

Environment and Social Compliance Audit Report

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Proposed Loan
Tangguh Liquefied Natural Gas Expansion Project
(Republic of Indonesia)

Tangguh LNG Trains 1 and 2
Independent Environmental and Social
Compliance Audit Report

Prepared by:
PT GREENCAP INDONESIA

The Environment and Social Compliance Audit Report is a document of the borrower. The views expressed herein do not necessarily represent those of ADB's Board of Directors, Management, or staff.

Tanggung LNG Trains 1 and 2 Independent Environmental and Social Compliance Audit

DRAFT REPORT
September 2016
Revision 6

EXECUTIVE SUMMARY

This Compliance Audit Report provides a review of the existing Tangguh LNG Project's adherence to Indonesia regulations and with Asian Development Bank (ADB) environmental and social compliance requirements as defined in its Safeguards Policies of 2009.

As part of the Compliance Audit a number of meetings, presentations and discussions were held in Jakarta with Tangguh management and members of its environmental and social teams. This was followed by a visit to the LNG facility; to a number of villages, where interviews were held with community members; and a meeting in Bintuni with Regency officials. The audit was conducted jointly with the External Panel which was undertaking its annual compliance audit for 2016, and with a team from ADB reviewing social and environmental commitments in the Tangguh Expansion Project AMDAL (TEP AMDAL). Management and monitoring efforts for Tangguh Trains 1 and 2 (T1/2) are now based on commitments made in the TEP AMDAL which was approved in July 2014. Review of the most recent AMDAL management and monitoring report submitted to the Government of Indonesia for the period July to December 2015 was an important component of the audit process.

Although the social programs continue to evolve, and will do so probably for the life of the Tangguh project, the breadth and quality of the programs and their success in meeting key performance indicators is a compliment to the commitment and performance of the Tangguh team. Successes include livelihood restoration for the resettled community and malaria control for host villages.

This Compliance Audit concludes that Tangguh T1/2 is compliant with the ADB Safeguard Policies of 2009. Resettlement was successfully implemented following ADB's Involuntary Resettlement Policy (1995) and closed out in 2012. The Integrated Social Programs Phases 1 and 2 covering the period 2006-2010 and 2011-2015 respectively which are designed to meet the requirements of ADB's Indigenous Peoples Policy (1998) and to meet aspirations of the Indigenous Peoples are meeting and in some cases exceeding their targets. Environmental compliance with the TEP AMDAL emission, effluent and environmental quality standards is at a high level. In terms of environment, anomalous groundwater quality that was noted in several monitor wells in an area used for disposal of construction fill (including acid sulfate soils) is considered to warrant further investigation.

The Tangguh LNG site now occupies an area of modified habitat. The presence of introduced species (e.g. cats and weeds) also suggests the need to revisit the Biodiversity Action Plan of 2002, and to formulate a more site-specific Biodiversity Action Plan.

The following summary tables present the results of the compliance audit for Tangguh T1/2 in relation to the ADB's integrated Safeguard Policy Statement, which addresses key areas of environmental and social compliance criteria, namely:

- Safeguard Requirements 1: Environment
- Safeguard Requirements 2: Involuntary Resettlement
- Safeguard Requirements 3: Indigenous Peoples

Summary of Tangguh T1/2 Compliance with ADB Safeguard Policy Statement

Meets ADB Safeguard Requirements 1: Environment

Ref. No	Aspect	Ref. No	Aspect
D1.1-4	Environmental Assessment: Identification of potential environmental impacts and risks	D8.1-27	Biodiversity Conservation and Sustainable Natural Resource Management: Natural Habitats, Mitigation Measures
D1.1-5	Environmental Assessment: Assessment process	D8.1-31	Biodiversity Conservation and Sustainable Natural Resource Management: Invasive Alien Species
D1.1-6	Environmental Assessment: Project's area of influence	D8.1-32	Biodiversity Conservation and Sustainable Natural Resource Management: Management and use of renewable natural resources
D1.1-7	Environmental Assessment: Trans boundary effects	D9.1-33	Biodiversity Conservation and Sustainable Natural Resource Management: EHS standards
D1.1-8	Environmental Assessment: Differentially or disproportionately affected groups	D9.1-34	Biodiversity Conservation and Sustainable Natural Resource Management: Pollution prevention, resource conservation and energy efficiency
D1.1-9	Environmental Assessment: EIA, IEE or equivalent process or desk review	D9.1-36	Biodiversity Conservation and Sustainable Natural Resource Management: Hazardous Material
D1.1-10	Environmental Assessment: Environmental audit for existing facilities	D9.1-37	Biodiversity Conservation and Sustainable Natural Resource Management: Pesticide Use and Management, Pest Management Program
D2.1-13	Environmental Planning and Management: Residual impacts	D9.1-38	Biodiversity Conservation and Sustainable Natural Resource Management: Pesticide Use and Management, WHO Recommended Classifications of Pesticides
D2.1-14	Environmental Planning and Management: Expected outcomes	D9.1-39	Biodiversity Conservation and Sustainable Natural Resource Management: Greenhouse Gas Emissions
D2.1-15	Environmental Planning and Management: Third party's involvement	D10.1-40	Occupational Health and Safety, Identification of Work Area's Inherent Risks and Hazards
D2.1-16	Environmental Planning and Management: Qualified and experienced experts provision	D10.1-41	Occupational Health and Safety, Preventive and Protective Measures Requirements
D4.1-19	Consultation and Participation: Meaningful Consultation	D10.1-42	Community Health and Safety, Risks and Potential Impacts
D5.1-20	Grievance Redress Mechanism	D11.1-45	Physical Cultural Resources: Siting and designing
D6.1-21	Monitoring and Reporting: Monitoring requirements	D11.1-46	Physical Cultural Resources: Siting Consultation with Affected Communities
D7.1-23	Unanticipated Environmental Impacts: Updating environmental assessment and EMP	D11.1-47	Physical Cultural Resources: Siting Impact mitigation
D8.1-24	Biodiversity Conservation and Sustainable Natural Resource Management: Biodiversity and natural resources assessment	D11.1-48	Physical Cultural Resources: Siting Chance Find Procedure
D8.1-25	Biodiversity Conservation and Sustainable Natural Resource Management: Modified habitats	D11.1-49	Physical Cultural Resources: Siting Removal of Physical Cultural Resources Conditions
D8.1-26	Biodiversity Conservation and Sustainable Natural Resource Management: Natural Habitats, Requirements		

Additional Efforts Required to Meet ADB Safeguard Requirement 1: Environment

Ref. No	Aspect	Issue
D2.1-12	Environmental Planning and Management: Environmental Management Plan	AMDAL provides general requirement for facility decommissioning, which includes requirement for closure and rehabilitation. However, there are no specific framework for closure of for existing organic and inert waste landfills and hydrostatic water pond.
D2.1-12	Environmental Planning and Management: Environmental Management Plan	Anomalous groundwater analyses are noted in monitor wells in an area of acid sulfate soils disposed during T1/2 construction and later excavated for construction of the new landfill.
D2.1-12	Environmental Planning and Management: Environmental Management Plan	Follow up of action items during inspection of facilities e.g. repair of eye wash station at hazardous waste facility was delayed.
D6.1-22	Monitoring and Reporting: Reporting requirements	Reporting standards for groundwater do not follow AMDAL requirement. There is no annual ambient air quality monitoring for NO _x contrary to international best practice. A once off validation program is recommended.
D9.1-35	Biodiversity Conservation and Sustainable Natural Resource Management: Wastes	Leachate volumes in the leachate pond at the new landfill exceed the 80% allowable under the Standard Operating Procedure.
D10.1-43	Community Health and Safety, Emergency Response Planning	There is no integrated Community Emergency Response Plan.

Meets ADB Safeguard Requirements 2: Involuntary Resettlement

Ref. No	Aspect	Ref. No	Aspect
D1.2-7	Compensation, Assistance and Benefits for Displaced Persons: Types of displaced persons	D3.2-21	Resettlement Planning: Measures for Income Restoration and Livelihood Improvement
D1.2-8	Compensation, Assistance and Benefits for Displaced Persons: Compensation	D3.2-22	Resettlement Planning: Census and Inventories of Loss of Assets
D1.2-9	Compensation, Assistance and Benefits for Displaced Persons: Land-based resettlement strategies	D3.2-23	Resettlement Planning: Contingency Plan
D1.2-10	Compensation, Assistance and Benefits for Displaced Persons: Rate of compensation	D3.2-24	Resettlement Planning: Qualified and Experienced Experts Provision
D1.2-11	Compensation, Assistance and Benefits for Displaced Persons: Physically displaced persons requirements	D4.2-25	Negotiated Land Acquisition: Negotiated settlements
D1.2-12	Compensation, Assistance and Benefits for Displaced Persons: Economically displaced persons requirements	D5.2-26	Information Disclosure: Client's documents for disclosure
D1.2-13	Compensation, Assistance and Benefits for Displaced Persons: Opportunities of project benefits	D5.2-27	Information Disclosure: Relevant information provided in timely manner, accessible and understandable language
D1.2-14	Compensation, Assistance and Benefits for Displaced Persons: Physical and economic displacement conditions	D6.2-28	Consultation and Participation: Meaningful Consultation
D2.2-15	Social Impact Assessment: Socioeconomic survey and census	D7.2-29	Grievance Redress Mechanism
D2.2-16	Social Impact Assessment: Identification of differentially or disproportionately affected individuals and groups	D8.2-30	Monitoring and Reporting: Monitoring requirements
D3.2-17	Resettlement Planning: Resettlement Plan Objective	D8.2-31	Monitoring and Reporting: Report Requirements
D3.2-18	Resettlement Planning: Resettlement Plan Measures	D9.2-32	Unanticipated Impacts: Updating resettlement plan and social impact assessment
D3.2-19	Resettlement Planning: Laws and Regulations Summary	D10.2-33	Special Considerations for Indigenous People
D3.2-20	Resettlement Planning: Incurred Costs		

Meets ADB Safeguard Requirements 3: Indigenous Peoples

Ref. No	Aspect	Ref. No	Aspect
D1.3-10	Consultation and Participation: Participation of affected indigenous people	D6.3-24	Monitoring and Reporting: Reporting Requirements
D1.3-11	Consultation and Participation: Participation - Inclusive and participatory consultation	D7.3-25	Unanticipated Impacts: Updating IPP and social impact assessment
D1.3-12	Consultation and Participation: Good Faith Negotiations	E1.3-26	Special Requirements: Special Considerations
D2.3-13	Social Impact Assessment: Qualified and experienced experts	E1.3-27	Special Requirements: Action plan
D2.3-14	Social Impact Assessment: Scope	E1.3-28	Special Requirements: Custodial or user rights
D2.3-15	Social Impact Assessment: Level of Detail	E1.3-29	Special Requirements: Meaningful Consultation
D3.3-16	Indigenous Peoples Planning: IPP	E2.3-30	Consent of affected indigenous peoples communities
D3.3-17	Indigenous Peoples Planning: Elements into Project Design	E2.3-31	Consent of affected indigenous peoples communities: Broad Community Support
D3.3-18	Indigenous Peoples Planning: Update Requirement	E2.3-32	Consent of affected indigenous peoples communities: Documentation Provision
D3.3-19	Indigenous Peoples Planning: Qualified and experienced experts provision	E2.3-33	Consent of affected indigenous peoples communities: Good Faith Negotiations
D4.3-20	Information Disclosure: Client Documents	E3.3-34	Commercial development of cultural resources
D4.3-21	Information Disclosure: Relevant Information Provided in Timely Manner and Accessible and Understandable Language	E4.3-35	Physical displacement of indigenous peoples
D5.3-22	Grievance Redress Mechanism	E5.3-36	Commercial development of natural resources: Commercial development of natural resources
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- Appendix 4 ASIA PACIFIC HSE POLICY, TANGGUH ISO 14001 EMS MANUAL & ENVIRONMENTAL PROCEDURES LIST
- Appendix 5 GROUNDWATER ANALYSIS AT NEW LANDFILL
- Appendix 6 GROUNDWATER NUMERICAL STANDARD CLASSIFICATION
- Appendix 7 PM_{2.5} AND PM₁₀ OF AMBIENT AIR ANALYSIS RESULTS
- Appendix 8 NO₂ AMBIENT AIR QUALITY STANDARD MEASUREMENT TIME
- Appendix 9 LIST OF REVIEWED DOCUMENTS

ACRONYMS & INDONESIAN TERMS

AAQS	Ambient Air Quality Standards
adat	Local and traditional customs, laws, and dispute resolution systems used in many parts of Indonesia
AMDAL	Analisis Mengenai Dampak Lingkungan—Environmental and Social Impact Assessment
ADB	Asian Development Bank
AGI	Acid Gas Incinerator
ASS	Acid Sulfate Soil
B3	Bahan Berbahaya dan Beracun, Dangerous and Toxic Material
BPDF	Bintuni Bay Development Foundation (YPTB – Yayasan Pembangunan Teluk Bintuni)
Bupati	Head of a Kabupaten or Regency
CAP	Community Action Plan – the support program approach to facilitating Community driven development projects in Directly Affected Villages
CIP	Community Investment Program
CEMS	Continuous Emissions Monitoring System
CPI	Corrugated Plate Interceptor
DAF	Dissolved Air Flotation
DAV	Directly affected village as originally identified by the Tangguh LNG project
Dinas	Agency
EHS	Environmental, Health and Safety
EP	External Panel
ESDD	Environmental and Social Due Diligence
ESDM	Ministry of Energy & Mineral Resources
GHG	Greenhouse Gas
GIIP	Good International Industry Practices
GLC	Ground Level Concentrations
GOI	Government of Indonesia
HGB	Hak Guna Bangunan, Building Rights Title
IFC	International Finance Corporation
IP	Indigenous Peoples
IPP	Indigenous Peoples Plan
ISO	International Organization for Standardization
ISP	Integrated Social Program – Tangguh’s social-economic development program
ISSAI	International Standards of Supreme Audit Institutions

IUCN	International Union for Conservation of Nature
Kabupaten	Regency
LARAP	Land Acquisition and Resettlement Action Plan – the Tangguh Project action plan describing the involuntary resettlement impacts of the Project
LAT	Lowest Astronomical Tide
LESC	Lenders Environmental and Social Consultant
LNG	Liquefied Natural Gas
MOEF	Ministry of Environment & Forestry, formerly named Ministry of Environment (MOE)
MR	Mixed Refrigerant
NGO	Non-Governmental Organization
OECD	Organization for Economic Cooperation and Development
PLN	Indonesia’s state electricity company
PR	Propane Refrigerant
PROPER	Ministry of Environment National Audit Program
Puskesmas	Local health clinic
RAV	Resettlement Affected Village as originally identified by the Tangguh Project: Tanah Merah Baru, Saengga and Onar
RKL	Environmental Management Plan
RPL	Environmental Monitoring Plan
SKK Migas	National upstream oil and gas oversight body, the Government of Indonesia partner in the Tangguh Project (which replaced BPMIGAS)
SOP	Standard Operating Procedure
SPS	Safeguard Policy Statement
STP	Sewage Treatment Plant
Tangguh T1/2	Tangguh Trains 1 and 2, existing trains
TEP	Tangguh Expansion Project
TMB	Tanah Merah Baru
TNI	Tentara Nasional Indonesia – Indonesian military forces
TIAP	Tangguh Independent Advisory Panel
TSDP	Tangguh Sustainable Development Program
WTP	Wastewater Treatment Plant
UGM	Gadjah Mada University

1.0 THE INDEPENDENT TANGGUH T1/2 COMPLIANCE AUDIT

Audit Rationale

1.1 This Independent Compliance Audit Report provides a comprehensive review of Tangguh Trains 1 and 2 Project's ('Tangguh T1/2') adherence to Indonesian laws and regulations and to ADB's environmental and social guidelines. The Compliance Audit Report details

- Objectives, audit scope, approach and project emissions;
- Tangguh T1/2 Project Description;
- Environmental and social management systems and oversight;
- Existing environmental and social conditions;
- Tangguh T1/2 Performance; and
- Compliance Audit Findings.

1.2 Greencap has been appointed as the Lenders Environmental and Social Consultant (LESC) to conduct the Independent Compliance Audit for Tangguh T1/2 ('T1/2 Compliance Audit'), identifying and assessing non-compliances and information gaps and where applicable outlining an action plan with appropriate remedial actions, including a budget for such actions and time frame for resolution of non-compliances and information gaps.

1.3 ADB is leading the Lenders group for potential investment in the Tangguh Expansion Project (TEP). As the TEP will be constructed on a brownfield site currently occupied by Trains 1 and 2, this T1/2 Compliance Audit is required under ADB Safeguard Policy of 2009 as an initial step in the ADB internal approval process.

1.4 Tangguh LNG received funding from ADB for T1/2 development, which required the project to comply with ADB policies applicable at the time of Financial Agreement was signed. At the time ADB exited the project in 2014 the Tangguh T1/2 operation was in full compliance with ADB policies applicable at the time of Financial Agreement was signed.

1.5 As required in ADB SPS 2009 Safeguard Requirements 4: Special Requirements for Different Finance Modalities Paragraph 12, *"For projects involving facilities and/or business that already exist or are under construction, the borrower/client will undertake an environment and/or social compliance audit, including on site assessment, to identify past or present concerns related to impacts on the environment, involuntary resettlement, and Indigenous Peoples. The objective of the compliance audit is to determine whether actions were in accordance with ADB's Safeguard principles and requirements for borrowers/clients and to identify and plan appropriate measures to address outstanding compliance issue."* This audit is conducted to fulfil the abovementioned requirement as part of TEP Train 3 Due Diligence Audit.

Objective

1.6 The objective of the Tangguh T1/2 Compliance Audit is to determine whether existing operations under Tangguh T1/2 are in accordance with ADB's Safeguard Policy Statement

2009, the requirements for borrowers/clients, and to identify and plan appropriate measures to address any outstanding compliance issues.

Audit Approach

Audit Team

1.7 The Audit Team comprised a blend of national and international consultants, with long-standing relevant professional experience:

- Dr Karlheinz Spitz as Lead Auditor responsible for the organisation and management of the T1/2 Compliance Audit, liaison with the Lenders and with Tangguh T1/2 management, and content and quality;
- Paul Whincup as Technical Advisor providing understanding and interpreting of technical and historical aspects of Tangguh T1/2 (Site Visit);
- Achmad Kosasih as Social Specialist guiding the social assessment (Site Visit);
- Dewayani Diah Savitri as Gender and Social Specialist responsible for preparing the social assessment with focus on gender and vulnerability issues;
- Dr Jozsua Mansoben as Senior Anthropologist responsible for preparing the social assessment with focus on Indigenous Peoples (IP) and consultation issues; and
- Dr Rusdian Lubis as Senior Environmental Specialist advising on ADB Compliance issues (Site Visit).

Greencap Competency

1.8 Greencap and its Audit Team Members have conducted numerous environmental and social compliance audits to international standards for a wide range of large resource development projects in Indonesia.

Auditing Standard and Process

1.9 Greencap has organized the T1/2 Compliance Audit in the way that is deemed most efficient in light of the mandate and role of Greencap within the particular financing arrangement, generally following International Standards of Supreme Audit Institutions (ISSAI) 4000 guidelines on compliance auditing. Key elements follow.

Initial Considerations Determine Compliance Audit objectives and scope	Audit objectives and Scope of Work are well defined in the contractual arrangement as LESC.
Consider independence and objectivity	The composition of Greencap's audit team, comprising auditors with different life experience and professional skills and previous T1/2 audit experience, was specifically selected to levelling out any variance caused by individual subjectivity.
Ensure quality control	Quality assurance is by providing Peer Review of each T1/2 Compliance Audit findings by personnel not involved in this particular audit aspect. Quality control is by applying a system of routine, planned activities implemented by the Audit Team as the T1/2 Compliance Audit is being conducted, such as checks to ensure data integrity, correctness and completeness, and checks to identify errors and omissions.

Audit Planning Consider legal basis	As the TEP will be constructed on a brownfield site currently occupied by Trains 1 and 2, this T1/2 Compliance Audit is required under ADB Safeguard Policy of 2009 as an initial step in the ADB internal approval process.
Identify subject matters and criteria	Audit criteria are as follows: <ul style="list-style-type: none"> ▪ Relevant environmental laws and regulations as stipulated by the Government of Indonesia (GOI); ▪ AMDAL commitments; and ▪ Requirements stipulated in ADB's Integrated Safeguard Policy Statements.
Understand the entity and its environment	The description of T1/2 and its environmental setting provides the context to explain audit focus and compliance issues.
Develop audit plan	In the T1/2 Compliance Audit planning was not a discrete initial phase of the audit but, rather, a continual and iterative process that commenced shortly after receiving the Mandate Letter and continued until submittal of the draft audit report.
Audit and Gathering Evidence Critical information review	Key documents provided by BP and reviewed include the following (see Appendix 9 for the complete list of documentation): <ul style="list-style-type: none"> ▪ Tangguh T1/2 AMDAL, October 2002; ▪ Tangguh Expansion Project AMDAL, July 2014; ▪ LARAP, July 2006; ▪ Tangguh Integrated Social Program (ISP 2005-2010); ▪ Tangguh Sustainability and Development program (TSDP 2015-2019); ▪ BP Tangguh Close Out Report (2006-2011); ▪ 6-monthly AMDAL RKL-RPL Implementation Report; ▪ Tangguh LNG EPII Monitoring; and ▪ Regular Monitoring for Lenders Requirements at Tangguh LNG.
Continually update audit planning	As stated elsewhere audit planning was a continual and iterative process.
Site visit and interviews	A one week site visit was undertaken in February 2016. Besides meetings and interviews at site, a number of meetings and video conferences were held with BP and ADB during February and March 2016.
Evaluating evidence and forming conclusion Evaluate whether sufficient information is obtained	A key quality criterion of the T1/2 Compliance Audit is that findings are supported by verifiable information (on a sampled basis).
Form conclusions	Conclusions are formed in a team approach, with the Team Leader being responsible for final audit findings.
Reporting Prepare draft report	The T1/2 Compliance Audit Report is structured around five elements: <ul style="list-style-type: none"> ▪ Condition, describing non-compliances and potential areas of improvement found during the audit; ▪ Criteria, indicating the criteria that were not met (e.g. a quality standard, a stated Tangguh T1/2 commitment, or a ADB SPS requirement); ▪ Cause, detailing the rationale of non-compliance; ▪ Consequence, focusing on negative outcome/risk of non-compliance; and

	<ul style="list-style-type: none"> ▪ Corrective Action, elaborating what can the management do to correct problem, and by when.
Allow for inputs of audited entity	To ensure that the audit report is fair, complete, and objective, Greencap will provide T1/2 Management an audit report draft followed with a close-out meeting in which T1/2 Management can state their views concerning the audit findings, conclusions, and recommendations.
Provide recommendation	The T1/2 Compliance Audit report contains a Corrective Action Plan, elaborating what can T1/2 management do to correct any non-compliances and/or does not meet ADB requirements, and by when.
Issue Final report	A final audit report, incorporating any changes discussed with Lenders and T1/2 Management will be issued in May 2016.

Responsibilities Related to the Tangguh T1/2 Compliance Audit

Tangguh T1/2's Responsibility

1.10 Management of Tangguh T1/2 is responsible for the environmental management and documentation so as to comply with applicable Indonesian laws and regulations and relevant international requirement. Management is also responsible for internal controls as defined by management to enable environmental performance that is free from non-compliance, whether due to negligence or error.

Greencap's Responsibility

1.11 Greencap's responsibility is to express its opinion on the environmental performance of Tangguh T1/2 in an independent and fair manner in accordance with good industry practice. Greencap has followed the procedures mentioned elsewhere in this Compliance Audit Report to collect evidence about non-compliances and has made the necessary risk assessments based on professional judgement and experience. Greencap is of the opinion that the evidence so collected during this Independent Compliance Audit is sufficient to formulate our audit opinion.

Compliance Criteria

1.12 Audit Criteria are as follows:

- Relevant environmental laws and regulations as stipulated by the Government of Indonesia (GOI);
- TEP AMDAL commitments; and
- Requirements stipulated in ADB's Integrated Safeguard Policy Statements.

Project Emission

1.13 Ambient Air Quality Standards (AAQS) (**Figure 1**). Tangguh T1/2 has to comply with both applicable emission and ambient environmental quality standards.

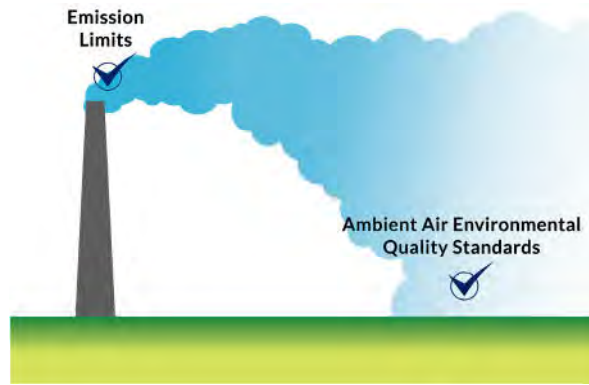


Figure 1 Combination of emission controls and ambient environmental quality standards to protect environment illustrated

Gaseous Emissions

1.14 Sources of the main gaseous emissions from Tangguh T1/2 are generated from the following activities:

- Flares – Dry, Wet & Tankage, see **Table 1**;
- Boilers, see **Table 2**;
- Acid Gas Incinerators (AGI), see **Table 3**;
- Regeneration Gas Heaters (RGH), see **Table 4**; and
- Mixed Refrigerant (MR) and Propane Refrigerant (PR) Turbines, see **Table 5** and **Table 6**.

1.15 Tangguh T1/2 performs regular environmental monitoring in adherence to AMDAL and applicable Indonesia and International requirements. All emission sources are monitored regularly by external accredited laboratory using manual sampling equipment. Continuous Emissions Monitoring Systems (CEMS) are also in operation at the two Gas Turbine units and the two of AGI units which are the largest emission sources.

1.16 Emission limits applicable to T1/2 restrict concentrations of contaminants at the point of emission (e.g. stacks). Gaseous concentrations are usually measured and documented in units such as milligrams per cubic metre of gas (mg/Nm^3) under specified conditions such as temperature, pressure, and averaging period. Convention, or Standard Temperature and Pressure, is 1 atmosphere pressure and 25°C temperature (which also applies to limits stated in Indonesian regulations).

1.17 It should be noted that emission limits represent commonly emission limits averaged over a specific time interval. The Indonesian Ministry of Environment and Forestry (MOEF) has approved a 24-hour averaging period for industries. Generally the 24-hour average period applies only when using continuous emission monitoring, as it is the case in Tangguh T1/2. The result of continuous emission monitoring complies with the emission quality standard if the daily average data of monitoring for 3 (three) months consecutively

complies with the emission quality standard. For manual/isokinetic sampling, the stack limit is an instantaneous limit that cannot be exceeded.

1.18 In the event that any abnormal condition occurs, the result of continuous emission monitoring may exceed the emission quality standard maximum 5% (five percent) of daily average data of monitoring for 3 (three) consecutive months.

1.19 The MOEF requires continuous emission monitoring (MOE Regulation 13 of 2009). The regulation specifies measurement and reporting requirements, requiring continuous emission monitoring systems (CEMS) installations for major stacks, together with twice-annual sampling campaigns, with results reported to relevant authorities. MOE Technical Guidelines (KEP-205/BAPEDAL/07/1996) specify sampling campaigns and analysis of emission parameters via specific analytical procedures.

1.20 For operating activities and/or at construction phase in 2009 with more than one emission source, CEMS shall be installed at the emission source with the highest emission load. Manual (isokinetic) emission monitoring applies to all other point sources.

1.21 The Operator is required to prepare an emission monitoring plan which at a minimum shall comprise definition of activity to be monitored; procurement, operation, maintenance, and improvement of facilities and infrastructures of stationary source emission monitoring; and identification, naming, and coding of all emission sources. The Operator is also required to prepare an Emergency Response Plan.

1.22 The minimum gas discharge velocity and stack height (and stack location) are to be selected to ensure that ambient air quality standards (ground level concentrations or GLC) are met.

1.23 The point of discharge shall be above the aerodynamic wake of nearby buildings and shall be vertically upward, located as remote from air intakes as possible. Emission sources, applicable environmental quality criteria and latest monitoring results are presented in the following tables.

Table 1 T1/2 Emission Results for Flares

Parameter	Tangguh T1/2 Former Standard	Indonesian Standard	IFC Standard	TEP Standard	Results ORF
Opacity	40%	40%	-	40%	<20%

Table 2 T1/2 Emission Results for Boilers in mg/Nm³ unless stated otherwise

Parameter	Tangguh T1/2 Former Standard	Indonesian Standard	IFC Standard	TEP Standard	Boiler Stack A	Boiler Stack B	Boiler Stack C
Nitrogen Oxide (NOx) as NO ₂	320	400	320	320	93.0	87.7	74.7

Parameter	Tangguh T1/2 Former Standard	Indonesian Standard	IFC Standard	TEP Standard	Boiler Stack A	Boiler Stack B	Boiler Stack C
Opacity	20%	20%	-	20%	<20%	<20%	<20%
Sulphur Dioxides (SO ₂)	150	150	-	150	<1	<1	<1
Total Particulate	50	50	-	50	1.1	1.5	1.3
Hydrogen Sulphide (H ₂ S)	-	-	5	5	<0.1	<0.1	<0.1

Table 3 T1/2 Emission Results for Acid Gas Incinerators (AGI) in mg/Nm³ unless stated otherwise

Parameter	Tangguh T1/2 Former Standard	Indonesian Standard	IFC Standard	TEP Standard	Results For AGI I	Results For AGI II
Sulphur Dioxide (SO ₂)	873	2,600	-	2,600	<3	<3
Hydrogen Sulphide(H ₂ S)	-	-	5	5	<0.1	<0.1

Table 4 T1/2 Emission Results for Regeneration Gas Heaters (RGH) in mg/Nm³ unless stated otherwise

Parameter	Tangguh T1/2 Former Standard	Indonesian Standard	IFC Standard	TEP Standard	Results for RGH I	Results for RGH II
Nitrogen Oxide (NO _x) as NO ₂	320	400	320	320	89.0	108.0
Opacity	20%	20%	-	20%	<20%	<20%
Sulphur Dioxides (SO ₂)	150	150	-	150	<1	<1
Total Particulate	50	50	-	50	1.7	1.9
Hydrogen Sulphide (H ₂ S)	-	-	5	5	<0.1	<0.1

Table 5 T1/2 Emission Results for Gas Turbines Train 1 in mg/Nm³ unless stated otherwise

Parameter	Tangguh T1/2 Former Standard	Indonesian Standard	IFC Standard	TEP Standard	Train 1 Gas Turbine PR	Train 1 Gas Turbine MR
Nitrogen Oxide (NOx) as NO ₂	320	320	51	51	6.4	16.5
Total Particulate	50	50	-	50	2.1	1.7
Sulphur Dioxide (SO ₂)	150	150	-	150	7.7	<1
Hydrogen Sulphide (H ₂ S)	-	-	5	5	<0.1	<0.1

Table 6 T1/2 Emission Results for Gas Turbines Train 2 in mg/Nm³ unless stated otherwise

Parameter	Tangguh T1/2 Former Standard	Indonesian Standard	IFC Standard	TEP Standard	Train 2 Gas Turbine PR	Train 2 Gas Turbine MR
Nitrogen Oxide (NOx) as NO ₂	320	320	51	51	18.7	10.7
Total Particulate	50	50	-	50	0.4	1.7
Sulphur Dioxide (SO ₂)	150	150	-	150	<1	<1
Hydrogen Sulphide (H ₂ S)	-	-	5	5	<0.1	<0.1

1.24 As reported in the latest RKL/RPL report dated July-December 2015, monitoring of plant emissions confirm compliance with applicable standards.

Ambient Air Quality Standards

1.25 AAQS applicable to Tangguh T1/2 (**Table 7**) ensure the community and protected areas around the facility are not adversely affected by plant emissions. Concentrations are usually measured and documented in micrograms per cubic metre of gas ($\mu\text{g}/\text{m}^3$) over specified averaging period.

1.26 AAQS include various thresholds for different averaging periods, all of which have to be met. The Indonesian regulation does not specify where limits apply: at site boundary, at the receptor, or at the maximum point of impingement. Approval on the monitoring locations and monitoring frequency is part of the AMDAL process.

1.27 IFC General EHS Guidelines require that projects with significant sources of air emissions, and potential for significant impacts to ambient air quality, should prevent or minimize impacts by ensuring that emissions do not result in pollutant concentrations that reach or exceed relevant ambient quality guidelines and standards by applying national legislated standards, or in their absence, the current IFC Air Quality Guidelines. Since the GOI has established ambient quality guidelines and standards, limits as defined by the GOI serve as reference for Tangguh T1/2.

Table 7 Ambient Air Quality Results in $\mu\text{g}/\text{m}^3$ unless stated otherwise

No	Parameter	Measuring Time	Tangguh T1/2 Former Standard	Indonesian Standard	IFC* Standard	TEP Standard	Monitoring Stations	
							Soccer Field	Log Pond
1	Sulphur Dioxide (SO ₂)	1 hour	900	900	-	900	<20	<20
		24 hours	150	365	20 (Guidelines)	20		
2	Carbon Monoxide (CO)	1 hour	30,000	30,000	-	30,000	<100	<100
		24 hours	10,000	10,000	-	10,000		
3	Nitrogen Dioxide (NO ₂)	1 hour	320	400	200	200	<5	<5
		24 hours	150	150	-	150		
		Annual	-	100	40	-		
4	Ozone (O ₃)	1 hour	-	235	-	235	<20	<20
5	Hydro-carbon(HC)	3 hours	-	160	-	160	<5	<5
6	PM ₁₀	24 hours	150	150	50 (Guidelines)	50	73.6	37.8
	PM _{2.5}	24 hours	65	65	25 (Guidelines)	25	31.8	20.7
7	Ash (TSP)	24 hours	230	230	-	230	132	87.7
8	Lead (Pb)	24 hours	-	2	-	2	<0.001	<0.001

**IFC adopts WHO air quality standard if the host country does not have a national standard*

1.28 As reported in the latest RKL/RPL report for the period July-Dec 2015, ambient air quality monitoring confirms compliance with applicable Indonesian standards. Levels of particulates measured in October 2015 exceeded the IFC guidelines for 24 hours due to smog and haze arising from burning activity outside the LNG site.

Greenhouse Gas Emissions

1.29 Total GHG produced from Tangguh T1/2 operations from 2010 to 2015 totalled between about 4.5 and 4.8 million tons of CO₂ (Error! Not a valid bookmark self-reference.). This is equivalent to about 0.25% of Indonesian GHG emissions (about 2 billion tons in 2015) or about 0.011% of world CO₂ emissions (45 billion tons in 2012).

Table 8 Tangguh T1/2 GHG (CO₂) Emissions from 2010 - 2015

GHG (CO ₂)	Tangguh T1/2					
	2010	2011	2012	2013	2014	2015
Kilo Tons (KT)	4,561	4,513	4,656	4,730	4,735	4,780

1.30 Though Indonesia has a climate change program and goals, there are no specific Greenhouse Gas (GHG) emission standards at this time.

1.31 IFC Performance Standard (PS) 3 'Resource Efficiency and Pollution Prevention' does not regulate GHG emissions as such, but does require quantification and reporting. IFC Guidance Note 3 requires that projects expected to produce more than 25,000 tonnes of CO₂ equivalent annually will quantify direct emissions from the facilities owned or controlled within the physical project boundary, as well as indirect emissions associated with the off-site production of energy used by the project.

1.32 The ADB SPS No. 1 requirement e. Greenhouse Gas Emissions requires that:

"The borrower/client will promote the reduction of project-related anthropogenic greenhouse gas emissions in a manner appropriate to the nature and scale of project operations and impacts. During the development or operation of projects that are expected to or currently produce significant quantities of greenhouse gases,¹⁰ the borrower/client will quantify direct emissions from the facilities within the physical project boundary and indirect emissions associated with the off-site production of power used by the project. The borrower/client will conduct quantification and monitoring of greenhouse gas emissions annually in accordance with internationally recognized methodologies. In addition, the borrower/client will evaluate technically and financially feasible and cost-effective options to reduce or offset project-related greenhouse gas emissions during project design and operation, and pursue appropriate options."

1.33 As committed in the TEP AMDAL, Tangguh has conducted management and monitoring of GHG emissions in accordance with IFC PS 3 and ADB SPS No. 1 requirements. Actions have included minimization of flares and numbers of plant shut down, calculation and recording the amount of GHG emission, including fuel consumption from LNG plant and its supporting facilities.

Sources of Noise

1.34 Noise sources from operation of Tangguh T1/2 comprises activities from LNG plant facilities including power generators, boilers, gas turbines, flares, and other plant processing equipment.

1.35 Minister of Environment Decree No 48/MENLH/11/1996 on Noise Standards defines national noise emission standards dependent on the area designation, with lower limits for residential and natural areas compared to industrial and commercial areas. Latest noise monitoring results for T1/2 is presented in the following table.

Table 9 Ambient Noise Standards applicable to T1/2

Area	TEP Standard (dba)	Soccer Field	Log Pond
Noise (L_{avg})	55 (day) 45 (night)	32.9	30.8

1.36 As reported in the latest RKL/RPL report July-December 2015, noise monitoring confirms compliance with applicable standards.

Discharges to Water

1.37 There are five main wastewater streams at Tangguh T1/2. Average volumes of each stream are indicated in the following table:

Table 10 Tangguh T1/2 Wastewater Streams

Wastewater Type	Quantity (m ³ /day)
Produced Water	1,200
Chemically Contaminated Water	4,000
Oily Contaminated Water	2,400
Desalination Wastewater (Brine Reject)	7,500
Sewage Treatment Plant	3,000

1.38 Treated wastewaters are monitored to ensure compliance with water quality standards prior to marine discharge via the common outfall. Wastewater monitoring is conducted at each sampling point facility on a regular basis by external accredited laboratory as part of the TEP AMDAL commitments.

1.39 Minister of Environment Decree No 112 of 2003 on Domestic Waste Water Quality Standards defines domestic wastewater as wastewater originating from business and/or resident activity (real estate), restaurant, office complex, commerce, apartment and dormitory. **Table 14**, **Table 15** and **Table 16** summarize domestic waste water discharge limits which are derived from Minister of Environment Decree No. 112 of 2003 on Domestic Wastewater Quality Standards. The Tangguh Wastewater Discharge Permit No. 125/2013 is valid until April 2018.

1.40 Minister of Environment Decree No. 19 of 2010 defines industrial effluent discharge limits for oil and gas as well as geothermal activities. Wastewater analysis is conducted at an accredited external laboratory on a monthly basis and its flow measurement is recorded on a daily basis. Results of monitoring wastewater treatment are presented in the following tables.

Oily Contaminated Water and Produced Water Monitoring Results

1.41 The oily contaminated water is treated in CPI (Corrugated Plate Interceptor) to remove any hydrocarbon content. However, the oily contaminated sewerage also receives wastewater from the production system containing Amine which causing high COD level.

Therefore, wastewater from CPI effluent cannot be discharged directly to the sea. All oily contaminated wastewater is routed into the produced water tank to be treated with the produced water. There is no discharge of treated oily water from the CPI to the common outfall.

1.42 Oily contaminated water and produced water monitoring results show that effluent loads for all parameters are in compliance with the Wastewater Discharge Permit No. 125/2013.

Table 11 Oily Contaminated Water and Produced Water Results

Parameter	Tangguh Standard	Jul 15	Aug 15	Sep 15	Oct 15	Nov 15	Dec 15
Temperature	40°C	30.7	30.0	29.5	33.7	30.2	29.0
pH	6 - 9	8.15	8.9	7.5	8.32	8.27	8.9
Oil & Grease	25 mg/L	<0.5	2.0	1.0	<0.5	<0.5	<0.5
Total Phenol	1 mg/L	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001
Ammonia (NH ₃)	5 mg/L	3.4	4.8	3.9	0.2	3.5	4.0
Chemical Oxygen Demand (COD)	200 mg/L	30.0	56.0	100.0	19.0	22.0	29.0
Methanol	100 mg/L at 100 m distance from discharge point to sea	<1	<1	<1	<1	<1	<1

Chemically Contaminated Wastewaters Monitoring Results

1.43 Chemically contaminated wastewater is treated in the neutralization pit to normalize pH levels between 6 and 9 as per TEP AMDAL and Wastewater Discharge Permit No. 125/2013. It is then discharged at the -13m LAT discharge outfall.

1.44 Analysis results from July to December 2015 show that all parameters are in compliance with applicable regulations.

Table 12 Tangguh T1/2 Chemically Contaminated Water Results

Parameter	Tangguh Standard	Jul 15	Aug 15	Sep 15	Oct 15	Nov 15	Dec 15
pH	6 - 9	8.75	8.70	7.32	7.34	7.33	8.53
COD	200 mg/L	3	40	5	6	5	33
TSS	100	<1	21	<1	1	<1	13
Total Metals	Total toxic metals <5mg/L*	0.435	0.930	0.386	0.377	0.414	0.350

* Heavy metals include: Arsenic, cadmium, chromium, copper, lead, mercury, nickel, silver, vanadium, and zinc.

Brine Water Monitoring Results

1.45 The Wastewater Discharge Permit No. 125/2013, only pH and salinity are monitored with regards to brine water discharge management. As reported in the latest RKL/RPL report for the period July-December 2015.

1.46 Brine water monitoring confirms compliance with applicable standards.

Table 13 Tangguh T1/2 Brine Reject Water Results

Parameter	Tangguh Standard	Jul 15	Aug 15	Sep 15	Oct 15	Nov 15	Dec 15
Desalination pH	6 - 9	8.47	8.42	8.66	8.45	8.41	8.07
RO pH	6 - 9	6.97	8.28	7.83	7.83	7.31	6.72
Exclusion Zone Ambient Salinity	%	28.6	31.0	29.5	31.2	29.9	31.0
30m discharge Salinity	%	28.3	31.2	30.5	31.3	29.4	30.6
Comparison between exclusion zone and 30m Salinity*	%	-1.06	0.64	3.28	0.32	-1.70	-1.31

*30m distance from discharge location at sea, maximum salinity standard is $\pm 5\%$ from ambient conditions

Sewage Monitoring Results

1.47 Treated effluent from the three Sewage Treatment Plants (STP) are sampled and analysed prior to discharge through the -13m LAT common outfall at the LNG jetty.

1.48 Results were in compliance with the Wastewater Discharge Permit No. 125/2013 during the last reporting period.

Table 14 STP Utility Results

Parameter	Unit	Standard	Jul 15	Aug 15	Sep 15	Oct 15	Nov 15	Dec 15
pH		6 – 9	6.3	7.2	7.2	7.2	6.8	7.3
BOD	mg/l	100	6	24	6	22	24	25
TSS	mg/l	100	<1	2	11	21	13	7
Oil & Grease	mg/l	10	5	<0.5	<0.5	2	<0.5	<0.5

Table 15 STP A Results

Parameter	Unit	Standard	Jul 15	Aug 15	Sep 15	Oct 15	Nov 15	Dec 15
pH		6 – 9	6.98	7.9	7.62	7.69	7.69	7.16
BOD	mg/l	100	33	49	39	39	39	31
TSS	mg/l	100	27	22	53	45	30	26
Oil & Grease	mg/l	10	<0.5	0.7	1.7	2	<0.5	<0.5

Table 16 STP C Results

Parameter	Unit	Standard	Jul 15	Aug 15	Sep 15	Oct 15	Nov 15	Dec 15
pH		6 – 9	6.9	8.0	7.84	7.19	7.15	7.32
BOD	mg/l	100	10	35	20	10	15	14
TSS	mg/l	100	19	35	12	6	19	22
Oil & Grease	mg/l	10	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5

1.49 Tangguh T1/2 has to comply with both, applicable discharge limits and ambient environmental quality standards. Marine discharges are illustrated conceptually in **Figure 2**. Tangguh T1/2 is required to adopt a suitable system for wastewater discharge into the sea so that

- wastewater discharge quality is below the regulatory limits; and
- Resultant changes in the receiving seawater quality do not exceed regulatory limits.

1.50 To comply with the latter requirement, a defined mixing zone is established as part of the AMDAL study within which the wastewater plume is allowed to interact with surrounding waters and to exceed the regulatory quality standards for receiving seawater (**Figure 2**). Compliance is then measured by monitoring marine waters at agreed compliance points at a distance from the discharge and mixing zone.



Figure 2 Combination of emission limits and ambient environmental quality standards to protect aquatic environment illustrated

Ambient Sea Water Quality Standards

1.51 Plant operators require a Wastewater Permit before discharging wastewater into the aquatic environment. Minister of Environment Regulation No. 51 of 2004, regarding Sea Water Quality Standards (Attachment I port waters) applies to coastal seawater quality after the mixing zone and defines expected seawater quality based on defined seawater

usage. Seawater monitoring was conducted twice during the reporting period (August and October 2015) at 4 locations (SW01 – SW04): 30 m and 100 m upstream and 30 m and 100 m downstream from the discharge.

1.52 No parameters exceeded the marine regulatory limit excepting nitrate and phosphate which are unrelated to Tangguh as they are both naturally high in Bintuni Bay.

Waste Management

1.53 Tangguh T1/2 applies the 3R (reduce, reuse, recycle) Principle for waste management. Non-hazardous wastes are segregated and disposed as follows:

- Recyclable wastes including aluminium/tin can are compacted and plastic bottles are shredded and subsequently transported off site;
- Organic wastes are composted on site and some disposed to the in-situ landfill (**Figure 4**);
- Non-hazardous combustible wastes including papers, cardboards, are incinerated; and
- Inert wastes including PVC pipes, Styrofoam and HDPE materials are disposed to the in-situ landfill (**Figure 4**); and
- Since 2015, inert wastes, tyres and bio-sludge are disposed to in-situ landfill (**Figure 4**).

1.54 Sanitary solid wastes are disposed at authorized landfills according to national and local policies (Act No. 18 of 2008 concerning Municipal Solid Waste Management; Regulation of Minister of Home Affairs No. 33 of 2010 regarding Guidelines for Waste Management).



Figure 3 Organic Waste Pits during T1/2 Construction Phase (2009)

1.55 Non-hazardous solid wastes during construction were landfilled. Waste pits used during construction were excavated and remediated (**Figure 3**). Excavated organic waste is disposed of to a new engineered organic waste landfill (**Figure 4**). Since 2015, all inert and organic wastes have been disposed to a new landfill.



Figure 4 Aerial View of Inert and Organic Waste Landfills

1.56 Minister of Environment Regulation No. 101 of 2014 on the Management of Hazardous and Toxic Wastes provides a listing of hazardous wastes and addresses requirements for management of hazardous and toxic (B3) solid and wastes in Indonesia, superseding Government Regulation No. 85 Year 1999.

1.57 Plant operators require a Permit for the temporarily storage of hazardous waste on site prior to licenced off-site disposal. Hazardous wastes are temporarily stored in the licensed Hazardous Waste Storage <90 day prior to shipment using licensed transporter and completed with manifest to permitted Hazardous Waste Treatment and Disposal Facility offsite. Dissolved Air Flotation (DAF) Sludge and Bio-sludge were previously designated as hazardous waste. Under the new GOI Hazardous Waste Regulation, Minister of Environment Regulation No. 101/2014 Biosludge is no longer classified as hazardous waste and are landfilled on site. DAF and Biosludge are being trialled for soil amelioration in order to minimize this waste stream.

1.58 Waste management operations at Tangguh are in compliance.

2.0 TANGGUH T1/2 PROJECT DESCRIPTION

Project Location

2.1 Tangguh T1/2 is centred on the Teluk Bintuni Regency in Papua Barat Province of Indonesia; the operations comprise two-train natural gas liquefaction facilities with associated onshore infrastructure, two offshore platforms, two sub-sea pipelines, and fourteen producing wells (**Figure 5**).

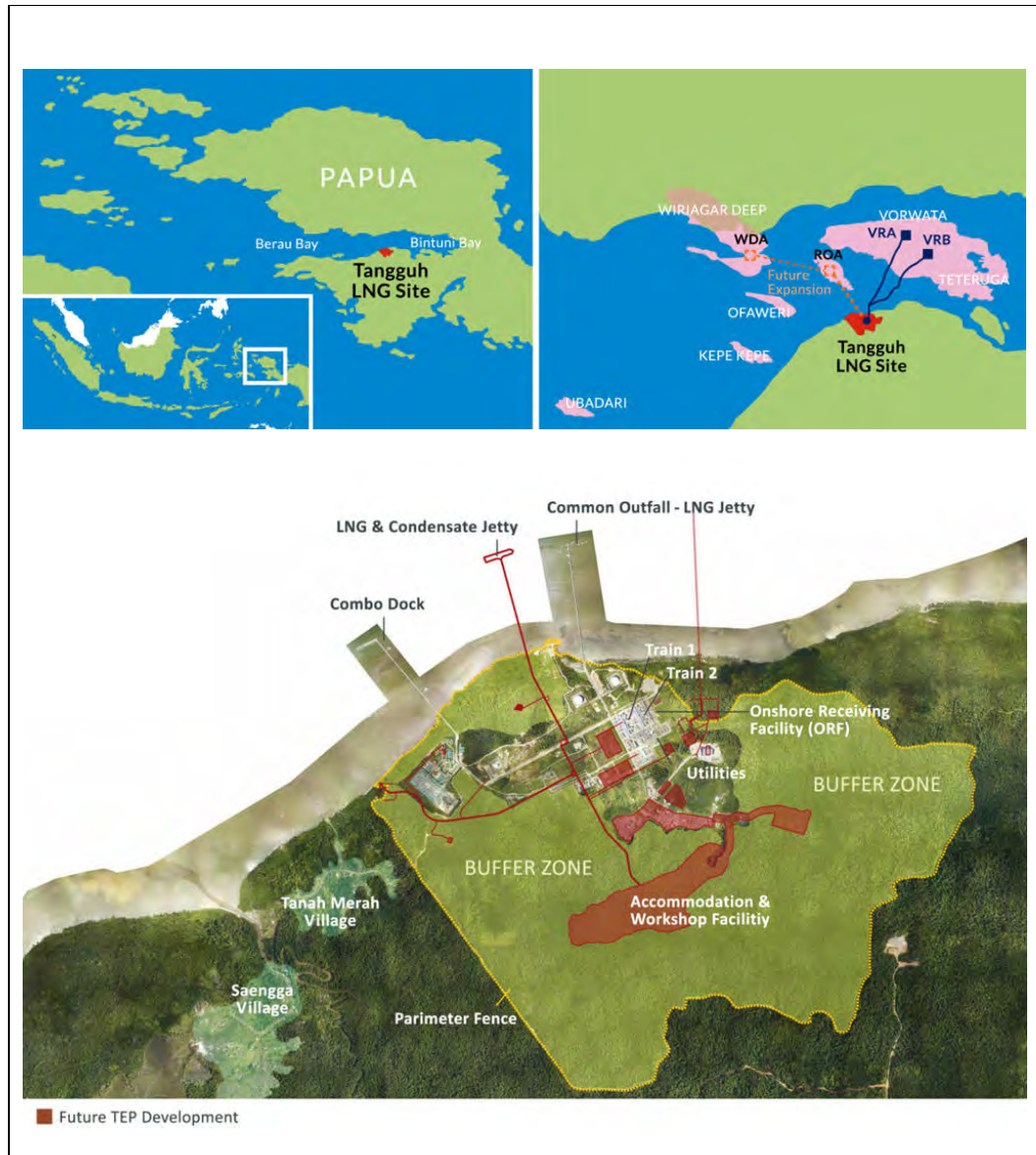


Figure 5 Tangguh T1/2 Site

Tangguh Expansion Project

2.2 Development planning for the Tangguh Expansion Project considers initial development of Train 3 plus supporting facilities and infrastructure.

Ownership

2.3 The operation of Tangguh T1/2 is a unitized upstream oil and gas activity under 3 Production Sharing Contracts (PSC); namely Berau PSC, Wirigar PSC and Muturi PSC (collectively known as "Tangguh PSCs"). BP Berau Ltd. ('BP') has been appointed as the operator to run Tangguh LNG for and in the name of all participating interest holders under Tangguh PSC ('Tangguh Affiliates'). Participating interest holders under Tangguh PSC are as follows:

1. BP Berau Ltd.	34.24%
2. BP Muturi Holdings B. V.	0.21%
3. BP Wiriagar Ltd.	2.71%
4. CNOOC Muturi Limited	13.90%
5. Indonesia Natural Gas Resources Muturi, Inc.	7.35%
6. KG Berau Petroleum Ltd.	8.56%
7. KG Wiriagar Petroleum Ltd.	1.44%
8. MI Berau B. V.	16.30%
9. Nippon Oil Exploration (Berau), Ltd.	12.23%
10. Talisman Wiriagar Overseas Limited	3.06%

Development History

2.4 Tangguh T1/2 has identified five existing (Vorwata, Roabiba, Wiriagar Deep, Ofaweri and Ubadari) and two prospective (Teteruga and Kepe-Kepe) gas reservoirs beneath and north of Bintuni Bay (**Figure 5**). Vorwata field contains proven reserves of 12.9 trillion cubic feet (tcf) of natural gas. Tangguh T1/2 is presently reliant on two unmanned platforms and 14 production wells located in the Vorwata reservoir (**Figure 5**).

2.5 Gas fields were first discovered in 1994 and subsequent environmental and social baseline studies were completed between 1999 and 2002. The Tangguh T1/2 Environmental Impact Assessment (or AMDAL in Bahasa Indonesia) was approved in October 2002 subject to a number of conditions. Conditions attached to the AMDAL approval included a requirement for studies of produced water reinjection, carbon dioxide sequestration and prohibiting the use of groundwater.

2.6 The first LNG shipment was in July 2009. **Figure 6** presents the Tangguh's overall development history with key milestones including the Tangguh Expansion Project (TEP) for 2 additional trains.

Tangguh Development History

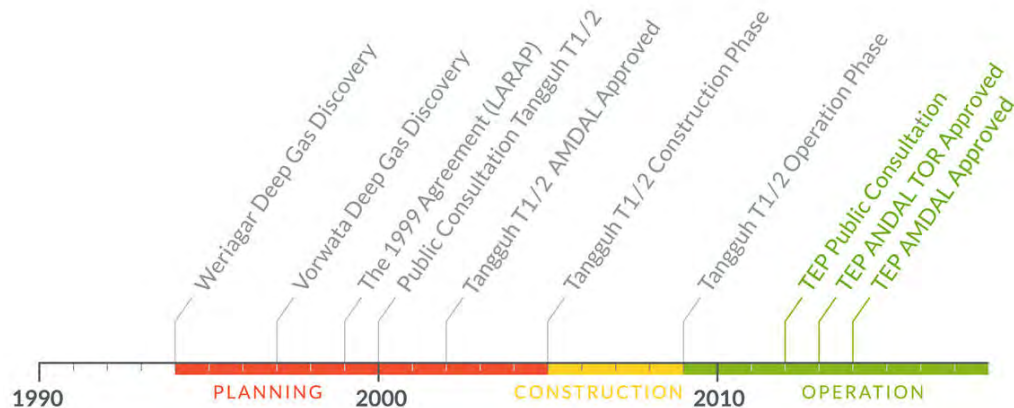


Figure 6 Project Timeline

2.7 Construction of T1/2 began in 2005. A total of 400 ha was cleared of which approximately 100 ha have subsequently been revegetated. The original intent was to revegetate a larger area but a number of construction dormitories, workshops and access roads have been retained into the operations phase.

2.8 All commercial felled timber remains to be stored at the log pond and has resulted in much of the commercial timber losing its integrity. This was the result of delays in receiving necessary approvals and permits. The commercial value of the remaining good quality felled timber and cost of transportation does not now warrants its removal for onward beneficial use. This is not however considered a compliance issue.



Figure 7 Log Pond (source: EP2)

2.9 A 24-km-long dual perimeter fence separated by an access road is installed around the boundary of the site (**Figure 8**) and there is an inner security fence around the actual T1/2 plant. Native forest between the inner and outer fences is referred to as the 'Buffer Zone'. The boundary is patrolled by BP personnel. Although breaches occur from time to time, mainly by those entering from the sea, there is no loss of integrity caused by security breaches.



Figure 8 Perimeter Fence Access Road

2.10 The workforce of approximately 10,700 during construction was higher than the 5,800 predicted in the Tangguh T1/2 AMDAL. Also the approximately 1,500 on a roster basis in the operations stage is higher than 450 predicted in the Tangguh T1/2 AMDAL creating issues with waste management and sewage treatment during construction, some of which continued through to operations.

2.11 Some non-compliance issues were identified during construction including organic waste disposal and tree death from water logging and silt near the waste management facility (**Figure 9**). Action plans were developed and remediation successfully achieved.



Figure 9 Tree Death near Waste Management Facility

2.12 The operational workforce of approximately 1,500 on a roster basis is higher than the 450 predicted in the Tangguh T1/2 AMDAL. The AMDAL however made commitments and set targets for Papuan percentage of the workforce. Whilst recognizing that LNG operations jobs are limited and require highly skilled professionals, programs have been developed to help prepare suitable local community members for project employment opportunities by providing training where appropriate. Targets were also set for

employment of Direct Affected Village (DAV) community and where possible hire increasing numbers to fill higher management positions.

2.13 Since April 2003, six-monthly environmental and social monitoring reports have been submitted to the central government.

2.14 The Tangguh LNG site covers former production forest which was subject to a Forest Release Agreement with the then Forestry Department. The land status has been changed and Tangguh has rights to use land under the HGB (Hak Guna Bangunan), Building Rights Title. As part of the Forest Release there is a requirement for Tangguh LNG to rehabilitate 6,984.40 ha of degraded forest in Papua Barat.

2.15 Tanah Merah village was located in the area planned for development. Agreements were reached with the villagers for resettlement to two new villages constructed at Tanah Merah Baru (TMB) close to the western boundary of the LNG site and to Onar Baru which is further west and adjoins an existing village termed Onar Lama.

2.16 Resettlement of the Tanah Merah villagers was completed in 2004 (121 households) in agreement with the Saengga community and to Onar Baru in 2006 (26 households), a total of 147 households comprising 758 people. Tanah Merah Baru, Saengga and Onar Baru are recognized as resettlement affected villages (RAVs).



Figure 10 Tanah Merah Baru Village (left) and Onar Baru Village (right)

2.17 The Government of Indonesia (GOI) unconditionally approved the TEP AMDAL in July 2014 covering all four trains (existing Trains 1 and 2 and planned Trains 3 and 4). The TEP AMDAL supersedes the Tangguh T1/2 AMDAL and all six-monthly reporting is now based on the environmental management and monitoring programs agreed in the TEP AMDAL.

2.18 A Plan of Development II (PoD II) for TEP was approved by GOI in 2012 and a Final Investment Decision (FID) is expected from the Tangguh consortium in mid-2016.

Off Takers

2.19 Tangguh T1/2 supplies LNG to International buyers in China, South Korea and Japan, as well as to domestic buyers.

Project Components

2.20 Tangguh T1/2 involves the tapping of gas from the Vorwata reservoir by two unmanned offshore production platforms (VRA and VRB). Feed gas is sent through two sub-sea pipelines to the LNG processing facility on the south shore of Bintuni Bay (**Figure 11**). The two trains are designed to produce 7.6 million tons per annum (mtpa) of LNG.



Figure 11 Aerial View of Tangguh T1/2 onshore facilities and VRA Platform

2.21 Other facilities at the site includes storage tanks, an LNG tanker loading terminal as well as maintenance facilities, offices, and a personnel accommodation (**Box 1**).

Box 1**ONSHORE SCOPE**

1. Onshore Receiving Facility (ORF) to accept feed gas from the VRA and VRB platforms via multiphase subsea pipeline
2. LNG Train 1 and 2 with maximum production capacity of 7.6 mtpa (millions tons per annum)
3. Plant utilities:
 - Power generation and distribution
 - Steam system
 - Fuel gas system
 - Water systems
 - Air and nitrogen systems
 - Process gas and liquid disposal system
 - Refrigerant transfer systems
 - Firefighting systems
 - Produced water system
 - Potable water production using Desalination and Reverse Osmosis system
 - Chemical Storage.
4. LNG Storage and Loading System.
5. Condensate Storage and Loading System
6. LNG Jetty, Combo Dock and Construction Jetty
7. Non-hazardous and hazardous waste facilities
8. Offices and Accommodation
9. Babo Facilities to support crew change, includes accommodation, airstrip and jetty

OFFSHORE SCOPE

1. VRA and VRB platforms with 15 production wells

3.0 TANGGUH T1/2 ENVIRONMENTAL SOCIAL MANAGEMENT SYSTEM AND OVERSIGHT

Environmental Management and Monitoring Requirements under the TEP AMDAL

3.1 The Tangguh T1/2 AMDAL of 2002 provided the overarching project governance in terms of meeting environment and social commitments, now superseded by the new Environmental Permit based on the TEP AMDAL issued by Minister of the Environment and Forestry in July 2014. The Environmental Permit incorporates comprehensive plans for Environmental Management (RKL) and Environmental Monitoring (RPL) as part of the AMDAL documentation. RKL and RPL require regular monitoring and bi-annual reporting to demonstrate performance against social and environmental commitments.

ISO 14001:2004 Certified Environmental Management System

3.2 Tangguh T1/2 has implemented an environmental management system certified for ISO 14001:2004 since 2010. The environmental management system certified for ISO 14001:2004 requires annual monitoring and 3-yearly re-certification audits by an independent party. Separately the Environmental and Social Management System is subject to regular internal audits. The Environmental Management Plan (EMP) has a comprehensive coverage of the Tangguh management plans and Standard Operating Procedures as listed in **Appendix 4**.

3.3 The latest ISO 14001:2004 surveillance audit was conducted by PT Sucofindo, an externally accredited certification body from 26 to 29 October 2015. It was concluded that the EMS implemented at Tangguh met the ISO 14001:2004 requirements with no major or minor issues reported.

Independent Lenders Environmental and Social Consultant Audits

3.4 The involvement of International Financial Institutions requires regular Environmental and Social Due Diligence (ESDD). Tangguh T1/2 was funded by three tranches of Lenders: ADB; Commercial Banks; and Fujian consortium. (ADB exited the project when its loan was repaid on 31 January 2014). An initial ESDD was completed by the LESC at that time in October 2005 with ADB leading the ESDD. The ADB Loan Agreement was signed in December 2005. The main aspects deriving from the initial ESDD were the requirement for an upgrade of the Land Acquisition and Resettlement Plan (LARAP), an upgrade of the Indigenous Peoples Development Framework (IPDF) and a requirement for marine mammal and reptiles, principally dolphins, monitoring in Bintuni Bay. The revised LARAP and IPDF were posted on the ADB website in 2005.

Independent External Panel Audits

3.5 Regular ESDD during construction and into operations (2006 to 2011) were undertaken by an Independent External Panel (EP1); a second External Panel (EP2) was appointed for the five year period commencing January 2011 with completion in December 2016.

3.6 The final ESDD audit by EP2 was completed in February 2016; no non-compliances were identified. EPII has made some suggestions as to areas where the Project may wish to focus continuous improvement efforts in recognition of the planned development of Train 3. These relate to common activities and identify where there may be opportunities to bring those activities in line with current international Lender standards and guidelines. Areas of environmental focus include biodiversity management, asset integrity, wastewater management, solid and hazardous waste management and plant decommissioning. EPII also found that the Social Programmes continue to be well resourced and implemented. It is resulting in sustainable development outcomes and community benefit sharing. Key new findings are largely positive, including progress with facilitating the issue of the Onar Land certificates to villagers, improved relations with local government, more local indigenous contractors undertaking work in the project affected communities, creation of the Subitu indigenous Papuan enterprises and women's economic empowerment. BP is aware of, and is continuing to tackle, ongoing challenges related to balancing demand for community produce with supply, livelihood market dependency, revenue sharing, industrial development within the area and the effect that all of this has on community relations. Table 17 below summarises EPII's annual compliance findings over its five year tenure (2011 – 2016).

Table 17 Overview of EPII compliance findings over its five year tenure

Audit Year	No. NC1s	Issues
2011	5	Wastewater discharge exceedances Various other exceedances (air, groundwater, seawater) Sediment monitoring Flora & Fauna surveys Grievance mechanism response times <i>*LARAP closed out by EPII</i>
2012	2	Effluent discharge from produced WW treatment plant Grievance mechanism
2013	1	Surface water monitoring exceedances <i>*EPII ISP2 mid-term review</i>
2014	0	No non-compliances
2015	0	No non-compliances <i>*EPII Final ISP2 Evaluation</i>

3.7 Furthermore, EP II concludes in its final mission that BP has exhibited continuous improvement and adaptability to meet compliance requirements and should be commended on this achievement. EPII feels that BP has the correct attitude and quality of human resources within its environmental and social teams to achieve this.

3.8 The LESC accompanied the EP on every audit preparing separate ESDD reports for Lenders. All EP reports as well as Operator's six-monthly summaries of environmental and social compliance reports based on the reports submitted to GOI as part of the AMDAL requirement were posted on the ADB website until 2013.

Tanggung Independent Advisory Panel Audits

3.9 BP appointed an external high level panel to report directly to the BP Board of Directors and to communicate with local stakeholders as well as stakeholders in the UK, and US. The first Tangguh Independent Advisory Panel (TIAP) was convened in 2003 to advise Tangguh on non-technical issues of the project throughout construction, and a second panel was established in 2011 for a term ending in April 2017. The TIAP reports are posted on the BP website and include Tangguh responses to the recommendations made by TIAP. The most recent TIAP report was posted in January 2016.

Independent PROPER Audits

3.10 Annual PROPER audits are conducted by Indonesian Ministry of Environment and Forestry (**Box 2**). Tangguh T1/2 received a Blue rating for environmental performance for period 2014 to 2015 by the GOI confirming full regulatory compliance; the fourth time Tangguh LNG has received this rating.

Box 2

Indonesian PROPER System - Indonesia's **Program for Pollution Control, Evaluation, and Rating (PROPER)** is a novel national-level public environmental regulatory reporting initiative. The PROPER program, targeting water pollution, was launched in June 1995. Its distinctive feature is the public disclosure of information via a five-colour code, in which each participating facility is assigned a colour according to its environmental performance:

- *Black* is awarded to facilities that make virtually no pollution control effort;
- *Red* facilities make some effort but fail to meet legal standards and had insufficient reporting;
- *Blue* is given to facilities that meet legal standards and have reasonably frequent reporting.
- *Green* is intended for the 'proactive' facilities and is awarded if pollution is significantly below legally required standards and the audited operation conducts good equipment maintenance, reporting, and environmental work; and
- *Gold* rewards facilities that meet international standards of environmental excellence, which in addition to the Green requirements implied the use of clean production technology, waste minimization, and pollution prevention activities.

4.0 EXISTING ENVIRONMENTAL AND SOCIAL CONDITIONS IN THE PROJECT AREA OF INFLUENCE

4.1 The Bintuni Bay Area, a 200-km-long sheltered body of water in the Bird's Head (Kepala Burung or Vogelkop) Peninsula, comprises a sensitive but not pristine environment.

Climate

4.2 Tangguh LNG is located near the equator and has a local type monsoon influenced climate (**Figure 12**), with temperatures ranging from 20°C to 38°C, precipitation occurring in all months, with high humidity throughout the year. The northwest monsoon wet season is generally from December to March, while the southeast monsoon dry season is from May to October, with April and November transitional months. Annual rainfall varies between 2,500 and 3,500 mm.



Figure 12 Climate Zones in Indonesia Illustrated

Geology and Topography

4.3 The Berau/Bintuni Bay area is in a tectonically active region subject to occasional earthquakes and associated tsunamis. That said the Bay itself lies on a relatively stable crustal block.

4.4 The topography bordering Berau and Bintuni Bays in the south is characterized by low relief. Within the project area, the terrain is flat to gently undulating, with several low east–west trending ridges extending to 50 m above sea level. Extensive swamps border the coast and extend inland along significant estuaries. Further east, extending around the

eastern and southern perimeter of Bintuni Bay, these swamps form a vast mosaic of islands and promontories, separated by estuarine channels.

Surface Waters

4.5 The Bay is a partially mixed estuarine system with numerous in-flowing rivers from the north, east, and south forming a great dendritic drainage network onshore. Most of the Tangguh LNG site is drained by three ephemeral watercourses (Siripa, Burma Hill, and Bofora Creeks). The two main watersheds draining the project site are the Manggosa River (30% of site drainage) on the eastern site boundary, and the Saengga River (70%) to the west. Both rivers are tidally influenced several kilometers inland. The Saengga watershed is the larger and includes a large oil palm plantation. Water quality in both rivers and their tributaries generally meet ambient surface water standards, but with uniformly high levels of fecal coliform.

4.6 In general, high suspended loads from rivers do not extend far into the Bay due to flocculation and deposition in the saltwater/ freshwater mixing zone, normal in estuarine systems. Water sampling indicates marine water quality characteristics of the Bay are well within Indonesian ambient seawater criteria, although sampling at river mouths shows turbidity and suspended sediment levels exceed ambient freshwater quality standards. Water temperatures throughout the Bay and at all depths are fairly consistent, ranging from 24°C to 30°C year-round. Variations in temperature appear to be associated with inputs of cooler rain and freshwater mixing with Bay water. Salinities generally range from 26 to 32 psu.¹

4.7 Bintuni Bay water quality is characteristic of estuary waters derived from swamps and mangroves entering the bay waters through rivers systems. With mangrove forest quite dominant in Bintuni Bay several water quality parameters such as Total Suspended Solids (TSS), temperature and salinity have been compared with water quality standards for mangrove. High turbidity levels in Bay waters accord with the high concentrations of TSS and low water clarity. The low clarity figure in the waters of Bintuni Bay prevents coral reef and seagrass from developing. These marine biota require sufficient light to be able to develop and are highly sensitive to high sedimentation level (TSS). Seawater quality is characterized by high TSS, nitrate and phosphate. This feature of nitrate and phosphate concentrations in offshore waters at Bintuni Bay is similar to that of nearshore waters. The origin of nitrate and phosphate has not been identified, but may be related to other activities in the Bintuni Bay catchment including runoff from palm oil plantations.

4.8 Marine sediments throughout Bintuni Bay as measured at historical exploration wells,

¹ The Practical Salinity Scale defines salinity in terms of the conductivity ratio of a sample to that of a solution of 32.4356 g of KCl at 15°C in a 1 kg solution. A sample of seawater at 15°C with conductivity equal to this KCl solution has a salinity of exactly 35 practical salinity units (psu). In practice, salinity is determined from empirical relationships between temperature and the conductivity ratio of a sample to International Association for the Physical Sciences of the Ocean (IAPSO) Standard Seawater. Comparison of results with other laboratories requires all researchers to use the IAPSO Standard Seawater for calibration.

near production platforms and offshore from the LNG facility show exceedances of some metals compared to the international guidelines adopted by Tangguh (Australian and New Zealand Environment and Conservation Council or ANZECC), including nickel and arsenic. These are attributed to naturally high baseline conditions as confirmed prior to the presence of the Tangguh LNG activities. Concentrations of metals in river sediments meet the ANZECC-ISQG, criteria or below the lower limit, however nickel and arsenic content both in the dry season as well as wet season has a tendency to exceed the lower limit of sediment criteria which was similar to nearshore and offshore seabed sediment.

4.9 Wave extremes are limited, since most of the Bay is well protected from large deepwater ocean swells; the largest fetch distance is from the west through the Bay entrance. Significant waves reaching the LNG facility shore line are mostly short-period, wind-generated waves. Equatorial weather patterns exclude large cyclonic storm events, resulting in a rather benign deepwater wave environment. Tides are semidiurnal (two highs and two lows daily), and the tide gauge at Tanah Merah near the LNG facility has an astronomical range of about 4 m. The strongest currents within the Bay are tidally dominated, with small seasonal variations that are less significant than the daily tide variations.

Terrestrial Fauna and Flora

4.10 The eastern reaches of the Bay consist of extensive mangrove swamps and estuaries and are designated as a Nature Conservation Area. This area contains diverse flora and fauna including endemic species. The large Bay has extensive shallow areas (though water depths in the center are 65 to 70 m), characterized by large tidal fluctuations and high levels of suspended sediments.

4.11 Bintuni Bay fringing mangrove forest is considered a sensitive ecosystem under Presidential Decree No 32/1990, and nationally protected under Minister of Forestry Decree No.891/KPTS-II/1999.

4.12 The major forest ecosystems at the Tangguh LNG site consist of lowland forest, swamp forest, and mangrove forest. Forest areas released for the Tangguh LNG site totals 3,266 ha, but only 365 ha (11.18%) of the area was cleared for the construction of Tangguh T1/T2 plus 39 ha for the perimeter fence. Further land clearing of up to 250 ha may be required for TEP but with no further clearing or activities in the buffer zone Tangguh envisioned.

4.13 Tangguh LNG operates in a modified habitat, with natural and high conservation value habitat in the buffer zone. A Tangguh Flora Fauna Study conducted in 2007 confirmed that the Tangguh buffer zone area (then about 2,800 ha) was rich in biodiversity. The study found more than 800 plant species, out of which 30 species are protected (either by IUCN, CITES, and/or Indonesian regulation). Further assessment on biodiversity within Tangguh area will be provided in Critical Habitat Assessment and Tangguh Biodiversity Action Plan.

4.14 The onshore Tangguh LNG area comprises a mosaic of five vegetation types: lowland tropical forest, beach forest, savannah, isolated mangrove stands and Nypa-Metroxylon (nipah-sago) swamp forest. Lowland forest covers most non-flooded ground between the

Saengga and Mangossa Rivers. The beach forest is a localized type that occurs on sandy, non-inundated soil of mangrove forests between Tanah Merah and Manggosa River. A sparse cover of trees and shrubs dominates anthropogenic savannah patches characteristic of the project site and vicinity, while mangrove communities form a fringe between the open Bay and extensive inland freshwater sago/swamp and peat swamp forests. Each vegetation type contains characteristic fauna associations – mammals, amphibians, reptiles and birds.

Marine Fauna and Flora

4.15 The Bay's surface, pelagic (water column), and benthic (bottom) communities are fairly typical of tropical Indo-Pacific waters, containing phytoplankton, zooplankton, polychaetes, crabs, shrimps, sponges, corals, fishes (brackish and marine), marine mammals, turtles, other reptiles, and birds. The waters around the Tangguh LNG site were characterized during several field surveys.

4.16 The zooplankton community composition based on identification results are grouped into eight classes, namely Protozoa, Crustacea, Urochordata, Chaetognatha, Nemertina, Polychaeta, Pelecypoda and Gastropoda. Overall only Crustacea and Protozoa are dominant in which Crustacea 30-90% and Protozoa 5-55%. There were no specific patterns between composition and location and no significant differences between the dry and wet seasons.

4.17 Amongst the phytoplankton assemblages, Bacillariophyceae was dominant. A number of dominant genus in the Bacillariophyceae class among others Chaetoceros, Coscinodiscus, Nitzschia, Pleurosigma, Thalassionema dan Thalassiothrix. The genus is an important member of the marine food chain providing food for many early stadia including fish and shrimps. Observations found that in the wet season the range of phytoplankton genus numbers nearshore tended to be greater than at offshore locations.

4.18 The existence of zooplankton in waters, in particular crustacea and various other microscopic organisms are important for continuity and balance of the ecosystem through the food chain mechanisms. Zooplankton as the first level consumers is necessary for small fish and fish larvae that in turn provide food for higher tropic levels. In general, the amount of zooplankton taxa in wet seasons tended to be more than in dry seasons. Offshore locations had a wider range with higher taxa compared to the nearshore locations.

4.19 Benthos organisms are found on floors or soft substrates suitable to their holing habits and the high availability of organic matter as a food source. Observations on benthos organisms found Polychaeta (marine worms) and Crustacea (crabs, lobsters, crayfish, shrimp, krill and barnacles) to be dominant. In general, benthos organism are present in muddy substrates. Muddy substrates had a high abundance of benthos organisms when compared to the rocky substrates.

4.20 Sea estuary fish groups were found to dominate the Bintuni Bay waters.

4.21 Bintuni Bay is home to Sousa and Spinner dolphins (IUCN data deficient, considered vulnerable), as well as several turtle species (IUCN endangered and critically endangered). Marine mammals and marine reptile surveys in 2005-2006 identified some five species of

whales and dolphin, four of the world's seven species of sea turtles, two kinds of sea snake and the five-meter-long estuarine crocodile. The Tangguh site is about 70 km away from recognised turtle nesting areas, mainly in Kokas and Arguni beach. No protected fish species were identified, however, one endemic the Arfak rainbowfish (*Melanotaenia arfakensis*) was found.

Social, Economic and Cultural Environment

4.22 There are at least nine indigenous tribes in the Bintuni/Berau Bay coastal areas, spread throughout several sparsely populated coastal and inland districts and villages (**Figure 13**). The tribes include Sebyar, Simuri, Irarutu, Wamesa, Soub, Kuri, Moskona, Sekar Pikipik, Wertuwar, and Petuanan Arguni. These communities follow a variety of traditional livelihoods - fishing, agriculture, hunting and gathering - as well as some trading and modern employment.



Figure 13 Administrative Boundaries and Settlements

4.23 At project initiation, the population near Tangguh LNG area was estimated at < 6,500 people including both indigenous (adat) communities and recent migrants from other parts of Indonesia. Infrastructure is limited with boats providing the main form of transportation.

Induced Development

4.24 Wider development has continued to attract in-migrants with whom indigenous populations have difficulty competing. There is evidence of indigenous marginalization elsewhere in Papua and Papua Barat Provinces, and increasing potential around Bintuni and Berau Bays. Critically, adat communities are identified as vulnerable. When compared to non-Papuan migrants, this indigenous population lags in numerous development

indicators, notably health, education, and economic participation.

4.25 Existing socio-economic baseline conditions within the study area are affected by ongoing activities-10 years of Tangguh T1/2 operation, palm oil plantations, timber concessions, wood chip processing, fishery operations including trawling and third-party oil and gas exploration such as Genting Oil & Gas to the immediate south of the site.

4.26 Genting undertakes onshore oil and gas exploration in the Kasuri Production Sharing Contract in Bintuni, Papua Barat. Two wells were tested in 2014. Both wells struck oil and gas the first discoveries of oil in the Bintuni Basin. The drilling of two new exploration wells commenced in 2014. New seismic surveys were conducted covering 140 km² and some 165 km².

4.27 Papua should also be seen in the context of central government which has set a number of major programs (e.g. agriculture, mining, energy) in collaboration with government ministries and the private sector. To support the economic development more evenly across Indonesia, GOI's Masterplan for Acceleration and Expansion of Indonesia's Economic Development (abbreviated as MP3EI) aims to direct economic development more evenly. MP3EI seeks to develop economic corridors based on each region's potential. The Papua – Moluccas corridor will focus the development of food, fisheries, energy and mining.

5.0 T1/2 PERFORMANCE

5.1 Tangguh's environmental management and monitoring programs continue to be implemented in accordance with the TEP AMDAL and relevant permits, as well as the Environmental Management System ISO 14001:2004.

5.2 The EP2 consisting of independent experts visited Tangguh on a scheduled basis for operational period 2011 to 2016. Their annual reviews concern performance of safety, environment, resettlement and social programs. EP2 found that BP carried out an appropriate level of environmental and social monitoring. BP was considered to be generally in compliance with its monitoring and reporting obligations. No critical or significant environmental and social risks were been identified in relation to compliance with Project requirements.

5.3 A decrease in GHG emissions has been realized due to reduced flaring and completion of a program to replace diesel power generation with electricity from a plant at the camp area. This reduced CO₂ emissions by 26 Kilo Tonnes/quarter on average. On-going improvements around flaring resulted in an 86% reduction between 2010 and 2015 (**Table 18**).

Table 18 Flaring emissions from 2010 - 2015

	Unit	2010	2011	2012	2013	2014	2015
Flaring	MMSCF	13,291	9,222	6,667	2,649	1,992	1,808
	CO ₂ (kT)	716	497	359	143	107	97

5.4 No 'non-compliance' findings in various independent audits (e.g. PROPER audit by GOI; ISO 14001 Certification Audits; or EP Audits) suggest that T1/2 operates in full adherence to applicable Indonesian laws and regulations.

Social Performance

5.5 Tangguh's impact management and social investment activities through the Integrated Social Program (ISP) 1 and Community Investment Program (CIP)/ISP2 periods (2006-2014) were implemented in a range of areas. The ISP and CIP targeted Indigenous Peoples as the majority of the population in directly-affected villages. Programs were organized around: Livelihoods, Community Health, Education and Training, Governance and Communication and External Affairs.

5.6 Tangguh sustainable development programs continue to make progress as planned and relationship with community remain conducive. Tangguh continues to deliver programs covering medical and Emergency services, Fit For Task and Health Surveillance, Case management and rehabilitation, Malaria & other Communicable Disease Control, Health Promotion, Wellness Program and Drug & Alcohol screening.

5.7 The EP2 reported that BP's social programs continued to be well resourced and implemented. Key achievements for 2014 included the health programme embedding services within the local government health department. BP was providing 4MW of power

for electrification of local villages.

Education and Training

5.8 Basic literacy rates in villages around Tangguh LNG have improved by more than 5% since 2007. 953 teachers received training to improve their teaching capacity. 185 senior high school and university level students have received scholarships from Tangguh LNG. The EPII mid-term report found satisfactory efforts to implement activities and achieve outcomes for the first three years. There was higher school attendance and there was the development of the model school in Tanah Merah Baru.

Community Health

5.9 Malaria prevalence rates in villages around Tangguh LNG dropped from 9.2% in 2006 to <0.1% in 2015 (**Figure 15**). The death rate caused by diarrhoea in villages around Tangguh LNG fell from 4.7% in 2006 to 1.6% in 2013. Infant death declined from 13.5% in 2006 to 2.7% in 2011. According to TIAP (2015) BP's health care program has been one of the most successful benefits to the broader community.



Figure 14 Activities at the 2015 Local Health Fair

5.10 The recently-built hospital in Bintuni, supported by BP has dramatically improved access to quality health care in the region. Health clinics in Babo and Bintuni and health kiosks in villages have all been part of a very successful fight to end malaria and to diminish other infectious diseases. Results do however vary depending on village location, availability of clean water provision and hygienic conditions. The Malaria Control Program has successfully maintained its zero malaria transmission record for almost 6 years at Tangguh.



Figure 15 Malaria Prevalence at Villages Surrounding Tangguh

Livelihoods

5.11 Between 2009 and 2012, local household incomes have grown by 166%. Villagers trained in post-harvest production of food products sell to Tangguh LNG and local markets in Babo and Bintuni. Between 2008 and 2013, more than 1278 tons of local produce, valued at Rp 27.2 billion was supplied to Tangguh LNG.

Papuan Workforce and Enterprise Development

5.12 The target of 85% of workforce being Papuan by 2029 is a key objective of TSDP. Some 55% of Tangguh's workforce comes from Papua. Tangguh LNG has organized 8 apprenticeship cycles with 136 apprentices participating. Since 2006 some 177 companies have participated in mentoring on enterprise management, administration, business sustainability.



Figure 16 Enterprise development initiatives



Figure 17 Produce Volumes at Stocking Points Destined for Tangguh LED Program 2015 (tons)

5.13 The TSDP sets out programs to address Tangguh’s social, economic and cultural impacts thus meeting new TEP AMDAL, corporate and lenders policy requirements. The TSDP is designed to continue building on achievements under ISP 2005-2010 and CIP 2011-2015; however socio-economic realities present on-going challenges. Regular program monitoring and recent research show that the proportion of indigenous people as part of the local population is decreasing and will continue to do so over time. Despite the socio-economic progress such as improvements in livelihoods since the early 2000s, the indigenous population lags in key development indicators, e.g., health, education, and economic participation.

5.14 Substantive challenges present themselves at Tangguh such as growing dependency cultures and social jealousy between north and south shore communities. The following **Figure 18** illustrates interesting findings on perceptions across the key communities around Tangguh. The survey on welfare levels conducted by Lab Socio University of Indonesia showed how welfare was perceived by the communities in the villages surrounding Tangguh LNG. Subjectively they tended to feel better compared to objective levels. Levels of welfare were lower when compared to regency levels. Perceptions of prosperity and material realities tend to diverge the greatest amongst Papuan communities when compared to migrants, who also tend to have higher living standards.

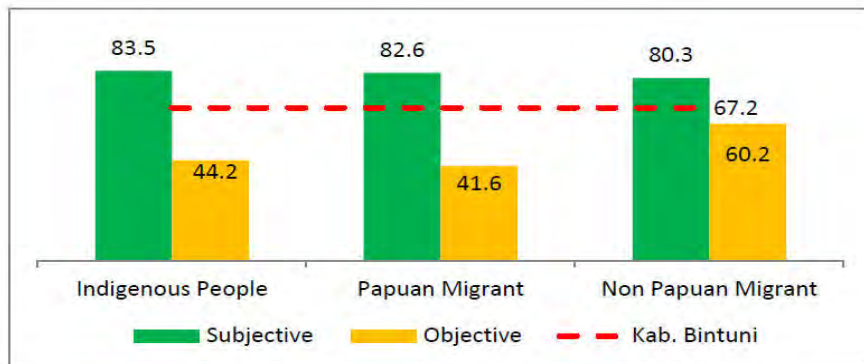


Figure 18 Perceptions of Prosperity at Villages Surrounding Tangguh

5.15 It may be unrealistic to expect rapid parity and a faster pace of catch-up in terms of economic participation by indigenous people given the very short time scales involved. The economic transition has been pronounced for the indigenous population who were until very recently cultures defined by hunter gathering and fishing. Similar changes have normally occurred in most developed societies over centuries and have involving more gradual socio-economic transitions typically from agrarian to industrial. Nonetheless, Tangguh LNG is committed to advancing its next phase of community investment activities in health, education scholarships and livelihoods. In addition a more deliberate focus towards indigenous people. This approach will affect most aspects of its business, from recruitment, training and development, to supply chain (purchasing).

6.0 COMPLIANCE AUDIT FINDINGS

6.1 The Tangguh T1/2 compliance audit is presented in this section and is based on the ADB Safeguards Policy for Environment 2009; SPS No. 1. Key findings are discussed below. The Corrective Action Plan (CAP) based on the Safeguard Policies is presented in tabular form at the end of this section. The complete Safeguards Policy audit findings are included as an Appendix to this report.

Safeguard Policy Statement No. 1 Environment

Biodiversity

6.2 The approximately 400 ha of land area cleared and occupied by the existing Tangguh T1/2 and its supporting facilities can be designated as a modified habitat. The presence of feral domestic animals such as cats and dogs both within the LNG site and the buffer zone and invasive weeds on site, require Tangguh under ADB Safeguard Policy to exercise care to minimize further conversion or degradation of such habitat and identify opportunities to enhance habitat, protect and conserve biodiversity as part of project operations. Management and monitoring plans to preserve biodiversity in the project area are described in detail in the TEP AMDAL. The biodiversity management and monitoring programs committed and implemented by existing Tangguh operation included the following:

- Clearance only 21% of the total 3,266 ha Tangguh site area for Trains 1 & 2 and TEP. The remaining area is maintained as Buffer Zone;
- Commitment to minimize project physical footprint as much as technically possible as part of the TEP AMDAL, as well as conducting re-vegetation using native species in areas cleared but not used for permanent facilities;
- Implementing a strict no hunting and no fishing policy in Tangguh operation area;
- Fencing the buffer zone area and monitoring entrance and exit access;
- Regular monitoring by conducting Flora and Fauna, and Fishery and Marine Mammal Surveys;
- Minimizing impact on mangrove forests by implementing horizontal directional drilling (HDD) for pipeline shoreline crossing;
- Rerouting LNG tanker shipping lane to avoid the Raja Ampat area;
- Implementing the Joint Nature Conservation Committee (JNCC) guideline for Tangguh seismic program to minimize impact to marine mammals;
- Allocation of approx. 7,000 ha replacement forest as part of the Forestry Release requirement to offset for habitat and flora-fauna potentially impacted by Tangguh LNG activity.

Biodiversity and Natural Resources Assessment-Modified Habitats and Invasive Alien Species

6.3 There is a potential threat of invasive plants introduced at Tangguh T1/2 spreading into the buffer zone. There are increasing numbers of feral animals (domestic cats and dogs) on site and in the buffer zone posing threat to native fauna. Tangguh has also conducted feral animal control as part of the Industrial Hygiene program, one of the methods used is by tagging the cats and/or dogs and releasing the tagged animal to the community. In addition, a strict policy to prohibit animal feeding by employees is also reinforced. Mimosa, also known as Putri Malu in Indonesia, is widespread on site and is listed by IUCN as an invasive species. However, it is a very common species found in many places in Indonesia and has not been identified in the buffer zone area.

Groundwater Quality at New Landfill

6.4 A new inert/organic waste landfill has been constructed and was brought into operation in 2015. A number of groundwater monitor wells were installed pre-construction and monitoring has continued for several years. This landfill was constructed in an area used for disposal of construction fill which included some acid sulfate soils.

6.5 Groundwater analyses from the latest six-monthly AMDAL report which are presented in the **Appendix 5** indicate anomalous groundwater quality in several monitor wells in an area used for disposal of construction fill. The anomalies are not natural baseline and cannot be related to the operation of the landfill. It is suggested that they are more probably related to the disposal of the acid sulfate soils in this area prior to the landfill and subsequently excavated during landfill construction.

6.6 Tangguh is requested to review depth and construction details of monitor wells including those abandoned during landfill construction and all groundwater monitoring data.



Figure 19 Monitoring Wells at New Landfill

Closure of Old Landfills

6.7 There are a number of existing landfills (inert landfill and organic landfill) which are no longer used. No schedule has been set for formal closure of these facilities. TEP AMDAL provides general requirement for facility decommissioning, which includes a commitment for closure and rehabilitation. However, a specific framework for landfill closure plans has not yet been prepared. Therefore, Tangguh is requested to prepare a framework for closure plans for existing organic and inert waste landfills. This framework should include requirement for final cover, gas and leachate management, and groundwater monitoring.

6.8 There is no evidence of groundwater contamination at any of the non-operational landfills. However, groundwater monitoring data has shown some slightly elevated metal concentrations which can be attributed to natural baseline.

Waste Management

6.9 During the site inspection, potential downstream overflow from the new landfill leachate pond was noted. Leachate volumes in the leachate pond at the new landfill exceed the 80% allowable under the Standard Operating Procedure. Leachate transfer depends on a single effluent line and power cable. The capacity of the wastewater treatment plant restricts the ability to transfer leachate at certain times of day, i.e. effluent loads from ablutions and laundry.

6.10 There is a Standard Operating Procedure (Centralized Waste Accumulation Area, Landfill Operation Non-Permit Activities at Non-Production Facility – TGH-89-PRC-MM-80002) for the leachate pond at the new landfill which includes a suitable event /fault-based risk assessment for prolonged heavy rainfall and power black-outs and demonstrates that overflows can be eliminated whilst ensuring the WTP can meet effluent quality standards. However a review of its implementation is recommended given that records indicate exceedances of the 80% allowable volume.



Figure 20 High water level in new landfill leachate pond

6.11 Used tires and bio-sludge (formerly considered a hazardous waste) are currently

being disposed to the new landfill taking up valuable landfill space, reducing the effective life of the landfill. Moreover, landfilling tyres is not regarded as good practice.



Figure 21 Tires and Bio-sludge in new landfill (source: EP2)

6.12 The hydrostatic test water pond was a temporary facility built during the construction phase to hold the hydrostatic water. It was to be decommissioned prior to operations; however it has become an integral part of the wastewater treatment system. It continues to be used as effluent holding pond for off-specification waste water, particularly from the Produced Water Treatment (PWT) unit. There is considered to be the potential for soil and groundwater contamination beneath this pond which, would need to be addressed in the pit closure plan/framework. Tangguh should prepare a framework for closure of the hydrostatic test water pond recognizing that closure is not anticipated in the short to medium term.

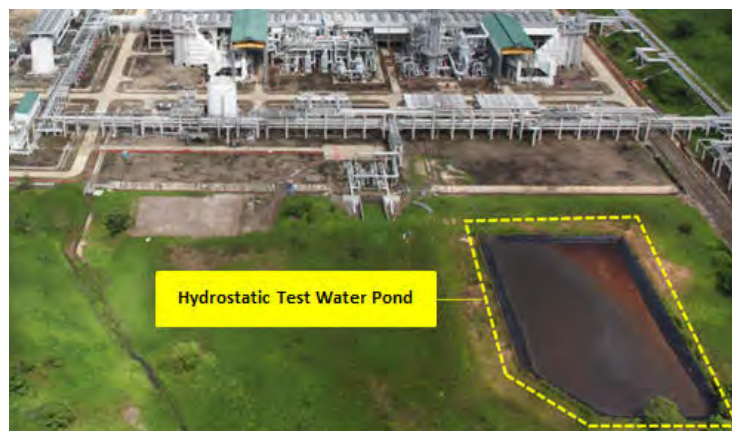


Figure 22 Hydrostatic Test Water Pond

Produced Water Treatment Plant

6.13 A study into the feasibility for reinjection of produced water was a condition of the approval of the Tangguh T1/2 AMDAL. This study opted a produced water treatment plant prior to discharge to receiving waters. Treatment of produced water has historically been challenging requiring a number of action plans to control effluent quality, particularly ammonia.



Figure 23 Produced Water Treatment Plant

6.14 A new produced water treatment plant was constructed in 2011 after several operational difficulties were encountered in the first operational plant; at one time produced water had to be shipped to a hazardous waste treatment facility in Java. The ammonia compliance as detailed in the wastewater effluent permit is assessed against a concentration (mg/L) and a loading (kg/month). The ammonia content for the period 2012-2015 is shown to fluctuate close to the permit standard of 5 mg/L. It appears from this data that the produced water treatment plant may potentially exceed the permit ammonia standard during out of scope events.

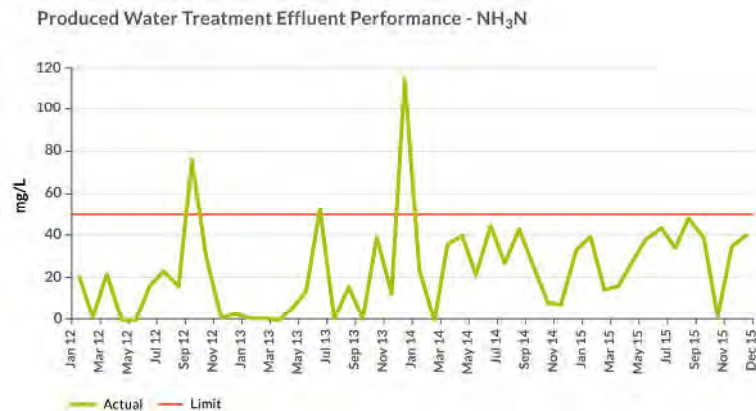


Figure 24 Ammonia Content in Produced Water 2012-2015

Numerical Standards

6.15 The groundwater numerical compliance parameters in the TEP AMDAL refer to Indonesian Regulation PP82/2001 Class I (**Appendix 6**), but the six-monthly monitoring reports refer to Class III which is a lower standard. It is recommended that Tangguh advise the external contractor to adopt the Class I standard for reporting of groundwater quality.

6.16 Exceedances of PM_{2.5} and PM₁₀ in ambient air were recorded in October 2015 (**Appendix 7**). These were recorded during the dry season and were likely related to burning and land clearing at palm oil plantations that are unrelated to Tangguh activities.

6.17 NO₂ ambient air quality monitoring is only for the 1-hour and 24-hour standard as specified in the TEP AMDAL (**Appendix 8**). Indonesian and international regulatory standards based on WHO air quality criteria also require 1-year monitoring. However, sources of NO₂ are relatively minor and dispersion modelling for the TEP AMDAL shows that the annual average NO₂ would be very low, almost two orders of magnitude below the standard, therefore annual monitoring is not considered necessary. A once off validation program is recommended.

BP Management System Reporting

6.18 The wash station at hazardous waste storage facility was noted to have a loose shower head which had been reported during the regular inspection but no follow up action implemented.

6.19 Procedures for inspection and approval of such facilities have been reviewed and found acceptable. However there appear to be delays in implementing the corrective action items reported by the site contractor and remain open. Closure on this issue is requested.

Pesticide Use and Management

6.20 During the site visit an area of bare ground was noted near the central waste management facility indicating over-reliance on Roundup (glyphosate) herbicide. Tangguh is requested to review the application of Standard Operating Procedure for pesticide management 900-SSO-HSE-002 and Landscape System Non Permit to Work Activity at NPF Area 920-PRC-OP-8003.

Community Health & Safety

6.21 As required in ADB SPS 2009 Safeguard Requirements 1: Environment Paragraph 43, *“The borrower/client will inform affected communities of significant potential hazards in a culturally appropriate manner. The borrower/client will be prepared to respond to accidental and emergency situations. This preparation will include response planning document(s) that addresses the training, resources, responsibilities, communications, procedures, and other aspects required to respond effectively to emergencies associated with project hazards. Appropriate information about emergency preparedness and response activities, resources, and responsibilities will be disclosed to affected communities.”*

6.22 No specific community emergency response plan has been prepared. It is recommended that Tangguh prepare an integrated Community Emergency Response Plan to share with communities and if necessary conduct drills. This to include natural disasters in order that a joint response with local Government can be agreed.

Safeguard Policy Statement No. 2 Involuntary Resettlement

Compensation

6.23 During the resettlement consultation with Tanah Merah Lama community comprised of Agofa, Siwana and Wayuri clans, 26 out of the 127 households decided to move to Onar Baru village rather than Tanah Merah Baru. As part of the agreement signed in 1999 with the community, Tangguh agreed to support and fund the land titling process after the land status in Onar village had changed from production to land for other use.

6.24 In 2015 the forest status was converted to other use and since then Tangguh has facilitated the land titling process in collaboration with the Bintuni land authority.

6.25 In early December 2015, Papua Barat Province Land Authority Agency (BPN) conducted an initial measurement, mapping and marking of the land areas in Onar Baru, which covers:

- 32 Hectare released for 26 resettled households by the Agofa clan of Sumuri Tribe. Every household received: (i) 575 m² for main household including yard and (ii) 1840 m² land plot for agriculture activity.
- 13 land section for the existing public infrastructure i.e. Catholic Church, Protestant Church, public building (village hall, village office, clinic, and school).

6.26 The provincial land authority process to validate the date will be completed by end of 2016 and if no issues are found will then release individual certificates for the 26 resettlement household and public infrastructure.

6.27 All costs for Onar land titling are being funded by Tangguh.

Land-based Resettlement Strategies

6.28 Resettlement affected communities wish to hold land title for infrastructure such as community halls. But it is not certain whether this is their right or whether these are officially the property of local government.

Safeguard Policy Statement No. 3 Indigenous Peoples

6.29 No compliance issues were identified in relation to SPS No. 3 IP.

General Social Observations

6.30 Tangguh's social programmes are meeting targets and key performance indicators and its social programmes continue to evolve in order to the benefit indigenous communities within the Tangguh area of influence.

Corrective Action Plan

6.31 Based on the ADB SPS, BP is required to prepare a Corrective Action Plan (CAP) based on the following criteria:

"For projects involving facilities and/or business activities that already exist or are under construction, the borrower/client will undertake an environment and/or social compliance audit, including on-site assessment, to identify past or present concerns related to impacts on the environment, involuntary resettlement, and Indigenous Peoples. The objective of the compliance audit is to determine whether actions were in accordance with ADB's safeguard principles and requirements for borrowers/clients and to identify and plan appropriate measures to address outstanding compliance issues. Where noncompliance is identified, a corrective action plan agreed on by ADB and the borrower/client will be prepared. The plan will define necessary remedial actions, the budget for such actions, and the time frame for resolution of noncompliance."

6.32 Budgets and timeframes for the actions recommended will need to be included in the audit report.

Table 19 Tangguh T1/2 CAP

No	Subject	Action	Internal Overhead Budget*	Status
1	No closure plans for existing landfills and hydrostatic test water pond	Prepare a closure plans/framework for existing organic and inert waste landfills. Landfill closure plans/framework should include requirement for final cover, gas and leachate management, and groundwater monitoring.	Landfill closure framework plan to be prepared incorporating action commitments. One month internal resources. Post closure monitoring is included in annual Opex costs.	Actioned.
2	Groundwater numerical compliance standard is being reported against PP82/2001 Class III rather than Class I	Advise external contractor to adopt the Class I standard for reporting of groundwater quality.	None	Completed. Contractor advised and will adopt Class I standard for next monitoring event in July 2016
3	As noted in six-monthly monitoring report, exceedances of TDS, pH, sulfate and phosphate (as per Class I standard) at acid sulfate soil disposal area near new landfill.	Review depth and construction details of monitor wells including those abandoned during landfill construction and all groundwater monitoring data.	One month collating and reviewing data. Two weeks additional internal sampling (including ammonium analysis).	Actioned. Submission of evaluation report, and if required an action plan by July 2016.
4	Potential overflow from leachate pond at new landfill	Proper implementation of Standard Operating Procedures for landfill and leachate pond will need to be reinforced and monitored.	None	Actioned Review to be completed by June 2016.
5	Air quality numerical standard	A once off NO ₂ monitoring validation program is recommended to be performed at 2 ambient air monitoring locations per TEP AMDAL for 3x24-hours at each location.	Additional scope for external contractor.	Actioned. To be implemented at next monitoring schedule in July 2016
6	Non-compliant wash station at hazardous waste storage facility	Procedures for inspection and approval of such facilities have been reviewed and found acceptable. However there appear to be delays in implementing the corrective action items reported by the site contractor and remain open. Closure on this issue is requested.	Two weeks internal review	Actioned. May 2016
7	Community Emergency Response Plan currently comprises several disconnected studies and procedures. Consultation with communities has not been undertaken.	Prepare an integrated Community Emergency Response Plan including on-going review and maintenance of emergency planning to share with communities and if necessary conduct drills. This to include natural disasters in order that a joint response with local Government can be agreed.	Two months internal evaluation of existing risk scenarios and emergency response. Community consultation and liaison with local Government	Actioned. To be completed by December 2016
8	Land title issuance still ending at Onar	Facilitate the land titles for the resettled households at Onar.	No additional budget required.	To be completed by December 2016

* allocation of internal and external resources is covered within existing overhead budgets and does not need to be agreed with SKK Migas.

APPENDIX 1

ADB SAFEGUARD REQUIREMENTS No. 1 – ENVIRONMENT

ADB Safeguard Requirements 1: Environment

ITEM	SUB ITEM	ID#	PARAGRAPH	ADB 2009 SAFEGUARD POLICY REQUIREMENT	TANGGUH TRAINS 1 AND 2 PERFORMANCE	DOCUMENT REVIEWED	MEET ADB REQUIREMENT																																									
Environmental Assessment	Identification of potential environmental impacts and risks	D1.1-4	4	<p>Environmental assessment is a generic term used to describe a process of environmental analysis and planning to address the environmental impacts and risks associated with a project. At an early stage of project preparation, the borrower/client will identify potential direct, indirect, cumulative and induced environmental impacts on and risks to physical, biological, socioeconomic, and physical cultural resources and determine their significance and scope, in consultation with stakeholders, including affected people and concerned NGOs. If potentially adverse environmental impacts and risks are identified, the borrower/client will undertake an environmental assessment as early as possible in the project cycle. For projects with potentially significant adverse impacts that are diverse, irreversible, or unprecedented, the borrower/client will examine alternatives to the project's location, design, technology, and components that would avoid, and, if avoidance is not possible, minimize adverse environmental impacts and risks. The rationale for selecting the particular project location, design, technology, and components will be properly documented, including, cost-benefit analysis, taking environmental costs and benefits of the various alternatives considered into account. The "no project" alternative will be also considered.</p>	<p>This assessment of Tangguh Train 1 and Train 2 facility (Tangguh T1/2) involves a Brownfield development which has been operational since 2010. The Tangguh T1/2 AMDAL was approved by the Government of Indonesia (GOI) in October 2002 as part legal and regulatory requirements. The proposed Tangguh Expansion Project (TEP) required the preparation of a new AMDAL approved on 24 July 2014. The TEP AMDAL supersedes the Tangguh T1/2 AMDAL and compliance for Trains 1/2 is now measured against the TEP AMDAL for those aspects which relate to T1/2. For completeness of the compliance audit, both AMDAL documents have been reviewed.</p> <p>Tangguh T1/2 ANDAL 2002 Chapter 5 (Forecasting of The Significant Impacts) and Chapter 6 (Evaluation of The Significant Impacts) as well as TEP ANDAL Chapter III Prediction and Evaluation of Significant Impacts have identified potential direct, indirect, cumulative and induced environmental impacts on and risks to physical, biological, socioeconomic, and physical cultural resources and determines their significance and scope, in consultation with stakeholders, including affected people and concerned NGOs. Public consultation during AMDAL development is documented in the Tangguh T1/2 ANDAL Appendix 8.3.01 and TEP ANDAL TOR Chapter 2.3.1.</p> <p>Tangguh T1/2 examined alternatives to the project's location as detailed in Tangguh T1/2 2002 Chapter 3.5.3.2.1 LNG Plant Site Selection. Design and technology were also examined in Tangguh T1/2 ANDAL Chapter 5 Forecasting of the Significant Impacts</p> <p>Table 5.4. Advantages and disadvantage of project options.</p> <table border="1"> <thead> <tr> <th>Issue</th> <th>Option</th> <th>Description</th> <th>Advantages</th> <th>Disadvantages</th> </tr> </thead> <tbody> <tr> <td rowspan="2">Gas Processing</td> <td>Minimum facilities</td> <td>Transport gas, condensate, and produced water to shore via three-phase pipeline for processing</td> <td> <ul style="list-style-type: none"> Less equipment; simpler, more reliable operation No power generation offshore </td> <td> <ul style="list-style-type: none"> More expensive pipeline materials (corrosion resistant alloy) </td> </tr> <tr> <td>Offshore dehydration</td> <td>Separate produced water and condensate from gas at offshore location before transporting to shore via separate pipelines</td> <td> <ul style="list-style-type: none"> Less expensive pipeline materials (conventional steel alloy) </td> <td> <ul style="list-style-type: none"> More equipment, more complex operation Power generation required offshore </td> </tr> <tr> <td rowspan="2">Drilling Fluid and Cuttings Disposal</td> <td>Reinjection</td> <td>Inject all drilling fluids and cuttings into underground formations at offshore development location</td> <td> <ul style="list-style-type: none"> Avoids environmental impacts of discharges (turbidity, burial of benthic organisms) </td> <td> <ul style="list-style-type: none"> More equipment and personnel required, more complex operation More expensive </td> </tr> <tr> <td>Offshore discharge</td> <td>Discharge drilling fluids and cuttings into the ocean at offshore development locations</td> <td> <ul style="list-style-type: none"> Less equipment and personnel, simpler operation Less expensive </td> <td> <ul style="list-style-type: none"> Causes environmental impacts (turbidity, burial of benthic organisms) </td> </tr> <tr> <td rowspan="2">Produced Water Disposal (under Offshore Dehydration option)</td> <td>Reinjection</td> <td>Inject all produced water into underground formations at offshore development locations</td> <td> <ul style="list-style-type: none"> Avoids offshore water quality impacts of produced water </td> <td> <ul style="list-style-type: none"> More equipment and personnel required, more complex operation More expensive </td> </tr> <tr> <td>Offshore discharge</td> <td>Discharge produced water into the ocean at offshore development locations</td> <td> <ul style="list-style-type: none"> Less equipment and personnel, simpler operation Less expensive </td> <td> <ul style="list-style-type: none"> Causes offshore water quality impacts </td> </tr> <tr> <td rowspan="2">Pipeline Shore Approach</td> <td>Horizontal directional drilling (HDD)</td> <td>Drill hole under intertidal and shallow nearshore zone, pull pipeline through it</td> <td> <ul style="list-style-type: none"> Avoids mangrove destruction at landfill site Avoids seabed disruption in nearshore waters </td> <td> <ul style="list-style-type: none"> More expensive and complex operation (may not be technically and commercially feasible) Drilling fluids and cuttings would require offshore disposal </td> </tr> <tr> <td>Trenching (open cut trench method)</td> <td>Dig a trench across the intertidal zone, place pipeline in the trench, and cover with backfill</td> <td> <ul style="list-style-type: none"> Less expensive, simpler operation (commonly used method) </td> <td> <ul style="list-style-type: none"> Disturbs seabed in nearshore waters Degraded material may require offshore disposal </td> </tr> </tbody> </table>	Issue	Option	Description	Advantages	Disadvantages	Gas Processing	Minimum facilities	Transport gas, condensate, and produced water to shore via three-phase pipeline for processing	<ul style="list-style-type: none"> Less equipment; 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Tangguh T1/2 ANDAL</p> <p>2. TEP ANDAL</p>	YES
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	Assessment process	D1.1-5	5	<p>The assessment process will be based on current information, including an accurate project description, and appropriate environmental and social baseline data. The environmental assessment will consider all potential impacts and risks of the project on physical, biological, socioeconomic (occupational health and safety, community health and safety, vulnerable groups and gender issues, and impacts on livelihoods through environmental media [Appendix 2, para. 6]) and physical cultural resources in an integrated way. The project's potential environmental impacts and risks will be reviewed against the requirements presented in this document and applicable laws and regulations of the jurisdictions in which the project operates that pertain</p>	<p>The environmental assessment process was based on current information, including:</p> <ul style="list-style-type: none"> - an accurate project description, documented in Tangguh T1/2 ANDAL Section 3 Planned Tangguh LNG Project Activities and TEP ANDAL Chapter I Introduction - Appropriate environmental and social baseline data, documented in Tangguh T1/2 ANDAL Existing Environment and Chapter TEP ANDAL Chapter II Environmental Baseline <p>The environmental assessment in Tangguh T1/2 ANDAL Chapter 5 (Forecasting of The Significant Impacts) and Chapter 6 (Evaluation of The Significant Impacts) as well as TEP ANDAL Chapter III Prediction and Evaluation of Significant Impacts have consider all potential impacts and risks of the project on physical, biological, socioeconomic</p>	<p>1. Tangguh T1/2 ANDAL</p> <p>2. TEP ANDAL</p>	YES																																									

ITEM	SUB ITEM	ID#	PARAGRAPH	ADB 2009 SAFEGUARD POLICY REQUIREMENT	TANGGUH TRAINS 1 AND 2 PERFORMANCE	DOCUMENT REVIEWED	MEET ADB REQUIREMENT
				to environmental matters, including host country obligations under international law.	<p>(occupational health and safety, community health and safety, vulnerable groups and gender issues, and impacts on livelihoods through environmental media and physical cultural resources in an integrated way.</p> <p>Impact assessments were reviewed against the applicable GOI regulations (detailed in Tangguh T1/2 ANDAL Chapter 1 Existing Laws and Regulations) and World Bank Pollution Prevention and Abatement Handbook 1998). For TEP AMDAL, impact assessments were reviewed against the most recent applicable GOI regulations, IFC, JNCC, IMO and MARPOL. The TEP AMDAL supersedes the Tangguh T1/2 AMDAL and compliance for Trains 1/2 is now measured against the TEP AMDAL for those aspects which relate to T1/2.</p> <p>The new GOI regulation PP 101/2014 regarding Hazardous Waste Management was issued after the AMDAL approval. Tangguh T1/2 activities are in compliance with the new regulation. Biosludge generated from the Produced Water Treatment Facility is no longer classified as hazardous waste.</p>		
	Project's area of influence	D1.1-6	6	<p>Impacts and risks will be analyzed in the context of the project's area of influence. This area of influence encompasses</p> <p>(i) the primary project site(s) and related facilities that the borrower/client (including its contractors) develops or controls, such as power transmission corridors, pipelines, canals, tunnels, access roads, borrow pits and disposal areas, and construction camps;</p> <p>(ii) associated facilities that are not funded as part of the project (funding may be provided separately by the borrower/client or by third parties), and whose viability and existence depend exclusively on the project and whose goods or services are essential for successful operation of the project;</p> <p>(iii) areas and communities potentially affected by cumulative impacts from further planned development of the project, other sources of similar impacts in the geographical area, any existing project or condition, and other project-related developments that are realistically defined at the time the assessment is undertaken; and</p> <p>(iv) areas and communities potentially affected by impacts from unplanned but predictable developments caused by the project that may occur later or at a different location.</p> <p>The area of influence does not include potential impacts that might occur without the project or independently of the project. Environmental impacts and risks will also be analyzed for all relevant stages of the project cycle, including preconstruction, construction, operations, decommissioning, and post closure activities such as rehabilitation or restoration.</p>	<p>No additional impacts have occurred other than those assessed in the Tangguh T1/2 AMDAL.</p> <p>Impacts and risks were analyzed based on the project's area of influence. The project area of influence was defined in the study area and encompasses several zones:</p> <p>(i) the primary project site(s) and related facilities developed by Tangguh consists of a small physical footprint of approximately 400 ha. This includes offshore platforms, pipelines, onshore LNG process plant and utilities, LNG Jetty, Combo Dock, waste management facilities, and accommodation facilities; (decision made not to build the airport, decision made to expand Babo Airport)</p> <p>(ii) associated facilities that are not funded as part of the project are Babo facilities, consisting Airstrip, Jetty, and Accommodation.</p> <p>(iii) areas and communities potentially affected by cumulative impacts from further planned development of the project, are the Direct Affected Villages (Tanah Merah, Saengga, Tofoi, Otoweri, Weriagar/Mogotira, Tomu/Ekam and Taroy)</p> <p>(iv) areas and communities potentially affected by impacts from unplanned but predictable developments caused by the project are Indirectly Affected Village Near the Project (SP2 Babo Trans, Sidomakmur, Irarutu III – Babo Town) and Indirectly Affected Village far from the Project (Manimeri, Sebyar Rejosari, Sisir and Arguni)</p> <p>Environmental impacts and risks have been systematically analyzed at the key stages of the project cycle, including pre-construction, construction, operation, decommissioning to post-closure which includes rehabilitation and site restoration.</p>	1. Tangguh T1/2 ANDAL	YES

ITEM	SUB ITEM	ID#	PARAGRAPH	ADB 2009 SAFEGUARD POLICY REQUIREMENT	TANGGUH TRAINS 1 AND 2 PERFORMANCE	DOCUMENT REVIEWED	MEET ADB REQUIREMENT																
	Trans boundary effects	D1.1-7	7	The assessment will identify potential trans boundary effects, such as air pollution, increased use or contamination of international waterways, as well as global impacts, such as emission of greenhouse gases and impacts on endangered species and habitats.	<p>Trains 1/2 ANDAL Chapter 6 defines trans boundary impacts as those occurring or extending beyond ecological boundary set out in the AMDAL. Those are air quality, noise, onshore ecology, near shore ecology, and ballast water were assessed and concluded that these were unlikely to have significant trans-boundary impacts. TEP AMDAL in ANDAL Chapter III – Prediction and Evaluation of Significant Impacts and Chapter IV – Holistic Evaluation of Environmental Impact identified CO₂ emissions as an aspect with potential trans boundary impacts.</p> <p>GHG figures 2010-2015 are all within the limit set in the Tangguh T1/2 AMDAL 2002 (5,790 Kilo Tons) as follows:</p> <table border="1"> <thead> <tr> <th></th> <th>2010</th> <th>2011</th> <th>2012</th> <th>2013</th> <th>2014</th> <th>2015</th> <th>Limit</th> </tr> </thead> <tbody> <tr> <td>GHG (CO₂) Kilo Tonnes</td> <td>4,561</td> <td>4,513</td> <td>4,656</td> <td>4,730</td> <td>4,735</td> <td>4,780</td> <td>5,790</td> </tr> </tbody> </table>		2010	2011	2012	2013	2014	2015	Limit	GHG (CO ₂) Kilo Tonnes	4,561	4,513	4,656	4,730	4,735	4,780	5,790	1. Tangguh T1/2 ANDAL 2. TEP ANDAL	YES
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GHG (CO ₂) Kilo Tonnes	4,561	4,513	4,656	4,730	4,735	4,780	5,790																
	Differentially or disproportionately affected groups	D1.1-8	8	The environmental assessment will examine whether particular individuals and groups may be differentially or disproportionately affected by the project's potential adverse environmental impacts because of their disadvantaged or vulnerable status, in particular, the poor, women and children, and Indigenous Peoples. Where such individuals or groups are identified, the environmental assessment will recommend targeted and differentiated measures so that adverse environmental impacts do not fall disproportionately on them.	The environmental assessment identified several sub sets that were considered as belonging to vulnerable groups. This was sufficiently detailed in Tangguh T1/2 ANDAL Chapter 5 (Forecasting of The Significant Impacts) and Chapter 6 (Evaluation of The Significant Impacts) as well as TEP ANDAL Chapter III Prediction and Evaluation.	1. Tangguh T1/2 ANDAL 2. TEP ANDAL	YES																
	EIA, IEE or equivalent process or desk review	D1.1-9	9	<p>Depending on the significance of project impacts and risks, the assessment may comprise a full-scale environmental impact assessment (EIA) for category A projects, an initial environmental examination (IEE) or equivalent process for category B projects, or a desk review. An EIA report includes the following major elements:</p> <ul style="list-style-type: none"> (i) executive summary, (ii) description of the project, (iii) description of the environment (with comprehensive baseline data), (iv) anticipated environmental impacts and mitigation measures, (v) analysis of alternatives, (vi) environmental management plan(s), (vii) consultation and information disclosure, and (viii) conclusion and recommendations. <p>The annex to this appendix provides further details. An IEE, with its narrower scope, may be conducted for projects with limited impacts that are few in number, generally site-specific, largely reversible, and readily addressed through mitigation measures.</p>	<p>Tangguh Trains 1/2 was classified as a Category A Project due to physical resettlement and presence of IP. The approved Tangguh T1/2 AMDAL was approved by GOI on 25 October 2002, with document structures (in compliance with GOI regulation Decree of State MoE No. Kep-14/MENLH/03/1994 regarding General Guideline for Development of Environmental Impact Assessment) and complemented by supporting documentation such as LARAP, IPDP, Marine Mammals etc.</p> <p>Subsequently TEP AMDAL was approved in 24 July 2014 in accordance with GOI regulations PP No. 16/2012 regarding Guidelines for Development of Environmental Document.</p>	1. Tangguh T1/2 AMDAL 2. TEP AMDAL	YES																

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	Environmental audit for existing facilities	D1.1-10	10	When the project involves existing activities or facilities, relevant external experts will perform environmental audits to determine the existence of any areas where the project may cause or is causing environmental risks or impacts. If the project does not foresee any new major expansion, the audit constitutes the environmental assessment for the project. A typical environmental audit report includes the following major elements: (i) executive summary; (ii) facilities description, including both past and current activities; (iii) summary of national, local, and any other applicable environmental laws, regulations, and standards; (iv) audit and site investigation procedure; (v) findings and areas of concern; and (vi) corrective action plan that provides the appropriate corrective actions for each area of concern, including costs and schedule.	Greencap has been appointed Lenders Environmental and Social Consultant (LESC) for the Tangguh LNG Train 3 (T3) expansion under contract number A31026868/1.4/07 dated 11 January 2016. ADB is leading the Lenders group for this aspect of the T3 Loan Agreement. As T3 will be constructed on a brownfield site currently occupied by Trains T1/2 an environmental and social Compliance Audit for Tangguh T1/2 is required under ADB Safeguard Policy of 2009. This is the first step in the ADB internal approval process. There are two separate parts to the scope of works which will be reported separately: 1. Part 1: Undertake an environment and social compliance audit of the existing Tangguh facilities in accordance with Appendix 4, Paragraph 12 of the ADB SPS 2. Part 2: Undertake an environmental and social assessment of the Tangguh Expansion Project. This work is part of the scope for Part 1.	-	YES
	Strategic environmental assessment	D1.1-11	11	When the project involves the development of or changes to policies, plans, or programs that are likely to have significant environmental impacts that are regional or sectoral, strategic environmental assessment will be required. A strategic environmental assessment report will include (i) an analysis of the scenario, (ii) an assessment of long-term and indirect impacts, (iii) a description of the consultation process, and (iv) an explanation of option selection.	Not considered applicable for this operation.	-	Not Applicable
Environmental Planning and Management	Environmental Management Plan	D2.1-12	12	The borrower/client will prepare an environmental management plan (EMP) that addresses the potential impacts and risks identified by the environmental assessment. The EMP will include the proposed mitigation measures, environmental monitoring and reporting requirements, emergency response procedures, related institutional or organizational arrangements, capacity development and training measures, implementation schedule, cost estimates, and performance indicators. Where impacts and risks cannot be avoided or prevented, mitigation measures and actions will be identified so that the project is designed, constructed, and operated in compliance with applicable laws and regulations and meets the requirements specified in this document. The level of detail and complexity of the environmental planning documents and the priority of the identified measures and actions will be commensurate with the project's impacts and risks. Key considerations include mitigation of potential adverse impacts to the level of "no significant harm to third parties", the polluter pays principle, the precautionary approach, and adaptive management.	Tangguh T1/2 prepared an environmental management and monitoring plan or namely Rencana Pengelolaan Lingkungan (RKL) and Rencana Pemantauan Lingkungan (RPL) as an integral part of AMDAL. This addressed potential impacts and risks identified by the environmental assessment. The RKL/RPL includes the proposed mitigation measures, environmental monitoring and reporting requirements, emergency response procedures, related institutional or organizational arrangements, capacity development and training measures, implementation schedule, and performance indicators. Costs estimates are not available and are considered too sensitive to be released in the public domain. Tangguh T1/2 operations were ISO14001 certified in 2010 and BP has established a comprehensive EMS. The project has an operational EMP which addresses all potential impacts and risks identified by the environmental assessment or AMDAL; Tangguh T1/2 EMP. Key plans and procedures are listed as follows: - Asia Pacific HSE Policy, signed by Regional President Asia Pacific, dated 10 September 2014 - Environmental Management System Manual (Document No. 900-MAN-EN-2301), next revision date 30 November 2015 - Environmental Monitoring Procedure (Document No. 900-PRC-EN-2320), next revision date 30 September 2017 - Non Hazardous Solid Waste Procedure (Document No. 920-PRC-	1. Tangguh T1/2 AMDAL RKL/RPL 2. TEP AMDAL RKL/RPL 3. Asia Pacific HSE Policy, signed by Regional President Asia Pacific 4. Environmental Management System Manual (Document No. 900-MAN-EN-2301) 5. Environmental Procedures 6. Environmental Management Plan and Environmental Management Plan Implementation Report January – June 2015 7. Environmental Management Plan and Environmental Management Plan Implementation Report July – December 2015	NO

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					<p>EN-2321), next revision date 18 April 2017</p> <ul style="list-style-type: none"> - Hazardous Waste Procedure (Document No. 900-PRC-EN-2322), next revision date 22 April 2017 - Wastewater Management Procedure (Document No. 900-PRC-EN-2324), next revision date 30 September 2017 - Environmental Sampling and Analysis Protocol by External Laboratory Procedure (Document No. 900-PRC-EN-2325), next revision date 16 October 2017 - Environmental Communication Procedure (Document No. 900-PRC-EN-2328), next revision date 15 November 2018 - Marine Mammals and Sea Reptiles Protection Procedure (Document No. 900-PRC-EN-2329), next revision date 5 March 2016 - Flora and Fauna Protection Procedure (Document No. 900-PRC-EN-2330), next revision date 28 June 2018 - Environmental Aspect & Impact Identification Procedure (Document No. 900-PRC-EN-2333), next revision date 8 October 2017 - Non Conformity, Corrective Action and Preventive Action Procedure (Document No. 920-PRC-EN-2335), next revision date 13 November 2017 - Internal Environmental Audit Procedure (Document No. 920-PRC-EN-2337), next revision date July 2018 - HSE Document and Record Control Procedure (Document No. 920-PRC-HE-2750), next revision date 20 May 2017 - HSE Regulatory Compliance Management Procedure (Document No. 920-PRC-HE-2245), next revision date December 2017 - Tangguh Operations Oil Spill Contingency Plan (Document No. 900-PRC-CM-1001), next revision date 31 January 2016 <p>Environmental planning documents contain measures and actions to manage project's impacts and risks. Mitigation measures are assessed and improvements considered all of which are subject to external audit process. Independent external auditing reports indicate that Tangguh T1/2 consistently achieves high safety, environmental and social performance in tandem with higher LNG production and greater cost efficiencies.</p> <p>During the site visit in February 2016, Greencap observed:</p> <ul style="list-style-type: none"> - Incorrect groundwater numerical compliance standard being used by external contractor as noted in the six-monthly report. Several numerical standards need to be updated. Groundwater quality continues to be assessed against the Class III regulatory standard rather than Class I approved in the Tangguh Expansion Project AMDAL. - Indications of anomalous sulfate and low pH in the shallow groundwater monitoring well at the new landfill. External monitoring results showed 1 landfill monitoring well (BH-7) indicated groundwater contamination (low pH, high TDS and high Sulfate) in the ASS disposal area. The anomalies are not related to 		

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					<p>the operation of the landfill.</p> <ul style="list-style-type: none"> - The wash station at hazardous waste storage facility was noted to have a loose shower head which had been reported during the regular inspection but no follow up action implemented. - There are no frameworks for closure plans for existing (organic and inert) waste landfills as well as hydrostatic test water pond. 		
	Residual impacts	D2.1-13	13	<p>If some residual impacts are likely to remain significant after mitigation, the EMP will also include appropriate compensatory measures (offset) that aim to ensure that the project does not cause significant net degradation to the environment. Such measures may relate, for instance, to conservation of habitat and biodiversity, preservation of ambient conditions, and greenhouse gas emissions. Monetary compensation in lieu of offset is acceptable in exceptional circumstances, provided that the compensation is used to provide environmental benefits of the same nature and is commensurate with the project's residual impact.</p>	<p>Residual impacts were identified in TEP ANDAL Chapter III Prediction and Evaluation of Significant Impacts for operations phase. These were the increase in COD and Ammonia concentrations in Bintuni Bay from treated wastewater discharges into sea.</p> <p>Mitigations for both impacts are set out in TEP AMDAL RKL. These will require the T1/2 and TEP to:</p> <ul style="list-style-type: none"> - Conduct study of reusing treated wastewater from Produced Water Treatment (PWT) unit for utility purpose - Conduct wastewater treatment and maintain WWT operational stability to ensure treated wastewater has complied with standards prior to discharge to sea - Conduct compliance evaluation by comparing analysis results with the wastewater regulatory standards: <ul style="list-style-type: none"> • Produced water, Oily contaminated water, Chemically contaminated water: Minister of Environment Regulation No. 19 Year 2010, applicable Permit and the EHS Guidelines for LNG Activity 2007 • Conduct compliance evaluation by comparing the actual flow rate with the maximum allowable flow rate • Conduct compliance evaluation by comparing the calculated load with the maximum allowable load • Conduct trend evaluation for concentration, flow rate and load of the effluent <p>In relation to GHG, following the Paris Climate Change Summit 2015, GOI has reiterated its commitment to 29% reduction in GHG. This commitment has been formalized by submission of the Internal Nationally –Determined Commitment (INDC) by GOI. GOI is preparing regulations for required reductions for each sector, including Oil & Gas, with technical details for required monitoring. BP is committed to restoring about 7,000 ha of degraded forest as a condition of its Forestry Release (Tangguh LNG site was converted from production forest) - Forestry Minister Decree No. SK. 286/Menhut-II/2004. compensate mangrove areas which has been cleared in coordination with Local Forestry Agency and Ministry of the Environment and Forestry, in adherence to the requirements of State Minister of the Environmental No. 02.37.07 Year 2014 regarding Environmental Permit for LNG Tangguh Project Integrated Activity.</p> <p>Tangguh GHG emissions were reported to contribute to global GHG. Yet current emissions are about 5 million CO₂E per year equivalent to 0.25% of total Indonesian GHG emissions. Recognizing that GHG emissions are the main emission source at T1/2, additional work is required to demonstrate a long term management plan which may include potential offset measures and/or GHG capture and storage.</p>	<ol style="list-style-type: none"> 1. TEP ANDAL 2. Forestry Release – Forestry Minister Decree No. SK. 286/Menhut-II/2004 3. GHG Management Strategy Tangguh LNG (Doc. No. 900-PHI-EM-0003) 	YES

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	Expected outcomes	D2.1-14	14	The EMP will define expected outcomes as measurable events to the extent possible and will include performance indicators or targets that can be tracked over defined periods. It will be responsive to changes in project design, such as a major change in project location or route, or in technology, unforeseen events, and monitoring results.	<p>Tanggung T1/2 EMP under the TEP AMDAL RKL/RPL defined outcomes as measurable events to the extent possible and incorporated performance indicators or targets that can be tracked over defined periods. Tangguh T1/2 categorized its management and monitoring plans along several activities namely Gas Exploitation, Gas Transmission, LNG Plant, Marine Facility, and Survey, Seismic, and Exploration and Appraisal Well Drilling Activity) and sub-categorized into defined period of the project cycle phases.</p> <p>Tanggung T1/2 operations were ISO14001 certified in 2010 and are part of BPs comprehensive EMS. The project has an operational EMP which addresses all potential impacts and risks identified by the environmental assessment of Tangguh T1/2 AMDAL EMP. A detailed Environmental Aspect & Impact Register is operational and is updated on an annual basis. Any significant impacts resulting from this assessment process are converted into action plans for the EMP and assigned trackable actions and a close out schedule.</p> <p>Changes in project design shall adhere to GOI regulation PP No. 27/2012 regarding Environmental Permit, Article 50. There was a relevant project change not anticipated in the TEP AMDAL commitments. An amendment in relation to PP 27/2012 regarding the Environmental Permit was made to manage additional dredged material disposal. This was approved as per State Minister of the Environment and Forestry Decree No. SK.535/Menlhk-Setjen/2015 regarding Amendment of State Minister of the Environmental No. 02.37.07 Year 2014 regarding Environmental Permit for LNG Tangguh Project Integrated Activity.</p>	<ol style="list-style-type: none"> 1. TEP AMDAL RKL/RPL 2. Environment System Manual (Document No. 900-MAN-EN-2301) 3. Environmental Aspect & Impact Identification Procedure (Document No. 900-PRC-EN-2333) 4. State Minister of the Environment and Forestry Decree No. SK.535/Menlhk-Setjen/2015 regarding Amendment of State Minister of the Environmental No. 02.37.07 Year 2014 regarding Environmental Permit for LNG Tangguh Project Integrated Activity 	YES
	Third party's involvement	D2.1-15	15	At times, a third party's involvement will influence implementation of the EMP. A third party may be, inter alia, a government agency, a contractor, or an operator of an associated facility. When the third-party risk is high and the borrower/client has control or influence over the actions and behavior of the third party, the borrower/client will collaborate with the third party to achieve the outcome consistent with the requirements for the borrower/client. Specific actions will be determined on a case-by-case basis.	<p>When a third-party risk is high and Tangguh T1/2 has control or influence over the actions and behavior of the third party, Tangguh T1/2 will collaborate with the third party to achieve the outcome consistent with the requirements for the borrower/client. Specific actions will be determined on a case-by-case basis. Details of the identified risk involving third parties have been documented in TSDP 2015 – 2019, among other are as follows:</p> <ul style="list-style-type: none"> - 4 + 4 MW electricity to Bintuni, excess power from Tangguh to PLN for sale to communities in Teluk Bintuni, - Support local government program in establishment of hospital in Bintuni as a referral hospital, - Northshore Housing require the involvement of Tangguh T1/2, and - Operations by Genting require the involvement of Tangguh T1/2. 	<ol style="list-style-type: none"> 1. Tangguh Sustainable Development Plan 2015 - 2019 	YES
	Qualified and experienced experts provision	D2.1-16	16	The borrower/client will use qualified and experienced experts to prepare the environmental assessment and the EMP. For highly complex and sensitive projects, independent advisory panel of experts not affiliated with the project will be used during project preparation and implementation.	Tanggung T1/2 AMDAL including the RKL-RPL was developed by qualified and experienced professionals from within the company and with the participation of external consulting specialists. The review process was conducted thoroughly involving local and international experts in respective disciplines. AMDAL documents were assessed by suitably qualified and certified internal and external experts. Study team personnel listed in Tangguh T1/2 ANDAL Section 8.3.13 – Abbreviated Resumes of Personnel Contributing to the Integrated AMDAL.	<ol style="list-style-type: none"> 1. Tangguh T1/2 ANDAL 	YES

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Information Disclosure	Client's documents for disclosure	D3.1-17	17	The borrower/client will submit to ADB the following documents for disclosure on ADB's website: (i) a draft full EIA (including the draft EMP) at least 120 days prior to ADB Board consideration, and/or environmental assessment and review frameworks before project appraisal, where applicable; (ii) the final EIA/IEE; (iii) a new or updated EIA/IEE and corrective action plan prepared during project implementation, if any; and (iv) the environmental monitoring reports.	ADB exited Tangguh T1/2 in 2014 hence there was no further requirement to post reports on the ADB website. Previously Tangguh T1/2 AMDAL Executive Summary 2002 was submitted and posted on the ADB website. In addition, the 6-monthly AMDAL RKL-RPL Implementation Reports were posted until 2014 when ADB exited the project.	-	Not Applicable
	Relevant information provided in timely manner, accessible and understandable language	D3.1-18	18	The borrower/client will provide relevant environmental information, including information from the documents in para. 17 in a timely manner, in an accessible place and in a form and language(s) understandable to affected people and other stakeholders. For illiterate people, other suitable communication methods will be used.	ADB exited Tangguh T1/2 in 2014 hence no further requirements to post reports on the ADB website. Previously, TEP AMDAL Executive Summary 2002 was submitted and posted on the ADB website. In addition, the 6-monthly AMDAL RKL-RPL Implementation Reports were posted until 2014 when ADB exited the project.	-	Not Applicable
Consultation and Participation	Meaningful consultation	D4.1-19	19	The borrower/client will carry out meaningful consultation with affected people and other concerned stakeholders, including civil society, and facilitate their informed participation. Meaningful consultation is a process that (i) begins early in the project preparation stage and is carried out on an ongoing basis throughout the project cycle; (ii) provides timely disclosure of relevant and adequate information that is understandable and readily accessible to affected people; (iii) is undertaken in an atmosphere free of intimidation or coercion; (iv) is gender inclusive and responsive, and tailored to the needs of disadvantaged and vulnerable groups; and (v) enables the incorporation of all relevant views of affected people and other stakeholders into decision making, such as project design, mitigation measures, the sharing of development benefits and opportunities, and implementation issues. Consultation will be carried out in a manner commensurate with the impacts on affected communities. The consultation process and its results are to be documented and reflected in the environmental assessment report.	Tangguh T1/2 carried out meaningful consultation with affected people and other concerned stakeholders, including civil society, and efforts made to facilitate their informed participation in the development of the Tangguh T1/2 AMDAL. Details of the consultation process contained in Tangguh T1/2 ANDAL Appendix 8.3.01 – Public Consultation and Tangguh T1/2 AMDAL RKL Appendix H – Public Consultation and Disclosure Plan. Both the TIAP and the EP have confirmed that the 5 criteria that constitute Meaningful Consultation are consistently met (e.g. review of social team records to villages and outcomes of visits).	<ol style="list-style-type: none"> 1. Tangguh T1/2 ANDAL 2. Tangguh T1/2 AMDAL RKL 3. TIAP Report on Operations and Proposed Expansion of the Tangguh LNG Project December 2015 4. Tangguh LNG Project E&S External Panel II for period 2011-2016, February 2012 5. Tangguh LNG Project E&S External Panel II 3rd operational report (2011-2016) July 2014 6. Tangguh LNG Project E&S External Panel II 4th operational report (2011-2016) July 2015 7. Tangguh LNG Project E&S External Panel II (2011-2016) Mid-Term Review May 2014 	YES

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Grievance Redress Mechanism	Grievance mechanism	D5.1-20	20	The borrower/client will establish a mechanism to receive and facilitate resolution of affected peoples' concerns, complaints, and grievances about the project's environmental performance. The grievance mechanism should be scaled to the risks and adverse impacts of the project. It should address affected people's concerns and complaints promptly, using an understandable and transparent process that is gender responsive, culturally appropriate, and readily accessible to all segments of the affected people at no costs and without retribution. The affected people will be appropriately informed about the mechanism.	Tanggung T1/2 has established a mechanism to receive and facilitate resolution of affected peoples' concerns, complaints, and grievances about the project's environmental performance. The grievance mechanism addressed affected people's concerns and complaints promptly, using an understandable and transparent process that is gender responsive, culturally appropriate, and readily accessible to all segments of the affected people at no costs and without retribution. Affected people will be appropriately informed about the mechanism. Detail of the grievance mechanisms are documented in Tangguh T1/2 AMDAL RKL Appendix E – Procedure for Conflict Resolution which subsequently updated in TEP AMDAL RKL, TSDP 2015-2019 and Community Grievance Procedure. The procedure sets out the mechanism access to the country's judicial or administrative remedies.	<ol style="list-style-type: none"> 1. Tangguh T1/2 AMDAL RKL 2. TEP AMDAL RKL/RPL 3. Community Grievance Procedure (Doc. No. IDN-000-PRC-OP-160001) 4. Tangguh Sustainable Development Plan 2015-2019 5. Sample of Grievance Card by Ridwan Solowat from Taroi Village and BP Response to the grievance 	YES
Monitoring and Reporting	Monitoring requirements	D6.1-21	21	The borrower/client will monitor and measure the progress of implementation of the EMP. The extent of monitoring activities will be commensurate with the project's risks and impacts. In addition to recording information to track performance, the borrower/client will undertake inspections to verify compliance with the EMP and progress toward the expected outcomes. For projects likely to have significant adverse environmental impacts, the borrower/client will retain qualified and experienced external experts or qualified NGOs to verify its monitoring information. The borrower/client will document monitoring results, identify the necessary corrective actions, and reflect them in a corrective action plan. The borrower/client will implement these corrective actions and follow up on these actions to ensure their effectiveness.	<p>Tanggung T1/2 continuously monitors and measures the progress of implementation of the environmental management and monitoring plans (RKL/RPL). Results are issued through AMDAL RKL/RPL Implementation Report in 6-month cycle to GOI Ministry of the Environment and Forestry, Papua Barat Governor, Teluk Bintuni Regent and Fakfak Regent as obliged in the Ministry of the Environment Decree No. 02.37.07 Year 2014 regarding Environmental Permit for Tangguh LNG Project Integrated Activities.</p> <p>Tanggung T1/2 undertakes regular inspections as per its environmental procedures and monitors its environmental performance in accordance with specific commitments and performance targets contained in RKL/RPL document to verify compliance with its statutory social and environmental commitments.</p> <p>Tanggung T1/2 retains qualified and experienced external experts namely External Panel, Lenders Consultant and Tangguh Independent Advisory Panel to verify its monitoring information reported on an annual cycle.</p> <p>T1/2 documents monitoring results are used to identify the necessary corrective actions, and state them in a corrective action plan. T1/2 implements these corrective actions and follows up on these actions to ensure their effectiveness.</p>	<ol style="list-style-type: none"> 1. The Ministry of the Environment Decree No. 02.37.07 Year 2014 regarding Environmental Permit for Tangguh LNG Project Integrated Activities. 2. AMDAL RKL-RPL Implementation Report July – December 2015 	YES

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	Reporting requirements	D6.1-22	22	The borrower/client will prepare periodic monitoring reports that describe progress with implementation of the EMP and compliance issues and corrective actions, if any. The borrower/client will submit at least semiannual monitoring reports during construction for projects likely to have significant adverse environmental impacts, and quarterly monitoring reports for highly complex and sensitive projects. For projects likely to have significant adverse environmental impacts during operation, reporting will continue at the minimum on an annual basis. Such periodic reports will be posted in a location accessible to the public. Project budgets will reflect the costs of monitoring and reporting requirements.	<p>Tanggung T1/2 prepares periodic monitoring reports that describe progress with implementation of the EMP and compliance issues and corrective actions, if any. Tangguh T1/2 AMDAL RKL-RPL Implementation Reports are submitted on a 6-month cycle (February and August) to relevant governmental bodies (set out in RKL-RPL) and lenders. Environmental monitoring is conducted as specified in AMDAL requirements which are in compliance with GOI regulations and where applicable international standards. These reports are accessible on BP websites.</p> <p>Tanggung T1/2 has experienced several environmental off-spec events, i.e.</p> <ol style="list-style-type: none"> 1. Concentrations of ammonia in effluent (load limit within permit requirements) from the produced water treatment plant. In compliance with GOI regulation KepMenLH no. 19/2010 regarding wastewater quality standard for oil and gas and geothermal business and/or activity, Tangguh T1/2 reported the off-spec to SKK Migas and Ministry of the Environment and Forestry for acknowledgment. The notification report explains the incident chronology, immediate action taken, corrective action plan and close-out target date. Further notification will be sent to SKK Migas and Ministry of the Environment and Forestry upon conclusion of follow-up actions and normalization of effluent quality. 2. Noted in the AMDAL Report July – Dec 2015: <ol style="list-style-type: none"> a. PM₁₀ and PM_{2.5} exceedances suffered from smog and haze from burning off outste Tangguh area. b. NO₂ ambient air quality monitoring is only for the 1-hour and 24-hour standard as specified in the AMDAL. Indonesian and international regulatory standards based on WHO air quality criteria also require 1-year monitoring. However, sources of NO₂ are relatively minor and dispersion modelling result in TEP AMDAL shows that the annual average NO₂ would be very low, almost two orders of magnitude below the standard, therefore annual monitoring is not considered necessary. A once off validation program is recommended. <p>A monitoring budget is proposed to SKK Migas on an annual basis through WP&B (Work Plan & Budget) and subject to SKK Migas approval.</p>	<ol style="list-style-type: none"> 1. Environmental Management Plan and Environmental Management Plan Implementation Report January – June 2015 2. Environmental Management Plan and Environmental Management Plan Implementation Report July – December 2015 	NO
Unanticipated Environmental Impacts	Updating environmental assessment and EMP	D7.1-23	23	Where unanticipated environmental impacts become apparent during project implementation, the borrower/client will update the environmental assessment and EMP or prepare a new environmental assessment and EMP to assess the potential impacts, evaluate the alternatives, and outline mitigation measures and resources to address those impacts.	There has been no unanticipated environmental impacts during the operation of Tangguh T1/2. However, there has been project change which were not anticipated in TEP AMDAL commitments. An amendment in relation to PP 27/2012 regarding the Environmental Permit was made to manage additional dredged material disposal. This was approved as per State Minister of the Environment and Forestry Decree No. SK.535/Menlhk-Setjen/2015 regarding Amendment of State Minister of the Environmental No. 02.37.07 Year 2014 regarding Environmental Permit for LNG Tangguh Project Integrated Activity.	<ol style="list-style-type: none"> 1. State Minister of the Environment and Forestry Decree No. SK.535/Menlhk-Setjen/2015 	YES
Biodiversity Conservation and Sustainable Natural Resource Management	Biodiversity and natural resources assessment	D8.1-24	24	The borrower/client will assess the significance of project impacts and risks on biodiversity and natural resources as an integral part of the environmental assessment process specified in paras. 4–10. The assessment will focus on the major threats to biodiversity, which include destruction of habitat and introduction of invasive alien species, and on the use of natural resources in an unsustainable manner. The	Tanggung T1/2 has assessed the significance of project impacts and risks on biodiversity and natural resources including major threats to biodiversity, which include destruction of habitat and introduction of invasive alien species, and on the use of natural resources in an unsustainable manner. These are documented in Tangguh T1/2 ANDAL Chapter 5 (Forecasting of The Significant Impacts) and TEP ANDAL Chapter III Prediction and Evaluation of Significant Impacts.	<ol style="list-style-type: none"> 1. Tangguh T1/2 ANDAL 2. TEP ANDAL 3. Wastewater Management Procedure (Document No. 900-PRC-EN-2324) 4. Flora and Fauna Protection Procedure (Document No. 900-PRC-EN-2330) 	YES

ITEM	SUB ITEM	ID#	PARAGRAPH	ADB 2009 SAFEGUARD POLICY REQUIREMENT	TANGGUH TRAINS 1 AND 2 PERFORMANCE	DOCUMENT REVIEWED	MEET ADB REQUIREMENT
				borrower/client will need to identify measures to avoid, minimize, or mitigate potentially adverse impacts and risks and, as a last resort, propose compensatory measures, such as biodiversity offsets, to achieve no net loss or a net gain of the affected biodiversity.	<p>During construction and land clearing, 400 Ha of tree cutting included 10 Ha of mangroves. Flora and Fauna surveys are conducted every 3 years in the buffer zone.</p> <p>There is a potential threat of invasive plants introduced at Tangguh T1/2 spreading beyond the buffer zone. Tangguh has however implemented mitigation measures such as:</p> <ol style="list-style-type: none"> 1. Policy of prohibition of bringing flora and fauna inside Tangguh. Conditions will apply if flora and fauna from outside Tangguh are brought in 2. Revegetation activities using local species. Conduct ballast water exchange for the tankers in adherence with IMO and GOI regulations 21/2010 (detailing in the Wastewater Management Procedure, document No. 900-PRC-EN-2324 3. Control of feral dogs and cats unintentionally introduced from the nearby villages now present in the Train 1/2 site. <p>Tangguh T1/2 to provide further review and assessment of the management and mitigation plans for control of invasive alien species, which will be included and prepared for TEP.</p>		
	Modified habitats	D8.1-25	25	In areas of modified habitat, where the natural habitat has apparently been altered, often through the introduction of alien species of plants and animals, such as in agricultural areas, the borrower/client will exercise care to minimize any further conversion or degradation of such habitat, and will, depending on the nature and scale of the project, identify opportunities to enhance habitat and protect and conserve biodiversity as part of project operations.	<p>Tangguh T1/2 has exercised care to minimize further conversion and degradation of natural habitat. The TEP ANDAL Chapter 1 cited that the Tangguh T1/2 AMDAL allowed Tangguh to clear an area of 800 Ha. To date, approximately 400 Ha of the 800 Ha have been cleared for existing Tangguh LNG facility. Of this, 300 Ha served as the permanent T1/T2 facilities and the remaining 100 Ha was revegetated.</p> <p>There is a potential threat of invasive plants introduced at Tangguh T1/2 spreading beyond the buffer zone. During the February 2016 site visit, Greencap observed that:</p> <ol style="list-style-type: none"> 1. design and operation of perimeter road and fences form a barrier fragmenting habitats. Easier for hunters to gain access within the fenced areas than for fauna to move across this barrier. 2. on-site land management and re-vegetation practices not using low maintenance vines. <p>Tangguh T1/2 to provide further review and assessment of the management and mitigation plans for control of invasive alien species, which will be included and prepared for TEP</p>	<ol style="list-style-type: none"> 1. Tangguh T1/2 ANDAL 2. TEP ANDAL 	YES
	Natural habitats	D8.1-26	26	In areas of natural habitat, the project will not significantly convert or degrade such habitat, unless the following conditions are met: (i) No alternatives are available. (ii) A comprehensive analysis demonstrates that the overall benefits from the project will substantially outweigh the project costs, including environmental costs. (iii) Any conversion or degradation is appropriately mitigated.	<p>Tangguh T1/2 has exercised care to minimize further conversion and degradation of natural habitat. The TEP ANDAL Chapter 1 cited that the Tangguh T1/2 AMDAL allowed Tangguh to clear an area of 800 Ha. To date, approximately 400 Ha of the 800 Ha have been cleared for existing Tangguh LNG facility. Of this, 300 Ha served as the permanent T1/T2 facilities and the remaining 100 Ha was revegetated.</p> <p>Mitigation measures implemented by the Project to minimize the impact of the land clearing include:</p> <ol style="list-style-type: none"> 1. limit land clearing to only the designated areas 2. maintain remaining forest area as buffer zone 3. implement reduced impact logging technique 4. implement no hunting and fishing policy 5. implement prohibition on flora and fauna disturbance 	<ol style="list-style-type: none"> 1. Tangguh T1/2 ANDAL 2. TEP ANDAL 3. Tangguh T1/2 AMDAL RKL/RPL 4. TEP AMDAL RKL/RPL 	YES

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					Tangguh T1/2 has committed to restoring about 7,000 ha of Degraded Forest as a condition of its Forestry Release (The Tangguh T1/2 LNG site was converted from Production Forest) - Forestry Minister Decree No. SK. 286/Menhut-II/2004.		
		D8.1-27	27	Mitigation measures will be designed to achieve at least no net loss of biodiversity. They may include a combination of actions, such as post project restoration of habitats, offset of losses through the creation or effective conservation of ecologically comparable areas that are managed for biodiversity while respecting the ongoing use of such biodiversity by Indigenous Peoples or traditional communities, and compensation to direct users of biodiversity.	Tangguh T1/2 has committed to restoring about 7,000 ha of degraded forest as a condition of its Forestry Release (The Tangguh LNG site was converted from production forest) - Forestry Minister Decree No. SK. 286/Menhut-II/2004.	1. Forestry Minister Decree No. SK. 286/Menhut-II/2004.	YES
	Critical habitat	D8.1-28	28	No project activity will be implemented in areas of critical habitat unless the following requirements are met: (i) There are no measurable adverse impacts, or likelihood of such, on the critical habitat which could impair its high biodiversity value or the ability to function. (ii) The project is not anticipated to lead to a reduction in the population of any recognized endangered or critically endangered species or a loss in area of the habitat concerned such that the persistence of a viable and representative host ecosystem be compromised. (iii) Any lesser impacts are mitigated in accordance with para. 27.	The term 'critical habitat' was not current in 2002. This requirement is considered Not Applicable for Tangguh T1/2. Critical Habitat was not assessed in TEP AMDAL. Action related to Critical Habitats will be detailed in the Train 3 E&S Compliance Audit.	-	Not Applicable
		D8.1-29	29	When the project involves activities in a critical habitat, the borrower/client will retain qualified and experienced external experts to assist in conducting the assessment.	The term 'critical habitat' was not current in 2002. This requirement is considered Not Applicable for Tangguh T1/2. Critical Habitat was not assessed in TEP AMDAL. Action related to Critical Habitats will be detailed in the Train 3 E&S Compliance Audit.	-	Not Applicable
	Legally protected areas	D8.1-30	30	In circumstances where some project activities are located within a legally protected area, in addition to the requirement specified in para. 28, the borrower/client will meet the following requirements: (i) Act in a manner consistent with defined protected area management plans. (ii) Consult protected area sponsors and managers, local communities, and other key stakeholders on the proposed project. (iii) Implement additional programs, as appropriate, to promote and enhance the conservation aims of the protected area.	The Project is not located in a designated Protected Area. The nearest Protect Area is the Bintuni Nature Reserve, 80 km from the Project site. In the 1980s, WWF proposed an area for the Bintuni Nature Reserve at 450,000 Ha (reference: TEP Environmental and Social Screening, 9000-RPT-EN-0001). The total area of this Nature Reserve currently covered under the Minister of Forestry Decree is much smaller than initially proposed. Based on current available information including the Forestry Department, the IUCN status of this Nature Reserve has yet to be decided; there are no indications of any recent discussions regarding classification.	-	Not Applicable
	Invasive alien species	D8.1-31	31	The borrower/client will not intentionally introduce any new alien species (that is, species not currently established in the country or region of the project) unless carried out in accordance with the existing regulatory framework for such introduction, if such a framework is present, or unless the introduction is subject to a risk assessment (as part of the environmental assessment) to determine the potential for invasive behavior. Under no circumstances must species known to be invasive be introduced into new environments. The borrower/client will undertake	Tangguh T1/2 does not intentionally introduce alien species to its site. There is a potential threat of invasive plants introduced at Tangguh T1/2 spreading beyond the buffer zone. Tangguh T1/2 has however implemented several mitigation measures such as: - allow ballast water exchange for tankers in adherence with IMO and GOI regulations 21/2010 (detailing in the Wastewater Management Procedure, document No. 900-PRC-EN-2324) - control feral dogs and cats unintentionally introduced from nearby villages now present at the Trains 1 and 2 site. During the site visit, cats were visible but no dogs were seen. - Policy of prohibition of bringing flora and fauna inside Tangguh.	1. Tangguh T1/2 ANDAL 2. TEP ANDAL 3. Wastewater Management Procedure (Document No. 900-PRC-EN-2324) 4. Flora and Fauna Protection Procedure (Document No. 900-PRC-EN-2330)	YES

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				assessment of the possibility of accidental or unintended introduction of such invasive alien species and identify measures to minimize the potential for release.	Conditions will apply if flora and fauna from outside Tangguh are brought in - Revegetation activities use local species.		
	Management and use of renewable natural resources	D8.1-32	32	Renewable natural resources will be managed in a sustainable manner. Sustainable resource management is management of the use, development, and protection of resources in a way, or at a rate, that enables people and communities, including Indigenous Peoples, to provide for their current social, economic, and cultural well-being while also sustaining the potential of those resources to meet the reasonably foreseeable needs of future generations. This includes safeguarding the life-supporting capacity of air, water, and soil ecosystems. Where possible, the borrower/client will demonstrate the sustainable management of resources through an appropriate system of independent certification.	In the Tangguh T1/2 AMDAL the use of groundwater was prohibited for Tangguh T1/2. Subsequently several studies suggested a sustainable groundwater resource may be present below the project site. The TEP AMDAL proposes the use of groundwater to supplement or provide an alternative to desalination of seawater. The impact analysis reported potential impacts to community wells in Tanah Merah and Saengga which draw groundwater from the uppermost part of the aquifer underlying Tangguh site. The use of groundwater for Tangguh will therefore be limited to aquifers > 100 m. The Genting discovery of gas beneath the Tangguh site and review of available seismic and structural data suggests the possibility of intersecting shallow gas reservoirs to depths proposed for groundwater abstraction wells. Such potential risks may prevent groundwater development.	1. Tangguh T1/2 ANDAL 2. TEP ANDAL	YES
Pollution Prevention and Abatement	EHS standards	D9.1-33	33	During the design, construction, and operation of the project the borrower/client will apply pollution prevention and control technologies and practices consistent with international good practice, as reflected in internationally recognized standards such as the World Bank Group's Environment, Health and Safety Guidelines. These standards contain performance levels and measures that are normally acceptable and applicable to projects. When host country regulations differ from these levels and measures, the borrower/client will achieve whichever is more stringent. If less stringent levels or measures are appropriate in view of specific project circumstances, the borrower/client will provide full and detailed justification for any proposed alternatives that are consistent with the requirements presented in this document.	The Tangguh T1/2 environmental standards in Tangguh T1/2 AMDAL adhere to GOI regulations and World Bank Pollution Prevention and Abatement Handbook 1998. TEP AMDAL adheres to current GOI regulations and IFC PS and EHS Guidelines.	1. TEP AMDAL	YES
	Pollution prevention, resource conservation and energy efficiency	D9.1-34	34	The borrower/client will avoid, or where avoidance is impossible, will minimize or control the intensity or load of pollutant emission and discharge. In addition the borrower/client will examine and incorporate in its operations resource conservation and energy efficiency measures consistent with the principles of cleaner production. When the project has the potential to constitute a significant source of emissions in an already degraded area, strategies that help improve ambient conditions, such as evaluating alternative project locations and considering emissions offsets, will be introduced.	T1/2 has controlled the intensity and load of pollutant emission and discharges by adhering to current GOI regulations, permit, and IFC PS, EHS Guidelines and Wastewater Discharge Permit No. 125/2013. The TEP AMDAL has used revised numerical standards, Trains 1/2 now incorporate the latest GOI regulations, guidelines from IFC which provide project specific numerical standards. The TIAP report of February 2016 states that effluent disposal into Bintuni Bay is fully compliant. The following are some actions Tangguh T1/2 has undertaken to reduce emissions: - flaring reduction - improve plant performance to reduce downtime, which in turn reduces flaring - biodiesel initiative from used cooking oil - rationalize diesel generators and limit their use as backup/emergency: Primary electrical power is provided from the plant utility grid.	1. TEP ANDAL 2. Wastewater Discharge Permit to Sea (MoE Decree No. 125/2013).	YES

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	Wastes	D9.1-35	35	The borrower/client will avoid, or where avoidance is not possible, will minimize or control the generation of hazardous and nonhazardous wastes and the release of hazardous materials resulting from project activities. Where waste cannot be recovered or reused, it will be treated, destroyed, and disposed of in an environmentally sound manner. If the generated waste is considered hazardous, the client will explore reasonable alternatives for its environmentally sound disposal considering the limitations applicable to its trans boundary movement.8 When waste disposal is conducted by third parties, the borrower/client will use contractors that are reputable and legitimate enterprises licensed by the relevant regulatory agencies.	<p>The Tangguh T1/2 is located in a remote area where waste has to be managed independently. Tangguh hazardous waste and non-hazardous waste management procedures set out all requirements on managing and disposing waste in a manner minimizing environmental damage in adherence with the regulations. Tangguh T1/2 hazardous wastes are temporarily stored in the licensed hazardous waste storage approved by MoEF.</p> <p>The Tangguh T1/2 may have potential trans boundary risks due to export of spent mercury catalysts (mercury concentration >260 mg/L from the mercury catalyst change-out activity). Mercury Handling, Temporary Storage and Disposal of Mercury Contaminated Waste Procedure (900-WIS-EN-2001) details sampling and analysis of used media, packaging specifications to prevent loss (UN drum and inner wrapping) to requirements for trans boundary shipments (in compliance with Basel Convention).</p> <p>During the February 2016 site visit, Greencap made several observations:</p> <ol style="list-style-type: none"> 1. The site demonstrated a high level of adherence to the waste hierarchy showing innovation with its waste cooking oil conversion project. 2. Leachate volumes in the leachate pond at the new landfill exceed the 80% allowable under the Standard Operating Procedure. 3. Landfilling tires was not regarded as good practice. Tires have large volumes with approximately 75% void space. 	<ol style="list-style-type: none"> 1. Non Hazardous Solid Waste Procedure (Doc. No. 920-PRC-EN-2321) 2. Hazardous Waste Management Procedure (Doc. No. 900-PRC-EN-2322) 3. Mercury Handling, Temporary Storage and Disposal of Mercury Contaminated Waste Procedure (Doc. No. 900-WIS-EN-2001) 4. Bupati Teluk Bintuni Recommendation No. 011/18/BUP-TB/IV/2011 on Temporary Hazardous Waste Storage (Yellow Shelter) 5. Bupati Teluk Bintuni Decree No. 188.4.5/A.39/2014 on Temporary Hazardous Waste Storage (Tangguh) 6. Bupati Teluk Bintuni Decree No. 188.4.5/A.38/2014 on Temporary Hazardous Waste Storage (Babo) 	NO
	Hazardous material	D9.1-36	36	The borrower/client will avoid the manufacture, trade, and use of hazardous substances and materials subject to international bans or phase outs because of their high toxicity to living organisms, environmental persistence, potential for bioaccumulation, or potential for depletion of the ozone layer and will consider the use of less hazardous substitutes for such chemicals and materials.	Tangguh Hazardous and Toxic Material Management Procedure (920-PRC-HS-2432) is in compliance with GOI regulation PP 74/2001 regarding Hazardous and Toxic Material Management. Procedures stated in Attachment 6 and 7 detail the list of prohibited and restricted hazardous and toxic waste material which the Project shall acknowledge prior to purchasing or using. The Procedure is in line with hazardous substances and materials that are subject to international bans and phase outs.	<ol style="list-style-type: none"> 1. Hazardous and Toxic Material Management Procedure (Document No. 920-PRC-HS-2432) 	YES
	Pesticide use and management	D9.1-37	37	The environmental assessment will ascertain that any pest and/or vector management activities related to the project are based on integrated pest management approaches and aim to reduce reliance on synthetic chemical pesticides in agricultural and public health projects. The borrower/client's integrated pest/vector management program will entail coordinated use of pest and environmental information along with available pest/vector control methods, including cultural practices, biological, genetic and, as a last resort, chemical means to prevent unacceptable levels of pest damage. The health and environmental risks associated with pest management should be minimized with support, as needed, to institutional capacity development, to help regulate and monitor the distribution and use of pesticides and enhance the application of integrated pest management.	<p>During February 2016 site visit, Greencap observed signs of over-reliance of Roundup herbicide.</p> <p>Tangguh T1/2 prepared Site Standing Order for Weed Control at LNG Area (Doc. Number: 900-SSO-HSE-002) and Landscaping System Non Permit to Work Activity at NPF Area to manage the use of Roundup.</p>	<ol style="list-style-type: none"> 1. Site Standing Order for Weed Control at LNG Area (Doc. Number: 900-SSO-HSE-002) 	YES
		D9.1-38	38	The borrower/client will not use products that fall in World Health Organization Recommended Classification of Pesticides by Hazard Classes Ia (extremely hazardous) and Ib (highly hazardous) or Class II	Tangguh T1/2 applies the pesticide Round-Up, which not classified as either Hazard Classes Ia (extremely hazardous), Ib (highly hazardous) or Class II (moderately hazardous). Round Up is mainly composed of glyphosate which is categorized as Class III (slightly hazardous).	<ol style="list-style-type: none"> 1. Site Standing Order for Weed Control at LNG Area (Doc. Number: 900-SSO-HSE-002) 	YES

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				(moderately hazardous), if the project host country lacks restrictions on distribution and use of these chemicals, or if they are likely to be accessible to personnel without proper training, equipment, and facilities to handle, store, apply and dispose of these products properly. The borrower/client will handle, store, apply and dispose of pesticides in accordance with international good practice such as the Food and Agricultural Organization's International Code of Conduct on the Distribution and Use of Pesticides.			
	Greenhouse gas emissions	D9.1-39	39	The borrower/client will promote the reduction of project-related anthropogenic greenhouse gas emissions in a manner appropriate to the nature and scale of project operations and impacts. During the development or operation of projects that are expected to or currently produce significant quantities of greenhouse gases, the borrower/client will quantify direct emissions from the facilities within the physical project boundary and indirect emissions associated with the off-site production of power used by the project. The borrower/client will conduct quantification and monitoring of greenhouse gas emissions annually in accordance with internationally recognized methodologies. In addition, the borrower/client will evaluate technically and financially feasible and cost-effective options to reduce or offset project-related greenhouse gas emissions during project design and operation, and pursue appropriate options.	<p>Tanggung T1/2 quantifies GHG emissions using recognized methodologies endorsed by BP global subject matter experts. The GHG report is included as part of the 6-month AMDAL RKL-RPL implementation report.</p> <p>Tanggung T1/2 is promoting the reduction of project-related anthropogenic GHG emissions in a manner appropriate to the nature and scale of project operations and impacts as evidenced in the TEP AMDAL RKL/RPL:</p> <ul style="list-style-type: none"> - Utilizing energy efficient design, such as using HRSG (Heat Recovery Steam Generator) to recover waste heat from gas turbine to produce high pressure steam; - Utilizing efficient gas turbine; - Utilizing Dry Low NOx burner for gas turbine; - Recovering Boil Off Gas from LNG Storage facility and loading system - Improve plant performance - Conducting flaring reduction program <p>Recognizing that GHG emissions are the main emission source at T1/2, additional work is required to demonstrate a long term management plan which may include potential offset measures and/or GHG capture and storage. Tangguh T1/T2 to update the GHG Management Strategy prepared in February 2012 with a GHG Management Plan which details management, monitoring, reporting and progress on the long term strategy</p>	<ol style="list-style-type: none"> 1. TEP AMDAL RKL/RPL 2. GHG Management Strategy Tangguh LNG (Doc. No. 900-PHI-EM-0003) 	YES
Health and Safety	Occupational health and Safety	D10.1-40	40	<p>The borrower/client will provide workers with a safe and healthy working environment, taking into account risks inherent to the particular sector and specific classes of hazards in the borrower's/client's work areas, including physical, chemical, biological, and radiological hazards.</p> <p>(i) identifying and minimizing, so far as reasonably practicable, the causes of potential hazards to workers;</p> <p>(ii) providing preventive and protective measures, including modification, substitution, or elimination of hazardous conditions or substances;</p> <p>(iii) providing appropriate equipment to minimize risks and requiring and enforcing its use;</p> <p>(iv) training workers and providing them with appropriate incentives to use and comply with health and safety procedures and protective equipment;</p> <p>(v) documenting and reporting occupational</p>	<p>The Tangguh T1/2 Health & Safety Management System is comprehensive and is in operation to prevent accidents, injury and disease. The period 2011 to 2015 was reviewed and found to be meet highest standards of health and safety and accident prevention for the workforce.</p> <p>Current Operations at Tangguh T1/2 demonstrate a continuing high commitment to safety, environmental and social performance and has achieved significant and commendable improvement in a number of aspects including community development (e.g. electricity supply, health, education and livelihood), safety and environment (e.g. energy efficiency and flare reduction). This is reflected in the LC3 Regular Monitoring for Lenders Requirements Tangguh LNG, (Greencap 2014).</p>	<ol style="list-style-type: none"> 1. Regular Monitoring for Lenders Requirements at Tangguh LNG 2014 	YES

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				accidents, diseases, and incidents; and (vi) having emergency prevention, preparedness, and response arrangements in place.			
		D10.1-41	41	The borrower/client will apply preventive and protective measures consistent with international good practice, as reflected in internationally recognized standards such as the World Bank Group's Environment, Health and Safety Guidelines.	The Project adopts GOI requirements and international recognized standards such as OSHA, British Standard (BS), European (EN), American National Standards Institute (ANSI), Australia and New Zealand (AU/NZ)		YES
	Community health and safety	D10.1-42	42	The borrower/client will identify and assess the risks to, and potential impacts on, the safety of affected communities during the design, construction, operation, and decommissioning of the project, and will establish preventive measures and plans to address them in a manner commensurate with the identified risks and impacts. These measures will favor the prevention or avoidance of risks and impacts over their minimization and reduction. Consideration will be given to potential exposure to both accidental and natural hazards, especially where the structural elements of the project are accessible to members of the affected community or where their failure could result in injury to the community. The borrower/client will avoid or minimize the exacerbation of impacts caused by natural hazards, such as landslides or floods, that could result from land use changes due to project activities.	Tanggapuh Emergency Response Procedure - Strategy (900-PRC-HS-2550), Tanggguh ERP IMG (900-PRC-HS-2550-A) and Tanggguh ERP OSC Tactical Guide (900-PRC-HS-2550-B) set out strategy and tactical guidance in the event of an emergency. Tanggguh Oil Spill Contingency Plan (900-PRC-1001) and Tanggguh OSCP Reference Material aim to provide guidance on the necessary actions to minimize any accidental discharge of oil and to mitigate the environmental consequences. Tanggapuh T1/2 was designed to withstand the largest earthquake of a certain probability based on the ELE (Extreme Level Earthquake) and the ALE (Abnormal Level Earthquake) study criteria.	1. Tanggguh Emergency Response Procedure - Strategy (900-PRC-HS-2550), 2. Tanggguh ERP IMG (900-PRC-HS-2550-A) 3. Tanggguh ERP OSC Tactical Guide (900-PRC-HS-2550-B) 4. Tanggguh ERP OSC Tactical Guide 900-PRC-HS-2550-B_Bleve 5. Tanggguh ERP OSC Tactical Guide 900-PRC-HS-2550-B_PLN Substation 6. 900-PRC-HS-2550-A_IMG for Oil Spill Response	YES
		D10.1-43	43	The borrower/client will inform affected communities of significant potential hazards in a culturally appropriate manner. The borrower/client will be prepared to respond to accidental and emergency situations. This preparation will include response planning document(s) that addresses the training, resources, responsibilities, communications, procedures, and other aspects required to respond effectively to emergencies associated with project hazards. Appropriate information about emergency preparedness and response activities, resources, and responsibilities will be disclosed to affected communities.	Tanggapuh T1/2 will inform affected communities of significant potential hazards through mechanism set out in the Tanggguh Emergency Response Procedure - Strategy (900-PRC-HS-2550), Tanggguh ERP IMG (900-PRC-HS-2550-A) and Tanggguh ERP OSC Tactical Guide (900-PRC-HS-2550-B) procedures. The procedures describe emergency communication, notification procedure, training and exercise, notification protocol in case of incidents affecting the local community. BP representative will be briefed on potential incidents and personnel will be mobilized to liaise with the local community. No specific Community Emergency Response Plan is currently available. Community Emergency Response Plan currently comprises several disconnected studies and procedures. Consultation with communities has not been undertaken.	1. Tanggguh Emergency Response Procedure - Strategy (900-PRC-HS-2550), 2. Tanggguh ERP IMG (900-PRC-HS-2550-A) 3. Tanggguh ERP OSC Tactical Guide (900-PRC-HS-2550-B)	NO
		D10.1-44	44	When structural elements or components, such as dams, tailings dams, or ash ponds, are situated in high-risk locations and their failure or malfunction may threaten the safety of communities, the borrower/client will engage qualified and experienced experts, separate from those responsible for project design and construction, to conduct a review as early as possible in project development and throughout project design, construction, and commissioning.	Not considered applicable for this operation.		Not Applicable

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Physical Cultural Resources	Siting and designing	D11.1-45	45	The borrower/client is responsible for siting and designing the project to avoid significant damage to physical cultural resources. Such resources likely to be affected by the project will be identified, and qualified and experienced experts will assess the project's potential impacts on these resources using field-based surveys as an integral part of the environmental assessment process specified in paras. 4–10.	<p>Tangguh T1/2 ANDAL Chapter 4 Existing Environment and TEP ANDAL Chapter 3 Prediction and Evaluation of Significant Impacts, sacred objects are identified several sacred resources: sacred stones inside the Tangguh site (Wasayara Wermina, Imu, Batu Laki-Laki, and Batu Perempuan), a sacred tree (Kayu Besi), a sacred creek (Kali Mai), a sacred stone (Batu Kumapa) and a graveyard.</p> <p>Table II-176 Location of Sacred Objects</p> <table border="1"> <thead> <tr> <th>No.</th> <th>Location</th> <th>Description</th> <th>Coordinate Position</th> </tr> </thead> <tbody> <tr> <td>1</td> <td>Kali Kobara</td> <td>Small river, streaming from a valley located between LNG Plant 1 and 1st Security Post, estuary surrounding Jetty Construction</td> <td>02° 26' 10.8" S 133° 07' 54.2" E</td> </tr> <tr> <td>2</td> <td>Kali Mai (Nene Mai)</td> <td>The place is located next to Kali Kobara, which is also situated between Kuburan Lama (old grave) and 1st Security Post</td> <td>02° 26' 32.2" S 133° 07' 29.5" E</td> </tr> <tr> <td>3</td> <td>Kuburan of Tanah Merah Lama (Grave of Tanah Merah Lama)</td> <td>Located next to the Jetty construction</td> <td>02° 26' 16.3" S 133° 07' 49.8" E</td> </tr> <tr> <td>4</td> <td>Kayu Besi (Wooden Iron)</td> <td>Located at the peak of hill between LNG Plant 1 and 1st Security Post</td> <td>02° 26' 18.6" S 133° 07' 55.5" E</td> </tr> <tr> <td>5</td> <td>Rumah Batu Karamat (Sacred Stone House)</td> <td>Located outside the west fence between TMB Village and LNG site.</td> <td>02° 27' 01.3" S 133° 06' 52.8" E</td> </tr> </tbody> </table> <p>Source: Primary Data, 2013</p> <p>Potential impacts of Tangguh T1/2 activities to those sacred areas were evaluated by qualified and experienced experts using field-based surveys.</p>	No.	Location	Description	Coordinate Position	1	Kali Kobara	Small river, streaming from a valley located between LNG Plant 1 and 1 st Security Post, estuary surrounding Jetty Construction	02° 26' 10.8" S 133° 07' 54.2" E	2	Kali Mai (Nene Mai)	The place is located next to Kali Kobara, which is also situated between Kuburan Lama (old grave) and 1 st Security Post	02° 26' 32.2" S 133° 07' 29.5" E	3	Kuburan of Tanah Merah Lama (Grave of Tanah Merah Lama)	Located next to the Jetty construction	02° 26' 16.3" S 133° 07' 49.8" E	4	Kayu Besi (Wooden Iron)	Located at the peak of hill between LNG Plant 1 and 1 st Security Post	02° 26' 18.6" S 133° 07' 55.5" E	5	Rumah Batu Karamat (Sacred Stone House)	Located outside the west fence between TMB Village and LNG site.	02° 27' 01.3" S 133° 06' 52.8" E	<p>1. Tangguh T1/2 ANDAL</p> <p>2. TEP ANDAL</p>	YES
	No.	Location	Description	Coordinate Position																											
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	2	Kali Mai (Nene Mai)	The place is located next to Kali Kobara, which is also situated between Kuburan Lama (old grave) and 1 st Security Post	02° 26' 32.2" S 133° 07' 29.5" E																											
3	Kuburan of Tanah Merah Lama (Grave of Tanah Merah Lama)	Located next to the Jetty construction	02° 26' 16.3" S 133° 07' 49.8" E																												
4	Kayu Besi (Wooden Iron)	Located at the peak of hill between LNG Plant 1 and 1 st Security Post	02° 26' 18.6" S 133° 07' 55.5" E																												
5	Rumah Batu Karamat (Sacred Stone House)	Located outside the west fence between TMB Village and LNG site.	02° 27' 01.3" S 133° 06' 52.8" E																												
	Consultation with affected communities	D11.1-46	46	When a project may affect physical cultural resources, the borrower/client will consult with affected communities who use, or have used them within living memory, for long-standing cultural purposes to identify physical cultural resources of importance and to incorporate the views of the affected communities on such resources into the borrower's/client's decision-making process. Consultation will also involve relevant national or local regulatory agencies that are entrusted with protecting physical cultural resources. The findings are disclosed as part of, and in the same manner as, the environmental assessment report, except when such disclosure would compromise or jeopardize the safety or integrity of the physical cultural resources.	<p>Tangguh T1/2 consulted with affected communities to identify any physical cultural resources of importance which was used for decision making. Consultation involved relevant national or local regulatory agencies through AMDAL development process.</p> <p>Tangguh T1/2 ANDAL Chapter 4 Existing Environment and TEP ANDAL Chapter 3 Prediction and Evaluation of Significant Impacts, sacred objects are identified several sacred resources: sacred stones inside the Tangguh site (Wasayara Wermina, Imu, Batu Laki-Laki, and Batu Perempuan), a sacred tree (Kayu Besi), a sacred creek (Kali Mai), a sacred stone (Batu Kumapa) and a graveyard. During the course of Train 1 and Train 2 construction, Sacred stones (Wasayara, Wermina, Imu, Batu Laki-Laki, and Batu Perempuan) were relocated without incident to a purpose built house. The relocation was agreed with the community and with their consent.</p>	<p>1. Tangguh T1/2 ANDAL</p> <p>2. TEP ANDAL</p>	YES																								
	Impact mitigation	D11.1-47	47	When the project is likely to have adverse impacts on physical cultural resources, the borrower/client will identify appropriate measures for avoiding or mitigating these impacts as part of the environmental planning process specified in paras. 12–16. These measures may range from avoidance to full site protection to selective mitigation, including salvage and documentation, in cases where a portion or all of the physical cultural resources may be lost.	Sacred objects were identified in Tangguh T1/2 ANDAL and the TEP ANDAL. Sacred stones inside the Tangguh site (Wasayara Wermina, Imu, Batu Laki-Laki, and Batu Perempuan) were relocated to a purpose built sacred house within the Project site with community consent. Other sacred objects include a sacred tree (Kayu Besi), a sacred creek (Kali Mai) a sacred stone (Batu Kumapa) and the graveyard; all remain undisturbed.	<p>1. Tangguh T1/2 ANDAL</p> <p>2. TEP ANDAL</p>	YES																								
	Chance find procedure	D11.1-48	48	When the proposed location of a project is in areas where physical cultural resources are expected to be found as determined during the environmental assessment process, chance finds procedures will be included in the EMP. Chance finds shall not be disturbed until an assessment by a competent specialist	Chance Find Procedure is sufficient and available.	Cultural Heritage Assessment and Chance Finds Procedure TEP-930-PRC-HS-BP1-0015	YES																								

ITEM	SUB ITEM	ID#	PARAGRAPH	ADB 2009 SAFEGUARD POLICY REQUIREMENT	TANGGUH TRAINS 1 AND 2 PERFORMANCE	DOCUMENT REVIEWED	MEET ADB REQUIREMENT
				is made and actions consistent with these requirements are identified.			
	Removal of physical cultural resources conditions	D11.1-49	49	<p>The project will not remove any physical cultural resources unless the following conditions are met:</p> <ul style="list-style-type: none"> (i) No alternatives to removal are available. (ii) The overall benefits of the project substantially outweigh the anticipated cultural heritage loss from removal. (iii) Any removal is conducted in accordance with relevant provisions of national and/or local laws, regulations, and protected area management plans and national obligations under international laws, and employs the best available techniques. 	Tangguh T1/2 has relocated sacred stones to a purpose built sacred house within the Project site. The relocation was within the consent from community and was executed safely.	-	YES

APPENDIX 2

ADB SAFEGUARD REQUIREMENTS No. 2 – INVOLUNTARY RESETTLEMENT

Safeguard Requirements 2: Involuntary Resettlement

ITEM	SUB ITEM	ID#	PARAGRAPH	ADB 2009 SAFEGUARD POLICY REQUIREMENT	TANGGUH TRAIN 1 & 2 PERFORMANCE	DOCUMENT REVIEWED	MEET ADB REQUIREMENT
Compensation, Assistance and Benefits for Displaced Persons	Types of displaced persons	D1.2-7	7	<p>Displaced persons in a project area could be of three types:</p> <p>(i) persons with formal legal rights to land lost in its entirety or in part;</p> <p>(ii) persons who lost the land they occupy in its entirety or in part who have no formal legal rights to such land, but who have claims to such lands that are recognized or recognizable under national laws; and</p> <p>(iii) persons who lost the land they occupy in its entirety or in part who have neither formal legal rights nor recognized or recognizable claims to such land. The involuntary resettlement requirements apply to all three types of displaced persons.</p>	<p>Tanggung T1/2 Project created physical displacement impacting communities with clan holding rights. Ethnic groups most affected by project displacement were from the Simuri and Sebyar tribes. The Simuri inhabited areas on the south shore of Bintuni Bay around the project site and the Sebyar primarily north shore areas. Resettlement-affected communities, from Tanah Merah, Saengga and Onar met the following criteria:</p> <p>(iii) persons who lost the land they occupy in its entirety or in part who have no formal legal rights to such land, but who have claims to such lands that are recognized or recognizable under national laws <i>hak ulayat</i>. This consisted of 127 families losing their original dwellings and home plots.</p> <p>The BP Close Out Report ISP (2006-2011) states that all LARAP commitments were completed: RAV residents were provided with resettlement assistance relating to house construction, RAV villagers settled into their new housing and adjusting to their new lifestyle, provisions of community facilities and livelihood restoration</p> <p>All Land Acquisition and Resettlement Action Plan (LARAP) issues were closed and documented by the Tangguh LNG Project E&S External Panel II for period 2011-2016, (February 2012).</p>	<ol style="list-style-type: none"> 1. Tangguh T1/2 AMDAL 2. LARAP July 2006 3. Tangguh LNG Project E&S External Panel II for period 2011-2016, February 2012 4. Tangguh LNG Project E&S External Panel II 3rd operational report (2011-2016) July 2014 5. Tangguh LNG Project E&S External Panel II 4th operational report (2011-2016) July 2015 6. BP Close Out Report ISP (2006-2011) 	YES
	Compensation	D1.2-8	8	<p>The borrower/client will provide adequate and appropriate replacement land and structures or cash compensation at full replacement cost for lost land and structures, adequate compensation for partially damaged structures, and relocation assistance, if applicable, to those persons described in para. 7(i) and 7(ii) prior to their relocation.</p> <p>For those persons described in para. 7(iii), the borrower/client will compensate them for the loss of assets other than land, such as dwellings, and also for other improvements to the land, at full replacement cost.</p> <p>The entitlements of those under para. 7(iii) is given only if they occupied the land or structures in the project area prior to the cutoff date for eligibility for resettlement assistance.</p>	<p>Based on those persons described in <i>para. 7(iii)</i>, the borrower/client will compensate them for the loss of assets other than land, such as dwellings, and also for other improvements to the land, at full replacement cost.</p> <p>Resettlement of the 127 displaced families was carried out within the framework of a participatory community development program. The overriding objective was to ensure that residents were better off than before the move.</p> <p>The BP Close Out Report ISP (2006-2011) states that all LARAP commitments were completed: RAV residents were provided with resettlement assistance relating to house construction, RAV villagers settled into their new housing and adjusting to their new lifestyle, provisions of community facilities and livelihood restoration</p> <p>All Land Acquisition and Resettlement Action Plan (LARAP) issues were closed and documented by the Tangguh LNG Project E&S External Panel II for period 2011-2016, (February 2012).</p>	<ol style="list-style-type: none"> 1. LARAP July 2006 2. The BP Close Out Report ISP (2006-2011) 3. Tangguh LNG Project E&S External Panel II for period 2011-2016, February 2012 4. Tangguh LNG Project E&S External Panel II 3rd operational report (2011-2016) July 2014 5. Tangguh LNG Project E&S External Panel II 4th operational report (2011-2016) July 2015 	YES
	Land-based resettlement strategies	D1.2-9	9	<p>Preference will be given to land-based resettlement strategies for displaced persons whose livelihoods are land-based. These strategies may include resettlement on public land, or on private land acquired or purchased for resettlement. Whenever replacement land is offered, displaced persons are provided with land for which a combination of productive potential, locational</p>	<p>As displaced persons livelihoods were land-based, a land-based resettlement strategy for displaced persons was selected for implementation. Replacement land offered had a combination of productive potential and locational advantages. The Project in close stakeholder consultation developed and implemented direct engagement with affected persons as potential project beneficiaries. Resettlement was formulated through the LARAP 2006. This instrument</p>	<ol style="list-style-type: none"> 1. LARAP July 2006 2. BP Close Out Report ISP (2006-2011) 3. Tangguh LNG Project E&S External Panel II for period 2011-2016, February 2012 4. Tangguh LNG Project E&S External Panel II 3rd operational report (2011-2016) July 2014 5. Tangguh LNG Project E&S External Panel II 4th 	YES

ITEM	SUB ITEM	ID#	PARAGRAPH	ADB 2009 SAFEGUARD POLICY REQUIREMENT	TANGGUH TRAIN 1 & 2 PERFORMANCE	DOCUMENT REVIEWED	MEET ADB REQUIREMENT
				<p>advantages, and other factors is at least equivalent to the advantages of the land taken. If land is not the preferred option of the displaced persons, or sufficient land is not available at a reasonable price, non-land-based options built around opportunities for employment or self-employment should be provided in addition to cash compensation for land and other assets lost. The lack of land will be demonstrated and documented to the satisfaction of ADB.</p>	<p>had the stated principle to achieve 'resettlement with development' thereby ensuring that resettled households achieved better livelihoods than they would have if resettlement had not taken place.</p> <p>The BP Close Out Report ISP (2006-2011) states that all LARAP commitments were completed: RAV residents were provided with resettlement assistance relating to house construction, RAV villagers settled into their new housing and adjusting to their new lifestyle, provisions of community facilities and livelihood restoration</p> <p>All Land Acquisition and Resettlement Action Plan (LARAP) issues were closed and documented by the Tangguh LNG Project E&S External Panel II for period 2011-2016, (February 2012).</p>	operational report (2011-2016) July 2015	
	Rate of compensation	D1.2-10	10	<p>The rate of compensation for acquired housing, land and other assets will be calculated at full replacement costs. The calculation of full replacement cost will be based on the following elements:</p> <p>(i) fair market value; (ii) transaction costs; (iii) interest accrued, (iv) transitional and restoration costs; and (v) other applicable payments, if any.</p> <p>Where market conditions are absent or in a formative stage, the borrower/client will consult with the displaced persons and host populations to obtain adequate information about recent land transactions, land value by types, land titles, land use, cropping patterns and crop production, availability of land in the project area and region, and other related information. The borrower/client will also collect baseline data on housing, house types, and construction materials. Qualified and experienced experts will undertake the valuation of acquired assets. In applying this method of valuation, depreciation of structures and assets should not be taken into account.</p>	<p>The rate of compensation for acquired housing, land and other assets was calculated at full replacement cost (LARAP 2006 Table 2).</p> <p>Negotiated cash and in-kind compensation package for land-selling clans was based on recognition of clan rights and land boundaries agreed between clans and surveyed in March 1999; (LARAP Table 2). Cash payments were distributed via clan leaders. Payment of agreed compensation for loss of land, forest and associated marine resources was made through a foundation endowed by the Project with US\$2 million. This was intended to generate revenue streams for the three land-selling clans.</p> <p>Qualified and experienced experts were engaged to undertake the valuation of acquired assets. In conducting their valuations, no depreciation of structures and assets was factored.</p> <p>The BP Close Out Report ISP (2006-2011) states that all LARAP commitments were completed: RAV residents were provided with resettlement assistance relating to house construction, RAV villagers settled into their new housing and adjusting to their new lifestyle, provisions of community facilities and livelihood restoration</p> <p>All Land Acquisition and Resettlement Action Plan (LARAP) issues were closed and documented by the Tangguh LNG Project E&S External Panel II for period 2011-2016, (February 2012).</p>	<ol style="list-style-type: none"> 1. LARAP July 2006 2. BP Close Out Report ISP (2006-2011) 3. Tangguh LNG Project E&S External Panel II for period 2011-2016, February 2012 4. Tangguh LNG Project E&S External Panel II 3rd operational report (2011-2016) July 2014 5. Tangguh LNG Project E&S External Panel II 4th operational report (2011-2016) July 2015 	YES

ITEM	SUB ITEM	ID#	PARAGRAPH	ADB 2009 SAFEGUARD POLICY REQUIREMENT	TANGGUH TRAIN 1 & 2 PERFORMANCE	DOCUMENT REVIEWED	MEET ADB REQUIREMENT
	Physically displaced persons requirements	D1.2-11	11	<p>In the case of physically displaced persons, the borrower/client will provide</p> <p>(i) relocation assistance, secured tenure to relocation land, better housing at resettlement sites with comparable access to employment and production opportunities, and civic infrastructure and community services as required;</p> <p>(ii) transitional support and development assistance, such as land development, credit facilities, training, or employment opportunities; and</p> <p>(iii) opportunities to derive appropriate development benefits from the project.</p>	<p>Tangguh T1/T2 managed physically displaced persons based on three temporal phases:</p> <p>(i) The Project LARAP involved relocation assistance, secured tenure to relocation sites, significantly improved housing at resettlement sites comparable access to employment and production opportunities and civic infrastructure and community services.</p> <p>(ii) Transitional support was a core part of Tangguh's impact management and social investment activities. The Integrated Social Program (ISP 2005-2010) and CIP/ISP2 periods (2006-2014) were implemented across a range of areas with diverse participants and implementing partners. Livelihood restoration programs for resettlers in their new settlements were organized around Livelihoods, Community Health, Education and Training, Governance and Communication and External Affairs. Local employment opportunities were managed as part of Livelihoods. Transitional support programs have seen household incomes improve by 166% between 2009-2012. Villagers trained in post-harvest production of salted fish and crackers now sell to the project and local markets in Babo and Bintuni. Between 2008-2013, more than 1278 tons of local produce was supplied to Tangguh valued at Rp 27.2 billion. The Dimaga Foundation which is a legacy of the Tanah Merah resettlement project and the Bintuni Bay Development Foundation initiated and funded by the project are also complementary activities that have helped meet goal of improving quality of life.</p> <p>(iii) Community Development Programs proposed as part of the Tangguh T1/2 AMDAL were implemented to generate new opportunities for local households to derive appropriate development benefits from the project. These plans were delivered through the Integrated Social Program ISP (2005-2010) then the Community Investment Program or ISP2 (2011-2015).</p> <p>Latest data suggests good progress has been made in terms of improving livelihoods post relocation. Between 2009-2012, local employment opportunities were managed as part of Livelihoods. Transitional support programs have seen household incomes improve by 166%. The UGM household economic survey in 2015 involved 1026 households, 13 villages selected from total population of 62 villages in Tangguh LNG's social area. The community at Tanah Merah Baru has become the village with the highest average income. The survey results indicated that IP tended to lag behind when compared to migrants. Survey results showed demographic pressures due to rising numbers of migrants (Papuan Migrants and non-Papuan). IP households still had the highest poverty rates followed closely by Papuan Migrants. IP groups had lower welfare index scores compared to migrants groups, based on education and the economy.</p>	<ol style="list-style-type: none"> LARAP July 2006 Tangguh ISPII 2011-2015 September 2011 Summary of Research Report Household Income Survey Bintuni Bay Regency and Fakfak Regency, West Papua Province April 2015 BP Close Out Report ISP (2006-2011) 	YES

ITEM	SUB ITEM	ID#	PARAGRAPH	ADB 2009 SAFEGUARD POLICY REQUIREMENT	TANGGUH TRAIN 1 & 2 PERFORMANCE	DOCUMENT REVIEWED	MEET ADB REQUIREMENT
	Economically displaced persons requirements	D1.2-12	12	<p>In the case of economically displaced persons, regardless of whether or not they are physically displaced, the borrower/client will promptly compensate for the loss of income or livelihood sources at full replacement cost.</p> <p>The borrower/client will also provide assistance such as credit facilities, training, and employment opportunities so that they can improve, or at least restore, their income-earning capacity, production levels, and standards of living to pre-displacement levels.</p> <p>The borrower/client will also provide opportunities to displaced persons to derive appropriate development benefits from the project.</p> <p>The borrower/client will compensate economically displaced people under paragraph 7(iii) for lost assets such as crops, irrigation infrastructure, and other improvements made to the land (but not for the land) at full replacement cost.</p> <p>In cases where land acquisition affects commercial structures, affected business owners are entitled to (i) the costs of reestablishing commercial activities elsewhere; (ii) the net income lost during the transition period; and (iii) the costs of transferring and reinstalling plant, machinery, or other equipment.</p> <p>Business owners with legal rights or recognized or recognizable claims to land where they carry out commercial activities are entitled to replacement property of equal or greater value or cash compensation at full replacement cost</p>	<p>Negotiated cash and in-kind compensation package for land-selling clans was agreed with the clans after surveys were completed in March 1999. Cash payments for land compensation and in-kind compensation was based on a resettlement program schedule.</p> <p>Community Development Programs proposed as part of the Tangguh T1/2 AMDAL were implemented to generate new opportunities for local households to derive appropriate development benefits from the project. These plans were delivered through the Integrated Social Program ISP (2005-2010) then the Community Investment Program or ISP2 (2011-2015).</p> <p>The Project LARAP involved relocation assistance, secured tenure to relocation sites, significantly improved housing at resettlement sites comparable access to employment and production opportunities and civic infrastructure and community services.</p> <p>Transitional support implemented across a range of areas involved livelihood restoration programs for resettlers in their new settlements organized around Livelihoods, Community Health, Education and Training, Governance and Communication and External Affairs.</p> <p>Local employment opportunities were managed as part of Livelihoods. Transitional support programs have seen household incomes improve by 166% between 2009-2012. The Project set up and funded the Dimaga Foundation, a legacy of the Tanah Merah resettlement project and the Bintuni Bay Development Foundation with the aim of improving the quality of local life.</p> <p>The UGM household economic survey in 2015 involved 1026 households, 13 villages selected from total population of 62 villages in Tangguh LNG's social area. Household survey data suggests progress is being made in terms of improving local livelihoods yet they recognize that more work is required.</p>	<ol style="list-style-type: none"> LARAP Appendix 4.2 Land Acquisition Documentation: 'The 1999 Agreements' LARAP July 2006 Table 1.4 Resettlement Program Implementation Schedule LARAP July 2006 BP Close Out Report ISP (2006-2011) Tangguh ISPII 2011-2015 September 2011 Summary of Research Report Household Income Survey Bintuni Bay Regency and Fakfak Regency, West Papua Province April 2015 	YES
	Opportunities of project benefits	D1.2-13	13	<p>Involuntary resettlement should be conceived of and executed as part of a development project or program.</p> <p>In this regard, the best strategy is to provide displaced persons with opportunities to share project benefits in addition to providing compensation and resettlement assistance. Such opportunities would help prevent impoverishment among affected persons, and also help meet the ethical demand for development interventions to spread development benefits widely.</p> <p>Therefore borrowers/clients are encouraged to ascertain specific opportunities for engaging affected persons as project beneficiaries and to discuss how to spread such opportunities as widely as possible among affected persons in the resettlement plan</p>	<p>Community Development Programs proposed as part of the Tangguh T1/2 AMDAL were implemented as part of the project design and intended to generate new opportunities for local households. The Project prepared its LARAP with the aim of complying with both ADB's Involuntary Resettlement Policy (1995) and the World Bank Group's Operational Directive 4.30. The stated objective of the LARAP were to achieve 'resettlement with development' thereby ensuring that resettled households achieve better livelihoods than they would have if resettlement had not taken place.</p> <p>Specific opportunities detailed in Tangguh T1/2 LARAP for resettlement-affected communities targeted benefits from resettlement-related construction and LNG plant construction and operations:</p> <ul style="list-style-type: none"> The Project met criteria developed from other resettlement experiences for effectively using employment as a reconstruction and income-generating resource; The Project trained and hired residents of resettlement-affected communities for the construction of their new villages; The Project ensured priority employment for construction jobs, offering at least one position per household, to residents of DAVs (including the resettlement-affected communities); The Project required construction contractors to meet hiring 	<ol style="list-style-type: none"> LARAP July 2006 Tangguh T1/2 AMDAL The BP Close Out Report ISP (2006-2011) Tangguh LNG Project E&S External Panel II for period 2011-2016, February 2012 Tangguh LNG Project E&S External Panel II for period 2011-2016, February 2012 Tangguh LNG Project E&S External Panel II for period 2011-2016. Section 3 and Table 3.1 February 2012 Summary of Research Report Household Income Survey Bintuni Bay Regency and Fakfak Regency, West Papua Province April 2015 	YES

ITEM	SUB ITEM	ID#	PARAGRAPH	ADB 2009 SAFEGUARD POLICY REQUIREMENT	TANGGUH TRAIN 1 & 2 PERFORMANCE	DOCUMENT REVIEWED	MEET ADB REQUIREMENT
					<p>guidelines and priorities, and to hire qualified candidates from the resettlement-affected villages;</p> <ul style="list-style-type: none"> The Project required EPC contractor to organize skills training for selected candidates from resettlement\ affected communities to qualify them for employment during construction; The Workforce Management Officer kept resettlement-affected communities informed of employment and training opportunities, and monitored employment rates and practices of contractors, and The Project developed programs to raise awareness of temporary nature of employment during construction and to help construction employees prepare for and adjust to the loss of jobs at the end of the construction period. <p>AMDAL 2002 set targets for employment and hire increasing numbers into higher management positions where possible whilst recognizing that operations jobs are limited and require highly skilled professionals. Best efforts were made to help prepare suitable local community members for project employment opportunities by providing training where appropriate.</p> <p>Specific programs were developed to spread development opportunities based on AMDAL 2002 commitments. Between 2009-2012, employment for RAV was prioritized during construction of resettlement and host villages. Villagers were trained to sell to Tangguh LNG and local markets and local household incomes improved by 166%. Between 2008-2013 more than 1278 tons of local produce was supplied to Tangguh valued at Rp 27.2 billion. This is supported by latest data form UGM household survey in 2015 which shows highest levels of income in Tanah Merah village.</p> <p>The BP Close Out Report ISP (2006-2011) states that all LARAP commitments were completed: RAV residents were provided with resettlement assistance relating to house construction, RAV villagers settled into their new housing and adjusting to their new lifestyle, provisions of community facilities and livelihood restoration</p> <p>All Land Acquisition and Resettlement Action Plan (LARAP) issues were closed and documented by the Tangguh LNG Project E&S External Panel II for period 2011-2016, (February 2012).</p>		
	Physical and economic displacement conditions	D1.2-14	14	<p>The borrower/client will ensure that no physical displacement or economic displacement will occur until (i) compensation at full replacement cost has been paid to each displaced person for project components or sections that are ready to be constructed; (ii) other entitlements listed in the resettlement plan have been provided to displaced persons; and (iii) a comprehensive income and livelihood rehabilitation program, supported by an adequate budget, is in place to help displaced persons improve, or at least restore, their incomes and livelihoods. While compensation is required to be paid before displacement, full implementation of the resettlement plan might take longer. If project activities restrict land use or access to legally designated parks and protected areas, such restrictions will be imposed in accordance with the timetable outlined in the resettlement plan</p>	<p>Tangguh T1/2 implemented the physical move or displacement after achieving land acquisition and physical compensation and secondly after consultation process for the design of resettlement affected villages.</p> <ul style="list-style-type: none"> (i) A combination of cash and in-kind benefits were provided in a timely manner based on implementation schedule below (ii) Other compensation entitlements scheduled in the LARAP were provided to displaced persons; (iii) Income and livelihood rehabilitation programs were implemented and aimed to achieve the goal of 'resettlement with development'. This represented 9.8% of the LARAP budget. <p>Implementation of the resettlement plan was conducted between 1999 and 2009. The implementation schedule for resettlement of affected villages was a critical element of the resettlement plan. Key phases were:</p>	<ol style="list-style-type: none"> LARAP July 2006 The BP Close Out Report ISP (2006-2011) Tangguh LNG Project E&S External Panel II for period 2011-2016, February 2012 Tangguh LNG Project E&S External Panel II for period 2011-2016. Section 3 and Table 3.1, EPII Review of LARAP Remedial Action Completion report February 2012 	YES

ITEM	SUB ITEM	ID#	PARAGRAPH	ADB 2009 SAFEGUARD POLICY REQUIREMENT	TANGGUH TRAIN 1 & 2 PERFORMANCE	DOCUMENT REVIEWED	MEET ADB REQUIREMENT
				agreed between the borrower/client and ADB.	<ul style="list-style-type: none"> 1999 'in principle' agreements on land relinquishment and resettlement; 2002 detailed agreements regarding entitlement for resettlement and host villages; 2003-2004 construction of replacement settlements; 2004 physical relocation of community 2004-2009 implementation of livelihood restoration programs. <p>The BP Close Out Report ISP (2006-2011) states that all LARAP commitments were completed: RAV residents were provided with resettlement assistance relating to house construction, RAV villagers settled into their new housing and adjusting to their new lifestyle, provisions of community facilities and livelihood restoration</p> <p>All Land Acquisition and Resettlement Action Plan (LARAP) issues were closed and documented by the Tangguh LNG Project E&S External Panel II for period 2011-2016, (February 2012).</p>		
Social Impact Assessment	Socioeconomic survey and census	D2.2-15	15	<p>The borrower/client will conduct socioeconomic survey(s) and a census, with appropriate socioeconomic baseline data to identify all persons who will be displaced by the project and to assess the project's socioeconomic impacts on them. For this purpose, normally a cut-off date will be established by the host government procedures. In the absence of such procedures, the borrower/client will establish a cut-off date for eligibility. Information regarding the cutoff date will be documented and disseminated throughout the project area. The social impact assessment (SIA) report will include</p> <p>(i) identified past, present and future potential social impacts,</p> <p>(ii) an inventory of displaced persons² and their assets,³</p> <p>(iii) an assessment of their income and livelihoods, and</p> <p>(iv) (gender-disaggregated information pertaining to the economic and sociocultural conditions of displaced persons.</p> <p>The project's potential social impacts and risks will be assessed against the requirements presented in this document and applicable laws and regulations of the jurisdictions in which the project operates that pertain to involuntary resettlement matters, including host country obligations under international law.</p>	<p>Tangguh T1/2 undertook extensive social economic mapping as part of Resettlement planning. Comprehensive baseline data on community settlements, housing, and construction materials is reported in ANDAL, October 2002. This included information on recent land transactions, land value by type, land title, land use, cropping patterns and crop production, availability of land in the project area and region, and other related information. Socio-economic surveys of the resettlement village and host villages were conducted in 2001 and 2002 by international recognized consultants.</p> <p>The social impact assessment (SIA) report included comprehensive information on:</p> <p>(i) identified past, present and future potential social impacts,</p> <p>(ii) an inventory of displaced persons and their assets,</p> <p>(iii) an assessment of their income and livelihoods, and</p> <p>(iv) gender-disaggregated information pertaining to the economic and sociocultural conditions of displaced persons.</p> <p>The project's potential social impacts and risks were assessed in the Tangguh T1/2 AMDAL against ADB, WB requirements and applicable GOI laws and regulations pertaining to involuntary resettlement matters.</p>	Tangguh T1/2 AMDAL, Chapter 4.3	YES
	Identification of differentially or disproportionately affected individuals and groups	D2.2-16	16	<p>As part of the social impact assessment, the borrower/client will identify individuals and groups who may be differentially or disproportionately affected by the project because of their disadvantaged or vulnerable status. Where such individuals and groups are identified, the borrower/client will propose and implement targeted measures so that adverse impacts do not fall disproportionately on them and they are not disadvantaged in relation to sharing the benefits and opportunities resulting from development.</p>	<p>Disadvantaged or vulnerable status groups were identified by the Socio Economic Impact Assessment conducted in Kabupaten Teluk Bintuni. These groups were elderly people those with special needs and single mothers. Special measures were implemented to assist and support vulnerable households before, during and after the relocation. Social support structures, welfare assistance and social support networks were developed prior to relocation and monitored into the post relocation period by project M&E.</p> <p>Overall, priority was given to original inhabitants considered the most vulnerable to marginalization as a result of the Project and other developments in the area. The project was informed by good evidence of indigenous people marginalization in Papua and around Bintuni and</p>	<ol style="list-style-type: none"> Tangguh T1/2 ANDAL, Section 4.3.20 LARAP Section 10.3.7 July 2006 Tangguh ISP July 2006 Tangguh ISP II 2011-2015 September 2011 YPTB foundation Info Independent Auditor's Certification Dec 2013 Summary of Research Report Household Income Survey Bintuni Bay Regency and Fakfak Regency, West Papua Province April 2015 	YES

ITEM	SUB ITEM	ID#	PARAGRAPH	ADB 2009 SAFEGUARD POLICY REQUIREMENT	TANGGUH TRAIN 1 & 2 PERFORMANCE	DOCUMENT REVIEWED	MEET ADB REQUIREMENT
					<p>Berau Bays. As such, there was a strong rationale for the Project to increase its focus on indigenous people, and more explicitly prioritizing them as beneficiaries. The project gave clear focus to Indigenous People in the Integrated Social Program (ISP 2005-2010) and the Community Investment Program (CIP or ISP2, 2011-2015). These communities were identified as the primary beneficiary from many programs such as targeted educational assistance, employment, enterprise development and livelihood support activities.</p> <p>To manage social jealousy and mitigate social tensions arising from <i>adat</i> rights issues the YPTB foundation was established by Tangguh Project in collaboration with Teluk Bintuni Regency. 10 million dollars (\$1million/annual funding for the past 10 years) was used to finance small infrastructure on the North Shore. It works with local government to deliver public infrastructure development particularly at north shore villages. Infrastructure is intended to support education, health and sanitation, and economic activities.</p> <p>Independent Auditor's Certification Dec 2013. Financial reports for YPTB were in conformity with the Indonesian Financial Accounting Standards for non-Publicly Accountable Entities</p> <p>The ISP and CIP targeted indigenous people as the majority of the population in DAV. The indigenous population generally lags in numerous development indicators, e.g. health, education and economic participation. Emerging opportunities related to the Project's presence and wider development continue to attract migrants with whom indigenous populations have difficulty competing.</p> <p>The UGM household economic survey in 2015 suggests progress is being made in terms of improving local livelihoods, welfare and incomes yet they recognize that more work is required to ensure IP communities do not fall behind or become too dependent on the project.</p>		
Resettlement Planning	Resettlement plan objective	D3.2-17	17	The borrower/client will prepare a resettlement plan, if the proposed project will have involuntary resettlement impacts. The objective of a resettlement plan is to ensure that livelihoods and standards of living of displaced persons are improved, or at least restored to pre-project (physical and/or economic) levels and that the standards of living of the displaced poor and other vulnerable groups are improved, not merely restored, by providing adequate housing, security of land tenure and steady income and livelihood sources. The resettlement plan will address all relevant requirements specified in Safeguard Requirements 2, and its level of detail and comprehensiveness of the resettlement plan will be commensurate with the significance of involuntary resettlement impacts. An outline of resettlement plan is provided in the annex to this appendix.	<p>Tangguh T1/2 had significant involuntary resettlement impacts, thus it was categorized as a Category A project requiring development of a full resettlement action plan or LARAP.</p> <p>The general objective of the LARAP was to achieve 'resettlement with development' i.e. affected households would achieve better livelihoods than if resettlement had not taken place.</p> <p>The LARAP address all relevant requirements as specified in ADB Safeguard Requirements SPS No 2. The level of detail and scope of the resettlement plan is considered commensurate with the significant involuntary resettlement impacts.</p> <p>The LARAP 2006 also contains restoration and development programs for the main components of local livelihood strategies, namely agriculture, fisheries and micro-enterprise. The primary target groups of these programs were resettled households from Tanah Merah.</p>	LARAP July 2006	YES
	Resettlement plan measures	D3.2-18	18	A resettlement plan will be based on the social impact assessment and through meaningful consultation with the affected persons. A resettlement plan will include measures to ensure that the displaced persons are (i) informed about their options and entitlements pertaining to compensation, relocation, and rehabilitation; (ii)	<p>Tangguh T1/2 LARAP included measures to ensure that the displaced persons were:</p> <p>(i) informed about their options and entitlements pertaining to compensation, relocation, and rehabilitation under a campaign of <i>Socialization and Consultation</i>. Detailed consultation and socialization</p>	<ol style="list-style-type: none"> LARAP July 2006 Table 7.1 Chronological Account of Tangguh LARAP-Community Consultations, YR1999-2004 Tangguh T1/2 ANDAL, Section 4.3 	YES

ITEM	SUB ITEM	ID#	PARAGRAPH	ADB 2009 SAFEGUARD POLICY REQUIREMENT	TANGGUH TRAIN 1 & 2 PERFORMANCE	DOCUMENT REVIEWED	MEET ADB REQUIREMENT
				<p>consulted on resettlement options and choices; and (iii) provided with resettlement alternatives. During the identification of the impacts of resettlement and resettlement planning, and implementation, the borrower/client will pay adequate attention to gender concerns, including specific measures addressing the need of female headed households, gender-inclusive consultation, information disclosure, and grievance mechanisms, to ensure that both men and women receive adequate and appropriate compensation for their lost property and resettlement assistance, if required, as well as assistance to restore and improve their incomes and living standards.</p>	<p>was carried out to disseminate information relating to the project and its implementation; to identify benefits and impacts from the project and to understand community attitudes with regard to the project, compensation, housing, and proposed efforts to minimize negative project impacts.</p> <p>(ii) consulted on resettlement options and choices as part of the lengthy public consultation and disclosure process for Tangguh LARAP. Consultation aimed to <i>ensure participation of Project-affected people in planning and implementing activities associated with resettlement</i>. The LARAP demonstrated that the Project followed public consultation and disclosure requirements for projects involving physical resettlement.</p> <p>(iii) provided with resettlement alternatives, i.e. non-cash compensation such as the provision of land plots ready to be developed; affordable housing; housing and the provision of credit facilities or other appropriate alternatives.</p> <p>The ESIA study (Tangguh T1/2 ANDAL) found that communities and households were characterized as patriarchal that accorded women low status. Women were commonly found to be disempowered across a broad range of activities. Specific measures addressing the needs of female headed households, gender-inclusive consultation, information disclosure, and grievance mechanisms were identified during the ESIA. Consultations with women occurred throughout the resettlement process and across all activities. This helped to ensure that women too received adequate and appropriate compensation for their lost property, resettlement assistance and other assistance to restore and improve their incomes and living standards.</p> <p>The Project developed a number of social programs, known as ISPs initially focused on the RAVs and DAVs closest to the Project site. Among these were the Community Action Plan annual grants to DAVs that allowed each DAV to select its specific priorities. Gender equality was key to all programs developed and implemented by the Resettlement Team. Gender equality was factored into all programs developed and implemented by the Resettlement Team. The ISP included a Women's Empowerment program for women from all the DAVs, including resettlement affected villages. This aimed to engage progressive and empowered women to work in their own communities to promote women's empowerment generally and provide specific extension on education, vocational training, health and induced impacts as these relate to women</p>		

ITEM	SUB ITEM	ID#	PARAGRAPH	ADB 2009 SAFEGUARD POLICY REQUIREMENT	TANGGUH TRAIN 1 & 2 PERFORMANCE	DOCUMENT REVIEWED	MEET ADB REQUIREMENT
	Laws and regulations summary	D3.2-19	19	The borrower/client will analyze and summarize national laws and regulations pertaining to land acquisition, compensation payment, and relocation of affected persons in the resettlement plan. The borrower/client will compare and contrast such laws and regulations with ADB's involuntary resettlement policy principles and requirements. If a gap between the two exists, the borrower/client will propose a suitable gap-filling strategy in the resettlement plan in consultation with ADB	<p>Tangguh T1/2 LARAP centred on traditional indigenous (<i>adat</i>) communities. The framework for land acquisition and compensation took into account both the formal system of Indonesian law and the customary rights of the affected communities.</p> <p>Tangguh T1/2 referred to international guidelines to plan involuntary resettlement, adat rights and the treatment of adat communities and resettlement. The Project LARAP was prepared to comply with:</p> <ul style="list-style-type: none"> • ADB Policy on Involuntary Resettlement (1995), ADB OM F2/BP and OM F2/OP on Involuntary Resettlement (2003) and F3/BP on Indigenous Peoples (2004) • World Bank's Operational Policy on Involuntary Resettlement OD 4.30 (1990) and OD 4.20 on Indigenous Peoples (1991) <p>A comparative analysis of ADB involuntary resettlement policy and guidelines and GOI legislation pertaining to involuntary resettlement was undertaken in the LARAP, 2006 Table 4.2 - Comparative Analysis of ADB Policy and GOI Legislation Pertaining to Involuntary Resettlement. This found shortcomings in GOI law when compared to ADB policy requirements. Gaps between ADB and applicable GOI Laws were used as the basis to prepare the Project Action Plan.</p>	<ol style="list-style-type: none"> 1. LARAP July 2006 2. Tangguh T1/2 ANDAL 	YES
	Incurred costs	D3.2-20	20	All costs of compensation, relocation, and livelihood rehabilitation will be considered project costs. To ensure timely availability of required resources, land acquisition and resettlement costs may be considered for inclusion in ADB financing. Resettlement expenditure is eligible for ADB financing if incurred in compliance with ADB's safeguard policy statement and with ADB-approved resettlement planning documents. If ADB funds are used for resettlement costs, such expenditure items will be clearly reflected in the resettlement plan.	<p>Tangguh T1/2 financed the total budget US\$31,126,451 allocated to implement the Land Acquisition and Resettlement Action Plan in the resettlement-affected villages from 1999 to 2009.</p> <p>Land acquisition and compensation was the largest line item representing 70.8% of the budget. Longer term initiatives designed to achieve 'resettlement with development' represented 9.8% of the budget.</p>	LARAP Section 12 July 2006	YES
	Measures for income restoration and live hood improvement	D3.2-21	21	<p>The borrower/client will include detailed measures for income restoration and livelihood improvement of displaced persons in the resettlement plan.</p> <p>Income sources and livelihoods affected by project activities will be restored to pre-project levels, and the borrower/client will make every attempt to improve the incomes of displaced persons so that they can benefit from the project.</p> <p>For vulnerable persons and households affected, the resettlement plan will include measures to provide extra assistance so that they can improve their incomes in comparison with pre-project levels.</p> <p>The resettlement plan will specify the income and livelihoods restoration strategy, the institutional arrangements, the monitoring and reporting framework, the budget, and the time-bound implementation schedule.</p>	<p>Tangguh T1/2 in close consultation with stakeholders developed targeted livelihood improvement programs with measures to engage affected persons as direct project beneficiaries. The stated objective of the LARAP was to achieve 'resettlement with development' thereby ensuring that resettled households achieved better livelihoods than they would have if resettlement had not taken place.</p> <p>Physical relocation of affected communities was completed in 2004. Restoration and development programs for the main components of local livelihood strategies, namely agriculture, fisheries and micro-enterprise were detailed in the BP Tangguh LARAP 2006.</p> <p>Under ISP, Livelihood activities contributed to the betterment of community's welfare. In 2007 the welfare index was 59.27, increasing to 65.89 in 2009. The improvement in welfare was also demonstrated by the growth in household incomes. Between 2009-2012, employment of resettlement-affected villagers was prioritized during construction of resettlement and host villages. Local household income improved by 166%. Villagers trained in post-harvest production sell to the Project and local markets. Between 2008-2013 more than 1278 tons of local produce was supplied to Tangguh valued at Rp 27.2 billion.</p> <p>For vulnerable persons and households, the resettlement plan contained social support measures to provide extra assistance to improve incomes when compared with pre-project levels.</p>	<ol style="list-style-type: none"> 1. LARAP July 2006 2. The BP Close Out Report ISP (2006-2011) 3. TSDP 2015-2019 4. YPTB foundation Info 5. Independent Auditor's Certification Dec 2013. 6. Summary of Research Report Household Income Survey Bintuni Bay Regency and Fakfak Regency, West Papua Province April 2015 	YES

ITEM	SUB ITEM	ID#	PARAGRAPH	ADB 2009 SAFEGUARD POLICY REQUIREMENT	TANGGUH TRAIN 1 & 2 PERFORMANCE	DOCUMENT REVIEWED	MEET ADB REQUIREMENT
					<p>As part of the Implementation Framework, a Resettlement Unit was established to manage compensation, resettlement and livelihood restoration. The resettlement plan specified income and livelihoods restoration strategy and the institutional arrangements. Interventions in livelihood sectors spanned the agriculture, fisheries, microfinance and small business development and wage employment as the basis to ensure that the resettled and host communities could sustainably improve and surpass their income, standards of living and livelihoods over and above pre-Project levels or expected levels without the Project.</p> <p>Post relocation, community development initiatives and post-resettlement social support for facilities management, education and health were budgeted through to 2008. The resettlement budget included compensation costs plus additional investments, over and above compensation to ensure development of living standards of the resettlement population.</p> <p>To manage social jealousy and mitigate social tensions arising from <i>adat</i> rights issues the YPTB foundation was established by Tangguh Project in collaboration with Teluk Bintuni Regency. 10 million dollars (\$1million/annual funding for the past 10 years) was used to finance small infrastructure on the North Shore. It works with local government to deliver public infrastructure development particularly at north shore villages. Infrastructure is intended to support education, health and sanitation, and economic activities.</p> <p>Independent Auditor's Certification Dec 2013. Financial reports for YPTB were in conformity with the Indonesian Financial Accounting Standards for non-Publicly Accountable Entities</p> <p>The UGM household economic survey in 2015 involved 1026 households, 13 villages selected from total population of 62 villages in Tangguh LNG's social area. Household survey data suggests progress is being made in terms of improving local livelihoods, incomes and welfare yet more work is required.</p> <p>An external monitoring and evaluation team reviewed implementation on an annual basis under M&E reporting framework. Performance included how budgets Performance, progress made and the time-bound implementation schedule were all assessed in the oversight scope.</p>		
	Census and inventories of loss of assets	D3.2-22	22	<p>The information contained in a resettlement plan may be tentative until a census of affected persons has been completed. Soon after the completion of engineering designs, the borrower/client will finalize the resettlement plan by completing the census and inventories of loss of assets. At this stage, changes to the resettlement plan take the form of revising the number of displaced persons, the extent of land acquired, the resettlement budget, and the timetable for implementing the resettlement plan. The entitlement matrix of the resettlement plan may be updated at this stage to reflect the relevant changes but the standards set in the original entitlement matrix cannot be lowered when the resettlement plan is revised and finalized. The borrower/client will ensure that the final resettlement</p>	<p>Between 2001–2002, Tangguh T1/T2 undertook comprehensive baseline socio-economic surveys to establish Environment, Demography, Productive Activities and Sources and Levels of Income. These surveys were used to design planning, monitoring and evaluating resettlement programs. This baseline was also part of the social baseline contained in the Tangguh T1/2 AMDAL and the basis to measure the success of the LARAP process.</p> <p>(i)The Project LARAP addressed all involuntary resettlement issues pertaining to the project. These were reported as closed out in the Tangguh LNG Project E&S External Panel II for period 2011-2016.</p> <p>(ii) Specific mitigation measures to manage potential community issues both pre-move and post-move were documented in the LARAP and reported as closed out in the Tangguh LNG Project E&S External Panel II for period 2011-2016.</p>	<ol style="list-style-type: none"> LARAP Sections 5.1 and 8.5, July 2006 The Down to Earth Report, Tangguh, BP & International Standards April 2011 Tangguh LNG Project E&S External Panel II for period 2011-2016, February 2012 	YES

ITEM	SUB ITEM	ID#	PARAGRAPH	ADB 2009 SAFEGUARD POLICY REQUIREMENT	TANGGUH TRAIN 1 & 2 PERFORMANCE	DOCUMENT REVIEWED	MEET ADB REQUIREMENT
				<p>plan</p> <p>(i) adequately addresses all involuntary resettlement issues pertaining to the project,</p> <p>(ii) describes specific mitigation measures that will be taken to address the issues,</p> <p>(iii) ensures the availability of sufficient resources to address the issues satisfactorily.</p>	<p>(iii) provision of sufficient resourcing to plan and execute resettlement issues were documented in the LARAP. These were reported as closed out in the Tangguh LNG Project E&S External Panel II for period 2011-2016.</p> <p>In 2011, the Down to Earth Report, Tangguh, BP & International Standards (April 2011) stated that the Project Resettlement Monitoring & Advisory Panel report, (dated 2007) had identified problems relating to granting legal ownership of houses and house-plots to resettled population; a lack of progress in transferring management and costs of electricity and water to resettled communities, the transfer of infrastructural assets to community management; and large departures from the policy of priority job allocation to residents of RAVs and DAVs. These issues were resolved as noted from the Tangguh LNG Project E&S External Panel II report for period 2011-2016 that all LARAP issues were closed out.</p>		
	Contingency plan	D3.2-23	23	Projects with significant involuntary resettlement impacts will need adequate contingency funds to address involuntary resettlement impacts that are identified during project implementation. The borrower/client will ensure that such funds are readily available. Moreover, the borrower/client will consult with displaced persons identified after the formulation of the final resettlement plan and inform them of their entitlements and relocation options. The borrower/client will prepare a supplementary resettlement plan, or a revised resettlement plan, and will submit it to ADB for review before any contracts are awarded.	Under Table 12.1 Summary of Land Acquisition and Resettlement Action Plan Budget, YR1999–2009, the LARAP (2006) scheduled a 10% Contingency provision. The project LARAP reported a total planned budget to 2009 for Resettlement of \$31,126,451 with \$2,829,677 planned as the Contingency provision.	LARAP Section 12, July 2006	YES
	Qualified and experienced experts provision	D3.2-24	24	The borrower/client will use qualified and experienced experts to prepare the social impact assessment and the resettlement plan. For highly complex and sensitive projects, independent advisory panel of experts not affiliated with the project will be used during project preparation and implementation.	<p>Tangguh T1/2 used qualified and experienced experts to prepare the social impact assessment and the resettlement plan. A qualified AMDAL Technical Team was headed by a Team Leader. To prepare the ESIA study, BP assembled onshore and offshore technical specialists who were teamed with multinational environmental and socio-economic specialists covering a diverse range of disciplines.</p> <p>The Tangguh independent Advisory Panel (TIAP) was set up to review BP's programs and activities in relation to most respected current global norms that establish best practices for projects in developing countries. These include the Universal Declaration of Human Rights; the OECD Guidelines for Multinational Enterprises; the ILO Convention Concerning Indigenous and Tribal Peoples in Independent Countries; the World Bank Operational Directive for indigenous peoples and the U.S. – U.K. Voluntary Principles on Security and Human Rights (the "Voluntary Principles"). The Panel also consults more recent global guidelines such as the UN Guiding Principles on Business and Human Rights ("the Guiding Principles"); the IFC Performance Standards on Environmental and Social Sustainability; and the Equator Principles (applicable to financial institutions).</p> <p>The Project was monitored by the Tangguh Lenders Group, represented by the ADB (until 2014), Japan Bank for International Cooperation and Mizuho Corporate Bank, which has established an external panel staffed by independent experts who visit the Project.</p>	<p>1. Tangguh T1/2 AMDAL Appendix 8.3.13</p> <p>2. TIAP Report December 2015</p>	YES
Negotiated Land Acquisition	Negotiated settlements	D4.2-25	25	Safeguard Requirements 2 does not apply to negotiated settlements, unless expropriation would result upon the failure of negotiations. Negotiated settlements help avoid expropriation and eliminate the need to use	Tangguh T1/2 acquired land and related community assets through negotiated settlement based on meaningful consultation with affected persons, i.e. adat communities with traditional land rights.	LARAP July 2006	YES

ITEM	SUB ITEM	ID#	PARAGRAPH	ADB 2009 SAFEGUARD POLICY REQUIREMENT	TANGGUH TRAIN 1 & 2 PERFORMANCE	DOCUMENT REVIEWED	MEET ADB REQUIREMENT
				<p>governmental authority to remove people forcibly. The borrower/client is encouraged to acquire land and other assets through a negotiated settlement wherever possible, based on meaningful consultation with affected persons, including those without legal title to assets. A negotiated settlement will offer adequate and fair price for land and/or other assets. The borrower/client will ensure that any negotiations with displaced persons openly address the risks of asymmetry of information and bargaining power of the parties involved in such transactions. For this purpose, the borrower/client will engage an independent external party to document the negotiation and settlement processes. The borrower/client will agree with ADB on consultation processes, policies, and laws that are applicable to such transactions; third-party validation; mechanisms for calculating the replacement costs of land and other assets affected; and record-keeping requirements.</p>	<p>The overall principle and objective was to achieve 'resettlement with development' (LARAP 2006). Project and external M&E confirms resettled households achieved better livelihoods than if resettlement had not taken place.</p> <p>Tanggung T1/2 conducted negotiations with displaced persons openly address the risks of asymmetry of information and bargaining power of the parties involved in such transactions. Public consultation and disclosure ensured awareness, support and participation of Project-Affected People in planning and implementing activities associated with resettlement works. Tangguh T1/2 engaged in continuous consultation with resettlement-affected communities via the establishment of formal mechanisms such as village committees with interest groups established around sectoral program implementation, and on an informal basis through continuous interaction with the affected communities, the latter facilitated by establishment of a Resettlement Unit in resettlement-affected communities. As per ADB requirements, the summary and full LARAP was disclosed and an Indonesian language summary of the LARAP was distributed to resettled-affected households.</p> <p>Tanggung T1/2 engaged an independent external party to document the negotiation and settlement processes. An external resettlement panel was commissioned to implement External Monitoring and Evaluation activities on a six-monthly basis. M&E reports were reportedly disclosed in line with ADB's Public Communications Policy 2005. The team comprised international resettlement and social development experts who were tasked to:</p> <ul style="list-style-type: none"> • Verify internal M&E findings and provide objective external assessments; • Assess overall compliance; • Provide objective and periodic assessments of resettlement implementation plans and their impacts. <p>The final report of the external resettlement panel was delivered in 2007 and disclosed on the BP website.</p>		
Information Disclosure	Client's documents for disclosure	D5.2-26	26	<p>The borrower/client will submit the following documents to ADB for disclosure on ADB's website:</p> <ul style="list-style-type: none"> (i) a draft resettlement plan and/or resettlement framework endorsed by the borrower/client before project appraisal; (ii) the final resettlement plan endorsed by the borrower/client after the census of affected persons has been completed; (iii) a new resettlement plan or an updated resettlement plan, and a corrective action plan prepared during project implementation, if any; and (iv) the resettlement monitoring reports 	<p>Tanggung T1/2 has submitted a variety of operators environmental monitoring reports. The key document on ADB's website for resettlement disclosure is the LARAP document posted in July 2006.</p> <p>The BP Close Out Report ISP (2006-2011) states that all LARAP commitments were completed: RAV residents were provided with resettlement assistance relating to house construction, RAV villagers settled into their new housing and adjusting to their new lifestyle, provisions of community facilities and livelihood restoration</p> <p>All Land Acquisition and Resettlement Action Plan (LARAP) issues were closed and documented by the Tangguh LNG Project E&S External Panel II for period 2011-2016, (February 2012).</p>	<ol style="list-style-type: none"> 1. BP Close Out Report ISP (2006-2011) 2. Tangguh LNG Project E&S External Panel II for period 2011-2016. Section 3 and Table 3.1, EPII Review of LARAP Remedial Action Completion report dated February 2012 	YES
	Relevant information provided in timely manner, accessible and understandable language	D5.2-27	27	<p>The borrower/client will provide relevant resettlement information, including information from the documents in para. 26 in a timely manner, in an accessible place and in a form and language(s) understandable to affected persons and other stakeholders. For illiterate people, suitable other communication methods will be used.</p>	<p>Tanggung T1/2 has provided relevant resettlement information and distributed an Indonesian summary of the Implementation LARAP to all affected households. The summary presented updated information about compensation entitlements and provided examples of the grievance process and procedure used for making a complaint.</p>	<ol style="list-style-type: none"> 1. LARAP Table 7.1 July 2006 2. Tangguh Grievance Card 3. Tangguh GRIEVANCE RESOLUTION FLOW CHART 	YES

ITEM	SUB ITEM	ID#	PARAGRAPH	ADB 2009 SAFEGUARD POLICY REQUIREMENT	TANGGUH TRAIN 1 & 2 PERFORMANCE	DOCUMENT REVIEWED	MEET ADB REQUIREMENT
					<p>The objective of public consultation and disclosure process in the LARAP was to ensure the participation of the Project-affected people in planning and implementing activities associated with resettlement. A chronological of public consultations with affected communities is provided in LARAP.</p> <p>Tanggung T1/2 established two village-level committees in Tanah Merah and Saengga with the objective of (a) relay community issues to the Project and disseminate information to the community, (b) participate in design, planning and implementation of community development initiatives related to the Resettlement Program, and, in so doing; (c) develop the capacity to represent the community, in planning and implementing development projects that reflect community priorities.</p>		
Consultation and Participation	Meaningful consultation	D6-28	28	<p>The borrower/client will conduct meaningful consultation with affected persons, their host communities, and civil society for every project and subproject identified as having involuntary resettlement impacts. Meaningful consultation is a process that</p> <ul style="list-style-type: none"> (i) begins early in the project preparation stage and is carried out on an ongoing basis throughout the project cycle; (ii) provides timely disclosure of relevant and adequate information that is understandable and readily accessible to affected people; (iii) is undertaken in an atmosphere free of intimidation or coercion; (iv) is gender inclusive and responsive, and tailored to the needs of disadvantaged and vulnerable groups; and (v) enables the incorporation of all relevant views of affected people and other stakeholders into decision making, such as project design, mitigation measures, the sharing of development benefits and opportunities, and implementation issues. <p>Consultation will be carried out in a manner commensurate with the impacts on affected communities. The borrower/client will pay particular attention to the need of disadvantaged or vulnerable groups, especially those below the poverty line, the landless, the elderly, female headed households, women and children, Indigenous Peoples, and those without legal title to land</p>	<p>Tanggung T1/2 conducted meaningful consultation with affected persons, host communities, and civil society all activities involving involuntary resettlement impacts.</p> <p>Consultation was carried out in a manner commensurate with the impacts on affected communities. The objective of public consultation and disclosure process in the LARAP was to ensure the participation of the Project-affected people in planning and implementing activities associated with resettlement.</p> <ul style="list-style-type: none"> (i) Meaningful Consultation began early in the project preparation stage and was established with 'The Agreements' in 1999. There is sufficient documentation in the LARAP and Tangguh T1/2 ANDAL to show it was ongoing throughout the project cycle; (ii) as detailed in the LARAP Chronology Table 7.1, the project provided timely disclosure of relevant and adequate information that was understandable and readily accessible to affected people; (iii) is undertaken in an atmosphere free of intimidation or coercion; (iv) was gender inclusive and responsive, and tailored to the needs of identified disadvantaged and vulnerable groups; (v) enabled the incorporation of all relevant views of affected people and other stakeholders into decision making, such as project design, mitigation measures, sharing of development benefits and opportunities, and implementation issues. Two village-level committees formed in Tanah Merah and Saengga were tasked to (a) relay community issues to the Project and disseminate information to the community, (b) participate in design, planning and implementation of community development initiatives related to the Resettlement Program, and, in so doing; (c) develop the capacity to represent the community, in planning and implementing development projects that reflect community priorities. BP enabled visits of community leaders to East Kalimantan in 2001 to familiarize them on AMDAL meetings. <p>Consultation was carried out in a manner commensurate with the impacts on affected communities. Whilst the project affected population was recognized as Indigenous Peoples, particular attention was given to the needs of disadvantaged or vulnerable groups; i.e. the elderly, female headed households and those with special needs. The LARAP identified several vulnerable groups: single parents, elderly and special needs groups. The Project also identified the poorest families, poverty being associated with status as single parents or the elderly not participating in productive activities and/or not receiving any support from children, LARAP 2006, Section 5. Special measures to assist and support</p>	LARAP Sections 5, 10 and Table 7.1 July 2006	YES

ITEM	SUB ITEM	ID#	PARAGRAPH	ADB 2009 SAFEGUARD POLICY REQUIREMENT	TANGGUH TRAIN 1 & 2 PERFORMANCE	DOCUMENT REVIEWED	MEET ADB REQUIREMENT
					<p>vulnerable households before, during and after project induced relocation are documented in LARAP Section 10.3.7. The ISP included a Women's Empowerment program aiming to engage progressive and empowered women to work in their own communities to promote women's empowerment generally and provide specific extension on education, vocational training, health and induced impacts as these relate to women LARAP 2006, Section 10.3.6.</p> <p>A chronological of public consultations with affected communities is provided in LARAP.</p>		
Grievance Redress Mechanism	Grievance Redress Mechanism	D7.2-29	29	<p>The borrower/client will establish a mechanism to receive and facilitate the resolution of affected persons' concerns and grievances about physical and economic displacement and other project impacts, paying particular attention to the impacts on vulnerable groups. The grievance redress mechanism should be scaled to the risks and adverse impacts of the project. It should address affected persons' concerns and complaints promptly, using an understandable and transparent process that is gender responsive, culturally appropriate, and readily accessible to the affected persons at no costs and without retribution. The mechanism should not impede access to the country's judicial or administrative remedies. The borrower/client will inform affected persons about the mechanism.</p>	<p>A Grievance Resolution Mechanism was prepared as part of the LARAP in 2005. This was socialized within the affected communities.</p> <p>Existing grievance procedures have been reviewed and appear adequate to address and manage the Grievance process.</p> <p>The Tangguh LNG Project E&S External Panel II Mid Term Report (2011-2016) found no specific issues with Grievance or its reporting.</p>	<ol style="list-style-type: none"> LARAP July 2006 Community Grievance Procedure Nov 2015 (Rev 3) Tangguh Grievance Card Tangguh GRIEVANCE RESOLUTION FLOW CHART Tangguh LNG Project E&S External Panel II 3rd operational report (2011-2016) July 2014 Tangguh LNG Project E&S External Panel II 4th operational report (2011-2016) July 2015 Tangguh LNG Project E&S External Panel II (2011-2016) Mid-Term Review May 2014 	YES
Monitoring and Reporting	Monitoring requirements	D8.2-30	30	<p>The borrower/client will monitor and measure the progress of implementation of the resettlement plan. The extent of monitoring activities will be commensurate with the project's risks and impacts. In addition to recording the progress in compensation payment and other resettlement activities, the borrower/client will prepare monitoring reports to ensure that the implementation of the resettlement plan has produced the desired outcomes.</p> <p>For projects with significant involuntary resettlement impacts, the borrower/client will retain qualified and experienced external experts or qualified NGOs to verify the borrower's/client's monitoring information. The external experts engaged by the borrower/client will advise on safeguard compliance issues, and if any significant involuntary resettlement issues are identified, a corrective action plan will be prepared to address such issues.</p> <p>Until such planning documents are formulated, disclosed and approved, the borrower/client will not proceed with implementing the specific project components for which involuntary resettlement impacts are identified</p>	<p>M&E was managed under the Resettlement Unit who were responsible for monitoring the implementation of the resettlement plan. An external monitoring and evaluation team was appointed to review implementation annually with supporting baseline data.</p> <p>The Project was monitored by the Tangguh Lenders Group, represented by the ADB (until 2014), Japan Bank for International Cooperation and Mizuho Corporate Bank. They established an External Panel staffed by independent experts who visit, monitor and report on Project performance.</p> <p>The External Panel conducts consultation with the community during the annual audit process. The External Panel Second Iteration (EPII) undertakes independent monitoring of the project's compliance environmental and social requirements for operational period 2011 to 2016.</p> <p>The Tangguh independent Advisory Panel (TIAP) was set up to review non-technical aspects of the Tangguh project activities and activities in relation to most respected current global norms that establish best practices for projects in developing countries.</p> <p>The BP Close Out Report ISP (2006-2011) states that all LARAP commitments were completed: RAV residents were provided with resettlement assistance relating to house construction, RAV villagers settled into their new housing and adjusting to their new lifestyle, provisions of community facilities and livelihood restoration</p> <p>All Land Acquisition and Resettlement Action Plan (LARAP) issues were closed and documented by the Tangguh LNG Project E&S External Panel</p>	<ol style="list-style-type: none"> LARAP July 2006 BP Close Out Report ISP (2006-2011) Tangguh LNG Project E&S External Panel II for period 2011-2016. Section 3 and Table 3.1, EPII Review of LARAP Remedial Action Completion report February 2012 	YES

ITEM	SUB ITEM	ID#	PARAGRAPH	ADB 2009 SAFEGUARD POLICY REQUIREMENT	TANGGUH TRAIN 1 & 2 PERFORMANCE	DOCUMENT REVIEWED	MEET ADB REQUIREMENT
					II for period 2011-2016, (February 2012).		
	Report requirements	D8.2-31	31	The borrower/client will prepare semiannual monitoring reports that describe the progress of the implementation of resettlement activities and any compliance issues and corrective actions. These reports will closely follow the involuntary resettlement monitoring indicators agreed at the time of resettlement plan approval. The costs of internal and external resettlement monitoring requirements will be included in the project budget.	<p>The Project met its legal obligation to prepare semiannual environmental management and monitoring reports which are central to its AMDAL operating license. These RKL-RPL reports described in detail progress on implementation of resettlement activities and any compliance issues and corrective actions. These reports contain involuntary resettlement monitoring indicators agreed at the time of resettlement plan approval. Costs of all resettlement monitoring requirements were included in the Tangguh project budget.</p> <p>Whilst we have not had access to all RKL-RPL reports for the period in question, we note that all Land Acquisition and Resettlement Action Plan (LARAP) issues were closed and documented by the Tangguh LNG Project E&S External Panel II for period 2011-2016, (February 2012).</p>	<ol style="list-style-type: none"> 1. Environmental Management (RKL) & Monitoring Report (RPL) January– June 2015 2. Environmental Management (RKL) & Monitoring Report (RPL) July– Dec 2015 3. Tangguh LNG Project E&S External Panel II for period 2011-2016, February 2012 4. Tangguh LNG Project E&S External Panel II 3rd operational report (2011-2016) July 2014 5. Tangguh LNG Project E&S External Panel II 4th operational report (2011-2016) July 2015 6. BP Close Out Report ISP (2006-2011) 	YES
Unanticipated Impacts	Updating resettlement plan and social impact assessment	D9.2-32	32	If unanticipated involuntary resettlement impacts are found during project implementation, the borrower/client will conduct a social impact assessment and update the resettlement plan or formulate a new resettlement plan covering all applicable requirements specified in this document.	Tangguh T1/2 did not create any unanticipated impacts during resettlement planning, physical execution or during the post relocation phase.	<ol style="list-style-type: none"> 1. Tangguh T1/2 AMDAL 2. ISPI 2005-2010 July 2006 3. BP Close Out Report ISP (2006-2011) 	YES
Special Considerations for Indigenous People	Special Consideration of Indigenous Peoples	D10.2-33	33	The borrower/client will explore to the maximum extent possible alternative project designs to avoid physical relocation of Indigenous Peoples that will result in adverse impacts on their identity, culture, and customary livelihoods. If avoidance is impossible, in consultation with ADB, a combined Indigenous Peoples plan and resettlement plan could be formulated to address both involuntary resettlement and Indigenous Peoples issues. Such a combined plan will also meet all relevant requirements specified under Safeguard Requirements 3.	<p>After extensive evaluations using environmental, technical, social, and economic criteria, the only site deemed feasible for the LNG plant was near the community of Tanah Merah. The study identified indigenous or <i>adat</i> communities belonging to seven distinct ethnic groups. The main social issues anticipated pertained to relinquishment of traditional land rights, or <i>hak ulayat tanah</i> for plant-site land; reduced natural resource access for the Simuri tribe; the resettlement of the Tanah Merah community; disturbances to local sea traffic; increased potential for conflict through issues such as the security regime for the project, which could either be a force for enhancing community stability or be seriously disruptive to its way of life; social jealousy; potential inward migration of settlers; positive and negative changes to lifestyles and income patterns; improved public health conditions; and improved human resource development.</p> <p>During the AMDAL process, the project engaged numerous stakeholders to agree the basic values that the project would promote. Along with Human Rights Policy, an Indigenous Peoples Development Plan was developed as part of the AMDAL. The ISPI 2005 -2010 served as the Indigenous Peoples Development Plan (IPDP).</p> <p>The interaction of local communities and local commercial interests within the project's operating area was carefully considered and communities directly affected were identified and prioritized as a key to the successful implementation of the project. Resettlement in Tanah Merah was conducted as a participatory community development program, with strict adherence to best-practice standards.</p>	<ol style="list-style-type: none"> 1. Tangguh T1/2 AMDAL 2. ISPI 2005-2010 July 2006 3. ISPII 2011-2015 September 2011 	YES

APPENDIX 3

ADB SAFEGUARD REQUIREMENTS No. 3 – INDIGENOUS PEOPLES

Safeguard Requirements 3: Indigenous Peoples

ITEM	SUB ITEM	ID#	PARAGRAPH	ADB 2009 SAFEGUARD POLICY REQUIREMENT	TANGGUH TRAINS 1 & 2 PERFORMANCE	DOCUMENT REVIEWED	MEET ADB REQUIREMENT
Consultation and Participation	Participation of affected indigenous people	D1.3-10	10	<p>The borrower/client will undertake meaningful consultation with affected Indigenous Peoples to ensure their informed participation in:</p> <p>(i) designing, implementing, and monitoring measures to avoid adverse impacts on them or, when avoidance is not possible, to minimize, mitigate, and compensate for such effects; and</p> <p>(ii) tailoring project benefits that accrue to them in a culturally appropriate manner.</p> <p>Meaningful consultation is a process that:</p> <p>(i) begins early in the project preparation stage and is carried out on an ongoing basis throughout the project cycle;</p> <p>(ii) provides timely disclosure of relevant and adequate information that is understandable and readily accessible to affected people;</p> <p>(iii) is undertaken in an atmosphere free of intimidation or coercion;</p> <p>(iv) is gender inclusive and responsive, and tailored to the needs of disadvantaged and vulnerable groups; and</p> <p>(v) enables the incorporation of all relevant views of affected people and other stakeholders into decision making, such as project design, mitigation measures, the sharing of development benefits and opportunities, and implementation issues.</p> <p>Consultation will be carried out in a manner commensurate with the impacts on affected communities. The consultation process and its results will be documented and reflected in the Indigenous Peoples Plan (IPP).</p>	<p>Tangguh undertook meaningful consultation with affected Indigenous Peoples to ensure their informed participation in the following areas:</p> <p><i>(i) designing, implementing, and monitoring measures to avoid adverse impacts on them or, when avoidance is not possible, to minimize, mitigate, and compensate for such effects;</i></p> <p><i>(ii) tailoring project benefits that accrue to Indigenous Peoples in a culturally appropriate manner.</i></p> <p>Meaningful consultation was a planned process that:</p> <p><i>(i) began early in the project preparation stage and was carried out on an ongoing basis throughout the project development cycle.</i></p> <p>The assessment of potential adverse and positive effects of the project was based on meaningful consultation with the affected Indigenous Peoples communities during the TOR study stage prior to AMDAL approval as described in LARAP Table 7.1. Consultation aimed to <i>ensure participation of Project-affected people in planning and implementing activities associated with resettlement.</i> The LARAP demonstrated that the Project followed public consultation and disclosure requirements for projects involving physical resettlement between 1999 and 2004.</p> <p><i>(ii) provided timely disclosure of relevant and adequate information that was understandable and readily accessible to affected people;</i></p> <p>History of consultations contained in LARAP 7.1 shows the project adhered to these guidelines and provided descriptive accounts of public consultations with the affected population that was timely and involved disclosure.</p> <p><i>iii) undertaken in an atmosphere free of intimidation or coercion;</i></p> <p>History of consultations contained in LARAP 7.1 shows the project adhered to guidelines and provided descriptive accounts of public consultations with the affected population were appropriately conducted.</p> <p><i>(iv) gender inclusive and responsive, and tailored to the needs of disadvantaged and vulnerable groups;</i></p> <p>In Papua generally, there are strong gender biases and often a balance of power that disadvantages women and girls, with subsequent effects related to health, education, and income levels. The ISP recognized the importance and role of gender-awareness in its programs as a key to successful human development improvements. The participation of women, indigenous women in particular was a strategic focus area whereby ISP principles were implemented via targeted consultation, participation and partnerships with women. The BP Close Out Report ISP (2006-2011) found that the ISP Women's Empowerment program raised greater awareness, understanding and the respect for the rights, roles and responsibilities of women. They</p>	<ol style="list-style-type: none"> Tangguh T1/2 AMDAL LARAP July 2006 Table 7.1 Tangguh T1/2 ANDAL Public Consultation and Disclosure Plan (RKL Appendix H). The BP Close Out Report ISP (2006-2011) Tangguh LNG Project E&S External Panel II for period 2011-2016 (report dated February 2012). 	YES

ITEM	SUB ITEM	ID#	PARAGRAPH	ADB 2009 SAFEGUARD POLICY REQUIREMENT	TANGGUH TRAINS 1 & 2 PERFORMANCE	DOCUMENT REVIEWED	MEET ADB REQUIREMENT
					<p>concluded that role and participation of women in the local community has significantly increased in key areas.</p> <p><i>v)enabled the incorporation of all relevant views of affected people and other stakeholders into decision making, such as project design, mitigation measures, sharing of development benefits and opportunities, and implementation issues.</i></p> <p>Stakeholder consultation was an important process in Tangguh LNG's impact management and monitoring.</p>		
	Participation - Inclusive and participatory consultation	D1.3-11	11	To carry out meaningful consultation with affected Indigenous Peoples, the borrower/client will establish a context-specific strategy for inclusive and participatory consultation, including approaches of identifying appropriate Indigenous Peoples representatives, and consultation methods appropriate to the social and cultural values of the affected Indigenous Peoples communities. The borrower/client will pay special attention to the concerns of indigenous women and youth.	<p>Meaningful Consultation is a Guiding principle for IPP and its programs. Meaningful Consultation is a process of dialogue with citizens and stakeholders that aims to inform company decisions on activities affecting external stakeholders and community members - and IP in particular. The Free, Prior and Informed Consent (FPIC) of particular indigenous peoples was the critical element in the consultation processes and used to design the ISP.</p> <p>To achieve social buy-in and enable better implementation and long term outcomes, special effort was made to enable input from traditional leaders, indigenous women, and civil society representatives during the consultation processes. Culturally-appropriate language, examples, and images were prepared accordingly.</p>	<ol style="list-style-type: none"> 1. Tangguh T1/2 AMDAL 2. Tangguh T1/2 ANDAL Public Consultation & Disclosure Plan (Appendix H). 3. ISP July 2006 	YES
	Good Faith Negotiations	D1.3-12	12	When the borrower/client and the affected Indigenous Peoples have serious differences and disagreements in relation to the project, its components, or the IPP, the borrower/client will undertake good faith negotiations to resolve such differences and disagreements.	The ISP does not contain a record of any serious differences or disagreements in relation to the project, or any of its components. The ISP also indicates good faith negotiations were used throughout.	<ol style="list-style-type: none"> 1. Tangguh T1/2 ANDAL Public Consultation & Disclosure Plan (Appendix H). 2. ISP July 2006 	YES
Social Impact Assessment	Qualified and experienced experts	D2.3-13	13	When screening by ADB confirms likely impacts on Indigenous Peoples, the borrower/client will retain qualified and experienced experts to carry out a full social impact assessment (SIA), and if impacts on Indigenous Peoples are identified, the borrower/client will prepare an IPP in conjunction with the feasibility study. The project's potential social impacts and risks will be assessed against the requirements presented in this document and applicable laws and regulations of the jurisdictions in which the project operates that pertain to Indigenous Peoples matters, including host country obligations under international law.	<p>Tangguh LNG's ESIA was guided by global standards, best practice, and by GOI regulations. Management plans are expressed as commitments within the Tangguh LNG Social and Environmental Impact Assessment (TEP AMDAL)</p> <p>Social, economic, and cultural impacts were identified in the Tangguh AMDAL. Tangguh T1/2 also undertook extensive social economic mapping as part of Resettlement planning. Comprehensive baseline data on community settlements, housing, and construction materials is reported in Tangguh T1/2 ANDAL. Long term commitments and management performance are contained in the RKL-RPL which were developed by qualified and experienced professionals from within the company and from external parties. The review process was done thoroughly, involving local and international experts in respective disciplines. In assessing AMDAL documents, internal and external experts were suitably qualified and certified accordingly.</p> <p>The ISP was developed as a primary instrument to manage identified impacts and address community needs and aspirations in conjunction with other local stakeholders. The ISP also serves to inform Tangguh LNG stakeholders on the management and mitigation of Tangguh LNG impacts, including how the benefits derived are utilized for sustainable local development. Tangguh LNG's ISP is guided by global standards, best practice, and by GOI regulations.</p>	<ol style="list-style-type: none"> 1. Tangguh T1/2 AMDAL, Chapter 4.3 2. ISP July 2006 3. Tangguh LNG Project E&S External Panel II for period 2011-2016, February 2012 4. TIAP Report On Operations & Proposed Expansion of The Tangguh LNG Project, December 2015 	YES

ITEM	SUB ITEM	ID#	PARAGRAPH	ADB 2009 SAFEGUARD POLICY REQUIREMENT	TANGGUH TRAINS 1 & 2 PERFORMANCE	DOCUMENT REVIEWED	MEET ADB REQUIREMENT
					<p>Tangguh has established and retains an External Panel. The EP has typically found that the existing Tangguh operation is on the whole compliant with Project requirements and no critical or significant risks are identified.</p> <p>BP contracted the Tangguh International Advisory Panel (TIAP) in February 2005 to provide external advice to senior BP decision-makers regarding non-commercial aspects of the Tangguh LNG Project ("the Project"). It advises BP on how Tangguh can achieve its potential as a world-class model for development. The TIAP focuses on matters relating to security, human rights, governance, revenue management, the political environment, and the broader issues relating to how Tangguh affects the people of Bintuni Bay and Papua and how it is perceived by them. It reports periodically on the project and its social performance.</p>		
	Social impact assessment scope	D2.3-14	14	<p>Based on the screening, a field-based SIA will be conducted either as part of the feasibility study or as a stand-alone activity. The SIA will, in a gender-sensitive manner, in consultation with Indigenous Peoples communities, identify the project-affected Indigenous Peoples and the potential impacts of the proposed project on them. The SIA will provide a baseline socioeconomic profile of the indigenous groups in the project area and project impact zone; assess their access to opportunities to avail themselves of basic social and economic services; assess the short- and long-term, direct and indirect, and positive and negative impacts of the project on each group's social, cultural, and economic status; assess and validate which indigenous groups will trigger the Indigenous Peoples policy principles; and assess the subsequent approaches and resource requirements for addressing the various concerns and issues of projects that affect them.</p>	<p>Based on the scoping study, an ESIA (Tangguh T1/2 AMDAL) was developed as part of the feasibility study. The ESIA was gender-sensitive and conducted in close consultation with Indigenous Peoples communities, recognizing the project-affected Indigenous Peoples and the potential impacts of the proposed project had on them. The ESIA was based on a comprehensive baseline of socioeconomic study data on indigenous groups in the project area and identified impact zones. The ESIA assessed access to and opportunities for improved social and economic services. The ESIA assessed short- and long-term, direct and indirect, and positive and negative and cumulative impacts by the project on indigenous groups and local communities' social, cultural, and economic status.</p> <p>The ESIA considered that the project would trigger the Indigenous Peoples policy principles; the AMDAL was the basis to develop the ISP (IPDP). This framed programs that delivered tangible activities to address Tangguh's social, economic and cultural impacts, in particular the various concerns and issues raised by Indigenous Peoples and local stakeholders due to project implementation.</p> <p>The BP Close Out Report ISP (2006-2011) states that all LARAP commitments were completed: RAV residents were provided with resettlement assistance relating to house construction, RAV villagers settled into their new housing and adjusting to their new lifestyle, provisions of community facilities and livelihood restoration.</p>	<ol style="list-style-type: none"> 1. Tangguh T1/2 AMDAL October 2. ISP July 2006 3. The BP Close Out Report ISP (2006-2011) 	YES
	Social impact assessment level of detail	D2.3-15	15	<p>The level of detail and comprehensiveness of the SIA will be proportional to the complexity of the proposed project and commensurate with the nature and scale of the proposed project's potential effects on Indigenous Peoples, whether positive or negative.</p>	<p>Tangguh LNG focused the ISP to serve the indigenous people of the Sebyar, Simuri, and Irarutu tribes, and on the Petuanan Arguni, Wertuwar, and Sekar Pikpik who live in 62 potentially impacted villages.</p> <p>The level of detail and comprehensiveness of the ESIA was found to be proportional to the complexity of the project and commensurate with the nature and scale of the project's potential effects on Indigenous Peoples. Negative impacts caused by project activities were managed through principles of prevention, control, and mitigation in a proper and suitable manner.</p> <p>Efforts made to keep negative impacts to a minimum and maximizing positive impacts were maximized are contained within the Community Development Programs developed as part of the Tangguh T1/2 AMDAL. These were implemented under ISP as part of the project design and intended to generate new opportunities and improved livelihoods for local households.</p>	<ol style="list-style-type: none"> 1. Tangguh LNG AMDAL October 2002 2. ISP July 2006 	YES

ITEM	SUB ITEM	ID#	PARAGRAPH	ADB 2009 SAFEGUARD POLICY REQUIREMENT	TANGGUH TRAINS 1 & 2 PERFORMANCE	DOCUMENT REVIEWED	MEET ADB REQUIREMENT
					The preparation of the AMDAL was supported by a peer review process. In addition, the AMDAL study was subject to regulatory review and input prior to finalization and approval.		
Indigenous Peoples Planning	Indigenous peoples plan	D3.3-16	16	<p>If the screening and SIA indicate that the proposed project will have impacts, positive and/or negative, on Indigenous Peoples, the borrower/client will prepare an IPP in the context of the SIA and through meaningful consultation with the affected Indigenous Peoples communities. The IPP will set out the measures whereby the borrower/client will ensure</p> <p>(i) that affected Indigenous Peoples receive culturally appropriate social and economic benefits; and</p> <p>(ii) that when potential adverse impacts on Indigenous Peoples are identified, these will be avoided to the maximum extent possible. Where this avoidance is proven to be impossible, based on meaningful consultation with indigenous communities, the IPP will outline measures to minimize, mitigate, and compensate for the adverse impacts.</p> <p>The level of detail and comprehensiveness of IPPs will vary depending on the specific project and the nature of impacts to be addressed. The borrower/client will integrate the elements of the IPP into the project's design.</p>	<p>(i) that affected Indigenous Peoples receive culturally appropriate social and economic benefits;</p> <p>The ISP's goal was to ensure that local Indigenous Peoples and others were able to participate fully in all Project social initiatives, that they receive an appropriate level of social development benefits, and that the potential induced adverse impacts associated with the development of the Tangguh Project are mitigated.</p> <p>The ISP aimed to enhance benefits to local indigenous people, reduce the risks of marginalization thereby creating a more equitable and sustainable impact from Tangguh LNG's presence. Stakeholders had particular expectations and interests related to improved quality of life, employment and increased government services. Tangguh LNG has demonstrated a long-standing commitment to local content and workforce development within the context of indigenous people prioritization and targets. Tangguh LNG prioritizes indigenous people as beneficiaries of its impact management efforts and its social investment more generally.</p> <p>Social commitments were legally binding and were initially implemented through the Tangguh Train 1 and Train 2 AMDAL approval in 2002 and subsequently updated by the TEP AMDAL. The BP Close Out Report ISP (2006-2011) states that all LARAP commitments were completed: RAV residents were provided with resettlement assistance relating to house construction, RAV villagers settled into their new housing and adjusting to their new lifestyle, provisions of community facilities and livelihood restoration.</p> <p>(ii) that when potential adverse impacts on Indigenous Peoples are identified, these will be avoided to the maximum extent possible. Where this avoidance is proven to be impossible, based on meaningful consultation with indigenous communities, the IPP will outline measures to minimize, mitigate, and compensate for the adverse impacts.</p> <p>Tangguh's sustainable approach aimed to maximize benefits while mitigating risks of marginalization, impoverishment, and adverse social impacts. Specific aspects for mitigation were developed by the project in consultation with stakeholders as detailed in the ISP section 5.</p>	<p>1. ISP July 2006</p> <p>2. Tangguh T1/2 AMDAL</p> <p>3. The BP Close Out Report ISP 2006-2011</p>	YES
	IPP elements into project design	D3.3-17	17	<p>If Indigenous Peoples are the sole or the overwhelming majority of direct project beneficiaries, and when only positive impacts are identified, the elements of an IPP could be included in the overall project design in lieu of preparing a separate IPP. In such cases, the project document will include a summary of about how the project complies with Indigenous Peoples safeguards. In particular, it will explain how the requirements for meaningful consultation are fulfilled and how the accrual of benefits has been integrated into the project design.</p>	<p>Indigenous Peoples were the overwhelming majority of direct project beneficiaries. Negative impacts from project development were identified during the ESIA.</p> <p>Stakeholders (including indigenous communities) expressed concerns during pre-Project consultations. Specifically their concerns related to: (a) opportunities to participate in the Project through employment; (b) development of the people through education, training, health services and water and sanitation; (c) the need to respect local culture and customs, and (d) the avoidance of negative Project-induced impacts (e.g., in-migration, alcohol, STDs, etc.). Taken together, an analysis of the public concerns regarding the development of the Tangguh Project and the analysis of the potential impacts of the Project provide the basis for defining the scope and content of the Project's ISP. These are detailed in Section 5 of the ISP.</p> <p>The Project made substantial effort to consult with local communities. Both</p>	<p>1. Tangguh T1/2 AMDAL</p> <p>2. ISP July 2006</p>	YES

ITEM	SUB ITEM	ID#	PARAGRAPH	ADB 2009 SAFEGUARD POLICY REQUIREMENT	TANGGUH TRAINS 1 & 2 PERFORMANCE	DOCUMENT REVIEWED	MEET ADB REQUIREMENT
					pre-Project and ongoing consultation and the promotion of participation in Project design and implementation define the Project.		
	IPP - Update Requirement	D3.3-18	18	The borrower/client will update the IPP following the completion of detailed engineering design and detailed measurement surveys. The updated IPP will closely follow the award of contract packages and the implementation time schedules of each project component or subproject. Mitigating measures to avoid adverse impacts on Indigenous Peoples and measures to enhance culturally appropriate development benefits will be adjusted, but the agreed outcomes as specified in the draft IPP will not be lowered or minimized. If new groups of Indigenous Peoples are identified prior to submission of the final IPP to ADB, meaningful consultation will be undertaken with them also.	The ISP was prepared as part of engineering design and detailed measurement surveys. No project change was recorded hence no iterations in ISP were necessary. There was no significant change in engineering design hence no change in ISP was applicable.	1. ISP July 2006 2. ISPII 2006-2010	YES
	IPP - Qualified and experienced experts provision	D3.3-19	19	The borrower/client will use qualified and experienced experts to prepare the social impact assessment and IPP. For highly complex and sensitive projects, independent advisory panel of experts not affiliated with the project will be used during project preparation and implementation. Any highly complex and sensitive projects affecting Indigenous Peoples will require an Indigenous Peoples expert on the advisory panel.	Qualified and experienced personnell were commissioned as part of project design and project execution including appropriate experts in resettlement and IP communities.	ISP July 2006	YES
Information Disclosure	Client Documents	D4.3-20	20	The borrower/client will submit to ADB the following documents to disclose on ADB's website: (i) a draft IPP and/or Indigenous Peoples planning framework, including the social impact assessment, endorsed by the borrower/client, before appraisal; (ii) the final IPP upon completion; (iii) a new or updated IPP and a corrective action plan prepared during implementation, if any; and (iv) the monitoring reports.	The final BP Tangguh ISP July 2006 was posted on the ADB website and is currently available for public access.	ISP July 2006	YES
	Relevant Information Provided in Timely Manner and Accessible and Understandable Language	D4.3-21	21	The borrower/client will provide relevant information, including information from the above documents in a timely manner, in an accessible place, and in a form and language(s) understandable to the affected Indigenous Peoples and other stakeholders. If the Indigenous Peoples are illiterate, other appropriate communication methods will be used.	Tangguh demonstrated good communication with local communities and indigenous people. Various mechanisms and media are involved such as face-to-face communication, Community Liaison officer presence in villages, distribution of the local tabloid, supporting community events on national holidays and community-specific events, and facilitating participatory meetings and community committees to develop and implement CAPs. The Project disclosed the Project IPDF, a summary of the ISP and the full ISP. In addition, the Project provided villagers with a short Indonesian-language summary description of the ISP. Dissemination of project information was conducted according to the ADB requirements for timely, accessible, understandable and appropriate.	1. LARAP July 2006 2. ISP July 2006 3. The BP Close Out Report ISP (2006-2011)	YES
Grievance Redress Mechanism	Grievance Redress Mechanism	D5.3-22	22	The borrower/client will establish a mechanism to receive and facilitate resolution of the affected Indigenous Peoples communities' concerns, complaints, and grievances. The grievance mechanism will be scaled to the impacts of the project. It should address concerns and complaints promptly, using an understandable and transparent process that is culturally appropriate, gender responsive, and accessible to the affected Indigenous Peoples communities at no cost and without retribution. The	Community-level grievance resolution process is reviewed periodically in consultation with local communities. The grievance process is communicated to the community by the Community Relations team. Tangguh LNG maintains a record of all grievances and logs them according to issue, stakeholder, and area. The Project acknowledges the need to recognize all complaints or claims and to have an established grievance tracking and resolution mechanism to efficiently and transparently address issues as they arise. Communities	1. Community Grievance Procedure Nov 2015 (Rev 3) 2. Tangguh Grievance Card 3. Tangguh Grievance Resolution Flow Chart 4. Tangguh LNG Project E&S External Panel II (2011-2016) Mid-Term Review May 2014	YES

ITEM	SUB ITEM	ID#	PARAGRAPH	ADB 2009 SAFEGUARD POLICY REQUIREMENT	TANGGUH TRAINS 1 & 2 PERFORMANCE	DOCUMENT REVIEWED	MEET ADB REQUIREMENT
				mechanism should not impede access to the country's judicial or administrative remedies. The affected Indigenous Peoples communities will be appropriately informed about the mechanism.	resident in the growth centres of Fakfak, Sorong and Manokwari as well as the towns (Bintuni, Babo and Arandai) and villages in the primary impact areas have access to the grievance tracking and resolution mechanism as described below. Tangguh LNG Project E&S External Panel II Mid Term Report (2011-2016) found no specific issues with Grievance or its reporting.		
Monitoring and Reporting	Monitoring Requirements	D6.3-23	23	The borrower/client will monitor and measure the progress of implementation of the IPP. The extent of monitoring activities will be commensurate with the project's risks and impacts. In addition to recording information to track performance, the borrower/client should use dynamic mechanisms, such as inspections and audits, to verify compliance with requirements and progress toward achieving the desired outcomes. For projects with significant adverse impacts on Indigenous Peoples, the borrower/client will retain qualified and experienced external experts or qualified NGOs to verify monitoring information. The external experts engaged by the borrower/client will advise on compliance issues, and if any significant Indigenous Peoples issues are found, the borrower/client will prepare a corrective action plan or an update to the approved IPP. The borrower/client will implement the corrective actions and follow up on these actions to ensure their effectiveness.	Tangguh established and may in future retain an External Panel for annual compliance audits by External Panel and Lenders. The External Panel First and Second Iteration undertook independent monitoring of the project's compliance environmental and social requirements during operational period between 2005 to 2016. Tangguh LNG Project EPII typically reported that the Tangguh operation was on the whole compliant with Project requirements and no critical or significant risks were identified.	<ol style="list-style-type: none"> 1. The BP Close Out Report ISP (2006-2011) 2. Tangguh LNG Project E&S External Panel II for period 2011-2016, February 2012 3. Tangguh LNG Project E&S External Panel II for period 2011-2016, February 2012 4. Tangguh LNG Project E&S External Panel II (2011-2016) Mid-Term Review May 2014 	YES
	Reporting Requirements	D6.3-24	24	The borrower/client will prepare periodic monitoring reports on the progress of IPP implementation, highlighting compliance issues and corrective actions, if any. The borrower/client will submit semiannual monitoring reports. The costs of monitoring requirements will be reflected in project budgets.	The Tangguh T1/2 AMDAL served as the key instrument detailing long-term project commitments. ISP programs indicators were aligned with the indicators set out in the AMDAL and the Management and Monitoring systems under the RKL-RPL. The RKL-RPL is issued as a public document every 6 months. ISP and ISP II encompassed environmental commitments not included in the AMDAL, i.e. commitments to the environment as part of the sustainable development concept – additional to and not related to the environmental impact management plans in the RKL-RPL. The ISP provided a basis for effective monitoring and evaluation of the programs' activities and their contribution to program objectives and IPP goals. The project has an operational Monitoring and Evaluation system that provides management with necessary information.	<ol style="list-style-type: none"> 1. ISP July 2006 2. ISP II 2011-2015, October 2011 3. Tangguh T1/2 AMDAL 4. The BP Close Out Report ISP (2006-2011) 	YES
Unanticipated Impacts	Updating IPP and social impact assessment	D7.3-25	25	If unanticipated impacts on Indigenous Peoples become apparent during project implementation, such as a change in the project's footprint, the borrower/client will carry out a social impact assessment and update the IPP or formulate a new IPP covering all applicable requirements specified in this document.	No changes in the project were identified hence no plans that affected Indigenous People were applicable.	<ol style="list-style-type: none"> 1. Tangguh T1/2 AMDAL 2. ISP July 2006 	YES

ITEM	SUB ITEM	ID#	PARAGRAPH	ADB 2009 SAFEGUARD POLICY REQUIREMENT	TANGGUH TRAINS 1 & 2 PERFORMANCE	DOCUMENT REVIEWED	MEET ADB REQUIREMENT
Special Requirements	Special considerations	E1.3-26	26	<p>Indigenous Peoples are closely tied to land, forests, water, wildlife, and other natural resources, and therefore special considerations apply if the project affects such ties. In this situation, when carrying out the social impact assessment and preparing the IPP, the borrower/client will pay particular attention to the following:</p> <ul style="list-style-type: none"> (i) the customary rights of the Indigenous Peoples, both individual and collective, pertaining to ancestral domains, lands, or territories that they traditionally own or customarily use or occupy, and where access to natural resources is vital to the sustainability of their cultures and livelihood systems; (ii) the need to protect such ancestral domains, lands, and resources against illegal intrusion or encroachment; (iii) the cultural and spiritual values that the Indigenous Peoples attribute to such lands and resources; (iv) the Indigenous Peoples' natural resources management practices and the long-term sustainability of such practices; and (v) the need to rehabilitate the livelihood systems of Indigenous Peoples who have been evicted from their lands. 	<p>The goal of the ESIA which was elaborated in the ISP was to avoid top down development. The project aimed to ensure that local Indigenous Peoples and other stakeholders were able to participate fully in all Project social initiatives, that they received an appropriate levels of social development benefits, and that the potential induced adverse impacts associated with the development of the Tangguh Project were mitigated. The strategy provided an efficient and deliverable social development program that took into account the special needs of the indigenous majority while also helping to mitigate social jealousy and conflict over the receipt of Project benefits.</p> <p>Specifically the AMDAL and later ISP and ISP II gave good attention to the following items:</p> <ul style="list-style-type: none"> i) Recognized the customary rights of IP, both individual and collective, pertaining to ancestral domains, lands, or territories that they traditionally own or customarily use or occupy, and where access to natural resources were vital to the sustainability of cultures and livelihood systems; ii) Recognized the need to protect such ancestral domains, lands, and resources against illegal intrusion or encroachment; iii) Acknowledged cultural and spiritual values that IP attribute to such lands and resources; iv) Recognized IP's natural resources management practices and the long-term sustainability of such practices; and v) Recognized the need to rehabilitate and improve the livelihood systems of Indigenous Peoples who were resettled from their lands. 	<ol style="list-style-type: none"> 1. Tangguh T1/2 AMDAL 2. LARAP July 2006 3. ISP July 2006 4. ISP II 2011-2015, October 2011 5. The BP Close Out Report ISP (2006-2011) 	YES
	Action plan	E1.3-27	27	<p>If the project involves activities that are contingent on establishing legally recognized rights to lands and territories that Indigenous Peoples have traditionally owned or customarily used or occupied, such as land titling projects, or the acquisition of such lands, the borrower/client will integrate an action plan for the legal recognition of customary rights to such lands, territories, and ancestral domains in the IPP. The action plan is normally carried out before project implementation, but in some cases it may need to be formulated concurrently with the project itself. Such legal recognition may take the following forms:</p> <ul style="list-style-type: none"> (i) full legal recognition of existing customary land tenure systems of Indigenous Peoples, or (ii) conversion of customary usage rights to communal and/or individual ownership rights 	<p>The presence of traditional indigenous (or <i>adat</i>) communities, the project's land acquisition and compensation policies took into account both the formal system of GOI law and the customary rights of the affected communities as well as the ADB and World Bank guidelines.</p> <p>The LARAP recognized <i>adat</i> communities and cultures were particularly significant across Papua. The Special Autonomy Law passed in 2001 specifically addresses the protection of <i>adat</i> communities and the status of traditional rights (<i>hak ulayat</i>). Legal recognition took by the Project took the following form:</p> <ul style="list-style-type: none"> i) full legal recognition of existing customary land tenure systems of Indigenous Peoples. 	LARAP July 2006	YES
	Custodial or user rights	E1.3-28	28	<p>If neither option is possible under national law, the IPP will include an action plan for legal recognition of perpetual or long-term renewable custodial or user rights</p>	As above	LARAP July 2006	YES
	Meaningful Consultation	E1.3-29	29	<p>In addition, for projects with potential impacts on Indigenous Peoples, the borrower/client will ensure their meaningful consultation and facilitate their informed participation on matters affecting them directly, such as proposed mitigation measures, sharing of project benefits and opportunities, and implementation arrangements.</p>	<p>Extensive Public Consultation was undertaken at an early stage in the project cycle beginning with the Agreements signed in 1999. A good level of engagement was maintained throughout project development which helped project buy-in.</p> <p>At Pre-Project consultations, local communities expressed concerns during about (a) opportunities to participate in the Project through employment; (b) development of people through education, training, health services and water and sanitation; (c) the need to respect local culture and customs, and (d) the</p>	<ol style="list-style-type: none"> 1. LARAP July 2006 2. ISP July 2006 	YES

ITEM	SUB ITEM	ID#	PARAGRAPH	ADB 2009 SAFEGUARD POLICY REQUIREMENT	TANGGUH TRAINS 1 & 2 PERFORMANCE	DOCUMENT REVIEWED	MEET ADB REQUIREMENT
					<p>avoidance of negative Project-induced impacts (e.g. in-migration, alcohol, STDs, etc.).</p> <p>The later stages of consultation resulted in more specific project aspects discussed with stakeholders. These centered around mitigation measures and planning to control risks of marginalization, impoverishment, compensation and other adverse social impacts due to in-migration.</p> <p>Tangguh undertook analysis of public concerns regarding project development. Consultations provided a basis for the analysis of potential impacts, defining the scope and content of the AMDAL and the subsequent Project's ISP.</p> <p>Since 2009 census results are shared with the local government and Tangguh regularly issues a bulletin to communities called Kadate (Kabar Dari Teluk). The content of Kadate includes the results from recent engagement activities with local communities.</p>		
Consent of affected indigenous peoples communities	Consent of affected indigenous peoples communities	E2.3-30	30	<p>Indigenous Peoples may be particularly vulnerable when project activities include</p> <p>(i) commercial development of the cultural resources and knowledge of Indigenous Peoples;</p> <p>(ii) physical displacement from traditional or customary lands; and</p> <p>(iii) commercial development of natural resources within customary lands under use that that would impact the livelihoods or the cultural, ceremonial, or spiritual uses that define the identity and community of Indigenous Peoples.</p> <p>In deciding whether to proceed with a project involving such project activities, the borrower/client will seek the consent of affected Indigenous Peoples communities.</p>	<p>A number of Indigenous Peoples communities, identified as project affected communities (or DAV) were considered vulnerable owing to project development:</p> <p>(ii) physical displacement from traditional or customary lands due to LNG plant site development; and</p> <p>(iii) commercial development of natural resources within customary lands under use would impact livelihoods. The development of marine exclusion zones along with disruption in access to fishing grounds disrupted the livelihoods of some fisherfolk.</p> <p>Extensive pre-Project consultations with communities in Bintuni Bay and subsequent consultations and promotion of the participation of stakeholders in ongoing programs. Based on the history of Public Consultation conducted, there was an appropriate level of disclosure about the project and its impacts. We also conclude that good levels of consent from project affected communities was secured by the project.</p>	<p>1. Tangguh T1/2 ANDAL</p> <p>2. LARAP July 2006</p> <p>3. ISP July 2006</p>	YES
Consent of affected indigenous peoples communities	Broad Community Support	E2.3-31	31	<p>For purposes of policy application, consent of affected Indigenous Peoples communities refers to a collective expression by the affected Indigenous Peoples communities, through individuals and/or their recognized representatives, of broad community support for the project activities listed in para. 30. Such broad community support may exist even if some individuals or groups object to the project activities.</p>	<p>An appropriate level of consent of affected Indigenous Peoples communities was secured. The Project made significant investment and effort to consult with local communities. Both pre-Project and ongoing consultation and the promotion of participation in Project design and implementation.</p>	LARAP July 2006	YES
Consent of affected indigenous peoples communities	Documentation Provision	E2.3-32	32	<p>Where broad community support has been ascertained, the borrower/client will provide documentation that details the process and outcomes of consultations with Indigenous Peoples and Indigenous Peoples' organizations, including</p> <p>(i) the findings of the SIA;</p> <p>(ii) the process of meaningful consultation with the affected Indigenous Peoples communities;</p> <p>(iii) the additional measures, including project design modification, that may be required to address adverse impacts on the Indigenous Peoples and to provide</p>	<p>Documentation on the extensive consultation process is provided in the Tangguh T1/2 ANDAL ANDAL.</p> <p>(i) The findings of the ESIA identified significant Social, Economic and Cultural Impacts on the following components:</p> <p>Berau/Bintuni Bay water quality decreases due to drilling discharges (if technically not feasible to be re-injected), dredging, dredged material disposal, and potential fuel/condensate spills;</p> <ul style="list-style-type: none"> Berau/Bintuni Bay fauna and flora increases due to artificial reef effect of platforms; decreases due to potential fuel/condensate spills, burial of rocky 	<p>1. Tangguh T1/2 ANDAL</p> <p>2. ISP July 2006</p>	YES

ITEM	SUB ITEM	ID#	PARAGRAPH	ADB 2009 SAFEGUARD POLICY REQUIREMENT	TANGGUH TRAINS 1 & 2 PERFORMANCE	DOCUMENT REVIEWED	MEET ADB REQUIREMENT
				<p>them with culturally appropriate project benefits;</p> <p>(iv) the recommendations for meaningful consultation with and participation by Indigenous Peoples communities during project implementation, monitoring, and evaluation; and</p> <p>(v) the content of any formal agreements reached with Indigenous Peoples communities and/or Indigenous Peoples' organizations.</p> <p>The borrower/client will submit documentation of the engagement process to ADB for review and for ADB's own investigation to assure itself of the existence of broad community support for the project activities. ADB will not finance the project if such support does not exist.</p>	<p>hard bottom fauna by dredged material disposal, and potential introduction of exotic species by ballast water discharges;</p> <ul style="list-style-type: none"> • Vegetation decreases due to pipeline shore approach (if horizontal directional drilling is not used) and potential fuel/condensate spills; • Onshore soil stability decreases, erosion and sedimentation increases, water quality decreases, and flora/fauna decreases due to clearing related to the project and potential illegal settlement; • Onshore fauna decreases due to noise disturbance. • Relinquishment of rights to 3,266 ha of traditional land from the Simuri tribe (Wayuri, Simuna, and Soway clans); • Reduced access to natural resources, such as fishing, hunting, sago collection, and forest areas due to the release of rights to land, and the Safety Exclusion Zone; • Change in lifestyle and income patterns/levels (increases/decreases); • Effects of village resettlement; • Improved public health conditions around the project area; • Development of human resources (through training opportunities); • Disturbances to local sea traffic due to the port area; • Increased potential for conflict and social jealousy; • Changes in community norms and values; and • Influx of migrants from outside to the Simuri people's traditional land resulting in social conflict, illegal land use, shifting cultivation. <p><i>(ii) the process of meaningful consultation with the affected Indigenous Peoples communities;</i></p> <p>The ISP describes extensive pre-Project consultations with communities in the Bay and subsequent consultations and promotion of the participation of stakeholders in ongoing programs. Figure 5.1 Outline of Tangguh Project SEIA Public Consultation Process</p> <p><i>(iii) additional measures, including project design modification, that may be required to address adverse impacts on the Indigenous Peoples and to provide them with culturally appropriate project benefits;</i></p> <p>Development and operation of the Tangguh Project introduced a variety of impacts, both positive and negative, both direct and indirect, to local, regional, provincial and national stakeholders. Extensive consultations were held with local communities during Project preparation and during execution. Measures to mitigate and manage impacts from project development were detailed in the AMDAL and further developed in the ISP as part of public consultations. These targeted groups/beneficiaries as part of program design and implementation. Participatory monitoring and evaluation of ISP programs was also a form of consultation with stakeholders that allowed them to provide feedback to the Project.</p> <p><i>(iv) recommendations for meaningful consultation with and participation by Indigenous Peoples communities during project implementation, monitoring, and evaluation;</i></p> <p>Stakeholder concerns regarding Project development (i.e. development benefits, participation and mitigation of adverse impacts) were utilized in developing the Terms of Reference for the TOR, the AMDAL and subsequently used as inputs for the development of the Project ISP.</p>		

ITEM	SUB ITEM	ID#	PARAGRAPH	ADB 2009 SAFEGUARD POLICY REQUIREMENT	TANGGUH TRAINS 1 & 2 PERFORMANCE	DOCUMENT REVIEWED	MEET ADB REQUIREMENT
					<p>Following development of the Terms of Reference for the Project ESIA, Public Hearings provided further scope for the public to give input to the ESIA process. Further consultations occurred during the process of obtaining baseline data for the AMDAL.</p> <p><i>(v) the content of any formal agreements reached with Indigenous Peoples communities and/or Indigenous Peoples' organizations.</i></p> <p>The 1999 Agreements relate to land relinquishment and resettlement plans. Subsequent formal agreements are not detailed.</p>		
Consent of affected indigenous peoples communities	Good Faith Negotiations	E2.3-33	33	When the borrower/client and the affected Indigenous Peoples have major disagreements relating to the design, the IPP, or the implementation of the activities relating to commercial development of the cultural resources, physical displacement of Indigenous Peoples, and/or to commercial development of natural resources, the borrower/client will adopt a process of good faith negotiations for resolving such differences and disagreements.	Non-technical issues discussed with project stakeholders are outlined in the Tangguh T1/2 AMDAL.	1. Tangguh T1/2 AMDAL	YES
Commercial development of cultural resources	Commercial development of cultural resources	E2.3-34	34	<p>If the project involves the commercial development of Indigenous Peoples' cultural resources and knowledge, the borrower/client will ensure that the affected communities are informed of:</p> <ul style="list-style-type: none"> (i) their rights to such resources under statutory and customary law; (ii) the scope and nature of the proposed commercial development and the parties interested or involved in such development; and (iii) the potential effects of such development on Indigenous Peoples' livelihoods, environment, and use of such resources. <p>The IPP will reflect the nature and content of agreements and will include arrangements to ensure that Indigenous Peoples receive an equitable share of the benefits to be derived from such commercial development in a culturally appropriate way.</p>	The project did not involve the commercial development of Indigenous Peoples' cultural resources and knowledge.	1. Tangguh T1/2 AMDAL 2. LARAP July 2006	YES
Physical displacement of indigenous peoples	Physical displacement of indigenous peoples	E2.3-35	35	The borrower/client will explore to the maximum extent possible alternative project designs to avoid physical displacement of Indigenous Peoples that will result in adverse impacts on their identity, culture, and customary livelihoods. In exceptional circumstances, when avoidance is impossible, the borrower/client will prepare an IPP that could be combined with a resettlement plan. Such a combined plan needs to be compatible with the Indigenous Peoples' cultural preferences and will include a land-based resettlement strategy. Where possible, the plan will allow the affected Indigenous Peoples to return to the lands and territories they traditionally owned or customarily used or occupied if the reasons for their relocation cease to exist. The plan should include provisions to rehabilitate such lands, if needed.	<p>The detailed site selection process involved physical displacement of Indigenous Peoples. Tangguh Project integrated the requirements of an IPDP into the development of its Integrated Social Program (ISP). This developed and implemented policies and programs that together met the social, economic and cultural commitments set out in the Tangguh T1/2 AMDAL. A 14 element program in the initial ISP (2006-2010) was implemented to for the development of indigenous people communities. These programs were refined and implemented under ISP II between 2010 and 2015.</p> <p>The development strategy aimed to ensure that local Indigenous Peoples and others were able to participate fully in all project social initiatives, that they received an appropriate level of social development benefits, and that induced adverse impacts associated with Tangguh development were mitigated.</p> <p>The development strategy, monitored through M&E systems delivered socio-economic development through programs that took into account the special needs of the indigenous majority.</p>	1. ISP 2006-2101, July 2006 2. ISP II 2011-2015, October 2011	YES

ITEM	SUB ITEM	ID#	PARAGRAPH	ADB 2009 SAFEGUARD POLICY REQUIREMENT	TANGGUH TRAINS 1 & 2 PERFORMANCE	DOCUMENT REVIEWED	MEET ADB REQUIREMENT
Commercial development of natural resources	Commercial development of natural resources	E2.3-36	36	<p>If the project involves the commercial development of natural resources (such as minerals, hydrocarbons, forests, water, or hunting or fishing grounds) within customary lands under use by Indigenous Peoples, the borrower/client will ensure that the affected communities are informed of</p> <ul style="list-style-type: none"> (i) their rights to such resources under statutory and customary law; (ii) the scope and nature of the proposed commercial development and the parties interested or involved in such development; and (iii) the potential effects of such development on the Indigenous Peoples' livelihoods, environment, and use of such resources. <p>The borrower/client will include in the IPP arrangements to enable the Indigenous Peoples to receive in a culturally appropriate manner an equitable share of the benefits to be derived from such commercial development that is at least equal to or higher than that of any other affected landowners.</p>	<p>The projects involved the commercial development of natural resources, i.e., hydrocarbons within customary lands under use by Indigenous Peoples.</p> <p><i>(i)their rights to such resources under statutory and customary law;</i></p> <p>The ISP targeted Indigenous People as the primary beneficiary given their status as "the customary or tribal people residing in the coastal areas of Bintuni Bay, comprising the original clans from the Sebyar, Irarutu, Simuri, and Petuanan Arguni, Wertuwar and Sekar Pikpik ethnic groups, who inhabit a defined custom-owned area, as well as the other community members in that area who are acknowledged by the indigenous people as part of their tribal community, and have lived in the custom-owned areas since before the presence of Tangguh LNG in 2002".</p> <p><i>(ii)the scope and nature of the proposed commercial development and the parties interested or involved in such development;</i></p> <p>The operation of Tangguh LNG Train 1 and Train 2 is a unitized upstream oil and gas activity under 3 Production Sharing Contracts (PSC); namely Berau PSC, Wirigar PSC and Muturi PSC (collectively known as "Tangguh PSCs").BP Berau Ltd. ("BP") has been appointed as the operator to run Tangguh LNG for and in the name of all participating interest holders under Tangguh PSC ("Tangguh Affiliates"). Tangguh Affiliates comprise a number of business entities.</p> <p><i>(iii)the potential effects of such development on the Indigenous Peoples' livelihoods, environment, and use of such resources.</i></p> <p>Development and operation of Tangguh Project brought varied impacts, both positive and negative, both direct and indirect, to local, regional, provincial and national stakeholders. Various potential adverse Project and/or Project-induced impacts including those typically associated with new resource extraction projects in remote areas, such as in-migration; economic marginalization; dilution of cultures, customs, and <i>hak ulayat</i>; increased potential for conflict (conflict over access to benefits, ethnic conflict, etc.); increased security risks; increased rates of change and a sense of loss of control; economic boom town effects; increased alcoholism and prostitution; adverse health effects including increased STDs; increased rate of resource depletion and environmental degradation.</p>	ISP July 2006	YES
Indigenous Peoples and Development	Development planning and poverty reduction strategies	E3.3-37	37	<p>In furtherance of the objectives to benefit Indigenous Peoples, developing member countries can ask ADB to support them in their development planning and poverty reduction strategies by providing financial assistance for a variety of initiatives, such as the following:</p> <ul style="list-style-type: none"> (i) strengthen local legislation to establish legal recognition of the customary or traditional land tenure systems of Indigenous Peoples; (ii) enhance participation by Indigenous Peoples in the development process by incorporating their perspectives into the design of development programs and poverty reduction strategies and providing them with opportunities to benefit more fully from development programs through policy and legal reforms, capacity building, and meaningful consultations, participation, and empowerment; 	Not Applicable	Not Applicable	Not Applicable

ITEM	SUB ITEM	ID#	PARAGRAPH	ADB 2009 SAFEGUARD POLICY REQUIREMENT	TANGGUH TRAINS 1 & 2 PERFORMANCE	DOCUMENT REVIEWED	MEET ADB REQUIREMENT
				<ul style="list-style-type: none"> (iii) support the development priorities of Indigenous Peoples through programs developed by governments in cooperation with Indigenous Peoples; (iv) address the gender and intergenerational issues that exist among many Indigenous Peoples, including the special needs of indigenous women, youth, and children; (v) prepare participatory profiles of Indigenous Peoples to document their culture, demographic structure, gender and intergenerational relations, and social organization, institutions, production systems, religious beliefs, and resource use patterns; (vi) strengthen the capacity of Indigenous Peoples communities and Indigenous Peoples' organizations to prepare, implement, monitor, and evaluate development programs; (vii) strengthen the capacity of government agencies responsible for providing development services to Indigenous Peoples; (viii) preserve and respect indigenous knowledge, including strengthening intellectual property rights; and (ix) facilitate partnerships among the government, Indigenous Peoples' organizations, civil society organizations, and the private sector to promote Indigenous Peoples' development programs. 			

APPENDIX 4**Asia Pacific HSE Policy, Tangguh ISO 14001 EMS Manual & Environmental Procedures List**

1. Asia Pacific HSE Policy, signed by Regional President Asia Pacific, dated 10 September 2014
2. Environmental Management System Manual (Document No. 900-MAN-EN-2301), next revision date 30 November 2015
3. Environmental Monitoring Procedure (Document No. 900-PRC-EN-2320), next revision date 30 September 2017
4. Non Hazardous Solid Waste Procedure (Document No. 920-PRC-EN-2321), next revision date 18 April 2017
5. Hazardous Waste Procedure (Document No. 900-PRC-EN-2322), next revision date 22 April 2017
6. Wastewater Management Procedure (Document No. 900-PRC-EN-2324), next revision date 30 September 2017
7. Environmental Sampling and Analysis Protocol by External Laboratory Procedure (Document No. 900-PRC-EN-2325), next revision date 16 October 2017
8. Environmental Communication Procedure (Document No. 900-PRC-EN-2328), next revision date 15 November 2018
9. Marine Mammals and Sea Reptiles Protection Procedure (Document No. 900-PRC-EN-2329), next revision date 5 March 2016
10. Flora and Fauna Protection Procedure (Document No. 900-PRC-EN-2330), next revision date 28 June 2018
11. Environmental Aspect & Impact Identification Procedure (Document No. 900-PRC-EN-2333), next revision date 8 October 2017
12. Non Conformity, Corrective Action and Preventive Action Procedure (Document No. 920-PRC-EN-2335), next revision date 13 November 2017
13. Internal Environmental Audit Procedure (Document No. 920-PRC-EN-2337), next revision date July 2018
14. HSE Document and Record Control Procedure (Document No. 920-PRC-HE-2750), next revision date 20 May 2017
15. HSE Regulatory Compliance Management Procedure (Document No. 920-PRC-HE-2245), next revision date December 2017
16. Tangguh Operations Oil Spill Contingency Plan (Document No. 900-PRC-CM-1001), next revision date 31 January 2016

APPENDIX 5

GROUNDWATER ANALYSIS AT NEW LANDFILL

Groundwater Analysis at New Landfill

Job Number : EV151276-Partial 2
Customer : BP Berau Ltd.
Project Name : Environmental Monitoring for Tangguh LNG Operation
Customer Ref : Contract #4420001056A

Laboratory Sample I.D :				EV151276-20
Customer Sample I.D :				BH 7
Date Sampled :				18-Aug-15
Sample Matrix :				Ground Water
No.	Test Description	Units	Regulatory Limit	Results
Physical Tests				
1	pH (Field)	S.U.	6.0 - 9.0	4.80
2	Total Dissolved Solids, TDS	mg/L	1000	3420
Anions				
1	Chloride, Cl ⁻	mg/L	-	<0.5
2	Sulphate, SO ₄ ²⁻	mg/L	-	1450
3	Sulphide as H ₂ S	mg/L	0.002	<0.001
Nutrients				
1	Nitrate, NO ₃ -N	mg/L	20	<0.005
2	Nitrite, NO ₂ -N	mg/L	1	<0.001
3	Total Phosphorus as P	mg/L	0.06	2.45
Dissolved Metals				
1	Arsenic, As	mg/L	1	<0.0005
2	Cadmium, Cd	mg/L	0.01	<0.005
3	Copper, Cu	mg/L	0.02	0.02
4	Iron, Fe	mg/L	-	<0.05
5	Lead, Pb	mg/L	0.03	0.008
6	Manganese, Mn	mg/L	0.002	28.8
7	Mercury, Hg	mg/L	-	<0.00005
8	Zinc, Zn	mg/L	0.05	1.43
Miscellaneous				
1	Biochemical Oxygen Demand, BOD ₅	mg/L	6	53
2	Chemical Oxygen Demand, COD	mg/L	50	152
Microbiology in Water				
1	E.Coli	MPN/100ml	-	ND

Note: Refer to QA/QC – Accuracy page for list of analytical methods used
 Regulatory Limit Based On PP No. 82/2001, Class II

Job Number : EV151909
 Customer : BP Berau Ltd.
 Project Name : Environmental Monitoring for Tangguh LNG Operation
 Customer Ref : Contract #4420001056A

Laboratory Sample I.D :				EV151909-6	EV151909-7	EV151909-8
Customer Sample I.D :				BHN 2	BH 3	BHN 6R
Date Sampled :				23-Nov-15	23-Nov-15	23-Nov-15
Sample Matrix :				Ground Water	Ground Water	Ground Water
No.	Test Description	Units	Regulatory Limit	Results	Results	Results
Physical Tests						
1	pH (Field)	S.U.	6.0 - 9.0	6.48	6.90	7.11
2	Total Dissolved Solids, TDS	mg/L	1000	548	542	730
Anions						
1	Chloride, Cl ⁻	mg/L	-	28.3	11.1	9.7
2	Sulphate, SO ₄ ²⁻	mg/L	-	27	37	116
3	Sulphide as H ₂ S	mg/L	0.002	<0.001	<0.001	<0.001
Nutrients						
1	Nitrate, NO ₃ -N	mg/L	20	<0.005	0.116	<0.005
2	Nitrite, NO ₂ -N	mg/L	1	<0.001	<0.001	<0.001
3	Total Phosphorus as P	mg/L	0.06	0.810	0.041	2.39
Dissolved Metals						
1	Arsenic, As	mg/L	1	0.0007	0.0013	<0.0005
2	Cadmium, Cd	mg/L	0.01	<0.005	<0.005	<0.005
3	Copper, Cu	mg/L	0.02	<0.01	<0.01	<0.01
4	Iron, Fe	mg/L	-	0.62	<0.05	0.06
5	Lead, Pb	mg/L	0.03	0.001	0.002	<0.001
6	Manganese, Mn	mg/L	0.002	1.89	0.025	0.433
7	Mercury, Hg	mg/L	-	<0.00005	<0.00005	<0.00005
8	Zinc, Zn	mg/L	0.05	0.026	0.030	0.021
Miscellaneous						
1	Biochemical Oxygen Demand, BOD ₅	mg/L	6	23	<2	37
2	Chemical Oxygen Demand, COD	mg/L	50	77	4	118
Microbiology						
1	Faecal Coliforms (Field)*	CFU/100ml	-	ND	ND	ND

Note: Refer to QA/QC – Accuracy page for list of analytical methods used
 Regulatory Limit Based On PP No. 82/ 2001, Class III

APPENDIX 6

GROUNDWATER NUMERICAL STANDARD CLASSIFICATION

Groundwater Analysis Referring to Class III Criteria of PP 82/2001

Job Number : EV151909
 Customer : BP Berau Ltd.
 Project Name : Environmental Monitoring for Tangguh LNG Operation
 Customer Ref : Contract #4420001056A

Laboratory Sample I.D :				EV151909-6	EV151909-7	EV151909-8
Customer Sample I.D :				BHN 2	BH 3	BHN 6R
Date Sampled :				23-Nov-15	23-Nov-15	23-Nov-15
Sample Matrix :				Ground Water	Ground Water	Ground Water
No.	Test Description	Units	Regulatory Limit	Results	Results	Results
Physical Tests						
1	pH (Field)	S.U.	6.0 - 9.0	6.48	6.90	7.11
2	Total Dissolved Solids, TDS	mg/L	1000	548	542	730
Anions						
1	Chloride, Cl ⁻	mg/L	-	28.3	11.1	9.7
2	Sulphate, SO ₄ ²⁻	mg/L	-	27	37	116
3	Sulphide as H ₂ S	mg/L	0.002	<0.001	<0.001	<0.001
Nutrients						
1	Nitrate, NO ₃ -N	mg/L	20	<0.005	0.116	<0.005
2	Nitrite, NO ₂ -N	mg/L	1	<0.001	<0.001	<0.001
3	Total Phosphorus as P	mg/L	0.06	0.810	0.041	2.39
Dissolved Metals						
1	Arsenic, As	mg/L	1	0.0007	0.0013	<0.0005
2	Cadmium, Cd	mg/L	0.01	<0.005	<0.005	<0.005
3	Copper, Cu	mg/L	0.02	<0.01	<0.01	<0.01
4	Iron, Fe	mg/L	-	0.62	<0.05	0.06
5	Lead, Pb	mg/L	0.03	0.001	0.002	<0.001
6	Manganese, Mn	mg/L	0.002	1.89	0.025	0.433
7	Mercury, Hg	mg/L	-	<0.00005	<0.00005	<0.00005
8	Zinc, Zn	mg/L	0.05	0.026	0.030	0.021
Miscellaneous						
1	Biochemical Oxygen Demand, BOD ₅	mg/L	6	23	<2	37
2	Chemical Oxygen Demand, COD	mg/L	50	77	4	118
Microbiology						
1	Faecal Coliforms (Field)*	CFU/100ml	-	ND	ND	ND

Note: Refer to QA/QC – Accuracy page for list of analytical methods used
 Regulatory Limit Based On PP No. 82/ 2001, Class III

APPENDIX 7

PM_{2.5} AND PM₁₀ OF AMBIENT AIR ANALYSIS RESULTS

PM_{2.5} and PM₁₀ of Ambient Air Analysis Results

Parameter (Unit)		Standard refer to PP 41 of 1999	TEP Standard *	Monitoring Result	
				A01 – Behind Soccer Field	A02 – Log Pond
Sulfur Dioxide (SO ₂) (1 Hour)	µg/m ³	900	900	<20	<20
Carbon Monoxide (CO) (1 Hour)	µg/m ³	10000	10000	<100	<100
Nitrogen Dioxide (NO ₂) (1 Hour)	µg/m ³	400	150	<5	<5
Ozone (O ₃)	µg/m ³	235	235	<20	<20
Hydrocarbon (HC) (3 Hour)	µg/m ³	160	160	<5	<5
PM ₁₀ (24 hours)	µg/m ³	150	50	73.6	37.8
PM _{2.5} (24 hours)	µg/m ³	65	25	31.8	20.7
Ash (TSP) (24 hours)	µg/m ³	230	230	132	87.7
Lead, Pb	µg/m ³	2	2	<0.001	<0.001
Noise (L _{avg})	dBA	55	45 at night 55 at day	32.9	30.8

APPENDIX 8

NO₂ AMBIENT AIR QUALITY STANDARD MEASUREMENT TIME

6-Monthly AMDAL RKL/RPL Report, July – December 2015 – NO₂ 1 hour sampling

Job Number : EV151673
 Customer : BP Berau Ltd.
 Project Name : Environmental Monitoring for
 Tangguh LNG Operation
 Customer Ref : Contract #4420001056A

Laboratory Sample I.D :				EV151673-2	EV151673-3
Customer Sample I.D :				Log Pond	Behind Soccer Field
Date Sampled :				27-Oct-15	28-Oct-15
Sample Matrix :				Ambient Air	Ambient Air
No.	Test Description	Units	Regulatory Limit	Results	Results
Ambient Sampling Condition					
1	Temperature	°C	-	24.0 - 34.0	24.6 - 32.7
2	Duration of Sampling	Hours	-	24	24
3	Pressure	mmHg	-	753 - 757	754 - 758
4	Humidity	%	-	55.0 - 94.1	50.6 - 92.4
5	Wind Speed	m/S	-	0.09 - 1.86	0.41 - 2.27
6	Dominant Wind Direction from	-	-	East	North
7	Weather	-	-	Sunny - Rainy - Cloudy	Cloudy - Sunny
Ambient Air Tests					
1	Carbon Monoxide, CO*	µg/Nm ³	30000	<100	<100
2	Nitrogen Dioxide, NO ₂ (1Hour)	µg/Nm ³	400	<5	<5
3	Oxidant, O ₃ (1 Hour)	µg/Nm ³	235	<20	<20
4	Sulfur Dioxide, SO ₂ (1 Hour)	µg/Nm ³	900	<20	<20
5	Total Hydrocarbon, HC*	µg/Nm ³	160	<5	<5
6	Particulate <2.5µm, PM _{2.5}	µg/Nm ³	65	31.8	20.7
7	Particulates <10µm, PM ₁₀	µg/Nm ³	150	73.6	37.8
8	Total Suspended Particulates, TSP	µg/Nm ³	230	132	87.7
9	Lead, Pb	µg/Nm ³	2	<0.001	<0.001
10	Noise Average (Grab) L _{avg}	dBA	-	32.9	30.8

Note: Refer to QA/QC – Accuracy page for list of analytical methods used
 Regulatory Limit based on PP No. 41 / 1999

TEP AMDAL RKL – NO₂ Monitoring Requirement for 1 hour and 24 hours

Table 5 Ambient Air Standard

No	Parameter	Measurement Time	Tangguh LNG Current Standard ¹ (µg/m ³)	Indonesian Standard ² (µg/m ³)	IFC Standard ³ (µg/m ³)	TEP Standard ⁴ (µg/m ³)
1	Sulphur Dioxide (SO ₂)	1 hour	900	900	-	900
		24 hours	150	365	20 (Guidelines)	20
2	Carbon Monoxide (CO)	1 hour	30000	30000	-	30000
		24 hours	10000	10000	-	10000
3	Nitrogen Dioxide (NO ₂)	1 hour	320	400	200 (Guidelines)	200
		24 hours	150	150	-	150
4	Ozone (O ₃)	1 hour	-	235	-	235
5	Hydrocarbon (HC)	3 hours	-	160	-	160
6	PM 10	24 hours	150	150	50 (Guidelines)	50
		24 hours	65	65	25 (Guidelines)	25
7	Ash (TSP)	24 hours	230	230	-	230
8	Lead (Pb)	24 hours	-	2	-	2

Note :

- Reference: Tangguh LNG Environmental Monitoring Procedure No. 900.PRC-EN.2320
- Reference: Government Regulation No. 41 Year 1999 regarding Air Pollution Control
- Reference: WHO Ambient Air Quality Guidelines, EHS Guidance, IFC, 2007
- Tangguh Expansion Project Standard

Republic of Indonesia Government Regulation No. 41 Year 1999 – National Air Quality Standard for NO₂

Parameter	Measurement Time	Standard
NO ₂ (Nitrogen Dioxide)	1 Hour	400 µg/Nm ³
	24 Hours	150 µg/Nm ³
	1 Year	100 µg/Nm ³

APPENDIX 9

LIST OF REVIEWED DOCUMENTS

1. Tangguh T1/2 AMDAL 2002
2. Tangguh Expansion Project ANDAL Term of Reference 2013
3. Tangguh Expansion Project AMDAL 2014
4. Environmental Permit for Tangguh LNG Project Integrated Activities No. 02.37.07 Year 2014
5. Environmental Permit Amendment No. SK.535/Menlhk-Setjen/2015
6. Tangguh Sustainable Development Plan 2015 – 2019 (IDN-AFC-OP-160001)
7. Tangguh Integrated Social Program (ISP 2005 – 2010)
8. LARAP 2006
9. Wastewater Discharge Permit No. 125 Year 2013
10. Temporary Hazardous Waste Storage Permit, Teluk Bintuni Regent Decree No. 188.4.5/A.39 year 2014
11. Temporary Hazardous Waste Storage Permit, Teluk Bintuni Regent Decree No. 011/18/BUP-TB/IV/2011
12. Temporary Hazardous Waste Storage Permit, Teluk Bintuni Regent Decree No. 188.4.5/A.38 year 2014
13. Asia Pacific HSE Policy, signed by Regional President Asia Pacific
14. Environmental Management System Manual (900-MAN-EN-2301)
15. Environmental Monitoring Procedure (900-PRC-EN-2320)
16. Non Hazardous Solid Waste Procedure (920-PRC-EN-2321)
17. Hazardous Waste Procedure (900-PRC-EN-2322)
18. Wastewater Management Procedure (900-PRC-EN-2324)
19. Environmental Sampling and Analysis Protocol by External Laboratory Procedure (900-PRC-EN-2325)
20. Environmental Communication Procedure (Document No. 900-PRC-EN-2328), next revision date 15 November 2018
21. Marine Mammals and Sea Reptiles Protection Procedure (900-PRC-EN-2329)
22. Flora and Fauna Protection Procedure(900-PRC-EN-2330)
23. Environmental Aspect & Impact Identification Procedure (900-PRC-EN-2333)
24. Non Conformity, Corrective Action and Preventive Action Procedure (920-PRC-EN-2335)
25. Internal Environmental Audit Procedure (920-PRC-EN-2337)
26. HSE Document and Record Control Procedure (920-PRC-HE-2750)
27. HSE Regulatory Compliance Management Procedure (920-PRC-HE-2245)
28. Tangguh Operations Oil Spill Contingency Plan (900-PRC-CM-1001)
29. GHG Management Strategy (901-PHI-EM-0003)
30. 6-Monthly AMDAL RKL-RPL Implementation Report January – June 2015
31. 6-Monthly AMDAL RKL-RPL Implementation Report July – December 2015
32. Regular Monitoring for Lenders Requirements at Tangguh LNG 2014
33. Regular Monitoring for Lenders Requirements at Tangguh LNG 2015
34. Tangguh Flaring and GHG Data 2010 – 2015
35. Tangguh IFC AMDAL Gap Analysis (ERM)
36. Tangguh LIDAR
37. Tangguh Sensitivity Mapping
38. Tangguh Health Risk Assessment Procedure (920-PRC-HS-2420)

39. Tangguh Hazardous and Toxic Material Management Procedure (920-PRC-HS-2432)
40. GOO Safety Performance 2011-2015
41. Tangguh Independent Advisory Panel Report 2015
42. Tangguh Independent Advisory Panel Report 2016
43. Community Grievance Procedure (IDN-000-PRC-OP-160001)
44. Public Consultation and Disclosure Plan (IDN-000-PRC-PM-160001)
45. Integrated Social Program 2006 – 2010
46. Integrated Social Program 2011 – 2015
47. Household Income Survey – Summary 2015 by LabSosio UI Summary of Research Report, Household Income Survey, Bintuni Bay Regency and Fakfak regency West papua Province
48. Grievance Resolution Flow Chart, with Grievance Form and grievance Log Format
49. Sample community grievance and resolution provided
50. YPTB INFO (Slideshow provided the following Information: Background, Objectives, Main Activities, Organization Committee, Number of Local Contractor)
51. YPTB Financial Statement (Reflects Independent Auditor’s Certification that the financial reports were in conformity with the Indonesian Financial Accounting Standards for non-Publicly Accountable Entities)
52. Map of Subsurface Area Covered by BP Concession
53. Chronology of Consultation and Disclosure Activities that will be prepared by BP
54. Executive Summary of Governance Gap Assessment
55. Laporan Survey Sosial Ekonomi RAVs 2009 Final
56. BP Tangguh Close Out Report (2006 – 2011)
57. Tangguh LNG EPII 3rd Monitoring
58. Tangguh LNG EP 4th Monitoring
59. Regular Monitoring for Lenders Requirements at Tangguh LNG 2014
60. Regular Monitoring for Lenders Requirements at Tangguh LNG 2015
61. BP Indonesia Biodiversity Action Plan
62. Tangguh ERP OSC Tactical Guide 900-PRC-HS-2550-B – Blevé
63. Tangguh ERP OSC Tactical Guide 900-PRC-HS-2550-B – PLN Substation
64. 900-PRC-HS-2550-A – IMG for Oil Spill Response
65. Centralized Waste Accumulation Area, Landfill Operation Non-Permit Activities at Non-Production Facility (NPF) Standard Operation Procedure (TGH-89-PRC-MM-80002)