PTT Exploration & Production Public Company Limited

2024 CDP Corporate Questionnaire 2024

Word version

Important: this export excludes unanswered questions
This document is an export of your organization's CDP questionnaire response. It contains all data points for questions that are answered or in progress. There may be questions or data points that you have been requested to provide, which are missing from this document because they are currently unanswered. Please note that it is your responsibility to verify that your questionnaire response is complete prior to submission. CDP will not be liable for any failure to do so.
Terms of disclosure for corporate questionnaire 2024 - CDP

.

10/09/2024, 08:53 am

Contents

C1. Introduction

(1.3) Provide an overview and introduction to your organization.

(1.3.2) Organization type

Select from:

☑ Privately owned organization

(1.3.3) Description of organization

PTT Exploration and Production Public Company Limited (PTTEP), a Thai national petroleum exploration and production organization, is a publicly listed company on the Thai stock exchange, and a subsidiary of PTT Public Company Limited, Thailand's national petroleum company. PTTEP's mission is to operate globally to provide reliable energy supply and sustainable value to all stakeholders. Therefore, we set our vision to be an energy partner of choice through competitive performance and innovation for long-term value creations. Operating under the philosophy and concept of sustainable development, PTTEP strives to provide energy security through continuous growth and competitive returns with low impact on environment and society through responsible operations in response to the stakeholder expectations. PTTEP realizes that it is important to build sustainability from within by fostering strong business performance on a robust business foundation. The goal is to create long-term value for all stakeholders while contributing to the sustainability of society as a whole (From We to World), aligning with PTTEP's vision to become the "Energy Partner of Choice". The framework comprises of three main components namely: High Performance Organization (HPO), Governance, Risk Management and Compliance (GRC), and Stakeholder Value Creation (SVC). The framework also corresponds with the United Nations Sustainable Development Goals (SDGs). PTTEP is confident that this strong foundation as well as conscious consideration of all stakeholders' interests will enable us to deliver value and foster sustainability for the wider world. (From We to World). PTTEP had worldwide operations of 54 projects in 12 countries as of 31th, December 2023. The company is engaged in the exploration, extraction, production and development of petroleum products. It produces crude oil, condensate, natural gas and liquefied petroleum gas (LPG). The company is also engaged in petroleum-related businesses, such as jetty, bulk tanks and warehouse management.
[Fixed row]

(1.4) State the end date of the year for which you are reporting data. For emissions data, indicate whether you will be providing emissions data for past reporting years.

	End date of reporting year	Alignment of this reporting period with your financial reporting period	Indicate if you are providing emissions data for past reporting years
	12/30/2023	*Select from:* ☑ Yes	*Select from:* ☑ No

[Fixed row]

(1.5) Provide details on your reporting boundary.

	Is your reporting boundary for your CDP disclosure the same as that used in your financial statements?	How does your reporting boundary differ to that used in your financial statement?
	Select from: ☑ No	*Reporting boundary for CDP disclosure covered the operations that company has controlled over.*

[Fixed row]

(1.6) Does your organization have an ISIN code or another unique identifier (e.g., Ticker, CUSIP, etc.)?

ISIN code - bond

(1.6.1) Does your organization use this unique identifier?

Select from:

☑ Yes

(1.6.2) Provide your unique identifier

TH0355A10Z04

ISIN code - equity

(1.6.1) Does your organization use this unique identifier?

Select from:

☑ No

CUSIP number

(1.6.1) Does your organization use this unique identifier?

Select from:

☑ No

Ticker symbol

(1.6.1) Does your organization use this unique identifier?

Select from:

☑ No

SEDOL code

(1.6.1) Does your organization use this unique identifier?

Select from:

☑ No

LEI number

(1.6.1) Does your organization use this unique identifier?

Select from:

☑ No

D-U-N-S number

(1.6.1) Does your organization use this unique identifier?

Select from:

☑ No

Other unique identifier

(1.6.1) Does your organization use this unique identifier?

Select from:

☑ No

[Add row]

(1.24) Has your organization mapped its value chain?

(1.24.1) Value chain mapped

Select from:

☑ Yes, we have mapped or are currently in the process of mapping our value chain

(1.24.2) Value chain stages covered in mapping

Select all that apply

☑ Upstream value chain

☑ Downstream value chain

(1.24.3) Highest supplier tier mapped

Select from:

☑ Tier 1 suppliers

(1.24.4) Highest supplier tier known but not mapped

Select from:

☑ Tier 2 suppliers

(1.24.7) Description of mapping process and coverage

PTTEP has fully identified and mapped the upstream and downstream value chain by ranking the group of suppliers/contractors/customers from low to high risk and contract value dimension. The company focused on the majority of supplier/contractors/customers. The data to be collected and estimated are mainly GHG Emissions Scope 3.
[Fixed row]

(1.24.1) Have you mapped where in your direct operations or elsewhere in your value chain plastics are produced, commercialized, used, and/or disposed of?

	Plastics mapping	Primary reason for not mapping plastics in your value chain	Explain why your organization has not mapped plastics in your value chain
	Select from: ☑ No, but we plan to within the next two years	*Select from:* ☑ Not an immediate strategic priority	*As part of tier2 customers, PTTEP is planning to map this value chain in the near future.*

[Fixed row]

C2. Identification, assessment, and management of dependencies, impacts, risks, and opportunities

(2.1) How does your organization define short-, medium-, and long-term time horizons in relation to the identification, assessment, and management of your environmental dependencies, impacts, risks, and opportunities?

Short-term

(2.1.1) From (years)

0

(2.1.3) To (years)

1

(2.1.4) How this time horizon is linked to strategic and/or financial planning

The short-term time frame is chosen to align with PTTEP's short-term strategy process. In addition, the 0-1 year time frame allows the use of historical time periods and probabilistic studies to forecast the short-term climate risks and opportunities.

Medium-term

(2.1.1) From (years)

2

(2.1.3) To (years)

11

(2.1.4) How this time horizon is linked to strategic and/or financial planning

The medium-term time frame draws upon climate modelling data analysis and probabilistic modelling to anticipate climatic changes in this time period.

Long-term

(2.1.1) From (years)

12

(2.1.2) Is your long-term time horizon open ended?

Select from:
☑ No

(2.1.3) To (years)

26

(2.1.4) How this time horizon is linked to strategic and/or financial planning

The long-term analysis involves the use of climate scenario analysis in addition to the modelling data analysis and probabilistic study to understand the range of impacts that can occur over 12 years from now.
[Fixed row]

(2.2) Does your organization have a process for identifying, assessing, and managing environmental dependencies and/or impacts?

	Process in place	Dependencies and/or impacts evaluated in this process
	Select from: ☑ Yes	*Select from:* ☑ Both dependencies and impacts

[Fixed row]

(2.2.1) Does your organization have a process for identifying, assessing, and managing environmental risks and/or opportunities?

	Process in place	Risks and/or opportunities evaluated in this process	Is this process informed by the dependencies and/or impacts process?
	Select from: ☑ Yes	*Select from:* ☑ Both risks and opportunities	*Select from:* ☑ Yes

[Fixed row]

(2.2.2) Provide details of your organization's process for identifying, assessing, and managing environmental dependencies, impacts, risks, and/or opportunities.

Row 1

(2.2.2.1) Environmental issue

Select all that apply

☑ Water

(2.2.2.2) Indicate which of dependencies, impacts, risks, and opportunities are covered by the process for this environmental issue

Select all that apply

☑ Dependencies

☑ Impacts

☑ Risks

(2.2.2.3) Value chain stages covered

Select all that apply

☑ Direct operations

(2.2.2.4) Coverage

Select from:

☑ Full

(2.2.2.7) Type of assessment

Select from:

☑ Qualitative and quantitative

(2.2.2.8) Frequency of assessment

Select from:

☑ Every three years or more

(2.2.2.9) Time horizons covered

Select all that apply

☑ Short-term

☑ Medium-term

☑ Long-term

(2.2.2.10) Integration of risk management process

Select from:

☑ Integrated into multi-disciplinary organization-wide risk management process

(2.2.2.11) Location-specificity used

Select all that apply

☑ Site-specific

☑ Local
☑ Sub-national

(2.2.2.12) Tools and methods used

Commercially/publicly available tools
☑ WRI Aqueduct
☑ WWF Water Risk Filter

Enterprise Risk Management
☑ Internal company methods

International methodologies and standards
☑ Environmental Impact Assessment
☑ IPCC Climate Change Projections
☑ ISO 14001 Environmental Management Standard

Other
☑ External consultants

(2.2.2.13) Risk types and criteria considered

Acute physical
☑ Cyclones, hurricanes, typhoons
☑ Drought
☑ Flood (coastal, fluvial, pluvial, ground water)
☑ Heavy precipitation (rain, hail, snow/ice)
☑ Pollution incident

Chronic physical
☑ Water stress
☑ Change in land-use
☑ Water quality at a basin/catchment level
☑ Water availability at a basin/catchment level

☑ Groundwater depletion
☑ Declining water quality
☑ Declining ecosystem services
☑ Increased levels of environmental pollutants in freshwater bodies
☑ Seasonal supply variability/interannual variability
☑ Changing temperature (air, freshwater, marine water)
☑ Changing precipitation patterns and types (rain, hail, snow/ice)

Policy

☑ Increased pricing of water
☑ Changes to national legislation
☑ Regulation of discharge quality/volumes
☑ Increased difficulty in obtaining operations permits
☑ Changes to international law and bilateral agreements
☑ Increased difficulty in obtaining water withdrawals permit
☑ Statutory water withdrawal limits/changes to water allocation
☑ Mandatory water efficiency, conservation, recycling, or process standards
☑ Introduction of regulatory standards for previously unregulated contaminants

Market

☑ Availability and/or increased cost of raw materials
☑ Inadequate access to water, sanitation, and hygiene services (WASH)

Reputation

☑ Stakeholder conflicts concerning water resources at a basin/catchment level

Technology

☑ Unsuccessful investment in new technologies

Liability

☑ Non-compliance with regulations

(2.2.2.14) Partners and stakeholders considered

Select all that apply

☑ NGOs
☑ Customers
☑ Employees
☑ Investors
☑ Local communities
☑ Water utilities at a local level

☑ Regulators

(2.2.2.15) Has this process changed since the previous reporting year?

Select from:

☑ No

(2.2.2.16) Further details of process

PTTEP has conducted water risk assessment to assess future potential water related risk on operating assets based on four different scenarios as follows: Event A: increase in cost of water Event B: physical water parameters Event C: increased regulatory controls Event D: surrounding catchment/water use To fully address comprehensive water related risk scenarios such as physical risks, regulatory and pricing risk and reputation (i.e. stakeholder conflict) risks, general water information of each asset was provided by worldwide accepted water tools. The Aqueduct developed by WRI, and the Water Risk Filter developed by WWF incorporate PTTEP site-specific data (including financial data and non-financial data). Each global tool used in the study provides information for different objectives. WRI's Aqueduct provides more in-depth information on water stress, water depletion, inter-annual variability, seasonal variability, groundwater table decline, drought risk, Untreated connected wastewater (by region) and scenario analysis. In addition, WWF Water Risk Filter provides information related to levels of water scarcity risk, flood risk, water quality risk, regulatory risk and reputation risk. The water risk assessment will generate water-related risk levels based on the company's risk matrix. In 2023 we updated our assessment for event risks to cover 3 timescales: 2023, medium (2024-2030) and long (2031-2050) term. The outcomes of water risk assessment can assist PTTEP decision makers on water-related risk identification, quantification of the magnitude of impacts to the PTTEP business if the risks occur at high level, water-related risk mitigation and management plan are required. However, the assessment results show that PTTEP absolutely has moderate and low water-related risks for all assessed timeframe and PTTEP assets and support bases. The water related risks have to be assessed regularly or when having significant change to ensure water related risks are monitored and properly mitigated. Thus, the water-related risks are incorporated into the corporate risk monitoring system to monitor and manage at corporate level.

Row 2

(2.2.2.1) Environmental issue

Select all that apply

☑ Climate change

(2.2.2.2) Indicate which of dependencies, impacts, risks, and opportunities are covered by the process for this environmental issue

Select all that apply

☑ Dependencies

☑ Impacts
☑ Risks
☑ Opportunities

(2.2.2.3) Value chain stages covered

Select all that apply
☑ Direct operations

(2.2.2.4) Coverage

Select from:
☑ Full

(2.2.2.7) Type of assessment

Select from:
☑ Qualitative and quantitative

(2.2.2.8) Frequency of assessment

Select from:
☑ More than once a year

(2.2.2.9) Time horizons covered

Select all that apply
☑ Short-term
☑ Medium-term
☑ Long-term

(2.2.2.10) Integration of risk management process

Select from:

☑ Integrated into multi-disciplinary organization-wide risk management process

(2.2.2.11) Location-specificity used

Select all that apply

☑ Site-specific

☑ Local

☑ Sub-national

☑ National

(2.2.2.12) Tools and methods used

Commercially/publicly available tools

☑ Other commercially/publicly available tools, please specify :TCFD

Enterprise Risk Management

☑ Enterprise Risk Management

☑ Internal company methods

International methodologies and standards

☑ Environmental Impact Assessment

☑ IPCC Climate Change Projections

☑ ISO 14001 Environmental Management Standard

Other

☑ External consultants

☑ Scenario analysis

(2.2.2.13) Risk types and criteria considered

Acute physical

☑ Cyclones, hurricanes, typhoons

☑ Drought
☑ Flood (coastal, fluvial, pluvial, ground water)
☑ Heat waves
☑ Heavy precipitation (rain, hail, snow/ice)

Chronic physical
☑ Increased severity of extreme weather events
☑ Sea level rise
☑ Water stress
☑ Water quality at a basin/catchment level

Policy
☑ Carbon pricing mechanisms

Market
☑ Uncertainty in the market signals

Reputation
☑ Increased partner and stakeholder concern and partner and stakeholder negative feedback
☑ Negative press coverage related to support of projects or activities with negative impacts on the environment (e.g. GHG emissions, deforestation & conversion, water stress)

Technology
☑ Transition to lower emissions technology and products

Liability
☑ Exposure to litigation
☑ Non-compliance with regulations

(2.2.2.14) Partners and stakeholders considered

Select all that apply
☑ NGOs
☑ Regulators

☑ Customers
☑ Employees
☑ Investors
☑ Suppliers

(2.2.2.15) Has this process changed since the previous reporting year?

Select from:
☑ No

(2.2.2.16) Further details of process

PTTEP has a process to identify and assess climate related risks including physical and transition risks. Climate-related risks and opportunities are assessed by a third-party climate consultant and scored against PTTEP's enterprise risk matrix based on the frequency and likelihood of risks. Risks identified in the assessment were ranked according to Likelihood (Score 1-5) and Impact which is categorized into 5 levels of impact. This provides PTTEP with a framework for continual review and assessment and allows the cost of potential impacts and management options to be integrated into business planning to determine any potential substantive impact. For the physical risk assessment process, changes in intensity and/or frequency in tropical cyclones, heavy precipitation, droughts, heatwaves and other water-related were reviewed for each of PTTEP's assets for the time horizons: short term (current - 2025), medium term (2026-2035) and long term (2036-2050). Subsequently, the possible impacts on PTTEP assets as a result of the expected changes were quantified in a financial impact assessment using historical events and PTTEP's risk matrix. For the transition risk assessment, policy, legal, market, technology and reputation risks were assessed. The approach was structured to review potential changes at asset-level for market and carbon pricing risks as well as technology risks, in addition to country-level for the remaining transition risks. In the assessment of physical risks, up to three scenarios are applied. These correspond to
[Add row]

(2.2.7) Are the interconnections between environmental dependencies, impacts, risks and/or opportunities assessed?

(2.2.7.1) Interconnections between environmental dependencies, impacts, risks and/or opportunities assessed

Select from:
☑ Yes

(2.2.7.2) Description of how interconnections are assessed

The assessment analyzes interconnection between the climate and water risk likelihood and severity as well as the risk to the business across three timeframes. For climate risks, the assessment conducts through the time horizons 2025, 2035 and 2050 including physical risks (tropical cyclones, heavy precipitation, droughts,

water stress, floods, and heatwaves) and transition risks (policy, legal, market, technology and reputation). Identifying risk and its impacts and opportunities as well as mitigations are considered. For water risks, the assessment conducts through the current year, 2030, and 2050 – under various concerns encompassing physical, regulatory, reputational, operational, and basin-specific water challenges. This multi-dimensional assessment allows the company to prioritize water-related risks by integrating financial data based on their potential financial impact, guiding targeted mitigation efforts, and identifying opportunities for assessment beyond identifying risks. It also highlights water efficiency opportunities in high water stress areas, such as collaborating with the local community to initiate water bank projects, enabling proactive management of water resources, and tracking progress as continuous monitoring ensures that risks are regularly reassessed and mitigation strategies adapt to changing circumstances. PTTEP has applied the generated produced water for improving the oil recovery at our oil fields by water flooding system. Water flooding or water injection is where water is injected into the oil field, to increase pressure and thereby stimulate production. To ensure opportunity realization, the target "zero produced water discharge" in Thailand operations was established and applied in focus areas. This target through injection of produced water back into depleted petroleum reservoirs is being closely monitored and annually disclosed to public.
[Fixed row]

(2.3) Have you identified priority locations across your value chain?

(2.3.1) Identification of priority locations

Select from:

☑ Yes, we are currently in the process of identifying priority locations

(2.3.2) Value chain stages where priority locations have been identified

Select all that apply

☑ Direct operations

(2.3.3) Types of priority locations identified

Sensitive locations

☑ Areas of limited water availability, flooding, and/or poor quality of water

Locations with substantive dependencies, impacts, risks, and/or opportunities

☑ Locations with substantive dependencies, impacts, risks, and/or opportunities relating to water

(2.3.4) Description of process to identify priority locations

PTTEP identifies priority locations by using the WRI Aqueduct to classify water stress levels with the company's localized information.

(2.3.5) Will you be disclosing a list/spatial map of priority locations?

Select from:

☑ Yes, we will be disclosing the list/geospatial map of priority locations

(2.3.6) Provide a list and/or spatial map of priority locations

WRI Aqueduct Tool for Water Stress (2024).pdf
[Fixed row]

(2.4) How does your organization define substantive effects on your organization?

Risks

(2.4.1) Type of definition

Select all that apply

☑ Quantitative

(2.4.2) Indicator used to define substantive effect

Select from:

☑ Direct operating costs

(2.4.3) Change to indicator

Select from:

☑ % increase

(2.4.4) % change to indicator

Select from:

☑ 1-10

(2.4.6) Metrics considered in definition

Select all that apply

☑ Frequency of effect occurring

☑ Time horizon over which the effect occurs

☑ Likelihood of effect occurring

(2.4.7) Application of definition

Project cost schedule: an impact on cost or schedule over 5% or 10%, respectively.

Opportunities

(2.4.1) Type of definition

Select all that apply

☑ Qualitative

☑ Quantitative

(2.4.2) Indicator used to define substantive effect

Select from:

☑ Revenue

(2.4.3) Change to indicator

Select from:

☑ % increase

(2.4.4) % change to indicator

Select from:

☑ 1-10

(2.4.6) Metrics considered in definition

Select all that apply

☑ Frequency of effect occurring

☑ Time horizon over which the effect occurs

☑ Likelihood of effect occurring

(2.4.7) Application of definition

PTTEP applies Corporate Risk Matrix for climate risk assessment including risk and opportunity in order to ensure consistency in risk management processes. A risk and opportunity are assigned an impact rating from minor (1) to critical (5) in at least one of the seven following cost categories based on PTTEP's Risk Management Standard: project cost, legal / compliance, property damage, financial, people, environment and reputation. A substantive impact is defined differently across the former cost categories. In particular, substantive impact is based on quantitative limits for the project/schedule, financial, property damage and compliance costs categories, whereas qualitative criteria are set for the legal, people, environment and reputation categories.

Risks

(2.4.1) Type of definition

Select all that apply

☑ Qualitative

(2.4.6) Metrics considered in definition

Select all that apply

☑ Frequency of effect occurring

☑ Time horizon over which the effect occurs

☑ Likelihood of effect occurring

(2.4.7) Application of definition

Water: PTTEP Water Risk Assessment is a mean to assess water related risk event likelihood and severity that might affect PTTEP operations in current, 2030 and 2050 timeframe. The tool enables PTTEP to systematically gather important information at the site, asset, and group levels. This data is then analyzed for four types

of risks related to operating costs and operations affected by physical, regulatory, and surrounding catchment/water use factors. The tool estimates the financial impact of these risks. It also shows the results of water-related risk assessment and scenario analysis, which can be presented on PTTEP's risk matrix.

Risks

(2.4.1) Type of definition

Select all that apply

☑ Quantitative

(2.4.2) Indicator used to define substantive effect

Select from:

☑ Other, please specify :fines

(2.4.3) Change to indicator

Select from:

☑ Absolute increase

(2.4.5) Absolute increase/ decrease figure

200000

(2.4.6) Metrics considered in definition

Select all that apply

☑ Frequency of effect occurring

☑ Time horizon over which the effect occurs

☑ Likelihood of effect occurring

(2.4.7) Application of definition

Legal/compliance: fines USD200k.

Risks

(2.4.1) Type of definition

Select all that apply

☑ Quantitative

(2.4.2) Indicator used to define substantive effect

Select from:

☑ Other, please specify :compensation

(2.4.3) Change to indicator

Select from:

☑ Absolute increase

(2.4.5) Absolute increase/ decrease figure

1000000

(2.4.6) Metrics considered in definition

Select all that apply

☑ Frequency of effect occurring

☑ Time horizon over which the effect occurs

☑ Likelihood of effect occurring

(2.4.7) Application of definition

Legal/compliance: compensations USD1 million.

Risks

(2.4.1) Type of definition

Select all that apply

☑ Quantitative

(2.4.2) Indicator used to define substantive effect

Select from:

☑ Other, please specify :loss

(2.4.3) Change to indicator

Select from:

☑ Absolute increase

(2.4.5) Absolute increase/ decrease figure

5000000

(2.4.6) Metrics considered in definition

Select all that apply

☑ Frequency of effect occurring

☑ Time horizon over which the effect occurs

☑ Likelihood of effect occurring

(2.4.7) Application of definition

Property damage: loss USD5 million or USD50 million, respectively.

Risks

(2.4.1) Type of definition

Select all that apply

☑ Qualitative

(2.4.6) Metrics considered in definition

Select all that apply

☑ Frequency of effect occurring

☑ Time horizon over which the effect occurs

☑ Likelihood of effect occurring

(2.4.7) Application of definition

PTTEP applies Corporate Risk Matrix for climate risk assessment including risk and opportunity in order to ensure consistency in risk management processes. A risk is assigned an impact rating from minor (1) to critical (5) in at least one of the seven following cost categories based on PTTEP's Risk Management Standard: project cost, legal / compliance, property damage, financial, people, environment and reputation. A substantive impact is defined differently across the former cost categories. In particular, substantive impact is based on qualitative criteria for the legal, people, environment and reputation categories. For the qualitative criteria, a "serious" (4) and "critical" (5) impact rating corresponds to the following: - legal(/compliance): a (4) corresponds to suspension of stock trading, suspension of licenses and imprisonment for 6-12 months, whereas a (5) corresponds to the dismissal of the board and management, revocation of any licenses, and imprisonment for over 12 months. - people: a (4) corresponds to multiple lost workday cases, one permanent disability or one fatality, whereas a (5) corresponds to multiple fatalities. - environment: a (4) corresponds to a 10,000 bbl oil spill that requires regional assistance, whereas a (5) corresponds to a 100,000 bbl oil spill with devastating environmental impacts that requires international assistance. - reputation: a (4) corresponds to national media coverage and local community protest, whereas a (5) corresponds to international media coverage and a formal complaint by an international authority.

Risks

(2.4.1) Type of definition

Select all that apply

☑ Quantitative

(2.4.2) Indicator used to define substantive effect

Select from:

☑ Other, please specify :♂Net income

(2.4.3) Change to indicator

Select from:

☑ % decrease

(2.4.4) % change to indicator

Select from:

☑ 1-10

(2.4.6) Metrics considered in definition

Select all that apply

☑ Frequency of effect occurring

☑ Time horizon over which the effect occurs

☑ Likelihood of effect occurring

(2.4.7) Application of definition

Water: PTTEP has developed a risk assessment matrix to comprehensively evaluate the likelihood and financial consequences of potential risk events. Five distinct financial risk exposure bands were defined based on the impact of these events on Net Income (NI). Any risk events (operation cost, regulatory change, and surrounding environment) that could lead to NI impact exceeding 1% were classified as having a "serious or substantive" financial impact.
[Add row]

(2.5) Does your organization identify and classify potential water pollutants associated with its activities that could have a detrimental impact on water ecosystems or human health?

(2.5.1) Identification and classification of potential water pollutants

Select from:

☑ Yes, we identify and classify our potential water pollutants

(2.5.2) How potential water pollutants are identified and classified

According to the environmental management strategy and requirements, PTTEP developed the Environmental Management Standard as a master document for environment management in accordance with the PTTEP SSHE Management System (SSHE-MS). The main objective of this Standard is to: 1) assist PTTEP Assets and Subsidiaries to properly manage the Company environmental aspects and impacts in the environmentally sound management practices which include compliance with the regulations and the Company requirements, and 2) ensure the effectiveness of mitigation and prevention of the environmental pollution including water pollution, and encourage the continual improvement culture. As required by PTTEP SSHE MS implementation as well as company risk management and voluntary implementation of ISO14001 for all PTTEP operating assets and petroleum support bases, the potential water pollutant including releasing of all types and forms of pollutant to water and/or sea e.g. wastes, wastewater, chemical substance, produced water and hydrocarbon liquid from each activity will be identified and assessed thorough all stages of activity both normal and abnormal operations. Moreover, a procedure Environmental Impact Assessment for Exploration, Production, and Decommissioning is also in place to identify water pollutants which has potential impact to human health and ecosystems of community located nearby our operating assets.
[Fixed row]

(2.5.1) Describe how your organization minimizes the adverse impacts of potential water pollutants on water ecosystems or human health associated with your activities.

Row 1

(2.5.1.1) Water pollutant category

Select from:
☑ Oil

(2.5.1.2) Description of water pollutant and potential impacts

PTTEP main product is natural gas and crude oil. The environmental potential impacts from PTTEP production may cause spill or leakage of hydrocarbon (HC) liquid during transferring/ offloading or from truck/vessel collision, subsea pipelines rupture/corrosion.

(2.5.1.3) Value chain stage

Select all that apply
☑ Direct operations

(2.5.1.4) Actions and procedures to minimize adverse impacts

Select all that apply

☑ Resource recovery
☑ Beyond compliance with regulatory requirements
☑ Reduction or phase out of hazardous substances
☑ Implementation of integrated solid waste management systems
☑ Requirement for suppliers to comply with regulatory requirements
☑ Industrial and chemical accidents prevention, preparedness, and response
☑ Assessment of critical infrastructure and storage condition (leakages, spillages, pipe erosion etc.) and their resilience

(2.5.1.5) Please explain

PTTEP developed the spill management plan and emergency management plan to protect the environmental potential impact in accordance with the PTTEP SSHE Management System (SSHE-MS). The main objective of this Standard is to: 1) assist PTTEP Assets and Subsidiaries to properly manage the Company environmental aspects and impacts in the environmentally sound management practices which include compliance with the regulations and the Company requirements, and 2) ensure the effectiveness of mitigation and prevention of the environmental pollution including water pollution, and encourage the continual improvement culture. In 2023, the Company's spilled oil and chemicals was at the rate of 0.21 tonnes per million tonnes of petroleum production which is decreased from the previous years. PTTEP performance on spill rate has continuously been kept lower than peers or IOGP average.

Row 2

(2.5.1.1) Water pollutant category

Select from:
☑ Other synthetic organic compounds

(2.5.1.2) Description of water pollutant and potential impacts

The potential impacts from PTTEP operations that has been identified and assessed since seismic, construction, exploration and production drilling, production and decommissioning phase of our operation i.e. Spill or leakage of hydrocarbon (HC) liquid, JET A1, diesel oil, during transferring/ offloading or from vessel collision, subsea pipelines rupture/corrosion. Hydrocarbon spill or leakage could be impacted to water ecosystems or human health. Potential impacted parties could be e.g. workers, communities, fishermen, aquatic life, mammals etc. The level of coverage, toxicity, persistence and bioaccumulation could be varied depending on e.g. spill volume, type and characteristic of spilled substance, duration, location, environmental condition and emergency response and management etc. However, the potential water pollution impact which considered as worst case may raise from the spill or leakage by the asset/project that located in the near-shore area with high environmental sensitivity. The identified impact is considered as substantive impact with moderate likelihood thus, the risks on water ecosystems or human health of potential water pollutants associated with our activity are considered as high.

(2.5.1.3) Value chain stage

Select all that apply

☑ Direct operations

(2.5.1.4) Actions and procedures to minimize adverse impacts

Select all that apply

☑ Assessment of critical infrastructure and storage condition (leakages, spillages, pipe erosion etc.) and their resilience

☑ Resource recovery

☑ Implementation of integrated solid waste management systems

(2.5.1.5) Please explain

Normally the approach of management procedures is a company-wide basis, however, an integration of company-wide, river-basin and regional basis also applied for some circumstances. The identified aspects and impact assessment shall be reviewed and updated in the condition of appearance of new development, new or modified activity/product/service, new law and/or regulation announced, new environmental mitigation measure put in place or achieved. The indicated management procedures help mitigate both probability of occurrence and severity of consequence resulting in descending of significant tier of the impact. e.g. compliance with effluent quality standards, measure to prevent spillage leaching and leakages, could provide the preventive barriers to the spill or leak event while community/stakeholder engagement, emergency preparedness and spill response plan could mitigate the impact once spill or leakage occurred. The success of this management is measured and evaluated in term of spilled oil and chemicals rate. In 2023, the Company's spilled oil and chemicals was at the rate of 0.21 tonnes per million tonnes of petroleum production which is decreased from the previous years. PTTEP performance on spill rate has continuously been kept lower than peers or IOGP average.
[Add row]

C3. Disclosure of risks and opportunities

(3.1) Have you identified any environmental risks which have had a substantive effect on your organization in the reporting year, or are anticipated to have a substantive effect on your organization in the future?

Climate change

(3.1.1) Environmental risks identified

Select from:

☑ Yes, only within our direct operations

(3.1.2) Primary reason why your organization does not consider itself to have environmental risks in your direct operations and/or upstream/downstream value chain

Select from:

☑ Environmental risks exist, but none with the potential to have a substantive effect on our organization

(3.1.3) Please explain

PTTEP identifies environmental risks including physical and transition risks which have had a substantive effect to the company. The identification of substantive effect covers the potential effect to all PTTEP's operating assets.

Water

(3.1.1) Environmental risks identified

Select from:

☑ Yes, only within our direct operations

(3.1.2) Primary reason why your organization does not consider itself to have environmental risks in your direct operations and/or upstream/downstream value chain

Select from:

☑ Environmental risks exist, but none with the potential to have a substantive effect on our organization

(3.1.3) Please explain

The definition of financial substantive impact on our business is applied to both direct operations and supply chain, i.e., water suppliers, wastewater disposal processors, etc. According to seawater consumption, generally classified as a renewable resource, is the major water source for PTTEP operations, equivalent to 99% of total water consumption. Nevertheless, we plan to assess water security of supplier within the next two years.

Plastics

(3.1.1) Environmental risks identified

Select from:

☑ No

(3.1.2) Primary reason why your organization does not consider itself to have environmental risks in your direct operations and/or upstream/downstream value chain

Select from:

☑ Not an immediate strategic priority

(3.1.3) Please explain

To minimize the environmental and human health impacts of PTTEP's use of plastic, we have selected a waste management contractor. This contractor will provide services for waste transportation, collection, treatment, and disposal in compliance with regulations and the waste management plan. The waste management plans for PTTEP operating assets follow the "5R's" Hierarchy, which includes Remove, Reduce, Reuse, Recycle, and Recover. The aim is to prevent and minimize the generation of used plastics. Although the area of plastic is not a top strategic priority, we are actively considering verification over the next two years.
[Fixed row]

(3.1.1) Provide details of the environmental risks identified which have had a substantive effect on your organization in the reporting year, or are anticipated to have a substantive effect on your organization in the future.

Climate change

(3.1.1.1) Risk identifier

Select from:

☑ Risk1

(3.1.1.3) Risk types and primary environmental risk driver

Acute physical

☑ Heat wave

(3.1.1.4) Value chain stage where the risk occurs

Select from:

☑ Direct operations

(3.1.1.6) Country/area where the risk occurs

Select all that apply

☑ Thailand

(3.1.1.9) Organization-specific description of risk

Excessive heats are identified as a risk to PTTEP's worker. The Scenario analysis shows that under the RCP8.5 (4C) scenario, the physical manifestations of climate change would be increasingly apparent. • For PTTEP's Thailand offshore asset (G2S), changes in the frequency and intensity of heatwaves will reduce workers' ability to work. • At moderate intensity work and temperatures of 33-34C, a worker's capacity can decrease by 50%. • Outdoor work in the oil and gas industry is physically demanding and requires protective clothing and gear. • During periods of excessive heat, the time required for outdoor operations and maintenance work may increase, resulting in higher maintenance costs.

(3.1.1.11) Primary financial effect of the risk

Select from:

☑ Increased direct costs

(3.1.1.12) Time horizon over which the risk is anticipated to have a substantive effect on the organization

Select all that apply

☑ Medium-term

(3.1.1.13) Likelihood of the risk having an effect within the anticipated time horizon

Select from:

☑ Likely

(3.1.1.14) Magnitude

Select from:

☑ High

(3.1.1.16) Anticipated effect of the risk on the financial position, financial performance and cash flows of the organization in the selected future time horizons

PTTEP anticipates effect of the heatwave risk on the financial position in the medium-term.

(3.1.1.17) Are you able to quantify the financial effect of the risk?

Select from:

☑ Yes

(3.1.1.21) Anticipated financial effect figure in the medium-term – minimum (currency)

7000000

(3.1.1.22) Anticipated financial effect figure in the medium-term – maximum (currency)

7000000

(3.1.1.25) Explanation of financial effect figure

During heatwaves, workers are 11% less productive. The elasticity of labour in the O&G sector is 0.398; the overall production will thus decrease by 4.3% during heatwaves.

(3.1.1.26) Primary response to risk

Compliance, monitoring and targets

☑ Improve monitoring of direct operations

(3.1.1.27) Cost of response to risk

2000000

(3.1.1.28) Explanation of cost calculation

Estimation on the work hours lost.

(3.1.1.29) Description of response

The management of response is covered 1. Reduce the number of working hours 2. Postpone scheduled maintenance during heatwaves 3. If possible, wear lightweight loose-fitting clothing 4. Introduce obligatory drinking breaks

Water

(3.1.1.1) Risk identifier

Select from:

☑ Risk1

(3.1.1.3) Risk types and primary environmental risk driver

Acute physical

☑ Other acute physical risk, please specify **:**flood event and drought in dry season

(3.1.1.4) Value chain stage where the risk occurs

Select from:

☑ Direct operations

(3.1.1.6) Country/area where the risk occurs

Select all that apply

☑ Myanmar

(3.1.1.7) River basin where the risk occurs

Select all that apply

☑ Other, please specify **:**Lake Songkhla

(3.1.1.9) Organization-specific description of risk

PTTEP has developed the risks events to be in line with Dow Jones Sustainability Index (DJSI) and Carbon Disclosure Project (CDP) Water Disclosure and knowledge of key water related risks that can affect PTTEP's operations. Each risk event consolidates a number of possible root cause scenarios that may result in a material impact on PTTEP's operations, our stakeholders and supply chains across the various consequence categories outlined in the PTTEP risk matrix (i.e. asset production/property; people; environmental effect/reputation). The identified risk events, potential root cause scenarios and risk matrix consequence categories are summarized as follow: Event A: PTTEP operations affected by increase in cost of water Event B: PTTEP operations affected by physical water parameters Event C: PTTEP operations affected by increased regulatory controls Event D: PTTEP operations impact on surrounding catchment/water use In addition, PTTEP developed risk assessment matrix in which risk events are assessed in terms of the likelihood of occurrence and financial consequences of risk event. Five bands of financial risk exposure are defined based on the impact of the risk event to Net Income (NI). PTTEP classifies NI that generated by the identified risk being more than 1% of NI as serious or substantive impact.

(3.1.1.11) Primary financial effect of the risk

Select from:

☑ Closure of operations

(3.1.1.12) Time horizon over which the risk is anticipated to have a substantive effect on the organization

Select all that apply

☑ Medium-term

(3.1.1.13) Likelihood of the risk having an effect within the anticipated time horizon

Select from:

☑ Very likely

(3.1.1.14) Magnitude

Select from:

☑ Medium

(3.1.1.16) Anticipated effect of the risk on the financial position, financial performance and cash flows of the organization in the selected future time horizons

The definition of financial substantive impact on our business is applied to both direct operations and supply chain, i.e. water suppliers, wastewater disposal processor, etc. However, the result of risk assessment covered both direct operations and supply chain shows that there is impact only to our supply chain but not to our direct operation, according to the definition of our financial substantive impact.

(3.1.1.17) Are you able to quantify the financial effect of the risk?

Select from:

☑ Yes

(3.1.1.21) Anticipated financial effect figure in the medium-term – minimum (currency)

587442

(3.1.1.22) Anticipated financial effect figure in the medium-term – maximum (currency)

587442

(3.1.1.25) Explanation of financial effect figure

Zawtika asset operations includes Zawtika Onshore Operation Center (ZOC), Zawtika Metering Station (ZMS), and Thakita Supply Base. This is not included the Zawtika Offshore Production Quarter (ZPQ) which is offshore facility and use seawater for water maker system. The financial impact was identified as the same level over all facilities under Myanmar asset, however, the highest likelihood was from the ZOC where its location is in Tanintharyi Coastal Basin. In case the regulatory becomes stringent (e.g. higher quality of wastewater discharge to the environment), this will significantly increase the site's operating cost (e.g. upgrade the wastewater treatment system). At the same time, the risk on failure to meet the Standard is considered to be higher than previously, which will result in higher insurance premium. Thus, the risk severity in this case is the summation of an increase of operating cost and insurance premium.

(3.1.1.26) Primary response to risk

Engagement

☑ Align organization’s public policy engagement with its environmental strategy

(3.1.1.27) Cost of response to risk

0

(3.1.1.28) Explanation of cost calculation

The financial impact was calculated based on assumption that the number of idle operating days is accounted when community opposition is occurred. For this event, it is assumed that 10 operating days is interrupted for Myanmar asset, leading to loss of daily revenues from the operations. The impact may be occurred within 10 years as the event is classified as medium term timeframe.

(3.1.1.29) Description of response

Keep improving knowledge of regulatory water approach by engaging with regulators/policymakers and being aware of any change in government/public perceptions on water related issues, stringent regulatory on wastewater discharge and water efficiency standard in order to lessen the impact of stringent regulatory control risk.

Climate change

(3.1.1.1) Risk identifier

Select from:

☑ Risk2

(3.1.1.3) Risk types and primary environmental risk driver

Acute physical

☑ Cyclone, hurricane, typhoon

(3.1.1.4) Value chain stage where the risk occurs

Select from:

☑ Direct operations

(3.1.1.6) Country/area where the risk occurs

Select all that apply

☑ Thailand

(3.1.1.9) Organization-specific description of risk

Tropical cyclones have caused production interruptions for offshore assets in the past. During production interruptions, the flow rate of oil and gas production decreases by an average of 50%. The average length of a production interruption is 5 days. It is projected that, with RCP8.5 scenario, the frequency of tropical cyclones will increase for the Malaysia and Thailand offshore assets (where G1/61 poses a substantive impact).

(3.1.1.11) Primary financial effect of the risk

Select from:

☑ Decreased revenues due to reduced production capacity

(3.1.1.12) Time horizon over which the risk is anticipated to have a substantive effect on the organization

Select all that apply

☑ Medium-term

(3.1.1.13) Likelihood of the risk having an effect within the anticipated time horizon

Select from:

☑ Unlikely

(3.1.1.14) Magnitude

Select from:

☑ High

(3.1.1.16) Anticipated effect of the risk on the financial position, financial performance and cash flows of the organization in the selected future time horizons

PTTEP anticipates effect of the tropical cyclone risk on the financial position in the medium-term.

(3.1.1.17) Are you able to quantify the financial effect of the risk?

Select from:

☑ Yes

(3.1.1.21) Anticipated financial effect figure in the medium-term – minimum (currency)

18000000

(3.1.1.22) Anticipated financial effect figure in the medium-term – maximum (currency)

18000000

(3.1.1.25) Explanation of financial effect figure

During production interruptions, the flow rate of oil and gas production decreases by an average of 50%. The average length of a production interruption is 5 days. This poses a growing financial risk for PTTEP.

(3.1.1.26) Primary response to risk

Infrastructure, technology and spending

☑ Improve pollution abatement and control measures

(3.1.1.27) Cost of response to risk

10000000

(3.1.1.28) Explanation of cost calculation

Estimation from the increasing of operating costs to implement the response.

(3.1.1.29) Description of response

The management of response is covered 1. Implement monitoring for early detection and identify vulnerable infrastructure areas. 2. Explore measures to prevent or minimize spill magnitude and mitigation options. 3. Develop/update a strategy and protocol for managing storage tank capacity and update the spill prevention, control, and countermeasure plan accordingly.

Climate change

(3.1.1.1) Risk identifier

Select from:

☑ Risk3

(3.1.1.3) Risk types and primary environmental risk driver

Policy

☑ Carbon pricing mechanisms

(3.1.1.4) Value chain stage where the risk occurs

Select from:

☑ Direct operations

(3.1.1.6) Country/area where the risk occurs

Select all that apply

☑ Malaysia

(3.1.1.9) Organization-specific description of risk

Significant impacts on PTTEP's operations globally from carbon taxes and/or cap and trade mechanisms implementation. However, Malaysia operations pose the highest potential impact from carbon price due to their major emission portion. Effect on PTTEP's future requirements for reducing internal emissions and may influence the company's strategy to adopt low carbon energy technologies. Expects that carbon pricing will become stricter.

(3.1.1.11) Primary financial effect of the risk

Select from:

☑ Increased production costs

(3.1.1.12) Time horizon over which the risk is anticipated to have a substantive effect on the organization

Select all that apply

☑ Medium-term

(3.1.1.13) Likelihood of the risk having an effect within the anticipated time horizon

Select from:

☑ Unlikely

(3.1.1.14) Magnitude

Select from:

☑ High

(3.1.1.16) Anticipated effect of the risk on the financial position, financial performance and cash flows of the organization in the selected future time horizons

PTTEP anticipates effect of the carbon price risk on the financial position in the long-term.

(3.1.1.17) Are you able to quantify the financial effect of the risk?

Select from:

☑ Yes

(3.1.1.21) Anticipated financial effect figure in the medium-term – minimum (currency)

352000000

(3.1.1.22) Anticipated financial effect figure in the medium-term – maximum (currency)

352000000

(3.1.1.25) Explanation of financial effect figure

To assess the carbon pricing risk, the following framework is used: Hazard (carbon price [USD/tCO2]) x exposure (GHG exposure [tCO2e]) impact (carbon cost [USD]) The exposure is based on GHG emissions in the 'planned reduction' scenario.

(3.1.1.26) Primary response to risk

Pricing and credits

☑ Implement internal price on carbon

(3.1.1.27) Cost of response to risk

352000000

(3.1.1.28) Explanation of cost calculation

Assume an internal carbon price of USD 97.7/tCO2e (based on the IEA SDS carbon price interpolated to 2035). The revenue from the internal carbon price should be used to implement further emission reduction projects within PTTEP. The exact mitigation amount will depend on the cost of mitigation projects. Without such data, we have assumed that this will reduce the impact by approximately 50%. Anyway, cost to further reduce emissions estimated to be no more than 352 million USD, otherwise PTTEP would pay the Carbon Tax/ETS.

(3.1.1.29) Description of response

The management of response is covered 1. Reduce emissions through adoption of an Internal Carbon Price. 2. Further emission reduction projects within PTTEP. [Add row]

(3.1.2) Provide the amount and proportion of your financial metrics from the reporting year that are vulnerable to the substantive effects of environmental risks.

Climate change

(3.1.2.1) Financial metric

Select from:

☑ OPEX

(3.1.2.2) Amount of financial metric vulnerable to transition risks for this environmental issue (unit currency as selected in 1.2)

0

(3.1.2.3) % of total financial metric vulnerable to transition risks for this environmental issue

Select from:

☑ Less than 1%

(3.1.2.4) Amount of financial metric vulnerable to physical risks for this environmental issue (unit currency as selected in 1.2)

7000000

(3.1.2.5) % of total financial metric vulnerable to physical risks for this environmental issue

Select from:

☑ Less than 1%

(3.1.2.7) Explanation of financial figures

During periods of excessive heat, the time required for outdoor operations and maintenance work may increase, resulting in higher maintenance costs. However, workers are less productive during heatwaves and overall production will thus decrease.

Water

(3.1.2.1) Financial metric

Select from:

☑ OPEX

(3.1.2.2) Amount of financial metric vulnerable to transition risks for this environmental issue (unit currency as selected in 1.2)

0

(3.1.2.3) % of total financial metric vulnerable to transition risks for this environmental issue

Select from:

☑ Less than 1%

(3.1.2.4) Amount of financial metric vulnerable to physical risks for this environmental issue (unit currency as selected in 1.2)

587442

(3.1.2.5) % of total financial metric vulnerable to physical risks for this environmental issue

Select from:

☑ Less than 1%

(3.1.2.7) Explanation of financial figures

Cost for engaging with regulators/policymakers considered insignificant since it already included in manpower cost.

Climate change

(3.1.2.1) Financial metric

Select from:

☑ Revenue

(3.1.2.2) Amount of financial metric vulnerable to transition risks for this environmental issue (unit currency as selected in 1.2)

0

(3.1.2.3) % of total financial metric vulnerable to transition risks for this environmental issue

Select from:

☑ Less than 1%

(3.1.2.4) Amount of financial metric vulnerable to physical risks for this environmental issue (unit currency as selected in 1.2)

18000000

(3.1.2.5) % of total financial metric vulnerable to physical risks for this environmental issue

Select from:

☑ Less than 1%

(3.1.2.7) Explanation of financial figures

Tropical cyclones have caused production interruptions for offshore assets in the past. During production interruptions, the flow rate of oil and gas production decreases by an average of 50%. The average length of a production interruption is 5 days.

Climate change

(3.1.2.1) Financial metric

Select from:

☑ OPEX

(3.1.2.2) Amount of financial metric vulnerable to transition risks for this environmental issue (unit currency as selected in 1.2)

352000000

(3.1.2.3) % of total financial metric vulnerable to transition risks for this environmental issue

Select from:
☑ 21-30%

(3.1.2.4) Amount of financial metric vulnerable to physical risks for this environmental issue (unit currency as selected in 1.2)

0

(3.1.2.5) % of total financial metric vulnerable to physical risks for this environmental issue

Select from:
☑ Less than 1%

(3.1.2.7) Explanation of financial figures

Financial implication of carbon tax/ ETS
[Add row]

(3.2) Within each river basin, how many facilities are exposed to substantive effects of water-related risks, and what percentage of your total number of facilities does this represent?

Row 1

(3.2.1) Country/Area & River basin

Myanmar
☑ Irrawaddy

(3.2.2) Value chain stages where facilities at risk have been identified in this river basin

Select all that apply
☑ Direct operations

(3.2.3) Number of facilities within direct operations exposed to water-related risk in this river basin

1

(3.2.4) % of your organization's total facilities within direct operations exposed to water-related risk in this river basin

Select from:

☑ 1-25%

(3.2.9) % organization's global oil and gas production volume that could be affected by these facilities

Select from:

☑ Less than 1%

(3.2.10) % organization's total global revenue that could be affected

Select from:

☑ Less than 1%

(3.2.11) Please explain

The financial impact was calculated based on assumption that the number of idle operating days is accounted when community opposition is occurred. For this event, it is assumed that 10 operating days is interrupted for Myanmar asset, leading to loss of daily revenues from the operations. The impact may be occurred within 10 years as the event is classified as medium-term timeframe.
[Add row]

(3.3) In the reporting year, was your organization subject to any fines, enforcement orders, and/or other penalties for water-related regulatory violations?

	Water-related regulatory violations	Comment
	Select from: ☑ No	*We have no fine related to water issue in 2023.*

[Fixed row]

(3.6) Have you identified any environmental opportunities which have had a substantive effect on your organization in the reporting year, or are anticipated to have a substantive effect on your organization in the future?

	Environmental opportunities identified
Climate change	*Select from:* ☑ Yes, we have identified opportunities, and some/all are being realized
Water	*Select from:* ☑ Yes, we have identified opportunities, and some/all are being realized

[Fixed row]

(3.6.1) Provide details of the environmental opportunities identified which have had a substantive effect on your organization in the reporting year, or are anticipated to have a substantive effect on your organization in the future.

Climate change

(3.6.1.1) Opportunity identifier

Select from:

☑ Opp1

(3.6.1.3) Opportunity type and primary environmental opportunity driver

Energy source

☑ Use of renewable energy sources

(3.6.1.4) Value chain stage where the opportunity occurs

Select from:

☑ Direct operations

(3.6.1.5) Country/area where the opportunity occurs

Select all that apply

☑ Malaysia

☑ Myanmar

☑ Thailand

(3.6.1.8) Organization specific description

PTTEP is dedicated to Research, Development, and Technology (RD&T) activities while fostering innovation, aiming to support the corporate strategy and targets, with three key objectives: (1) Enhancing value and competitiveness in E&P business, (2) Minimizing GHG emissions to transition into a low-carbon organization, and (3) Supporting the energy transition and venturing into new businesses. PTTEP is exploring opportunities to diversify into new businesses focusing on future energy, advanced technology, and innovation as well as decarbonization technology. An investment in future energy and renewable energy such as hydrogen and solar is made. In addition, PTTEP also invests in RD&T through AI and Robotic Venture for business diversification.

(3.6.1.9) Primary financial effect of the opportunity

Select from:

☑ Reduced direct costs

(3.6.1.10) Time horizon over which the opportunity is anticipated to have a substantive effect on the organization

Select all that apply

☑ Long-term

(3.6.1.11) Likelihood of the opportunity having an effect within the anticipated time horizon

Select from:

☑ Very likely (90–100%)

(3.6.1.12) Magnitude

Select from:

☑ High

(3.6.1.14) Anticipated effect of the opportunity on the financial position, financial performance and cash flows of the organization in the selected future time horizons

PTTEP anticipates effect of the energy transition opportunity on the financial position in the long-term.

(3.6.1.15) Are you able to quantify the financial effects of the opportunity?

Select from:

☑ Yes

(3.6.1.21) Anticipated financial effect figure in the long-term - minimum (currency)

29500000

(3.6.1.22) Anticipated financial effect figure in the long-term – maximum (currency)

29500000

(3.6.1.23) Explanation of financial effect figures

PTTEP has allocated capital expenditure (CAPEX) budget to energy transition business.

(3.6.1.24) Cost to realize opportunity

29500000

(3.6.1.25) Explanation of cost calculation

Cost is estimated by investment budget to energy transition business.

(3.6.1.26) Strategy to realize opportunity

NA

Water

(3.6.1.1) Opportunity identifier

Select from:

☑ Opp1

(3.6.1.3) Opportunity type and primary environmental opportunity driver

Resource efficiency

☑ Improved field recovery factor

(3.6.1.4) Value chain stage where the opportunity occurs

Select from:

☑ Direct operations

(3.6.1.5) Country/area where the opportunity occurs

Select all that apply

☑ Thailand

(3.6.1.6) River basin where the opportunity occurs

Select all that apply

☑ Other, please specify :Chao Phraya

(3.6.1.8) Organization specific description

With the limitation on global water sources, PTTEP has applied the generated produced water for improving the oil recovery at our oil fields by water flooding system. Water flooding or water injection is where water is injected into the oil field, to increase pressure and thereby stimulate production. To ensure opportunity realization, the target "zero produced water discharge" in Thailand operations was established and applied in focus areas. This target through injection of produced water back into depleted petroleum reservoirs is being closely monitored and annually disclosed to public.

(3.6.1.9) Primary financial effect of the opportunity

Select from:

☑ Reduced direct costs

(3.6.1.10) Time horizon over which the opportunity is anticipated to have a substantive effect on the organization

Select all that apply

☑ Medium-term

(3.6.1.11) Likelihood of the opportunity having an effect within the anticipated time horizon

Select from:

☑ Likely (66–100%)

(3.6.1.12) Magnitude

Select from:

☑ Medium

(3.6.1.14) Anticipated effect of the opportunity on the financial position, financial performance and cash flows of the organization in the selected future time horizons

The financial cost of water improvement initiatives can be influenced by various external factors, such as changes in regulatory frameworks, market prices for water and energy, and technological advancements. These uncertainties can make it challenging to accurately estimate future financial benefits.

(3.6.1.15) Are you able to quantify the financial effects of the opportunity?

Select from:

☑ No

(3.6.1.24) Cost to realize opportunity

76480000

(3.6.1.25) Explanation of cost calculation

In 2023, crude oil gained from waterflooding at approx. 2,690 BBL/D with oil price at 77.89 per BBL, thus value gain 76.48 MMUSD.

(3.6.1.26) Strategy to realize opportunity

Water management is important for PTTEP as it aligns with the company's commitment to environmental stewardship and sustainable practices across its operations. PTTEP recognizes that effective management of water resources is essential for ensuring the responsible use of this vital natural asset. By implementing rigorous water management strategies, PTTEP aims to minimize its environmental footprint and reduce both direct and indirect impacts on water resources, such as pollution and depletion. PTTEP's projects located in Thailand have achieved zero produced water discharge since 2010, through injection of produced water back into depleted petroleum reservoirs. Though produced water volume tends to increase in line with production activities and reservoir age, PTTEP has effectively maintained the water injection capacity. Sinphuhorm Asset in Thailand was the exception as it resorts to another technique, as described in its EIA, which also results in zero discharge. By employing advanced treatment technologies, PTTEP has improved the quality of produced water (water produced along with petroleum production) to meet the standards for a broader range of uses, thereby significantly reducing our dependency on freshwater resources. This initiative will include the exploration of opportunities for using treated produced water in operation, where permissible.
[Add row]

(3.6.2) Provide the amount and proportion of your financial metrics in the reporting year that are aligned with the substantive effects of environmental opportunities.

Climate change

(3.6.2.1) Financial metric

Select from:
☑ CAPEX

(3.6.2.2) Amount of financial metric aligned with opportunities for this environmental issue (unit currency as selected in 1.2)

29500000

(3.6.2.3) % of total financial metric aligned with opportunities for this environmental issue

Select from:
☑ 1-10%

(3.6.2.4) Explanation of financial figures

PTTEP has allocated capital expenditure (CAPEX) budget to energy transition business.

Water

(3.6.2.1) Financial metric

Select from:
☑ OPEX

(3.6.2.2) Amount of financial metric aligned with opportunities for this environmental issue (unit currency as selected in 1.2)

0

(3.6.2.3) % of total financial metric aligned with opportunities for this environmental issue

Select from:
☑ Less than 1%

(3.6.2.4) Explanation of financial figures

The financial impact of water improvement initiatives can be influenced by various external factors, such as changes in regulatory frameworks, market prices for water and energy, and technological advancements. These uncertainties can make it challenging to accurately estimate future financial benefits.
[Add row]

C4. Governance

(4.1) Does your organization have a board of directors or an equivalent governing body?

(4.1.1) Board of directors or equivalent governing body

Select from:

☑ Yes

(4.1.2) Frequency with which the board or equivalent meets

Select from:

☑ Quarterly

(4.1.3) Types of directors your board or equivalent is comprised of

Select all that apply

☑ Executive directors or equivalent

☑ Independent non-executive directors or equivalent

(4.1.4) Board diversity and inclusion policy

Select from:

☑ Yes, and it is publicly available

(4.1.5) Briefly describe what the policy covers

PTTEP's Board of Directors comprises the independent non-executive directors or equivalents. The structure of the Board of Directors takes into account the diversity factors during the nomination process including gender, ethnicity, nationality or any other differences such as race, country of origin or cultural background. This is in order to have an appropriate and balance structure that contains expertise with skills, knowledge, and experience in various fields that necessary for petroleum exploration and production business. Moreover, in director nomination process, diversity of the Board is reviewed regularly to ensure the appropriateness and balance of each required field to be consistent with the state of business change. CEO is as a member of PTTEP's Board of Directors who direct company vision, mission,

objective and strategy of business development including sustainability. As a representative of Board of Directors, CEO cascades company direction via top managements through relevant working committees which chaired by CEO.

(4.1.6) Attach the policy (optional)

pttep-diversity-statement-en.pdf
[Fixed row]

(4.1.1) Is there board-level oversight of environmental issues within your organization?

	Board-level oversight of this environmental issue
Climate change	*Select from:* ☑ Yes
Water	*Select from:* ☑ Yes
Biodiversity	*Select from:* ☑ Yes

[Fixed row]

(4.1.2) Identify the positions (do not include any names) of the individuals or committees on the board with accountability for environmental issues and provide details of the board's oversight of environmental issues.

Climate change

(4.1.2.1) Positions of individuals or committees with accountability for this environmental issue

Select all that apply

☑ Chief Sustainability Officer (CSO)

☑ Board-level committee

(4.1.2.2) Positions' accountability for this environmental issue is outlined in policies applicable to the board

Select from:

☑ Yes

(4.1.2.3) Policies which outline the positions' accountability for this environmental issue

Select all that apply

☑ Board Terms of Reference

☑ Board mandate

☑ Individual role descriptions

(4.1.2.4) Frequency with which this environmental issue is a scheduled agenda item

Select from:

☑ Scheduled agenda item in every board meeting (standing agenda item)

(4.1.2.5) Governance mechanisms into which this environmental issue is integrated

Select all that apply

☑ Approving corporate policies and/or commitments

☑ Overseeing the setting of corporate targets

☑ Overseeing and guiding the development of a climate transition plan

☑ Overseeing and guiding the development of a business strategy

(4.1.2.7) Please explain

PTTEP's Corporate Governance and Sustainability (CGS) Committee which is the BoD level committee to oversee the corporate sustainability strategy and framework including climate-related issues in terms of risks and opportunities to PTTEP and provide directions and monitor climate-related implementation including PTTEP's decarbonization and its performance. PTTEP Executive Vice President of Technology, Carbon Solution and Sustainability Growth or equivalent to Chief Sustainability Officer, nominated by CEO, report directly to BoD. In addition, Risk Management Committee which is also a Board level committee regularly assesses

enterprise risks including the Climate related risks. Climate related target has been set as corporate KPI and deployed through all employees, where the performance is followed up by the committee on monthly basis. CEO is also a member of Board of Directors (BoD) who provide direction on company vision, mission, objective and strategy of business development including sustainability. As a representative of BoD, CEO cascades company direction via top managements and relevant management committees including Safety, Security, Health and Environment (SSHE) Council.

Water

(4.1.2.1) Positions of individuals or committees with accountability for this environmental issue

Select all that apply

☑ Chief Executive Officer (CEO)

☑ Other, please specify :Safety Security Health and Environment Council Committee

(4.1.2.2) Positions' accountability for this environmental issue is outlined in policies applicable to the board

Select from:

☑ Yes

(4.1.2.3) Policies which outline the positions' accountability for this environmental issue

Select all that apply

☑ Individual role descriptions

(4.1.2.4) Frequency with which this environmental issue is a scheduled agenda item

Select from:

☑ Sporadic – agenda item as important matters arise

(4.1.2.5) Governance mechanisms into which this environmental issue is integrated

Select all that apply

☑ Reviewing and guiding the assessment process for dependencies, impacts, risks, and opportunities

☑ Monitoring compliance with corporate policies and/or commitments

(4.1.2.7) Please explain

CEO is as a member of PTTEP's Board of Directors who direct company vision, mission, objective and strategy of business development including sustainability. As a representative of Board of Directors, CEO cascades company direction via top managements through relevant working committees which chaired by CEO. The committee who is responsible for water management is SSHE Council in which the meeting is held on quarterly basis. The company water related issues, e.g. company water target, etc. that need decision making and endorsement from CEO and top managements will be brought to the Council. The key issues will be summarized and reported by CEO to the Board of Director in annual company's performance review session.

Biodiversity

(4.1.2.1) Positions of individuals or committees with accountability for this environmental issue

Select all that apply

☑ Chief Sustainability Officer (CSO)

☑ Board-level committee

(4.1.2.2) Positions' accountability for this environmental issue is outlined in policies applicable to the board

Select from:

☑ Yes

(4.1.2.3) Policies which outline the positions' accountability for this environmental issue

Select all that apply

☑ Board Terms of Reference

☑ Board mandate

☑ Individual role descriptions

(4.1.2.4) Frequency with which this environmental issue is a scheduled agenda item

Select from:

☑ Scheduled agenda item in every board meeting (standing agenda item)

(4.1.2.5) Governance mechanisms into which this environmental issue is integrated

Select all that apply

☑ Approving corporate policies and/or commitments

☑ Overseeing the setting of corporate targets

☑ Overseeing and guiding the development of a climate transition plan

☑ Overseeing and guiding the development of a business strategy

(4.1.2.7) Please explain

PTTEP considers biodiversity could be relevant to the impact on climate change and put this agenda in BoD meeting. PTTEP's Corporate Governance and Sustainability (CGS) Committee which is the BoD level committee to oversee the corporate sustainability strategy and framework including biodiversity-related issues in terms of risks and opportunities to PTTEP and provide directions and monitor climate-related implementation including PTTEP's decarbonization and its performance. PTTEP Executive Vice President of Technology, Carbon Solution and Sustainability Growth or equivalent to Chief Sustainability Officer, nominated by CEO, report directly to BoD. In addition, Risk Management Committee which is also a Board level committee regularly review the Biodiversity- related risks. CEO is also a member of Board of Directors (BoD) who provide direction on company vision, mission, objective and strategy of business development including sustainability. As a representative of BoD, CEO cascades company direction via top managements and relevant management committees including Safety, Security, Health and Environment (SSHE) Council.
[Fixed row]

(4.2) Does your organization's board have competency on environmental issues?

Climate change

(4.2.1) Board-level competency on this environmental issue

Select from:

☑ Yes

(4.2.2) Mechanisms to maintain an environmentally competent board

Select all that apply

☑ Consulting regularly with an internal, permanent, subject-expert working group

☑ Engaging regularly with external stakeholders and experts on environmental issues

☑ Integrating knowledge of environmental issues into board nominating process

Water

(4.2.1) Board-level competency on this environmental issue

Select from:

☑ Yes

(4.2.2) Mechanisms to maintain an environmentally competent board

Select all that apply

☑ Other, please specify :All water related strategy and relevant policy is oriented by our Board of Director and/or Management Committee who responsibilities will be at least annually reviewed via company performance review and monitoring.

[Fixed row]

(4.3) Is there management-level responsibility for environmental issues within your organization?

	Management-level responsibility for this environmental issue
Climate change	*Select from:* ☑ Yes
Water	*Select from:* ☑ Yes
Biodiversity	*Select from:* ☑ Yes

[Fixed row]

(4.3.1) Provide the highest senior management-level positions or committees with responsibility for environmental issues (do not include the names of individuals).

Climate change

(4.3.1.1) Position of individual or committee with responsibility

Committee

☑ Sustainability committee

(4.3.1.2) Environmental responsibilities of this position

Dependencies, impacts, risks and opportunities

☑ Managing environmental dependencies, impacts, risks, and opportunities

Engagement

☑ Managing public policy engagement related to environmental issues

☑ Managing value chain engagement related to environmental issues

Policies, commitments, and targets

☑ Measuring progress towards environmental corporate targets

☑ Setting corporate environmental policies and/or commitments

☑ Setting corporate environmental targets

Strategy and financial planning

☑ Developing a business strategy which considers environmental issues

(4.3.1.4) Reporting line

Select from:

☑ Reports to the board directly

(4.3.1.5) Frequency of reporting to the board on environmental issues

Select from:

☑ Quarterly

(4.3.1.6) Please explain

CGS committee is a corporate governance and sustainability committee (BoD level committee) or equivalent to sustainability committee to oversee the corporate sustainability strategy and framework including climate related issues of PTTEP. The Board establishes the Corporate Governance and Sustainability Committee (CGS), which comprises at least three PTTEP directors, the majority of whom must be independent directors. The Corporate Governance and Sustainability Committee is responsible for developing and reviewing the company's sustainability targets, policies/statements, and roadmaps covering key aspects of High Performance Organization (HPO), Governance, Risk Management and Compliance (GRC), and Sustainable Value Creation (SVC). This includes considering the sustainability work plan and budget, which will be proposed to the Board for approval.

Water

(4.3.1.1) Position of individual or committee with responsibility

Committee

☑ Safety, Health, Environment and Quality committee

(4.3.1.2) Environmental responsibilities of this position

Engagement

☑ Managing public policy engagement related to environmental issues

Policies, commitments, and targets

☑ Monitoring compliance with corporate environmental policies and/or commitments

Strategy and financial planning

☑ Managing acquisitions, mergers, and divestitures related to environmental issues

Other

☑ Providing employee incentives related to environmental performance

(4.3.1.4) Reporting line

Select from:

☑ Reports to the Chief Executive Officer (CEO)

(4.3.1.5) Frequency of reporting to the board on environmental issues

Select from:

☑ Quarterly

(4.3.1.6) Please explain

CEO is as a member of PTTEP's Board of Directors who direct company vision, mission, objective and strategy of business development including sustainability. As a representative of Board of Directors, CEO cascades company direction via top managements through relevant working committees which chaired by CEO. The committee who is responsible for water management is SSHE Council in which the meeting is held on quarterly basis. The company water related issues, e.g. company water goals, etc. that need decision making and endorsement from CEO and top managements will be brought to the Council. The key issues will be summarized and reported by CEO to the Board of Director in annual company's performance review session.

Biodiversity

(4.3.1.1) Position of individual or committee with responsibility

Committee

☑ Sustainability committee

(4.3.1.2) Environmental responsibilities of this position

Dependencies, impacts, risks and opportunities

☑ Managing environmental dependencies, impacts, risks, and opportunities

Engagement

☑ Managing public policy engagement related to environmental issues

☑ Managing value chain engagement related to environmental issues

Policies, commitments, and targets

☑ Measuring progress towards environmental corporate targets

☑ Setting corporate environmental policies and/or commitments

☑ Setting corporate environmental targets

Strategy and financial planning

☑ Developing a business strategy which considers environmental issues

(4.3.1.4) Reporting line

Select from:

☑ Reports to the board directly

(4.3.1.5) Frequency of reporting to the board on environmental issues

Select from:

☑ Quarterly

(4.3.1.6) Please explain

CGS committee is a corporate governance and sustainability committee (BoD level committee) or equivalent to sustainability committee to oversee the corporate sustainability strategy and framework including climate related issues of PTTEP where biodiversity can also be related. The Board establishes the Corporate Governance and Sustainability Committee (CGS), which comprises at least three PTTEP directors, the majority of whom must be independent directors. The Corporate Governance and Sustainability Committee is responsible for developing and reviewing the company's sustainability targets, policies/statements, and roadmaps covering key aspects of High Performance Organization (HPO), Governance, Risk Management and Compliance (GRC), and Sustainable Value Creation (SVC). This includes considering the sustainability work plan and budget, which will be proposed to the Board for approval.
[Add row]

(4.5) Do you provide monetary incentives for the management of environmental issues, including the attainment of targets?

Climate change

(4.5.1) Provision of monetary incentives related to this environmental issue

Select from:

☑ Yes

(4.5.2) % of total C-suite and board-level monetary incentives linked to the management of this environmental issue

0

(4.5.3) Please explain

The incentivized climate change related KPI for CEO is GHG intensity reduction target and implementation progress of company roadmap which is aligned with corporate target to achieve the GHG emission intensity reduction and Net Zero Target.

Water

(4.5.1) Provision of monetary incentives related to this environmental issue

Select from:
☑ Yes

(4.5.2) % of total C-suite and board-level monetary incentives linked to the management of this environmental issue

0

(4.5.3) Please explain

In 2023, KPI was established to include spill intensity reduction as a SSHE KPI which is then cascaded to functional group to the department and then to individual KPI for relevant employees that incentivized through the allocation of their performance bonuses. Corporate executive team and employers bonuses and salary linked to Spill KPI. 2% salary bonus is given to the Corporate executive management if these targets are achieved by 2023. There are also short-term, quarterly cash rewards evaluated on the progression towards these targets.
[Fixed row]

(4.5.1) Provide further details on the monetary incentives provided for the management of environmental issues (do not include the names of individuals).

Climate change

(4.5.1.1) Position entitled to monetary incentive

Board or executive level

☑ Chief Executive Officer (CEO)

(4.5.1.2) Incentives

Select all that apply

☑ Bonus - % of salary

(4.5.1.3) Performance metrics

Targets

☑ Achievement of environmental targets

(4.5.1.4) Incentive plan the incentives are linked to

Select from:

☑ Short-Term Incentive Plan, or equivalent, only (e.g. contractual annual bonus)

(4.5.1.5) Further details of incentives

The incentivized climate change related KPI for CEO is GHG intensity reduction target and implementation progress of company roadmap which is aligned with corporate target to achieve the GHG emission intensity reduction and Net Zero Target.

(4.5.1.6) How the position's incentives contribute to the achievement of your environmental commitments and/or climate transition plan

The achievement of GHG reduction target and roadmap implementation progress each year accounted at 5% of overall CEO KPI weights. This links to salary increasing and bonus consideration of CEO.

Water

(4.5.1.1) Position entitled to monetary incentive

Board or executive level

☑ Corporate executive team

(4.5.1.2) Incentives

Select all that apply

☑ Bonus - % of salary

(4.5.1.3) Performance metrics

Targets

☑ Achievement of environmental targets

(4.5.1.4) Incentive plan the incentives are linked to

Select from:

☑ Short-Term Incentive Plan, or equivalent, only (e.g. contractual annual bonus)

(4.5.1.5) Further details of incentives

Corporate executive team and employers bonuses and salary linked to Spill KPI.

(4.5.1.6) How the position's incentives contribute to the achievement of your environmental commitments and/or climate transition plan

PTTEP realizes that release of chemical & hydrocarbon to the environment is a key issue for oil and gas companies, which can have direct financial and environmental impact as well as reputation consequences. It is also a key issue heavily monitored by the public. Therefore, spill intensity reduction has been set as SSHE KPI since 2014.

Climate change

(4.5.1.1) Position entitled to monetary incentive

Board or executive level

☑ Corporate executive team

(4.5.1.2) Incentives

Select all that apply

☑ Bonus - % of salary

(4.5.1.3) Performance metrics

Targets

☑ Achievement of environmental targets

(4.5.1.4) Incentive plan the incentives are linked to

Select from:

☑ Short-Term Incentive Plan, or equivalent, only (e.g. contractual annual bonus)

(4.5.1.5) Further details of incentives

The incentivized climate change related KPI for Corporate Executive Team is GHG intensity reduction target and implementation progress of company roadmap which is aligned with corporate target to achieve the GHG emission intensity reduction and Net Zero Target.

(4.5.1.6) How the position's incentives contribute to the achievement of your environmental commitments and/or climate transition plan

The achievement of GHG reduction target and roadmap implementation progress each year accounted at 5% of overall Corporate Executive Team KPI weights. This links to salary increasing and bonus consideration of them.

Climate change

(4.5.1.1) Position entitled to monetary incentive

Senior-mid management

☑ Management group

(4.5.1.2) Incentives

Select all that apply

☑ Bonus - % of salary

(4.5.1.3) Performance metrics

Targets

☑ Progress towards environmental targets

☑ Achievement of environmental targets

(4.5.1.4) Incentive plan the incentives are linked to

Select from:

☑ Short-Term Incentive Plan, or equivalent, only (e.g. contractual annual bonus)

(4.5.1.5) Further details of incentives

The incentivized climate change related KPI for Corporate and Asset Managment Group is GHG intensity reduction target and implementation progress of company roadmap which is aligned with corporate target to achieve the GHG emission intensity reduction and Net Zero Target.

(4.5.1.6) How the position's incentives contribute to the achievement of your environmental commitments and/or climate transition plan

The achievement of GHG reduction target and roadmap implementation progress each year accounted at 3% of overall Corporate and Asset Managment Group KPI weights. This links to salary increasing and bonus consideration of them.

Climate change

(4.5.1.1) Position entitled to monetary incentive

Senior-mid management

☑ Environment/Sustainability manager

(4.5.1.2) Incentives

Select all that apply

☑ Bonus - % of salary

(4.5.1.3) Performance metrics

Targets

☑ Progress towards environmental targets

☑ Achievement of environmental targets

(4.5.1.4) Incentive plan the incentives are linked to

Select from:

☑ Short-Term Incentive Plan, or equivalent, only (e.g. contractual annual bonus)

(4.5.1.5) Further details of incentives

The incentivized climate change related KPI for Environmental/ Sustainability Manager is GHG intensity reduction target and implementation progress of company roadmap which is aligned with corporate target to achieve the GHG emission intensity reduction and Net Zero Target.

(4.5.1.6) How the position's incentives contribute to the achievement of your environmental commitments and/or climate transition plan

The achievement of GHG reduction target and roadmap implementation progress each year accounted at 5% of overall Environmental/ Sustainability Manager KPI weights. This links to salary increasing and bonus consideration of them.
[Add row]

(4.6) Does your organization have an environmental policy that addresses environmental issues?

	Does your organization have any environmental policies?
	Select from: ☑ Yes

[Fixed row]

(4.6.1) Provide details of your environmental policies.

Row 1

(4.6.1.1) Environmental issues covered

Select all that apply

☑ Climate change

☑ Water

☑ Biodiversity

(4.6.1.2) Level of coverage

Select from:

☑ Organization-wide

(4.6.1.3) Value chain stages covered

Select all that apply

☑ Direct operations

(4.6.1.4) Explain the coverage

PTTEP commits to operating business with social and environmental responsibility by adhering to the Safety, Security, Health and Environmental (SSHE) Policy, which integrates the commitment to environmental protection, regulatory compliance, and continuous improvement. Company personnel, business partners as well as contractors working for or on behalf of the Company must implement this SSHE Policy. The summary of PTTEP's Environmental Management appeared in the Company's website; such as: - Climate Change Management - Biodiversity and Ecosystem Services Management - Water Resources Management - Waste Management - Spill Management

(4.6.1.5) Environmental policy content

Environmental commitments

☑ Commitment to avoidance of negative impacts on threatened and protected species

☑ Commitment to comply with regulations and mandatory standards

☑ Commitment to take environmental action beyond regulatory compliance

☑ Commitment to respect legally designated protected areas

☑ Other environmental commitment, please specify **:**circularity concept

(4.6.1.6) Indicate whether your environmental policy is in line with global environmental treaties or policy goals

Select all that apply

☑ Yes, in line with the Paris Agreement

☑ Yes, in line with Sustainable Development Goal 6 on Clean Water and Sanitation

(4.6.1.7) Public availability

Select from:

☑ Publicly available

(4.6.1.8) Attach the policy

2022 PTTEP SSHE Policy_EN (1).pdf
[Add row]

(4.10) Are you a signatory or member of any environmental collaborative frameworks or initiatives?

(4.10.1) Are you a signatory or member of any environmental collaborative frameworks or initiatives?

Select from:

☑ Yes

(4.10.2) Collaborative framework or initiative

Select all that apply

☑ Pledge to Net Zero

☑ UN Global Compact

☑ Other, please specify **:**IPIECA, IOGP, MLP, OGMP2.0, OGDC

(4.10.3) Describe your organization's role within each framework or initiative

The company has assigned staff to be members of IPIECA and IOGP, attended to review sustainability, water, and biodiversity guidelines, and participated in their workshops to share case studies and seek opportunities for company improvement. In term of climate, PTTEP participate with 3 main international frameworks/initiatives as follows. - Joined ASEAN Energy Sector Methane Leader Program (MLP) to enable regional collaboration, technology transfer, and capability building among ASEAN Energy Sector on the methane management. - Signed MOU as member of Oil and Gas Methane Partnership 2.0 (OGMP 2.0) to report methane inventory with accuracy and transparency. - Joined Oil and Gas Decarbonization Charter (OGDC) in collaboration to accelerate the decarbonization of the global oil and gas sector.
[Fixed row]

(4.11) In the reporting year, did your organization engage in activities that could directly or indirectly influence policy, law, or regulation that may (positively or negatively) impact the environment?

(4.11.1) External engagement activities that could directly or indirectly influence policy, law, or regulation that may impact the environment

Select all that apply

☑ Yes, we engaged directly with policy makers

(4.11.2) Indicate whether your organization has a public commitment or position statement to conduct your engagement activities in line with global environmental treaties or policy goals

Select from:

☑ Yes, we have a public commitment or position statement in line with global environmental treaties or policy goals

(4.11.3) Global environmental treaties or policy goals in line with public commitment or position statement

Select all that apply

☑ Paris Agreement

☑ Sustainable Development Goal 6 on Clean Water and Sanitation

☑ Another global environmental treaty or policy goal, please specify :Biodiversity conservation

(4.11.4) Attach commitment or position statement

PTTEP sign MOU with ONEP & DCCE on climate change operations and biodiversity conservation.pdf

(4.11.5) Indicate whether your organization is registered on a transparency register

Select from:

☑ Yes

(4.11.6) Types of transparency register your organization is registered on

Select all that apply

☑ Voluntary government register

(4.11.7) Disclose the transparency registers on which your organization is registered & the relevant ID numbers for your organization

1. Memorandum of Understanding (MOU) with Office of Natural Resources and Environmental Policy and Planning (ONEP) and Department of Climate Change and Environment (DCCE)

(4.11.8) Describe the process your organization has in place to ensure that your external engagement activities are consistent with your environmental commitments and/or transition plan

PTTEP signs a Memorandum of Understanding (MOU) to strengthen cooperation on climate change and biodiversity conservation with the Department of Climate Change and Environment (DCCE) and the Office of Natural Resources and Environmental Policy and Planning (ONEP), aiming to establish measures and mechanisms for private sector-driven greenhouse gas reduction, support the steering of climate-related efforts, as well as biodiversity related conservation. [Fixed row]

(4.11.1) On what policies, laws, or regulations that may (positively or negatively) impact the environment has your organization been engaging directly with policy makers in the reporting year?

Row 1

(4.11.1.1) Specify the policy, law, or regulation on which your organization is engaging with policy makers

Net Zero Emissions by 2050

(4.11.1.2) Environmental issues the policy, law, or regulation relates to

Select all that apply

☑ Climate change

(4.11.1.3) Focus area of policy, law, or regulation that may impact the environment

Environmental impacts and pressures

☑ Emissions – CO2

☑ Emissions – methane

☑ Emissions – other GHGs

(4.11.1.4) Geographic coverage of policy, law, or regulation

Select from:

☑ Global

(4.11.1.6) Your organization’s position on the policy, law, or regulation

Select from:

☑ Support with no exceptions

(4.11.1.8) Type of direct engagement with policy makers on this policy, law, or regulation

Select all that apply

☑ Regular meetings

☑ Participation in working groups organized by policy makers

☑ Participation in voluntary government programs

(4.11.1.9) Funding figure your organization provided to policy makers in the reporting year relevant to this policy, law, or regulation (currency)

0

(4.11.1.10) Explain the relevance of this policy, law, or regulation to the achievement of your environmental commitments and/or transition plan, how this has informed your engagement, and how you measure the success of your engagement

To support Thailand's goals to achieve Carbon Neutrality and Net Zero GHG Emissions as committed at the 26th United Nations Climate Change Conference of the Parties (COP26), PTTEP has set the target to achieve Net Zero GHG Emissions by 2050 for E&P business covering scope 1 and scope 2 under PTTEP's operational control, incorporating with the energy efficiency management, by means of flare/excess gas recovery and utilization, energy efficiency improvement, production efficiency improvement, methane leak reduction, and renewable energy utilization.

(4.11.1.11) Indicate if you have evaluated whether your organization's engagement on this policy, law, or regulation is aligned with global environmental treaties or policy goals

Select from:

☑ Yes, we have evaluated, and it is aligned

(4.11.1.12) Global environmental treaties or policy goals aligned with your organization's engagement on this policy, law or regulation

Select all that apply

☑ Paris Agreement

[Add row]

(4.12.1) Provide details on the information published about your organization's response to environmental issues for this reporting year in places other than your CDP response. Please attach the publication.

Row 1

(4.12.1.1) Publication

Select from:

☑ In mainstream reports

(4.12.1.3) Environmental issues covered in publication

Select all that apply

☑ Climate change

☑ Water

☑ Biodiversity

(4.12.1.4) Status of the publication

Select from:

☑ Complete

(4.12.1.5) Content elements

Select all that apply

☑ Strategy

☑ Governance

☑ Emission targets

☑ Emissions figures

☑ Risks & Opportunities

☑ Value chain engagement

☑ Dependencies & Impacts

☑ Biodiversity indicators

☑ Public policy engagement

☑ Water accounting figures

☑ Water pollution indicators

☑ Content of environmental policies

(4.12.1.6) Page/section reference

Page 5-6/Path Towards Net Zero Greenhouse Gas Emission Page 10-11/Environmental, Social, Governance Highlight Performance Page 13/Value Creation - Social and Relationship Capital, and Natural Resources Capital Page 22-30/PTTEP and Sustainability - Sustainability Statement

(4.12.1.7) Attach the relevant publication

PTTEP_One report 23 EN_27Mar24.pdf

(4.12.1.8) Comment

NA
[Add row]

C5. Business strategy

(5.1) Does your organization use scenario analysis to identify environmental outcomes?

Climate change

(5.1.1) Use of scenario analysis

Select from:
☑ Yes

(5.1.2) Frequency of analysis

Select from:
☑ Every three years or less frequently

Water

(5.1.1) Use of scenario analysis

Select from:
☑ Yes

(5.1.2) Frequency of analysis

Select from:
☑ Every three years or less frequently
[Fixed row]

(5.1.1) Provide details of the scenarios used in your organization’s scenario analysis.

Climate change

(5.1.1.1) Scenario used

Physical climate scenarios

☑ RCP 2.6

(5.1.1.2) Scenario used SSPs used in conjunction with scenario

Select from:

☑ No SSP used

(5.1.1.3) Approach to scenario

Select from:

☑ Qualitative and quantitative

(5.1.1.4) Scenario coverage

Select from:

☑ Facility

(5.1.1.5) Risk types considered in scenario

Select all that apply

☑ Acute physical

☑ Chronic physical

(5.1.1.6) Temperature alignment of scenario

Select from:

☑ 1.6°C - 1.9°C

(5.1.1.7) Reference year

2023

(5.1.1.8) Timeframes covered

Select all that apply

☑ 2030

☑ 2050

(5.1.1.9) Driving forces in scenario

Local ecosystem asset interactions, dependencies and impacts

☑ Changes in ecosystem services provision

☑ Climate change (one of five drivers of nature change)

Regulators, legal and policy regimes

☑ Global targets

(5.1.1.10) Assumptions, uncertainties and constraints in scenario

RCP 2.6 is used to identify an aggressive mitigation scenario that may lead to temperature increase of approximately 1C in 2100. PTTEP applies RCP 2.6 into physical risk including heatwaves, tropical cyclones, heavy precipitation, and drought. Our scenario analysis is run based on sets of assumptions derived from sources such as IEA for transition risks and IPCC for physical risks. Forward-looking statements, such as those covered under scenarios, are subject to adjustments based on future information. PTTEP acknowledges three main areas of uncertainty regarding our scenario analysis assessment: • Model uncertainty: Models are a representation and approximation of real climate conditions, due to practical reasons, there are certain processes that are not incorporated into the climate model. • Scenario uncertainty: PTTEP has selected the most appropriate scenarios for our business, however we acknowledge the existence of other scenarios, the differences between our selected scenarios and other scenarios and the inherent limitations of the scenarios we have selected. • Internal uncertainty: This uncertainty is generated by climate itself, as it is a complex and non-linear system, leading to unpredictability of outcomes that cannot be fully resolved, even by the most comprehensive models.

(5.1.1.11) Rationale for choice of scenario

Scenario analysis based on RCPs helps in understanding the range of outcomes regarding the physical impacts to the environment over a range of global temperature increases compared to pre-industrial levels. This then helps informing businesses such as PTTEP on the potential physical impacts that may occur if global average temperatures are increased to above 2C. It supports informed decision-making by providing insights into the potential risks, opportunities, and trade-offs under different scenarios.

Water

(5.1.1.1) Scenario used

Water scenarios

☑ WRI Aqueduct

(5.1.1.3) Approach to scenario

Select from:

☑ Qualitative and quantitative

(5.1.1.4) Scenario coverage

Select from:

☑ Business activity

(5.1.1.5) Risk types considered in scenario

Select all that apply

☑ Acute physical

☑ Chronic physical

☑ Policy

☑ Reputation

☑ Liability

(5.1.1.7) Reference year

2023

(5.1.1.8) Timeframes covered

Select all that apply

☑ 2030

☑ 2050

(5.1.1.9) Driving forces in scenario

Local ecosystem asset interactions, dependencies and impacts

☑ Changes to the state of nature

☑ Changes in ecosystem services provision

Finance and insurance

☑ Cost of capital

Stakeholder and customer demands

☑ Consumer attention to impact

☑ Sensitivity to inequity of nature impacts

Regulators, legal and policy regimes

☑ Global regulation

☑ Political impact of science (from galvanizing to paralyzing)

☑ Global targets

Relevant technology and science

☑ Granularity of available data (from aggregated to local)

☑ Data regime (from closed to open)

Direct interaction with climate

☑ On asset values, on the corporate

Macro and microeconomy

☑ Domestic growth

☑ Globalizing markets

(5.1.1.10) Assumptions, uncertainties and constraints in scenario

The purpose of IPCC Climate Change Scenarios is to give foresight on the future with regard to GHG emissions. These scenarios basically help predict possible outcomes of different situations and are useful for climate analysis, modeling, and assessments. IPCC uses "Representative Concentration Pathways (RCP)" and

"Shared Socioeconomic Pathways (SSPs) as scenarios for predicting climate change. AQUEDUCT computes water stress results into 2 separate years using IPCC scenarios; 2030, and 2040. It then depicts 1 possible alternative scenario (business as usual) for each of the projected years. Business as usual - RCP8.5/SSP5-8.5 is a "business-as-usual" scenario of relatively unconstrained emissions. Temperatures increase 2.6–4.8C by 2100 relative to 1986–2005 levels.

(5.1.1.11) Rationale for choice of scenario

WRI's Aqueduct is a well-known global water risk database that helps companies screen water risk data by location. The tool includes the baseline water stress indicator and estimates the degree to which freshwater availability is an ongoing concern such as high levels of baseline water stress are associated with increased socioeconomic competition for freshwater supplies and heightened political attention to issues of water scarcity.

Climate change

(5.1.1.1) Scenario used

Physical climate scenarios

☑ RCP 4.5

(5.1.1.2) Scenario used SSPs used in conjunction with scenario

Select from:

☑ No SSP used

(5.1.1.3) Approach to scenario

Select from:

☑ Qualitative and quantitative

(5.1.1.4) Scenario coverage

Select from:

☑ Facility

(5.1.1.5) Risk types considered in scenario

Select all that apply

☑ Acute physical

☑ Chronic physical

(5.1.1.6) Temperature alignment of scenario

Select from:

☑ 2.0ºC - 2.4ºC

(5.1.1.7) Reference year

2023

(5.1.1.8) Timeframes covered

Select all that apply

☑ 2030

☑ 2050

(5.1.1.9) Driving forces in scenario

Local ecosystem asset interactions, dependencies and impacts

☑ Changes in ecosystem services provision

☑ Climate change (one of five drivers of nature change)

Regulators, legal and policy regimes

☑ Global targets

(5.1.1.10) Assumptions, uncertainties and constraints in scenario

RCP 4.5 is used to identify a strong mitigation scenario that may lead to temperature increase of approximately 2C in 2100. PTTEP applies RCP 4.5 into physical risk including heatwaves, tropical cyclones, heavy precipitation, drought, and other water-related risk. Our scenario analysis is run based on sets of assumptions derived from sources such as IEA for transition risks and IPCC for physical risks. Forward-looking statements, such as those covered under scenarios, are subject to adjustments based on future information. PTTEP acknowledges three main areas of uncertainty regarding our scenario analysis assessment: • Model uncertainty: Models are a representation and approximation of real climate conditions, due to practical reasons, there are certain processes that are not incorporated into the

climate model. • Scenario uncertainty: PTTEP has selected the most appropriate scenarios for our business, however we acknowledge the existence of other scenarios, the differences between our selected scenarios and other scenarios and the inherent limitations of the scenarios we have selected. • Internal uncertainty: This uncertainty is generated by climate itself, as it is a complex and non-linear system, leading to unpredictability of outcomes that cannot be fully resolved, even by the most comprehensive models.

(5.1.1.11) Rationale for choice of scenario

Scenario analysis based on RCPs helps in understanding the range of outcomes regarding the physical impacts to the environment over a range of global temperature increases compared to pre-industrial levels. This then helps informing businesses such as PTTEP on the potential physical impacts that may occur if global average temperatures are increased to above 2C. It supports informed decision-making by providing insights into the potential risks, opportunities, and trade-offs under different scenarios.

Climate change

(5.1.1.1) Scenario used

Physical climate scenarios

☑ RCP 8.5

(5.1.1.2) Scenario used SSPs used in conjunction with scenario

Select from:

☑ No SSP used

(5.1.1.3) Approach to scenario

Select from:

☑ Qualitative and quantitative

(5.1.1.4) Scenario coverage

Select from:

☑ Facility

(5.1.1.5) Risk types considered in scenario

Select all that apply

☑ Acute physical

☑ Chronic physical

(5.1.1.6) Temperature alignment of scenario

Select from:

☑ 4.0°C and above

(5.1.1.7) Reference year

2023

(5.1.1.8) Timeframes covered

Select all that apply

☑ 2030

☑ 2050

(5.1.1.9) Driving forces in scenario

Local ecosystem asset interactions, dependencies and impacts

☑ Changes in ecosystem services provision

☑ Climate change (one of five drivers of nature change)

Regulators, legal and policy regimes

☑ Global targets

(5.1.1.10) Assumptions, uncertainties and constraints in scenario

RCP 8.5 is used to identify a business-as-usual (BaU) scenario with a continuation of the current path of increasing GHG concentrations that may lead to temperature increase of approximately 4C in 2100. PTTEP applies RCP 8.5 into physical risk including heatwaves, tropical cyclones, heavy precipitation, drought, and other water-related risk. Our scenario analysis is run based on sets of assumptions derived from sources such as IEA for transition risks and IPCC for physical risks. Forward-looking statements, such as those covered under scenarios, are subject to adjustments based on future information. PTTEP acknowledges three main areas of

uncertainty regarding our scenario analysis assessment: • Model uncertainty: Models are a representation and approximation of real climate conditions, due to practical reasons, there are certain processes that are not incorporated into the climate model. • Scenario uncertainty: PTTEP has selected the most appropriate scenarios for our business, however we acknowledge the existence of other scenarios, the differences between our selected scenarios and other scenarios and the inherent limitations of the scenarios we have selected. • Internal uncertainty: This uncertainty is generated by climate itself, as it is a complex and non-linear system, leading to unpredictability of outcomes that cannot be fully resolved, even by the most comprehensive models.

(5.1.1.11) Rationale for choice of scenario

Scenario analysis based on RCPs helps in understanding the range of outcomes regarding the physical impacts to the environment over a range of global temperature increases compared to pre-industrial levels. This then helps informing businesses such as PTTEP on the potential physical impacts that may occur if global average temperatures are increased to above 2C. It supports informed decision-making by providing insights into the potential risks, opportunities, and trade-offs under different scenarios.

Climate change

(5.1.1.1) Scenario used

Climate transition scenarios

☑ IEA SDS

(5.1.1.3) Approach to scenario

Select from:

☑ Qualitative and quantitative

(5.1.1.4) Scenario coverage

Select from:

☑ Country/area

(5.1.1.5) Risk types considered in scenario

Select all that apply

☑ Policy

☑ Market

☑ Technology

(5.1.1.6) Temperature alignment of scenario

Select from:

☑ 2.0°C - 2.4°C

(5.1.1.7) Reference year

2023

(5.1.1.8) Timeframes covered

Select all that apply

☑ 2030

☑ 2050

(5.1.1.9) Driving forces in scenario

Local ecosystem asset interactions, dependencies and impacts

☑ Climate change (one of five drivers of nature change)

Finance and insurance

☑ Cost of capital

Regulators, legal and policy regimes

☑ Global targets

Direct interaction with climate

☑ On asset values, on the corporate

☑ Perception of efficacy of climate regime

(5.1.1.10) Assumptions, uncertainties and constraints in scenario

International Energy Agency (IEA) Sustainable Development Scenario is used to identify major transformation of the global energy system from oil & gas to renewable energy. This scenario fully aligned with the original Paris Agreement estimating temperature increase of approximately 2C in 2100. PTTEP applies SDS into transition risk including policy, technology and market. Our scenario analysis is run based on sets of assumptions derived from sources such as IEA for transition risks and IPCC for physical risks. Forward-looking statements, such as those covered under scenarios, are subject to adjustments based on future information. PTTEP acknowledges three main areas of uncertainty regarding our scenario analysis assessment: • Model uncertainty: Models are a representation and approximation of real climate conditions, due to practical reasons, there are certain processes that are not incorporated into the climate model. • Scenario uncertainty: PTTEP has selected the most appropriate scenarios for our business, however we acknowledge the existence of other scenarios, the differences between our selected scenarios and other scenarios and the inherent limitations of the scenarios we have selected. • Internal uncertainty: This uncertainty is generated by climate itself, as it is a complex and non-linear system, leading to unpredictability of outcomes that cannot be fully resolved, even by the most comprehensive models.

(5.1.1.11) Rationale for choice of scenario

Transition risks in our risk assessment refer to scenarios from the International Energy Agency (IEA) and other sources e.g. IPCC. The IEA mainly looks at future trends of energy production, demand and consumption, and from these any related impact to global GHG emissions. In lower carbon scenarios, such as Sustainable Development Scenario (SDS), renewable energy transition occurs faster, and use of higher polluting fuels such as coal are phased out more quickly. The Stated Policies Scenario (SPS) looks at a scenario where the world continues as per national and international policies currently in place. In this scenario, most of the world's energy consumption remains fossil-based, with fewer actions towards renewable energy. However, IPCC looks at a wide range of possible carbon prices based on policy measures, available technologies, and model methodologies.
[Add row]

(5.1.2) Provide details of the outcomes of your organization's scenario analysis.

Climate change

(5.1.2.1) Business processes influenced by your analysis of the reported scenarios

Select all that apply

☑ Risk and opportunities identification, assessment and management

☑ Resilience of business model and strategy

(5.1.2.2) Coverage of analysis

Select from:

☑ Facility

(5.1.2.3) Summarize the outcomes of the scenario analysis and any implications for other environmental issues

Scenario analysis allows PTTEP to see what would happen under different scenarios. Scenario analysis also help us to identify and understand on the followings: 1. Variety: envision and adapt to a wide range of possible futures. 2. Comparability: compare how we are measuring, mitigating and adapting to specific risks.

Water

(5.1.2.1) Business processes influenced by your analysis of the reported scenarios

Select all that apply

☑ Risk and opportunities identification, assessment and management

(5.1.2.2) Coverage of analysis

Select from:

☑ Business activity

(5.1.2.3) Summarize the outcomes of the scenario analysis and any implications for other environmental issues

PTTEP has conducted water risk assessment to assess future potential water related risk on operating assets based on four different scenarios as follows: Event A: increase in cost of water Event B: physical water parameters Event C: increased regulatory controls Event D: surrounding catchment/water use To fully address comprehensive water related risk scenarios such as physical risks, regulatory and pricing risk and reputation (i.e. stakeholder conflict) risks, general water information of each asset was provided by worldwide accepted water tools. The Aqueduct developed by WRI, and the Water Risk Filter developed by WWF incorporate PTTEP site-specific data (including financial data and non-financial data). Each global tool used in the study provides information for different objectives. WRI's Aqueduct provides more in-depth information on water stress, water depletion, inter-annual variability, seasonal variability, groundwater table decline, drought risk, Untreated connected wastewater (by region) and scenario analysis. In addition, WWF Water Risk Filter provides information related to levels of water scarcity risk, flood risk, water quality risk, regulatory risk and reputation risk. The water risk assessment will generate water-related risk levels based on the company's risk matrix. In 2023 we updated our assessment for event risks to cover 3 timescales: 2023, medium (2024-2030) and long (2031-2050) term. The outcomes of water risk assessment can assist PTTEP decision makers on water-related risk identification, quantification of the magnitude of impacts to the PTTEP business if the risks occur at high level, water-related risk mitigation and management plan are required. However, the assessment results show that PTTEP absolutely has moderate and low water-related risks for all assessed timeframe and PTTEP assets and support bases. The water related risks have to be assessed regularly or when having significant change to ensure water related risks are monitored and properly mitigated. Thus, the water-related risks are incorporated into the corporate risk monitoring system to monitor and manage at corporate level.
[Fixed row]

(5.2) Does your organization's strategy include a climate transition plan?

(5.2.1) Transition plan

Select from:

☑ Yes, we have a climate transition plan which aligns with a 1.5°C world

(5.2.3) Publicly available climate transition plan

Select from:

☑ Yes

(5.2.4) Plan explicitly commits to cease all spending on, and revenue generation from, activities that contribute to fossil fuel expansion

Select from:

☑ No, and we do not plan to add an explicit commitment within the next two years

(5.2.6) Explain why your organization does not explicitly commit to cease all spending on and revenue generation from activities that contribute to fossil fuel expansion

PTTEP's main business is exploration and production of oil and natural gas to serve demand of energy consumption in Thailand. To support the transition, the company explores in low-carbon energy and renewable energy.

(5.2.7) Mechanism by which feedback is collected from shareholders on your climate transition plan

Select from:

☑ Our climate transition plan is voted on at AGMs and we also have an additional feedback mechanism in place

(5.2.8) Description of feedback mechanism

Feedback could be made via - Materiality survey at triannual basis to get information on interests/ concerns/ recommendations from all stakeholder groups which is including shareholders. - Analyst meeting at quarterly basis to present plan/progress and get recommendation against our business plan (including transition plan) Our target, strategy and transition plan in response to climate-related issue also has been announced in our Annual General Meetings (AGM).

(5.2.9) Frequency of feedback collection

Select from:

☑ More frequently than annually

(5.2.10) Description of key assumptions and dependencies on which the transition plan relies

- Diversify to energy transition business - Diversify to lower carbon products

(5.2.11) Description of progress against transition plan disclosed in current or previous reporting period

PTTEP has established new business portfolio ready for future energy transition under the “Diversify” Strategic Pillar. This business will help to sustain the long-term direction of PTTEP.

(5.2.12) Attach any relevant documents which detail your climate transition plan (optional)

pttep-tcfd-disclosure-report-en.pdf

(5.2.13) Other environmental issues that your climate transition plan considers

Select all that apply

☑ No other environmental issue considered

[Fixed row]

(5.3) Have environmental risks and opportunities affected your strategy and/or financial planning?

(5.3.1) Environmental risks and/or opportunities have affected your strategy and/or financial planning

Select from:

☑ Yes, both strategy and financial planning

(5.3.2) Business areas where environmental risks and/or opportunities have affected your strategy

Select all that apply

☑ Products and services
☑ Upstream/downstream value chain
☑ Investment in R&D
☑ Operations
[Fixed row]

(5.3.1) Describe where and how environmental risks and opportunities have affected your strategy.

Products and services

(5.3.1.1) Effect type

Select all that apply
☑ Risks

(5.3.1.2) Environmental issues relevant to the risks and/or opportunities that have affected your strategy in this area

Select all that apply
☑ Climate change

(5.3.1.3) Describe how environmental risks and/or opportunities have affected your strategy in this area

There are many socioeconomic scenarios that have been applied to address the impact of specific transition risks (policy, legal, technology, market, and reputation) to our products. The risks and opportunities regarding energy and electricity prices, climate policies, carbon prices, and energy mix, market and technology influenced our strategy in term of integration of the result into the company climate related goal and targets, e.g. our roadmap to become the low-carbon footprint organization, target of GHG emission intensity reduction and net-zero GHG emission target. This directly influence our business objectives and strategy to explore investment opportunities in potential new business to enhance the company's competitiveness and future sustainable growth. This included a promotion of LPG and natural gas as well as aiming to increase the share of renewable energy in the energy mix.

Upstream/downstream value chain

(5.3.1.1) Effect type

Select all that apply

☑ Risks

(5.3.1.2) Environmental issues relevant to the risks and/or opportunities that have affected your strategy in this area

Select all that apply

☑ Climate change

☑ Water

(5.3.1.3) Describe how environmental risks and/or opportunities have affected your strategy in this area

Both physical and market risk may impact to company supply chain, e.g. disruption to supply chain (product transportation) from water flooding, storm and drought and/or the market shifts to more environmental stewardship products/services. With this reason, PTTEP has in place the PTTEP Vendor Sustainable Code of Conduct which governs the conduct of vendors on issues relating to their business operations and ethics, human rights, occupational health and safety, as well as environmental expectations. The company also set the goal to increase the green procurement (for products/services with low carbon and low environmental impacts) to 30% of total spending by 2022. To achieve this goal, we developed the "Green Procurement Criteria" for each of the work categories, which were then certified by the Thailand Environment Institute (TEI), and also developed an approach to evaluate the environmental considerations of procurement practices.

Investment in R&D

(5.3.1.1) Effect type

Select all that apply

☑ Opportunities

(5.3.1.2) Environmental issues relevant to the risks and/or opportunities that have affected your strategy in this area

Select all that apply

☑ Climate change

(5.3.1.3) Describe how environmental risks and/or opportunities have affected your strategy in this area

Due to global climate change situation leading to alternative energy adoption, i.e. renewable energy, PTTEP as an oil and gas exploration and production company will be impacted from this transition to low carbon society in case new technologies and new business opportunities are not developed for future trend. With this regard, PTTEP has established Technology Management Division since 2013 with objectives to enhancing core E&P business, minimize environmental impact, explore future energy transition. One of the key objectives of new organization is to explore new business opportunity including low carbon technology e.g. hydrogen and renewable energy.

Operations

(5.3.1.1) Effect type

Select all that apply

☑ Risks

(5.3.1.2) Environmental issues relevant to the risks and/or opportunities that have affected your strategy in this area

Select all that apply

☑ Climate change

☑ Water

(5.3.1.3) Describe how environmental risks and/or opportunities have affected your strategy in this area

The identified physical risks have potential to impact to PTTEP operations, e.g. heatwaves, tropical cyclones, and flooding were the main risks, with potential impacts on all PTTEP's offshore facilities, highest frequency of tropical cyclones in the Gulf of Thailand. However, the design basis of existing operations is still valid, with expected climate conditions. In some instances, changes to certain variables by 2035 are within the design threshold. Therefore, the physical risks which may impact our operations in future are under our close monitoring.
[Add row]

(5.3.2) Describe where and how environmental risks and opportunities have affected your financial planning.

Row 1

(5.3.2.1) Financial planning elements that have been affected

Select all that apply

☑ Direct costs

(5.3.2.2) Effect type

Select all that apply

☑ Risks

(5.3.2.3) Environmental issues relevant to the risks and/or opportunities that have affected these financial planning elements

Select all that apply

☑ Climate change

☑ Water

(5.3.2.4) Describe how environmental risks and/or opportunities have affected these financial planning elements

Environmental impacts from physical risks could damage PTTEP's facilities and affect to direct cost. Heatwaves impact can cause work hour lost, while tropical cyclones can damage equipment, infrastructure which will require maintenance cost,

Row 2

(5.3.2.1) Financial planning elements that have been affected

Select all that apply

☑ Revenues

☑ Capital expenditures

(5.3.2.2) Effect type

Select all that apply

☑ Risks

(5.3.2.3) Environmental issues relevant to the risks and/or opportunities that have affected these financial planning elements

Select all that apply

☑ Climate change

☑ Water

(5.3.2.4) Describe how environmental risks and/or opportunities have affected these financial planning elements

The world is progressively switching towards more and more ambitious climate policies. In terms of carbon pricing as a policy risk, according to the study of the World Bank, around 57 carbon pricing initiatives have been implemented, or scheduled for implementation, in 46 national and 28 subnational jurisdictions. At least 20% of global emissions (11 GtCO2e) is covered by a carbon price ranging from USD 1 to 127/tCO2e, with 51% of emissions covered prices below USD 10/tCO2e. It is expected that this amount will increase significantly over the years, as a lot of countries are in the process of entering carbon pricing ETS. The international IEA WEO scenarios projected increases in carbon prices, which could put PTTEP under risk. The direct influence of the policy risk in term of an increasing of carbon pricing, for example, is reflected in our 2020-2030 Sustainable Development Plan which target to explore investment opportunities in potential new business to enhance the company's competitiveness and future sustainable growth. With company strategy, we allocate 10% of PTTEP's total capital expenditure (CAPEX) budget for transition business during 2024-2030.
[Add row]

(5.4) In your organization's financial accounting, do you identify spending/revenue that is aligned with your organization's climate transition?

	Identification of spending/revenue that is aligned with your organization's climate transition	Methodology or framework used to assess alignment with your organization's climate transition
	Select from: ☑ Yes	*Select all that apply* ☑ Other methodology or framework

[Fixed row]

(5.4.1) Quantify the amount and percentage share of your spending/revenue that is aligned with your organization's climate transition.

Row 1

(5.4.1.1) Methodology or framework used to assess alignment

Select from:
☑ Other, please specify **:**Decarbonization budget

(5.4.1.5) Financial metric

Select from:
☑ CAPEX

(5.4.1.6) Amount of selected financial metric that is aligned in the reporting year (currency)

29500000

(5.4.1.7) Percentage share of selected financial metric aligned in the reporting year (%)

1

(5.4.1.8) Percentage share of selected financial metric planned to align in 2025 (%)

10

(5.4.1.9) Percentage share of selected financial metric planned to align in 2030 (%)

10

(5.4.1.12) Details of the methodology or framework used to assess alignment with your organization's climate transition

As part of our commitment to becoming a low-carbon organization and fostering future growth, PTTEP allocates capital expenditure (CAPEX) budget to energy transition businesses amounting to USD 29.5 million in 2023. The company also set the allocate 10% of PTTEP's total capital expenditure (CAPEX) budget for transition business during 2024-2030, this is including climate transition.
[Add row]

(5.5) Does your organization invest in research and development (R&D) of low-carbon products or services related to your sector activities?

(5.5.1) Investment in low-carbon R&D

Select from:
☑ Yes

(5.5.2) Comment

As part of our commitment to becoming a low-carbon organization and fostering future growth, PTTEP is dedicated to Research, Development, and Technology (RD&T) activities while fostering innovation, aiming to support the corporate strategy and targets, with three key objectives: (1) Enhancing value and competitiveness in E&P business, (2) Minimizing GHG emissions to transition into a low-carbon organization, and (3) Supporting the energy transition and venturing into new businesses. PTTEP has been exploring opportunities to diversify into new businesses focusing on future energy, advanced technology, and innovation as well as decarbonization technology. In this regard, we invest in large-scale green hydrogen project.
[Fixed row]

(5.5.7) Provide details of your organization's investments in low-carbon R&D for your sector activities over the last three years.

Row 1

(5.5.7.1) Technology area

Select from:
☑ Hydrogen

(5.5.7.2) Stage of development in the reporting year

Select from:
☑ Large scale commercial deployment

(5.5.7.3) Average % of total R&D investment over the last 3 years

12.5

(5.5.7.4) R&D investment figure in the reporting year (unit currency as selected in 1.2) (optional)

12.5

(5.5.7.5) Average % of total R&D investment planned over the next 5 years

1.3

(5.5.7.6) Explain how your R&D investment in this technology area is aligned with your climate commitments and/or climate transition plan

Moving towards future energy development, PTTEP has embarked on a large-scale green hydrogen project. The project aims to establish an integrated green hydrogen production system. It involves the development of a green hydrogen plant, alongside solar and wind plants in Block Z1-02, with a planned capacity of about 5 gigawatts (GW), to generate renewable energy to power the production process. To facilitate transportation, it's planned to build an ammonia production facility to convert most of the green hydrogen production into green ammonia in the Special Economic Zone at Duqm City in 2027, with a targeted commercial operations date in 2030. The plant is geared towards achieving an annual capacity of 1.2 million tonnes. The produced green ammonia is primarily intended for export to South Korea, where there is a demand for its use as a mixed fuel with coal fuels. The initial target is to reduce GHG emissions by approximately 20 percent from power generation process. The remaining green hydrogen will fulfill Oman's domestic consumption needs. Presently, the consortium is carrying out feasibility and technical studies to finalize the total capital expenditure required for the project.
[Add row]

(5.6) Break down, by fossil fuel expansion activity, your organization's CAPEX in the reporting year and CAPEX planned over the next 5 years.

Exploration of new oil fields

(5.6.1) CAPEX in the reporting year for this expansion activity (unit currency as selected in 1.2)

0

(5.6.2) CAPEX in the reporting year for this expansion activity as % of total CAPEX in the reporting year

0

(5.6.3) CAPEX planned over the next 5 years for this expansion activity as % of total CAPEX planned over the next 5 years

0

(5.6.4) Explain your CAPEX calculations, including any assumptions

NA

Exploration of new natural gas fields

(5.6.1) CAPEX in the reporting year for this expansion activity (unit currency as selected in 1.2)

0

(5.6.2) CAPEX in the reporting year for this expansion activity as % of total CAPEX in the reporting year

0

(5.6.3) CAPEX planned over the next 5 years for this expansion activity as % of total CAPEX planned over the next 5 years

0

(5.6.4) Explain your CAPEX calculations, including any assumptions

NA

Expansion of existing oil fields

(5.6.1) CAPEX in the reporting year for this expansion activity (unit currency as selected in 1.2)

530619328

(5.6.2) CAPEX in the reporting year for this expansion activity as % of total CAPEX in the reporting year

17

(5.6.3) CAPEX planned over the next 5 years for this expansion activity as % of total CAPEX planned over the next 5 years

20

(5.6.4) Explain your CAPEX calculations, including any assumptions

CAPEX including the capital expenditure invested in existing oil fields consisting of S1, Suphanburi and Malaysia asset.

Expansion of existing natural gas fields

(5.6.1) CAPEX in the reporting year for this expansion activity (unit currency as selected in 1.2)

1755477347

(5.6.2) CAPEX in the reporting year for this expansion activity as % of total CAPEX in the reporting year

57

(5.6.3) CAPEX planned over the next 5 years for this expansion activity as % of total CAPEX planned over the next 5 years

40

(5.6.4) Explain your CAPEX calculations, including any assumptions

CAPEX including the capital expenditure invested in existing gas fields consisting of G1, G2N, G2S, ART, Sinphuhorm, Zawtika and Yadana asset.
[Fixed row]

(5.9) What is the trend in your organization's water-related capital expenditure (CAPEX) and operating expenditure (OPEX) for the reporting year, and the anticipated trend for the next reporting year?

(5.9.1) Water-related CAPEX (+/- % change)

98

(5.9.2) Anticipated forward trend for CAPEX (+/- % change)

-7.9

(5.9.3) Water-related OPEX (+/- % change)

-178

(5.9.4) Anticipated forward trend for OPEX (+/- % change)

81.64

(5.9.5) Please explain

In 2023, PTTEP extracted water-related expenses from our system for reporting Environmental Performance Standards (EPS). Each asset reported its expenditure related to the environment, categorized as CAPEX and OPEX. The increase in CAPEX is due to our external services for environmental management. While the 2023 OPEX decreased because most of the maintenance and operating materials and services were fully utilized in 2022. It is expected that both CAPEX and OPEX expenditures in next year's reporting will increase due to oil prices and business activity.
[Fixed row]

(5.10) Does your organization use an internal price on environmental externalities?

	Use of internal pricing of environmental externalities	Environmental externality priced
	Select from: ☑ Yes	*Select all that apply* ☑ Carbon

[Fixed row]

(5.10.1) Provide details of your organization’s internal price on carbon.

Row 1

(5.10.1.1) Type of pricing scheme

Select from:
☑ Implicit price

(5.10.1.2) Objectives for implementing internal price

Select all that apply

☑ Navigate regulations
☑ Stress test investments
☑ Set a carbon offset budget
☑ Drive low-carbon investment
☑ Influence strategy and/or financial planning
☑ Setting and/or achieving of climate-related policies and targets
☑ Incentivize consideration of climate-related issues in decision making

(5.10.1.3) Factors considered when determining the price

Select all that apply

☑ Benchmarking against peers
☑ Cost of required measures to achieve climate-related targets

(5.10.1.4) Calculation methodology and assumptions made in determining the price

PTTEP sets our carbon price through looking at external resources such as IEA World Energy Outlook and internal carbon pricing in the oil and gas industry. We have designed our carbon price to ensure that it properly reflects the potential risk from carbon pricing schemes in the future and we look to update our internal carbon price on a regular basis, especially after the Thai Government announces the first Climate Change Act. PTTEP has introduced an internal pricing scheme aimed at creating a right balance between GHG emissions management towards net zero aspiration and business growth opportunities, PTTEP is considering the application of a price of USD 35-60 per tonne of CO2 equivalent in our investment decisions for new M&A projects, incorporating distinct steps for operating and non-operating assets.

(5.10.1.5) Scopes covered

Select all that apply

☑ Scope 1
☑ Scope 2

(5.10.1.6) Pricing approach used – spatial variance

Select from:

☑ Uniform

(5.10.1.8) Pricing approach used – temporal variance

Select from:

☑ Evolutionary

(5.10.1.9) Indicate how you expect the price to change over time

Increase in future

(5.10.1.10) Minimum actual price used (currency per metric ton CO2e)

35

(5.10.1.11) Maximum actual price used (currency per metric ton CO2e)

60

(5.10.1.12) Business decision-making processes the internal price is applied to

Select all that apply
☑ Risk management

(5.10.1.13) Internal price is mandatory within business decision-making processes

Select from:
☑ Yes, for some decision-making processes, please specify :Only M&A

(5.10.1.14) % total emissions in the reporting year in selected scopes this internal price covers

0

(5.10.1.15) Pricing approach is monitored and evaluated to achieve objectives

Select from:
☑ Yes

(5.10.1.16) Details of how the pricing approach is monitored and evaluated to achieve your objectives

PTTEP apply Marginal Abatement Cost of Carbon curve (MACC curve) as the pricing approach of monitoring. The price will be reviewed every 2 years or as necessary to ensure its effectiveness.
[Add row]

(5.11) Do you engage with your value chain on environmental issues?

Suppliers

(5.11.1) Engaging with this stakeholder on environmental issues

Select from:
☑ Yes

(5.11.2) Environmental issues covered

Select all that apply
☑ Climate change

Customers

(5.11.1) Engaging with this stakeholder on environmental issues

Select from:
☑ Yes

(5.11.2) Environmental issues covered

Select all that apply
☑ Climate change
☑ Water

Investors and shareholders

(5.11.1) Engaging with this stakeholder on environmental issues

Select from:

☑ No, but we plan to within the next two years

(5.11.3) Primary reason for not engaging with this stakeholder on environmental issues

Select from:

☑ Not an immediate strategic priority

(5.11.4) Explain why you do not engage with this stakeholder on environmental issues

PTTEP considers upstream and downstream value chain of our direct operation is supplier and customer.

Other value chain stakeholders

(5.11.1) Engaging with this stakeholder on environmental issues

Select from:

☑ No, but we plan to within the next two years

(5.11.3) Primary reason for not engaging with this stakeholder on environmental issues

Select from:

☑ Not an immediate strategic priority

(5.11.4) Explain why you do not engage with this stakeholder on environmental issues

PTTEP considers upstream and downstream value chain of our direct operation is supplier and customer.
[Fixed row]

(5.11.1) Does your organization assess and classify suppliers according to their dependencies and/or impacts on the environment?

Climate change

(5.11.1.1) Assessment of supplier dependencies and/or impacts on the environment

Select from:

☑ Yes, we assess the dependencies and/or impacts of our suppliers

(5.11.1.2) Criteria for assessing supplier dependencies and/or impacts on the environment

Select all that apply

☑ Contribution to supplier-related Scope 3 emissions

☑ Impact on plastic waste and pollution

(5.11.1.3) % Tier 1 suppliers assessed

Select from:

☑ 1-25%

(5.11.1.4) Define a threshold for classifying suppliers as having substantive dependencies and/or impacts on the environment

PTTEP develops and implements the Green Procurement Criteria Manual covered the goods and services that still not being included in Thai Green Label Products list and PTTEP has significant proportion of spent on that goods or services. PTTEP's green procurement toolkit is developed to elaborate of roles and responsibilities as a responsible operator by considering beyond cost-benefit and approach to maximize net benefit of the wider environment. In 2022, 7.6% of total suppliers are engaged.

(5.11.1.5) % Tier 1 suppliers meeting the thresholds for substantive dependencies and/or impacts on the environment

Select from:

☑ 76-99%

(5.11.1.6) Number of Tier 1 suppliers meeting the thresholds for substantive dependencies and/or impacts on the environment

170
[Fixed row]

(5.11.2) Does your organization prioritize which suppliers to engage with on environmental issues?

Climate change

(5.11.2.1) Supplier engagement prioritization on this environmental issue

Select from:

☑ Yes, we prioritize which suppliers to engage with on this environmental issue

(5.11.2.2) Criteria informing which suppliers are prioritized for engagement on this environmental issue

Select all that apply

☑ Procurement spend

(5.11.2.4) Please explain

PTTEP prioritizes the supplier for engagement considering with spend volume since these group of suppliers are mainly associated with our business activity.
[Fixed row]

(5.11.5) Do your suppliers have to meet environmental requirements as part of your organization's purchasing process?

	Suppliers have to meet specific environmental requirements related to this environmental issue as part of the purchasing process	Policy in place for addressing supplier non-compliance	Comment
Climate change	*Select from:* ☑ Yes, environmental requirements related to this environmental issue are included in our supplier contracts	*Select from:* ☑ Yes, we have a policy in place for addressing non-compliance	*There is a feedback mechanism to allow the contractor or supplier to improve their performance over the contractual period.*

[Fixed row]

(5.11.6) Provide details of the environmental requirements that suppliers have to meet as part of your organization's purchasing process, and the compliance measures in place.

Climate change

(5.11.6.1) Environmental requirement

Select from:

☑ Implementation of emissions reduction initiatives

(5.11.6.2) Mechanisms for monitoring compliance with this environmental requirement

Select all that apply

☑ Supplier scorecard or rating

☑ Supplier self-assessment

(5.11.6.3) % tier 1 suppliers by procurement spend required to comply with this environmental requirement

Select from:

☑ None

(5.11.6.4) % tier 1 suppliers by procurement spend in compliance with this environmental requirement

Select from:

☑ 1-25%

(5.11.6.7) % tier 1 supplier-related scope 3 emissions attributable to the suppliers required to comply with this environmental requirement

Select from:

☑ None

(5.11.6.8) % tier 1 supplier-related scope 3 emissions attributable to the suppliers in compliance with this environmental requirement

Select from:

☑ 1-25%

(5.11.6.9) Response to supplier non-compliance with this environmental requirement

Select from:

☑ Other, please specify **:**Response via feedback mechanism

(5.11.6.10) % of non-compliant suppliers engaged

Select from:

☑ None

(5.11.6.11) Procedures to engage non-compliant suppliers

Select all that apply

☑ Providing information on appropriate actions that can be taken to address non-compliance

(5.11.6.12) Comment

There is a feedback mechanism to allow the contractor or supplier to improve their performance over the contractual period.
[Add row]

(5.11.7) Provide further details of your organization’s supplier engagement on environmental issues.

Climate change

(5.11.7.2) Action driven by supplier engagement

Select from:

☑ Emissions reduction

(5.11.7.3) Type and details of engagement

Capacity building

☑ Provide training, support and best practices on how to mitigate environmental impact

Financial incentives

☑ Feature environmental performance in supplier awards scheme

(5.11.7.4) Upstream value chain coverage

Select all that apply

☑ Tier 1 suppliers

(5.11.7.5) % of tier 1 suppliers by procurement spend covered by engagement

Select from:

☑ 1-25%

(5.11.7.6) % of tier 1 supplier-related scope 3 emissions covered by engagement

Select from:

☑ 1-25%

(5.11.7.9) Describe the engagement and explain the effect of your engagement on the selected environmental action

PTTEP develops and implements green supply chain management with the objective to elaborate of roles and responsibilities as a responsible and prudent operator by considering beyond private cost-benefit and approach to maximize net benefit of the wider environment. This is to promote procurement of environmentally friendly goods and services, seek the opportunity to reduce environmental impact throughout their life cycle by integrating environmental performance considerations in PTTEP's procurement process. This manual focuses on how to integrate green criteria into procurement and contract processes. PTTEP also puts an emphasis on supply chain management efficiency to proactively address and minimize environmental, social, and governance risks while fostering shared value with suppliers and enhancing their capabilities for mutual growth in order to navigate the energy transition. Safety, security, health and environmental related trainings are also provided to the suppler to enhance SSHE performance.

(5.11.7.10) Engagement is helping your tier 1 suppliers meet an environmental requirement related to this environmental issue

Select from:

☑ Yes, please specify the environmental requirement :reduce GHG emissions and waste

(5.11.7.11) Engagement is helping your tier 1 suppliers engage with their own suppliers on the selected action

Select from:

☑ Yes

[Add row]

(5.11.9) Provide details of any environmental engagement activity with other stakeholders in the value chain.

Climate change

(5.11.9.1) Type of stakeholder

Select from:

☑ Customers

(5.11.9.2) Type and details of engagement

Education/Information sharing

☑ Share information on environmental initiatives, progress and achievements

(5.11.9.3) % of stakeholder type engaged

Select from:

☑ 100%

(5.11.9.4) % stakeholder-associated scope 3 emissions

Select from:

☑ 76-99%

(5.11.9.5) Rationale for engaging these stakeholders and scope of engagement

All company products were sold directly to PTT Gas Separation Plant (GSP). Over 70% of PTTEP product is natural gas sent to GSP. The processing of our sold products by the GSP is contributed as a significant stage of GHG scope 3 emission. The engagement with our customers is implemented via an establishment of the Environmental taskforce in collaboration with customers to develop climate change related policy & strategy.

(5.11.9.6) Effect of engagement and measures of success

With the systematic engagement i.e. quarterly meeting, carbon pricing policy development and as a result of the collaboration on policy and strategy, PTT Gas Separation Plant (GSP) as a PTT subsidiary set the target of 27% GHG intensity reduction. This target was quarterly monitored. In 2021, PTT GSP has set new target to reduce GHG emissions at least 15% by 2030 from 2020 baseline. The measurement of success is tracked in quarterly basis through the PTTG environmental taskforce and PTTG management committee.

Water

(5.11.9.1) Type of stakeholder

Select from:

☑ Customers

(5.11.9.2) Type and details of engagement

Education/Information sharing

☑ Educate and work with stakeholders on understanding and measuring exposure to environmental risks

☑ Share information about your products and relevant certification schemes

☑ Share information on environmental initiatives, progress and achievements

(5.11.9.3) % of stakeholder type engaged

Select from:

☑ 100%

(5.11.9.5) Rationale for engaging these stakeholders and scope of engagement

PTTEP's sole customer is PTT, which is our mother company included in water related risk assessment.

(5.11.9.6) Effect of engagement and measures of success

The impact from water risk assessment is in term of awareness and monitor water use performance to reduce freshwater withdrawals are to increase opportunity for water reuse/recycle
[Add row]

C6. Environmental Performance - Consolidation Approach

(6.1) Provide details on your chosen consolidation approach for the calculation of environmental performance data.

	Consolidation approach used	Provide the rationale for the choice of consolidation approach
Climate change	*Select from:* ☑ Operational control	*Company has the full control over to introduce and implement the policies as well as reduce and mitigate the GHG emissions at the operations.*
Water	*Select from:* ☑ Operational control	*In alignment with GHG emissions and other environmental performance reporting*
Plastics	*Select from:* ☑ Other, please specify :Not a current strategic direction	*Company plans to conduct within 2 years*
Biodiversity	*Select from:* ☑ Operational control	*In alignment with GHG emissions and all environmental performance reporting*

[Fixed row]

C7. Environmental performance - Climate Change

(7.1.1) Has your organization undergone any structural changes in the reporting year, or are any previous structural changes being accounted for in this disclosure of emissions data?

	Has there been a structural change?
	Select all that apply ☑ No

[Fixed row]

(7.1.2) Has your emissions accounting methodology, boundary, and/or reporting year definition changed in the reporting year?

	Change(s) in methodology, boundary, and/or reporting year definition?	Details of methodology, boundary, and/or reporting year definition change(s)
	Select all that apply ☑ Yes, a change in methodology	*Change in emissions factors in alignment with IPCC Sixth Assessment Report (AR6)*

[Fixed row]

(7.1.3) Have your organization's base year emissions and past years' emissions been recalculated as a result of any changes or errors reported in 7.1.1 and/or 7.1.2?

(7.1.3.1) Base year recalculation

Select from:

☑ Yes

(7.1.3.2) Scope(s) recalculated

Select all that apply

☑ Scope 1

☑ Scope 2, location-based

☑ Scope 2, market-based

☑ Scope 3

(7.1.3.3) Base year emissions recalculation policy, including significance threshold

Change in emissions factors regarding Global Warming Potential (GWP) of CH4 and N2O.

(7.1.3.4) Past years' recalculation

Select from:

☑ Yes

[Fixed row]

(7.3) Describe your organization's approach to reporting Scope 2 emissions.

(7.3.1) Scope 2, location-based

Select from:

☑ We are reporting a Scope 2, location-based figure

(7.3.2) Scope 2, market-based

Select from:

☑ We are reporting a Scope 2, market-based figure

(7.3.3) Comment

PTTEP is unable to identify emission factor of Scope 2 market-based figure, the emissions of Scope 2 are therefore reported at same figure between location-based and market-based.
[Fixed row]

(7.5) Provide your base year and base year emissions.

Scope 1

(7.5.1) Base year end

12/30/2020

(7.5.2) Base year emissions (metric tons CO2e)

5387738

(7.5.3) Methodological details

Scope 1 emissions are calculated from sum of emissions from flare, stationary combustion, mobile combustion, fugitive losses and vent in operating assets. The emissions factor of each emission source is applied in compliance with standard, protocol and methodology stated in topic 7.2

Scope 2 (location-based)

(7.5.1) Base year end

12/30/2020

(7.5.2) Base year emissions (metric tons CO2e)

14372

(7.5.3) Methodological details

Scope 2 (location-based) emissions are calculated from emissions by electricity purchased in operating assets. The emission factor is applied in compliance with standard, protocol and methodology stated in topic 7.2

Scope 2 (market-based)

(7.5.1) Base year end

12/30/2020

(7.5.2) Base year emissions (metric tons CO2e)

14372

(7.5.3) Methodological details

Scope 2 (market-based) emissions are calculated from emissions by electricity purchased in operating assets. The emission factor is applied in compliance with standard, protocol and methodology stated in topic 7.2

Scope 3 category 1: Purchased goods and services

(7.5.1) Base year end

12/30/2020

(7.5.2) Base year emissions (metric tons CO2e)

0

(7.5.3) Methodological details

This category is not included in base year.

Scope 3 category 2: Capital goods

(7.5.1) Base year end

12/30/2020

(7.5.2) Base year emissions (metric tons CO2e)

0

(7.5.3) Methodological details

This category is not included in base year.

Scope 3 category 3: Fuel-and-energy-related activities (not included in Scope 1 or 2)

(7.5.1) Base year end

12/30/2020

(7.5.2) Base year emissions (metric tons CO2e)

0

(7.5.3) Methodological details

This category is not included in base year.

Scope 3 category 4: Upstream transportation and distribution

(7.5.1) Base year end

12/30/2020

(7.5.2) Base year emissions (metric tons CO2e)

0

(7.5.3) Methodological details

This category is not included in base year.

Scope 3 category 5: Waste generated in operations

(7.5.1) Base year end

12/30/2020

(7.5.2) Base year emissions (metric tons CO2e)

0

(7.5.3) Methodological details

This category is not included in base year.

Scope 3 category 6: Business travel

(7.5.1) Base year end

12/30/2020

(7.5.2) Base year emissions (metric tons CO2e)

6950

(7.5.3) Methodological details

Emission from business air travel is calculated from transportation distance multiply by number of passengers and emission factor. In addition, the emission factors in the PTT Group standard &API Compendium 2009 are used.

Scope 3 category 7: Employee commuting

(7.5.1) Base year end

12/30/2020

(7.5.2) Base year emissions (metric tons CO2e)

0

(7.5.3) Methodological details

This category is not included in base year.

Scope 3 category 8: Upstream leased assets

(7.5.1) Base year end

12/30/2020

(7.5.2) Base year emissions (metric tons CO2e)

0

(7.5.3) Methodological details

This category is not included in base year.

Scope 3 category 9: Downstream transportation and distribution

(7.5.1) Base year end

12/30/2020

(7.5.2) Base year emissions (metric tons CO2e)

5352

(7.5.3) Methodological details

Vehicle mileage (segregated by vehicle type and fuel type) and fuel use data separated by fuel type were used. In addition, the emission factors in the PTT Group standard & API.

Scope 3 category 10: Processing of sold products

(7.5.1) Base year end

12/30/2020

(7.5.2) Base year emissions (metric tons CO2e)

3806848

(7.5.3) Methodological details

Natural gas is major PTTEP's product (67% by volume) and was sold directly to PTT Gas Separation Plant (GSP) which is our sole customer. Therefore, GHG emissions from processing of PTTEP's natural gas sold is equal to scope 1&2 GHG emissions of PTT GSP (10,574,578 tonCO2e). However, natural gas from PTTEP is approx. 36% of total PTT GSP feedstock. This category is not included in the assurance scope and public disclosure.

Scope 3 category 11: Use of sold products

(7.5.1) Base year end

12/30/2020

(7.5.2) Base year emissions (metric tons CO2e)

33124192

(7.5.3) Methodological details

Emissions from natural gas combustion by the end user were calculated under the assumption that all natural gas sold in 2020 with volume of 663,744 MMSCF from our purchase orders was combusted in 2020. GHG emissions from processing of sold product is deducted. Emissions from crude oil are not relevant because it is not

combusted directly and must be processed into other products before being used. Emission factor used is referred to IPCC AR4 (IPCC 2006, vol.2, ch.2, p.2.16). This category is not included in the assurance scope and public disclosure.

Scope 3 category 12: End of life treatment of sold products

(7.5.1) Base year end

12/30/2020

(7.5.2) Base year emissions (metric tons CO2e)

0

(7.5.3) Methodological details

This category is not included in base year.

Scope 3 category 13: Downstream leased assets

(7.5.1) Base year end

12/30/2020

(7.5.2) Base year emissions (metric tons CO2e)

0

(7.5.3) Methodological details

This category is not included in base year.

Scope 3 category 14: Franchises

(7.5.1) Base year end

12/30/2020

(7.5.2) Base year emissions (metric tons CO2e)

0

(7.5.3) Methodological details

This category is not included in base year.

Scope 3 category 15: Investments

(7.5.1) Base year end

12/30/2020

(7.5.2) Base year emissions (metric tons CO2e)

0

(7.5.3) Methodological details

This category is not included in base year.

Scope 3: Other (upstream)

(7.5.1) Base year end

12/30/2020

(7.5.2) Base year emissions (metric tons CO2e)

0

(7.5.3) Methodological details

This category is not included in base year.

Scope 3: Other (downstream)

(7.5.1) Base year end

12/30/2020

(7.5.2) Base year emissions (metric tons CO2e)

0

(7.5.3) Methodological details

This category is not included in base year.
[Fixed row]

(7.6) What were your organization’s gross global Scope 1 emissions in metric tons CO2e?

Reporting year

(7.6.1) Gross global Scope 1 emissions (metric tons CO2e)

6744227

(7.6.3) Methodological details

Scope 1 GHG emissions are reported from different emission sources including flare, stationary combustion, mobile combustion, vent and fugitive losses. Based on input data of each emission sources, we apply emission factors from item 7.2 to calculate Scope 1 GHG emissions.
[Fixed row]

(7.7) What were your organization’s gross global Scope 2 emissions in metric tons CO2e?

	Gross global Scope 2, location-based emissions (metric tons CO2e)	Gross global Scope 2, market-based emissions (metric tons CO2e) (if applicable)	Methodological details
Reporting year	*17323*	*17323*	*Scope 2 GHG emissions are reported from electricity purchased. We apply emission factors from item 7.2 to calculate Scope 2 GHG emissions.*

[Fixed row]

(7.8) Account for your organization’s gross global Scope 3 emissions, disclosing and explaining any exclusions.

Purchased goods and services

(7.8.1) Evaluation status

Select from:

☑ Relevant, calculated

(7.8.2) Emissions in reporting year (metric tons CO2e)

2081

(7.8.3) Emissions calculation methodology

Select all that apply

☑ Spend-based method

(7.8.5) Please explain

Applying methodology is a spend-based method by accounting for the goods and services provided during the PTTEP Annual General Meeting of Shareholders event, SSHE Forum, KM Week and Conferences including emissions from cooking, electricity consumption, transportation of equipment and attendees, accommodation, distribution materials, and waste. which was offset by PTTEP and considered a carbon-neutral event. This category is not included in the assurance scope and public disclosure.

Capital goods

(7.8.1) Evaluation status

Select from:

☑ Not evaluated

(7.8.5) Please explain

PTTEP considers this category insignificant and not included in the assurance scope and public disclosure

Fuel-and-energy-related activities (not included in Scope 1 or 2)

(7.8.1) Evaluation status

Select from:

☑ Relevant, calculated

(7.8.2) Emissions in reporting year (metric tons CO2e)

1039

(7.8.3) Emissions calculation methodology

Select all that apply

☑ Spend-based method

(7.8.5) Please explain

Applying methodology is a spend-based method by accounting for transmission and distribution loss which is derived from the electricity consumption in scope 2 and % transmission and distribution loss (from https://data.worldbank.org/indicator/eg.elc.loss.zs) However, it is insignificant and not included in the assurance scope and public disclosure.

Upstream transportation and distribution

(7.8.1) Evaluation status

Select from:

☑ Not evaluated

(7.8.5) Please explain

Referring to "Overview of methodologies: Estimating petroleum industry value chain (Scope 3) greenhouse gas emissions" of IPIECA and API, the category emissions comparison also requires considering volume, for example, if the amount of fuel used in a category is smaller than the amount of that fuel sold by the company included in Category 11 (Use of sold products), the company may assume that accounting for fuel emissions in both Category 11 and the other category may be double counting. Categories for which it may be straightforward to avoid the double counting of Category 11 (Use of sold products) emissions include Category 4 (upstream transport and distribution), Category 6 (business travel), and Category 7 (employee commuting). Accordingly, PTTEP considered that the emissions from fuel that the company sold (use of sold product) covered the emissions from the fuel used in Category 4 (upstream transport and distribution) and Category 7 and we choose to disclose under Category 11 (Use of sold products) emissions.

Waste generated in operations

(7.8.1) Evaluation status

Select from:

☑ Relevant, calculated

(7.8.2) Emissions in reporting year (metric tons CO2e)

10919

(7.8.3) Emissions calculation methodology

Select all that apply

☑ Waste-type-specific method

(7.8.5) Please explain

Apart from reuse and recycle methods, PTTEP's wastes are mainly disposed of by incineration and landfill. Scope 3 emissions were estimated by using the emission factors for industrial waste for these two disposal methods. However, it is insignificant and not included in the assurance scope and public disclosure.

Business travel

(7.8.1) Evaluation status

Select from:

☑ Relevant, calculated

(7.8.2) Emissions in reporting year (metric tons CO2e)

20819

(7.8.3) Emissions calculation methodology

Select all that apply

☑ Fuel-based method

☑ Distance-based method

(7.8.5) Please explain

Vehicle mileage (segregated by vehicle type and fuel type) and fuel use data separated by fuel type were used. In addition, the emission factors in the PTT Group standard & API Compendium 2009 are used.

Employee commuting

(7.8.1) Evaluation status

Select from:

☑ Not evaluated

(7.8.5) Please explain

Referring "Overview of methodologies: Estimating petroleum industry value chain (Scope 3) greenhouse gas emissions" of IPIECA and API, the category emissions comparison also requires considering volume, for example if the amount of fuel used in a category is smaller than the amount of that fuel sold by the company included in Category 11 (Use of sold products), the company may assume that accounting for fuel emissions in both Category 11 and the other category may be double counting. Categories for which it may be straightforward to avoid the double counting of Category 11 (Use of sold products) emissions include Category 4

(upstream transport and distribution), Category 6 (business travel) and Category 7 (employee commuting). Accordingly, PTTEP considered that the emissions from fuel that company sold (use of sold product) covered the emissions from the fuel used in Category 4 (upstream transport and distribution) and Category 7 and we choose to disclose under Category 11 (Use of sold products) emissions.

Upstream leased assets

(7.8.1) Evaluation status

Select from:

☑ Not evaluated

(7.8.5) Please explain

PTTEP considers this category insignificant and not included in the assurance scope and public disclosure

Downstream transportation and distribution

(7.8.1) Evaluation status

Select from:

☑ Relevant, calculated

(7.8.2) Emissions in reporting year (metric tons CO2e)

5631

(7.8.3) Emissions calculation methodology

Select all that apply

☑ Fuel-based method

☑ Distance-based method

(7.8.5) Please explain

Applying methodologies are a combination of a fuel-based method and distance-based method by tracking on vehicle mileage (segregated by vehicle type and fuel type) and fuel use data separated by fuel type, then applying the emission factors.

Processing of sold products

(7.8.1) Evaluation status

Select from:

☑ Relevant, calculated

(7.8.2) Emissions in reporting year (metric tons CO2e)

8001067

(7.8.3) Emissions calculation methodology

Select all that apply

☑ Average product method

(7.8.4) Percentage of emissions calculated using data obtained from suppliers or value chain partners

79

(7.8.5) Please explain

Natural gas is major PTTEP's product (72% by volume) and was sold directly to PTT Gas Separation Plant (GSP) which is our sole customer. Therefore, GHG emissions from processing of PTTEP's natural gas sold is equal to scope 1&2 GHG emissions of PTT GSP (10,127,933 tonCO2e). However, natural gas from PTTEP is approx. 79% of total PTT GSP feedstock. This category is not included in the assurance scope and public disclosure.

Use of sold products

(7.8.1) Evaluation status

Select from:

☑ Relevant, calculated

(7.8.2) Emissions in reporting year (metric tons CO2e)

34635309

(7.8.3) Emissions calculation methodology

Select all that apply

☑ Average product method

(7.8.5) Please explain

Emissions from natural gas combustion by the end user were calculated under the assumption that natural gas sold in 2023 with the volume of 744,347 MMSCF was combusted in 2023. GHG emissions from the processing of sold products are deducted. Emissions from crude oil are not relevant because it is not combusted directly and must be processed into other products before being used. The emission factor used is referred to IPCC AR4 (IPCC 2006, vol.2, ch.2, p.2.16). This category is not included in the assurance scope and public disclosure.

End of life treatment of sold products

(7.8.1) Evaluation status

Select from:

☑ Not relevant, explanation provided

(7.8.5) Please explain

PTTEP's products are crude oil, natural gas and condensate as business to business nature. We do not sell our product to the mass consumers. These products generally do not end up as waste since they are fuels or are used to produce fuels, therefore there is no end of life treatment for our products.

Downstream leased assets

(7.8.1) Evaluation status

Select from:

☑ Not relevant, explanation provided

(7.8.5) Please explain

PTTEP does not have any downstream leased assets.

Franchises

(7.8.1) Evaluation status

Select from:

☑ Not relevant, explanation provided

(7.8.5) Please explain

PTTEP engages in only exploration and production without downstream business. PTTEP therefore does not have any franchises as defined in the GHG Scope 3 Accounting and Reporting Standard.

Investments

(7.8.1) Evaluation status

Select from:

☑ Not relevant, explanation provided

(7.8.5) Please explain

PTTEP engages in only exploration and production (upstream) without midstream and downstream business and does not provide any financial services. Therefore, this issue is not applicable to our current business model.

Other (upstream)

(7.8.1) Evaluation status

Select from:

☑ Not evaluated

(7.8.5) Please explain

All relevant scope 3 emissions had been identified in each category above.

Other (downstream)

(7.8.1) Evaluation status

Select from:
☑ Not evaluated

(7.8.5) Please explain

All relevant scope 3 emissions had been identified in each category above.
[Fixed row]

(7.9) Indicate the verification/assurance status that applies to your reported emissions.

	Verification/assurance status
Scope 1	*Select from:* ☑ Third-party verification or assurance process in place
Scope 2 (location-based or market-based)	*Select from:* ☑ Third-party verification or assurance process in place
Scope 3	*Select from:* ☑ Third-party verification or assurance process in place

[Fixed row]

(7.9.1) Provide further details of the verification/assurance undertaken for your Scope 1 emissions, and attach the relevant statements.

Row 1

(7.9.1.1) Verification or assurance cycle in place

Select from:
☑ Annual process

(7.9.1.2) Status in the current reporting year

Select from:
☑ Complete

(7.9.1.3) Type of verification or assurance

Select from:
☑ Limited assurance

(7.9.1.4) Attach the statement

pttep-assurance-statement-en.pdf

(7.9.1.5) Page/section reference

Page 1-3

(7.9.1.6) Relevant standard

Select from:
☑ ISAE 3410

(7.9.1.7) Proportion of reported emissions verified (%)

100
[Add row]

(7.9.2) Provide further details of the verification/assurance undertaken for your Scope 2 emissions and attach the relevant statements.

Row 1

(7.9.2.1) Scope 2 approach

Select from:
☑ Scope 2 location-based

(7.9.2.2) Verification or assurance cycle in place

Select from:
☑ Annual process

(7.9.2.3) Status in the current reporting year

Select from:
☑ Complete

(7.9.2.4) Type of verification or assurance

Select from:
☑ Limited assurance

(7.9.2.5) Attach the statement

pttep-assurance-statement-en.pdf

(7.9.2.6) Page/ section reference

(7.9.2.7) Relevant standard

Select from:

☑ ISAE 3410

(7.9.2.8) Proportion of reported emissions verified (%)

100

Row 2

(7.9.2.1) Scope 2 approach

Select from:

☑ Scope 2 market-based

(7.9.2.2) Verification or assurance cycle in place

Select from:

☑ Annual process

(7.9.2.3) Status in the current reporting year

Select from:

☑ Complete

(7.9.2.4) Type of verification or assurance

Select from:

☑ Limited assurance

(7.9.2.5) Attach the statement

pttep-assurance-statement-en.pdf

(7.9.2.6) Page/ section reference

Page 1-3

(7.9.2.7) Relevant standard

Select from:

☑ ISAE 3410

(7.9.2.8) Proportion of reported emissions verified (%)

100
[Add row]

(7.9.3) Provide further details of the verification/assurance undertaken for your Scope 3 emissions and attach the relevant statements.

Row 1

(7.9.3.1) Scope 3 category

Select all that apply

☑ Scope 3: Business travel

☑ Scope 3: Downstream transportation and distribution

(7.9.3.2) Verification or assurance cycle in place

Select from:

☑ Annual process

(7.9.3.3) Status in the current reporting year

Select from:
☑ Complete

(7.9.3.4) Type of verification or assurance

Select from:
☑ Limited assurance

(7.9.3.5) Attach the statement

pttep-assurance-statement-en.pdf

(7.9.3.6) Page/section reference

Page 1-3

(7.9.3.7) Relevant standard

Select from:
☑ ISAE 3410

(7.9.3.8) Proportion of reported emissions verified (%)

100
[Add row]

(7.10.1) Identify the reasons for any change in your gross global emissions (Scope 1 and 2 combined), and for each of them specify how your emissions compare to the previous year.

Change in renewable energy consumption

(7.10.1.1) Change in emissions (metric tons CO2e)

99

(7.10.1.2) Direction of change in emissions

Select from:

☑ Decreased

(7.10.1.3) Emissions value (percentage)

0.0001

(7.10.1.4) Please explain calculation

PTTEP implements wind-solar power for offshore wellhead platform at ART asset.

Other emissions reduction activities

(7.10.1.1) Change in emissions (metric tons CO2e)

156861

(7.10.1.2) Direction of change in emissions

Select from:

☑ Decreased

(7.10.1.3) Emissions value (percentage)

2.9

(7.10.1.4) Please explain calculation

In 2023, we achieved the GHG reduction volume more than planned. Anyway, comparing the % difference between 2021-2022 and 2022-2023, the % change is decreased.

Divestment

(7.10.1.1) Change in emissions (metric tons CO2e)

0

(7.10.1.2) Direction of change in emissions

Select from:

☑ No change

(7.10.1.3) Emissions value (percentage)

0

(7.10.1.4) Please explain calculation

No divestment in 2023

Acquisitions

(7.10.1.1) Change in emissions (metric tons CO2e)

0

(7.10.1.2) Direction of change in emissions

Select from:

☑ No change

(7.10.1.3) Emissions value (percentage)

0

(7.10.1.4) Please explain calculation

No acquisition in 2023

Mergers

(7.10.1.1) Change in emissions (metric tons CO2e)

0

(7.10.1.2) Direction of change in emissions

Select from:
☑ No change

(7.10.1.3) Emissions value (percentage)

0

(7.10.1.4) Please explain calculation

No merger in 2023

Change in output

(7.10.1.1) Change in emissions (metric tons CO2e)

934730

(7.10.1.2) Direction of change in emissions

Select from:
☑ Increased

(7.10.1.3) Emissions value (percentage)

17.4

(7.10.1.4) Please explain calculation

In 2023, the production significantly increased. If without the success in GHG reduction, the GHG emissions would be expected to increase significantly.

Change in methodology

(7.10.1.1) Change in emissions (metric tons CO2e)

108185

(7.10.1.2) Direction of change in emissions

Select from:
☑ Increased

(7.10.1.3) Emissions value (percentage)

1.6

(7.10.1.4) Please explain calculation

PTTEP updates emissions factors in alignment with IPCC Sixth Assessment Report (AR6)

Change in boundary

(7.10.1.1) Change in emissions (metric tons CO2e)

0

(7.10.1.2) Direction of change in emissions

Select from:
☑ No change

(7.10.1.3) Emissions value (percentage)

0

(7.10.1.4) Please explain calculation

No change in boundary in 2023

Change in physical operating conditions

(7.10.1.1) Change in emissions (metric tons CO2e)

0

(7.10.1.2) Direction of change in emissions

Select from:
☑ No change

(7.10.1.3) Emissions value (percentage)

0

(7.10.1.4) Please explain calculation

No change in physical operating conditions

Unidentified

(7.10.1.1) Change in emissions (metric tons CO2e)

0

(7.10.1.2) Direction of change in emissions

Select from:
☑ No change

(7.10.1.3) Emissions value (percentage)

0

(7.10.1.4) Please explain calculation

Reasons of all changes had been identified.

Other

(7.10.1.1) Change in emissions (metric tons CO2e)

127222

(7.10.1.2) Direction of change in emissions

Select from:

☑ Decreased

(7.10.1.3) Emissions value (percentage)

2.2

(7.10.1.4) Please explain calculation

This is a result of our production increased from asset without further gas processing under our operational control and from assets with lower intensity.
[Fixed row]

(7.12.1) Provide the emissions from biogenic carbon relevant to your organization in metric tons CO2.

	CO2 emissions from biogenic carbon (metric tons CO2)	Comment
	4991	*Emissions from biogenic is calculated from the combustion of biofuel in all PTTEP's operating asset.*

[Fixed row]

(7.15.1) Break down your total gross global Scope 1 emissions by greenhouse gas type and provide the source of each used global warming potential (GWP).

Row 1

(7.15.1.1) Greenhouse gas

Select from:

☑ CO2

(7.15.1.2) Scope 1 emissions (metric tons of CO2e)

6277045

(7.15.1.3) GWP Reference

Select from:

☑ IPCC Sixth Assessment Report (AR6 - 100 year)

Row 2

(7.15.1.1) Greenhouse gas

Select from:

☑ CH4

(7.15.1.2) Scope 1 emissions (metric tons of CO2e)

458145

(7.15.1.3) GWP Reference

Select from:
☑ IPCC Sixth Assessment Report (AR6 - 100 year)

Row 3

(7.15.1.1) Greenhouse gas

Select from:
☑ N2O

(7.15.1.2) Scope 1 emissions (metric tons of CO2e)

9208

(7.15.1.3) GWP Reference

Select from:
☑ IPCC Sixth Assessment Report (AR6 - 100 year)
[Add row]

(7.15.4) Break down your total gross global Scope 1 emissions from oil and gas value chain production activities by greenhouse gas type.

Row 1

(7.15.4.1) Emissions category

Select from:

☑ Combustion (excluding flaring)

(7.15.4.2) Value chain

Select all that apply

☑ Upstream

(7.15.4.3) Product

Select from:

☑ Unable to disaggregate

(7.15.4.4) Gross Scope 1 CO2 emissions (metric tons CO2)

3407205

(7.15.4.5) Gross Scope 1 methane emissions (metric tons CH4)

42

(7.15.4.6) Total gross Scope 1 emissions (metric tons CO2e)

3417664

(7.15.4.7) Comment

There are not just only CO2 and CH4 from fuel combustion, but also N2O. Total gross Scope 1 N2O emissions are 9,197 tonsCO2e or 33.69 tons N2O).

Row 2

(7.15.4.1) Emissions category

Select from:

☑ Flaring

(7.15.4.2) Value chain

Select all that apply

☑ Upstream

(7.15.4.3) Product

Select from:

☑ Unable to disaggregate

(7.15.4.4) Gross Scope 1 CO2 emissions (metric tons CO2)

2870978

(7.15.4.5) Gross Scope 1 methane emissions (metric tons CH4)

5989

(7.15.4.6) Total gross Scope 1 emissions (metric tons CO2e)

3049465

(7.15.4.7) Comment

There are not just only CO2 and CH4 from flare, but also N2O. However, this is considered insignificant as low portion (11 tonsCO2e or 0.04 tons N2O).

Row 3

(7.15.4.1) Emissions category

Select from:

☑ Fugitives

(7.15.4.2) Value chain

Select all that apply

☑ Upstream

(7.15.4.3) Product

Select from:

☑ Unable to disaggregate

(7.15.4.4) Gross Scope 1 CO2 emissions (metric tons CO2)

1290

(7.15.4.5) Gross Scope 1 methane emissions (metric tons CH4)

8018

(7.15.4.6) Total gross Scope 1 emissions (metric tons CO2e)

240219

(7.15.4.7) Comment

Main portion of fugitive is CH4 since it is a primary gas composition, and we use fuel gas as energy to operate the facilities. Fugitive can be leaked when the facilities are malfunction and under poor maintenance.

Row 4

(7.15.4.1) Emissions category

Select from:

☑ Venting

(7.15.4.2) Value chain

Select all that apply

☑ Upstream

(7.15.4.3) Product

Select from:
☑ Unable to disaggregate

(7.15.4.4) Gross Scope 1 CO2 emissions (metric tons CO2)

847

(7.15.4.5) Gross Scope 1 methane emissions (metric tons CH4)

1209

(7.15.4.6) Total gross Scope 1 emissions (metric tons CO2e)

36879

(7.15.4.7) Comment

Main portion of vent is CH4 since it is a primary gas composition, and we use fuel gas as energy to operate the facilities. Some facilities are designed to release vent for safety condition.
[Add row]

(7.16) Break down your total gross global Scope 1 and 2 emissions by country/area.

	Scope 1 emissions (metric tons CO2e)	Scope 2, location-based (metric tons CO2e)	Scope 2, market-based (metric tons CO2e)
Malaysia	*1086567*	*8231*	*8231*

	Scope 1 emissions (metric tons CO2e)	Scope 2, location-based (metric tons CO2e)	Scope 2, market-based (metric tons CO2e)
Myanmar	*632605*	*550*	*550*
Thailand	*5025055*	*8542*	*8542*

[Fixed row]

(7.17.2) Break down your total gross global Scope 1 emissions by business facility.

Row 1

(7.17.2.1) Facility

G1

(7.17.2.2) Scope 1 emissions (metric tons CO2e)

820149

(7.17.2.3) Latitude

9.41305

(7.17.2.4) Longitude

101.24126

Row 2

(7.17.2.1) Facility

G2N

(7.17.2.2) Scope 1 emissions (metric tons CO2e)

687650

(7.17.2.3) Latitude

7.89501

(7.17.2.4) Longitude

102.4656

Row 3

(7.17.2.1) Facility

G2S

(7.17.2.2) Scope 1 emissions (metric tons CO2e)

2147480

(7.17.2.3) Latitude

7.65743

(7.17.2.4) Longitude

102.68085

Row 4

(7.17.2.1) Facility

ART

(7.17.2.2) Scope 1 emissions (metric tons CO2e)

919759

(7.17.2.3) Latitude

8.24169

(7.17.2.4) Longitude

102.47739

Row 5

(7.17.2.1) Facility

S1

(7.17.2.2) Scope 1 emissions (metric tons CO2e)

414248

(7.17.2.3) Latitude

16.80199

(7.17.2.4) Longitude

99.95117

Row 6

(7.17.2.1) Facility

Suphanburi

(7.17.2.2) Scope 1 emissions (metric tons CO2e)

1676

(7.17.2.3) Latitude

14.33893

(7.17.2.4) Longitude

99.97073

Row 7

(7.17.2.1) Facility

Sinphuhorm

(7.17.2.2) Scope 1 emissions (metric tons CO2e)

33972

(7.17.2.3) Latitude

16.67702

(7.17.2.4) Longitude

102.77144

Row 8

(7.17.2.1) Facility

Zawtika

(7.17.2.2) Scope 1 emissions (metric tons CO2e)

310468

(7.17.2.3) Latitude

14.19087

(7.17.2.4) Longitude

96.04558

Row 9

(7.17.2.1) Facility

Yadana

(7.17.2.2) Scope 1 emissions (metric tons CO2e)

329387

(7.17.2.3) Latitude

15.71981

(7.17.2.4) Longitude

94.46576

Row 10

(7.17.2.1) Facility

Sabah

(7.17.2.2) Scope 1 emissions (metric tons CO2e)

387005

(7.17.2.3) Latitude

3.26736

(7.17.2.4) Longitude

113.07797

Row 11

(7.17.2.1) Facility

Sarawak

(7.17.2.2) Scope 1 emissions (metric tons CO2e)

692312

(7.17.2.3) Latitude

3.26736

(7.17.2.4) Longitude

113.07797

Row 12

(7.17.2.1) Facility

PSB

(7.17.2.2) Scope 1 emissions (metric tons CO2e)

105

(7.17.2.3) Latitude

7.23531

(7.17.2.4) Longitude

100.56432

Row 13

(7.17.2.1) Facility

RSB

(7.17.2.2) Scope 1 emissions (metric tons CO2e)

16

(7.17.2.3) Latitude

10.03061

(7.17.2.4) Longitude

98.63331
[Add row]

(7.17.3) Break down your total gross global Scope 1 emissions by business activity.

	Activity	Scope 1 emissions (metric tons CO2e)
Row 1	*Flare*	*3049465*
Row 2	*Stationary Combustion*	*2804442*
Row 3	*Mobile combustion*	*613222*
Row 4	*Fugitive losses*	*240219*
Row 5	*Vent*	*36879*

[Add row]

(7.19) Break down your organization’s total gross global Scope 1 emissions by sector production activity in metric tons CO2e.

Oil and gas production activities (upstream)

(7.19.1) Gross Scope 1 emissions, metric tons CO2e

6744227

(7.19.2) Net Scope 1 emissions , metric tons CO2e

6744227

(7.19.3) Comment

PTTEP reports Scope 1 emissions throughout following activity: construction, exploration, production, and decommissioning. The gross and net Scope 1 emissions are reported at same figure.
[Fixed row]

(7.20.2) Break down your total gross global Scope 2 emissions by business facility.

Row 1

(7.20.2.1) Facility

G1

(7.20.2.2) Scope 2, location-based (metric tons CO2e)

0

(7.20.2.3) Scope 2, market-based (metric tons CO2e)

0

Row 2

(7.20.2.1) Facility

G2N

(7.20.2.2) Scope 2, location-based (metric tons CO2e)

0

(7.20.2.3) Scope 2, market-based (metric tons CO2e)

0

Row 3

(7.20.2.1) Facility

G2S

(7.20.2.2) Scope 2, location-based (metric tons CO2e)

0

(7.20.2.3) Scope 2, market-based (metric tons CO2e)

0

Row 4

(7.20.2.1) Facility

ART

(7.20.2.2) Scope 2, location-based (metric tons CO2e)

0

(7.20.2.3) Scope 2, market-based (metric tons CO2e)

0

Row 5

(7.20.2.1) Facility

S1

(7.20.2.2) Scope 2, location-based (metric tons CO2e)

4511

(7.20.2.3) Scope 2, market-based (metric tons CO2e)

4511

Row 6

(7.20.2.1) Facility

Suphanburi

(7.20.2.2) Scope 2, location-based (metric tons CO2e)

2565

(7.20.2.3) Scope 2, market-based (metric tons CO2e)

2565

Row 7

(7.20.2.1) Facility

Sinphuhorm

(7.20.2.2) Scope 2, location-based (metric tons CO2e)

792

(7.20.2.3) Scope 2, market-based (metric tons CO2e)

792

Row 8

(7.20.2.1) Facility

Zawtika

(7.20.2.2) Scope 2, location-based (metric tons CO2e)

56

(7.20.2.3) Scope 2, market-based (metric tons CO2e)

56

Row 9

(7.20.2.1) Facility

Yadana

(7.20.2.2) Scope 2, location-based (metric tons CO2e)

493

(7.20.2.3) Scope 2, market-based (metric tons CO2e)

493

Row 10

(7.20.2.1) Facility

Sabah

(7.20.2.2) Scope 2, location-based (metric tons CO2e)

67

(7.20.2.3) Scope 2, market-based (metric tons CO2e)

67

Row 11

(7.20.2.1) Facility

Sarawak

(7.20.2.2) Scope 2, location-based (metric tons CO2e)

8164

(7.20.2.3) Scope 2, market-based (metric tons CO2e)

8164

Row 12

(7.20.2.1) Facility

PSB

(7.20.2.2) Scope 2, location-based (metric tons CO2e)

564

(7.20.2.3) Scope 2, market-based (metric tons CO2e)

564

Row 13

(7.20.2.1) Facility

RSB

(7.20.2.2) Scope 2, location-based (metric tons CO2e)

110

(7.20.2.3) Scope 2, market-based (metric tons CO2e)

110
[Add row]

(7.20.3) Break down your total gross global Scope 2 emissions by business activity.

	Activity	Scope 2, location-based (metric tons CO2e)	Scope 2, market-based (metric tons CO2e)
Row 1	*Electricity Purchased*	*17323*	*17323*

[Add row]

(7.21) Break down your organization's total gross global Scope 2 emissions by sector production activity in metric tons CO2e.

	Scope 2, location-based, metric tons CO2e	Scope 2, market-based (if applicable), metric tons CO2e	Comment
Oil and gas production activities (upstream)	*17323*	*17323*	*PTTEP reports Scope 2 emissions from electricity purchased. The location-based and market-based of Scope 2 emissions are reported at same figure.*
Oil and gas production activities (midstream)	*0*	*0*	*Not relevant*
Oil and gas production activities (downstream)	*0*	*0*	*Not relevant*

[Fixed row]

(7.22) Break down your gross Scope 1 and Scope 2 emissions between your consolidated accounting group and other entities included in your response.

Consolidated accounting group

(7.22.1) Scope 1 emissions (metric tons CO2e)

6744227

(7.22.2) Scope 2, location-based emissions (metric tons CO2e)

17323

(7.22.3) Scope 2, market-based emissions (metric tons CO2e)

17323

(7.22.4) Please explain

PTTEP reports emissions including Scope 1 and Scope 2 only under PTTEP's operating assets.

All other entities

(7.22.1) Scope 1 emissions (metric tons CO2e)

0

(7.22.2) Scope 2, location-based emissions (metric tons CO2e)

0

(7.22.3) Scope 2, market-based emissions (metric tons CO2e)

0

(7.22.4) Please explain

PTTEP reports emissions including Scope 1 and Scope 2 only under PTTEP's operating assets.
[Fixed row]

(7.23.1) Break down your gross Scope 1 and Scope 2 emissions by subsidiary.

Row 1

(7.23.1.1) Subsidiary name

PTT Exploration and Production PLC

(7.23.1.2) Primary activity

Select from:
☑ Oil & gas extraction

(7.23.1.3) Select the unique identifier you are able to provide for this subsidiary

Select all that apply
☑ ISIN code – bond

(7.23.1.4) ISIN code – bond

TH0355A10Z04

(7.23.1.12) Scope 1 emissions (metric tons CO2e)

919759

(7.23.1.13) Scope 2, location-based emissions (metric tons CO2e)

0

(7.23.1.14) Scope 2, market-based emissions (metric tons CO2e)

0

(7.23.1.15) Comment

The emissions of this subsidiary are included ART asset.

Row 2

(7.23.1.1) Subsidiary name

PTTEP Energy Development Company Limited

(7.23.1.2) Primary activity

Select from:

☑ Oil & gas extraction

(7.23.1.3) Select the unique identifier you are able to provide for this subsidiary

Select all that apply

☑ No unique identifier

(7.23.1.12) Scope 1 emissions (metric tons CO2e)

3655279

(7.23.1.13) Scope 2, location-based emissions (metric tons CO2e)

0

(7.23.1.14) Scope 2, market-based emissions (metric tons CO2e)

0

(7.23.1.15) Comment

The emissions of this subsidiary are included G1, G2N and G2S asset. Since this subsidiary company is not registered in Thailand Stock Market, so ISIN code is not available.

Row 3

(7.23.1.1) Subsidiary name

PTTEP Siam Limited

(7.23.1.2) Primary activity

Select from:

☑ Oil & gas extraction

(7.23.1.3) Select the unique identifier you are able to provide for this subsidiary

Select all that apply

☑ No unique identifier

(7.23.1.12) Scope 1 emissions (metric tons CO2e)

414248

(7.23.1.13) Scope 2, location-based emissions (metric tons CO2e)

4511

(7.23.1.14) Scope 2, market-based emissions (metric tons CO2e)

4511

(7.23.1.15) Comment

The emissions of this subsidiary are included S1 asset. Since this subsidiary company is not registered in Thailand Stock Market, so ISIN code is not available.

Row 4

(7.23.1.1) Subsidiary name

PTTEP International Limited

(7.23.1.2) Primary activity

Select from:

☑ Oil & gas extraction

(7.23.1.3) Select the unique identifier you are able to provide for this subsidiary

Select all that apply

☑ No unique identifier

(7.23.1.12) Scope 1 emissions (metric tons CO2e)

1797

(7.23.1.13) Scope 2, location-based emissions (metric tons CO2e)

3239

(7.23.1.14) Scope 2, market-based emissions (metric tons CO2e)

3239

(7.23.1.15) Comment

The emissions of this subsidiary are included Suphanburi asset, PSB and RSB. Since this subsidiary company is not registered in Thailand Stock Market, so ISIN code is not available.

Row 5

(7.23.1.1) Subsidiary name

PTTEP SP Limited

(7.23.1.2) Primary activity

Select from:

☑ Oil & gas extraction

(7.23.1.3) Select the unique identifier you are able to provide for this subsidiary

Select all that apply

☑ No unique identifier

(7.23.1.12) Scope 1 emissions (metric tons CO2e)

33972

(7.23.1.13) Scope 2, location-based emissions (metric tons CO2e)

792

(7.23.1.14) Scope 2, market-based emissions (metric tons CO2e)

792

(7.23.1.15) Comment

The emissions of this subsidiary are included Sinphuhorm asset. Since this subsidiary company is not registered in Thailand Stock Market, so ISIN code is not available.

Row 6

(7.23.1.1) Subsidiary name

PTTEP International Limited, Myanmar Asset

(7.23.1.2) Primary activity

Select from:

☑ Oil & gas extraction

(7.23.1.3) Select the unique identifier you are able to provide for this subsidiary

Select all that apply

☑ No unique identifier

(7.23.1.12) Scope 1 emissions (metric tons CO2e)

639855

(7.23.1.13) Scope 2, location-based emissions (metric tons CO2e)

549

(7.23.1.14) Scope 2, market-based emissions (metric tons CO2e)

549

(7.23.1.15) Comment

The emissions of this subsidiary are included Zawtika and Yadana asset. Since this subsidiary company is not registered in Thailand Stock Market, so ISIN code is not available.

Row 7

(7.23.1.1) Subsidiary name

PTTEP Sabah Oil Limited

(7.23.1.2) Primary activity

Select from:

☑ Oil & gas extraction

(7.23.1.3) Select the unique identifier you are able to provide for this subsidiary

Select all that apply

☑ No unique identifier

(7.23.1.12) Scope 1 emissions (metric tons CO2e)

387005

(7.23.1.13) Scope 2, location-based emissions (metric tons CO2e)

67

(7.23.1.14) Scope 2, market-based emissions (metric tons CO2e)

67

(7.23.1.15) Comment

The emissions of this subsidiary are included Sabah field in Malaysia asset. Since this subsidiary company is not registered in Thailand Stock Market, so ISIN code is not available.

Row 8

(7.23.1.1) Subsidiary name

PTTEP Sarawak Oil Limited

(7.23.1.2) Primary activity

Select from:

☑ Oil & gas extraction

(7.23.1.3) Select the unique identifier you are able to provide for this subsidiary

Select all that apply

☑ No unique identifier

(7.23.1.12) Scope 1 emissions (metric tons CO2e)

692312

(7.23.1.13) Scope 2, location-based emissions (metric tons CO2e)

8164

(7.23.1.14) Scope 2, market-based emissions (metric tons CO2e)

8164

(7.23.1.15) Comment

The emissions of this subsidiary are included Sarawak field in Malaysia asset. Since this subsidiary company is not registered in Thailand Stock Market, so ISIN code is not available.
[Add row]

(7.24) Report your methane emissions as percentages of natural gas and hydrocarbon production or throughput.

Row 1

(7.24.1) Oil and gas business division

Select all that apply

☑ Upstream

(7.24.2) Estimated total methane emitted expressed as % of natural gas production or throughput at given division

0.072

(7.24.3) Estimated total methane emitted expressed as % of total hydrocarbon production or throughput at given division

0.062

(7.24.4) Indicate whether your methane emissions figure is based on observational data

Select from:

☑ Estimated or modelled data only

(7.24.5) Details of methodology

Methane emissions in our operation are mainly from incomplete combustion of (1) flaring and fuel combustion, (2) vents and (3) leaks. The amount of methane emissions from source (1) and (2) is calculated by using conversion factor from reference source in item 7.2 while the amount of methane emission from source (3) is estimated by specific emission factor for the majority assets where direct measurement has been implemented, and industrial factor for remaining assets where direct measurement is ongoing. Note that % methane emitted expressed is calculated by weight of methane per weight of natural gas production and weight of total hydrocarbon production.
[Add row]

(7.30) Select which energy-related activities your organization has undertaken.

	Indicate whether your organization undertook this energy-related activity in the reporting year
Consumption of fuel (excluding feedstocks)	*Select from:* ☑ Yes
Consumption of purchased or acquired electricity	*Select from:* ☑ Yes
Consumption of purchased or acquired heat	*Select from:* ☑ No
Consumption of purchased or acquired steam	*Select from:*

	Indicate whether your organization undertook this energy-related activity in the reporting year
	☑ No
Consumption of purchased or acquired cooling	*Select from:* ☑ No
Generation of electricity, heat, steam, or cooling	*Select from:* ☑ No

[Fixed row]

(7.30.1) Report your organization’s energy consumption totals (excluding feedstocks) in MWh.

Consumption of fuel (excluding feedstock)

(7.30.1.1) Heating value

Select from:
☑ LHV (lower heating value)

(7.30.1.2) MWh from renewable sources

20714

(7.30.1.3) MWh from non-renewable sources

15056925

(7.30.1.4) Total (renewable and non-renewable) MWh

15077639

Consumption of purchased or acquired electricity

(7.30.1.1) Heating value

Select from:

☑ Unable to confirm heating value

(7.30.1.2) MWh from renewable sources

0

(7.30.1.3) MWh from non-renewable sources

42393

(7.30.1.4) Total (renewable and non-renewable) MWh

42393

Total energy consumption

(7.30.1.1) Heating value

Select from:

☑ LHV (lower heating value)

(7.30.1.2) MWh from renewable sources

20714

(7.30.1.3) MWh from non-renewable sources

15099318

(7.30.1.4) Total (renewable and non-renewable) MWh

15120032
[Fixed row]

(7.30.6) Select the applications of your organization’s consumption of fuel.

	Indicate whether your organization undertakes this fuel application
Consumption of fuel for the generation of electricity	*Select from:* ☑ Yes
Consumption of fuel for the generation of heat	*Select from:* ☑ No
Consumption of fuel for the generation of steam	*Select from:* ☑ No
Consumption of fuel for the generation of cooling	*Select from:* ☑ No
Consumption of fuel for co-generation or tri-generation	*Select from:* ☑ No

[Fixed row]

(7.30.7) State how much fuel in MWh your organization has consumed (excluding feedstocks) by fuel type.

Sustainable biomass

(7.30.7.1) Heating value

Select from:
☑ Unable to confirm heating value

(7.30.7.2) Total fuel MWh consumed by the organization

20714

(7.30.7.3) MWh fuel consumed for self-generation of electricity

20714

(7.30.7.4) MWh fuel consumed for self-generation of heat

0

(7.30.7.8) Comment

Data is applied from total renewable energy consumption.

Other biomass

(7.30.7.1) Heating value

Select from:
☑ Unable to confirm heating value

(7.30.7.2) Total fuel MWh consumed by the organization

0

(7.30.7.3) MWh fuel consumed for self-generation of electricity

0

(7.30.7.4) MWh fuel consumed for self-generation of heat

0

(7.30.7.8) Comment

Not relevant.

Other renewable fuels (e.g. renewable hydrogen)

(7.30.7.1) Heating value

Select from:
☑ Unable to confirm heating value

(7.30.7.2) Total fuel MWh consumed by the organization

0

(7.30.7.3) MWh fuel consumed for self-generation of electricity

0

(7.30.7.4) MWh fuel consumed for self-generation of heat

0

(7.30.7.8) Comment

Not relevant.

Coal

(7.30.7.1) Heating value

Select from:
☑ Unable to confirm heating value

(7.30.7.2) Total fuel MWh consumed by the organization

0

(7.30.7.3) MWh fuel consumed for self-generation of electricity

0

(7.30.7.4) MWh fuel consumed for self-generation of heat

0

(7.30.7.8) Comment

Not relevant.

Oil

(7.30.7.1) Heating value

Select from:
☑ LHV

(7.30.7.2) Total fuel MWh consumed by the organization

3161954

(7.30.7.3) MWh fuel consumed for self-generation of electricity

3161954

(7.30.7.4) MWh fuel consumed for self-generation of heat

0

(7.30.7.8) Comment

Data is applied from total non-renewable energy consumption.

Gas

(7.30.7.1) Heating value

Select from:

☑ LHV

(7.30.7.2) Total fuel MWh consumed by the organization

11894971

(7.30.7.3) MWh fuel consumed for self-generation of electricity

11894971

(7.30.7.4) MWh fuel consumed for self-generation of heat

0

(7.30.7.8) Comment

Data is applied from total non-renewable energy consumption.

Other non-renewable fuels (e.g. non-renewable hydrogen)

(7.30.7.1) Heating value

Select from:

☑ Unable to confirm heating value

(7.30.7.2) Total fuel MWh consumed by the organization

0

(7.30.7.3) MWh fuel consumed for self-generation of electricity

0

(7.30.7.4) MWh fuel consumed for self-generation of heat

0

(7.30.7.8) Comment

Not relevant.

Total fuel

(7.30.7.1) Heating value

Select from:
☑ LHV

(7.30.7.2) Total fuel MWh consumed by the organization

15077639

(7.30.7.3) MWh fuel consumed for self-generation of electricity

15077639

(7.30.7.4) MWh fuel consumed for self-generation of heat

0

(7.30.7.8) Comment

Data is applied from both total renewable and non-renewable energy consumption.
[Fixed row]

(7.30.14) Provide details on the electricity, heat, steam, and/or cooling amounts that were accounted for at a zero or near-zero emission factor in the market-based Scope 2 figure reported in 7.7.

Row 1

(7.30.14.1) Country/area

Select from:

☑ Thailand

(7.30.14.2) Sourcing method

Select from:

☑ None (no active purchases of low-carbon electricity, heat, steam or cooling)

(7.30.14.10) Comment

PTTEP uses electricity from grid which the majority of electricity in Thailand is produced from natural gas (63%), coal (19%) and hydro (17%), respectively.

Row 2

(7.30.14.1) Country/area

Select from:

☑ Malaysia

(7.30.14.2) Sourcing method

Select from:

☑ None (no active purchases of low-carbon electricity, heat, steam or cooling)

(7.30.14.10) Comment

PTTEP uses electricity from grid which the majority of electricity in Malaysia is produced from fossil fuels.

Row 3

(7.30.14.1) Country/area

Select from:

☑ Myanmar

(7.30.14.2) Sourcing method

Select from:

☑ None (no active purchases of low-carbon electricity, heat, steam or cooling)

(7.30.14.10) Comment

PTTEP uses electricity from grid, but we are unable to identify source of electricity in Myanmar.
[Add row]

(7.30.16) Provide a breakdown by country/area of your electricity/heat/steam/cooling consumption in the reporting year.

Malaysia

(7.30.16.1) Consumption of purchased electricity (MWh)

20349

(7.30.16.2) Consumption of self-generated electricity (MWh)

0

(7.30.16.4) Consumption of purchased heat, steam, and cooling (MWh)

0

(7.30.16.5) Consumption of self-generated heat, steam, and cooling (MWh)

0

(7.30.16.6) Total electricity/heat/steam/cooling energy consumption (MWh)

20349.00

Myanmar

(7.30.16.1) Consumption of purchased electricity (MWh)

1068

(7.30.16.2) Consumption of self-generated electricity (MWh)

204

(7.30.16.4) Consumption of purchased heat, steam, and cooling (MWh)

0

(7.30.16.5) Consumption of self-generated heat, steam, and cooling (MWh)

0

(7.30.16.6) Total electricity/heat/steam/cooling energy consumption (MWh)

1272.00

Thailand

(7.30.16.1) Consumption of purchased electricity (MWh)

20582

(7.30.16.2) Consumption of self-generated electricity (MWh)

191

(7.30.16.4) Consumption of purchased heat, steam, and cooling (MWh)

0

(7.30.16.5) Consumption of self-generated heat, steam, and cooling (MWh)

0

(7.30.16.6) Total electricity/heat/steam/cooling energy consumption (MWh)

20773.00
[Fixed row]

(7.38) Disclose your net liquid and gas hydrocarbon production (total of subsidiaries and equity-accounted entities).

	In-year net production	Comment
Crude oil and condensate, million barrels	*43.1*	*NA*
Natural gas liquids, million barrels	*0*	*No natural gas liquids production.*
Oil sands, million barrels (includes bitumen and synthetic crude)	*0*	*No oil sands production.*
Natural gas, billion cubic feet	*1113.5*	*NA*

[Fixed row]

(7.38.2) Disclose your estimated total net reserves and resource base (million boe), including the total associated with subsidiaries and equity-accounted entities.

	Estimated total net proved + probable reserves (2P) (million BOE)	Comment
	2280	*Possible reserves (3P) are unavailable for disclosure.*

[Fixed row]

(7.38.3) Provide an indicative percentage split for 2P, 3P reserves, and total resource base by hydrocarbon categories.

Crude oil/ condensate/ natural gas liquids

(7.38.3.1) Net proved + probable reserves (2P) (%)

27

(7.38.3.4) Comment

Possible reserves (3P) are unavailable for disclosure.

Natural gas

(7.38.3.1) Net proved + probable reserves (2P) (%)

73

(7.38.3.4) Comment

Possible reserves (3P) are unavailable for disclosure.

Oil sands (includes bitumen and synthetic crude)

(7.38.3.1) Net proved + probable reserves (2P) (%)

0

(7.38.3.2) Net proved + probable + possible reserves (3P) (%)

0

(7.38.3.3) Net total resource base (%)

0

(7.38.3.4) Comment

No oil sands.
[Fixed row]

(7.38.4) Provide an indicative percentage split for production, 1P, 2P, 3P reserves, and total resource base by development types.

Row 1

(7.38.4.1) Development type

Select from:
☑ Onshore

(7.38.4.2) In-year net production (%)

21

(7.38.4.3) Net proved reserves (1P) (%)

25

(7.38.4.4) Net proved + probable reserves (2P) (%)

28

(7.38.4.7) Comment

Possible reserves (3P) are unavailable for disclosure.

Row 2

(7.38.4.1) Development type

Select from:
☑ Shallow-water

(7.38.4.2) In-year net production (%)

79

(7.38.4.3) Net proved reserves (1P) (%)

75

(7.38.4.4) Net proved + probable reserves (2P) (%)

72

(7.38.4.7) Comment

Possible reserves (3P) are unavailable for disclosure.
[Add row]

(7.45) Describe your gross global combined Scope 1 and 2 emissions for the reporting year in metric tons CO2e per unit currency total revenue and provide any additional intensity metrics that are appropriate to your business operations.

Row 1

(7.45.1) Intensity figure

208

(7.45.2) Metric numerator (Gross global combined Scope 1 and 2 emissions, metric tons CO2e)

6761550

(7.45.3) Metric denominator

Select from:

☑ metric ton of product

(7.45.4) Metric denominator: Unit total

32637612

(7.45.5) Scope 2 figure used

Select from:

☑ Location-based

(7.45.6) % change from previous year

11.24

(7.45.7) Direction of change

Select from:

☑ Decreased

(7.45.8) Reasons for change

Select all that apply

☑ Other emissions reduction activities

☑ Change in output

(7.45.9) Please explain

PTTEP has increased production in 2023 comparing to 2022. In addition, GHG reduction initiatives are continuing encouraged and implemented.
[Add row]

(7.48) Provide the intensity figures for Scope 1 emissions (metric tons CO2e) per unit of hydrocarbon category.

Row 1

(7.48.1) Unit of hydrocarbon category (denominator)

Select from:
☑ Thousand barrels of crude oil/ condensate

(7.48.2) Metric tons CO2e from hydrocarbon category per unit specified

156.5

(7.48.3) % change from previous year

7

(7.48.4) Direction of change

Select from:
☑ Increased

(7.48.5) Reason for change

Change from production increasing both crude and natural gas, as well as change from emission reduction initiatives increasing.

(7.48.6) Comment

PTTEP typically discloses GHG emission intensity in SD report in unit of ton CO2e per ton of production. The 2023 GHG emission intensity figure is 208 as presented in topic 7.45.

Row 2

(7.48.1) Unit of hydrocarbon category (denominator)

Select from:

☑ Million cubic feet of natural gas

(7.48.2) Metric tons CO2e from hydrocarbon category per unit specified

6.01

(7.48.3) % change from previous year

14

(7.48.4) Direction of change

Select from:

☑ Decreased

(7.48.5) Reason for change

Change from production increasing both crude and natural gas, as well as change from emission reduction initiatives increasing.

(7.48.6) Comment

PTTEP typically discloses GHG emission intensity in SD report in unit of ton CO2e per ton of production. The 2023 GHG emission intensity figure is 208 as presented in topic 7.45.
[Add row]

(7.52) Provide any additional climate-related metrics relevant to your business.

Row 1

(7.52.1) Description

Select from:

☑ Energy usage

(7.52.2) Metric value

54432114

(7.52.3) Metric numerator

GJ

(7.52.4) Metric denominator (intensity metric only)

Energy Intensity 1.668 GJ/tonne of production

(7.52.5) % change from previous year

12.8

(7.52.6) Direction of change

Select from:

☑ Increased

(7.52.7) Please explain

In 2023, PTTEP expand operation activities resulting in increasing of energy consumption.
[Add row]

(7.53.2) Provide details of your emissions intensity targets and progress made against those targets.

Row 1

(7.53.2.1) Target reference number

Select from:

☑ Int 1

(7.53.2.2) Is this a science-based target?

Select from:

☑ No, but we anticipate setting one in the next two years

(7.53.2.5) Date target was set

12/20/2022

(7.53.2.6) Target coverage

Select from:

☑ Organization-wide

(7.53.2.7) Greenhouse gases covered by target

Select all that apply

☑ Carbon dioxide (CO2)

☑ Methane (CH4)

☑ Nitrous oxide (N2O)

(7.53.2.8) Scopes

Select all that apply

☑ Scope 1

☑ Scope 2

(7.53.2.9) Scope 2 accounting method

Select from:

☑ Location-based

(7.53.2.11) Intensity metric

Select from:

☑ Metric tons CO2e per metric ton of product

(7.53.2.12) End date of base year

12/30/2020

(7.53.2.13) Intensity figure in base year for Scope 1 (metric tons CO2e per unit of activity)

257.6

(7.53.2.14) Intensity figure in base year for Scope 2 (metric tons CO2e per unit of activity)

0.7

(7.53.2.33) Intensity figure in base year for all selected Scopes (metric tons CO2e per unit of activity)

258.3000000000

(7.53.2.34) % of total base year emissions in Scope 1 covered by this Scope 1 intensity figure

99.7

(7.53.2.35) % of total base year emissions in Scope 2 covered by this Scope 2 intensity figure

0.3

(7.53.2.54) % of total base year emissions in all selected Scopes covered by this intensity figure

100

(7.53.2.55) End date of target

12/30/2023

(7.53.2.56) Targeted reduction from base year (%)

13.7

(7.53.2.57) Intensity figure at end date of target for all selected Scopes (metric tons CO2e per unit of activity)

222.9129000000

(7.53.2.58) % change anticipated in absolute Scope 1+2 emissions

13.7

(7.53.2.60) Intensity figure in reporting year for Scope 1 (metric tons CO2e per unit of activity)

206.6

(7.53.2.61) Intensity figure in reporting year for Scope 2 (metric tons CO2e per unit of activity)

0.5

(7.53.2.80) Intensity figure in reporting year for all selected Scopes (metric tons CO2e per unit of activity)

207.1000000000

(7.53.2.81) Land-related emissions covered by target

Select from:

☑ No, it does not cover any land-related emissions (e.g. non-FLAG SBT)

(7.53.2.82) % of target achieved relative to base year

144.69

(7.53.2.83) Target status in reporting year

Select from:

☑ Achieved

(7.53.2.85) Explain target coverage and identify any exclusions

The performance above (which indicated the target achievement) is based on "like-with-like" comparisons over time against the base year emissions (same structure, measurement and calculation methodologies, referred to GHG Protocol).

(7.53.2.86) Target objective

To reduce GHG emission intensity at 13.7% from base year in 2020.

(7.53.2.88) Target derived using a sectoral decarbonization approach

Select from:

☑ Yes

(7.53.2.89) List the emissions reduction initiatives which contributed most to achieving this target

This was accomplished through avoidance by portfolio management for lower carbon, cooperation among multi-discipline teams to optimize the operations, and mitigation strategies, such as recovering and utilizing flare/excess gas, enhancing renewable energy consumption, reducing methane leaks, and improving energy and process efficiency.
[Add row]

(7.55.1) Identify the total number of initiatives at each stage of development, and for those in the implementation stages, the estimated CO2e savings.

	Number of initiatives	Total estimated annual CO2e savings in metric tonnes CO2e (only for rows marked *)
Under investigation	*0*	*`Numeric input*
To be implemented	*0*	*0*
Implementation commenced	*0*	*0*
Implemented	*32*	*313943*
Not to be implemented	*0*	*`Numeric input*

[Fixed row]

(7.55.2) Provide details on the initiatives implemented in the reporting year in the table below.

Row 1

(7.55.2.1) Initiative category & Initiative type

Energy efficiency in production processes

☑ Process optimization

(7.55.2.2) Estimated annual CO2e savings (metric tonnes CO2e)

237660

(7.55.2.3) Scope(s) or Scope 3 category(ies) where emissions savings occur

Select all that apply

☑ Scope 1

(7.55.2.4) Voluntary/Mandatory

Select from:

☑ Voluntary

(7.55.2.5) Annual monetary savings (unit currency – as specified in C0.4)

8318100

(7.55.2.6) Investment required (unit currency – as specified in C0.4)

0

(7.55.2.7) Payback period

Select from:

☑ 4-10 years

(7.55.2.8) Estimated lifetime of the initiative

Select from:

☑ 11-15 years

(7.55.2.9) Comment

Data contains a combination set of several initiatives for process improvement and energy efficiency improvement to ensure the optimization of operations.

Row 2

(7.55.2.1) Initiative category & Initiative type

Transportation

☑ Company fleet vehicle efficiency

(7.55.2.2) Estimated annual CO2e savings (metric tonnes CO2e)

3643

(7.55.2.3) Scope(s) or Scope 3 category(ies) where emissions savings occur

Select all that apply

☑ Scope 1

(7.55.2.4) Voluntary/Mandatory

Select from:

☑ Voluntary

(7.55.2.5) Annual monetary savings (unit currency – as specified in C0.4)

127505

(7.55.2.6) Investment required (unit currency – as specified in C0.4)

0

(7.55.2.7) Payback period

Select from:

☑ No payback

(7.55.2.8) Estimated lifetime of the initiative

Select from:

☑ Ongoing

(7.55.2.9) Comment

This initiative is implemented with concept to optimize vessel fleet. This can lower MGO consumption and reduce GHG emissions.

Row 3

(7.55.2.1) Initiative category & Initiative type

Energy efficiency in production processes

☑ Other, please specify :Flare gas recovery

(7.55.2.2) Estimated annual CO2e savings (metric tonnes CO2e)

72640

(7.55.2.3) Scope(s) or Scope 3 category(ies) where emissions savings occur

Select all that apply

☑ Scope 1

(7.55.2.4) Voluntary/Mandatory

Select from:

☑ Voluntary

(7.55.2.5) Annual monetary savings (unit currency – as specified in C0.4)

2542400

(7.55.2.6) Investment required (unit currency – as specified in C0.4)

0

(7.55.2.7) Payback period

Select from:

☑ 4-10 years

(7.55.2.8) Estimated lifetime of the initiative

Select from:

☑ 11-15 years

(7.55.2.9) Comment

Data contains a combination set of several initiatives to recover and utilize the gases which otherwise will be flared/vent.
[Add row]

(7.55.3) What methods do you use to drive investment in emissions reduction activities?

Row 1

(7.55.3.1) Method

Select from:

☑ Dedicated budget for low-carbon product R&D

(7.55.3.2) Comment

In order to achieve our vision of being an energy partner of choice through competitive performance and innovation for long-term value creation, this target has been included in the long-term business strategy, and dedicated budgets for energy efficiency are included in our budget. We have also publicly disclosed our intentions of reducing and offsetting our GHG emissions in which this serves as a long-term public commitment which drives initial investments into projects that can reduce and offset GHG. In addition, development of low carbon products is in PTTEP research & development plan

Row 2

(7.55.3.1) Method

Select from:

☑ Other **:**Employee KPI

(7.55.3.2) Comment

In order to achieve our vision of being an energy partner of choice through competitive performance and innovation for long-term value creation, this target has been included in the long-term business strategy. The company wide target as well as the key performance indicators are set. The company KPIs are then cascaded down

to each individual employee, where monetary incentives such as bonuses, monetary recognitions and awards are given to employees with the best GHG emissions reduction project implementations and results.
[Add row]

(7.74.1) Provide details of your products and/or services that you classify as low-carbon products.

Row 1

(7.74.1.1) Level of aggregation

Select from:
☑ Group of products or services

(7.74.1.2) Taxonomy used to classify product(s) or service(s) as low-carbon

Select from:
☑ Other, please specify **:**GHG protocol and IOGP environmental performance report

(7.74.1.3) Type of product(s) or service(s)

Power
☑ Other, please specify **:**Low energy consumption products

(7.74.1.4) Description of product(s) or service(s)

As PTTEP is an upstream business, low carbon product has been considered from the production of assets which consume energy and emit GHG lower than the IOGP average.

(7.74.1.5) Have you estimated the avoided emissions of this low-carbon product(s) or service(s)

Select from:
☑ Yes

(7.74.1.6) Methodology used to calculate avoided emissions

Select from:

☑ Estimating and Reporting the Comparative Emissions Impacts of Products (WRI)

(7.74.1.7) Life cycle stage(s) covered for the low-carbon product(s) or services(s)

Select from:

☑ Use stage

(7.74.1.8) Functional unit used

Energy consumption intensity in operating assets vs. average IOGP energy consumption intensity for oil and gas sector.

(7.74.1.9) Reference product/service or baseline scenario used

Average IOGP energy consumption.

(7.74.1.10) Life cycle stage(s) covered for the reference product/service or baseline scenario

Select from:

☑ Use stage

(7.74.1.11) Estimated avoided emissions (metric tons CO2e per functional unit) compared to reference product/service or baseline scenario

354458

(7.74.1.12) Explain your calculation of avoided emissions, including any assumptions

Avoided emission was calculated by differentiation between asset emission and average IOPG emission. Revenue was calculated by counted assets revenue from low carbon product divided by PTTEP total revenue.

(7.74.1.13) Revenue generated from low-carbon product(s) or service(s) as % of total revenue in the reporting year

53.2
[Add row]

C9. Environmental performance - Water security

(9.2) Across all your operations, what proportion of the following water aspects are regularly measured and monitored?

Water withdrawals – total volumes

(9.2.1) % of sites/facilities/operations

Select from:

☑ 100%

(9.2.2) Frequency of measurement

Select from:

☑ Monthly

(9.2.3) Method of measurement

Through direct monitoring. Water data aggregation will adhere to relevant water-related regulations and Global Reporting Initiative (GRI) standards. Monthly water inventory data from all assets will be recorded in the Environmental Performance Reporting System. This comprehensive dataset is essential for evaluating water-related risks and setting informed water management targets.

(9.2.4) Please explain

PTTEP conducts monitoring program is also required to record volume of water withdrawals from all PTTEP operating assets and petroleum support bases to be environmental performance report for further improvements and ensure that there is no impact on the community and water users.

Water withdrawals – volumes by source

(9.2.1) % of sites/facilities/operations

Select from:

☑ 100%

(9.2.2) Frequency of measurement

Select from:

☑ Monthly

(9.2.3) Method of measurement

Through direct monitoring. Through direct monitoring. Water data aggregation will adhere to relevant water-related regulations and Global Reporting Initiative (GRI) standards. Monthly water inventory data from all assets will be recorded in the Environmental Performance Reporting System. This comprehensive dataset is essential for evaluating water-related risks and setting informed water management targets.

(9.2.4) Please explain

PTTEP conducts monitoring program is also required to record volume separately by source of water withdrawals from all PTTEP operating assets and petroleum support bases to be environmental performance report for further improvements and ensure that there is no impact on the community and water users.

Produced water associated with your oil & gas sector activities - total volumes

(9.2.1) % of sites/facilities/operations

Select from:

☑ 100%

(9.2.2) Frequency of measurement

Select from:

☑ Monthly

(9.2.3) Method of measurement

Throught direct monitoring. Through direct monitoring. Water data aggregation will adhere to relevant water-related regulations and Global Reporting Initiative (GRI) standards. Monthly water inventory data from all assets will be recorded in the Environmental Performance Reporting System. This comprehensive dataset is essential for evaluating water-related risks and setting informed water management targets.

(9.2.4) Please explain

PTTEP conducts monitoring program is also required to record volume of produced water from all PTTEP operating assets.

Water withdrawals quality

(9.2.1) % of sites/facilities/operations

Select from:

☑ 76-99

(9.2.2) Frequency of measurement

Select from:

☑ Yearly

(9.2.3) Method of measurement

Lab test and other secondary source of information from local authority agency.

(9.2.4) Please explain

PTTEP conducts monitoring quality of water withdrawals for almost PTTEP operating assets and support base. Therefore, some of water withdrawal quality is not monitored because we supply the water from waterworks authority and referred these water supply quality standard.

Water discharges – total volumes

(9.2.1) % of sites/facilities/operations

Select from:

☑ 100%

(9.2.2) Frequency of measurement

Select from:

☑ Monthly

(9.2.3) Method of measurement

Through direct monitoring. Through direct monitoring. Water data aggregation will adhere to relevant water-related regulations and Global Reporting Initiative (GRI) standards. Monthly water inventory data from all assets will be recorded in the Environmental Performance Reporting System. This comprehensive dataset is essential for evaluating water-related risks and setting informed water management targets.

(9.2.4) Please explain

PTTEP conducts monitoring program is also required to record volume of water discharge from all PTTEP operating assets.

Water discharges – volumes by destination

(9.2.1) % of sites/facilities/operations

Select from:

☑ 100%

(9.2.2) Frequency of measurement

Select from:

☑ Monthly

(9.2.3) Method of measurement

Through direct monitoring. Through direct monitoring. Water data aggregation will adhere to relevant water-related regulations and Global Reporting Initiative (GRI) standards. Monthly water inventory data from all assets will be recorded in the Environmental Performance Reporting System. This comprehensive dataset is essential for evaluating water-related risks and setting informed water management targets.

(9.2.4) Please explain

PTTEP conduct to monitor water discharge volume by management method as a destination of discharge. Most of water discharge as approximately 96% is produced water. The produced water is an important resource as approximately 73% is reinjected to depleted wells or used as water flooding for oil recovery process improvement, while the rest is treated before discharged overboard; or evaporated in compliance with the regulation requirements.

Water discharges – volumes by treatment method

(9.2.1) % of sites/facilities/operations

Select from:

☑ 100%

(9.2.2) Frequency of measurement

Select from:

☑ Monthly

(9.2.3) Method of measurement

Through direct monitoring. Through direct monitoring. Water data aggregation will adhere to relevant water-related regulations and Global Reporting Initiative (GRI) standards. Monthly water inventory data from all assets will be recorded in the Environmental Performance Reporting System. This comprehensive dataset is essential for evaluating water-related risks and setting informed water management targets.

(9.2.4) Please explain

PTTEP conducts monitoring program is also required to record volume of water discharge separately by treatment method from all PTTEP operating assets.

Water discharge quality – by standard effluent parameters

(9.2.1) % of sites/facilities/operations

Select from:

☑ 100%

(9.2.2) Frequency of measurement

Select from:

☑ Yearly

(9.2.3) Method of measurement

Method of measurement of water discharge quality is monitored at the site level using lab testing. Water data aggregation will adhere to relevant water-related regulations. Water inventory data from all assets will be recorded in the Environmental Performance Reporting System. This comprehensive dataset is essential for evaluating water-related risks and setting informed water management targets.

(9.2.4) Please explain

PTTEP conducts monitoring program is also required to record quality of water discharge from all PTTEP operating assets

Water discharge quality – emissions to water (nitrates, phosphates, pesticides, and/or other priority substances)

(9.2.1) % of sites/facilities/operations

Select from:

☑ Not monitored

(9.2.4) Please explain

This water aspect is not monitored in our sites; discharge quality is only monitored by standard effluent parameters in compliance with the regulation requirements.

Water discharge quality – temperature

(9.2.1) % of sites/facilities/operations

Select from:

☑ Not monitored

(9.2.4) Please explain

This water aspect is not monitored in operating sites; most of water discharge is produced water which monitored in compliance with the regulation requirements. The produced water is an important resource as approximately 73% is reinjected to depleted wells or used as water flooding for oil recovery process improvement, while the rest is treated before discharged overboard; or evaporated in compliance with the regulation requirements.

Water consumption – total volume

(9.2.1) % of sites/facilities/operations

Select from:
☑ 100%

(9.2.2) Frequency of measurement

Select from:
☑ Monthly

(9.2.3) Method of measurement

estimation from volume of water withdrawal and water discharge

(9.2.4) Please explain

PTTEP conduct monitoring program is also required to record volume of water consumption from all PTTEP operating assets and petroleum support bases.

Water recycled/reused

(9.2.1) % of sites/facilities/operations

Select from:
☑ 100%

(9.2.2) Frequency of measurement

Select from:
☑ Monthly

(9.2.3) Method of measurement

Through direct monitoring

(9.2.4) Please explain

PTTEP conduct monitoring program is also required to record volume of recycled/reused from all PTTEP operating assets and petroleum support bases.

The provision of fully-functioning, safely managed WASH services to all workers

(9.2.1) % of sites/facilities/operations

Select from:

☑ 100%

(9.2.2) Frequency of measurement

Select from:

☑ Yearly

(9.2.3) Method of measurement

Method of measurement is through occupation health audit by yearly

(9.2.4) Please explain

The monitoring program of WASH service is conducted via the compliance audits against the defined standard of PTTEP Occupational Health Management including food and water safety, sewage and sanitation.
[Fixed row]

(9.2.2) What are the total volumes of water withdrawn, discharged, and consumed across all your operations, how do they compare to the previous reporting year, and how are they forecasted to change?

Total withdrawals

(9.2.2.1) Volume (megaliters/year)

84780

(9.2.2.2) Comparison with previous reporting year

Select from:

☑ Lower

(9.2.2.3) Primary reason for comparison with previous reporting year

Select from:

☑ Increase/decrease in business activity

(9.2.2.4) Five-year forecast

Select from:

☑ Lower

(9.2.2.5) Primary reason for forecast

Select from:

☑ Increase/decrease in efficiency

(9.2.2.6) Please explain

PTTEP intends to reduce freshwater withdrawals are to increase opportunity for water reuse/recycle. Therefore, we anticipated that the forward trend of total water withdrawal efficiency will be reduced gradually in the following years.

Total discharges

(9.2.2.1) Volume (megaliters/year)

16170

(9.2.2.2) Comparison with previous reporting year

Select from:

☑ Higher

(9.2.2.3) Primary reason for comparison with previous reporting year

Select from:

☑ Increase/decrease in business activity

(9.2.2.4) Five-year forecast

Select from:

☑ Lower

(9.2.2.5) Primary reason for forecast

Select from:

☑ Increase/decrease in efficiency

(9.2.2.6) Please explain

PTTEP intends to reduce water discharge are to increase opportunity for water reuse/recycle. Therefore, we anticipated that the forward trend of total water discharge will be reduced gradually in the following years.

Total consumption

(9.2.2.1) Volume (megaliters/year)

68610

(9.2.2.2) Comparison with previous reporting year

Select from:

☑ Lower

(9.2.2.3) Primary reason for comparison with previous reporting year

Select from:

☑ Increase/decrease in business activity

(9.2.2.4) Five-year forecast

Select from:

☑ Lower

(9.2.2.5) Primary reason for forecast

Select from:

☑ Increase/decrease in efficiency

(9.2.2.6) Please explain

PTTEP intends to reduce water consumption are to increase opportunity for water reuse/recycle. Therefore, we anticipated that the forward trend of total water consumption efficiency will be reduced gradually in the following years.
[Fixed row]

(9.2.3) In your oil & gas sector operations, what are the total volumes of water withdrawn, discharged, and consumed (by business division), how do they compare to the previous reporting year, and how are they forecasted to change?

Total withdrawals – upstream

(9.2.3.1) Volume (megaliters/year)

84780

(9.2.3.2) Comparison with previous reporting year

Select from:

☑ Lower

(9.2.3.3) Primary reason for comparison with previous reporting year

Select from:

☑ Increase/decrease in business activity

(9.2.3.4) Five-year forecast

Select from:

☑ Lower

(9.2.3.5) Primary reason for forecast

Select from:

☑ Increase/decrease in efficiency

(9.2.3.6) Please explain

PTTEP intends to reduce freshwater withdrawals are to increase opportunity for water reuse/recycle. Therefore, we anticipated that the forward trend of total water withdrawal efficiency will be reduced gradually in the following years.

Total discharges – upstream

(9.2.3.1) Volume (megaliters/year)

16170

(9.2.3.2) Comparison with previous reporting year

Select from:

☑ Higher

(9.2.3.3) Primary reason for comparison with previous reporting year

Select from:

☑ Increase/decrease in business activity

(9.2.3.4) Five-year forecast

Select from:

☑ Lower

(9.2.3.5) Primary reason for forecast

Select from:

☑ Increase/decrease in efficiency

(9.2.3.6) Please explain

PTTEP intends to reduce water discharge are to increase opportunity for water reuse/recycle. Therefore, we anticipated that the forward trend of total water discharge will be reduced gradually in the following years.

Total consumption – upstream

(9.2.3.1) Volume (megaliters/year)

68610

(9.2.3.2) Comparison with previous reporting year

Select from:

☑ Lower

(9.2.3.3) Primary reason for comparison with previous reporting year

Select from:

☑ Increase/decrease in business activity

(9.2.3.4) Five-year forecast

Select from:

☑ Lower

(9.2.3.5) Primary reason for forecast

Select from:

☑ Increase/decrease in efficiency

(9.2.3.6) Please explain

PTTEP intends to reduce water consumption are to increase opportunity for water reuse/recycle. Therefore, we anticipated that the forward trend of total water consumption efficiency will be reduced gradually in the following years.
[Fixed row]

(9.2.4) Indicate whether water is withdrawn from areas with water stress, provide the volume, how it compares with the previous reporting year, and how it is forecasted to change.

(9.2.4.1) Withdrawals are from areas with water stress

Select from:
☑ Yes

(9.2.4.2) Volume withdrawn from areas with water stress (megaliters)

7670

(9.2.4.3) Comparison with previous reporting year

Select from:
☑ Higher

(9.2.4.4) Primary reason for comparison with previous reporting year

Select from:
☑ Increase/decrease in business activity

(9.2.4.5) Five-year forecast

Select from:
☑ Lower

(9.2.4.6) Primary reason for forecast

Select from:

☑ Increase/decrease in efficiency

(9.2.4.7) % of total withdrawals that are withdrawn from areas with water stress

9.05

(9.2.4.8) Identification tool

Select all that apply

☑ WRI Aqueduct

(9.2.4.9) Please explain

% of water withdrawn in forecast in water-stressed areas was calculated based on production consisting of operation assets from areas with water stress multiplied by total production from every asset including all domestic and international assets.
[Fixed row]

(9.2.7) Provide total water withdrawal data by source.

Fresh surface water, including rainwater, water from wetlands, rivers, and lakes

(9.2.7.1) Relevance

Select from:

☑ Relevant

(9.2.7.2) Volume (megaliters/year)

50

(9.2.7.3) Comparison with previous reporting year

Select from:

☑ Higher

(9.2.7.4) Primary reason for comparison with previous reporting year

Select from:

☑ Mergers and acquisitions

(9.2.7.5) Please explain

Freshwater withdrawal from PTTEP's operating assets and support bases has increased to 50 megaliters, surpassing the previous year's surface freshwater withdrawal. This rise is primarily attributed to the company's expansion into new operational areas, including G1/61 and Yadana, in response to growing energy demands. To mitigate the environmental impact and ensure sustainable water resource management, PTTEP is actively exploring strategies to reduce freshwater withdrawals and increase water reuse and recycling initiatives.

Brackish surface water/Seawater

(9.2.7.1) Relevance

Select from:

☑ Relevant

(9.2.7.2) Volume (megaliters/year)

68469

(9.2.7.3) Comparison with previous reporting year

Select from:

☑ Lower

(9.2.7.4) Primary reason for comparison with previous reporting year

Select from:

☑ Increase/decrease in business activity

(9.2.7.5) Please explain

Seawater, generally classified as a renewable resource, is major water source for PTTEP operations, equivalent to 99% of total water consumption.

Groundwater – renewable

(9.2.7.1) Relevance

Select from:
☑ Relevant

(9.2.7.2) Volume (megaliters/year)

410

(9.2.7.3) Comparison with previous reporting year

Select from:
☑ Lower

(9.2.7.4) Primary reason for comparison with previous reporting year

Select from:
☑ Increase/decrease in business activity

(9.2.7.5) Please explain

The groundwater from all PTTEP operating assets and petroleum support bases, equivalent to 410 megaliters which is lower than previous year.

Groundwater – non-renewable

(9.2.7.1) Relevance

Select from:
☑ Not relevant

(9.2.7.5) Please explain

No groundwater-non-renewable use

Produced/Entrained water

(9.2.7.1) Relevance

Select from:
☑ Relevant

(9.2.7.2) Volume (megaliters/year)

15550

(9.2.7.3) Comparison with previous reporting year

Select from:
☑ Higher

(9.2.7.4) Primary reason for comparison with previous reporting year

Select from:
☑ Increase/decrease in business activity

(9.2.7.5) Please explain

Produced water from PTTEP's operating assets has increased to 15,550 megaliters, surpassing the previous year's surface freshwater withdrawal. This rise is primarily attributed to the company's expansion into new operational areas, including G1/61 and Yadana, in response to growing energy demands.

Third party sources

(9.2.7.1) Relevance

Select from:

☑ Relevant

(9.2.7.2) Volume (megaliters/year)

301

(9.2.7.3) Comparison with previous reporting year

Select from:
☑ Higher

(9.2.7.4) Primary reason for comparison with previous reporting year

Select from:
☑ Increase/decrease in business activity

(9.2.7.5) Please explain

The water withdrawal from third-party sources across all PTTEP operating assets and petroleum support bases has increased to 301 megaliters, surpassing the previous year's consumption. This rise is primarily attributed to the expansion of the company's operations and the addition of new assets.
[Fixed row]

(9.2.8) Provide total water discharge data by destination.

Fresh surface water

(9.2.8.1) Relevance

Select from:
☑ Not relevant

(9.2.8.5) Please explain

No water discharge to surface water.

Brackish surface water/seawater

(9.2.8.1) Relevance

Select from:

☑ Relevant

(9.2.8.2) Volume (megaliters/year)

2980

(9.2.8.3) Comparison with previous reporting year

Select from:

☑ Lower

(9.2.8.4) Primary reason for comparison with previous reporting year

Select from:

☑ Increase/decrease in business activity

(9.2.8.5) Please explain

Almost of water discharge is reinjected to depleted wells or used as water flooding for oil recovery process improvement, while the rest is treated and discharged to seawater in compliance with the regulation requirements.

Groundwater

(9.2.8.1) Relevance

Select from:

☑ Not relevant

(9.2.8.5) Please explain

No water discharge to groundwater.

Third-party destinations

(9.2.8.1) Relevance

Select from:
☑ Not relevant

(9.2.8.5) Please explain

No water discharge to 3rd party destination
[Fixed row]

(9.2.9) Within your direct operations, indicate the highest level(s) to which you treat your discharge.

Tertiary treatment

(9.2.9.1) Relevance of treatment level to discharge

Select from:
☑ Not relevant

(9.2.9.6) Please explain

No water discharge to Tertiary treatment

Secondary treatment

(9.2.9.1) Relevance of treatment level to discharge

Select from:
☑ Relevant

(9.2.9.2) Volume (megaliters/year)

2984

(9.2.9.3) Comparison of treated volume with previous reporting year

Select from:

☑ Lower

(9.2.9.4) Primary reason for comparison with previous reporting year

Select from:

☑ Increase/decrease in business activity

(9.2.9.5) % of your sites/facilities/operations this volume applies to

Select from:

☑ 21-30

(9.2.9.6) Please explain

The water discharge flowed into the primary treatment unit for the physical removal of suspended solids and hydrocarbons. After that, the water was transferred to the secondary treatment for the reduction and control of Total Petroleum Hydrocarbons (TPH) to comply with regulations.

Primary treatment only

(9.2.9.1) Relevance of treatment level to discharge

Select from:

☑ Relevant

(9.2.9.2) Volume (megaliters/year)

13190

(9.2.9.3) Comparison of treated volume with previous reporting year

Select from:

☑ Higher

(9.2.9.4) Primary reason for comparison with previous reporting year

Select from:

☑ Increase/decrease in business activity

(9.2.9.5) % of your sites/facilities/operations this volume applies to

Select from:

☑ 61-70

(9.2.9.6) Please explain

Most of the water discharge undergone primary treatment for the physical removal of suspended solids and hydrocarbons. Subsequently, it will be transferred to a site for well injection.

Discharge to the natural environment without treatment

(9.2.9.1) Relevance of treatment level to discharge

Select from:

☑ Not relevant

(9.2.9.6) Please explain

No water discharge to the nature environment without treatment

Discharge to a third party without treatment

(9.2.9.1) Relevance of treatment level to discharge

Select from:
☑ Not relevant

(9.2.9.6) Please explain

No water discharge to a third party without treatment

Other

(9.2.9.1) Relevance of treatment level to discharge

Select from:
☑ Not relevant

(9.2.9.6) Please explain

No water discharge to other
[Fixed row]

(9.3) In your direct operations and upstream value chain, what is the number of facilities where you have identified substantive water-related dependencies, impacts, risks, and opportunities?

Direct operations

(9.3.1) Identification of facilities in the value chain stage

Select from:
☑ Yes, we have assessed this value chain stage and identified facilities with water-related dependencies, impacts, risks, and opportunities

(9.3.2) Total number of facilities identified

1

(9.3.3) % of facilities in direct operations that this represents

Select from:

☑ 1-25

(9.3.4) Please explain

The facility that could have a significant financial or strategic impact on our business is the Zawtika asset. According to the results of the water risk assessment, the Zawtika asset is at significant risk due to operational disruption.

Upstream value chain

(9.3.1) Identification of facilities in the value chain stage

Select from:

☑ No, we have not assessed this value chain stage for facilities with water-related dependencies, impacts, risks, and opportunities, and are not planning to do so in the next 2 years

(9.3.4) Please explain

The company has evaluated the value chain according to PTTEP's definition. If the net income generated by identified risks exceeds 10%, it is considered to have a serious or substantive impact. After assessing the risks associated with our value chain, we found that their financial impact is less than the specified criteria.
[Fixed row]

(9.3.1) For each facility referenced in 9.3, provide coordinates, water accounting data, and a comparison with the previous reporting year.

Row 1

(9.3.1.1) Facility reference number

Select from:

☑ Facility 1

(9.3.1.2) Facility name (optional)

Zawtika asset

(9.3.1.3) Value chain stage

Select from:

☑ Direct operations

(9.3.1.4) Dependencies, impacts, risks, and/or opportunities identified at this facility

Select all that apply

☑ Dependencies

☑ Impacts

☑ Risks

(9.3.1.5) Withdrawals or discharges in the reporting year

Select from:

☑ Yes, withdrawals and discharges

(9.3.1.7) Country/Area & River basin

Myanmar

☑ Irrawaddy

(9.3.1.8) Latitude

14.19

(9.3.1.9) Longitude

96.05

(9.3.1.10) Located in area with water stress

Select from:

☑ No

(9.3.1.12) Oil & gas sector business division

Select all that apply

☑ Upstream

(9.3.1.13) Total water withdrawals at this facility (megaliters)

333.92

(9.3.1.14) Comparison of total withdrawals with previous reporting year

Select from:

☑ Higher

(9.3.1.15) Withdrawals from fresh surface water, including rainwater, water from wetlands, rivers and lakes

24.62

(9.3.1.16) Withdrawals from brackish surface water/seawater

125.52

(9.3.1.17) Withdrawals from groundwater - renewable

0.75

(9.3.1.18) Withdrawals from groundwater - non-renewable

0

(9.3.1.19) Withdrawals from produced/entrained water

183.02

(9.3.1.20) Withdrawals from third party sources

0

(9.3.1.21) Total water discharges at this facility (megaliters)

183.02

(9.3.1.22) Comparison of total discharges with previous reporting year

Select from:

☑ Higher

(9.3.1.23) Discharges to fresh surface water

0

(9.3.1.24) Discharges to brackish surface water/seawater

183.02

(9.3.1.25) Discharges to groundwater

0

(9.3.1.26) Discharges to third party destinations

0

(9.3.1.27) Total water consumption at this facility (megaliters)

150.89

(9.3.1.28) Comparison of total consumption with previous reporting year

Select from:

☑ Higher

(9.3.1.29) Please explain

The Zawtika asset operations include the Zawtika Onshore Operation Center (ZOC), Zawtika Metering Station (ZMS), and Thakita Supply Base. This does not include the Zawtika Offshore Production Quarter (ZPQ), which is an offshore facility that utilizes seawater for the water maker system. The financial impact has been identified to be at the same level across all facilities under the Zawtika asset. However, the highest likelihood of impact is from the ZOC, which is located in the Irrawaddy Basin. If regulations become more stringent (e.g. requiring higher quality of wastewater discharge to the environment), this will significantly increase the operating cost of the site (e.g. by requiring an upgrade to the wastewater treatment system). Simultaneously, the risk of failing to meet the standards is considered to be higher than before, which would result in a higher insurance premium. Consequently, the severity of the risk in this case is the combination of increased operating costs and insurance premiums.
[Add row]

(9.3.2) For the facilities in your direct operations referenced in 9.3.1, what proportion of water accounting data has been third party verified?

Water withdrawals – total volumes

(9.3.2.1) % verified

Select from:
☑ 76-100

(9.3.2.2) Verification standard used

The assurance engagement is conducted in accordance with the International Standard on Assurance Engagements ISAE 3000 Assurance Engagements other than Audits or Reviews of Historical Financial Information and the Accountability Assurance Standard of Sustainability AA1000AS (2008). Water accounting data was prepared and calculated in accordance with the GRI Sustainability Reporting Standards (GRI Standards).

Water withdrawals – volume by source

(9.3.2.1) % verified

Select from:
☑ 76-100

(9.3.2.2) Verification standard used

The assurance engagement is conducted in accordance with the International Standard on Assurance Engagements ISAE 3000 Assurance Engagements other than Audits or Reviews of Historical Financial Information and the Accountability Assurance Standard of Sustainability AA1000AS (2008). Water accounting data was prepared and calculated in accordance with the GRI Sustainability Reporting Standards (GRI Standards).

Water withdrawals – quality by standard water quality parameters

(9.3.2.1) % verified

Select from:

☑ Not verified

(9.3.2.3) Please explain

The majority of the water discharge was sent to a well for injection, and the remaining water was treated before being released into the environment according to regulatory requirements. We have focused on identifying and addressing threats to our operations or reputation related to the volume of water withdrawals. While we recognize the importance of water quality risks, they have been assessed as a lower priority compared to other factors. However, we have plans to verify the quality of the water withdrawn within the next 5 years.

Water discharges – total volumes

(9.3.2.1) % verified

Select from:

☑ 76-100

(9.3.2.2) Verification standard used

The assurance engagement is conducted in accordance with the International Standard on Assurance Engagements ISAE 3000 Assurance Engagements other than Audits or Reviews of Historical Financial Information and the Accountability Assurance Standard of Sustainability AA1000AS (2008). Water accounting data was prepared and calculated in accordance with the GRI Sustainability Reporting Standards (GRI Standards).

Water discharges – volume by destination

(9.3.2.1) % verified

Select from:

☑ 76-100

(9.3.2.2) Verification standard used

The assurance engagement is conducted in accordance with the International Standard on Assurance Engagements ISAE 3000 Assurance Engagements other than Audits or Reviews of Historical Financial Information and the Accountability Assurance Standard of Sustainability AA1000AS (2008). Water accounting data was prepared and calculated in accordance with the GRI Sustainability Reporting Standards (GRI Standards).

Water discharges – volume by final treatment level

(9.3.2.1) % verified

Select from:

☑ 76-100

(9.3.2.2) Verification standard used

The assurance engagement is conducted in accordance with the International Standard on Assurance Engagements ISAE 3000 Assurance Engagements other than Audits or Reviews of Historical Financial Information and the Accountability Assurance Standard of Sustainability AA1000AS (2008). Water accounting data was prepared and calculated in accordance with the GRI Sustainability Reporting Standards (GRI Standards).

Water discharges – quality by standard water quality parameters

(9.3.2.1) % verified

Select from:

☑ Not verified

(9.3.2.3) Please explain

The majority of the water discharge was sent to a well for injection, and the remaining water was treated before being released into the environment according to regulatory requirements. We have focused on identifying and addressing threats to our operations or reputation related to the volume of water withdrawals. While we recognize the importance of water quality risks, they have been assessed as a lower priority compared to other factors. However, we have plans to verify the quality of the water withdrawn within the next 5 years.

Water consumption – total volume

(9.3.2.1) % verified

Select from:

☑ 76-100

(9.3.2.2) Verification standard used

The assurance engagement is conducted in accordance with the International Standard on Assurance Engagements ISAE 3000 Assurance Engagements other than Audits or Reviews of Historical Financial Information and the Accountability Assurance Standard of Sustainability AA1000AS (2008). Water accounting data was prepared and calculated in accordance with the GRI Sustainability Reporting Standards (GRI Standards).
[Fixed row]

(9.5) Provide a figure for your organization's total water withdrawal efficiency.

(9.5.1) Revenue (currency)

9057330000

(9.5.2) Total water withdrawal efficiency

106833.33

(9.5.3) Anticipated forward trend

The withdrawal of seawater is important to PTTEP as it is considered a renewable resource and serves as the main water source for PTTEP operations, accounting for 99% of total water withdrawal, which is consistent with the previous year. PTTEP aims to decrease freshwater withdrawals in order to promote water reuse and recycling. As a result, we expect the overall water withdrawal efficiency to gradually decrease in the coming years.
[Fixed row]

(9.11.1) Provide water intensity information associated with your activities in the oil & gas sector.

Row 1

(9.11.1.1) Business division

Select all that apply

☑ Upstream

(9.11.1.2) Water intensity value (m3/denominator)

0

(9.11.1.3) Numerator: water aspect

Select from:

☑ Freshwater withdrawals

(9.11.1.4) Denominator

Select from:

☑ Barrel of oil equivalent

(9.11.1.5) Comparison with previous reporting year

Select from:

☑ About the same

(9.11.1.6) Please explain

The water intensity value is approximately 0.0034. This value is calculated based on the relationship between the volume of freshwater withdrawals and the total production from all PTTEP operating assets. There is no significant difference from the previous year. PTTEP aims to reduce freshwater withdrawals in order to increase opportunities for water reuse and recycling. Furthermore, freshwater withdrawals account for only 1.37% of the total water withdrawal for PTTEP operations, as seawater is our primary water source.
[Add row]

(9.13) Do any of your products contain substances classified as hazardous by a regulatory authority?

	Products contain hazardous substances
	Select from: ☑ Yes

[Fixed row]

(9.13.1) What percentage of your company's revenue is associated with products containing substances classified as hazardous by a regulatory authority?

Row 1

(9.13.1.1) Regulatory classification of hazardous substances

Select from:

☑ Other, please specify **:**Thailand hazardous substance Act

(9.13.1.2) % of revenue associated with products containing substances in this list

Select from:

☑ More than 80%

(9.13.1.3) Please explain

PTTEP main product is natural gas and crude oil. The environmental potential impacts from PTTEP production may cause spill or leakage of hydrocarbon (HC) liquid during transferring/ offloading or from truck/vessel collision, subsea pipelines rupture/corrosion. PTTEP developed the spill management plan and emergency management plan to protect the environmental potential impact in accordance with the PTTEP SSHE Management System (SSHE-MS). The main objective of this Standard is to: 1) assist PTTEP Assets and Subsidiaries to properly manage the Company environmental aspects and impacts in the environmentally sound

management practices which include compliance with the regulations and the Company requirements, and 2) ensure the effectiveness of mitigation and prevention of the environmental pollution including water pollution, and encourage the continual improvement culture.
[Add row]

(9.14) Do you classify any of your current products and/or services as low water impact?

(9.14.1) Products and/or services classified as low water impact

Select from:
☑ Yes

(9.14.2) Definition used to classify low water impact

In management of water resource, PTTEP commits to avoid operating in areas at risk from water scarcity and ensure that there is no impact on the community and water users. The classification of PTTEP operating as low water impact considered by the operations in assets with "non-water stress area" and/or low water risk. We can also calculate the % production portion from the assets that operating in "non-water stress area" and/or low water risk to show PTTEP performance.

(9.14.4) Please explain

As of 2023, 92% of total production is from the assets that operating in "non-water stress area" and/or low water risk.
[Fixed row]

(9.15.1) Indicate whether you have targets relating to water pollution, water withdrawals, WASH, or other water-related categories.

Water pollution

(9.15.1.1) Target set in this category

Select from:
☑ Yes

Water withdrawals

(9.15.1.1) Target set in this category

Select from:

☑ No, but we plan to within the next two years

(9.15.1.2) Please explain

The freshwater consumption accounts only 1.37 % of total water withdrawal for PTTEP operations, since seawater is generally classified as a renewable resource, is major water source, equivalent to 99% of total water withdrawals. In addition, we are planning to study water use and water returns of domestic operating and and our supply chain, e.g. Songkhla petroleum support base who is responsible for providing water supply to some offshore operations, etc. To seek opportunities to optimize water efficiency both water withdrawals and water discharge and set target for improvement within 2025, and avoid operating in areas at risk from water scarcity and ensure that there is no impact on the community and water users.

Water, Sanitation, and Hygiene (WASH) services

(9.15.1.1) Target set in this category

Select from:

☑ No, but we plan to within the next two years

(9.15.1.2) Please explain

To provide an overview of the public health interface and promotion of good health strategy and requirements, PTTEP developed the Occupational Health Management Standard as a document for water, sanitation, and hygiene (WASH) services in accordance with the PTTEP SSHE Management System (SSHE-MS). We conducted hygiene monitoring plan for PTTEP worksites and plan to set target within next two years.

Other

(9.15.1.1) Target set in this category

Select from:

☑ No, but we plan to within the next two years

(9.15.1.2) Please explain

We conduct studies on water usage and returns, as well as water risk assessments, to identify opportunities for improvement. Therefore, we are studying to establish targets for increasing renewable water supplies and implementing replenishment projects in water-stressed areas.
[Fixed row]

(9.15.2) Provide details of your water-related targets and the progress made.

Row 1

(9.15.2.1) Target reference number

Select from:
☑ Target 1

(9.15.2.2) Target coverage

Select from:
☑ Organization-wide (direct operations only)

(9.15.2.3) Category of target & Quantitative metric

Water pollution
☑ Other water pollution, please specify **:**Reduction produced water discharge

(9.15.2.4) Date target was set

12/31/2008

(9.15.2.5) End date of base year

12/30/2009

(9.15.2.6) Base year figure

99.98

(9.15.2.7) End date of target year

12/30/2030

(9.15.2.8) Target year figure

100

(9.15.2.9) Reporting year figure

100

(9.15.2.10) Target status in reporting year

Select from:

☑ Achieved

(9.15.2.11) % of target achieved relative to base year

100

(9.15.2.12) Global environmental treaties/initiatives/ frameworks aligned with or supported by this target

Select all that apply

☑ Zero Discharge of Hazardous Chemicals (ZDHC)

(9.15.2.13) Explain target coverage and identify any exclusions

We focuses on management of both water resources and reuse/recycle of water. PTTEP commits to avoid the operations in the area at risk from water scarcity, as well as develop the water management program for the operations in the water stress area. Moreover, the mitigation of the impact from large volume of produced water is priority by setting the target of 100% of produced water injection for Thailand operations where the facility is safely allowed. Otherwise, the compliance with the regulation in the country where the operating assets located is adhered to.

(9.15.2.15) Actions which contributed most to achieving or maintaining this target

The volume of produced water generated and discharged is daily monitored and reported monthly via our web-based performance reporting system. Currently in 2023, 99.97% produced water from Thailand assets was re-injected into underground reservoir, whereas 0.03% were treated by evaporation method according to regulation requirements. For the international assets e.g. Myanmar and Malaysia where the national regulation allows to discharge produced water overboard, they are under conducting the feasibility study to comply with this target at zero produced water discharge.

(9.15.2.16) Further details of target

PTTEP's projects located in Thailand have achieved zero produced water discharge since 2010, through injection of produced water back into depleted petroleum reservoirs. Though produced water volume tends to increase in line with production activities and reservoir age, PTTEP has effectively maintained the water injection capacity. Sinphuhorm Asset in Thailand was the exception as it resorts to another technique, as described in its EIA, which also results in zero discharge. By employing advanced treatment technologies, PTTEP has improved the quality of produced water (water produced along with petroleum production) to meet the standards for a broader range of uses, thereby significantly reducing our dependency on freshwater resources. This initiative will include the exploration of opportunities for using treated produced water in operation, where permissible.
[Add row]

C10. Environmental performance - Plastics

(10.1) Do you have plastics-related targets, and if so what type?

	Targets in place
	Select from: ☑ No, and we do not plan to within the next two years

[Fixed row]

C11. Environmental performance - Biodiversity

(11.2) What actions has your organization taken in the reporting year to progress your biodiversity-related commitments?

(11.2.1) Actions taken in the reporting period to progress your biodiversity-related commitments

Select from:

☑ Yes, we are taking actions to progress our biodiversity-related commitments

(11.2.2) Type of action taken to progress biodiversity- related commitments

Select all that apply

☑ Land/water management

☑ Education & awareness

[Fixed row]

(11.3) Does your organization use biodiversity indicators to monitor performance across its activities?

	Does your organization use indicators to monitor biodiversity performance?	Indicators used to monitor biodiversity performance
	Select from: ☑ Yes, we use indicators	*Select all that apply* ☑ State and benefit indicators ☑ Pressure indicators ☑ Response indicators

[Fixed row]

(11.4) Does your organization have activities located in or near to areas important for biodiversity in the reporting year?

	Indicate whether any of your organization's activities are located in or near to this type of area important for biodiversity	Comment
Legally protected areas	*Select from:* ☑ Yes	-
UNESCO World Heritage sites	*Select from:* ☑ No	-
UNESCO Man and the Biosphere Reserves	*Select from:* ☑ No	-
Ramsar sites	*Select from:* ☑ No	-
Key Biodiversity Areas	*Select from:* ☑ No	-
Other areas important for biodiversity	*Select from:* ☑ No	-

[Fixed row]

(11.4.1) Provide details of your organization’s activities in the reporting year located in or near to areas important for biodiversity.

Row 1

(11.4.1.2) Types of area important for biodiversity

Select all that apply

☑ Legally protected areas

(11.4.1.3) Protected area category (IUCN classification)

Select from:

☑ Not applicable

(11.4.1.4) Country/area

Select from:

☑ Thailand

(11.4.1.5) Name of the area important for biodiversity

Watershed Area and Phan Don and Pakho Reserved Forest

(11.4.1.6) Proximity

Select from:

☑ Adjacent

(11.4.1.8) Briefly describe your organization’s activities in the reporting year located in or near to the selected area

The Sinphuhorm onshore facilities, consists of a 64 km long onshore gas transportation pipeline and four (4) connected well pads, which are located in the Phan Don and Pakho Reserved Forest.

(11.4.1.9) Indicate whether any of your organization’s activities located in or near to the selected area could negatively affect biodiversity

Select from:

☑ Yes, but mitigation measures have been implemented

(11.4.1.10) Mitigation measures implemented within the selected area

Select all that apply

☑ Scheduling

☑ Restoration

☑ Abatement controls

☑ Operational controls

☑ Site selection
☑ Project design
☑ Physical controls
☑ Biodiversity offsets

(11.4.1.11) Explain how your organization's activities located in or near to the selected area could negatively affect biodiversity, how this was assessed, and describe any mitigation measures implemented

Conduct Biodiversity offset strategy and Biodiversity offset management program have been identified and implementing, for examples: - Manage biodiversity risks in accordance with the mitigation hierarchy (Avoidance, Minimizing, Restoration and - Offsetting) - Ecological restoration and securing of degraded forest habitats proximate to locations where project development - Fire control programs by supporting and optimisation of existing community fire control programs to identify any potential sources of fire and raise public awareness related to fire prevention.

Row 2

(11.4.1.2) Types of area important for biodiversity

Select all that apply
☑ Legally protected areas

(11.4.1.3) Protected area category (IUCN classification)

Select from:
☑ Category Ia-III

(11.4.1.4) Country/area

Select from:
☑ Myanmar

(11.4.1.5) Name of the area important for biodiversity

Tanintharyi Nature Reserve

(11.4.1.6) Proximity

Select from:

☑ Overlap

(11.4.1.7) Area of overlap (hectares)

77

(11.4.1.8) Briefly describe your organization’s activities in the reporting year located in or near to the selected area

A section of the natural gas pipeline (approximately 32 km) and gas metering station have been laid within the area of Tanintharyi Nature Reserve. Right of Way (ROW) being 20 m in width, of the project, it could be able to calculate the total area of the gas pipeline and gas metering station located within the Tanintharyi Nature Reserve approximately 77 ha.

(11.4.1.9) Indicate whether any of your organization’s activities located in or near to the selected area could negatively affect biodiversity

Select from:

☑ Yes, but mitigation measures have been implemented

(11.4.1.10) Mitigation measures implemented within the selected area

Select all that apply

☑ Scheduling

☑ Restoration

☑ Site selection

☑ Project design

☑ Physical controls

☑ Abatement controls

☑ Operational controls

☑ Biodiversity offsets

(11.4.1.11) Explain how your organization’s activities located in or near to the selected area could negatively affect biodiversity, how this was assessed, and describe any mitigation measures implemented

As the Thanintharyi Natural Reserve Area of Myanmar has some endangered species, entering the area may disturb the endangered species. Thus, mitigation measures according to the project BES management plan have been implemented, for example: - PTTEP and Thanintharyi National Reserved Project have monitored a number of endangered species found in the forest and within the project site by using camera traps and staff mobile phones as one of the strategic actions of the BAPs of the project. The endangered species found near the project site have been recorded and kept to ensure that there is no net loss of BES in the

area. - Continually conducts BES management training for all PTTEP staff who work in protected areas to build up awareness and knowledge of BES management. - Manage biodiversity risks in accordance with the mitigation hierarchy (Avoidance, Minimizing, Restoration and - Offsetting)
[Add row]

C13. Further information & sign off

(13.1) Indicate if any environmental information included in your CDP response (not already reported in 7.9.1/2/3, 8.9.1/2/3/4, and 9.3.2) is verified and/or assured by a third party?

	Other environmental information included in your CDP response is verified and/or assured by a third party
	Select from: ☑ Yes

[Fixed row]

(13.1.1) Which data points within your CDP response are verified and/or assured by a third party, and which standards were used?

Row 1

(13.1.1.1) Environmental issue for which data has been verified and/or assured

Select all that apply

☑ Water

(13.1.1.2) Disclosure module and data verified and/or assured

Environmental performance – Water security

☑ Volume withdrawn from areas with water stress (megaliters)

(13.1.1.3) Verification/assurance standard

General standards

☑ AA1000AS

☑ ISAE 3000

(13.1.1.4) Further details of the third-party verification/assurance process

The assurance engagement is conducted in accordance with the International Standard on Assurance Engagements ISAE 3000 Assurance Engagements other than Audits or Reviews of Historical Financial Information and the Accountability Assurance Standard of Sustainability AA1000AS (2008). Water accounting data was prepared and calculated in accordance with the GRI Sustainability Reporting Standards (GRI Standards). The data was disclosed via https://sustainability.pttep.com/storage/document/sustainability/pttep-environmental-performance-data-en.pdf.

(13.1.1.5) Attach verification/assurance evidence/report (optional)

pttep-assurance-statement-en.pdf

Row 2

(13.1.1.1) Environmental issue for which data has been verified and/or assured

Select all that apply

☑ Climate change

(13.1.1.2) Disclosure module and data verified and/or assured

Environmental performance – Climate change

☑ Other data point in module 7, please specify **:**Energy consumption

(13.1.1.3) Verification/assurance standard

General standards

☑ AA1000AS

☑ ISAE 3000

(13.1.1.4) Further details of the third-party verification/assurance process

The assurance engagement is conducted in accordance with the International Standard on Assurance Engagements ISAE 3000 Assurance Engagements other than Audits or Reviews of Historical Financial Information and the Accountability Assurance Standard of Sustainability AA1000AS (2008). Water accounting data was prepared and calculated in accordance with the GRI Sustainability Reporting Standards (GRI Standards). The data was disclosed via https://sustainability.pttep.com/storage/document/sustainability/pttep-environmental-performance-data-en.pdf.

(13.1.1.5) Attach verification/assurance evidence/report (optional)

pttep-assurance-statement-en.pdf
[Add row]

(13.2) Use this field to provide any additional information or context that you feel is relevant to your organization's response. Please note that this field is optional and is not scored.

	Additional information
	None

[Fixed row]

(13.3) Provide the following information for the person that has signed off (approved) your CDP response.

(13.3.1) Job title

CEO

(13.3.2) Corresponding job category

Select from:

☑ Chief Executive Officer (CEO)
[Fixed row]