

PTT EXPLORATION AND PRODUCTION PUBLIC COMPANY LIMITED

CONSOLIDATED AND SEPARATE FINANCIAL STATEMENTS

31 DECEMBER 2021

Independent Auditor's Report

To the Shareholders of PTT Exploration and Production Public Company Limited

My opinion

In my opinion, the consolidated financial statements and the separate financial statements present fairly, in all material respects, the consolidated financial position of PTT Exploration and Production Public Company Limited (the Company) and its subsidiaries (the Group) and the separate financial position of the Company as at 31 December 2021, and its consolidated and separate financial performance and its consolidated and separate cash flows for the year then ended in accordance with Thai Financial Reporting Standards (TFRS).

What I have audited

The consolidated financial statements and the separate financial statements comprise:

- the consolidated and separate statements of financial position as at 31 December 2021;
- the consolidated and separate statements of income for the year then ended;
- the consolidated and separate statements of comprehensive income for the year then ended;
- the consolidated and separate statements of changes in equity for the year then ended;
- the consolidated and separate statements of cash flows for the year then ended; and
- the notes to the consolidated and separate financial statements, which include significant accounting policies and other explanatory information.

Basis for opinion

I conducted my audit in accordance with Thai Standards on Auditing (TSAs) and the State Audit Standards. My responsibilities under those standards are further described in the Auditor's responsibilities for the audit of the consolidated and separate financial statements section of my report. I am independent of the Group and the Company in accordance with the Code of Ethics for Professional Accountants issued by the Federation of Accounting Professions that are relevant to my audit of the consolidated and separate financial statements and the State Audit Standards as determined by the State Audit Commission, and I have fulfilled my other ethical responsibilities in accordance with these ethical requirements and the State Audit Standards. I believe that the audit evidence I have obtained is sufficient and appropriate to provide a basis for my opinion.

Other matter

The State Audit Standards as described in the basis for opinion section and the auditor's responsibilities for the audit of the consolidated and separate financial statements section are relevant to the particular section of audit on the financial reporting by independent auditor.

Key audit matters

Key audit matters are those matters that, in my professional judgement, were of most significance in my audit of the consolidated and separate financial statements of the current period. These matters were addressed in the context of my audit of the consolidated and separate financial statements as a whole, and in forming my opinion thereon, and I do not provide a separate opinion on these matters.

Key audit matter	How my audit addressed the key audit matter
<i>Impairment assessments of goodwill and long-lived assets</i> <p>As at 31 December 2021, the Group has recognised goodwill net of an allowance for impairment of US Dollar 1,740.80 million, long-lived assets comprising property, plant and equipment net of an allowance for impairment of US Dollar 11,379.66 million, and exploration and evaluation assets net of allowance for impairment of US Dollar 3,121.29 million. The total net value of these assets represents 69% of the total consolidated assets. In 2021, the Group recognised an impairment loss for goodwill in the amount of US Dollar 163 million as disclosed in Note 19 and for property, plant and equipment in the amount of US Dollar 20 million as disclosed in Note 21.</p> <p>The management tests impairment of goodwill annually or whenever there is an indicator of impairment, and impairment of long-lived assets whenever there is an impairment indicator. The impairment test is performed at the cash generating unit (CGU) level.</p>	<p>I carried out the following procedures to assess management's impairment testing of goodwill and long-lived assets:</p> <ul style="list-style-type: none">• Evaluated the appropriateness of the impairment indicators that management assessed.• Evaluated the appropriateness of CGUs that the Group identified and the internal impairment assessment process.• Held discussions with the management to understand the basis of the assumptions used to estimate the cash flow and assessed whether the impairment testing process and assumptions had been applied consistently across the Group.• Challenged management's significant assumptions for impairment testing of goodwill and long-lived assets, specifically global oil price trends, petroleum reserve estimates, exploration, development and production plans, cost profiles, growth rate and discount rate. The procedures included comparing key assumptions with external sources and the approved business plan.

Key audit matter	How my audit addressed the key audit matter
<p>Determining the CGUs' recoverable amount (the higher of value in use or fair value less costs of disposal), which includes long-lived assets and goodwill, requires significant management judgement in identifying both the relevant CGUs and valuation assumptions. These assumptions include global oil price trends, estimated petroleum reserves, exploration, development and production plans, cost profiles, growth rate and discount rate applied to the discounted cash flow forecasts.</p> <p>The management considered the following factors to assess whether there were any impairment indicators:</p> <ul style="list-style-type: none"> • unsuccessful exploration activities during the year • the significant decrease in global oil prices • significant changes to exploration, development and production plans, and • changes to petroleum reserve estimates. <p>I focused on the impairment assessment of these assets due to their significant values. Also, determining the recoverable amount depends on a number of assumptions and management judgements in determining the appropriate level of impairment recognition:</p> <ul style="list-style-type: none"> • Goodwill of US Dollar 520.46 million from the acquisition of the exploration and production business in Thailand, US Dollar 454.10 million from the acquisition of the exploration and production 	<ul style="list-style-type: none"> • Assessed the reasonableness of the business plan by comparing the plan for 2021 with actual results. • Assessed the discount rate by taking into account publicly available information on other companies in the industry, obtained independently by the auditor's expert, to see whether the discount rate that the management used was within an acceptable range compared to other companies in the industry. • Tested the sensitivity analysis of key assumptions in the management's model. This was done to assess which factors were sensitive to assumptions and the potential impact of a range of possible outcomes from changing in assumption. <p>Based on the results of the procedures performed, I found that the key assumptions that the management used were reasonable and within the acceptable range. They were consistent with supporting evidence.</p>

Key audit matter	How my audit addressed the key audit matter
<p>business in other South East Asia and US Dollar 562.97 million from the acquisition of the exploration and production business in Africa; and</p> <ul style="list-style-type: none"> Long-lived assets of US Dollar 14,500.95 million. 	
<p><i>Fair value estimate from the business acquisition of Oman Block 61</i></p> <p>Refer to Note 34. On 1 February 2021, the Group signed a Sale and Purchase Agreement (SPA) to acquire 20% interest in Oman Block 61 in the Sultanate Oman. The fair value of total consideration transferred on the acquisition date was US Dollar 2,368.38 million. The acquisition was completed on 23 March 2021. The management determined that this acquired participating interest was an investment in a joint operation following the definition in TFRS 11 'Joint arrangements'. The acquired participating interest has an integrated set of activities that constitute a business as defined in TFRS 3 'Business combinations'. As a result, the Group had to apply all business combination accounting principles in TFRS 3 when measuring the fair value of net identifiable assets acquired and performing the purchase price allocation (PPA).</p> <p>The management engaged the external valuer to appraise the fair value of net identifiable assets acquired as at the acquisition date, which was US Dollar 2,710.26 million. This mainly consisted of US Dollar 2,165.71 million in property, plant and equipment and US Dollar 332.30 million in exploration and evaluation assets. The fair value was measured as part of the PPA. The business</p>	<p>I carried out the following procedures to obtain sufficient evidence on the management's fair value measurement of net identifiable assets acquired as at the acquisition date.</p> <ul style="list-style-type: none"> Obtained an understanding of the terms and conditions by reading the completed SPA and all related documents. Evaluated the competency, qualifications, experience and independence of management's experts. Assessed the appropriateness of assumptions used to estimate the fair value of net identifiable assets acquired on the acquisition date by performing the following procedures: <ul style="list-style-type: none"> Tested key assumptions applied in the fair valuation method, especially for global oil price trends, petroleum reserve estimates, exploration, development and production plans, cost profiles, growth rate and discount rate by comparing them with publicly available information, including approved project plans with reference public information. Assessed the discount rate by taking into account publicly available information on other companies in the industry, obtained independently by the auditor's expert, to see whether the discount rate that the management used was within an acceptable range compared to other companies in the industry.

Key audit matter	How my audit addressed the key audit matter
<p>acquisition resulted in a US Dollar 341.87 million gain on a bargain purchase.</p> <p>The determination of fair value of net identifiable assets acquired as at the acquisition date required significant management judgements regarding the fair valuation method, estimated operating results and projected cash flows including the application of discount rate on those projected cash flows. Key assumptions used to determine the fair value were the global oil price trends, estimated petroleum reserves, exploration, development and production plans, cost profiles, growth rate and discount rate applied to the discounted cash flow forecasts.</p> <p>I focused on the fair value of property, plant and equipment and exploration and evaluation assets acquired due to the significance of this transaction. Also, the external valuer applied the discounted cash flow model in determining the fair value which involved their significant assumptions and judgements when determining the possibility of cash flow forecasts and the discount rate.</p>	<ul style="list-style-type: none"> - Assessed the fair valuation method under TFRS requirements. • Tested the mathematical accuracy of the fair value of net identifiable assets acquired and the gain on a bargain purchase. <p>Based on the results of the procedures performed, I found that the method and assumptions that the management used to assess the fair value of the business acquisition and gain on a bargain purchase were appropriate.</p>

Other information

The directors are responsible for the other information. The other information comprises the information included in the annual report, but does not include the consolidated and separate financial statements and my auditor's report thereon. The annual report is expected to be made available to me after the date of this auditor's report.

My opinion on the consolidated and separate financial statements does not cover the other information and I will not express any form of assurance conclusion thereon.

In connection with my audit of the consolidated and separate financial statements, my responsibility is to read the other information identified above when it becomes available and, in doing so, consider whether the other information is materially inconsistent with the consolidated and separate financial statements or my knowledge obtained in the audit, or otherwise appears to be materially misstated.

When I read the annual report, if I conclude that there is a material misstatement therein, I am required to communicate the matter to the audit committee.

Responsibilities of the directors for the consolidated and separate financial statements

The directors are responsible for the preparation and fair presentation of the consolidated and separate financial statements in accordance with TFRS, and for such internal control as the directors determine is necessary to enable the preparation of consolidated and separate financial statements that are free from material misstatement, whether due to fraud or error.

In preparing the consolidated and separate financial statements, the directors are responsible for assessing the Group's and the Company's ability to continue as a going concern, disclosing, as applicable, matters related to going concern and using the going concern basis of accounting unless the directors either intend to liquidate the Group and the Company or to cease operations, or has no realistic alternative but to do so.

The audit committee assists the directors in discharging their responsibilities for overseeing the Group's and the Company's financial reporting process.

Auditor's responsibilities for the audit of the consolidated and separate financial statements

My objectives are to obtain reasonable assurance about whether the consolidated and separate financial statements as a whole are free from material misstatement, whether due to fraud or error, and to issue an auditor's report that includes my opinion. Reasonable assurance is a high level of assurance, but is not a guarantee that an audit conducted in accordance with TSAs and the State Audit Standards will always detect a material misstatement when it exists. Misstatements can arise from fraud or error and are considered material if, individually or in the aggregate, they could reasonably be expected to influence the economic decisions of users taken on the basis of these consolidated and separate financial statements.

As part of an audit in accordance with TSAs and the State Audit Standards, I exercise professional judgement and maintain professional scepticism throughout the audit. I also:

- Identify and assess the risks of material misstatement of the consolidated and separate financial statements, whether due to fraud or error, design and perform audit procedures responsive to those risks, and obtain audit evidence that is sufficient and appropriate to provide a basis for my opinion. The risk of not detecting a material misstatement resulting from fraud is higher than for one resulting from error, as fraud may involve collusion, forgery, intentional omissions, misrepresentations, or the override of internal control.
- Obtain an understanding of internal control relevant to the audit in order to design audit procedures that are appropriate in the circumstances, but not for the purpose of expressing an opinion on the effectiveness of the Group's and the Company's internal control.
- Evaluate the appropriateness of accounting policies used and the reasonableness of accounting estimates and related disclosures made by the directors.
- Conclude on the appropriateness of the directors' use of the going concern basis of accounting and, based on the audit evidence obtained, whether a material uncertainty exists related to events or conditions that may cast significant doubt on the Group's and the Company's ability to continue as a going concern. If I conclude that a material uncertainty exists, I am required to draw attention in my auditor's report to the related disclosures in the consolidated and separate financial statements or, if such disclosures are inadequate, to modify my opinion. My conclusions are based on the audit evidence obtained up to the date of my auditor's report. However, future events or conditions may cause the Group and the Company to cease to continue as a going concern.

- Evaluate the overall presentation, structure and content of the consolidated and separate financial statements, including the disclosures, and whether the consolidated and separate financial statements represent the underlying transactions and events in a manner that achieves fair presentation.
- Obtain sufficient appropriate audit evidence regarding the financial information of the entities or business activities within the Group to express an opinion on the consolidated financial statements. I am responsible for the direction, supervision and performance of the group audit. I remain solely responsible for my audit opinion.

I communicate with the audit committee regarding, among other matters, the planned scope and timing of the audit and significant audit findings, including any significant deficiencies in internal control that I identify during my audit.

I also provide the audit committee with a statement that I have complied with relevant ethical requirements and the State Audit Standards regarding independence, and to communicate with them all relationships and other matters that may reasonably be thought to bear on my independence, and where applicable, related safeguards.

From the matters communicated with the audit committee, I determine those matters that were of most significance in the audit of the consolidated and separate financial statements of the current period and are therefore the key audit matters. I describe these matters in my auditor's report unless law or regulation precludes public disclosure about the matter or when, in extremely rare circumstances, I determine that a matter should not be communicated in my report because the adverse consequences of doing so would reasonably be expected to outweigh the public interest benefits of such communication.

PricewaterhouseCoopers ABAS Ltd.

Amornrat Pearmpoonvatanasuk

Certified Public Accountant (Thailand) No. 4599

Bangkok

11 February 2022

PTT Exploration and Production Public Company Limited
Statement of Financial Position
As at 31 December 2021

		Consolidated financial statements			
		Unit: Thousand US Dollar		Unit: Thousand Baht	
		31 December	31 December	31 December	31 December
	Notes	2021	2020	2021	2020
Assets					
Current assets					
Cash and cash equivalents	11	2,559,189	3,704,003	85,527,810	111,257,372
Short-term investments		-	100,000	-	3,003,707
Trade and other receivables	12	1,000,303	790,763	33,430,040	23,752,181
Inventories	14	420,969	338,105	14,068,739	10,155,695
Current tax assets		59,366	56,168	1,984,024	1,687,122
Derivative assets	7	16,427	4,362	548,990	131,009
Other current assets		120,414	90,847	4,024,240	2,728,786
Total current assets		4,176,668	5,084,248	139,583,843	152,715,872
Non-current assets					
Investments in associates	16	220,880	216,866	7,381,771	6,514,000
Investments in joint ventures	16	210,235	233,344	7,026,037	7,008,969
Long-term loans to related parties	15	41,500	74,945	1,386,921	2,251,134
Property, plant and equipment	17	11,379,664	9,837,537	380,307,143	295,490,745
Right-of-use assets	18	519,711	482,778	17,368,709	14,501,235
Goodwill	19	1,740,803	1,903,803	58,177,427	57,184,639
Intangible assets		135,719	130,453	4,535,718	3,918,436
Exploration and evaluation assets	20	3,121,294	2,886,220	104,313,320	86,693,591
Deferred tax assets	22	1,317,826	1,098,682	44,041,594	33,001,186
Rights to receive reimbursement from decommissioning funds		290,546	265,789	9,710,013	7,983,520
Derivative assets	7	825	49,051	27,581	1,473,344
Other non-current financial assets		109,824	49,636	3,670,310	1,490,925
Other non-current assets	23	179,692	180,094	6,005,282	5,409,499
Total non-current assets		19,268,519	17,409,198	643,951,826	522,921,223
Total assets		23,445,187	22,493,446	783,535,669	675,637,095

(Montri Rawanchaikul)
Chief Executive Officer

(Sermsak Satchawannakul)
Senior Vice President, Accounting Division

The notes to the consolidated and separate financial statements are an integral part of these financial statements.

PTT Exploration and Production Public Company Limited
Statement of Financial Position
As at 31 December 2021

Consolidated financial statements					
		Unit: Thousand US Dollar		Unit: Thousand Baht	
		31 December	31 December	31 December	31 December
Notes		2021	2020	2021	2020
Liabilities and equity					
Current liabilities					
Trade and other payables	24	1,096,946	893,694	36,659,830	26,843,944
Current portion of long-term liabilities	25	633,346	135,475	21,166,366	4,069,275
Income tax payable		782,837	504,785	26,162,328	15,162,267
Short-term provisions		381,144	150,218	12,737,799	4,512,101
Derivative liabilities	7	49,209	29,675	1,644,539	891,347
Other current liabilities		183,466	159,074	6,131,426	4,778,114
Total current liabilities		3,126,948	1,872,921	104,502,288	56,257,048
Non-current liabilities					
Debentures	25	2,475,802	2,830,375	82,741,041	85,016,153
Long-term loans	25	596,057	594,659	19,920,163	17,861,825
Lease liabilities	25	388,510	371,552	12,983,959	11,160,344
Deferred tax liabilities	22	1,504,258	1,445,792	50,272,138	43,427,363
Provision for employee benefits	28	205,381	265,511	6,863,853	7,975,139
Provision for decommissioning costs	26	2,458,593	3,140,385	82,165,892	94,327,939
Provision for remuneration for the renewal of petroleum production	27	120,727	103,243	4,034,672	3,101,126
Derivative liabilities	7	8,413	674	281,165	20,239
Other non-current liabilities		132,279	69,216	4,420,750	2,079,039
Total non-current liabilities		7,890,020	8,821,407	263,683,633	264,969,167
Total liabilities		11,016,968	10,694,328	368,185,921	321,226,215

The notes to the consolidated and separate financial statements are an integral part of these financial statements.

PTT Exploration and Production Public Company Limited
Statement of Financial Position
As at 31 December 2021

Consolidated financial statements				
Notes	Unit: Thousand US Dollar		Unit: Thousand Baht	
	31 December 2021	31 December 2020	31 December 2021	31 December 2020
Liabilities and equity (continued)				
Equity				
Share capital				
Authorised share capital				
Ordinary shares, 3,969,985,400 shares				
at par value of Baht 1 each	29		3,969,985	3,969,985
Issued and paid-up share capital				
Ordinary shares, 3,969,985,400 shares				
paid-up at Baht 1 each	150,684	150,684	3,969,985	3,969,985
Share premium	3,439,037	3,439,037	105,417,620	105,417,620
Subordinated capital debentures	156,570	156,570	4,981,992	4,981,992
Retained earnings				
Appropriated				
Legal reserve	15,048	15,048	396,999	396,999
Reserve for expansion	431,231	431,231	16,900,000	16,900,000
Unappropriated	8,306,161	7,672,902	269,709,716	248,775,592
Other components of equity	(70,512)	(66,354)	13,973,436	(26,031,308)
Total equity	12,428,219	11,799,118	415,349,748	354,410,880
Total liabilities and equity	23,445,187	22,493,446	783,535,669	675,637,095

The notes to the consolidated and separate financial statements are an integral part of these financial statements.

PTT Exploration and Production Public Company Limited
Statement of Financial Position
As at 31 December 2021

		Separate financial statements			
		Unit: Thousand US Dollar		Unit: Thousand Baht	
		31 December	31 December	31 December	31 December
Notes		2021	2020	2021	2020
Assets					
Current assets					
Cash and cash equivalents	11	788,461	1,119,258	26,350,301	33,619,228
Short-term investments		-	100,000	-	3,003,707
Trade and other receivables	12	611,701	466,349	20,442,990	14,007,770
Short-term loans to a related party	15	527,281	78,317	17,621,666	2,352,399
Inventories	14	120,098	99,553	4,013,664	2,990,288
Current tax assets		16,584	10,678	554,226	320,749
Derivative assets	7	6,321	-	211,248	-
Other current assets		45,588	39,483	1,523,537	1,185,944
Total current assets		2,116,034	1,913,638	70,717,632	57,480,085
Non-current assets					
Investments in associates	16	25,577	25,577	854,795	768,271
Investments in subsidiaries	16	2,484,787	1,082,369	83,041,306	32,511,191
Long-term loans to related parties	15	6,440,835	6,795,975	215,251,993	204,131,135
Property, plant and equipment	17	2,146,452	2,754,254	71,734,200	82,729,723
Right-of-use assets	18	56,230	52,412	1,879,210	1,574,309
Goodwill	19	75,158	75,158	2,511,758	2,257,513
Intangible assets		86,554	81,960	2,892,612	2,461,826
Deferred tax assets	22	789,978	769,779	26,400,973	23,121,899
Derivative assets	7	-	33,516	-	1,006,716
Other non-current financial assets		226	235	7,552	7,073
Other non-current assets	23	22,437	20,726	749,862	622,546
Total non-current assets		12,128,234	11,691,961	405,324,261	351,192,202
Total assets		14,244,268	13,605,599	476,041,893	408,672,287

The notes to the consolidated and separate financial statements are an integral part of these financial statements.

PTT Exploration and Production Public Company Limited
Statement of Financial Position
As at 31 December 2021

		Separate financial statements			
		Unit: Thousand US Dollar		Unit: Thousand Baht	
		31 December	31 December	31 December	31 December
Notes		2021	2020	2021	2020
Liabilities and equity					
Current liabilities					
Trade and other payables	24	359,366	301,155	12,009,981	9,045,802
Current portion of lease liabilities	25	30,801	25,617	1,029,366	769,459
Income tax payable		601,185	443,603	20,091,535	13,324,549
Short-term provisions		339,913	135,433	11,359,848	4,068,017
Derivative liabilities	7	1,284	22,656	42,923	680,518
Other current liabilities		135,220	34,067	4,519,035	1,023,265
Total current liabilities		1,467,769	962,531	49,052,688	28,911,610
Non-current liabilities					
Debentures	25	520,170	379,264	17,384,009	11,391,980
Lease liabilities	25	29,393	31,226	982,326	937,917
Provision for employee benefits	28	121,516	188,324	4,061,055	5,656,709
Provision for decommissioning costs	26	1,076,113	1,663,810	35,963,586	49,975,972
Provision for remuneration for the renewal of petroleum production	27	39,711	87,568	1,327,146	2,630,294
Derivative liabilities	7	8,413	-	281,165	-
Other non-current liabilities		28,076	29,893	938,286	897,889
Total non-current liabilities		1,823,392	2,380,085	60,937,573	71,490,761
Total liabilities		3,291,161	3,342,616	109,990,261	100,402,371

The notes to the consolidated and separate financial statements are an integral part of these financial statements.

PTT Exploration and Production Public Company Limited
Statement of Financial Position
As at 31 December 2021

Separate financial statements				
Notes	Unit: Thousand US Dollar		Unit: Thousand Baht	
	31 December	31 December	31 December	31 December
	2021	2020	2021	2020
Liabilities and equity (continued)				
Equity				
Share capital				
Authorised share capital				
Ordinary shares, 3,969,985,400 shares				
at par value of Baht 1 each	29		3,969,985	3,969,985
Issued and paid-up share capital				
Ordinary shares, 3,969,985,400 shares				
paid-up at Baht 1 each	150,684	150,684	3,969,985	3,969,985
Share premium	3,439,037	3,439,037	105,417,620	105,417,620
Subordinated capital debentures	156,570	156,570	4,981,992	4,981,992
Retained earnings				
Appropriated				
Legal reserve	15,048	15,048	396,999	396,999
Reserve for expansion	431,231	431,231	16,900,000	16,900,000
Unappropriated	6,760,581	6,067,984	225,003,218	202,151,174
Other components of equity	(44)	2,429	9,381,818	(25,547,854)
Total equity	10,953,107	10,262,983	366,051,632	308,269,916
Total liabilities and equity	14,244,268	13,605,599	476,041,893	408,672,287

The notes to the consolidated and separate financial statements are an integral part of these financial statements.

PTT Exploration and Production Public Company Limited
Statement of Income
For the year ended 31 December 2021

		Consolidated financial statements			
		Unit: Thousand US Dollar		Unit: Thousand Baht	
	Notes	2021	2020	2021	2020
Revenues					
Revenue from sales		6,730,860	5,043,170	216,075,359	157,505,983
Revenue from pipeline transportation		93,147	92,350	2,992,712	2,894,695
Other income					
Gain on foreign exchange rates		-	26,062	-	818,411
Gain on remeasuring of financial instruments		-	99,331	-	3,212,765
Gain on debt modification		-	22,307	-	679,959
Gain from a bargain purchase		341,874	-	10,693,779	-
Interest income		16,750	36,729	531,645	1,150,128
Other income		131,594	37,012	4,337,632	1,156,212
Total revenues		7,314,225	5,356,961	234,631,127	167,418,153
Expenses					
Operating expenses		861,495	795,112	27,723,557	24,855,924
Exploration expenses		226,252	104,314	7,109,671	3,239,217
Administrative expenses		355,039	314,117	11,416,409	9,754,165
Petroleum royalties		530,215	410,154	16,994,689	12,798,161
Depreciation, depletion and amortisation		2,202,064	2,086,083	70,293,971	65,249,767
Other expenses					
Loss on foreign exchange rate		37,592	-	1,312,707	-
Loss on remeasuring of financial instruments		234,290	-	7,263,044	-
Impairment loss on assets and goodwill	19, 21	183,000	91,576	6,142,011	2,806,643
Other expenses		-	20,341	-	637,348
Finance costs		202,226	254,476	6,471,932	7,955,860
Total expenses		4,832,173	4,076,173	154,727,991	127,297,085
Share of profit of associates and joint ventures		15,174	41,636	488,626	1,307,226
Profit before income taxes		2,497,226	1,322,424	80,391,762	41,428,294
Income taxes	33	(1,286,688)	(602,880)	(41,528,167)	(18,764,283)
Profit for the year		1,210,538	719,544	38,863,595	22,664,011
		Unit: US Dollar		Unit: Baht	
		2021	2020	2021	2020
Earnings per share					
Basic earnings per share	35	0.30	0.18	9.70	5.65

The notes to the consolidated and separate financial statements are an integral part of these financial statements.

PTT Exploration and Production Public Company Limited
Statement of Comprehensive Income
For the year ended 31 December 2021

	Consolidated financial statements			
	Unit: Thousand US Dollar		Unit: Thousand Baht	
	2021	2020	2021	2020
Profit for the year	1,210,538	719,544	38,863,595	22,664,011
Other comprehensive income (expense)				
Items that will be reclassified subsequently to profit or loss				
Currency translation differences	4,222	(1,863)	5,229,507	(157,383)
Gain on remeasuring of financial assets	-	757	-	26,057
Changes in hedging reserves	578	(38,708)	17,712	(1,233,846)
Income taxes relating to changes in hedging reserves	(116)	7,742	(3,543)	246,769
Share of other comprehensive income (expense) of associates and joint ventures - net of tax	(8,494)	712	(267,960)	20,917
Total items that will be reclassified subsequently to profit or loss	(3,810)	(31,360)	4,975,716	(1,097,486)
Items that will not be reclassified subsequently to profit or loss				
Currency translation differences	-	-	35,010,773	(1,407,506)
Gain (loss) on remeasuring of financial assets	93	(767)	2,695	(26,583)
Share of other comprehensive income (expense) of associates	(580)	(44,146)	10,711	(1,394,988)
Gain from changes in actuarial assumptions of provision for employee benefits	71,723	1,431	2,360,601	44,608
Income taxes resulting from changes in actuarial assumptions of provision for employee benefits	(32,722)	-	(1,082,611)	-
Total items that will not be reclassified subsequently to profit or loss	38,514	(43,482)	36,302,169	(2,784,469)
Other comprehensive income (expense) for the year - net of tax	34,704	(74,842)	41,277,885	(3,881,955)
Total comprehensive income for the year	1,245,242	644,702	80,141,480	18,782,056

The notes to the consolidated and separate financial statements are an integral part of these financial statements.

PTT Exploration and Production Public Company Limited
Statement of Income
For the year ended 31 December 2021

	Notes	Separate financial statements			
		Unit: Thousand US Dollar		Unit: Thousand Baht	
		2021	2020	2021	2020
Revenues					
Revenue from sales		3,122,448	2,596,640	100,005,612	81,100,136
Other income					
Gain on foreign exchange rate		11,531	32,706	321,459	1,030,396
Gain on remeasuring of financial instruments		42,024	-	1,339,605	-
Interest income		372,026	256,409	11,884,659	8,025,652
Other income		160,215	143,099	5,141,000	4,463,782
Dividend income from related parties		71,814	28,930	2,369,985	921,684
Total revenues		3,780,058	3,057,784	121,062,320	95,541,650
Expenses					
Operating expenses		252,177	259,050	8,112,541	8,104,381
Exploration expenses		49	1,263	1,558	39,582
Administrative expenses		345,846	308,115	11,112,486	9,574,528
Petroleum royalties		390,306	324,645	12,500,702	10,139,606
Depreciation, depletion and amortisation		915,885	1,002,202	29,092,125	31,344,017
Other expenses					
Loss on remeasuring of financial instruments		-	8,370	-	282,622
Finance costs		54,524	84,829	1,743,042	2,647,254
Total expenses		1,958,787	1,988,474	62,562,454	62,131,990
Profit before income taxes		1,821,271	1,069,310	58,499,866	33,409,660
Income taxes	33	(545,428)	(335,326)	(17,533,527)	(10,409,785)
Profit for the year		1,275,843	733,984	40,966,339	22,999,875
				Unit: US Dollar	Unit: Baht
		2021	2020	2021	2020
Earnings per share					
Basic earnings per share	35	0.32	0.18	10.23	5.74

The notes to the consolidated and separate financial statements are an integral part of these financial statements.

PTT Exploration and Production Public Company Limited
Statement of Comprehensive Income
For the year ended 31 December 2021

	Separate financial statements			
	Unit: Thousand US Dollar		Unit: Thousand Baht	
	2021	2020	2021	2020
Profit for the year	1,275,843	733,984	40,966,339	22,999,875
Other comprehensive income (expense)				
Items that will be reclassified subsequently to profit or loss				
Loss on remeasuring of financial assets	(5)	-	(163)	-
Changes in hedging reserves	(3,085)	(32,051)	(101,172)	(1,020,763)
Income taxes relating to remeasuring of financial assets	617	6,410	20,234	204,152
Total items that will be reclassified subsequently to profit or loss	(2,473)	(25,641)	(81,101)	(816,611)
Item that will not be reclassified subsequently to profit or loss				
Currency translation differences	-	-	35,010,773	(1,407,506)
Gain from changes in actuarial assumptions of provision for employee benefits	65,484	-	2,166,547	-
Income taxes resulting from changes in actuarial assumptions of provision for employee benefits	(32,742)	-	(1,083,273)	-
Total items that will not be reclassified subsequently to profit or loss	32,742	-	36,094,047	(1,407,506)
Other comprehensive income (expense) for the year - net of tax	30,269	(25,641)	36,012,946	(2,224,117)
Total comprehensive income for the year	1,306,112	708,343	76,979,285	20,775,758

The notes to the consolidated and separate financial statements are an integral part of these financial statements.

PTT Exploration and Production Public Company Limited
Statement of Changes in Equity
For the year ended 31 December 2021

Consolidated financial statements												
Unit: Thousand US Dollar												
	Issued and paid-up share capital	Share premium	Subordinated capital debentures	Retained earnings			Other components of equity					Total equity
				Legal reserve	Reserve for expansion	Unappropriated	Other comprehensive income (expense)				Total other components of equity	
							Currency translation differences	Remeasuring of financial assets	Cash flow hedge reserve	Share of other comprehensive income (expense) of associates and joint ventures		
Balance as at 1 January 2020	150,684	3,439,037	187,434	15,048	431,231	7,630,675	(50,315)	(757)	29,778	31,068	9,774	11,863,883
Changes in equity for the year												
Interest expenses for subordinated capital debentures	-	-	-	-	-	(10,126)	-	-	-	-	-	(10,126)
Redemption of subordinated capital debentures	-	-	(30,864)	-	-	12	-	-	-	-	-	(30,852)
Income tax for subordinated capital debentures	-	-	-	-	-	2,511	-	-	-	-	-	2,511
Dividends paid	-	-	-	-	-	(671,000)	-	-	-	-	-	(671,000)
Profit for the year	-	-	-	-	-	719,544	-	-	-	-	-	719,544
Other comprehensive income (expense) for the year	-	-	-	-	-	1,286	(1,863)	(10)	(30,966)	(43,289)	(76,128)	(74,842)
Balance as at 31 December 2020	150,684	3,439,037	156,570	15,048	431,231	7,672,902	(52,178)	(767)	(1,188)	(12,221)	(66,354)	11,799,118

The notes to the consolidated and separate financial statements are an integral part of these financial statements.

PTT Exploration and Production Public Company Limited
Statement of Changes in Equity
For the year ended 31 December 2021

Consolidated financial statements												
												Unit: Thousand US Dollar
Note	Issued and paid-up share capital	Share premium	Subordinated capital debentures	Retained earnings			Other components of equity					
							Other comprehensive income (expense)					Share of other comprehensive expense of associates and joint ventures
				Legal reserve	Reserve for expansion	Unappropriated	Currency translation differences	Remeasuring of financial assets	Cash flow hedge reserve			
Balance as at 1 January 2021	150,684	3,439,037	156,570	15,048	431,231	7,672,902	(52,178)	(767)	(1,188)	(12,221)	(66,354)	11,799,118
Changes in equity for the year												
Interest expenses for subordinated capital debentures	-	-	-	-	-	(9,138)	-	-	-	-	-	(9,138)
Income tax for subordinated capital debentures	-	-	-	-	-	(1,662)	-	-	-	-	-	(1,662)
Dividends paid	31	-	-	-	-	(605,341)	-	-	-	-	-	(605,341)
Profit for the year	-	-	-	-	-	1,210,538	-	-	-	-	-	1,210,538
Other comprehensive income (expense) for the year	-	-	-	-	-	38,862	4,222	93	462	(8,935)	(4,158)	34,704
Balance as at 31 December 2021	150,684	3,439,037	156,570	15,048	431,231	8,306,161	(47,956)	(674)	(726)	(21,156)	(70,512)	12,428,219

The notes to the consolidated and separate financial statements are an integral part of these financial statements.

PTT Exploration and Production Public Company Limited
Statement of Changes in Equity
For the year ended 31 December 2021

	Consolidated financial statements											
	Unit: Thousand Baht											
							Other components of equity					
							Other comprehensive income (expense)					Share of other comprehensive income (expense) of associates and joint ventures
Issued and paid-up share capital	Share premium	Subordinated capital debentures	Retained earnings			Currency translation differences	Remeasuring of financial assets	Cash flow hedge reserve				
			Legal reserve	Reserve for expansion	Unappropriated							
Balance as at 1 January 2020	3,969,985	105,417,620	6,018,034	396,999	16,900,000	247,150,264	(24,120,733)	(26,057)	1,082,121	955,264	(22,109,405)	357,743,497
Changes in equity for the year												
Interest expenses for subordinated capital debentures	-	-	-	-	-	(314,981)	-	-	-	-	-	(314,981)
Redemption of subordinated capital debentures	-	-	(1,036,042)	-	-	459	-	-	-	-	-	(1,035,583)
Income tax for subordinated capital debentures	-	-	-	-	-	77,762	-	-	-	-	-	77,762
Dividends paid	-	-	-	-	-	(20,841,871)	-	-	-	-	-	(20,841,871)
Profit for the year	-	-	-	-	-	22,664,011	-	-	-	-	-	22,664,011
Other comprehensive income (expense) for the year	-	-	-	-	-	39,948	(1,564,889)	(526)	(987,077)	(1,369,411)	(3,921,903)	(3,881,955)
Balance as at 31 December 2020	3,969,985	105,417,620	4,981,992	396,999	16,900,000	248,775,592	(25,685,622)	(26,583)	95,044	(414,147)	(26,031,308)	354,410,880

The notes to the consolidated and separate financial statements are an integral part of these financial statements.

PTT Exploration and Production Public Company Limited
Statement of Changes in Equity
For the year ended 31 December 2021

Consolidated financial statements												
Unit: Thousand Baht												
							Other components of equity					
							Other comprehensive income (expense)					
Retained earnings							Currency translation differences	Remeasuring of financial assets	Cash flow hedge reserve	Share of other comprehensive expense of associates and joint ventures	Total other components of equity	Total equity
Note	Issued and paid-up share capital	Share premium	Subordinated capital debentures	Legal reserve	Reserve for expansion	Unappropriated						
Balance as at 1 January 2021	3,969,985	105,417,620	4,981,992	396,999	16,900,000	248,775,592	(25,685,622)	(26,583)	95,044	(414,147)	(26,031,308)	354,410,880
Changes in equity for the year												
Interest expenses for subordinated capital debentures		-	-	-	-	-	(293,908)	-	-	-	-	(293,908)
Income tax for subordinated capital debentures		-	-	-	-	-	(51,491)	-	-	-	-	(51,491)
Dividends paid	31	-	-	-	-	-	(18,857,213)	-	-	-	-	(18,857,213)
Profit for the year		-	-	-	-	-	38,863,595	-	-	-	-	38,863,595
Other comprehensive income (expense) for the year		-	-	-	-	-	1,273,141	40,240,280	2,695	14,169	(252,400)	41,277,885
Balance as at 31 December 2021		3,969,985	105,417,620	4,981,992	396,999	16,900,000	269,709,716	14,554,658	(23,888)	109,213	(666,547)	415,349,748

The notes to the consolidated and separate financial statements are an integral part of these financial statements.

PTT Exploration and Production Public Company Limited
Statement of Changes in Equity
For the year ended 31 December 2021

	Separate financial statements									
	Unit: Thousand US Dollar									
							Other components of equity			
	Retained earnings						Other comprehensive income (expense)			
	Issued and paid-up share capital	Share premium	Subordinated capital debentures	Legal reserve	Reserve for expansion	Unappropriated	Remeasuring of financial assets	Cash flow hedge reserve	Total other components of equity	Total equity
Balance as at 1 January 2020	150,684	3,439,037	156,570	15,048	431,231	6,012,420	-	28,070	28,070	10,233,060
Changes in equity for the year										
Interest expenses for subordinated capital debentures	-	-	-	-	-	(9,444)	-	-	-	(9,444)
Income tax for subordinated capital debentures	-	-	-	-	-	2,024	-	-	-	2,024
Dividends paid	-	-	-	-	-	(671,000)	-	-	-	(671,000)
Profit for the year	-	-	-	-	-	733,984	-	-	-	733,984
Other comprehensive expense for the year	-	-	-	-	-	-	-	(25,641)	(25,641)	(25,641)
Balance as at 31 December 2020	150,684	3,439,037	156,570	15,048	431,231	6,067,984	-	2,429	2,429	10,262,983

The notes to the consolidated and separate financial statements are an integral part of these financial statements.

PTT Exploration and Production Public Company Limited
Statement of Changes in Equity
For the year ended 31 December 2021

Separate financial statements										
										Unit: Thousand US Dollar
Note	Issued and paid-up share capital	Share premium	Subordinated capital debentures	Retained earnings			Other components of equity		Total other components of equity	Total equity
				Legal reserve	Reserve for expansion	Unappropriated	Remeasuring of financial assets	Cash flow hedge reserve		
Balance as at 1 January 2021	150,684	3,439,037	156,570	15,048	431,231	6,067,984	-	2,429	2,429	10,262,983
Changes in equity for the year										
Interest expenses for subordinated capital debentures	-	-	-	-	-	(9,138)	-	-	-	(9,138)
Income tax for subordinated capital debentures	-	-	-	-	-	(1,509)	-	-	-	(1,509)
Dividends paid	31	-	-	-	-	(605,341)	-	-	-	(605,341)
Profit for the year	-	-	-	-	-	1,275,843	-	-	-	1,275,843
Other comprehensive income (expense) for the year	-	-	-	-	-	32,742	(5)	(2,468)	(2,473)	30,269
Balance as at 31 December 2021	150,684	3,439,037	156,570	15,048	431,231	6,760,581	(5)	(39)	(44)	10,953,107

The notes to the consolidated and separate financial statements are an integral part of these financial statements.

PTT Exploration and Production Public Company Limited
Statement of Changes in Equity
For the year ended 31 December 2021

	Separate financial statements										
	Unit: Thousand Baht										
	Issued and paid-up share capital	Share premium	Subordinated capital debentures	Retained earnings			Other components of equity				Total equity
				Legal reserve	Reserve for expansion	Unappropriated	Other comprehensive income (expense)			Total other components of equity	
							Currency translation differences	Remeasuring of financial assets	Cash flow hedge reserve		
Balance as at 1 January 2020	3,969,985	105,417,620	4,981,992	396,999	16,900,000	200,224,793	(24,245,850)	-	922,113	(23,323,737)	308,567,652
Changes in equity for the year											
Interest expenses for subordinated capital debentures	-	-	-	-	-	(294,226)	-	-	-	-	(294,226)
Income tax for subordinated capital debentures	-	-	-	-	-	62,603	-	-	-	-	62,603
Dividends paid	-	-	-	-	-	(20,841,871)	-	-	-	-	(20,841,871)
Profit for the year	-	-	-	-	-	22,999,875	-	-	-	-	22,999,875
Other comprehensive expense for the year	-	-	-	-	-	-	(1,407,506)	-	(816,611)	(2,224,117)	(2,224,117)
Balance as at 31 December 2020	3,969,985	105,417,620	4,981,992	396,999	16,900,000	202,151,174	(25,653,356)	-	105,502	(25,547,854)	308,269,916

The notes to the consolidated and separate financial statements are an integral part of these financial statements.

PTT Exploration and Production Public Company Limited
Statement of Changes in Equity
For the year ended 31 December 2021

Separate financial statements											
											Unit: Thousand Baht
Note	Issued and paid-up share capital	Share premium	Subordinated capital debentures	Retained earnings			Other components of equity				
				Legal reserve	Reserve for expansion	Unappropriated	Other comprehensive income (expense)			Total other components of equity	Total equity
							Currency translation differences	Remeasuring of financial assets	Cash flow hedge reserve		
Balance as at 1 January 2021	3,969,985	105,417,620	4,981,992	396,999	16,900,000	202,151,174	(25,653,356)	-	105,502	(25,547,854)	308,269,916
Changes in equity for the year											
Interest expenses for subordinated capital debentures	-	-	-	-	-	(293,908)	-	-	-	-	(293,908)
Income tax for subordinated capital debentures	-	-	-	-	-	(46,448)	-	-	-	-	(46,448)
Dividends paid	31	-	-	-	-	(18,857,213)	-	-	-	-	(18,857,213)
Profit for the year	-	-	-	-	-	40,966,339	-	-	-	-	40,966,339
Other comprehensive income (expense) for the year	-	-	-	-	-	1,083,274	35,010,773	(163)	(80,938)	34,929,672	36,012,946
Balance as at 31 December 2021	3,969,985	105,417,620	4,981,992	396,999	16,900,000	225,003,218	9,357,417	(163)	24,564	9,381,818	366,051,632

The notes to the consolidated and separate financial statements are an integral part of these financial statements.

PTT Exploration and Production Public Company Limited

Statement of Cash Flows

For the year ended 31 December 2021

	Consolidated financial statements			
	Unit: Thousand US Dollar		Unit: Thousand Baht	
	2021	2020	2021	2020
Cash flows from operating activities				
Profit before income taxes	2,497,226	1,322,424	80,391,762	41,428,294
Adjustments for:				
Share of profit of associates and joint ventures	(15,174)	(41,636)	(488,626)	(1,307,226)
Depreciation, depletion and amortisation	2,202,064	2,086,083	70,293,971	65,249,767
Allowance for impairment loss on assets and goodwill	183,000	91,576	6,142,011	2,806,643
Allowance (reversal) for decrease in value of inventories to net realisable value	(882)	474	(27,657)	14,824
Write-off of exploration expenses	214,928	62,140	6,763,906	1,943,212
Other amortised expenses	10,976	10,208	350,393	319,349
Loss on disposal of assets	2,256	24,215	77,913	757,335
Income recognised from deferred income	(3,104)	(2,550)	(99,091)	(79,755)
(Gain) loss on remeasuring financial instruments	(15,718)	43,649	(849,979)	1,327,977
(Gain) loss on foreign exchange rates	9,132	(10,229)	291,535	(319,920)
Interest income lower than interest expenses	177,752	212,035	5,693,537	6,631,560
Gain from a bargain purchase	(341,874)	-	(10,693,779)	-
Gain on debt modification	-	(22,307)	-	(679,959)
Other Income	(81,276)	-	(2,727,874)	-
Other expenses	19,176	37,371	607,935	1,169,989
Cash flows before changes in working capital	4,858,482	3,813,453	155,725,957	119,262,090
Changes in working capital				
Trade and other receivables	(229,783)	178,745	(7,335,644)	5,590,373
Inventories	(60,357)	(29,761)	(1,926,848)	(930,782)
Other current financial assets	(1,425)	200,546	(45,499)	6,272,218
Other current assets	(40,122)	6,258	(1,280,852)	195,737
Rights to receive reimbursement from decommissioning funds	(28,656)	(20,987)	(914,816)	(656,390)
Other non-current financial assets	(53,562)	(27,145)	(1,709,928)	(848,981)
Other non-current assets	(5,935)	1,933	(189,468)	60,446
Trade and other payables	124,016	(110,972)	3,959,105	(3,470,724)
Other current liabilities	(20,858)	24,173	(665,861)	756,043
Provisions	(136,019)	(125,779)	(4,342,316)	(3,933,821)
Other non-current liabilities	4,755	(53,139)	151,813	(1,661,964)
Net cash provided by operating activities	4,410,536	3,857,325	141,425,643	120,634,245
Interest received from bank deposits	6,855	24,371	218,854	762,215
Cash paid for income taxes	(989,083)	(1,110,196)	(31,575,682)	(34,722,169)
Net cash flows provided by operating activities	3,428,308	2,771,500	110,068,815	86,674,291

The notes to the consolidated and separate financial statements are an integral part of these financial statements.

PTT Exploration and Production Public Company Limited
Statement of Cash Flows
For the year ended 31 December 2021

	Consolidated financial statements			
	Unit: Thousand US Dollar		Unit: Thousand Baht	
	2021	2020	2021	2020
Cash flows from investing activities				
Cash paid for short-term investments	-	(100,000)	-	(3,127,571)
Cash received from investing in short-term investments	100,000	200,000	3,192,420	6,255,141
Cash received from long-term loans to related parties	33,170	11,086	1,058,929	346,712
Dividend received from related parties	40,746	26,807	1,300,791	838,403
Cash paid for business acquisition	(2,299,492)	-	(73,409,451)	-
Net cash received from asset acquisition	11,968	-	382,071	-
Cash paid for contingent considerations				
from participating interest acquisition in a joint venture	(54,670)	-	(1,745,296)	-
Cash received from investment in joint venture	-	393	-	12,301
Cash paid for investment in associate and joint ventures	(15,506)	(3,138)	(495,014)	(98,150)
Cash received from lease receivables	374	378	11,945	11,814
Interest received from short-term investments	1,850	5,842	59,060	182,728
Interest received from loans to related parties	1,010	2,277	32,243	71,221
Increase in property, plant and equipment	(1,512,174)	(1,093,140)	(48,274,943)	(34,188,714)
Increase in intangible assets	(29,067)	(28,466)	(927,946)	(890,307)
Increase in exploration and evaluation assets	(131,574)	(93,651)	(4,200,412)	(2,929,002)
Net cash flows used in investing activities	(3,853,365)	(1,071,612)	(123,015,603)	(33,515,424)
Cash flows from financing activities				
Cash received from short-term loans	200,000	-	6,384,840	-
Cash paid for repayment of short-term loans	(200,000)	-	(6,384,840)	-
Cash paid for repayment of debentures	-	(730,443)	-	(22,845,133)
Cash received from issuance of debentures	179,960	850,000	5,745,095	26,584,349
Cash paid for finance cost from issuance of debentures	(270)	(9,945)	(8,617)	(311,037)
Cash paid for lease liabilities	(128,482)	(96,362)	(4,101,696)	(3,013,790)
Interest paid	(133,914)	(147,594)	(4,275,080)	(4,616,110)
Cash paid for redemption of subordinated capital debentures	-	(30,852)	-	(964,918)
Interest paid for subordinated capital debentures	(9,138)	(10,126)	(291,719)	(316,686)
Net cash received from financial derivative contracts	1,826	-	58,280	-
Dividends paid	(605,341)	(671,000)	(19,325,041)	(20,986,003)
Net cash flows used in financing activities	(695,359)	(846,322)	(22,198,778)	(26,469,328)

The notes to the consolidated and separate financial statements are an integral part of these financial statements.

PTT Exploration and Production Public Company Limited
Statement of Cash Flows
For the year ended 31 December 2021

	Consolidated financial statements			
	Unit: Thousand US Dollar		Unit: Thousand Baht	
	2021	2020	2021	2020
Net increase (decrease) in cash and cash equivalents	(1,120,416)	853,566	(35,145,566)	26,689,539
Cash and cash equivalents at the beginning of the year	3,704,003	2,822,897	111,257,372	85,121,635
Adjustment for the impact of exchange rate changes	(24,398)	27,540	9,416,004	(553,802)
Cash and cash equivalents at the end of the year	<u>2,559,189</u>	<u>3,704,003</u>	<u>85,527,810</u>	<u>111,257,372</u>
Significant non-cash transactions				
Outstanding payable from purchases of assets	387,058	346,979	12,356,505	10,852,020
Changes in right-of-use assets	187,153	98,367	5,974,704	3,076,504

The notes to the consolidated and separate financial statements are an integral part of these financial statements.

PTT Exploration and Production Public Company Limited
Statement of Cash Flows
For the year ended 31 December 2021

	Separate financial statements			
	Unit: Thousand US Dollar		Unit: Thousand Baht	
	2021	2020	2021	2020
Cash flows from operating activities				
Profit before income taxes	1,821,271	1,069,310	58,499,866	33,409,660
Adjustments for:				
Depreciation, depletion and amortisation	915,885	1,002,202	29,092,125	31,344,017
Write-off of exploration expenses	-	1,191	-	37,358
Other amortised expenses	2,524	2,596	80,735	81,152
Loss on disposal of assets	3,400	14,059	112,377	447,269
Income recognised from deferred income	(1,759)	(1,658)	(56,165)	(51,848)
(Gain) loss on remeasuring financial instruments	(29,514)	10,716	(881,452)	361,266
Dividend income from related parties	(71,814)	(28,930)	(2,369,985)	(921,684)
Gain on foreign exchange rates	(24,873)	(2,415)	(794,063)	(75,537)
Interest income higher than interest expenses	(317,744)	(172,041)	(10,149,495)	(5,392,782)
Other expenses	26,104	15,109	846,137	472,548
Cash flows before changes in working capital	2,323,480	1,910,139	74,380,080	59,711,419
Changes in working capital				
Trade and other receivables	(59,242)	57,323	(1,891,254)	1,792,811
Inventories	(15,173)	(7,208)	(484,384)	(225,451)
Other current assets	(9,258)	27,215	(295,559)	851,152
Other non-current assets	(1,686)	53	(53,836)	1,667
Trade and other payables	44,747	(40,430)	1,428,520	(1,264,479)
Other current liabilities	1,724	(19,882)	55,042	(621,815)
Provisions	(118,870)	(110,011)	(3,794,832)	(3,440,683)
Other non-current liabilities	(6,887)	(3,736)	(219,857)	(116,832)
Net cash provided by operating activities	2,158,835	1,813,463	69,123,920	56,687,789
Interest received from bank deposits	1,679	8,685	53,615	271,631
Cash paid for income taxes	(445,772)	(693,140)	(14,230,928)	(21,678,437)
Net cash flows provided by operating activities	1,714,742	1,129,008	54,946,607	35,280,983

The notes to the consolidated and separate financial statements are an integral part of these financial statements.

PTT Exploration and Production Public Company Limited
Statement of Cash Flows
For the year ended 31 December 2021

	Separate financial statements			
	Unit: Thousand US Dollar		Unit: Thousand Baht	
	2021	2020	2021	2020
Cash flows from investing activities				
Cash paid for short-term investments	-	(100,000)	-	(3,127,570)
Cash received from investing in short-term investments	100,000	200,000	3,192,420	6,255,141
(Increase) decrease in short-term loans to related party	(443,086)	299,588	(14,145,169)	9,369,838
Cash received from long-term loans to related parties	354,865	105,121	11,328,769	3,287,731
Cash paid for long-term loans to related parties	-	(489,414)	-	(15,306,766)
Net cash received from asset acquisition	11,968	-	382,071	-
Cash paid for investment in subsidiaries	(1,402,418)	(157,966)	(44,771,065)	(4,940,490)
Dividend received from related parties	71,814	28,930	2,292,614	904,820
Cash received from lease receivables	374	378	11,945	11,814
Interest received from short-term investments	1,850	5,843	59,060	182,728
Interest received from loans to related parties	190,841	420,941	6,092,435	13,165,217
Increase in property, plant and equipment	(424,426)	(295,479)	(13,549,448)	(9,241,311)
Increase in intangible assets	(21,544)	(22,084)	(687,767)	(690,703)
Net cash flows used in investing activities	(1,559,762)	(4,142)	(49,794,135)	(129,551)
Cash flows from financing activities				
Cash received from issuance of debentures	179,960	-	5,745,095	-
Cash paid for finance cost from issuance of debentures	(270)	-	(8,617)	-
Cash paid for lease liabilities	(30,443)	(22,251)	(971,858)	(695,909)
Interest paid	(19,560)	(21,388)	(624,431)	(668,937)
Interest paid for subordinated capital debenture	(9,138)	(9,444)	(291,719)	(295,356)
Net cash received from financial derivative contracts	1,826	-	58,280	-
Dividends paid	(605,341)	(671,000)	(19,325,041)	(20,986,003)
Net cash flows used in financing activities	(482,966)	(724,083)	(15,418,291)	(22,646,205)
Net increase (decrease) in cash and cash equivalents	(327,986)	400,783	(10,265,819)	12,505,227
Cash and cash equivalents at the beginning of the year	1,119,258	715,768	33,619,228	21,583,266
Adjustment for the impact of exchange rate changes	(2,811)	2,707	2,996,892	(469,265)
Cash and cash equivalents at the end of the year	788,461	1,119,258	26,350,301	33,619,228
Significant non-cash transactions				
Outstanding payable from purchases of assets	68,125	61,499	2,174,837	1,923,427
Changes in right-of-use assets	36,659	47,375	1,170,296	1,481,686

The notes to the consolidated and separate financial statements are an integral part of these financial statements.

1 General information

PTT Exploration and Production Public Company Limited (the Company) is registered as a company in Thailand and listed on the Stock Exchange of Thailand. The address of its registered office is 555/1 Energy Complex Building A, 6th and 19th - 36th Floor, Vibhavadi-Rangsit Road, Chatuchak, Bangkok 10900.

For reporting purposes, the Company and its subsidiaries are together referred to as the Group.

The principal business operations of the Group are exploration and production of petroleum in Thailand and overseas, and related business associated with the Group's strategy.

These consolidated and separate financial statements were authorised for issue by the Board of Directors on 11 February 2022.

2 Significant events during the current period

On 30 July 2021, the Company entered into Memorandum of Agreement relating to Bongkot end of concessions (MOA) with TOTAL E&P Thailand, a joint partner of Bongkot project, for the Company to be a sole risk operator for the infill drilling. As a result, the Company recognised all revenue, costs and operating expenses from the petroleum produced from such drillings.

On 3 December 2021, PTTEP MENA Limited (PTTEP MENA), a subsidiary of the Group, has signed Farm-Out Agreement (FOA) to acquire 25% stake in the Concession Area C onshore the Emirate of Sharjah from Eni Sharjah B.V. (ENI). The acquisition will be completed after PTTEP MENA fulfills all conditions in the said agreement and obtaining all necessary government approvals.

3 Basis of preparation

The consolidated and separate financial statements have been prepared in accordance with Thai Financial Reporting Standards (TFRS) and the financial reporting requirements issued under the Securities and Exchange Act.

The Company's management has determined US Dollar as the functional currency of the Company and presents the consolidated and separate financial statements in US Dollar. However, the Stock Exchange of Thailand and the Department of Business Development require the Company to present its consolidated and separate financial statements in Thai Baht, so the Company also presents its financial statements in Thai Baht by translating from US Dollar.

Where the Group has entered into joint interest operations in the Concession or the Production Sharing Contract with other parties to participate in exploration and production of petroleum businesses, the Group records its share of expenses, assets and liabilities incurred in accordance with the Statements of Expenditures prepared by the operators of the Concession or the Production Sharing Contract. The Statements of Expenditures have been audited by other independent auditors and the joint venture committee on a regular basis.

The consolidated and separate financial statements have been prepared under the historical cost convention except as disclosed in the accounting policies.

The preparation of financial statements in conformity with TFRS requires the Group's management to use certain critical accounting estimates and to exercise its judgement in applying the Group's accounting policies. The areas involving a higher degree of judgement or complexity, or areas that are more likely to be materially adjusted due to changes in estimates and assumptions are disclosed in Note 8.

Where necessary, comparative figures have been reclassified to conform with changes in presentation in the current year.

An English version of the consolidated and separate financial statements have been prepared from the statutory financial statements that are in the Thai language. In the event of a conflict or a difference in interpretation between the two languages, the Thai language statutory financial statements shall prevail.

4 Amended financial reporting standards

4.1 Amended financial reporting standards that are effective for accounting period beginning on or after 1 January 2021 and related to the Group

- a) **Revised Conceptual Framework for Financial Reporting** added the following key principals and guidance:
- Measurement basis, including factors in considering difference measurement basis
 - Presentation and disclosure, including classification of income and expenses in other comprehensive income
 - Definition of a reporting entity, which may not be necessarily a legal entity, or a portion of an entity, or comprise more than one entity, and
 - Derecognition of assets and liabilities.

The amendment also includes the revision to the definition and the basis in grouping of an asset and liability in the financial statements. In addition, it clarifies the objectivity of the management and procuring the economic resources of the entity, conservatism principle and uncertainty of measurement basis in the financial reporting.

- b) **Amendment to TFRS 3, Business combinations** Since 1 January 2021, the Group adopted the amendment to TFRS 3 - Business Combinations, which amended definition of business by requiring a business acquisition to include, at least an input and a substantive process that together significantly contribute to the ability to create outputs. The definition of the term 'outputs' is amended to focus on goods and services provided to customers, and it excludes returns in the form of lower costs. In addition, the standard sets out an optional test (the concentration test) for a simplified assessment of whether an acquired set of activities and assets is not a business.
- c) **Amendment to TFRS 9, Financial instruments and TFRS 7, Financial instruments: disclosures** amended to provide a relief from applying specific hedge accounting requirements to the uncertainty arising from interest rate benchmark reform such as Interbank offer rates - IBORs. The amendment also requires the disclosure of hedging relationships directly affected by the uncertainty.
- d) **Amendment to TAS 1, Presentation of financial statements and TAS 8, Accounting policies, changes in accounting estimates and errors** amended the definition of materiality and make it consistent on both the Thai Financial Reporting Standards and the Conceptual Framework for Financial Reporting. It also

clarified when information is material and incorporates some of the guidance in TAS 1 about immaterial information.

- e) **Amendment to TFRS 16, Leases** amended to provide a practical expedient where lessees are exempted from having to consider individual lease contracts when determining whether rent concessions occurring as a direct consequence of the COVID-19 pandemic are lease modifications. It applies to rent concessions that reduce the lease payments due by 30 June 2022.

4.2 **Amended financial reporting standards that are effective for accounting period beginning on or after 1 January 2022 and related to the Group**

The Group did not early adopt the amended financial reporting standards.

- a) **Interest rate benchmark (IBOR) reform - phase 2, amendments to TFRS 9, TFRS 7 and TFRS 16** provide the relief measures addressing issues that might affect the financial reporting during the reform, including the additional disclosures about IBOR reform. Key relief measures of the phase 2 amendments are as follows:

- When changing the basis for determining contractual cash flows for financial assets and financial liabilities (including lease liabilities), changes that are necessary as a direct result of the IBOR reform and which are considered economically equivalent, will not result in an immediate gain or loss in the statement of income.
- Most hedge accounting relationships that are directly affected by the IBOR reform will be allowed to continue. However, the entity is still required to recognise the hedged ineffectiveness portion.

5 Accounting policies

The principal accounting policies applied in the preparation of these consolidated and separate financial statements are set out below.

5.1 Principles of consolidation accounting

- a) **Subsidiaries**

Subsidiaries are all entities over which the Group has control. The Group controls an entity when the Group is exposed to, or has rights to, variable returns from its involvement with the entity and has the

ability to affect those returns through its power over the entity. Subsidiaries are consolidated from the date on which control is transferred to the Group until the date that control ceases.

In the separate financial statements, investments in subsidiaries are accounted for using cost method less impairment (if any).

List of subsidiaries has been presented in Note 16.

b) Associates

Associates are all entities over which the Group has significant influence but not control or joint control. Investments in associates are accounted for using the equity method of accounting.

In the separate financial statements, investments in associates are accounted for using cost method less impairment (if any).

List of associates has been presented in Note 16.

c) Joint arrangements

Investments in joint arrangements are classified as either joint operations or joint ventures depending on the contractual rights and obligations of each investor, rather than the legal structure of the joint arrangements.

Joint operations

A joint operation is a joint arrangement whereby the Group has rights to the assets, and obligations for the liabilities relating to the arrangement. The Group recognises its direct right to the assets, liabilities, revenues and expenses of joint operations and its share of any jointly held or incurred assets, liabilities, revenues and expenses. These have been incorporated in the Group's financial statement line items.

Joint ventures

A joint venture is a joint arrangement whereby the Group has rights to the net assets of the arrangement. Interests in joint ventures are accounted for using the equity method in the consolidated financial statements.

In the separate financial statements, investments in joint ventures are accounted for using cost less impairment (if any).

List of joint ventures and joint operations have been presented in Note 16.

d) Equity method

The investment is initially recognised at cost which is consideration paid and directly attributable costs.

The Group's subsequently recognises shares of its associates and joint ventures' profits or losses and other comprehensive income in the profit or loss and other comprehensive income, respectively. The subsequent cumulative movements are adjusted against the carrying amount of the investment.

When the Group's share of losses in associates and joint ventures equals or exceeds its interest in the associates and joint ventures, the Group does not recognise further losses, unless it has incurred obligations or made payments on behalf of the associates and joint ventures.

e) Changes in ownership interests

The Group treats transactions with non-controlling interests that do not result in a loss of control as transactions with equity owners of the Group. A difference between the amount of the adjustment to non-controlling interests to reflect their relative interest in the subsidiary and any consideration paid or received is recognised within equity.

If the ownership interest in associates and joint ventures is reduced but significant influence and joint control is retained, only a proportionate share of the amounts previously recognised in other comprehensive income is reclassified to profit or loss where appropriate. Profit or loss from reduce of the ownership interest in associates and joint ventures is recognise in profit or loss.

When the Group loses control, joint control or significant influence over investments, any retained interest in the investment is remeasured to its fair value, with the change in carrying amount recognised in profit or loss. The fair value becomes the initial carrying amount of the retained interest which is reclassified to investment in an associate, or a joint venture or a financial asset accordingly.

f) **Intercompany transactions on consolidation**

Intra-group transactions, balances and unrealised gains on transactions are eliminated. Unrealised gains on transactions between the Group and its associates and joint ventures are eliminated to the extent of the Group's interest in the associates and joint ventures. Unrealised losses are also eliminated in the same manner unless the transaction provides evidence of an impairment of the asset transferred.

5.2 Business combination

The Group applies the acquisition method to account for business combinations with an exception on business combination under common control. The consideration transferred for the acquisition of a subsidiary comprises.

- Fair value of the assets transferred,
- Liabilities incurred to the former owners of the acquiree,
- Equity interests issued by the Group.

Identifiable assets and liabilities acquired and contingent liabilities assumed in a business combination are measured initially at their fair values at the acquisition date.

The excess of the consideration transferred, the amount of any non-controlling interest recognised and the acquisition-date fair value of any previous equity interest in the acquiree (for business combination achieved in stages) over the fair value of the identifiable net assets acquired is recorded as goodwill. In the case of a bargain purchase, the difference is recognised directly in profit or loss.

Acquisition-related cost are recognised as expenses in consolidated financial statements.

Subsequent changes to the fair value of the contingent consideration that is an asset or liability is recognised in profit or loss. Contingent consideration that is classified as equity is not re-measured.

Business combination under common control

The Group accounts for business combination under common control by measuring acquired assets and liabilities of the acquiree at their carrying values presented in the highest level of the consolidation. The Group retrospectively adjusted the business combination under common control transactions as if the combination had occurred on the later of the beginning of the preceding comparative period and the date the acquiree has become under common control.

Consideration of business combination under common control are the aggregated amount of fair value of assets transferred, liabilities incurred and equity instruments issued by the acquirer at the date of which the exchange in control occurs.

The difference between consideration under business combination under common control and the acquirer's interests in the carrying value of the acquiree is presented as "surplus arising from business combination under common control" in equity and is derecognised when the investment is disposed.

5.3 Foreign currency translation

a) Functional and presentation currency

Items included in the financial statements of each of the Group's entities are measured using the currency of the primary economic environment in which the entity operates (the functional currency). The financial statements are presented in US Dollar, which is the Company's functional currency and the Company's and Group's presentation currency.

b) Transactions and balances

Foreign currency transactions are translated into the functional currency using the exchange rates prevailing at the dates of the transactions. Foreign exchange gains and losses resulting from the settlement of such transactions and from the translation at year-end exchange rates of monetary assets and liabilities denominated in foreign currencies are recognised in the profit or loss.

When a gain or loss on a non-monetary item is recognised in other comprehensive income, any exchange component of that gain or loss is recognised in other comprehensive income. Conversely, when a gain or loss on a non-monetary item is recognised in profit or loss, any exchange component of that gain or loss is recognised in profit or loss.

c) Group companies

The operational results and financial position of the Group's entities (none of which has the currency of a hyper-inflationary economy) that have a different functional currency from the Group's presentation currency are translated into the presentation currency.

To comply with the financial reporting requirements of the Stock Exchange of Thailand and the Department of Business Development, the Group presents the financial statements by translating from US Dollar to Thai Baht as follows:

- Assets and liabilities are translated at the closing rate at the date of respective statement of financial position;
- Income and expenses for statement of income and statement of comprehensive income are translated at average exchange rates during the period; and
- All resulting exchange differences from such translations are recognised in other comprehensive income (expense).

5.4 Cash and cash equivalents

Cash and cash equivalents includes cash on hand, deposits at bank, short-term highly liquid investments with maturities of three months or less from acquisition date.

5.5 Trade accounts receivable

Trade receivables are amounts due from customers for goods sold or services performed in the ordinary course of business.

Trade receivables are recognised initially at the amount of consideration that is unconditional unless they contain significant financing components, they are recognised at fair value. The Group measures them subsequently at amortised cost.

The impairment of trade accounts receivable are disclosed in Note 5.8 (f).

5.6 Inventories

Inventories are stated at the lower of cost and net realisable value.

Cost of inventories is determined by the weighted average method. Net realisable value is the estimated selling price in the ordinary course of business less the costs of completion and selling expenses.

5.7 Materials and supplies

Materials and supplies are stated at cost less allowance for obsolescence. The costs of materials and supplies are determined using the weighted average cost method.

5.8 Financial asset

a) Classification

The Group classifies its debt instrument financial assets into the following measurement categories depending on i) business model for managing the asset and ii) the cash flow characteristics of the asset whether they represent solely payments of principal and interest (SPPI).

- Those to be measured subsequently at fair value through other comprehensive income (FVOCI) or fair value through profit or loss (FVPL); and
- Those to be measured at amortised cost.

For investments in equity instruments, the Group has an irrevocable election at the time of initial recognition to account for the equity investment at a) fair value through profit or loss or b) at fair value through other comprehensive income except those that are held for trading, they are measured at FVPL.

b) Recognition and derecognition

Regular way purchases, acquires and sales of financial assets are recognised on the trade date, which the Group commits to purchase or sell the asset. Financial assets are derecognised when the rights to receive cash flows from the financial assets have expired or have been transferred and the Group has transferred substantially all the risks and rewards of ownership.

c) Measurement

At initial recognition, the Group measures a financial asset at its fair value plus or minus, in the case of a financial asset not at FVPL, transaction costs that are directly attributable to the acquisition of the financial asset. Transaction costs of financial assets carried at FVPL are expensed in profit or loss.

Financial assets with embedded derivatives are considered in their entirety when determining whether the cash flows are solely payment of principal and interest.

d) Debt instruments

Subsequent measurement of debt instruments depends on the Group's business model for managing the asset and the cash flow characteristics of the financial assets. There are three measurement categories into which the Group classifies its debt instruments:

- Amortised cost - Financial assets that are held for collection of contractual cash flows where those cash flows represent solely payments of principal and interest are measured at amortised cost. Interest income from these financial assets is included in interest income using the effective interest rate method. Any gain or loss arising on derecognition and foreign exchange gains and losses are recognised in profit or loss and presented in other gains/(losses) and gain (loss) on foreign exchange rates, respectively. Impairment losses are presented as a separate line item in the statement of income.
- FVOCI - Financial assets that are held for i) collection of contractual cash flows and ii) for selling the financial assets are measured at FVOCI. Movements in the carrying amount are taken through other comprehensive income (OCI), except for the recognition of impairment gains or losses, interest income using the effective interest method, and foreign exchange gains and losses which are recognised in profit or loss. When the financial assets is derecognised, the cumulative gain or loss previously recognised in OCI is reclassified from equity to profit or loss and recognised in other gains/(losses). Interest income is included in interest income. Impairment expenses are presented separately in the statement of income.

- FVPL - Financial assets that do not meet the criteria for amortised cost or FVOCI are measured at FVPL. A gain or loss on a debt investment that is subsequently measured at FVPL is recognised in profit or loss and presented in gains (loss) on remeasuring of financial instruments from in the period in which it arises.

The Group reclassifies debt instruments only when its business model for managing those assets changes.

e) **Equity instruments**

The Group measures all equity investments at fair value. Where the Group has elected to present fair value gains and losses on equity instruments in OCI, there is no subsequent reclassification of fair value gains and losses to profit or loss following the derecognition of the investment. Dividends from such investments continue to be recognised in profit or loss as other income when the right to receive payments is established.

Changes in the fair value of financial assets at FVPL are recognised in gain on remeasuring financial instruments in the incurring period.

Impairment losses and reversal of impairment losses on equity investments are reported together with changes in fair value.

f) **Impairment**

The Group applies the TFRS 9 simplified approach in recognising the impairment of trade and other receivables, which applies lifetime expected credit loss, from initial recognition, for trade and other receivables.

To measure the expected credit losses, trade receivables have been grouped based on shared credit risk characteristics and the days past due. The expected loss rates are based on the payment profiles and the corresponding historical credit losses experienced. The historical loss rates are adjusted to reflect current and forward-looking information on macroeconomic factors affecting the ability of the customers to settle the receivables.

For long-term loans to related parties and other financial assets carried at amortised cost and FVOCI, the Group applies TFRS 9 general approach in measuring the impairment of those financial assets. Under the general approach, the 12-month or the lifetime expected credit loss is applied depending on whether there has been a significant increase in credit risk since the initial recognition.

The credit risk assessment is performed at the end of each reporting period whether there is any significant increase in credit risk profile from the initial recognition by comparing i) expected risk of default as of the reporting date and ii) estimated risk of default on the date of initial recognition.

The Group assesses expected credit loss by taking into consideration forward-looking information and past experiences. The expected credit loss is a probability-weighted estimate of credit losses (probability-weighted present value of estimated cash shortfall). The cash shortfall is the difference between all contractual cash flows that are due to the Group and all cash flows expected to receive, discounted at the original effective interest rate.

When measuring expected credit losses, the Group reflects the following:

- Probability-weighted estimated uncollectible amounts;
- Time value of money; and
- Supportable and reasonable information as of the reporting date about past experience, current conditions and forecasts of future situations.

Impairment and reversal of impairment losses are recognised in profit or loss and included in administrative expenses.

5.9 Group of non-current assets held-for-sale

Non-current assets (or disposal groups) are classified as assets held-for-sale when their carrying amount will be recovered principally through a sale transaction and a sale is considered highly probable. They are measured at the lower of the carrying amount and fair value less costs to sell.

An impairment loss is recognised for initial and subsequent write-down of the asset (or disposal group) to fair value less costs to sell. A gain is recognised for any subsequent increases in fair value less costs to sell of an asset (or disposal group), but not in excess of any cumulative impairment loss previously recognised.

Non-current assets (including those that are part of a disposal group) are not depreciated or amortised.

5.10 Property, plant and equipment

Property, plant and equipment are presented at cost, after deducting accumulated depreciation and the provision for the impairment of assets.

Land is not depreciated. Depreciation on other assets is calculated as follows:

a) Exploration and production assets

The Group follows the Successful Efforts Method in accounting for its assets used for exploration and production activities as follows:

Cost of exploration and production assets

- Costs of exploration and production assets comprise total acquisition costs of petroleum rights or the acquisition costs of the portion of properties, decommissioning costs as well as support equipment and facilities.
- Exploratory drilling costs are capitalised as exploration and evaluation assets and will be classified as oil and gas properties of the projects if their exploratory wells have identified proved reserves that have been found to be commercially producible. However, if the exploratory wells have not identified proved reserves or have identified proved reserves but have not been found to be commercially producible, such drilling costs will be expensed in the statements of income.
- Exploration costs, comprising geological and geophysical costs as well as area reservation fees during the exploration stage, are charged to expenses in the statement of income when incurred.
- Development costs, whether relating to the successful or unsuccessful development of wells, are capitalised as oil and gas properties.

Depreciation and depletion

- The capitalised acquisition costs of petroleum rights are depreciated using the unit of production method based on proved reserves. Depreciation of exploratory wells, development costs as well as decommissioning costs, except unsuccessful projects, are calculated using the unit of production method based on proved reserves or proved developed reserves. The Group recognises changes in reserve estimates prospectively.
- Proved reserves and proved developed reserves are calculated by the engineers of the Company and are based on the information received from the joint operators.
- Depreciation for support equipment and facilities is calculated using the straight-line method with an estimated useful life of assets not exceeding 20 years.
- Depreciation for remuneration for the renewal of petroleum production is calculated using the straight-line method with an estimated useful life not exceeding 10 years in accordance with the agreement.

b) Pipelines and others

Costs of properties comprises of other direct costs necessary to bring the asset to working condition suitable for its intended use.

Depreciation of pipelines and others is determined using the straight-line method with an estimated useful life of assets not exceeding 30 years.

The assets' residual values and useful lives are reviewed, and adjusted if appropriate, at the end of each reporting period.

Subsequent costs are included in the asset's carrying amount, only when it is probable that future economic benefits associated with the item will flow to the Group. The carrying amount of the replaced part is derecognised.

Repair and maintenance costs are recognised as expenses when incurred.

Gains and losses on disposal of property, plant and equipment are determined by comparing proceeds from disposal with the carrying amount and are recognised in the statement of income when incurred.

5.11 Rights to receive reimbursement from decommissioning funds

Rights to receive reimbursement from decommissioning funds is recognised at present value when the Group contribute cash into the fund in accordance to terms and it is certainly probable that it can reimburse the cost of decommissioning from the funds. When funds reimburse cash to the Group after the completion of the decommissioning activities, cash will be adjusted against the right to receive reimbursement from decommissioning funds. The differences between the amount received and the remaining carrying amount of the decommissioning fund is recognised profit or loss.

The Group will not offset the rights to receive reimbursement from decommissioning fund with provisions for decommissioning costs if the Group is still obligated to the decommissioning liabilities. The Group does not have control, joint control or significant influence over the funds.

5.12 Goodwill

Goodwill arises from the business combination which represents the excess of the fair value of the consideration transferred over the fair value of the net identifiable assets, liabilities and contingent liabilities of the acquired subsidiaries, joint operations, associates or joint ventures undertaking at the date of the acquisition.

Goodwill on acquisitions of subsidiaries and joint operations is separately reported in the statements of financial position, while goodwill on acquisitions of associates and joint ventures is included in investment in associates and joint ventures.

Goodwill is not amortised but is annually tested for impairment. Goodwill is allocated to cash-generating unit of group of cash-generating units that are expected to gain benefit from the business combination that caused goodwill. Goodwill is presented at cost less accumulated impairment losses.

Impairment losses on goodwill are not reversed. The carrying amount of goodwill is included in the gains and losses on the disposal of business when it is divested.

5.13 Intangible assets

Intangible assets are presented at cost, after deducting accumulated amortisation and the allowance for the impairment of assets.

Where the carrying amount of an asset is greater than its estimated recoverable amount, it is written down to its recoverable amount.

Intangible assets are amortised using the straight-line method according to asset's useful life but not exceeding 10 years.

Research and development/ internally generated intangible assets

Research expenditure is recognised as an expense as incurred.

Development expenditure is recognised as an asset when the Group can demonstrate all of the following:

- The expenditure attributable to its development can be measured reliably and feasibility in technical, financial, commercial, and resource and;
- The Group intends to and has the ability to complete the development for the purpose of using or selling.

Development costs previously recognised as an expense are not recognised as an asset in a subsequent period.

Other intangible assets

Other intangible assets comprise expenditures incurred to acquire computer software licenses and concession rights in midstream oil and gas business.

5.14 Exploration and evaluation assets

Exploration and evaluation expenditures are capitalised at cost as exploration and evaluation assets. If the projects have identified the proved reserves that have been found to be commercially producible, the capitalised exploration and evaluation expenditures under these projects will be transferred to oil and gas properties of the projects with proved reserves. Subsequent accounting of such costs is described in the accounting policy for property, plant and equipment in Note 5.10 - Property, Plant and Equipment. The capitalised exploration and evaluation expenditure is written off as expenses in the statements of income in the period in which the projects have not identified proved reserves or have identified proved reserves, but have not been found to be commercially producible.

5.15 Impairment of assets

The Group's assets are reviewed for impairment whenever events or changes in circumstances indicate that the carrying amount may exceed the recoverable amount. Intangible assets that have an indefinite useful life or are not ready to be used are tested for impairment annually.

An impairment loss is recognised for the amount by which the carrying amount of the assets exceeds its recoverable amount which is the higher of an asset's fair value less costs to sell and its value in use, and is recorded in the statement of income. For the purposes of assessing impairment, assets are grouped at the lowest levels in which they are separately identifiable.

Estimates of future cash flows used in the evaluation for impairment of assets which relate to petroleum production are made with consideration of the risk assessment on field and reservoir performance which includes the estimate of proved and unproved reserves.

Allowance for impairment of assets, except when relating to goodwill, is reversed as applicable to the extent that the events or circumstances that triggered the original allowance for impairment change. For this circumstance, the increased carrying amount of the assets from the reversal could not exceed the carrying amount (net of amortisation or depreciation), if the Group did not recognise the impairment loss for assets in the prior period.

5.16 Current and deferred income taxes

The tax expense for the period comprises current and deferred tax. Tax is recognised in profit or loss, except to the extent that it relates to items recognised in other comprehensive income or directly in equity.

Current tax

The current income tax is calculated on the basis of the tax laws enacted or substantially enacted at the end of the reporting period. Management periodically evaluates positions taken in tax returns with respect to situations in which applicable tax regulation is subject to interpretation. It establishes provisions where appropriate on the basis of amounts expected to be paid to the tax authorities.

Deferred income tax

Deferred income tax will be recognised when there are temporary differences arising from differences between the tax base of assets and liabilities and their carrying amounts in the financial statements. However, deferred income tax is not recognised for temporary differences arise from:

- Initial recognition of an asset or liability in a transaction other than a business combination that affects neither accounting nor taxable profit or loss is not recognised
- Investments in subsidiaries, associates and joint arrangements where the timing of the reversal of the temporary difference is controlled by the Group and it is probable that the temporary difference will not be reversed in the foreseeable future.

Deferred income tax is measured using tax rates of the period in which temporary difference is expected to be reversed, based on tax rates and tax laws that have been enacted or substantially enacted by the end of the reporting period.

Deferred tax assets are recognised only to the extent that it is probable that future taxable profit will be available against which the temporary differences can be utilised.

Deferred tax assets and liabilities are offset when there is a legally enforceable right to offset current tax assets and liabilities and when the deferred tax assets and liabilities balances relate to the same or different taxable entities which intend either to settle current tax liabilities and assets on a net basis.

5.17 Deferred remuneration under agreement

The Company has an obligation to make a payment to the buyer (PTT) under the conditions in the Gas Sales Agreement of Arthit project. The remuneration is classified as non-current asset, presented under the caption "Other non-current assets", and amortised over contract life using the straight-line method.

5.18 Leases

Leases – where the Group is lessee

Leases are recognised as a right-of-use asset and a corresponding liability at the date at which the leased asset is available for use by the Group. Each lease payment is allocated between the liability and finance cost. The finance cost is charged to profit or loss over the lease period so as to produce a constant periodic rate of interest on the remaining balance of the liability for each period. The right-of-use asset is depreciated over the shorter of the asset's useful life and the lease term on a straight-line basis.

The Group allocates the consideration in the contract to the lease and non-lease components based on their relative stand-alone prices. In the event that the Group cannot allocate the lease and non-lease components, the Group elected not to separate lease and non-lease components and instead accounts for these as a single lease component.

Assets and liabilities arising from a lease are initially measured at a present value basis. Lease liabilities include the net present value of the following lease payments:

- Fixed payments (including in-substance fixed payments), less any lease incentives receivable
- Variable lease payment that are based on an index or a rate
- Amounts expected to be payable by the lessee under residual value guarantees
- The exercise price of a purchase option if the lessee is reasonably certain to exercise that option, and
- Payments of penalties for terminating the lease, if the lease term reflects the lessee exercising that option.

Lease payments under the extension options period are also included in the measurement of the liability, if the Group is reasonably certain about exercising its extension options.

The lease payments are discounted using the interest rate implicit in the lease. If that rate cannot be determined, the lessee's incremental borrowing rate is used, being the rate that the lessee would have to pay to borrow the funds necessary to obtain an asset of similar value in a similar economic environment with similar terms and conditions.

The Group is exposed to potential future increases in variable lease payments based on an index or rate, which are not included in the lease liability until they take effect. When adjustments to lease payments based on an index or rate take effect, the lease liability is reassessed and adjusted against the right-of-use asset.

Right-of-use assets are measured at cost comprising the following:

- The amount of the initial measurement of lease liability
- Any lease payments made at or before the commencement date less any lease incentives received
- Any initial direct costs; and
- Restoration costs.

Payments associated with short-term leases and leases of low-value assets are recognised on a straight-line basis as an expense in profit or loss. Short-term leases are leases with a lease term of 12 months or less. Low-value assets comprise computer and IT equipment.

Leases - where the Group is the lessor

Assets leased under operating leases are included in property, plant and equipment in the statements of financial position. They are depreciated over their expected useful lives on a basis consistent with other similar property, plant and equipment owned by the Group. Rental income is recognised on a straight-line basis over the lease term.

5.19 Financial liabilities

a) Classification

Financial instruments issued by the Group are classified as either financial liabilities or equity securities by considering contractual obligations.

- Where the Group has an unconditional contractual obligation to deliver cash or another financial asset to another entity, it is considered a financial liability unless there is a predetermined or possible settlement for a fixed amount of cash in exchange of a fixed number of the Group's own equity instruments.
- Where the Group has no contractual obligation or has an unconditional right to avoid delivering cash or another financial asset in settlement of the obligation, it is considered an equity instrument.

Borrowings are classified as current liabilities unless the Group has an unconditional right to defer settlement of the liability for at least 12 months after the reporting date.

b) Measurement

Financial liabilities are initially recognised at fair value and are subsequently measured at amortised cost.

c) Derecognition and modification

Financial liabilities are derecognised when the obligation specified in the contract is discharged, cancelled, or expired.

Where the terms of a financial liability are renegotiated/modified, the Group assesses whether the renegotiation / modification results in the derecognition of that financial liability. Where the modification results in an extinguishment, the new financial liability is recognised based on fair value of its obligation. The remaining carrying amount of financial liability is derecognised. The difference as well as proceed paid is recognised as other gains (losses) in profit or loss.

Where the modification does not result in the derecognition of the financial liability, the carrying amount of the financial liability is recalculated as the present value of the renegotiated / modified contractual cash flows discounted at its original effective interest rate. The difference is recognised in other gains/(losses) in profit or loss.

5.20 Borrowing costs

General and specific borrowing costs directly attributable to the acquisition, construction or production of qualifying assets, are added to the cost of those assets less investment income earned from these specific borrowings. The capitalisation of borrowing costs is ceased when substantially all of the activities necessary to prepare the qualifying assets for its intended use or sale are complete.

Other borrowing costs are recognised as expenses in the period in which they are incurred.

5.21 Employee benefits

The Group has recognised employee benefits based on the types of benefits which are post-employment benefits and other long-term benefits.

a) Post-employment benefits

The Group has recognised both defined contribution and defined benefit plans as follows:

Defined contribution plan

The Group's employees have become members of the following provident funds: "Employee of PTTEP Registered Provident Fund", "Sinsataporn Registered Provident Fund" and "TISCO Master Pooled Fund Registered Provident Fund".

The provident funds are funded by payments from employees and from the Group which are held in a separate trustee-administered fund. The Group contributes to the funds at a rate of 3% - 15% of the employees' salaries which are charged to the statements of income in the period the contributions are made.

Employee retirement benefits

The Group's obligation in respect of the retirement benefit plans is calculated by estimating the amount of future benefits that employees will earn in return for their services to the Group in current and future periods. Such benefits are discounted to the present value. The employee benefits obligation is calculated by an independent actuary using the projected unit credit method. Actuarial gains and losses arising from experience adjustments and changes in actuarial assumptions are charged or credited to equity in other comprehensive income (loss) in the period in which they arise.

Past-service costs are recognised immediately in the statements of income.

b) Other long-term benefits

The Group's other long-term benefits are benefits based on employees' length of service. The Group calculates the amount of these benefits according to the employees' service period.

The expected obligation of these benefits is calculated by independent actuarial experts and accrued over the period of employment based on the same accounting practice used for the employee retirement benefits. Actuarial gains and losses arising from experience adjustments and changes in actuarial assumptions will be recognised in the statements of income in the period in which they arise.

The Group recognises the obligation in respect of employee benefits in the statements of financial position under "Provision for Employee Benefits" as disclosed in Note 28.

5.22 Provisions

Provisions are recognised when the Group has a present legal or constructive obligation as a result of past events; it is probable that an outflow of resources will be required to settle the obligation; and the amount has been reliably estimated.

Provisions are measured at the present value of the expenditures expected to be required to settle the obligation. The increase in the provision due to passage of time is recognised as interest expense.

5.23 Capital management

The Group's objectives when managing capital are to safeguard its ability to continue as a going concern, to provide returns for shareholders and benefits for other stakeholders, and maintain an optimal capital structure to reduce the cost of capital.

5.24 Other reserve for expansion

The Group considers to set aside a reserve for expanding its investments in new projects in the exploration phase, which is generally susceptible to high risk, and for exploration of additional petroleum reserves. The reserve for expansion is set aside at no more than 35% of the net taxable income from its exploration and production activities.

5.25 Revenue recognition

Revenue are recorded net of value added tax. They are recognised in accordance with the provision of goods or services, provided that collectability of the consideration is probable.

Multiple element arrangements involving delivery or provision of multiple products or services are separated into individual distinct performance obligations. Total transaction price of the bundled contract is allocated to each performance obligation based on their relative standalone selling prices or estimated standalone selling prices. Each performance obligation is recognised as revenue on fulfilment of the obligation to the customer.

The Group has the revenue recognition in each category as follows:

Revenue from contracts with customers

Revenue from contracts with customers is recognised when the Group complete performance obligations at a point in time by transferring petroleum product to a customer and the control over the product is transferred to a customer whom the product is physically possessed. The revenue is measured at the fair value of the consideration which the Group expects to be entitled in exchange for petroleum product, provided that collectability of the consideration is probable. Inter-company sales revenue is excluded in the consolidated financial statements.

Deferred income under agreements (Take-or-Pay)

Under the Gas Sales Agreements, the Group has obligations to supply minimum quantities of gas to a customer in each contract year. If in any contract year, the customer has not taken the minimum quantities of gas according to the Gas Sales Agreements, the customer shall pay for quantities of gas not taken (Take-or-Pay). If the customer is unable to take the minimum contracted quantities in a given year, the volume of gas that the customer has paid for but has not taken in that year (Make-up) can be taken free of charge in subsequent years. Payments received in advance under these agreements are recognised as deferred income. This deferred income is recognised in the statements of income when the gas is subsequently taken.

Interest income

Interest income is recognised based on time proportion basis considering on an effective interest rate of one point of time until the end of term and considering on an outstanding balance of the principal recognised in deferred income account of the Group.

Dividend income

Dividend income is recognised when the right to receive payment is established.

Other income

Other income is recognised on an accrual basis.

5.26 Share capital

Ordinary shares with discretionary dividends are classified as equity.

Incremental costs directly attributable to the issue of new shares or options (net of tax) are shown as a deduction in equity.

5.27 Dividend distribution

Dividend distributed to the Company's shareholders is recognised as a liability when interim dividends are approved by the Board of Directors' meeting, and when the annual dividends are approved by the shareholders' meeting.

5.28 Earnings per share

Basic earnings per share are calculated by dividing the income for the year attributable to ordinary shareholders less interest expense for subordinated capital debentures by the weighted average number of ordinary shares outstanding during the year.

Diluted earnings per share are calculated by dividing the income for the year attributable to shareholders less interest expense for subordinated capital debentures by the weighted average number of ordinary shares outstanding during the year, adjusted with dilutive potential ordinary shares. The Company assumes that all dilutive potential ordinary shares are converted into ordinary shares.

5.29 Segment reporting

Operating segments are reported in a manner consistent with the internal reporting provided to the chief operating decision-maker. The chief operating decision-maker is a person responsible for allocating resources and assessing performance of the operating segments that makes strategic decisions.

In considering the segment reporting, the chief operating decision-maker considers product types as well as geographical areas classified by business segments which are identified by different business activities that are subject to risks and returns that are different from those of other business segments.

5.30 Derivatives and hedging activities

a) Embedded derivative and derivatives that do not qualify for hedge accounting

Embedded derivative that is separately accounted for and derivatives that do not qualify for hedge accounting is initially recognised at fair value. Changes in the fair value are included in other gains (losses).

Fair value of derivatives is classified as a current or non-current following its remaining maturity.

b) Hedge accounting

Derivatives are initially recognised at fair value on the date a derivative contract is entered into and are subsequently remeasured to their fair value at the end of each reporting period. The Group designates certain derivatives as either 1) hedges of the fair value of recognised assets or liabilities or 2) hedges of a particular risk associated with the cash flows of highly probable forecast transactions (cash flow hedges).

At inception of the hedge relationship, the Group documents i) the economic relationship between hedging instruments and hedged items including whether changes in the cash flows of the hedging instruments are expected to offset changes in the cash flows of hedged items and ii) its risk management objective and strategy for undertaking its hedge transactions.

The full fair value of a hedging derivative is classified as a current or non-current asset or liability following the maturity of related hedged item.

The fair values of derivative financial instruments designated in cash flow hedge relationships and movements in the hedging reserve in shareholders' equity are disclosed in Note 7.

Cash flow hedges

The effective portion of changes in the fair value of derivatives that are designated and qualified as cash flow hedges is recognised in the cash flow hedge reserve within equity. The gain or loss relating to the ineffective portion is recognised immediately in profit or loss.

The Group applies hedge accounting on cross currency and interest rate swap and interest rate collar (zero cost collar) in hedge relationships that were being used to hedge the underlying assets and liabilities. The Group only designates the spot component of cross currency and interest rate swap and the intrinsic value of interest rate collar (zero cost collar) as hedging instrument. Gains or losses relating to the effective portion of the change in the spot component and intrinsic value are recognised in the cash flow hedge reserve within equity and recognised the changes in foreign currency basis spreads of cross currency and interest rate swap and time value of interest rate collar (zero cost collar) that relate to hedged items as the costs of hedging reserve within other comprehensive income of equity.

Amounts accumulated in equity are reclassified in the periods when the hedged item affects profit or loss.

The gain or loss relating to the effective portion of cross currency and interest rate swap and interest rate collar (zero cost collar) hedging variable rates borrowings and debentures is recognised in profit or loss within finance costs at the same time as the interest expense on the hedged borrowings and debentures.

5.31 Financial guarantee contracts

Financial guarantee contracts are recognised as a financial liability at the time the guarantee is issued. The liability is initially measured at fair value and subsequently at the higher of:

- The amount determined in accordance with the expected credit loss model under TFRS 9; and
- The amount initially recognised less the cumulative amount of income recognised in accordance with the principles of TFRS 15.

The fair value of financial guarantees is determined based on the present value of the difference in cash flows between a) the contractual payments required under the debt instrument; and b) the payments that would be required without the guarantee, or the estimated amount that would be payable to a third party for assuming the obligations.

The Group recognised guarantees associated with loans or other payables without compensation as part of the cost of the investment.

6 Financial risk management

The Group exposes to various risks from its business operations as follows:

6.1 Financial risk

The Group exposes to a variety of financial risks which comprise market risk (including foreign exchange risk, interest rate risk and price risk), credit risk and liquidity risk. The Group's overall risk management programme focuses on the unpredictability of financial markets and seeks to minimise potential effects on the Group's financial performance to an acceptable level. The Group also uses derivative financial instruments to hedge certain exposures.

Financial risk management is centralised and carried out by the financial risk management function. The Group's financial risk management includes areas such as foreign exchange risk, interest rate risk, price risk, credit risk and liquidity risk. The framework parameters are approved by the Board of Directors and uses as the key communication and control tools for financial risk management function of the Group's subsidiaries.

6.1.1 Market risk

a) Foreign exchange risk

The vast majority of the Group's domestic and overseas business (revenues and expenses) are in US Dollar and the Group has determined the US Dollar as the functional currency by considering from revenue and operating expenses used in the primary economic environment in which the entity operates. The Group's exposure to the foreign exchange risk arises from transactions which are denominated in currencies that are not the functional currency.

Exposure

The Group and the Company has significant exposure to financial statements from transactions denominated in Baht at the end of the reporting period as follows:

	Consolidated financial statements			
	31 December 2021		31 December 2020	
	Unit: Million US Dollar	Unit: Million Baht	Unit: Million US Dollar	Unit: Million Baht
Cash and cash equivalents	339	11,341	261	7,826
Trade and other receivables	409	13,653	356	10,685
Cross currency and interest rate swaps				
- hedge derivative *	969	32,400	879	26,400
Long-term loans to related parties	-	-	16	468
Other non-current financial assets	-	8	-	7
Other non-current assets	4	150	5	157
Trade and other payables	(322)	(10,774)	(279)	(8,393)
Forward foreign exchange contracts				
- trading *	(1,001)	(33,467)	(1,008)	(30,289)
Other current liabilities	(100)	(3,333)	-	-
Lease liabilities	(36)	(1,208)	(16)	(484)
Debentures	(969)	(32,384)	(878)	(26,383)

	Separate financial statements			
	31 December 2021		31 December 2020	
	Unit: Million US Dollar	Unit: Million Baht	Unit: Million US Dollar	Unit: Million Baht
Cash and cash equivalents	65	2,184	55	1,661
Trade and other receivables	316	10,564	277	8,329
Cross currency and interest rate swaps				
- hedge derivative *	521	17,400	380	11,400
Long-term loans to related parties	-	-	16	468
Other non-current financial assets	-	8	-	7
Other non-current assets	4	147	5	153
Trade and other payables	(247)	(8,243)	(213)	(6,407)
Short-term loans from a related party	(16)	(548)	(34)	(1,013)
Forward foreign exchange contracts				
- trading *	(901)	(30,125)	(909)	(27,310)
Other current assets	(100)	(3,333)	-	-
Lease liabilities	(26)	(884)	(11)	(328)
Debentures	(520)	(17,384)	(379)	(11,392)

* These are disclosed with notional amount.

Financial instruments used by the Group for risk management

The Group manages its foreign exchange risks on financial assets and financial liabilities those are not the Group's functional currency by balancing the structure and transactions, types of assets, liabilities and equity. In addition, the Group uses derivative instruments to manage and hedge the risks exposure of the foreign currency transaction while it also considers costs, effectiveness, and risks that may arise in each interval.

The Group used cross currency and interest rate swaps, forward foreign exchange contracts and foreign currency options in a consistent manner to hedge firm and anticipated foreign exchange commitments and to manage its foreign exchange risk arising from future commercial transactions. The Group does not usually hedge its net investments in foreign operations except in circumstances where there is a material exposure arising from a currency that is anticipated to be volatile and the hedging is cost effective. The Group manages its foreign exchange risks by swapping into the entity's functional currency. Foreign currency borrowings are swapped into the entity's functional currency using cross currency and interest rate swaps, except where the foreign currency borrowings are repaid with cash flows generated in the same foreign currency. The purpose of these hedges is to mitigate the impact of movements in foreign exchange rates on assets and liabilities and the profit or loss of the Group.

The Group enters into cross currency and interest rate swaps, forward foreign exchange contracts and foreign currency options to hedge its exposure to foreign exchange risk. Under the Group's policy, the critical terms of these contracts must align with the hedged items. However, the Group do not apply hedge accounting for forward foreign exchange contracts and foreign currency options. As a result, gain or loss is recognised in profit or loss.

The Group only designates the spot component of cross currency and interest rate swap in hedge relationships. The spot component is determined with reference to relevant spot market exchange rates. The difference between the contracted forward rate and the spot market exchange rate is defined as the forward points. It is discounted, where material.

The changes in the forward element of the cross currency and interest rate swaps that relate to hedged items are deferred in the costs of hedging reserve.

The Group and the Company entered into a cross currency and interest rate swaps with 100% of total Thai Baht borrowings which are not matched with the Company's and each subsidiary's functional currency.

Cross currency and interest rate swaps comprise of accrued interest income and expense which will be made twice a year. The due date of interest and principal of the cross currency and interest rate swaps are the same date as loan maturity date.

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Notes to the Consolidated and Separate Financial Statements

For the year ended 31 December 2021

The Group's exposure of hedging instrument to financial position and performance are as follows:

Consolidated financial statements									
31 December 2021									
Type of hedge	Hedging instrument		Carrying amount of hedging instrument		Hedge ratio	Maturity date	Contractual exchange rate	Swap rate received	Swap rate paid
	Derivative	Total contractual amount (Million US Dollar)	Unit: Million US Dollar	Unit: Million Baht					
Cash flow hedge	Cross currency and interest rate swap	349	(6)	(201)	1:1	6 June 2029	32.66	4.82%	4.99%
		480	(33)	(1,098)	1:1	19 June 2022	31.25	2.26%	2.63% - 3.05%
		182	(2)	(80)	1:1	5 November 2026	33.00	2.00% - 2.75%	2.46% - 2.55%

Consolidated financial statements									
31 December 2020									
Type of hedge	Hedging instrument		Carrying amount of hedging instrument		Hedge ratio	Maturity date	Contractual exchange rate	Swap rate received	Swap rate paid
	Derivative	Total contractual amount (Million US Dollar)	Unit: Million US Dollar	Unit: Million Baht					
Cash flow hedge	Cross currency and interest rate swap	349	34	1,007	1:1	6 June 2029	32.66	4.82%	4.99%
		480	16	467	1:1	19 June 2022	31.25	2.26%	2.63% - 3.05%

PTT Exploration and Production Public Company Limited

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For the year ended 31 December 2021

Separate financial statements

31 December 2021

Type of hedge	Hedging instrument		Carrying amount of hedging instrument		Hedge ratio	Maturity date	Contractual exchange rate	Swap rate received	Swap rate paid
	Derivative	Total contractual amount (Million US Dollar)	Unit: Million US Dollar	Unit: Million Baht					
Cash flow hedge	Cross currency and interest rate swap	349	(6)	(201)	1:1	6 June 2029	32.66	4.82%	4.99%
		182	(2)	(80)	1:1	5 November 2026	33.00	2.00% - 2.75%	2.46% - 2.55%

Separate financial statements

31 December 2020

Type of hedge	Hedging instrument		Carrying amount of hedging instrument		Hedge ratio	Maturity date	Contractual exchange rate	Swap rate received	Swap rate paid
	Derivative	Total contractual amount (Million US Dollar)	Unit: Million US Dollar	Unit: Million Baht					
Cash flow hedge	Cross currency and interest rate swap	349	34	1,007	1:1	6 June 2029	32.66	4.82%	4.99%

Sensitivity analysis

As shown in the table above, the Group is primarily exposed to changes in Baht and US Dollar exchange rates. The sensitivity of profit or loss to changes in the exchange rates arises mainly from financial assets and financial liabilities denominated in foreign currency other than its functional currency and the impact on profit before income tax arises. If the Group determines the exchange rate as at 31 December 2021 and 2020 to be changed by 10% and holding all other variables constant, the impact on profit before income tax of the Group will be as follows:

	Consolidated financial statements	
	Unit:	Unit:
	Million US Dollar	Million Baht
2021		
Baht to US Dollar exchange rate		
- increase 10%	32	1,058
- decrease 10%	(32)	(1,058)
	Consolidated financial statements	
	Unit:	Unit:
	Million US Dollar	Million Baht
2020		
Baht to US Dollar exchange rate		
- increase 10%	25	751
- decrease 10%	(25)	(751)

		Separate financial statements	
		Unit: Million US Dollar	Unit: Million Baht
2021			
Baht to US Dollar exchange rate			
- increase 10%		51	1,718
- decrease 10%		(51)	(1,718)
		Separate financial statements	
		Unit: Million US Dollar	Unit: Million Baht
2020			
Baht to US Dollar exchange rate			
- increase 10%		40	1,192
- decrease 10%		(40)	(1,192)

b) Interest rate risk

Interest rate risk is the risk of changes in market value of interest rate which affect to the cash flow from assets and liabilities at variable rates. Therefore, the borrowing at variable rates is the cause of the Group's interest rate risk. The Group's main interest rate risk arises from borrowings with variable rates. The Group's policy is to maintain an appropriate proportion of its borrowings at fixed rates and variable rates considering the Group's business operation. In doing so, the Group maintains its fixed interest rate borrowings at 80%. In addition, the Group considers entering into derivative such as interest rate collar (zero cost collar). The Group also considers costs, market conditions, and acceptable risk before entering into the financial instrument to manage interest rate risk.

Following interest rate benchmark reform, there are cessations in several benchmark interest rates including LIBOR, which is applied by the Group as part of the variable rate calculation. The Group had monitored and managed the transition to alternative benchmark rates for loan agreements and financial instruments. As a result, the uncertainty does not significantly impact the Group. As at 31 December 2021, the financial instruments that have not yet to transition to alternative benchmark rates did not have significant impact.

The exposure of the Group's borrowings to interest rate changes of the borrowings at the end of the reporting period are as follows:

	Consolidated financial statements					
	2021			2020		
	Unit: Million US Dollar	Unit: Million Baht	% of total borrowings	Unit: Million US Dollar	Unit: Million Baht	% of total borrowings
Variable rate						
borrowings - LIBOR	596	19,920	17	595	17,862	17
Fixed rate borrowings	2,746	91,747	78	2,830	85,016	83
Fixed rate borrowings - repricing 1 - 5 years	179	5,991	5	-	-	-
	3,521	117,658	100	3,425	102,878	100
	Separate financial statements					
	2021			2020		
	Unit: Million US Dollar	Unit: Million Baht	% of total borrowings	Unit: Million US Dollar	Unit: Million Baht	% of total borrowings
Fixed rate borrowings	341	11,393	66	379	11,392	100
Fixed rate borrowings - repricing 1 - 5 years	179	5,991	34	-	-	-
	520	17,384	100	379	11,392	100

The percentage of total borrowings shows the proportion of borrowings that are currently at variable rates and fixed rates in relation to the total amount of borrowings. An analysis by maturities is provided in Note 25.

Financial instruments used by the Group for risk management

The Group had entered into interest rate collar (zero cost collar), which represents 50% of total variable rate borrowing (2020: 50%). The interest rate collar (zero cost collar) comprises of put option with interest rate cap at 2.42% per annum and call option with interest rate floor at 0.20% per annum. The variable interest rate is reference to 6M LIBOR. At the end of the reporting period, the 6M LIBOR rate is at 0.34% per annum (2020: 0.26% per annum).

Under interest rate collar (zero cost collar), the reference interest rate will be determined in April and October according to the reference interest rate of the variable rate borrowings and in case either the reference interest rate exceeds the cap or falls below the floor, the net interest receivable and payable is required to be settled every 180 days. The settlement dates coincide with the dates on which is payable on the underlying variable rate borrowings.

The Group's exposure of interest rate-related hedging instrument to financial position and performance are as follows:

Consolidated financial statements								
31 December 2021								
Type of hedge	Hedging instrument		Carrying amount of hedging instrument		Hedge ratio	Maturity date	Swap rate received	Swap rate paid
	Derivative	Total contractual amount (Million US Dollar)	Unit: Million US Dollar	Unit: Million Baht				
Cash flow hedge	Interest rate collar (zero cost collar)	300	1	28	1:1	21 October 2024	Reference interest rate, as of borrowing's interest rate reset date, floats over 2.42% per annum	Reference interest rate, as of borrowing's interest rate reset date, floats below 0.20% per annum

Type of hedge	Hedging instrument		Carrying amount of hedging instrument		Hedge ratio	Maturity date	Swap rate received	Swap rate paid
	Derivative	Total contractual amount (Million US Dollar)	Unit: Million US Dollar	Unit: Million Baht				
Cash flow hedge	Interest rate collar (zero cost collar)	300	(1)	(20)	1:1	21 October 2024	Reference interest rate, as of borrowing's interest rate reset date, floats over 2.42% per annum	Reference interest rate, as of borrowing's interest rate reset date, floats below 0.20% per annum

Sensitivity analysis

Profit or loss is mainly sensitive to higher or lower interest expenses from borrowings as a result of changes in interest rates.

The Group is exposed to change in market rate of variable interest rate borrowings from financial institutions. If the Group determines the interest rate to be changed and holding all other variables constant, the impact on profit before income tax of the Group will be as follows:

	Consolidated financial statements	
	Unit:	Unit:
	Million US Dollar	Million Baht
2021		
Interest rate		
- Increase 1%	(3)	(97)
- Decrease 1%	3	97

	Consolidated financial statements	
	Unit:	Unit:
	Million US Dollar	Million Baht
2020		
Interest rate		
- Increase 1%	(4)	(125)
- Decrease 1%	4	125

c) Price risk

Exposure

The Group's exposure to price risk arises from petroleum product prices because the Group's selling price of petroleum products is reference to the world's crude oil price, which are fluctuated subject to various factors beyond its control.

Fluctuations in the world's crude oil prices directly affect the prices of the Group's crude oil and condensate, while the prices of natural gas, which is the main product of the Group, change in the same direction with the reference oil prices and other factors in the gas price formula. Natural gas prices have adjusted periods that reflect actual price delayed by every 6 to 24 months (lag time) depending on each contract. The natural gas price will move corresponding to lower volatility compared to the prices of crude oil and condensate.

The Group has managed the price risk by analysing the impact of the level of oil price changes to revenue, cash flow and net profit of the Group annually. The risk mitigation plan is reviewed by the Risk Management Committee and the Board of Directors in order to be used as the Group's operation framework.

As at 31 December 2021, the Group entered into oil price hedging derivatives for the year 2022 totalling 15.4 million barrel (2021: the Group entered into oil price hedging derivatives for the year 2021 totalling 24.49 million barrel).

Sensitivity analysis

The changes in oil price, holding all other variables constant, will impact fair value of oil price hedging derivative as at 31 December 2021 and 2020 as follows:

	Consolidated financial statements	
	Unit:	Unit:
	Million US Dollar	Million Baht
2021		
Price per barrel		
- Increase 1 US Dollar	(8)	(269)
- Decrease 1 US Dollar	8	273
	Consolidated financial statements	
	Unit:	Unit:
	Million US Dollar	Million Baht
2020		
Price per barrel		
- Increase 1 US Dollar	(8)	(244)
- Decrease 1 US Dollar	8	232

6.1.2 Credit risk

a) Risk management

The Group's policy to manage its credit risk is to enter into transactions with the customers who have good credit profiles. The majority of sales is made with PTT Public Company Limited, the parent company. In addition, the Group carefully assesses and regularly reviews the credit profiles of its customers.

The Group places deposits with the banks which are rated at investment grade level. The Group regularly assesses credit quality and stability of these banks by taking into account of their credit rating, investment portfolio and other financial ratios which demonstrate their performance and the ability to control their business risks, such as non-performing loan to total loan ratio. These factors are used to manage risks and to consider the amount of bank deposit limit in order to ensure that deposits are well-diversified and to avoid concentration risks with individual bank together with the consideration yields and acceptable risk in each time interval.

Before entering into financial derivative contracts, the Group has assessed the financial position and credit worthiness, including setting up credit exposure limit, of counterparty bank in the same way as when the Group assesses banks before placing deposit as described above. Currently all banks in which the Group has entered into financial derivative contracts are rated at investment grade level. In addition, the Group has adjusted, based on the timing and type of transactions, the outstanding balance of each derivative financial instrument made with banks to reflect the risk-adjusted exposure and has diversified transactions to avoid concentration risks with individual bank together with the costs, consideration yields and risks arising in each interval.

b) Security

For some trade receivables, the Group may obtain security in the form of guarantees or letters of credit which can be called upon if the counterparty is in default under the terms of the agreement.

c) Impairment of financial assets

The Group has following financial assets that are subject to the expected credit loss model as follows:

- Cash and cash equivalents
- Short-term investments
- Trade and other receivables
- Other current assets
- Short-term loans to a related party
- Long-term loans to related parties
- Other non-current financial assets
- Other non-current assets

Management consider that impairment loss of financial assets mentioned above are immaterial.

6.1.3 Liquidity risk

Liquidity risk is the risk that suitable sources of funding for the Group's business activities may not be available. The Group's contractual maturity of liabilities and interest, including the derivative contracts are as follows:

a) Maturity of financial liabilities

The tables below analyse the maturity of financial liabilities grouping based on their contractual maturities. The amounts disclosed are the contractual undiscounted cash flows as at 31 December 2021 and 2020.

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	Consolidated financial statements				
	Unit: Million US Dollar				
	Within 1 year	1 - 5 years	Over 5 years	Total	Total carrying amount
2021					
Trade and other payables	1,082	-	-	1,082	1,082
Other current liabilities	132	-	-	132	132
Lease liabilities	196	331	89	616	572
Contingent considerations from business acquisition	1	76	-	77	72
Loans from financial institutions - variable interest rate					
Principal	-	600	-	600	596
Interest expense *	7	17	-	24	1
Debentures - fixed interest rate					
Principal	449	179	2,331	2,959	2,925
Interest expense *	105	402	1,404	1,911	11
Cross currency and interest rate swaps – net **	35	9	11	55	41
Forward foreign exchange contracts – net **	-	-	-	-	2

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For the year ended 31 December 2021

	Consolidated financial statements				
	Unit: Million US Dollar				
					Total carrying amount
	Within 1 year	1 - 5 years	Over 5 years	Total	
2020					
Trade and other payables	880	-	-	880	880
Other current liabilities	112	-	-	112	112
Lease liabilities	150	302	119	571	507
Contingent considerations from business acquisition	2	4	-	6	6
Contingent considerations from participating interest acquisition in a joint venture	55	-	-	55	53
Loans from financial institutions - variable interest rate					
Principal	-	600	-	600	595
Interest expense *	8	25	-	33	1
Debentures - fixed interest rate					
Principal	-	499	2,370	2,869	2,830
Interest expense *	109	398	1,507	2,014	12
Forward foreign exchange contracts – net **	40	-	-	40	26

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Consolidated financial statements					
Unit: Million Baht					
	Within 1 year	1 - 5 years	Over 5 years	Total	Total carrying amount
2021					
Trade and other payables	36,163	-	-	36,163	36,163
Other current liabilities	4,422	-	-	4,422	4,422
Lease liabilities	6,553	11,072	2,954	20,579	19,153
Contingent considerations from business acquisition	32	2,555	-	2,587	2,412
Loans from financial institutions – variable interest rate					
Principal	-	20,052	-	20,052	19,920
Interest expense *	245	558	-	803	42
Debentures - fixed interest rate					
Principal	15,000	6,000	77,905	98,905	97,738
Interest expense *	3,509	13,433	46,912	63,854	373
Cross currency and interest rate swaps – net **	1,176	308	367	1,851	1,379
Forward foreign exchange contracts – net **	-	-	-	-	55

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	Consolidated financial statements				
	Unit: Million Baht				
	Total carrying				amount
	Within 1 year	1 - 5 years	Over 5 years	Total	
2020					
Trade and other payables	26,430	-	-	26,430	26,430
Other current liabilities	3,355	-	-	3,355	3,355
Lease liabilities	4,516	9,075	3,571	17,162	15,230
Contingent considerations from business acquisition	61	114	-	175	169
Contingent considerations from participating interest acquisition in a joint venture	1,642	-	-	1,642	1,601
Loans from financial institutions - variable interest rate					
Principal	-	18,022	-	18,022	17,862
Interest expense *	228	752	-	980	41
Debentures - fixed interest rate					
Principal	-	15,000	71,174	86,174	85,016
Interest expense *	3,288	11,967	45,252	60,507	374
Forward foreign exchange contracts – net **	1,209	-	-	1,209	788

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	Separate financial statements				
	Unit: Million US Dollar				
	Total carrying				amount
	Within 1 year	1 - 5 years	Over 5 years	Total	
2021					
Trade and other payables	356	-	-	356	356
Other current liabilities	102	-	-	102	102
Lease liabilities	31	29	1	61	60
Debentures – fixed interest rate					
Principal	-	180	341	521	520
Interest expense *	20	83	41	144	4
Cross currency and interest rate swaps – net **	2	9	11	22	8
Forward foreign exchange contracts – net **	-	-	-	-	1

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	Separate financial statements				
	Unit: Million US Dollar				
					Total carrying amount
	Within 1 year	1 - 5 years	Over 5 years	Total	
2020					
Trade and other payables	299	-	-	299	299
Other current liabilities	3	-	-	3	3
Lease liabilities	27	31	2	60	57
Debentures - fixed interest rate					
Principal	-	-	380	380	379
Interest expense *	18	73	64	155	3
Forward foreign exchange contracts – net **	37	-	-	37	23

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	Separate financial statements				
	Unit: Million Baht				
	Total carrying				amount
	Within 1 year	1 - 5 years	Over 5 years	Total	
2021					
Trade and other payables	11,883	-	-	11,883	11,883
Other current liabilities	3,414	-	-	3,414	3,414
Lease liabilities	1,025	954	45	2,024	2,011
Debentures – fixed interest rate					
Principal	-	6,000	11,400	17,400	17,384
Interest expense *	669	2,753	1,374	4,796	127
Cross currency and interest rate swaps – net **	77	308	367	752	281
Forward foreign exchange contracts – net **	-	-	-	-	43

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	Separate financial statements				
	Unit: Million Baht				
	Within 1 year	1 - 5 years	Over 5 years	Total	Total carrying amount
2020					
Trade and other payables	8,966	-	-	8,966	8,966
Other current liabilities	79	-	-	79	79
Lease liabilities	806	931	53	1,790	1,707
Debentures - fixed interest rate					
Principal	-	-	11,400	11,400	11,392
Interest expense *	550	2,198	1,923	4,671	80
Forward foreign exchange contracts – net **	1,104	-	-	1,104	681

The major assumptions for the data presented in the table above are that all the interest expenses are calculated based on the nominal interest rate and there is no change in aggregate principal amounts of loans other than repayment at scheduled maturity.

- Thai Baht liabilities were equivalent to US Dollar at the closing rate at the date respective statement of financial position.

* Interest paid represents the interest payment due within year.

** Derivatives were presented at the net amount between cash inflow and cash outflow.

As at 31 December 2021, the Company has commitments from the guarantees of debentures and loans of its subsidiaries as disclosed in Note 36.3, the maturity date of obligations follows the maturity of loan agreements, debentures and loans of subsidiaries.

b) Financing arrangements

The Group manages its liquidity risks by preparing cash flow forecasts and adjusting financial forecasts on a regular basis, entering into financing program, issuing short-term debt securities in order to access Thailand's capital market, as well as entering into credit facilities with financial institutions with the interest rate agreed in advance.

As at 31 December 2021 and 2020, the outstanding principal amount and undrawn facilities are summarised below.

	Consolidated financial statements			
	Unit: Million US Dollar		Unit: Million Baht	
	Undrawn		Undrawn	
	Credit limit	amount	Credit limit	amount
2021				
Committed credit facility	580	580	19,368	19,368
Uncommitted credit facility	374	374	12,504	12,504

	Consolidated financial statements			
	Unit: Million US Dollar		Unit: Million Baht	
	Undrawn		Undrawn	
	Credit limit	amount	Credit limit	amount
2020				
Committed credit facility	600	600	18,015	18,015
Uncommitted credit facility	423	423	12,718	12,718

	Separate financial statements			
	Unit: Million US Dollar		Unit: Million Baht	
	Undrawn		Undrawn	
	Credit limit	amount	Credit limit	amount
2021				
Committed credit facility	180	180	6,000	6,000
Uncommitted credit facility	373	373	12,451	12,451

	Separate financial statements			
	Unit: Million US Dollar		Unit: Million Baht	
	Credit limit	Undrawn amount	Credit limit	Undrawn amount
2020				
Committed credit facility	200	200	6,000	6,000
Uncommitted credit facility	422	422	12,664	12,664

Thai Baht credit facility is translated to US Dollar using the closing rate at the date respective statement of financial position.

The Company's International Credit Rating is comparable with the Sovereign Rating of Thailand and the National Credit Rating is at the AAA. As a result, the Company can access to the source of fund for the long-term loan at the interest rate approximate the market interest rate. For the years 2021 and 2020, the Company's credit ratings as assigned by prominent credit rating agencies are as follows:

	2021		2020	
	Foreign Currency	Domestic Currency	Foreign Currency	Domestic Currency
Rating Agency				
Moody's	Baa1	Baa1	Baa1	Baa1
Standard and Poor's	BBB+	BBB+	BBB+	BBB+
Fitch Ratings	BBB+	-	BBB+	-
TRIS Rating (National Rating)	-	AAA	-	AAA

6.2 Capital management

6.2.1 Risk management

Capital Risk Management

The Group manages capital to keep financial strength comparable with the leading companies in the same industry, alignment with the business strategy, economy, market positioning and finance cost as well as impact to the financial ratio and credit rating of the Company and providing the ultimate returns to shareholders and benefits to other stakeholders.

7 Derivatives and hedge accounting

Book value of derivatives as at 31 December 2021 and 2020 are disclosed in Note 10.

7.1 Classification of derivative financial instruments

Derivatives are only used for economic hedging purposes, not for speculative investments. The Group adopts hedge accounting for some derivatives which meet the condition of cash flow hedges instruments and determines the hedge ratio at 1:1 considering the relationship of the relevant transactions and risk factors between hedged items and hedging instruments. However, where derivatives do not meet the hedge accounting criteria, they are classified as 'held for trading' for accounting purposes and are accounted for at fair value through profit or loss.

The fair value of a hedging derivative is presented as current or non-current following the maturity of related hedged items.

7.2 Hedge effectiveness

Hedge effectiveness is determined at the inception of the hedge relationship, and through periodic effectiveness assessments, to ensure that an economic relationship exists between the hedged items and hedging instruments.

Foreign exchange risk

For cross currency and interest rate swap, the Group enters into hedging transaction where the critical terms of the hedging instrument match exactly with the terms of the hedged item. The Group therefore performs a qualitative assessment of effectiveness. If changes in circumstances affect the terms of the hedged item such that the critical terms no longer match exactly with the critical terms of the hedging instrument, the Group uses the hypothetical derivative method to assess effectiveness.

In hedging of foreign currency on cross currency and interest rate swap, ineffectiveness may arise if there are changes in the credit risk of the derivative counterparty, a reduction in value of the hedged items, or a significant change in components of cross currency and interest rate swap.

Interest rate risk

The Group enters into interest rate collar (zero cost collar) that have similar critical terms as the hedged item, such as reference rate, payment dates, maturities and notional amount. The Group does not hedge 100% of its loans, therefore the hedged item is identified as a proportion of the outstanding loans up to the notional amount of the interest rate collar (zero cost collar). Because, during the year, all critical terms of the hedging instruments and hedged items are matched, it considered as hedging of economic relationship.

Hedge ineffectiveness for interest rate collar (zero cost collar) is assessed using the same principles as for hedges of cross currency and interest rate swap. It may occur due to changes in the credit risk of the derivative counterparty, changes in critical terms between the interest rate collar (zero cost collar) and loans and potentially effects of the uncertainty caused by Interest rate benchmark (IBOR) reform.

7.3 Cash flow hedge reserve

Hedging reserve includes costs of hedging and cash flow hedge reserve. The cash flow hedge reserve is used to recognise the effective portion of gains or losses on changes in fair value of derivatives that are qualified for hedge accounting.

The Group has hedging reserve presented in other comprehensive income comprising financial instruments as follows:

	Consolidated financial statements							
	Unit: Million US Dollar				Unit: Million Baht			
	Cost of hedging reserve	Spot component of currency forwards	Intrinsic value of option	Total	Cost of hedging reserve	Spot component of currency forwards	Intrinsic value of option	Total
As at 1 January 2021	8	(9)	-	(1)	340	(245)	-	95
Changes in fair value of hedging instruments recognised in OCI	-	(94)	2	(92)	-	(2,874)	47	(2,827)
Costs of hedging deferred and recognised in OCI	3	-	-	3	106	-	-	106
Reclassified from OCI to profit or loss								
- Gain on foreign exchange rate	-	89	-	89	-	2,738	-	2,738
Deferred tax	(1)	1	-	-	(21)	27	(9)	(3)
As at 31 December 2021	10	(13)	2	(1)	425	(354)	38	109

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	Consolidated financial statements							
	Unit: Million US Dollar				Unit: Million Baht			
	Cost of hedging reserve	Spot component of currency forwards	Intrinsic value of option	Total	Cost of hedging reserve	Spot component of currency forwards	Intrinsic value of option	Total
As at 1 January 2020	19	10	-	29	707	375	-	1,082
Changes in fair value of hedging instruments recognised in OCI	-	(21)	-	(21)	-	(667)	-	(667)
Costs of hedging deferred and recognised in OCI	(14)	-	-	(14)	(458)	-	-	(458)
Reclassified from OCI to profit or loss								
- Loss on foreign exchange rate	-	(3)	-	(3)	-	(108)	-	(108)
Deferred tax	3	5	-	8	91	155	-	246
As at 31 December 2020	8	(9)	-	(1)	340	(245)	-	95

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	Separate financial statements					
	Unit: Million US Dollar			Unit: Million Baht		
	Cost of hedging reserve	Spot component of currency forwards	Total	Cost of hedging reserve	Spot component of currency forwards	Total
As at 1 January 2021	8	(6)	2	270	(165)	105
Changes in fair value of hedging instruments recognised in OCI	-	(46)	(46)	-	(1,509)	(1,509)
Costs of hedging deferred and recognised in OCI	4	-	4	135	-	135
Reclassified from OCI to profit or loss						
- Gain on foreign exchange rate	-	39	39	-	1,274	1,274
Deferred tax	(1)	2	1	(27)	47	20
As at 31 December 2021	11	(11)	-	378	(353)	25

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	Separate financial statements					
	Unit: Million US Dollar			Unit: Million Baht		
	Cost of hedging reserve	Spot component of currency forwards	Total	Cost of hedging reserve	Spot component of currency forwards	Total
As at 1 January 2020	18	10	28	572	350	922
Changes in fair value of hedging instruments recognised in OCI	-	(19)	(19)	-	(596)	(596)
Costs of hedging deferred and recognised in OCI	(12)	-	(12)	(378)	-	(378)
Reclassified from OCI to profit or loss						
- Loss on foreign exchange rate	-	(1)	(1)	-	(47)	(47)
Deferred tax	2	4	6	76	128	204
As at 31 December 2020	8	(6)	2	270	(165)	105

7.4 Amounts recognised in profit or loss

In addition to the amounts reclassified from hedge reserve as disclosed in Note 7.3, the following amounts recognised in profit or loss relating to derivatives:

	Consolidated financial statements	
	Unit: Million US Dollar	
	2021	2020
For the year ended 31 December		

Net gain (loss) on derivatives that do not qualify for hedge accounting, presented in gain (loss) on revaluation of financial instruments	(241)	117
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	Consolidated financial statements	
	Unit: Million Baht	
	2021	2020
For the year ended 31 December		

Net gain (loss) on derivatives that do not qualify for hedge accounting, presented in gain (loss) on revaluation of financial instruments	(7,471)	3,759
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	Separate financial statements	
	Unit: Million US Dollar	
	2021	2020
For the year ended 31 December		

Net gain (loss) on derivatives that do not qualify for hedge accounting, presented in gain (loss) on revaluation of financial instruments	28	(14)
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	Separate financial statements	
	Unit: Million Baht	
	2021	2020
For the year ended 31 December		

Net gain (loss) on derivatives that do not qualify for hedge accounting, presented in gain (loss) on revaluation of financial instruments	907	(444)
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8 Critical accounting estimates and judgements

Estimates and judgements are continually evaluated and are based on historical experience and other factors, including expectations of future events that are believed to be reasonable under the circumstances.

8.1 Impairment of assets and goodwill

In assessing the impairment of assets and goodwill the Group estimates using the discounted future cash flows which are based on management's key assumptions in relation to selling price using the future oil price, estimated future production volume based on a proved and probable reserves and gross margin rate. These assumptions are based on management's judgment and past experience as well as the future prediction that is believed to be reasonable in the present situation. Changes in the information or new noticeable information may lead to the change in the assumptions and the discount rate for the estimation of the discounted future cash flows. The assumption of selling price is determined from the short-term oil price based on forward oil price curve and long-term oil price based on demand and supply of oil in the world market.

8.2 Estimation related to the fair values of net identifiable assets from business acquisition

In assessing the fair value of property, plant and equipment and exploration and evaluation assets on acquisition date, the Group estimates using the discounted future cash flows applying uncertain estimated information including management's key assumptions which mainly comprise discount rate, selling price using the future oil price, estimated future production volume and estimated expenditure.

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9 Segment and revenue information

	Consolidated financial statements									
	Unit: Million US Dollar									
	Exploration and production							Others	Intercompany elimination	Total
	Southeast Asia		Other							
For the year ended 31 December 2021	Thailand	Southeast Asia	Middle East	Australia	America	Africa	Others			
Revenues - Third parties	231	926	702	-	2	-	47	63	-	1,971
- Related parties	4,074	844	127	-	-	58	-	-	(250)	4,853
Other income	35	81	-	-	-	-	-	119	(119)	116
Gain from a bargain purchase	-	-	342	-	-	-	-	-	-	342
Interest income	-	1	-	-	-	9	-	-	-	10
Total revenues	4,340	1,852	1,171	-	2	67	47	182	(369)	7,292
Operating expenses	454	512	84	-	1	13	13	53	(269)	861
Exploration expenses	-	59	9	(11)	168	1	-	-	-	226
Administrative expenses	43	58	13	2	7	16	-	91	(101)	129
Petroleum royalties	501	29	-	-	-	-	-	-	-	530
Depreciation, depletion and amortisation	1,339	550	237	-	-	23	15	9	(4)	2,169
Loss on foreign exchange rates	38	14	-	-	1	-	-	-	-	53
Finance costs	54	26	4	-	-	1	-	-	-	85
Share of (profit) loss of associates and joint ventures	-	-	(1)	4	-	-	-	(18)	-	(15)
Impairment loss on assets	-	20	-	-	-	163	-	-	-	183
Total expenses	2,429	1,268	346	(5)	177	217	28	135	(374)	4,221
Segment profit (loss)	1,911	584	825	5	(175)	(150)	19	47	5	3,071
Depreciation - general										(33)
Administrative expenses										(226)
Operating profit										2,812
Other income, net										15
Interest income										7
Finance costs										(117)
Gain on foreign exchange rates										15
Loss on remeasuring financial instruments										(234)
Profit before income taxes										2,498
Income tax - Project	(691)	(228)	(399)	-	-	3	(6)	(10)		(1,331)
- Group										44
Net profit (loss)	1,220	356	426	5	(175)	(147)	13	37		1,211

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	Consolidated financial statements									
	Unit: Million Baht									
	Exploration and production							Others	Intercompany elimination	Total
	Southeast Asia		Other							
For the year ended 31 December 2021	Thailand	Southeast Asia	Middle East	Australia	America	Africa	Others			
Revenues - Third parties	7,393	29,893	22,661	-	68	-	1,522	2,027	-	63,564
- Related parties	130,461	26,992	4,217	-	-	1,848	-	-	(8,014)	155,504
Other income	1,103	2,704	8	2	2	-	-	3,815	(3,797)	3,837
Gain from a bargain purchase	-	-	10,694	-	-	-	-	-	-	10,694
Interest income	2	30	1	-	1	290	-	-	-	324
Total revenues	138,959	59,619	37,581	2	71	2,138	1,522	5,842	(11,811)	233,923
Operating expenses	14,600	16,459	2,698	-	33	402	407	1,728	(8,603)	27,724
Exploration expenses	4	1,930	276	(366)	5,222	44	-	-	-	7,110
Administrative expenses	1,380	1,865	496	41	234	531	6	2,858	(3,245)	4,166
Petroleum royalties	16,052	938	-	-	5	-	-	-	-	16,995
Depreciation, depletion and amortisation	42,617	17,604	7,614	2	4	727	484	285	(115)	69,222
(Gain) loss on foreign exchange rates	1,242	446	-	5	9	(3)	-	5	-	1,704
Finance costs	1,736	802	132	-	1	35	6	2	(10)	2,704
Share of (profit) loss of associates and joint ventures	-	-	(25)	142	-	-	-	(606)	-	(489)
Impairment loss on assets	-	671	-	-	-	5,471	-	-	-	6,142
Total expenses	77,631	40,715	11,191	(176)	5,508	7,207	903	4,272	(11,973)	135,278
Segment profit (loss)	61,328	18,904	26,390	178	(5,437)	(5,069)	619	1,570	162	98,645
Depreciation - general										(1,072)
Administrative expenses										(7,250)
Operating profit										90,323
Other income, net										501
Interest income										208
Finance costs										(3,768)
Gain on foreign exchange rates										391
Loss on remeasuring financial instruments										(7,263)
Profit before income taxes										80,392
Income tax - Project	(22,204)	(7,324)	(13,012)	-	(5)	95	(191)	(317)		(42,958)
- Group										1,430
Net profit (loss)	39,124	11,580	13,378	178	(5,442)	(4,974)	428	1,253		38,864

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For the year ended 31 December 2021

	Consolidated financial statements								
	Unit: Million US Dollar								
	Exploration and production							Others	Total
	Southeast Asia								
		Other							
As at 31 December 2021	Thailand	Southeast Asia	Middle East	Australia	America	Africa	Others		
Segment assets	5,859	6,180	3,477	305	166	4,061	227	111	20,386
Investments under equity method	-	-	48	-	-	-	-	383	431
Unallocated assets									2,628
Total assets									23,445
Segment liabilities	4,039	1,826	641	2	7	620	72	48	7,255
Unallocated liabilities									3,762
Total liabilities									11,017
Capital expenditures	1,149	542	2,658	-	34	355	4	80	4,822

	Consolidated financial statements								
	Unit: Million Baht								
	Exploration and production							Others	Total
	Southeast Asia								
		Other							
As at 31 December 2021	Thailand	Southeast Asia	Middle East	Australia	America	Africa	Others		
Segment assets	195,806	206,531	116,192	10,186	5,562	135,702	7,578	3,726	681,283
Investments under equity method	-	-	1,590	-	-	-	-	12,818	14,408
Unallocated assets									87,845
Total assets									783,536
Segment liabilities	135,001	61,010	21,416	64	228	20,734	2,408	1,594	242,455
Unallocated liabilities									125,731
Total liabilities									368,186
Capital expenditures	36,688	17,290	82,415	-	1,098	11,340	142	2,547	151,520

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	Consolidated financial statements										
	Unit: Million US Dollar										
	Exploration and production							Others	Intercompany elimination	Total	
	Southeast Asia		Other	Middle East	Australia	America	Africa	Others			
For the year ended 31 December 2020	Thailand	Southeast Asia									
Revenues - Third parties	251	735		200	-	1	-	26	32	-	1,245
- Related parties	3,291	821		-	-	-	43	-	-	(264)	3,891
Other income	18	1		-	-	-	-	-	113	(105)	27
Interest income	-	3		-	-	-	7	-	-	-	10
Total revenues	3,560	1,560		200	-	1	50	26	145	(369)	5,173
Operating expenses	461	514		49	-	1	9	10	30	(279)	795
Exploration expenses	5	54		10	27	6	2	-	-	-	104
Administrative expenses	32	62		10	1	5	17	3	89	(90)	129
Petroleum royalties	408	2		-	-	-	-	-	-	-	410
Depreciation, depletion and amortisation	1,392	541		72	-	-	30	16	9	(3)	2,057
(Gain) loss on foreign exchange rates	(18)	(2)		-	-	2	-	-	-	-	(18)
Finance costs	92	34		3	-	-	1	-	-	-	130
Share of (profit) loss of associates and joint ventures	-	-		3	-	-	-	-	(45)	-	(42)
Impairment loss on assets	4	44		-	-	44	-	-	-	-	92
Total expenses	2,376	1,249		147	28	58	59	29	83	(372)	3,657
Segment profit (loss)	1,184	311		53	(28)	(57)	(9)	(3)	62	3	1,516
Depreciation - general											(29)
Administrative expenses											(185)
Operating profit											1,302
Other income, net											10
Interest income											27
Finance costs											(125)
Gain on foreign exchange rates											8
Gain on remeasuring financial instruments											99
Gain on debt modification											22
Other expenses											(20)
Profit before income taxes											1,323
Income tax - Project	(385)	(166)		(66)	-	-	32	1	(7)		(591)
- Group											(12)
Net profit (loss)	799	145		(13)	(28)	(57)	23	(2)	55		720

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	Consolidated financial statements									
	Unit: Million Baht									
	Exploration and production							Others	Intercompany elimination	Total
	Southeast Asia		Other							
For the year ended 31 December 2020	Thailand	Southeast Asia	Middle East	Australia	America	Africa	Others			
Revenues - Third parties	7,847	22,943	6,220	-	43	-	813	992	-	38,858
- Related parties	102,732	25,734	-	-	-	1,344	-	-	(8,268)	121,542
Other income	570	17	1	2	2	1	-	3,524	(3,266)	851
Interest income	8	97	5	-	1	201	2	1	(1)	314
Total revenues	111,157	48,791	6,226	2	46	1,546	815	4,517	(11,535)	161,565
Operating expenses	14,431	16,073	1,523	-	35	294	315	912	(8,727)	24,856
Exploration expenses	166	1,685	327	822	182	57	-	-	-	3,239
Administrative expenses	995	1,938	318	32	166	525	82	2,773	(2,809)	4,020
Petroleum royalties	12,742	51	-	-	5	-	-	-	-	12,798
Depreciation, depletion and amortisation	43,526	16,926	2,234	2	8	936	509	275	(84)	64,332
(Gain) loss on foreign exchange rates	(546)	(46)	-	(8)	49	(1)	2	13	-	(537)
Finance costs	2,870	1,066	86	-	2	31	8	4	(11)	4,056
Share of (profit) loss of associates and joint ventures	-	-	59	-	-	-	-	(1,366)	-	(1,307)
Impairment loss on assets	120	1,326	-	-	1,361	-	-	-	-	2,807
Total expenses	74,304	39,019	4,547	848	1,808	1,842	916	2,611	(11,631)	114,264
Segment profit (loss)	36,853	9,772	1,679	(846)	(1,762)	(296)	(101)	1,906	96	47,301
Depreciation - general										(917)
Administrative expenses										(5,734)
Operating profit										40,650
Other income, net										305
Interest income										836
Finance costs										(3,900)
Gain on foreign exchange rates										281
Gain on remeasuring financial instruments										3,213
Gain on debt modification										680
Other expenses										(637)
Profit before income taxes										41,428
Income tax - Project	(11,949)	(5,186)	(2,046)	-	(1)	967	33	(220)		(18,402)
- Group										(362)
Net profit (loss)	24,904	4,586	(367)	(846)	(1,763)	671	(68)	1,686		22,664

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	Consolidated financial statements								
	Unit: Million US Dollar								
	Exploration and production							Others	Total
	Southeast Asia								
		Other							
As at 31 December 2020	Thailand	Southeast Asia	Middle East	Australia	America	Africa	Others		
Segment assets	6,266	6,120	727	308	293	3,863	217	102	17,896
Investments under equity method	-	-	63	5	-	-	-	382	450
Unallocated assets									4,147
Total assets									22,493
Segment liabilities	4,051	1,814	377	15	7	591	66	56	6,977
Unallocated liabilities									3,717
Total liabilities									10,694
Capital expenditures	875	352	104	-	18	236	5	45	1,635

	Consolidated financial statements								
	Unit: Million Baht								
	Exploration and production							Others	Total
	Southeast Asia								
		Other							
As at 31 December 2020	Thailand	Southeast Asia	Middle East	Australia	America	Africa	Others		
Segment assets	188,213	183,832	21,834	9,248	8,807	116,030	6,527	3,070	537,561
Investments under equity method	-	-	1,905	149	-	-	-	11,469	13,523
Unallocated assets									124,553
Total assets									675,637
Segment liabilities	121,663	54,489	11,331	452	222	17,744	1,975	1,695	209,571
Unallocated liabilities									111,655
Total liabilities									321,226
Capital expenditures	27,377	11,005	3,236	-	576	7,376	162	1,407	51,139

From 1 January 2021, the Group has presented the additional reportable operating segments in accordance with the relevant financial reporting standards. The Group is organised into the following business segments:

- Exploration and production: The Group operates in oil and gas exploration and production both domestically and overseas, either as an operator or as a joint venture partner with international oil and gas companies. Most domestic projects are located in the Gulf of Thailand. Overseas projects are located in Southeast Asia, Middle East, Australia, America, Africa and Others.
- The Group's other operations consist mainly of investments in related business associated with the Group's strategy, and other operations. These do not constitute a separately reportable segment.

The segment information for the year 2020 included in the financial statements has been adjusted retrospectively for comparative purposes.

For the year ended 31 December 2021, the Group has one major customer from revenues under the exploration and production segment, representing 70% of total revenues from sales. The mentioned revenue is presented in Note 15 (a) under the topic transactions with parent company (For the year ended 31 December 2020, the Group has one major customer from revenues under the exploration and production segment, representing 76% of total revenues from sales. The mentioned revenues is presented in Note 15 (a) under the topic transactions with parent company).

10 Fair value

10.1 Fair value estimation

The following tables present financial assets and liabilities recognised by their fair value hierarchy.

Consolidated financial statements							
Unit: Million US Dollar							
Level 1		Level 2		Level 3		Total	
31 December 2021	31 December 2020	31 December 2021	31 December 2020	31 December 2021	31 December 2020	31 December 2021	31 December 2020
Assets							
Financial derivatives assets							
Derivatives assets used for hedging							
- Cross currency and interest rate swap	-	-	49	-	-	-	49
- Interest rate collar (zero cost collar)	-	1	-	-	-	1	-
Derivatives assets measured at fair value through profit or loss							
- Oil price hedge	-	9	4	-	-	9	4
- Forward foreign exchange contracts	-	7	-	-	-	7	-
Other financial assets							
Financial assets measured at fair value through other comprehensive income							
- Investment in equity instruments	1	1	-	-	-	1	1
Other non-current assets							
Assets measured at fair value through profit or loss							
- Pension scheme investments from joint operation	61	55	-	-	-	61	55
Total assets	62	56	17	53	-	79	109

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	Consolidated financial statements							
	Unit: Million US Dollar							
	Level 1		Level 2		Level 3		Total	
	31 December 2021	31 December 2020	31 December 2021	31 December 2020	31 December 2021	31 December 2020	31 December 2021	31 December 2020
Liabilities								
Financial derivatives liabilities								
Derivatives liabilities used for hedging								
- Cross currency and interest rate swap	-	-	41	-	-	-	41	-
- Interest rate collar (zero cost collar)	-	-	-	1	-	-	-	1
Derivatives liabilities measured at fair value through profit or loss								
- Oil price hedge	-	-	15	3	-	-	15	3
- Forward foreign exchange contracts	-	-	2	26	-	-	2	26
Other current liabilities								
Financial liabilities measured at fair value through profit or loss								
- Contingent considerations from business acquisition	-	-	-	-	1	2	1	2
- Contingent considerations from participating interest acquisition in joint venture	-	-	-	-	-	53	-	53
Other non-current liabilities								
Financial liabilities measured at fair value through profit or loss								
- Contingent considerations from business acquisition	-	-	-	-	71	4	71	4
Total liabilities	-	-	58	30	72	59	130	89

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Consolidated financial statements							
Unit: Million Baht							
Level 1		Level 2		Level 3		Total	
31 December 2021	31 December 2020	31 December 2021	31 December 2020	31 December 2021	31 December 2020	31 December 2021	31 December 2020
Assets							
Financial derivatives assets							
Derivatives assets used for hedging							
- Cross currency and interest rate swap	-	-	-	1,473	-	-	1,473
- Interest rate collar (zero cost collar)	-	-	28	-	-	28	-
Derivatives assets measured at fair value through profit or loss							
- Oil price hedge	-	-	304	131	-	-	304
- Forward foreign exchange contracts	-	-	245	-	-	-	245
Other financial assets							
Financial assets measured at fair value through profit or loss							
- Investment in debt instruments	6	6	-	-	-	-	6
Financial assets measured at fair value through other comprehensive income							
- Investment in equity instruments	21	16	-	-	1	1	22
Other non-current assets							
Assets measured at fair value through profit or loss							
- Pension scheme investments from joint operation	2,048	1,648	-	-	-	-	2,048
Total assets	2,075	1,670	577	1,604	1	1	3,275

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Consolidated financial statements							
Unit: Million Baht							
Level 1		Level 2		Level 3		Total	
31 December 2021	31 December 2020	31 December 2021	31 December 2020	31 December 2021	31 December 2020	31 December 2021	31 December 2020
Liabilities							
Financial derivatives liabilities							
Derivatives liabilities used for hedging							
- Cross currency and interest rate swap	-	-	1,379	-	-	1,379	-
- Interest rate collar (zero cost collar)	-	-	-	20	-	-	20
Derivatives liabilities measured at fair value through profit or loss							
- Oil price hedge	-	-	493	103	-	493	103
- Forward foreign exchange contracts	-	-	54	788	-	54	788
Other current liabilities							
Financial liabilities measured at fair value through profit or loss							
- Contingent considerations from business acquisition	-	-	-	-	32	60	60
- Contingent considerations from participating interest acquisition in joint venture	-	-	-	-	-	1,601	1,601
Other non-current liabilities							
Financial liabilities measured at fair value through profit or loss							
- Contingent considerations from business acquisition	-	-	-	-	2,380	109	109
Total liabilities	-	-	1,926	911	2,412	1,770	2,681

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Separate financial statements							
Unit: Million US Dollar							
Level 1		Level 2		Level 3		Total	
31 December 2021	31 December 2020	31 December 2021	31 December 2020	31 December 2021	31 December 2020	31 December 2021	31 December 2020
Assets							
Financial derivatives assets							
Derivatives assets used for hedging							
- Cross currency and interest rate swap	-	-	34	-	-	-	34
Derivatives assets measured at fair value through profit or loss							
- Forward foreign exchange contracts	-	6	-	-	-	6	-
Total assets	-	6	34	-	-	6	34
Liabilities							
Financial derivatives liabilities							
Derivatives liabilities used for hedging							
- Cross currency and interest rate swap	-	8	-	-	-	8	-
Derivatives liabilities measured at fair value through profit or loss							
- Forward foreign exchange contracts	-	1	23	-	-	1	23
Total liabilities	-	9	23	-	-	9	23

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	Separate financial statements							
	Unit: Million Baht							
	Level 1		Level 2		Level 3		Total	
	31 December 2021	31 December 2020	31 December 2021	31 December 2020	31 December 2021	31 December 2020	31 December 2021	31 December 2020
Assets								
Financial derivatives assets								
Derivatives assets used for hedging								
- Cross currency and interest rate swap	-	-	-	1,007	-	-	-	1,007
Derivatives assets measured at fair value through profit or loss								
- Forward foreign exchange contracts	-	-	211	-	-	-	211	-
Other financial assets								
Financial assets measured at fair value through profit or loss								
- Investment in debt instruments	6	6	-	-	-	-	6	6
Financial assets measured at fair value through other comprehensive income								
- Investment in equity instruments	-	-	-	-	1	1	1	1
Total assets	6	6	211	1,007	1	1	218	1,014

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	Separate financial statements							
	Unit: Million Baht							
	Level 1		Level 2		Level 3		Total	
	31 December 2021	31 December 2020	31 December 2021	31 December 2020	31 December 2021	31 December 2020	31 December 2021	31 December 2020
Liabilities								
Financial derivatives liabilities								
Derivatives liabilities used for hedging								
- Cross currency and interest rate swap	-	-	281	-	-	-	281	-
Derivatives liabilities measured at fair value through profit or loss								
- Forward foreign exchange contracts	-	-	43	681	-	-	43	681
Total liabilities	-	-	324	681	-	-	324	681

The valuation of financial assets and financial liabilities fair value is based on accounting policy disclosed in Note 5.8 Financial assets and Note 5.19 Financial liabilities

Transfer between fair value hierarchy

The Group has no transaction transfer between Level 1, Level 2, and Level 3 of the fair value hierarchy during the year.

10.2 Fair value valuation techniques

Fair values are categorised into hierarchy based on inputs used as follows:

10.2.1 Valuation techniques used to derive level 1 fair values

The fair value of financial instruments is based on quoted prices of each asset or liability by reference of active markets.

10.2.2 Valuation techniques used to derive level 2 fair values

The fair value of financial instruments is determined using valuation techniques which significantly use observable data and, as little as possible, the Group specific estimates.

Valuation techniques used to derive level 2 fair values of financial derivative instruments are as follows:

- Oil price hedge comprises oil price swaps and options. The fair value of oil price swaps is assessed based on the price level which is calculated using the market price of future contracts. The fair value of oil price options is calculated using premium which requires various variable factors, such as the price level of swap, timing of exercise, and price volatility.
- The fair value of forward contracts, including forward foreign exchange contracts with resettable option, are calculated using forward foreign exchange rates that are quoted in an active market for the forward contract portion. The fair value of resettable option is assessed based on various variable factors, such as future forward foreign exchange rate, the market value of swap price, timing of exercise, and foreign exchange rate volatility.
- The fair value of cross currency and interest rate swaps including Memorandum of Understanding on Cross Currency Swap (MOU) in relation to interest rate adjustment with the financial institution, is calculated using forward interest rates derived from the yield curves in an observable interest market and forward foreign exchange rates that are quoted in an active market including assessing the possibilities of interest rate adjustment according to MOU.
- The fair value of interest rate collar which is zero cost collar (option) is assessed based on various variable factors, such as the market price level of swap, reference rate, timing of exercise, and price volatility.

10.2.3 Valuation techniques used to derive level 3 fair values

The fair value of financial instruments is measured using unobservable inputs in which the Group uses discounted cash flows method to derive level 3 fair value.

Changes in level 3 fair value of financial instruments for the year ended as at 31 December 2021 and 2020 are as follows:

	Consolidated financial statements			
	Unit: Million US Dollar			
	Contingent considerations from business acquisition	Contingent from participating interest acquisition in joint venture	Financial assets measured at fair value through comprehensive income	Total
Opening balance as at 1 January 2020	7	52	-	59
Decrease	(1)	-	-	(1)
Changes recognised in profit or loss	-	1	-	1
Closing balance as at 31 December 2020	6	53	-	59
Business acquisition	69	-	-	69
Decrease	(4)	(54)	-	(58)
Changes recognised in profit or loss	1	1	-	2
Closing balance as at 31 December 2021	72	-	-	72

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	Consolidated financial statements			
	Unit: Million Baht			
	Contingent considerations from business acquisition	Contingent from participating interest acquisition in joint venture	Financial assets measured at fair value through comprehensive income	Total
Opening balance as at 1 January 2020	214	1,564	-	1,778
Impact of adoption of TFRS 9	-	-	10	10
Decrease	(53)	-	-	(53)
Reclassification	-	-	(9)	(9)
Changes recognised in profit or loss	7	45	-	52
Currency translation differences	1	(8)	-	(7)
Closing balance as at 31 December 2020	169	1,601	1	1,771
Business acquisition	2,132	-	-	2,132
Decrease	(108)	(1,745)	-	(1,853)
Changes recognised in profit or loss	33	43	-	76
Currency translation differences	186	101	-	287
Closing balance as at 31 December 2021	2,412	-	1	2,413

	Separate financial statements
	Unit: Million US Dollar
	Financial assets measured at fair value through other comprehensive income
Opening balance as at 1 January 2020	-
Impact of adoption of TFRS 9	-
Changes recognised in other comprehensive income	-
Closing balance as at 31 December 2020	-
Changes recognised in other comprehensive income	-
Closing balance as at 31 December 2021	-

	Separate financial statements
	Unit: Million Baht
	Financial assets measured at fair value through other comprehensive income
Opening balance as at 1 January 2020	-
Impact of adoption of TFRS 9	1
Changes recognised in other comprehensive income	-
Currency translation differences	-
Closing balance as at 31 December 2020	1
Changes recognised in other comprehensive income	-
Closing balance as at 31 December 2021	1

The following table summarises the quantitative information about the significant unobservable inputs used in level 3 fair value measurements.

	Fair value				Unobservable inputs	Inputs	
	Unit: Million US Dollar		Unit: Million Baht			2021	2020
	2021	2020	2021	2020			
Contingent consideration							
in a business combination	72	6	2,412	169	Risk-adjusted discount rate	1.79% - 2.84%	2.71% - 2.84%

The following table presents the relationship of unobservable inputs to fair value:

	Unobservable input	Movement	Change in fair value	
			Increase in assumption	Decrease in assumption
			2021	2021
Contingent consideration in a business combination	Risk-adjusted discount rate	1.00%	Decrease by 1.11% - 3.91%	Increase by 1.14% - 4.08%

The Group's valuation processes

Significant unobservable input of fair value hierarchy level 3 is risk adjusted discount rate. It is estimated based on the Group's cost of debt and assumptions relating to possibilities in accordance to conditions as specified in sale and purchase agreement (SPA).

The fair value of investments in unquoted equity, classified as financial assets and measured at fair value through comprehensive income, were assessed based on business plan and market conditions. Management considers that the book value of the financial assets approximates their fair value.

The following figures presented fair value and book value of assets and financial liabilities for each category, but not include transaction which has a book value similar to fair value.

The details of fair values of long-term loans and long-term liabilities as at 31 December 2021 and 2020 calculated by using the discounted cash flow based on a discount rate of borrowing with similar terms are as follows:

	Consolidated financial statements							
	Unit: Million US Dollar				Unit: Million Baht			
	Book value		Fair value		Book value		Fair value	
	2021	2020	2021	2020	2021	2020	2021	2020
Unsecured and unsubordinated debentures	2,925	2,830	3,278	3,294	97,738	85,016	109,542	98,941
	Separate financial statements							
	Unit: Million US Dollar				Unit: Million Baht			
	Book value		Fair value		Book value		Fair value	
	2021	2020	2021	2020	2021	2020	2021	2020
Long-term loans to related parties	6,441	6,796	7,035	6,796	215,252	204,131	235,123	204,131
Unsecured and unsubordinated debentures	520	379	574	450	17,384	11,392	19,176	13,525

Book value of long-term loans to related parties and unsecured and unsubordinated debentures is measured at amortised cost.

The fair value of debentures in Thai Baht is calculated using the reference price in the secondary market of Thai Bond Market Association that are quoted in an active market and classified as level 2 fair value.

The fair value of debentures in US Dollar is calculated using the reference observable price in the secondary market of foreign bond that are quoted in an active market and classified as level 2 fair value.

The fair value of long-term loans to related parties is calculated by the discounted cash flow method using the reference discount rate in the market and classified as level 3 fair value.

The fair value of the following financial assets and liabilities approximates their book value.

The book value of long-term loans approximates their fair value, since their interest rates are close to market rate.

Consolidated financial statements	Separate financial statements
Financial assets	Financial assets
<ul style="list-style-type: none"> • Cash and cash equivalents • Short-term investments • Trade and other receivables • Other current assets • Long-term loans to related parties • Other non-current financial assets • Other non-current assets 	<ul style="list-style-type: none"> • Cash and cash equivalents • Short-term investments • Trade and other receivables • Short-term loans to related parties • Other current assets • Other non-current assets
Financial liabilities	Financial liabilities
<ul style="list-style-type: none"> • Trade and other payable • Lease liabilities • Other current liabilities • Long-term loans 	<ul style="list-style-type: none"> • Trade and other payable • Lease liabilities • Other current liabilities

Book value of the above financial assets and liabilities is measured at amortised cost.

11 Cash and cash equivalents

Cash and cash equivalents comprised:

	Consolidated financial statements			
	Unit: Million US Dollar		Unit: Million Baht	
	31 December	31 December	31 December	31 December
	2021	2020	2021	2020
Cash and bank deposits	1,756	1,223	58,681	36,725
Cash equivalents				
Fixed deposits with banks	803	2,443	26,841	73,396
Treasury bill with maturity not over than 3 months	-	38	-	1,131
Money market funds	-	-	6	5
Total cash and cash equivalents	2,559	3,704	85,528	111,257
	Separate financial statements			
	Unit: Million US Dollar		Unit: Million Baht	
	31 December	31 December	31 December	31 December
	2021	2020	2021	2020
Cash and bank deposits	298	289	9,968	8,683
Cash equivalents				
Fixed deposits with banks	490	830	16,376	24,931
Money market funds	-	-	6	5
Total cash and cash equivalents	788	1,119	26,350	33,619

12 Trade and other receivables

	Consolidated financial statements			
	Unit: Million US Dollar		Unit: Million Baht	
	31 December	31 December	31 December	31 December
	2021	2020	2021	2020
Trade receivables, net (Note 15)	796	572	26,613	17,186
Other receivables, net	204	219	6,817	6,566
Total trade and other receivables, net	1,000	791	33,430	23,752
	Separate financial statements			
	Unit: Million US Dollar		Unit: Million Baht	
	31 December	31 December	31 December	31 December
	2021	2020	2021	2020
Trade receivables, net (Note 15)	311	280	10,377	8,411
Other receivables, net	301	186	10,066	5,597
Total trade and other receivables, net	612	466	20,443	14,008

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Aging of trade receivables can be analysed as follows:

	Consolidated financial statements			
	Unit: Million US Dollar		Unit: Million Baht	
	31 December 2021	31 December 2020	31 December 2021	31 December 2020
Not yet due	769	538	25,726	16,168
Over due				
- Up to 3 months	-	4	-	108
- Over 3 months but not over 6 months	-	-	-	9
- Over 6 months but not over 12 months	-	-	-	-
- Over 12 months	28	31	920	934
	797	573	26,646	17,219
<u>Less</u> Loss allowance from impairment	(1)	(1)	(33)	(33)
Total	796	572	26,613	17,186

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	Separate financial statements			
	Unit: Million US Dollar		Unit: Million Baht	
	31 December 2021	31 December 2020	31 December 2021	31 December 2020
Not yet due	284	251	9,492	7,524
Over due				
- Up to 3 months	-	-	-	2
- Over 3 months but not over 6 months	-	-	-	1
- Over 6 months but not over 12 months	-	-	-	-
- Over 12 months	28	30	918	917
	312	281	10,410	8,444
<u>Less</u> Loss allowance from impairment	(1)	(1)	(33)	(33)
Total	311	280	10,377	8,411

Due to the short-term nature of the current receivables, their carrying amount is considered to be the same as their fair values.

13 Other current financial assets

Other current financial assets comprised investments in fixed income fund. The movements of other current financial assets for the year ended 31 December are as follows:

	Consolidated financial statements			
	Unit: Million US Dollar		Unit: Million Baht	
	2021	2020	2021	2020
Opening book value	-	214	-	6,444
Increase	368	423	11,771	13,230
Decrease	(367)	(622)	(11,724)	(19,450)
Loss from change in fair value	-	(1)	-	(26)
Foreign exchange differences	(1)	(14)	(47)	(438)
Currency translation differences	-	-	-	240
Closing book value	-	-	-	-
	Separate financial statements			
	Unit: Million US Dollar		Unit: Million Baht	
	2021	2020	2021	2020
Opening book value	-	-	-	6
Increase	-	50	-	1,564
Decrease	-	(50)	-	(1,570)
Closing book value	-	-	-	-

Other current financial assets above is financial assets at fair value through profit or loss (FVPL). The Group's exposure on credit risk is related to investment in debt measured at FVPL.

14 Inventories

	Consolidated financial statements			
	Unit: Million US Dollar		Unit: Million Baht	
	31 December	31 December	31 December	31 December
	2021	2020	2021	2020
Inventory	36	24	1,217	728
Materials and supplies	426	352	14,237	10,566
	462	376	15,454	11,294
<u>Less</u> Allowance for net realisable value	-	(1)	-	(26)
Allowance for slow moving and obsolete	(41)	(37)	(1,385)	(1,112)
	(41)	(38)	(1,385)	(1,138)
Total	421	338	14,069	10,156
	Separate financial statements			
	Unit: Million US Dollar		Unit: Million Baht	
	31 December	31 December	31 December	31 December
	2021	2020	2021	2020
Inventory	5	3	159	93
Materials and supplies	138	116	4,617	3,474
	143	119	4,776	3,567
<u>Less</u> Allowance for slow moving and obsolete	(23)	(19)	(762)	(577)
Total	120	100	4,014	2,990

15 Significant transactions with related parties

Enterprises or individuals that directly, or indirectly through one or more intermediaries, control, or are controlled by, or are under common control with, the Company, including holding companies, subsidiaries and fellow subsidiaries are related parties of the Company. Associates and individuals owning, directly or indirectly, an interest in the voting power of the Company that gives them significant influence over the enterprise, key management personnel, directors and close members of the family of these individuals and companies associated with these individuals also constitute related parties.

In considering each possible related party relationship, the Company's attention is directed to the substance of the relationship, and not merely the legal form.

PTT Public Company Limited, a company registered in Thailand, is the major shareholder of the Company held in proportion of 63.79% of the shareholding interest. General public held the remaining shares.

Other related parties include major shareholders, associates and joint ventures of the Company, which have control in other related parties.

The pricing policies for transactions between parent company, subsidiaries, associates, joint ventures, joint operations and related parties are as follows:

- Sales are set based on market price.
- Interest income is calculated using weighted average cost of debt plus profit markup.
- The prices of purchases and services charged are in accordance with the conditions in the agreement.
- Rental expenses are set based on price in the agreement.
- Other expenses comprise management and service fees charged to the parent company, subsidiaries and related parties for rendering the management services in the normal course of business. The fees are based on the service costs plus profit markup.

Significant transactions with related parties are summarised as follows:

a) Transactions with related parties

Transactions with related parties for the year ended 31 December are as follows:

	Consolidated financial statements			
	Unit: Million US Dollar		Unit: Million Baht	
	2021	2020	2021	2020
Parent company				
Revenue from sales	4,712	3,811	151,070	119,057
Other income	5	4	159	139
Purchase and other expenses	6	21	190	647
Subsidiaries, associates, joint ventures and joint operations				
Interest income	-	-	6	15
Other income	2	2	61	69
Dividend income	41	27	1,301	838
Rental and service expenses	49	46	1,552	1,427
Other related parties				
Revenue from sales	140	80	4,434	2,486
Other income	1	-	18	13
Purchase and other expenses	67	39	2,126	1,204
Interest income	1	2	31	72

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	Separate financial statements			
	Unit: Million US Dollar		Unit: Million Baht	
	2021	2020	2021	2020
Parent company				
Revenue from sales	3,115	2,588	99,763	80,825
Other income	2	2	69	63
Purchase and other expenses	5	20	148	619
Subsidiaries, associates, joint ventures and joint operations				
Interest income	367	239	11,719	7,496
Other income	2	2	71	78
Dividend income	72	29	2,293	905
Rental and service expenses	47	44	1,496	1,367
Other related parties				
Other income	1	-	18	11
Purchase and other expenses	33	22	1,053	677

b) Account receivable - related parties

Account receivable - related parties comprised:

	Consolidated financial statements			
	Unit: Million US Dollar		Unit: Million Baht	
	31 December 2021	31 December 2020	31 December 2021	31 December 2020
Parent company	503	424	16,817	12,747

	Separate financial statements			
	Unit: Million US Dollar		Unit: Million Baht	
	31 December 2021	31 December 2020	31 December 2021	31 December 2020
Parent company	310	279	10,353	8,385

c) **Short-term loans to related parties**

Short-term loans to related parties comprised:

	Separate financial statements			
	Unit: Million US Dollar		Unit: Million Baht	
	31 December 2021	31 December 2020	31 December 2021	31 December 2020
Subsidiary	527	78	17,622	2,352

The Company has provided loans to a subsidiary for the year ended 31 December 2021 with an interest rate of 0.05% per annum (2020: interest rate is 0.05% per annum).

d) **Long-term loans to related parties**

Long-term loans to related parties comprised:

	Consolidated financial statements			
	Unit: Million US Dollar		Unit: Million Baht	
	31 December 2021	31 December 2020	31 December 2021	31 December 2020
Associate	-	16	-	467
Other related party	42	59	1,387	1,784
	42	75	1,387	2,251

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	Separate financial statements			
	Unit: Million US Dollar		Unit: Million Baht	
	31 December	31 December	31 December	31 December
	2021	2020	2021	2020
Subsidiary	6,441	6,780	215,252	203,664
Associate	-	16	-	467
	6,441	6,796	215,252	204,131

The Company has provided loans to a subsidiary for the year ended 31 December 2021 with an interest rate of 5.48% per annum (2020: interest rate is 3.54% per annum). The borrower shall make the repayment notice within this loan term which is over than 1 year.

The Company has provided loans to an associate for the year ended 31 December 2021 with an interest rate of 2.40% - 2.50% per annum (2020: interest rate is 2.50% - 3.35% per annum).

The Group has provided loans to another related party for the year ended 31 December 2021 with an interest rate of 1.96% - 2.06% per annum (2020: interest rate is 2.17% - 3.71% per annum).

The movements of the long-term loans to related parties for the year are as follows:

	Consolidated		Separate	
	financial statements		financial statements	
	Unit: Million US Dollar	Unit: Million Baht	Unit: Million US Dollar	Unit: Million Baht
Balance as at 1 January 2021	75	2,251	6,796	204,131
Increase	-	-	-	-
Decrease	(33)	(1,059)	(355)	(11,329)
Foreign exchange differences	-	(9)	-	(9)
Currency translation differences	-	204	-	22,459
Balance as at 31 December 2021	42	1,387	6,441	215,252

Loans to related parties

Loans to related parties measured at amortised cost are considered to have low credit risk, and the expected credit loss in the following 12 months and lifetime expected credit losses of the loans from increasing in credit risk is insignificant.

e) Director and executive management fees

Director and executive management fees for the year ended 31 December are as follows:

	Consolidated financial statements			
	Unit: Million US Dollar		Unit: Million Baht	
	2021	2020	2021	2020
Short-term benefits	7	7	233	214
Post-employment and other long-term benefits	-	-	12	15
	7	7	245	229
	Separate financial statements			
	Unit: Million US Dollar		Unit: Million Baht	
	2021	2020	2021	2020
Short-term benefits	7	7	232	214
Post-employment and other long-term benefits	-	-	12	15
	7	7	244	229

16 Investments in subsidiaries, associates, joint ventures and joint operations

The amounts of investments recognised in the statement of financial position are as follows:

	Consolidated financial statements			
	Unit: Million US Dollar		Unit: Million Baht	
	31 December	31 December	31 December	31 December
	2021	2020	2021	2020
Investments in associates	221	217	7,382	6,514
Investments in joint ventures	210	233	7,026	7,009
Total	431	450	14,408	13,523
	Separate financial statements			
	Unit: Million US Dollar		Unit: Million Baht	
	31 December	31 December	31 December	31 December
	2021	2020	2021	2020
Investments in associates	2,485	1,082	83,041	32,511
Investments in joint ventures	26	26	855	768
Total	2,511	1,108	83,896	33,279

16.1 Investments in subsidiaries

Changes of investments in subsidiaries during the year are as follows:

	Separate financial statements			
	Unit: Million US Dollar		Unit: Million Baht	
	2021	2020	2021	2020
For the year ended 31 December				
Opening book value	1,082	924	32,511	27,874
Increase in investments	1,403	158	44,771	4,941
Currency translation differences	-	-	5,759	(304)
Closing book value	2,485	1,082	83,041	32,511

On 22 January 2021, PTTEP Energy Holding (Thailand) Company Limited (PTTEP EH), a subsidiary of the Company, increased its authorised share capital amounting to Baht 2,017 million by issuing 20.17 million new ordinary shares at a par value of Baht 100 each. The Company paid the share subscription according to the Company's shareholding portion with an amount equivalent to US Dollar 67.30 million.

On 29 March 2021, PTTEP HK Holding Limited (PTTEP HK), a subsidiary of the Company, increased its authorised share capital of Hong Kong Dollar (HK Dollar) 13,094.97 million by increasing its par value to be HK Dollar 1.47 million per share. The Company paid the share subscription according to the Company's shareholding portion with an amount equivalent to US Dollar 421.60 million.

On 27 May 2021, PTTEP EH increased its authorised share capital amounting to Baht 600 million by issuing 6 million new ordinary shares at a par value of Baht 100 each. The Company paid the share subscription according to the Company's shareholding portion with an amount equivalent to US Dollar 19.17 million.

On 28 June 2021, PTTEP EH increased its authorised share capital amounting to Baht 3,956 million by issuing 39.56 million new ordinary shares at a par value of Baht 100 each. The Company paid the share subscription according to the Company's shareholding portion with an amount equivalent to US Dollar 126.79 million.

On 17 August 2021, PTTEP HK increased its authorised share capital of Hong Kong Dollar (HK Dollar) 155.78 million by increasing its par value to be HK Dollar 1.48 million per share. The Company paid the share subscription according to the Company's shareholding portion with an amount equivalent to US Dollar 5 million.

On 3 September 2021, EP-Tech Ventures Holding Company Limited (EP-Tech) established Asia Power and Transportation SG Holding PTE. LTD. (APT) with a registered capital amount to US Dollar 0.05 million comprises 0.05 million ordinary shares at a par value of US Dollar 1 each. EP-Tech holds 100% interest in APT and paid-up all shares on 20 January 2022. The Group classifies the investment in APT as an investment in a subsidiary.

On 6 September 2021, APT, established Delta Gas Transportaion SG Holding PTE. LTD. (DGH) with a registered capital of US Dollar 0.05 million. The registered capital comprises 0.05 million ordinary shares at a par value of US Dollar 1 each. APT holds 100% interest in DGH and paid-up all shares on 20 January 2022. The Group classifies the investment in DGH as an investment in a subsidiary.

On 21 September 2021, ARV established Rovula (Thailand) Co., Ltd. (Rovula) with a registered capital of Baht 1 million. The registered capital comprises 0.1 million ordinary shares at a par value of Baht 10 each. ARV holds 100% interest in Rovula. Its registered shares were fully paid with an amount equivalent to US Dollar 0.03 million. The Group classifies the investment in Rovula as an investment in a subsidiary.

On 21 September 2021, ARV established Skyller Solutions Co., Ltd. (Skyller) with a registered capital of Baht 1 million. The registered capital comprises 0.1 million ordinary shares at a par value of Baht 10 each. ARV holds 100% interest in Skyller. Its registered shares were fully paid with an amount equivalent to US Dollar 0.03 million. The Group classifies the investment in Skyller as an investment in a subsidiary.

On 21 September 2021, ARV established Varuna (Thailand) Co., Ltd. (Varuna) with a registered capital of Baht 1 million. The registered capital comprises 0.1 million ordinary shares at a par value of Baht 10 each. ARV holds 100% interest in Varuna. Its registered shares were fully paid with an amount equivalent to US Dollar 0.03 million. The Group classifies the investment in Varuna as an investment in a subsidiary.

On 21 September 2021, ARV established Cariva (Thailand) Co., Ltd. (Cariva) with a registered capital of Baht 1 million. The registered capital comprises 0.1 million ordinary shares at a par value of Baht 10 each. ARV holds 100% interest in Cariva. Its registered shares were fully paid with an amount equivalent to US Dollar 0.03 million. The Group classifies the investment in Cariva as an investment in a subsidiary.

On 26 October 2021, DGH established Delta Gas Transportation Limited (DGT) with a registered capital of US Dollar 0.05 million. The registered capital comprises 0.05 million ordinary shares at a par value of US Dollar 1 each. DGH holds 100% interest in DGT and fully paid up shares on 20 January 2022. The Group classifies the investment in DGT as an investment in a subsidiary.

On 26 October 2021, EP-Tech established FutureTech Energy Ventures Co., Ltd. (FEV) with a registered capital of Baht 5 million. The registered capital comprises 0.05 million ordinary shares at a par value of Baht 100 each. EP-Tech holds 100% interest in FEV. Its registered shares were fully paid with an amount equivalent to US Dollar 0.15 million. The Group classifies the investment in FEV as an investment in a subsidiary.

On 27 October 2021, FEV established FutureTech Solar (Thailand) Co., Ltd. (FST) with a registered capital of Baht 1 million. The registered capital comprises 0.01 million ordinary shares at a par value of Baht 100 each. FEV holds 100% interest in FST. Its registered shares were fully paid with an amount equivalent to US Dollar 0.03 million. The Group classifies the investment in FST as an investment in a subsidiary.

On 22 November 2021, PTTEP EH increased its authorised share capital amounting to Baht 25,338.89 million by issuing 253.39 million new ordinary shares at a par value of Baht 100 each. The Company paid the share subscription according to the Company's shareholding portion with an amount equivalent to US Dollar 762.55 million.

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Details of investments in subsidiaries of the Company are as follows:

List of subsidiaries	Country of incorporation	Type of business	Separate financial statements (Cost method)							
			Participating interest (%)		Participating interest (%)		Unit: Million US Dollar		Unit: Million Baht	
			(including direct holding)		(including indirect holding)					
			31 December 2021	31 December 2021	31 December 2021	31 December 2020	31 December 2021	31 December 2020	31 December 2021	31 December 2020
PTTEP International Limited (PTTEPI)	Thailand	Petroleum	100	100	-	-	516	516	17,257	15,511
PTTEP Services Limited (PTTEP Services)	Thailand	Human resource support	25	25	75	75	-	-	3	2
PTTEP Siam Limited (PTTEPS)	Thailand	Petroleum	51	51	49	49	100	100	3,335	2,997
PTTEP Offshore Investment Company Limited (PTTEPO)	Cayman Islands	Petroleum	75	75	25	25	-	-	-	-
PTTEP HK Holding Limited (PTTEP HK)	Hong Kong	Petroleum	25	25	75	75	479	52	16,008	1,574
PTTEP Treasury Center Company Limited (PTTEP TC)	Thailand	Treasury center for the Group's business	25	25	75	75	-	-	2	2
PTTEP Energy Holding (Thailand) Company Limited (PTTEP EH)	Thailand	Petroleum	100	100	-	-	1,390	414	46,436	12,425

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List of subsidiaries	Country of incorporation	Type of business	Participating interest (%) (including indirect holding)	
			31 December 2021	31 December 2020
PTTEP Business Center Company Limited (PTTEP BC)	Thailand	Petroleum	100	100
PTTEP Energy Development Company Limited (PTTEP ED)	Thailand	Petroleum	100	100
EP-Tech Ventures Holding Company Limited (EP-Tech)	Thailand	Petroleum related Technology	100	100
AI and Robotics Ventures Company Limited (ARV)	Thailand	Technology	100	100
PTTEP Southwest Vietnam Company Limited (PTTEP SV)	Cayman Islands	Petroleum	100	100
PTTEP Kim Long Vietnam Company Limited (PTTEP KV)	Cayman Islands	Petroleum	100	100
PTTEP Hoang-Long Company Limited (PTTEP HL)	Cayman Islands	Petroleum	100	100
PTTEP Hoan-Vu Company Limited (PTTEP HV)	Cayman Islands	Petroleum	100	100
PTTEP Algeria Company Limited (PTTEP AG)	Cayman Islands	Petroleum	100	100
PTTEP Holding Company Limited (PTTEPH)	Cayman Islands	Petroleum	100	100
PTTEP Indonesia Company Limited (PTTEP ID)	Cayman Islands	Petroleum	100	100
PTTEP Africa Investment Limited (PTTEP AI)	Cayman Islands	Petroleum	100	100
PTTEP Australia Pty Ltd (PTTEP AU)	Commonwealth of Australia	Petroleum	100	100
PTTEP Australia Offshore Pty Ltd (PTTEP AO)	Commonwealth of Australia	Petroleum	100	100
PTTEP South Asia Limited (PTTEP SA)	Cayman Islands	Petroleum	100	100
PTTEP Semai II Limited (PTTEP SM) ¹	Cayman Islands	Petroleum	100	100
PTTEP Australia Perth Pty Ltd (PTTEP AP)	Commonwealth of Australia	Petroleum	100	100
PTTEP Australia Browse Basin Pty Ltd (PTTEP AB)	Commonwealth of Australia	Petroleum	100	100
PTTEP Australia Timor Sea Pty Ltd (PTTEP AT)	Commonwealth of Australia	Petroleum	100	100
PTTEP Australasia (Operations) Pty Ltd (PTTEP AAO)	Commonwealth of Australia	Petroleum	100	100
PTTEP Australasia (Ashmore Cartier) Pty Ltd (PTTEP AAA)	Commonwealth of Australia	Petroleum	100	100
PTTEP Australasia (Staff) Pty Ltd (PTTEP AAS)	Commonwealth of Australia	Petroleum	100	100

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List of subsidiaries	Country of incorporation	Type of business	Participating interest (%) (including indirect holding)	
			31 December 2021	31 December 2020
PTTEP International Holding Company Limited (PTTEP IH)	Cayman Islands	Petroleum	100	100
PTTEP Southwest Vietnam Pipeline Company Limited (PTTEP SVPC)	Cayman Islands	Gas pipeline transportation	100	100
PTTEP FLNG Holding Company Limited (PTTEP FH) ²	Hong Kong	Petroleum	100	100
PTTEP Netherland Holding Limited (PTTEP NL)	Cayman Islands	Petroleum	100	100
JV Marine Limited (JV Marine)	Cayman Islands	Petroleum	100	100
PTTEP South Mandar Limited (PTTEP SMD)	Cayman Islands	Petroleum	100	100
PTTEP South Sageri Limited (PTTEP SS)	Cayman Islands	Petroleum	100	100
PTTEP Sadang Limited (PTTEP SD) ³	Cayman Islands	Petroleum	100	100
PTTEP Malunda Limited (PTTEP ML)	Cayman Islands	Petroleum	100	100
PTTEP Netherlands Coöperatie U.A. (PTTEP NC)	Netherlands	Petroleum	100	100
PTTEP Canada Limited (PTTEP CA)	Canada	Petroleum	100	100
PTTEP Canada International Finance Limited (PTTEP CIF)	Canada	Investment funding for the Group's business	100	100
Cove Energy Limited (Cove)	United Kingdom of Great Britain and Northern Ireland	Petroleum	100	100
Cove Energy Mozambique Rovuma Onshore Limited (CEMROL) ⁴	Republic of Cyprus	Petroleum	-	100
Cove Energy East Africa Limited (CEEAL)	Republic of Cyprus	Petroleum	100	100
PTTEP Mozambique Area 1 Limited (PTTEP MZA1)	Republic of Cyprus	Petroleum	100	100
PTTEP Netherlands Holding Coöperatie U.A. (PTTEP NH)	Netherlands	Petroleum	100	100
PTTEP Brazil Investment B.V. (PTTEP BI)	Netherlands	Petroleum	100	100
PTTEP Brazil Investments in Oil and Gas Exploration and Production Limitada (PTTEP BL)	Federative Republic of Brazil	Petroleum	100	100
Sinphuhorm Holdings Limited (SHL)	Cayman Islands	Petroleum	100	100
PTTEP SP Limited (PTTEP SP)	United Kingdom of Great Britain and Northern Ireland	Petroleum	100	100
PTTEP G7 Limited (PTTEP G7)	Thailand	Petroleum	100	100
PTTEP HK Offshore Limited (PTTEP HKO)	Hong Kong	Petroleum	100	100
PTTEP MENA Limited (PTTEP MENA)	Hong Kong	Petroleum	100	100
PTTEP Mexico E&P Limited, S. de R.L. de C.V. (PTTEP MEP)	Mexico	Petroleum	100	100
PTTEP Sabah Oil Limited (PTTEP SBO)	Bahamas	Petroleum	100	100

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List of subsidiaries	Country of incorporation	Type of business	Participating interest (%) (including indirect holding)	
			31 December 2021	31 December 2020
PTTEP Sarawak Oil Limited (PTTEP SKO)	Bahamas	Petroleum	100	100
PTTEP Group Holding B.V. (PGH)	Netherlands	Petroleum	100	100
Partex Oil and Gas (Holdings) Corporation (POGHC) ⁵	Cayman Islands	Petroleum	-	100
PTTEP (Kazakhstan) Corporation (PKC)	Cayman Islands	Petroleum	100	100
PTTEP (Angola) Corporation (PANG)	Cayman Islands	Petroleum	100	100
Partex (Brazil) Corporation (PBC)	Cayman Islands	Petroleum	100	100
PTTEP Gas Corporation (PGC)	Republic of Panama	Petroleum	100	100
Partex Services Corporation (PSC)	Republic of Panama	Human resource support	100	100
Participations and Explorations Corporation (PEC)	Republic of Panama	Petroleum	100	100
PTTEP Oman E&P Corporation (POC) ⁶	Republic of Panama	Petroleum	100	100
Partex Services Portugal – Serviços para a Indústria Petrolífera, S.A. (PSP)	Portugal	Human resource support	100	100
Partex Brasil Ltda. (PBL) ⁷	Federative Republic of Brazil	Petroleum	-	100
Partex Brasil Operações Petrolíferas Ltda (PBO) ⁷	Federative Republic of Brazil	Human resource support	-	100
Asia Power and Transportation SG Holding PTE. LTD. (APT)	Singapore	Petroleum	100	-
Delta Gas Transportation SG Holding PTE. LTD. (DGH)	Singapore	Gas pipeline transportation	100	-
Delta Gas Transportation Limited (DGT)	Republic of the Union of Myanmar	Gas pipeline transportation	100	-
Rovula (Thailand) Co., Ltd. (Rovula)	Thailand	Technology	100	-
Skyller Solutions Co., Ltd. (Skyller)	Thailand	Technology	100	-
Varuna (Thailand) Co., Ltd. (Varuna)	Thailand	Technology	100	-
Cariva (Thailand) Co., Ltd. (Cariva)	Thailand	Technology	100	-
FutureTech Energy Ventures Co., Ltd. (FEV)	Thailand	Renewable energy and related new business	100	-
FutureTech Solar (Thailand) Co., Ltd. (FST)	Thailand	Solar power	100	-

- ¹ On 30 September 2021, PTTEP Semai II Company Limited (PTTEP SM), a subsidiary of the Group, received the approval for company dissolution from the registrar.
- ² On 30 June 2021, PTTEP FLNG Holding Company Limited (PTTEP FH), a subsidiary of the Group, has proceeded to dissolve the company. The dissolution will be effective after receiving the official announcement from the Hong Kong Government.
- ³ On 7 October 2021, PTTEP Sadang Limited (PTTEP SD), a subsidiary of the Group, received the approval for company dissolution from the registrar and is in the process of dissolution.
- ⁴ On 20 October 2021, Cove Energy Mozambique Rovuma Onshore Limited (CEMROL), a subsidiary of the Group, completed the dissolution and liquidation.
- ⁵ On 4 August 2021, Partex Oil and Gas (Holdings) Corporation (POGHC), a subsidiary of the Group, completed the dissolution and liquidation.
- ⁶ Held 5% interest in Gas Investments and Services Company Limited (GISCO). The Group classifies the investment in GISCO as an investment in an associate. As at 31 December 2021 and 2020, the book value is zero.
- ⁷ On 30 July 2021, Participations and Explorations Corporation (PEC) and Partex (Brazil) Corporation (PBC), subsidiaries of the Group, entered into a Sale and Purchase Agreement (SPA) to sell all shares of Partex Brasil Ltda. (PBL) and Partex Brasil Operações Petrolíferas Ltda. (PBO), which are registered in the Federative Republic of Brazil to Ubuntu Engenharia e Serviços Ltda. (Ubuntu). The sale was completed on 29 October 2021.

16.2 Investment in associates

Changes of investments in associates during the year are as follows:

For the year ended 31 December	Consolidated financial statements			
	Unit: Million US Dollar		Unit: Million Baht	
	2021	2020	2021	2020
Opening book value	217	228	6,514	6,864
Impact of adoption of TFRS 9	-	23	-	685
Share of net profit after income taxes	5	12	141	391
Dividends received	(4)	(3)	(119)	(90)
Share of other comprehensive income (expenses)				
- Remeasurement of employee benefits	-	-	2	(5)
- Measurement of financial assets	-	(44)	9	(1,390)
- Currency difference arising from translation of financial statements of associates	(9)	1	(267)	21
Increase in investments	12	-	391	-
Reclassification	-	-	-	9
Currency translation differences	-	-	711	29
Closing book value	221	217	7,382	6,514
For the year ended 31 December	Separate financial statements			
	Unit: Million US Dollar		Unit: Million Baht	
	2021	2020	2021	2020
Opening book value	26	26	768	771
Currency translation differences	-	-	87	(3)
Closing book value	26	26	855	768

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Details of investment in associates of the Group and the Company are as follows:

List of associates ^{1, 2}	Country of incorporation	Type of business	Consolidated financial statements (Equity method)					
			Participating interest (%) (including indirect holding)		Unit: Million US Dollar		Unit: Million Baht	
			31 December 2021	31 December 2020	31 December 2021	31 December 2020	31 December 2021	31 December 2020
Energy Complex Company Limited (Energy Complex)	Thailand	Property rental services	50	50	64	63	2,130	1,878
PTT Digital Solutions Company Limited (PTT Digital)	Thailand	Information technology and communication services	20	20	17	16	569	493
PTTEP AP Group's Associates ³	Commonwealth of Australia	Air base services	50	50	-	5	-	149
PTT Global LNG Company Limited (PTT GL)	Thailand	Petroleum	50	50	127	129	4,258	3,883
Leismer Aerodrome Limited (LAL)	Canada	Air transportation	32	32	-	4	-	111
MoZ LNG1 Holding Company Ltd (HoldCo)	United Arab Emirates	Petroleum	8.5	8.5	13	-	425	-

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List of associates ^{1, 2}	Country of incorporation	Type of business	Consolidated financial statements (Cost method)					
			Participating interest (%) (including indirect holding)		Unit: Million US Dollar		Unit: Million Baht	
			31 December 2021	31 December 2020	31 December 2021	31 December 2020	31 December 2021	31 December 2020
Energy Complex Company Limited (Energy Complex)	Thailand	Property rental services	50	50	25	25	829	745
PTT Digital Solutions Company Limited (PTT Digital)	Thailand	Information technology and communication services	20	20	1	1	26	24

¹ All investments in associates have been assessed as immaterial to the Group.

² The Group has no contingent liabilities with participating interest in investment in associates.

³ PTTEP AP's Group Associates are Mungalalu Truscott Airbase Pty Ltd and Troughton Island Pty Ltd.

Individually immaterial associates

The Group's immaterial associates accounted for using equity method are as follows:

	Unit: Million US Dollar		Unit: Million Baht	
	31 December 2021	31 December 2020	31 December 2021	31 December 2020
Aggregate carrying amount of share of individually immaterial associates	221	217	7,382	6,514
	Unit: Million US Dollar		Unit: Million Baht	
For the year ended 31 December	2021	2020	2021	2020
Aggregate amounts of the Group's share of associates:				
Profit from continuing operations	5	12	141	391
Other comprehensive income	(9)	(43)	(256)	(1,374)
Total comprehensive income for the year	(4)	(31)	(115)	(983)

On 2 February 2021, MoZ LNG1 Holding Company Ltd (HoldCo), an associate of the Group, increased its authorised share capital amounting to US Dollar 94 million by issuing of 94 million new ordinary shares at a par value of US Dollar 1 each. The Group paid the share subscription according to the Group's shareholding portion amounting to US Dollar 7.99 million.

On 6 May 2021, HoldCo increased its authorised share capital amounting to US Dollar 5 million by issuing of 5 million new ordinary shares at a par value of US Dollar 1 each. The Group paid the share subscription according to the Group's shareholding portion amounting to US Dollar 0.43 million.

On 4 August 2021, HoldCo increased its authorised share capital amounting to US Dollar 45 million by issuing 45 million new ordinary shares at a par value of Baht 1 each. The Group has paid-up shares in the Group's shareholding to US Dollar 3.83 million.

16.3 Investments in Joint Ventures

Changes of investments in Joint Ventures during the year are as follows:

For the year ended 31 December	Consolidated financial statements			
	Unit: Million US Dollar		Unit: Million Baht	
	2021	2020	2021	2020
Opening book value	233	225	7,009	6,796
Share of net profit after income taxes	11	29	347	916
Dividends received	(37)	(24)	(1,182)	(749)
Share of other comprehensive income				
- Currency differences arising from translation of financial statements of joint ventures	-	-	(1)	-
Increase in investments	3	3	104	98
Decrease in investment	-	-	-	(12)
Currency translation differences	-	-	749	(40)
Closing book value	210	233	7,026	7,009

On 11 January 2021, Zeaquest Company Limited (Zeaquest), a joint venture of the Group, increased its authorised share capital amounting to Baht 150 million by issuing of 1.5 million new ordinary shares at a par value of Baht 100 each. The Group paid the share subscription according to the Group's shareholding portion with an amount equivalent to US Dollar 2.54 million.

On 16 June 2021, ARV co-invested in AeroSky Solutions Co., Ltd. (AeroSky) with a registered capital of Baht 1 million. The registered capital comprises 0.01 million ordinary shares at a par value of Baht 100 each. ARV holds 33% interest in AeroSky and paid the share subscription at 25% of the registered shares with an amount equivalent to US Dollar 0.003 million. The Group classifies the investment in AeroSky as an investment in a joint venture.

On 9 July 2021, ATI Technologies Co., Ltd. (ATI), a joint venture of the Group, called for additional paid-up shares at the remaining 40% of its registered shares. The Group paid the share subscription according to the Group's shareholding portion with an amount equivalent to US Dollar 0.12 million.

On 2 September 2021, AeroSky, a joint venture of the Group, called for additional paid-up shares at the remaining 75% of its registered shares and increased its authorised share capital amounting to Baht 29 million. The registered capital comprises 0.29 million ordinary shares at a par value of Baht 100 each. The Group paid the share subscription according to the Group's shareholding portion with an amount equivalent to US Dollar 0.30 million.

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Details of investments in joint ventures of the Group are as follows:

List of joint ventures ^{1, 2}	Country of incorporation	Type of business	Participating interest (%)		Consolidated financial statements (Equity method)			
			(including indirect holding)		Unit: Million US Dollar		Unit: Million Baht	
			31 December 2021	31 December 2020	31 December 2021	31 December 2020	31 December 2021	31 December 2020
Erawan 2 FSO PTE. Ltd. ³ (Erawan 2 FSO PTE.)	Singapore	FSO rental services	13.11	13.11	37	41	1,238	1,236
APICO LLC (APICO)	United States of America	Petroleum	72.8215	72.8215	123	129	4,125	3,863
Oman LNG LLC (OLNG)	Sultanate of Oman	Petroleum	2	2	48	63	1,590	1,905
ATI Technologies Company Limited (ATI)	Thailand	Technology	50	50	-	-	5	5
Zeaquest Company Limited (Zeaquest)	Thailand	Technology	50	50	2	-	59	-
AeroSky Solutions Co., Ltd. (AeroSky)	Thailand	Technology	33	-	-	-	9	-

¹ All investments in joint ventures have been assessed as immaterial to the Group.

² The Group has no contingent liabilities with participating interest in investment in joint ventures.

³ Held 100% share capital in Asia PacificMarine Services (EF) B.V. and redomiciled from Bahamas to Singapore and changed its name to Erawan 2 FSO PTE. LTD. during the year 2021.

Individually immaterial joint ventures

The Group's immaterial joint ventures accounted for using equity method are as follows:

	Unit: Million US Dollar		Unit: Million Baht	
	31 December 2021	31 December 2020	31 December 2021	31 December 2020
Aggregate carrying amount of share of individually immaterial joint ventures	210	223	7,026	7,009
For the year ended 31 December	2021	2020	2021	2020
Aggregate amounts of the Group's share of joint ventures:				
Profit from continuing operations	11	29	347	916
Other comprehensive income	-	-	(1)	-
Total comprehensive income for the year	11	29	346	916

16.4 Investments in Joint Operations

Details of investments in joint operations of the Group are as follows:

List of joint operations	Country of incorporation	Type of business	Participating interest (%) (including indirect holding)	
			31 December 2021	31 December 2020
Carigali - PTTEPI Operating Company Sdn Bhd. (CPOC)	Malaysia	Petroleum	50	50
Moattama Gas Transportation Company (MGTC)	Bermuda	Gas pipeline transportation	25.5	25.5
Taninthayi Pipeline Company LLC (TPC)	Cayman Islands	Gas pipeline transportation	19.3178	19.3178
Orange Energy Limited (Orange)	Thailand	Petroleum	53.9496	53.9496
B8/32 Partners Limited (B8/32 Partners)	Thailand	Petroleum	25.0009	25.0009
Hoang-Long Joint Operating Company	Socialist Republic of Vietnam	Petroleum	28.5	28.5
Hoan-Vu Joint Operating Company	Socialist Republic of Vietnam	Petroleum	25	25
Groupement Bir Seba (GBRS)	People's Democratic Republic of Algeria	Petroleum	35	35
Andaman Transportation Limited (ATL)	Cayman Islands	Gas pipeline transportation	80	80
Natuna 2 B.V. (Natuna)	Netherlands	Petroleum	50	50
Petroleum Development Oman LLC (PDO)	Sultanate of Oman	Petroleum	2	2
Abu Dhabi Gas Industries Limited (AGP)	United Arab Emirates	Petroleum	2	2
Private Oil Holdings Oman Limited (POHOL)	United Kingdom of Great Britain and Northern Ireland	Petroleum	5	5
Petroleum Development Oman Services LLC (PDO-S) ¹	Sultanate of Oman	Petroleum	1.9998	-

¹ On 27 April 2021, Petroleum Development Oman LLC (PDO), a joint operation of the Group, co-established Petroleum Development Oman Services LLC (PDO-S) with a registered capital of Rial Omani 0.5 million. The registered capital comprises 0.5 million ordinary shares at a par value of Rial Omani 1 each. PDO holds 99.99% interest according to the Group's shareholding portion with an amount equivalent to US Dollar 0.03 million. The Group classifies the investment in PDO-S as an investment in a joint operation.

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Details of exploration and production projects operated by the Group are as follows:

Project	Country	Operator	Participating interest (%)	
			31 December 2021	31 December 2020
PTT Exploration and Production Public Company Limited				
Bongkot	Thailand	PTT Exploration and Production Public Company Limited	66.6667	66.6667
Arthit	Thailand	PTT Exploration and Production Public Company Limited	80	80
Contract 4 (B12/27)	Thailand	Chevron Thailand Exploration and Production, Ltd.	45	45
Sinphuhorm (E5 North)	Thailand	PTTEP SP Limited	20	20
S1	Thailand	PTTEP Siam Limited	25	25
Contract 3 (B10, B11, B12 and B13)	Thailand	Chevron Thailand Exploration and Production, Ltd.	5	5
E5	Thailand	ExxonMobil Exploration and Production Khorat Inc.	20	20
Algeria Hassi Bir Rekaiz ¹	People's Democratic Republic of Algeria	PTT Exploration and Production Public Company Limited	49	24.5
PTTEP International Limited (PTTEPI)				
Yadana	Republic of the Union of Myanmar	TotalEnergies EP Myanmar	25.5	25.5
Yetagun	Republic of the Union of Myanmar	Petronas Carigali Myanmar (Hong Kong) Ltd.	19.31784	19.31784
PTTEP 1	Thailand	PTTEP International Limited	100	100
G4/43	Thailand	Chevron Offshore (Thailand) Ltd.	21.375	21.375
G9/43	Thailand - Kingdom of Cambodia	PTTEP International Limited	100	100
L22/43	Thailand	PTTEP International Limited	100	100
L53/43 & L54/43	Thailand	PTTEP International Limited	100	100
G4/48	Thailand	Chevron Pattani, Ltd.	5	5
Bongkot (G12/48)	Thailand	PTTEP International Limited	66.6667	66.6667
Contract 4 (G7/50)	Thailand	Chevron Pattani, Ltd.	60	60

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Project	Country	Operator	Participating interest (%)	
			31 December 2021	31 December 2020
Arthit (G8/50)	Thailand	PTTEP International Limited	80	80
Zawtika	Republic of the Union of Myanmar	PTTEP International Limited	80	80
Myanmar M3 ²	Republic of the Union of Myanmar	PTTEP International Limited	100	80
Myanmar M11 ³	Republic of the Union of Myanmar	PTTEP International Limited	-	100
MTJDA	Thailand - Malaysia	Carigali-PTTEPI Operating Company Sdn Bhd.	50	50
PTTEP Offshore Investment Company Limited (PTTEPO)				
B8/32 & 9A ⁴	Thailand	Chevron Offshore (Thailand) Ltd.	25.001	25.001
PTTEP Southwest Vietnam Company Limited (PTTEP SV)				
Vietnam 52/97	Socialist Republic of Vietnam	Vietnam Oil and Gas Group	7	7
PTTEP Kim Long Vietnam Company Limited (PTTEP KV)				
Vietnam B & 48/95	Socialist Republic of Vietnam	Vietnam Oil and Gas Group	8.5	8.5
PTTEP Hoang-Long Company Limited (PTTEP HL)				
Vietnam 16-1	Socialist Republic of Vietnam	Hoang-Long Joint Operating Company	28.5	28.5
PTTEP Hoan-Vu Company Limited (PTTEP HV)				
Vietnam 9-2	Socialist Republic of Vietnam	Hoan-Vu Joint Operating Company	25	25
PTTEP Algeria Company Limited (PTTEP AG)				
Algeria 433A & 416B	People's Democratic Republic of Algeria	Groupement Bir Seba	35	35

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Project	Country	Operator	Participating interest (%)	
			31 December 2021	31 December 2020
PTTEP Siam Limited (PTTEPS)				
Sinphuhorm (EU-1)	Thailand	PTTEP SP Limited	20	20
B6/27	Thailand	PTTEP Siam Limited	100	100
S1	Thailand	PTTEP Siam Limited	75	75
PTTEP South Asia Limited (PTTEP SA)				
Myanmar MD-7 ⁵	Republic of the Union of Myanmar	PTTEP South Asia Limited	50	50
Myanmar MOGE 3 ⁶	Republic of the Union of Myanmar	PTTEP South Asia Limited	-	77.5
PTTEP Canada Limited (PTTEP CA)				
Mariana Oil Sands	Canada	PTTEP Canada Limited	100	100
PTTEP Australia Perth Pty Ltd (PTTEP AP)				
PTTEP Australasia*	Commonwealth of Australia			

* Details of operators and participating interests in PTTEP Australasia Project are as follows:

Block	Operator	Participating interest (%)	
		31 December 2021	31 December 2020
AC/RL7, AC/RL12 and AC/P54	PTTEP Australasia (Ashmore Cartier) Pty Ltd	100	100
AC/L3 ⁷	PTTEP Australasia (Ashmore Cartier) Pty Ltd	100	100
AC/RL10	PTTEP Australia Timor Sea Pty Ltd	90	90
AC/RL4 (Tenacious)	PTTEP Australia Timor Sea Pty Ltd	100	100
AC/RL6 (Audacious), AC/RL6 (exclusive of Audacious)	PTTEP Australia Timor Sea Pty Ltd	100	100
AC/RL4 (exclusive of Tenacious)	PTTEP Australia Timor Sea Pty Ltd	100	100

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Project	Country	Operator	Participating interest (%)	
			31 December 2021	31 December 2020
PTTEP Mozambique Area 1 Limited (PTTEP MZA1)				
Mozambique Area 1	Republic of Mozambique	TotalEnergies EP Mozambique Area 1 Limitada	8.5	8.5
Natuna 2 B.V. (Natuna)				
Natuna Sea A	Republic of Indonesia	Premier Oil Natuna Sea BV	11.5	11.5
PTTEP Brazil Investments in Oil and Gas Exploration and Production Limitada (PTTEP BL)				
Barreirinhas AP1	Federative Republic of Brazil	Shell Brasil Petroleo Ltda.	25	25
Brazil BM-ES-23	Federative Republic of Brazil	Petróleo Brasileiro S.A. (Petrobas)	20	20
PTTEP SP Limited (PTTEP SP)				
Contract 4 (B12/27)	Thailand	Chevron Thailand Exploration and Production, Ltd.	15	15
Sinphuhorm (E5 North and EU-1)	Thailand	PTTEP SP Limited	35	35
PTTEP HK Offshore Limited (PTTEP HKO)				
Sarawak SK 410B	Malaysia	PTTEP HK Offshore Limited	42.5	42.5
Sarawak SK 417	Malaysia	PTTEP HK Offshore Limited	80	80
Sarawak SK 438	Malaysia	PTTEP HK Offshore Limited	80	80
Peninsular PM 407	Malaysia	PTTEP HK Offshore Limited	55	55
Peninsular PM 415	Malaysia	PTTEP HK Offshore Limited	70	70
PTTEP Mexico E&P Limited, S. de R.L. de C.V. (PTTEP MEP)				
Mexico block 12 (2.4)	Mexico	PC Carigali Mexico Operations, S.A. de C.V.	20	20
Mexico block 29 (2.4)	Mexico	Repsol Exploración México, S.A. de C.V.	16.67	16.67

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Project	Country	Operator	Participating interest (%)	
			31 December	31 December
			2021	2020
PTTEP Energy Development Company Limited (PTTEP ED)				
G1/61	Thailand	PTTEP Energy Development Company Limited	60	60
G2/61	Thailand	PTTEP Energy Development Company Limited	100	100
PTTEP MENA Limited (PTTEP MENA)				
Abu Dhabi Offshore 1	United Arab Emirates	Eni Abu Dhabi B.V.	30	30
Abu Dhabi Offshore 2	United Arab Emirates	Eni Abu Dhabi B.V.	30	30
Oman Onshore Block 12	Sultanate of Oman	TotalEnergies EP Oman Block 12 B.V.	20	20
Abu Dhabi Offshore 3	United Arab Emirates	Eni Abu Dhabi B.V.	30	30
Oman Block 61 ⁸	Sultanate of Oman	BP Exploration (Epsilon) Limited (BP)	20	-
PTTEP Sabah Oil Limited (PTTEP SBO)				
Malaysia Block K ^{**}	Malaysia			
Malaysia Block H ^{***}	Malaysia			

^{**} Details of operators and participating interests in Malaysia Block K project are as follows:

Block	Operator	Participating interest (%)	
		31 December 2021	31 December 2020
Kikeh	PTTEP Sabah Oil Limited	56	56
SNP	PTTEP Sabah Oil Limited	22.4	22.4
GK ⁹	Sabah Shell Petroleum Co., Ltd.	7.1657292	6.366

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*** Details of operators and participating interests in Malaysia Block H project are as follows:

Block	Operator	Participating interest (%)	
		31 December 2021	31 December 2020
Rotan	PTTEP Sabah Oil Limited	56	56
Others	PTTEP Sabah Oil Limited	42	42

Project	Country	Operator	Participating interest (%)	
			31 December 2021	31 December 2020

PTTEP Sarawak Oil Limited (PTTEP SKO)

Sarawak SK 314A	Malaysia	PTTEP Sarawak Oil Limited	59.5	59.5
Sarawak SK 405B	Malaysia	PTTEP Sarawak Oil Limited	59.5	59.5
Sarawak SK 309 and SK 311 ****	Malaysia			

**** Details of operators and participating interests in Sarawak SK 309 and Sarawak SK 311 projects are as follows:

Block	Operator	Participating interest (%)	
		31 December 2021	31 December 2020
East Patricia	PTTEP Sarawak Oil Limited	42	42
Others	PTTEP Sarawak Oil Limited	59.5	59.5

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Project	Country	Operator	Participating interest (%)	
			31 December	31 December
			2021	2020
PTTEP Holding Group B.V. (PGH)				
Block 17/06	Angola	TotalEnergies E&P Angola Block 17.06 (TEPA)	2.5	2.5
Potiguar ¹⁰	Federative Republic of Brazil	Partex Brasil Ltda	-	50
Dunga	Kazakhstan	Total E&P Dunga GmbH	20	20
PDO (Block 6)	Sultanate of Oman	Petroleum Development Oman LLC	2	2
Mukhaizna (Block 53)	Sultanate of Oman	Occidental Mukhaizna,LLC	1	1

¹ On 1 September 2021, the Company, as an operator of Algeria Hassi Bir Rekaiz (the Project) in People's Democratic Republic of Algeria, received an approval from the Government of People's Democratic Republic of Algeria to acquire the 24.5% shareholding interest in the Project from CNOOC Limited (CNOOC), a joint partner with a total value of US Dollar 82.84 million (Baht 2,675.98 million). As a result, the Company has increased its shareholding interest to 49% in the project. The acquisition of the shareholding interest is an asset acquisition because substantially all of the fair value of the gross assets acquired is concentrated in the exploration and production assets. Therefore, the Company recognised the asset acquisition transaction as property, plant and equipment amounting to US Dollar 75.26 million (Baht 2,430.89 million), cash and cash equivalents amounting to US Dollar 11.97 million (Baht 386.58 million) and the remainings were recognised as relevant assets and liabilities.

² On 17 September 2021, Mitsui Oil Exploration Company Limited (MOECO), a joint partner of Myanmar M3 project, notified to withdraw its shareholding interest at 20%. The withdrawal will be effective on 31 October 2021 according to the Joint Operating Agreement. As a result, the participating interest of PTTEP International Limited (PTTEPI), a subsidiary of the Company and the operator of Myanmar M3 project, will change from 80% to 100%. However, the completion of the withdrawal is subject to the approval from the Government of the Republic of the Union of Myanmar.

³ On 22 November 2021, PTTEPI entered into a Termination Agreement with the Government of the Republic of the Union of Myanmar to terminate and return the exploration blocks of Myanmar M11 project after fulfillment of the requirements of the Production Sharing Contract. The agreement becomes legally binding upon the signatures.

⁴ PTTEP Offshore Investment Company Limited (PTTEPO) has shareholding interest in Orange Energy Limited and B8/32 Partners Limited, which hold the project's concession.

⁵ On 14 October 2020, PTTEP South Asia Limited (PTTEP SA), a subsidiary of the Group, submitted a request to terminate and return 50% of the exploration block of Myanmar MD-7 Project after fulfilling the obligations under the Product Sharing Contract earlier than termination exploration period identified per the contract (14 November 2021). The termination will be effective upon receiving official approval from the Government of the Republic of the Union of Myanmar.

- ⁶ On 24 November 2021, PTTEP SA entered into a Termination Agreement with the Government of the Republic of the Union of Myanmar to terminate and return the exploration blocks of Myanmar MOGE 3 project after fulfillment of the requirements of the Production Sharing Contract. The agreement becomes legally binding upon the signatures.
- ⁷ On 19 November 2021, PTTEP Australasia (Ashmore Cartier) Pty Ltd (PTTEP AAA) submitted a request to terminate and return the exploration block of AC/L3 Project. The termination will be effective after receiving the official approval from the Government of the Commonwealth of Australia (Australia).
- ⁸ On 1 February 2021, PTTEP MENA Limited (PTTEP MENA), a subsidiary of the Group, signed a Sale and Purchase Agreement (SPA) to acquire the 20% interests in Block 61 Sultanate of Oman (Oman Block 61) from BP Exploration (Epsilon) Limited (BP). The acquisition was completed on 23 March 2021. This investment is an investment in a joint operation.
- ⁹ On 15 March 2021, PTTEP Sabah Oil Limited (PTTEP SBO), a subsidiary of the Group, received redetermination approval of Block GK under Malaysia Block K project from Malaysian Government. The participating interest increased from 6.366% to 6.555% which retrospectively effective from 1 January 2020 onwards on 30 December 2021. Sabah Shell Petroleum Company Limited (SSPC), the operator of Block GK, received redetermination approval of Block GK under Malaysia Block K project from Malaysian Government in accordance to Unitisation and Unit Operating Agreement (UUOA) which affected to participating interest of PTTEP Sabah Oil Limited (PTTEP SBO), a subsidiary of the Group, increased from 6.555% to 7.1657292%.
- ¹⁰ On 30 July 2021, Participations and Explorations Corporation (PEC) and Partex (Brazil) Corporation (PBC), subsidiaries of the Group, entered into a Sale and Purchase Agreement (SPA) to sell all shares of Partex Brasil Ltda. (PBL) and Partex Brasil Operações Petrolíferas Ltda. (PBO), which are registered in the Federative Republic of Brazil to Ubuntu Engenharia e Serviços Ltda. (Ubuntu). The sale was completed on 29 October 2021.

17 Property, plant and equipment

	Consolidated financial statements				
	Unit: Million US Dollar				
	Exploration and production assets	Pipeline	Others	Assets under construction	Total
As at 1 January 2020					
Cost	28,654	893	144	1,478	31,169
<u>Less</u> Accumulated depreciation	(19,930)	(278)	(86)	-	(20,294)
<u>Less</u> Accumulated impairment	(330)	(5)	-	-	(335)
Net book value	8,394	610	58	1,478	10,540
For the year ended 31 December 2020					
Opening net book value	8,394	610	58	1,478	10,540
Additions	541	2	12	851	1,406
Disposals and write-off, net	(64)	-	(3)	(32)	(99)
Reclassification	294	-	-	(277)	17
Depreciation charged	(1,934)	(30)	(14)	-	(1,978)
Allowance for impairment of assets	(48)	-	-	-	(48)
Closing net book value	7,183	582	53	2,020	9,838
As at 31 December 2020					
Cost	28,968	896	153	2,020	32,037
<u>Less</u> Accumulated depreciation	(21,423)	(308)	(100)	-	(21,831)
<u>Less</u> Accumulated impairment	(362)	(6)	-	-	(368)
Net book value	7,183	582	53	2,020	9,838

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Unit: Million US Dollar					
	Exploration and production assets	Pipeline	Others	Assets under construction	Total
For the year ended 31 December 2021					
Opening net book value	7,183	582	53	2,020	9,838
Business acquisition	1,862	-	-	304	2,166
Additions	705	1	5	1,267	1,978
Disposals and write-off, net	(385)	(2)	(1)	(28)	(416)
Reclassification	674	-	1	(631)	44
Depreciation charged	(2,170)	(30)	(10)	-	(2,210)
Allowance for impairment of assets	(14)	(6)	-	-	(20)
Closing net book value	7,855	545	48	2,932	11,380
As at 31 December 2021					
Cost	31,583	894	153	2,932	35,562
<u>Less</u> Accumulated depreciation	(23,367)	(338)	(105)	-	(23,810)
<u>Less</u> Accumulated impairment	(361)	(11)	-	-	(372)
Net book value	7,855	545	48	2,932	11,380

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	Consolidated financial statements				
	Unit: Million Baht				
	Exploration and production assets	Pipeline	Others	Assets under construction	Total
As at 1 January 2020					
Cost	864,044	26,944	4,338	44,558	939,884
<u>Less</u> Accumulated depreciation	(600,980)	(8,390)	(2,599)	-	(611,969)
<u>Less</u> Accumulated impairment	(9,947)	(158)	-	-	(10,105)
Net book value	253,117	18,396	1,739	44,558	317,810
For the year ended 31 December 2020					
Opening net book value	253,117	18,396	1,739	44,558	317,810
Additions	16,922	66	378	26,615	43,981
Disposals and write-off, net	(2,012)	-	(90)	(979)	(3,081)
Reclassification	9,185	-	9	(8,667)	527
Depreciation charged	(60,513)	(934)	(447)	-	(61,894)
Allowance for impairment of assets	(1,434)	(12)	-	-	(1,446)
Currency translation differences	476	(37)	(1)	(844)	(406)
Closing net book value	215,741	17,479	1,588	60,683	295,491
As at 31 December 2020					
Cost	870,110	26,903	4,584	60,683	962,280
<u>Less</u> Accumulated depreciation	(643,493)	(9,254)	(2,996)	-	(655,743)
<u>Less</u> Accumulated impairment	(10,876)	(170)	-	-	(11,046)
Net book value	215,741	17,479	1,588	60,683	295,491

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	Consolidated financial statements				
	Unit: Million Baht				
	Exploration and production assets	Pipeline	Others	Assets under construction	Total
For the year ended 31 December 2021					
Opening net book value	215,741	17,479	1,588	60,683	295,491
Business acquisition	59,651	-	-	9,730	69,381
Additions	22,517	19	181	40,455	63,172
Disposals and write-off, net	(12,298)	(72)	(39)	(894)	(13,303)
Reclassification	21,535	-	24	(20,146)	1,413
Depreciation charged	(69,373)	(954)	(317)	-	(70,644)
Allowance for impairment of assets	(470)	(201)	-	-	(671)
Currency translation differences	25,214	1,924	167	8,163	35,468
Closing net book value	262,517	18,195	1,604	97,991	380,307
As at 31 December 2021					
Cost	1,055,511	29,878	5,106	97,991	1,188,486
<u>Less</u> Accumulated depreciation	(780,932)	(11,293)	(3,502)	-	(795,727)
<u>Less</u> Accumulated impairment	(12,062)	(390)	-	-	(12,452)
Net book value	262,517	18,195	1,604	97,991	380,307

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	Separate financial statements			
	Unit: Million US Dollar			
	Exploration and production assets	Others	Assets under construction	Total
As at 1 January 2020				
Cost	13,360	84	390	13,834
<u>Less</u> Accumulated depreciation	(10,468)	(61)	-	(10,529)
Net book value	2,892	23	390	3,305
For the year ended 31 December 2020				
Opening net book value	2,892	23	390	3,305
Additions	174	6	246	426
Disposals and write-off, net	(1)	-	(1)	(2)
Reclassification	135	-	(135)	-
Depreciation charged	(971)	(4)	-	(975)
Closing net book value	2,229	25	500	2,754
As at 31 December 2020				
Cost	13,514	89	500	14,103
<u>Less</u> Accumulated depreciation	(11,285)	(64)	-	(11,349)
Net book value	2,229	25	500	2,754

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	Separate financial statements			
	Unit: Million US Dollar			
	Exploration and production assets	Others	Assets under construction	Total
For the year ended 31 December 2021				
Opening net book value	2,229	25	500	2,754
Additions	326	1	324	651
Disposals and write-off, net	(259)	-	-	(259)
Reclassification	175	1	(176)	-
Depreciation charged	(996)	(4)	-	(1,000)
Closing net book value	1,475	23	648	2,146
As at 31 December 2021				
Cost	13,628	87	648	14,363
<u>Less</u> Accumulated depreciation	(12,153)	(64)	-	(12,217)
Net book value	1,475	23	648	2,146

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	Separate financial statements			
	Unit: Million Baht			
	Exploration and production assets	Others	Assets under construction	Total
As at 1 January 2020				
Cost	402,865	2,533	11,758	417,156
<u>Less</u> Accumulated depreciation	(315,673)	(1,827)	-	(317,500)
Net book value	87,192	706	11,758	99,656
For the year ended 31 December 2020				
Opening net book value	87,192	706	11,758	99,656
Additions	5,443	193	7,682	13,318
Disposals and write-off, net	(28)	(4)	(37)	(69)
Reclassification	4,195	9	(4,204)	-
Depreciation charged	(30,348)	(126)	-	(30,474)
Currency translation differences	487	(6)	(182)	299
Closing net book value	66,941	772	15,017	82,730
As at 31 December 2020				
Cost	405,914	2,683	15,017	423,614
<u>Less</u> Accumulated depreciation	(338,973)	(1,911)	-	(340,884)
Net book value	66,941	772	15,017	82,730

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	Separate financial statements			
	Unit: Million Baht			
	Exploration and production assets	Others	Assets under construction	Total
For the year ended 31 December 2021				
Opening net book value	66,941	772	15,017	82,730
Additions	10,402	48	10,347	20,797
Disposals and write-off, net	(8,261)	(3)	(13)	(8,277)
Reclassification	5,575	22	(5,597)	-
Depreciation charged	(31,760)	(145)	-	(31,905)
Currency translation differences	6,392	84	1,913	8,389
Closing net book value	49,289	778	21,667	71,734
As at 31 December 2021				
Cost	455,445	2,895	21,667	480,007
<u>Less</u> Accumulated depreciation	(406,156)	(2,117)	-	(408,273)
Net book value	49,289	778	21,667	71,734

Impairment loss on property, plant and equipment is disclosed in Note 21.

As at 31 December 2021 and 2020, the Group has capital expenditure commitments as disclosed in Note 36.1.

18 Right-of-use assets

	Consolidated financial statements		
	Unit: Million US Dollar		
	Exploration and production assets	Others	Total
As at 1 January 2020			
Cost	-	-	-
<u>Less</u> Accumulated amortisation	-	-	-
Net book value	-	-	-
For the year ended 31 December 2020			
Opening net book value	-	-	-
Impact of the adoption of TFRS 16	467	29	496
Additions	91	6	97
Decreases	(1)	-	(1)
Agreement modification	1	-	1
Amortisation charged	(90)	(20)	(110)
Closing net book value	468	15	483
As at 31 December 2020			
Cost	558	35	593
<u>Less</u> Accumulated amortisation	(90)	(20)	(110)
Net book value	468	15	483

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	Consolidated financial statements		
	Unit: Million US Dollar		
	Exploration and production assets	Others	Total
For the year ended 31 December 2021			
Opening net book value	468	15	483
Additions	149	33	182
Decreases	(9)	-	(9)
Agreement modification	5	-	5
Amortisation charged	(127)	(14)	(141)
Closing net book value	486	34	520
As at 31 December 2021			
Cost	672	44	716
<u>Less</u> Accumulated amortisation	(186)	(10)	(196)
Net book value	486	34	520

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	Consolidated financial statements		
	Unit: Million Baht		
	Exploration and production assets	Others	Total
As at 1 January 2020			
Cost	-	-	-
<u>Less</u> Accumulated amortisation	-	-	-
Net book value	-	-	-
For the year ended 31 December 2020			
Opening net book value	-	-	-
Impact of the adoption of TFRS 16	14,078	866	14,944
Additions	2,840	192	3,032
Decreases	(21)	(2)	(23)
Agreement modification	43	1	44
Amortisation charged	(2,826)	(626)	(3,452)
Currency translation differences	(58)	14	(44)
Closing net book value	14,056	445	14,501
As at 31 December 2020			
Cost	16,756	1,045	17,801
<u>Less</u> Accumulated amortisation	(2,700)	(600)	(3,300)
Net book value	14,056	445	14,501

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	Consolidated financial statements		
	Unit: Million Baht		
	Exploration and production assets	Others	Total
For the year ended 31 December 2021			
Opening net book value	14,056	445	14,501
Additions	4,763	1,051	5,814
Decreases	(280)	(7)	(287)
Agreement modification	159	2	161
Amortisation charged	(4,098)	(426)	(4,524)
Currency translation differences	1,626	78	1,704
Closing net book value	16,226	1,143	17,369
As at 31 December 2021			
Cost	22,459	1,463	23,922
<u>Less</u> Accumulated amortisation	(6,233)	(320)	(6,553)
Net book value	16,226	1,143	17,369

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	Separate financial statements		
	Unit: Million US Dollar		
	Exploration and production assets	Others	Total
As at 1 January 2020			
Cost	-	-	-
<u>Less</u> Accumulated amortisation	-	-	-
Net book value	-	-	-
For the year ended 31 December 2020			
Opening net book value	-	-	-
Impact of the adoption of TFRS 16	6	25	31
Additions	42	5	47
Amortisation charged	(8)	(18)	(26)
Closing net book value	40	12	52
As at 31 December 2020			
Cost	48	31	79
<u>Less</u> Accumulated amortisation	(8)	(19)	(27)
Net book value	40	12	52

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	Separate financial statements		
	Unit: Million US Dollar		
	Exploration and production assets	Others	Total
For the year ended 31 December 2021			
Opening net book value	40	12	52
Additions	9	25	34
Decreases	(2)	-	(2)
Agreement modification	2	-	2
Amortisation charged	(19)	(11)	(30)
Closing net book value	30	26	56
As at 31 December 2021			
Cost	55	33	88
<u>Less</u> Accumulated amortisation	(25)	(7)	(32)
Net book value	30	26	56

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	Separate financial statements		
	Unit: Million Baht		
	Exploration and production assets	Others	Total
As at 1 January 2020			
Cost	-	-	-
<u>Less</u> Accumulated amortisation	-	-	-
Net book value	-	-	-
For the year ended 31 December 2020			
Opening net book value	-	-	-
Impact of the adoption of TFRS 16	179	768	947
Additions	1,321	169	1,490
Agreement modification	(8)	-	(8)
Amortisation charged	(246)	(577)	(823)
Currency translation differences	(45)	13	(32)
Closing net book value	1,201	373	1,574
As at 31 December 2020			
Cost	1,440	927	2,367
<u>Less</u> Accumulated amortisation	(239)	(554)	(793)
Net book value	1,201	373	1,574

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	Separate financial statements		
	Unit: Million Baht		
	Exploration and production assets	Others	Total
For the year ended 31 December 2021			
Opening net book value	1,201	373	1,574
Additions	296	792	1,088
Decreases	(67)	(1)	(68)
Agreement modification	82	1	83
Amortisation charged	(620)	(365)	(985)
Currency translation differences	126	61	187
Closing net book value	1,018	861	1,879
As at 31 December 2021			
Cost	1,862	1,099	2,961
<u>Less</u> Accumulated amortisation	(844)	(238)	(1,082)
Net book value	1,018	861	1,879

19 Goodwill

	Consolidated financial statements		Separate financial statements	
	Unit: Million US Dollar	Unit: Million Baht	Unit: Million US Dollar	Unit: Million Baht
As at 1 January 2020				
Cost	2,016	60,796	75	2,266
<u>Less</u> Provision for impairment	(112)	(3,389)	-	-
Net book value	1,904	57,407	75	2,266
For the year ended 31 December 2020				
Opening net book value	1,904	57,407	75	2,266
Currency translation differences	-	(222)	-	(8)
Closing net book value	1,904	57,185	75	2,258
As at 31 December 2020				
Cost	2,016	60,561	75	2,258
<u>Less</u> Provision for impairment	(112)	(3,376)	-	-
Net book value	1,904	57,185	75	2,258
For the year ended 31 December 2021				
Opening net book value	1,904	57,185	75	2,258
Allowance for impairment of assets	(163)	(5,471)	-	-
Currency translation differences	-	6,463	-	254
Closing net book value	1,741	58,177	75	2,512
As at 31 December 2021				
Cost	2,016	67,381	75	2,512
<u>Less</u> Provision for impairment	(275)	(9,204)	-	-
Net book value	1,741	58,177	75	2,512

Goodwill is allocated to the Group's cash-generating units (CGUs).

Goodwill allocation presented by the CGUs as follows:

	Consolidated financial statements			
	Unit: Million US Dollar		Unit: Million Baht	
	2021	2020	2021	2020
As at 31 December				
Exploration and production				
Thailand	521	521	17,393	15,633
Other Southeast Asia	454	454	15,176	13,640
Middle East	142	142	4,747	4,266
Africa	563	726	18,814	21,806
Others	44	44	1,465	1,317
Others	17	17	582	523
Total	1,741	1,904	58,177	57,185
	Separate financial statements			
	Unit: Million US Dollar		Unit: Million Baht	
	2021	2020	2021	2020
As at 31 December				
Exploration and production				
Thailand	75	75	2,512	2,258
Total	75	75	2,512	2,258

Goodwill impairment testing

The Group tested impairment of goodwill from business acquisition annually, or more frequently if events or changes in circumstances indicate that it might be impaired. The Group compares the carrying amount of the goodwill with the recoverable amount of each cash-generating units which is the higher of the fair value less cost to sell or value-in-use.

An asset or group of assets described as cash-generating unit (CGU) is the smallest identifiable group of assets that generates inflows that are largely independent from the cash flows from other CGUs. The Group considers the CGU at the individual project level assessing the expected future cash flows over the average life of the project with a growth rate along with the industry's information.

The measurements of fair value less cost to sell and value-in-use are based on a proved and probable reserve production profile including other key estimates and assumptions such as the short-term forward oil price curve, long-term oil price based on supply and demand of oil in the global market, exchange rates, discount rates, and project management team estimate of the capital expenditure and operating expenditure as well as past industry performance which were consistent with the external sources of information. The weighted average cost of capital of each project in each region is used for discount rate for financial estimation. For consolidated financial statements, the discount rate for exploration and production segment consists of Southeast Asia at rate of 6% - 7% per annum (2020: 4% - 6% per annum), Africa at rate of 8% - 9% per annum (2020: 7% - 10% per annum), Middle East at rate of 5% - 8% per annum (2020: 6% - 8% per annum) and others at rate of 5% - 6% per annum (2020: 4% - 5% per annum), and for others segment is at rate of 4% - 5% per annum (2020: 4% per annum). For separate financial statements, the discount rate for exploration and production segment consists of Southeast Asia at rate of 6% - 7% per annum (2020: 4% - 5% per annum).

If the discounted cash flow in goodwill impairment testing increases approximately 0.3% - 10% per annum, there still would be no allowance for goodwill impairment recognised in the consolidated and separate financial statements for the year ended 31 December 2021.

Impairment loss on goodwill

During the fourth quarter of 2021, the Group considered and found that some projects in development phase have changed its development plan based on current situation resulting in a significant delay of its operation. These events are the key indicators that require the Group to perform impairment assessment for its projects. The Group found that there was impairment loss on goodwill occurred.

The Group measures recoverable amount of assets using fair value less cost to sell which are based on a proved and probable reserve production profile including other key estimates and assumptions such as the long-term oil price based on supply and demand of oil in the world market, foreign currency exchange rates, growth rates, discount rates, and estimated of the capital expenditure and operating expenditure made by management of the project as well as past industry performance which were consistent with the external sources of information. The Group used the discounted cash flows based on the average life of the project greater than 5 years with discount rates around 8% - 9%.

During the year ended 31 December 2021, the Group recognised impairment loss on goodwill in the consolidated statement of income as follows:

		Consolidated financial statements	
		Unit: Million US Dollar	Unit: Million Baht
Impairment loss on goodwill		163	5,471
Total		163	5,471

		Consolidated financial statements		
		Unit: Million US Dollar		
Group of assets	Basis using to identify the recoverable amount	The carrying amount of group of assets before impairment	The carrying amount of group of assets after impairment	Impairment loss
Overseas	Fair value less cost to sell	2,770	2,607	163
			Total	163

		Consolidated financial statements		
		Unit: Million Baht		
Group of assets	Basis using to identify the recoverable amount	The carrying amount of group of assets before impairment	The carrying amount of group of assets after impairment	Impairment loss
Overseas	Fair value less cost to sell	92,564	87,093	5,471
			Total	5,471

The amount of impairment loss on goodwill is disclosed in Note 9 Segment and revenue information.

20 Exploration and evaluation assets

		Consolidated financial statements	
		Unit: Million US Dollar	Unit: Million Baht
As at 1 January 2020			
Cost		4,606	138,905
<u>Less</u> Accumulated impairment		(1,726)	(52,052)
Net book value		2,880	86,853
For the year ended 31 December 2020			
Opening net book value		2,880	86,853
Additions		104	3,235
Decreases		(35)	(1,099)
Reclassification		(17)	(527)
Allowance for impairment loss on assets		(44)	(1,360)
Currency translation differences		(2)	(408)
Closing net book value		2,886	86,694

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	Consolidated financial statements	
	Unit: Million US Dollar	Unit: Million Baht
As at 31 December 2020		
Cost	4,694	140,982
<u>Less</u> Accumulated impairment	(1,808)	(54,288)
Net book value	2,886	86,694
For the year ended 31 December 2021		
Opening net book value	2,886	86,694
Business acquisition	332	10,286
Additions	134	4,280
Decreases	(187)	(5,971)
Reclassification	(44)	(1,413)
Currency translation differences	-	10,437
Closing net book value	3,121	104,313
As at 31 December 2021		
Cost	4,446	148,599
<u>Less</u> Accumulated impairment	(1,325)	(44,286)
Net book value	3,121	104,313

During the year ended 31 December 2021, the Group wrote-off some portions of the exploration and evaluation assets of the exploration project in Brazil amounting to US Dollar 144.72 million (Baht 4,454.56 million) which included in exploration expenses in the consolidated statement of income.

Impairment loss on exploration and evaluation assets is disclosed in Note 21.

21 Impairment loss on assets

Assets that are subject to amortisation are reviewed for impairment whenever events or change in circumstances indicate that the carrying amount of the assets exceeds its recoverable amount. An impairment loss is recognised when the carrying amount of the asset is higher than its recoverable amount which is the higher of the asset's fair value less cost to sell or value-in-use.

An asset or group of assets described as cash-generating unit (CGU) is the smallest identifiable group of assets that generates inflows that are largely independent from the cash flows from other CGUs. The Group considers the CGU at the individual project level assessing the expected future cash flows over the average life of the project with a growth rate along with the industry's information.

In Quarter 4 of 2021, the Group considered and found that the production plan of some production projects had been significantly reduced in accordance to the potential of petroleum reserves. These events are the key indicators that require the Group to perform impairment assessment for its projects.

The Group measures recoverable amount of assets using fair value less cost to sell and value-in-use which are based on a proved and probable reserve production profile including other key estimates and assumptions such as the short-term forward oil price curve, long-term oil price based on supply and demand of oil in the world market, foreign currency exchange rates, discount rates, and estimated of the capital expenditure and operating expenditure made by the management of the project as well as past industry performance which were consistent with the external sources of information. The Group used the discounted cash flow in the calculation by applying discount rates about 10% - 11% (2020: 4% - 5%).

During the year ended 31 December 2021, the Group recognised impairment loss on assets in the consolidated profit or loss, categorised by classification of asset as follows:

	Consolidated financial statements	
	Unit: Million US Dollar	Unit: Million Baht
Impairment loss on exploration and production assets recognised in property, plant and equipment	20	671
Total	20	671

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		Consolidated financial statements		
		Unit: Million US Dollar		
Group of assets	Basis using to identify the recoverable amount	The carrying amount of group of assets before impairment	The carrying amount of group of assets after impairment	Impairment loss
Overseas	Value-in-use	25	5	20
			Total	20

		Consolidated financial statements		
		Unit: Million Baht		
Group of assets	Basis using to identify the recoverable amount	The carrying amount of group of assets before impairment	The carrying amount of group of assets after impairment	Impairment loss
Overseas	Value-in-use	822	151	671
			Total	671

The amount of impairment loss on assets is disclosed in Note 9 Segment and revenue information.

22 Deferred income taxes

Deferred tax assets and liabilities comprised:

	Consolidated financial statements			
	Unit: Million US Dollar		Unit: Million Baht	
	31 December	31 December	31 December	31 December
	2021	2020	2021	2020
Deferred tax assets	1,318	1,099	44,042	33,001
Deferred tax liabilities	(1,504)	(1,446)	(50,272)	(43,427)
Deferred taxes, net	(186)	(347)	(6,230)	(10,426)
	Separate financial statements			
	Unit: Million US Dollar		Unit: Million Baht	
	31 December	31 December	31 December	31 December
	2021	2020	2021	2020
Deferred tax assets	790	770	26,401	23,122
Deferred tax liabilities	-	-	-	-
Deferred taxes, net	790	770	26,401	23,122

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The movements in deferred tax assets and liabilities during the year are as follows:

Consolidated financial statements					
Unit: Million US Dollar					
	As at 1 January 2021	Statement of income	Statement of comprehensive income	Business acquisition	As at 31 December 2021
Deferred tax assets					
Decommissioning costs	1,112	(12)	-	-	1,100
Provision for employee benefits	111	-	(32)	-	79
Property, plant and equipment and intangible assets	6	(1)	-	-	5
Loss carried forward	316	(79)	(2)	-	235
Financial derivatives	2	5	-	-	7
Allowance for impairment loss on assets	135	(7)	-	-	128
Lease liabilities	5	3	-	-	8
Cost recovery	36	(110)	-	326	252
Others	167	(36)	-	-	131
	1,890	(237)	(34)	326	1,945
Tax effect of currency translation on tax base	8	(8)	-	-	-
	1,898	(245)	(34)	326	1,945
Deferred tax liabilities					
Property, plant and equipment and intangible assets	2,222	(218)	-	109	2,113
Financial derivatives	6	(5)	-	-	1
Others	17	(2)	-	-	15
	2,245	(225)	-	109	2,129
Tax effect of currency translation on tax base	-	2	-	-	2
	2,245	(223)	-	109	2,131
Deferred taxes, net	(347)	(22)	(34)	217	(186)

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	Consolidated financial statements			
	Unit: Million US Dollar			
	As at 1 January 2020	Statement of income	Statement of comprehensive income	As at 31 December 2020
Deferred tax assets				
Decommissioning costs	1,016	96	-	1,112
Provision for employee benefits	103	8	-	111
Property, plant and equipment and intangible assets	8	(2)	-	6
Loss carried forward	298	16	2	316
Financial derivatives	1	1	-	2
Allowance for impairment loss on assets	125	10	-	135
Lease liabilities	-	5	-	5
Cost recovery	33	3		36
Others	169	(2)	-	167
	1,753	135	2	1,890
Tax effect of currency translation on tax base	104	(96)	-	8
	1,857	39	2	1,898
Deferred tax liabilities				
Property, plant and equipment and intangible assets	2,308	(86)	-	2,222
Financial derivatives	15	(1)	(8)	6
Others	14	3	-	17
	2,337	(84)	(8)	2,245
Tax effect of currency translation on tax base	1	(1)	-	-
	2,338	(85)	(8)	2,245
Deferred taxes, net	(481)	124	10	(347)

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Consolidated financial statements						
Unit: Million Baht						
	As at 1 January 2021	Statement of income	Statement of comprehensive income	Business acquisition	Currency translation differences	As at 31 December 2021
Deferred tax assets						
Decommissioning costs	33,400	(260)	-	21	3,615	36,776
Provision for employee benefits	3,335	(13)	(1,083)	-	363	2,602
Property, plant and equipment and intangible assets	172	(24)	-	-	19	167
Loss carried forward	9,477	(2,535)	(51)	-	963	7,854
Financial derivatives	53	172	(4)	-	17	238
Allowance for impairment loss on assets	4,060	(149)	-	-	375	4,286
Lease liabilities	147	102	-	-	19	268
Cost recovery	1,090	(3,581)	-	10,094	824	8,427
Others	5,013	(1,154)	-	-	493	4,352
	56,747	(7,442)	(1,138)	10,115	6,688	64,970
Tax effect of currency translation on tax base	246	(248)	-	-	2	-
	56,993	(7,690)	(1,138)	10,115	6,690	64,970
Deferred tax liabilities						
Property, plant and equipment and intangible assets	66,748	(6,644)	-	3,378	7,512	70,634
Financial derivatives	154	(148)	-	-	6	12
Others	571	(71)	-	-	57	503
	67,419	(6,863)	-	3,378	7,215	71,149
Tax effect of currency translation on tax base	-	46	-	-	5	51
	67,419	(6,817)	-	3,378	7,220	71,200
Deferred taxes, net	(10,426)	(873)	(1,138)	6,737	(530)	(6,230)

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Consolidated financial statements					
Unit: Million Baht					
	As at 1 January 2020	Statement of income	Statement of comprehensive income	Currency translation differences	As at 31 December 2020
Deferred tax assets					
Decommissioning costs	30,643	2,986	-	(229)	33,400
Provision for employee benefits	3,116	243	-	(24)	3,335
Property, plant and equipment and intangible assets	234	(58)	-	(4)	172
Loss carried forward	8,979	374	67	57	9,477
Financial derivatives	16	38	-	(1)	53
Allowance for impairment loss on assets	3,782	271	-	7	4,060
Lease liabilities	-	159	-	(12)	147
Cost recovery	982	115	-	(7)	1,090
Others	5,081	(127)	-	59	5,013
	52,833	4,001	67	(154)	56,747
Tax effect of currency translation on tax base	3,124	(2,950)	-	72	246
	55,957	1,051	67	(82)	56,993
Deferred tax liabilities					
Property, plant and equipment and intangible assets	69,586	(2,876)	-	38	66,748
Financial derivatives	433	(48)	(247)	16	154
Others	399	97	(1)	22	517
	70,418	(2,827)	(248)	76	67,419
Tax effect of currency translation on tax base	36	(37)	-	1	-
	70,454	(2,864)	(248)	77	67,419
Deferred taxes, net	(14,497)	3,915	315	(159)	(10,426)

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	Separate financial statements			
	Unit: Million US Dollar			
	As at 1 January 2021	Statement of income	Statement of comprehensive income	As at 31 December 2021
Deferred tax assets				
Decommissioning costs	732	(52)	-	680
Provision for employee benefits	105	(1)	(33)	71
Loss carried forward	211	(78)	(2)	131
Others	62	(23)	1	40
	1,110	(154)	(34)	922
Deferred tax liabilities				
Property, plant and equipment and intangible assets	338	(206)	-	132
Lease liabilities	-	-	-	-
Others	2	(2)	-	-
	340	(208)	-	132
Deferred taxes, net	770	54	(34)	790

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	Separate financial statements			
	Unit: Million US Dollar			
	As at 1 January 2020	Statement of income	Statement of comprehensive income	As at 31 December 2020
Deferred tax assets				
Decommissioning costs	682	50	-	732
Provision for employee benefits	99	6	-	105
Loss carried forward	269	(60)	2	211
Others	83	(21)	-	62
	1,133	(25)	2	1,110
Tax effect of currency translation on tax base	42	(42)	-	-
	1,175	(67)	2	1,110
Deferred tax liabilities				
Property, plant and equipment and intangible assets	525	(187)	-	338
Others	10	(2)	(6)	2
	535	(189)	(6)	340
Deferred taxes, net	640	122	8	770

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	Separate financial statements				
	Unit: Million Baht				
	As at 1 January 2021	Statement of income	Statement of comprehensive income	Currency translation differences	As at 31 December 2021
Deferred tax assets					
Decommissioning costs	21,992	(1,601)	-	2,330	22,721
Provision for employee benefits	3,139	(22)	(1,083)	341	2,375
Loss carried forward	6,331	(2,390)	(46)	492	4,387
Others	1,872	(701)	20	148	1,339
	33,334	(4,714)	(1,109)	3,311	30,822
Deferred tax liabilities					
Property, plant and equipment and intangible assets	10,140	(6,311)	-	569	4,398
Lease liabilities	4	14	-	2	20
Others	68	(66)	-	1	3
	10,212	(6,363)	-	572	4,421
Deferred taxes, net	23,122	1,649	(1,109)	2,739	26,401

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	Separate financial statements				
	Unit: Million Baht				
	As at 1 January 2020	Statement of income	Statement of comprehensive income	Currency translation differences	As at 31 December 2020
Deferred tax assets					
Decommissioning costs	20,563	1,588	-	(159)	21,992
Provision for employee benefits	2,980	179	-	(20)	3,139
Loss carried forward	8,101	(1,895)	63	62	6,331
Others	2,510	(661)	-	23	1,872
	34,154	(789)	63	(94)	33,334
Tax effect of currency translation on tax base	1,278	(1,315)	-	37	-
	35,432	(2,104)	63	(57)	33,334
Deferred tax liabilities					
Property, plant and equipment and intangible assets	15,820	(5,914)	-	234	10,140
Lease liabilities	-	4	-	-	4
Others	319	(61)	(204)	14	68
	16,139	(5,971)	(204)	248	10,212
Deferred taxes, net	19,293	3,867	267	(305)	23,122

Deferred income tax assets are recognised for tax loss and carried forwards only to the extent that realisation of the related tax benefit through the future taxable profits is probable. The Group does not recognise deferred tax asset from tax losses of US Dollar 1,025 million (2020: US Dollar 2,929 million) to carry forward against future taxable income. Some portions of tax losses could be carried forward against future taxable income without expiration invalid and some portions will be expired during 2022 to 2041.

23 Other non-current assets

	Consolidated financial statements			
	Unit: Million US Dollar		Unit: Million Baht	
	31 December	31 December	31 December	31 December
	2021	2020	2021	2020
Land usage fee	20	21	664	642
Advance payment and accrued interest	49	53	1,640	1,599
Pension scheme investments from joint operation	61	55	2,048	1,648
Prepaid expenses	10	11	341	322
Deferred remuneration under agreement	8	10	260	287
Others	32	30	1,052	911
	180	180	6,005	5,409
	Separate financial statements			
	Unit: Million US Dollar		Unit: Million Baht	
	31 December	31 December	31 December	31 December
	2021	2020	2021	2020
Deposits	4	5	145	145
Land usage fee	5	5	166	160
Prepaid expenses	1	-	22	5
Deferred remuneration under agreement	8	10	260	287
Others	4	1	157	26
	22	21	750	623

24 Trade and other payable

	Consolidated financial statements			
	Unit: Million US Dollar		Unit: Million Baht	
	31 December	31 December	31 December	31 December
	2021	2020	2021	2020
Trade payable	148	121	4,952	3,636
Working capital to co-ventures	21	22	691	654
Account payable - related parties	16	10	529	312
Accrued expenses	897	727	29,990	21,828
Accrued interest expense	15	14	498	414
	1,097	894	36,660	26,844
	Separate financial statements			
	Unit: Million US Dollar		Unit: Million Baht	
	31 December	31 December	31 December	31 December
	2021	2020	2021	2020
Trade payable	26	26	865	780
Account payable - related parties	9	6	310	195
Accrued expenses	320	266	10,708	7,991
Accrued interest expense	4	3	127	80
	359	301	12,010	9,046

25 Loans, debentures and lease liabilities

Loans, debentures and lease liabilities comprised:

	Consolidated financial statements			
	Unit: Million US Dollar		Unit: Million Baht	
	31 December	31 December	31 December	31 December
	2021	2020	2021	2020
Current portion				
Current portion of debentures	449	-	14,997	-
Current portion of lease liabilities	184	135	6,169	4,069
	633	135	21,166	4,069
Non-current portion				
Debentures	2,476	2,830	82,741	85,016
Long-term loans	596	595	19,920	17,862
Lease liabilities	388	372	12,984	11,161
	3,460	3,797	115,645	114,039
Total loans, debentures and lease liabilities	4,093	3,932	136,811	118,108
	Separate financial statements			
	Unit: Million US Dollar		Unit: Million Baht	
	31 December	31 December	31 December	31 December
	2021	2020	2021	2020
Current portion				
Current portion of lease liabilities	31	26	1,029	769
	31	26	1,029	769
Non-current portion				
Debentures	520	379	17,384	11,392
Lease liabilities	29	31	982	938
	549	410	18,366	12,330
Total debentures and lease liabilities	580	436	19,395	13,099

a) **Debentures**

The carrying value of unsecured and unsubordinated debentures comprised:

				Consolidated financial statements			
				Unit: Million US Dollar		Unit: Million Baht	
	Interest rates (% per annum)	Effective interest rates (% per annum)	Maturity date	31 December 2021	31 December 2020	31 December 2021	31 December 2020
Maturity date within 1 year							
- Debentures Baht 15,000 million	2.26	2.312	19 June 2022	449	499	14,997	14,991
Maturity date over 3 years but not exceeding 5 years							
- Debentures Baht 6,000 million	2.00 - 2.75	2.214	5 November 2026	179	-	5,991	-
Maturity date over 5 years							
- Debentures Baht 11,400 million	4.82	4.89	6 June 2029	341	379	11,393	11,392
- Debentures US Dollar 500 million	2.587	2.637	10 June 2027	499	498	16,663	14,968
- Debentures US Dollar 350 million	2.993	3.063	15 January 2030	322	319	10,759	9,575
- Debentures US Dollar 490 million	6.35	6.507	12 June 2042	487	487	16,295	14,642
- Debentures US Dollar 650 million	3.903	3.958	6 December 2059	648	648	21,640	19,448
Total carrying value				2,925	2,830	97,738	85,016

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				Separate financial statements			
				Unit: Million US Dollar		Unit: Million Baht	
	Interest rates (% per annum)	Effective interest rates (% per annum)	Maturity date	31 December 2021	31 December 2020	31 December 2021	31 December 2020
Maturity date over 3 years but not exceeding 5 years							
- Debentures Baht 6,000 million	2.00 - 2.75	2.214	5 November 2026	179	-	5,991	-
Maturity date over 5 years							
- Debentures Baht 11,400 million	4.82	4.89	6 June 2029	341	379	11,393	11,392
Total carrying value				520	379	17,384	11,392

The fair values of debentures as at 31 December 2021 and 2020 are disclosed in Note 10.2.3.

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The movements of debentures for the year ended 31 December are as follows:

	Consolidated financial statements			
	Unit: Million US Dollar		Unit: Million Baht	
	2021	2020	2021	2020
Opening net book value	2,830	2,705	85,016	81,559
Cash flows:				
Increase	180	850	5,745	26,584
Repayment of debentures	-	(700)	-	(21,893)
Deferred finance cost	-	(31)	(5)	(972)
Non-cash movement:				
Amortisation of deferred finance cost	4	3	118	103
Foreign exchange differences	(89)	3	(2,851)	106
Currency translation differences	-	-	9,715	(471)
Closing net book value	2,925	2,830	97,738	85,016
	Separate financial statements			
	Unit: Million US Dollar		Unit: Million Baht	
	2021	2020	2021	2020
Opening net book value	379	378	11,392	11,391
Cash flows:				
Increase	180	-	5,745	-
Non-cash movement:				
Amortisation of deferred finance cost	-	-	(8)	1
Foreign exchange differences	(39)	1	(1,239)	46
Currency translation differences	-	-	1,494	(46)
Closing net book value	520	379	17,384	11,392

Repurchase and issuance of debentures

The details of movements of debentures during the year ended 31 December 2021 are as follows:

On 5 November 2021, the Company had issued name-registered, unsubordinated, and unsecured digital debenture with a bondholders' representative in the amount of Baht 6,000 million (US Dollar 179.96 million). The debenture had a tenor of 5-years, bears a step-up interest rate with the minimum of 2.00% per annum and the maximum of 2.75% per annum, averaging to 2.25% per annum. The Company entered into a cross currency swap transaction with a financial institution to swap Baht debenture for US Dollar 181.82 million at the average exchange rate of Baht 33 per US Dollar with an average interest rate of 2.53% per annum.

b) Long-term loans

Long-term loans from financial institutions comprised:

				Consolidated financial statements			
				Unit: Million US Dollar		Unit: Million Baht	
	Interest rates (% per annum)	Effective interest rates (% per annum)	Maturity date	31 December 2021	31 December 2020	31 December 2021	31 December 2020
Maturity date over 1 years but not exceeding 3 years							
- Loans US Dollar 480 million	6M LIBOR + 0.85	1.67	20 October 2024	477	476	15,927	14,279
- Loans US Dollar 120 million	6M LIBOR + 0.95	1.667	20 October 2024	119	119	3,993	3,583
Total carrying value				596	595	19,920	17,862

The fair values of long-term loans are close to their carrying amounts, as disclosed in Note 10.2.3.

The movements of long-term loans for the year ended 31 December are as follows:

	Consolidated financial statements			
	Unit: Million US Dollar		Unit: Million Baht	
	2021	2020	2021	2020
Opening net book value	595	593	17,862	17,889
Cash flows:				
Increase	-	-	-	-
Non-cash movement:				
Amortisation of deferred finance cost	1	2	45	44
Currency translation differences	-	-	2,013	(71)
Closing net book value	596	595	19,920	17,862

c) Lease liabilities

The movements of lease liabilities for the year ended 31 December are as follows:

	Consolidated financial statements			
	Unit: Million US Dollar		Unit: Million Baht	
	2021	2020	2021	2020
Opening net book value	507	144	15,230	4,333
Cash flows:				
Repayment of lease liabilities	(145)	(115)	(4,621)	(3,612)
Non-cash movements:				
Impact of adoption of TFRS 16	-	362	-	10,909
Deferred finance cost	16	19	520	593
Additions of lease liabilities	194	97	6,186	3,048
Decreases of lease liabilities	(3)	(1)	(85)	(24)
Agreement modification	5	1	161	44
Foreign exchange differences	(2)	-	(52)	(1)
Currency translation differences	-	-	1,814	(60)
Closing net book value	572	507	19,153	15,230

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	Separate financial statements			
	Unit: Million US Dollar		Unit: Million Baht	
	2021	2020	2021	2020
Opening net book value	57	1	1,707	32
Cash flows:				
Repayment of lease liabilities	(31)	(23)	(999)	(739)
Non-cash movements:				
Impact of adoption of TFRS 16	-	30	-	905
Deferred finance cost	1	1	45	40
Additions of lease liabilities	34	48	1,088	1,509
Decreases of lease liabilities	(3)	-	(82)	-
Agreement modification	3	-	82	(8)
Foreign exchange differences	(1)	-	(27)	3
Currency translation differences	-	-	197	(35)
Closing net book value	60	57	2,011	1,707

Related leases transaction recognised in the statement of income for the year ended 31 December are as follows:

	Consolidated financial statements			
	Unit: Million US Dollar		Unit: Million US Baht	
	2021	2020	2021	2020
Expenses related to short-term lease	9	11	288	357
Expenses related to low-value assets lease	5	4	148	121
Expenses related to variable lease payment, which does not include in lease liabilities	-	-	3	4

	Separate financial statements			
	Unit: Million US Dollar		Unit: Million US Baht	
	2021	2020	2021	2020
Expenses related to short-term lease	2	3	60	87
Expenses related to low-value assets lease	4	3	137	79
Expenses related to variable lease payment, which does not include in lease liabilities	-	-	2	2

26 Provision for decommissioning costs

Provision for decommissioning costs are as follows:

	Consolidated financial statements			
	Unit: Million US Dollar		Unit: Million Baht	
	31 December 2021	31 December 2020	31 December 2021	31 December 2020
Provision for decommissioning costs	2,724	3,203	91,044	96,209
<u>Less</u> Current portion	(265)	(63)	(8,878)	(1,881)
Non-current portion of provision for decommissioning costs	2,459	3,140	82,166	94,328

	Separate financial statements			
	Unit: Million US Dollar		Unit: Million Baht	
	31 December 2021	31 December 2020	31 December 2021	31 December 2020
Provision for decommissioning costs	1,310	1,713	43,795	51,468
<u>Less</u> Current portion	(234)	(49)	(7,831)	(1,492)
Non-current portion of provision for decommissioning costs	1,076	1,664	35,964	49,976

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The movements of provision for decommissioning costs during the year are as follows:

	Consolidated financial statements			
	Unit: Million US Dollar		Unit: Million Baht	
	2021	2020	2021	2020
Balance as at 1 January	3,203	3,010	96,209	90,772
Business acquisition	4	-	138	-
Additional provision	49	191	1,564	5,990
Provision used during the year	(36)	(24)	(1,152)	(754)
Finance costs	64	95	2,042	2,973
Reversal of provision	(556)	(69)	(17,762)	(2,169)
Foreign exchange differences	(4)	-	(117)	-
Currency translation differences	-	-	10,122	(603)
Balance as at 31 December	2,724	3,203	91,044	96,209
	Separate financial statements			
	Unit: Million US Dollar		Unit: Million Baht	
	2021	2020	2021	2020
Balance as at 1 January	1,713	1,584	51,468	47,774
Additional provision	12	92	393	2,882
Provision used during the year	(29)	(11)	(929)	(343)
Finance costs	31	49	989	1,529
Reversal of provision	(413)	(1)	(13,200)	(28)
Foreign exchange differences	(4)	-	(120)	-
Currency translation differences	-	-	5,194	(346)
Balance as at 31 December	1,310	1,713	43,795	51,468

On 9 November 2021, the Company entered into Asset Transferred Agreement with Department of Mineral Fuels, Ministry of Energy to determine the assets that the concessionaire of Bongkot project shall transfer to the government at the end of the concession including decommissioning costs of transferred assets which the Company shall pay to the government in accordance to the Company's participating interest. The Company recognised provision for decommissioning costs of those transferred assets to be in line with provision for decommissioning cost of the cash subject to pay to the government and adjusted to the carrying amount of the transferred assets and relevant depreciation, depletion and amortisation.

The Group records a provision for decommissioning costs whenever it is probable that there would be an obligation as a result of a past event and the amount of that obligation is reliably estimated by the Group's engineers and management's judgment. The Group recognises provision for decommissioning costs as part of oil and gas properties, using the discounted present value before tax based on the estimated eventual costs that relate to the removal of the production facilities and amortised based on the unit of production of the proved reserve or the proved developed reserve. The Group recognises an increase that reflects the passage of time from the unwinding discount in each period, as a finance cost in the statements of income.

The provisions are based on the current situation such as regulations, technologies and prices. The actual results could differ from these estimates as future confirming events occur.

27 Provision for remuneration for the renewal of petroleum production

Provision for remuneration for the renewal of petroleum production are as follows:

	Consolidated financial statements			
	Unit: Million US Dollar		Unit: Million Baht	
	31 December 2021	31 December 2020	31 December 2021	31 December 2020
Provision for remuneration for the renewal of petroleum production	236	191	7,894	5,732
<u>Less</u> Current portion	(115)	(88)	(3,859)	(2,631)
Non-current portion of provision for remuneration for the renewal of petroleum production	121	103	4,035	3,101

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	Separate financial statements			
	Unit: Million US Dollar		Unit: Million Baht	
	31 December	31 December	31 December	31 December
	2021	2020	2021	2020
Provision for remuneration for the renewal of petroleum production	145	173	4,856	5,206
<u>Less</u> Current portion	(105)	(85)	(3,529)	(2,576)
Non-current portion of provision for remuneration for the renewal of petroleum production	40	88	1,327	2,630

Movements of provision for remuneration for the renewal of petroleum production during the year are as follows:

	Consolidated financial statements			
	Unit: Million US Dollar		Unit: Million Baht	
	2021	2020	2021	2020
Balance as at 1 January	191	269	5,732	8,100
Additional provision during the year	157	1	5,018	36
Remuneration paid during the year	(117)	(90)	(3,736)	(2,818)
Finance costs	5	17	168	521
Reversal of provision	-	(6)	-	(180)
Currency translation differences	-	-	712	73
Balance as at 31 December	236	191	7,894	5,732

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	Separate financial statements			
	Unit: Million US Dollar		Unit: Million Baht	
	2021	2020	2021	2020
As at 1 January 2020	173	250	5,206	7,548
Additional provision during the year	75	1	2,403	16
Remuneration paid during the year	(106)	(88)	(3,396)	(2,751)
Finance costs	3	14	99	449
Reversal of provision	-	(4)	-	(129)
Currency translation differences	-	-	544	73
Balance as at 31 December	145	173	4,856	5,206

The Group has entered into the Supplemental Petroleum Concession Agreement with the Ministry of Energy to extend the petroleum production period for another 10 years. As a result of this extension, the Group has to pay remuneration fee to the Ministry of Energy. The management has estimated the provision for remuneration using the discounted cash flows based on the duration of the new agreement and significant assumptions, such as sales volume data and oil price, etc.

28 Provision for employee benefits

Provision for employee benefits are as follows:

	Consolidated financial statements			
	Unit: Million US Dollar		Unit: Million Baht	
	2021	2020	2021	2020
Statements of financial position				
Retirement benefits	194	252	6,495	7,571
Other long-term benefits	11	14	369	404
Liabilities in the statements of financial position	205	266	6,864	7,975
Statement of income				
Retirement benefits	37	22	1,184	689
Other long-term benefits	1	1	43	41
	38	23	1,227	730

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	Separate financial statements			
	Unit: Million US Dollar		Unit: Million Baht	
	2021	2020	2021	2020
Statements of financial position				
Retirement benefits	111	175	3,692	5,254
Other long-term benefits	11	13	369	403
Liabilities in the statements of financial position	122	188	4,061	5,657
Statement of income				
Retirement benefits	27	14	872	431
Other long-term benefits	1	1	43	41
	28	15	915	472

The movements of provision for retirement benefits during the year are as follows:

	Consolidated financial statements			
	Unit: Million US Dollar		Unit: Million Baht	
	2021	2020	2021	2020
As at 1 January	252	233	7,571	7,023
Current service cost	16	15	509	479
Past service cost	14	-	440	-
Interest expense	7	7	235	210
	289	255	8,755	7,712
Gain from actuarial assumptions	(72)	(1)	(2,361)	(45)
Benefits paid	(10)	(8)	(314)	(240)
Foreign exchange differences	(13)	6	(421)	195
Currency translation differences	-	-	836	(51)
	(95)	(3)	(2,260)	(141)
As at 31 December	194	252	6,495	7,571

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	Separate financial statements			
	Unit: Million US Dollar		Unit: Million Baht	
	2021	2020	2021	2020
As at 1 January	175	167	5,253	5,037
Current service cost	10	11	336	336
Past service cost	13	-	434	-
Interest expense	3	3	102	95
	201	181	6,125	5,468
Gain from actuarial assumptions	(65)	-	(2,167)	-
Benefits paid	(8)	(7)	(248)	(217)
Foreign exchange differences	(18)	1	(589)	31
Currency translation differences	-	-	571	(29)
	(91)	(6)	(2,433)	(215)
As at 31 December	110	175	3,692	5,253

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Expenses recognised in the statements of income for the years are as follows:

	Consolidated financial statements			
	Unit: Million US Dollar		Unit: Million Baht	
	2021	2020	2021	2020
Current service cost	16	15	509	479
Past service cost	14	-	440	-
Interest expense	7	7	235	210
Total	37	22	1,184	689
Other long-term benefits	1	1	43	41
Expenses recognised in statement of income	38	23	1,227	730
	Separate financial statements			
	Unit: Million US Dollar		Unit: Million Baht	
	2021	2020	2021	2020
Current service cost	11	11	336	336
Past service cost	13	-	434	-
Interest expense	3	3	102	95
Total	27	14	872	431
Other long-term benefits	1	1	43	41
Expenses recognised in statement of income	28	15	915	472

(Gain) loss from actuarial assumptions recognised in the statements of comprehensive income are as follows:

	Consolidated financial statements			
	Unit: Million US Dollar		Unit: Million Baht	
	2021	2020	2021	2020
Change in financial assumptions	(59)	-	(1,951)	-
Change in demographic assumptions	3	-	105	-
Experience adjustment	(16)	(1)	(515)	(45)
Total	(72)	(1)	(2,361)	(45)

	Separate financial statements			
	Unit: Million US Dollar		Unit: Million Baht	
	2021	2020	2021	2020
Change in financial assumptions	(51)	-	(1,706)	-
Change in demographic assumptions	-	-	3	-
Experience adjustment	(14)	-	(464)	-
Total	(65)	-	(2,167)	-

The significant actuarial assumptions used were as follows:

	% per annum	
	2021	2020
Discount rate	0.52 - 6.70	1.9 - 7.15
Inflation rate	2.0	2.0 - 2.5
Turnover rate	0.0 - 15.0	0.0 - 14.0

Sensitivity analysis for each significant assumption used is as follows:

	Increase (Decrease) in impact on defined retirement benefit obligation			
	Unit: Million US Dollar		Unit: Million Baht	
	2021	2020	2021	2020
Discount rate				
Increase 1%	(15)	(23)	(506)	(677)
Decrease 1%	19	27	630	819

The above sensitivity analysis is based on a change in an assumption while holding all other assumptions constant. In practice, this is unlikely to occur, and changes in some of the assumptions may be correlated. When calculating the sensitivity of the defined benefit obligation to significant actuarial assumptions, the same method has been applied as when calculating the retirement benefits recognised in the statement of financial position.

The methods and types of assumptions used in preparing the sensitivity analysis did not change compared to the previous year.

As at 31 December 2021, the weighted average duration of the defined retirement benefit obligation is 23.6 years (2020: 20 years).

Maturity analysis of undiscounted retirement benefits are as follows:

	Consolidated financial statements		Separate financial statements	
	Unit: Million US Dollar	Unit: Million Baht	Unit: Million US Dollar	Unit: Million Baht
As at 31 December 2021				
Not later than 1 year	10	337	3	103
Over 1 to 5 years	44	1,459	37	1,232
Over 5 to 10 years	47	1,581	37	1,252
Over than 10 years	359	11,990	316	10,547
	460	15,367	393	13,134

29 Share capital

The total number of authorised ordinary shares is 3,969.98 million shares (2020: 3,969.98 million shares) with a par value of Baht 1 each (2020: a par value of Baht 1 each). All authorised ordinary shares are fully paid.

30 Legal reserve

Under the Public Companies Act., B.E. 2535, the Company is required to set aside as a legal reserve at least 5% of its net profit for the year until the reserve is not less than 10% of the authorised ordinary shares capital. The legal reserve is not available for dividend distribution. The Company has already set aside full legal reserve at 10% of the authorised ordinary shares capital.

31 Dividends

On 8 April 2021, the Annual General Meeting of the Shareholders approved payment of a dividend for the year 2020 at the rate of Baht 4.25 per share. The Company made an interim dividend payment for the first half-year operations of 2020 at the rate of Baht 1.50 per share on 28 August 2020, and for the second half-year operations of 2020 at the rate of Baht 2.75 per share on 26 April 2021.

On 27 January 2022, the Company's Board of Directors endorsed the proposal of dividend payment for the year 2021 at the rate of Baht 5.00 per share. The Company had made an interim dividend payment for the first half-year operations of 2021 at the rate of Baht 2.00 per share on 27 August 2021. The remaining is for the second half-year operations of 2021 at the rate of Baht 3.00 per share which will be paid after receiving approval from the Annual General Meeting of the Shareholders.

32 Expense by nature

Significant expenses by nature of the Group which comprise the expenses based on its participating interest in each project for the years are as follows:

	Consolidated financial statements			
	Unit: Million US Dollar		Unit: Million Baht	
	2021	2020	2021	2020
Salary, wages and employees' benefits	287	270	9,116	8,459
Repair and maintenance	188	159	6,002	4,983
Exploration well and projects write-off	215	62	6,764	1,943
Geological and geophysical expenses	7	46	226	1,439
Logistics	149	120	4,757	3,762
	Separate financial statements			
	Unit: Million US Dollar		Unit: Million Baht	
	2021	2020	2021	2020
Salary, wages and employees' benefits	273	246	8,713	7,683
Repair and maintenance	69	67	2,214	2,082
Exploration well and projects write-off	-	1	-	37
Geological and geophysical expenses	-	-	1	2
Logistics	62	51	1,975	1,610

33 Income tax expense

Income tax rates for the year ended 31 December 2021 are as follows:

	Tax Rate (%)
Income tax in Thailand	
- Corporate income tax under Revenue Code	3, 20
- Petroleum income tax on petroleum businesses in Thailand pursuant to Petroleum Income Tax Act, B.E. 2514 and 2532	50
- Petroleum income tax on petroleum business in Thailand pursuant to Petroleum Income Tax Act, B.E. 2560	20
Income tax from the Petroleum business in the Malaysia - Thailand Joint Development Area under the Petroleum Income Tax Act (No.5), B.E. 2541 and Petroleum Income tax in Malaysia	
- From the first to the eighth accounting period	Exempt
- From the ninth to the fifteenth accounting period	10
- From the sixteenth accounting period onwards	20
Income tax in Malaysia	
- Corporate income tax	24
- Petroleum income tax	25, 38
Corporate income tax in the Republic of the Union of Myanmar	22
Corporate income tax in the Socialist Republic of Vietnam	20, 50
Corporate income tax in Indonesia	
- Corporate income tax	30
- Income tax from the profit distribution	20
Corporate income tax in the Republic of Singapore	17
Corporate income tax in Hong Kong Special Administrative Region of the People's Republic of China	16.5
Corporate income tax in the Republic of Portugal	21
Corporate income tax in United Kingdom	19
Corporate income tax in the Netherlands	15, 25
Corporate income tax the Republic of Cyprus	12.5

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	Tax Rate (%)
Corporate income tax in Commonwealth of Australia	
- Corporate income tax	30
- Petroleum resource rent tax in Australia	40
Corporate income tax in the Federative Republic of Brazil	24, 34
Corporate income tax in Canada	23
Corporate income tax in Mexico	30
Corporate income tax the Republic of Panama	25
Corporate income tax in People's Democratic Republic of Algeria	
- Corporate income tax	38
- Petroleum income tax	20-70
Income tax in Sultanate of Oman	
- Corporate income tax	15
- Petroleum income tax	55, 80
Corporate income tax in United Arab Emirates	50, 55
Corporate income tax in the Republic of Kazakhstan	
- Corporate income tax	30
- Income tax from the profit distribution	15
Corporate income tax in the Republic of Mozambique	32
Petroleum income tax in the Republic of Angola	50

Income tax expenses for the year ended 31 December comprised:

	Consolidated financial statements			
	Unit: Million US Dollar		Unit: Million Baht	
	2021	2020	2021	2020
Current income tax	1,265	726	40,655	22,679
Deferred income tax	22	(123)	873	(3,915)
Total income tax expenses	1,287	603	41,528	18,764

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	Separate financial statements			
	Unit: Million US Dollar		Unit: Million Baht	
	2021	2020	2021	2020
Current income tax	599	457	19,183	14,276
Deferred income tax	(54)	(122)	(1,649)	(3,866)
Total income tax expenses	545	335	17,534	10,410

The income tax on the Group's profit before income tax differs from the theoretical amount that would arise using the basic tax rate of the home country of the Company are as follows:

	Consolidated financial statements			
	Unit: Million US Dollar		Unit: Million Baht	
	2021	2020	2021	2020
Profit before income tax	2,497	1,322	80,392	41,428
Tax calculated at a tax rate of 50%	1,249	661	40,196	20,714
Tax effect of:				
(Gain) loss of the entities not subject to tax	246	(22)	7,920	(684)
Expenses not deductible for tax purpose	185	311	5,952	9,757
Adjustment in respect of prior year	(15)	5	(474)	165
Results of operations of associates and joint ventures, net of tax	(8)	(21)	(244)	(654)
Tax credit on petroleum royalty	(485)	(392)	(15,606)	(12,273)
Deferred tax on functional currency	10	95	294	2,913
Difference in tax rate of the Group's operating countries	105	(32)	3,387	(1,016)
Others	-	(2)	103	(158)
Tax charge	1,287	603	41,528	18,764

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	Separate financial statements			
	Unit: Million US Dollar		Unit: Million Baht	
	2021	2020	2021	2020
Profit before income tax	1,821	1,069	58,500	33,410
Tax calculated at a tax rate of 50%	911	535	29,250	16,705
Tax effect of:				
Gain from the entities not subject to tax	(15)	(6)	(461)	(181)
Expenses not deductible for tax purpose	173	153	5,573	4,782
Adjustment in respect of prior year	(1)	13	(23)	394
Tax credit on petroleum royalty	(390)	(325)	(12,501)	(10,140)
Deferred tax on functional currency	-	42	-	1,316
Difference in tax rate of the Group's operating countries	(133)	(78)	(4,282)	(2,429)
Others	-	1	(22)	(37)
Tax charge	545	335	17,534	10,410

34 Business acquisition

On 1 February 2021, PTTEP MENA Limited (PTTEP MENA), a subsidiary of the Group, signed a Sale and Purchase Agreement (SPA) to acquire the 20% interests in Block 61 Sultanate of Oman (Oman Block 61) from BP Exploration (Epsilon) Limited (BP). The acquisition was completed on 23 March 2021. This investment is an investment in a joint operation.

The process of determining fair value of the net identifiable assets acquired and reviewing purchase price allocation (PPA) of Oman Block 61 had been finalised in the fourth quarter of 2021. The gain from a bargain purchase derived from an improvement in oil price and operating plan of the project when compared to the agreed consideration date in SPA.

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Details of net identifiable assets acquired on acquisition date and gain from a bargain purchase are as follows:

	Consolidated financial statements	
	Unit: Million US Dollar	Unit: Million Baht
Trade and other receivables	2	48
Inventories	18	558
Other current assets	7	228
Property, plant and equipment	2,166	69,381
Exploration and evaluation assets	332	10,286
Deferred tax assets	217	6,737
Trade and other payables	(28)	(864)
Provision for decommissioning costs	(4)	(138)
Net identifiable assets acquired	2,710	86,236
Gain from a bargain purchase	(342)	(10,694)
Total consideration	2,368	75,542

The fair value of total considerations transferred on the acquisition date of US Dollar 2,368.38 million (Baht 75,541.76 million) consists of cash payment netting with the adjustments according to the conditions as specified in the SPA of US Dollar 2,299.49 million (Baht 73,409.45 million) and the fair value of contingent consideration of US Dollar 68.89 million (Baht 2,132.31 million). The fair value of contingent consideration has been measured by using discounted cash flows method based on discount rate and relevant assumptions relating to possibilities classified as level 3 fair value.

35 Earnings per share

Basic earnings per share for the year ended 31 December are calculated as follows:

	Consolidated financial statements			
	Unit: US Dollar		Unit: Baht	
	2021	2020	2021	2020
Profit attributable to equity holders of parent (unit: million)	1,211	720	38,864	22,664
<u>Less</u> Interest expenses for subordinated capital debentures (unit: million)	(9)	(10)	(294)	(315)
Redemption of subordinated capital debentures (unit: million)	-	-	-	-
Income tax for subordinated capital debentures (unit: million)	(2)	2	(52)	78
Profit used to determine basic earnings per share (unit: million)	1,200	712	38,518	22,427
Weighted average number of ordinary shares outstanding during the year (million shares)	3,970	3,970	3,970	3,970
Basic earnings per share	0.30	0.18	9.70	5.65

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	Separate financial statements			
	Unit: US Dollar		Unit: Baht	
	2021	2020	2021	2020
Profit attributable to equity holders of parent (unit: million)	1,276	734	40,966	23,000
<u>Less</u> Interest expenses for subordinated capital debentures (unit: million)	(9)	(9)	(294)	(294)
Redemption of subordinated capital debentures (unit: million)	-	-	-	-
Income tax for subordinated capital debentures (unit: million)	(2)	2	(46)	63
Profit used to determine basic earnings per share (unit: million)	1,265	727	40,626	22,769
Weighted average number of ordinary shares outstanding during the year (million shares)	3,970	3,970	3,970	3,970
Basic earnings per share	0.32	0.18	10.23	5.74

36 Commitments and contingent liabilities

36.1 Contractual commitments

As at 31 December 2021 and 2020, significant contractual commitments contracted but not recognised as liabilities are as follows:

	Consolidated financial statements			
	Unit: Million US Dollar		Unit: Million Baht	
	31 December 2021	31 December 2020	31 December 2021	31 December 2020
Capital commitments	1,637	1,035	54,708	31,099
Other commitments	72	54	2,406	1,622
Total	1,709	1,089	57,114	32,721

	Separate financial statements			
	Unit: Million US Dollar		Unit: Million Baht	
	31 December	31 December	31 December	31 December
	2021	2020	2021	2020
Capital commitments	310	233	10,360	6,992
Other commitments	22	29	735	874
Total	332	262	11,095	7,866

36.2 Contingent liabilities

- On 9 August 2016, PTTEP Australasia (Ashmore Cartier) Pty Ltd (PTTEP AAA) was notified of a claim made in the Sydney Registry of the Federal Court of Australia seeking damages on behalf of a group of West Timorese seaweed farmers (Class action) for compensation relating to the Montara oil spill incident in the Timor Sea in 2009. Subsequently, on 19 March 2021, the court found that oil from the Montara oil spill incident, on the balance of probabilities, reached the lead plaintiff's seaweed farm in late 2009, destroying his 2009 seaweed crops and making it difficult for him to re-establish his crops in the following five years. The court determined the damages caused only to the lead plaintiff of the class action of approximately Indonesian Rupiah 253 million or equivalent to US Dollar 0.02 million (Baht 0.59 million). Interest payable on these damages was agreed to be approximately Indonesian Rupiah 165 million or equivalent to US Dollar 0.01 million (Baht 0.39 million) up until 31 December 2021.

On 25 October 2021, the court delivered its judgement on the remaining unanswered common questions in the class action. The court specified that impacted areas, on the balance of probabilities, from the Montara oil spill incident, from the period September to at least November 2009. The judgement relates to the lead plaintiff's claim and the common questions raised at trial only. Claims of all the class members are presently statute barred and must be determined separately. The court's decision does not negate the requirement for individual class members to demonstrate their actual loss and damage.

At the time of this report, PTTEP AAA has not been provided with information on the number of class members, the amount of their individual claims nor on the evidence available to support their claims not being statute barred or to support the magnitude of any claim they may make. Further, PTTEP AAA lodged an appeal on 13 December 2021 against the first instance judgment in its entirety. No provision has been raised in relation to this matter due to the current status of the case as presented above.

- As at 31 December 2021, the Company had contingent liabilities in the form of letters of guarantee with an amount equivalent to US Dollar 292.94 million (Baht 9,790.03 million) for the separate financial statements and with an equivalent to US Dollar 430.30 million (Baht 14,380.41 million) for the consolidated financial statements.

36.3 Commitments

Commitment from the guarantee of debentures and loans of subsidiaries

The Company has commitment for the guarantee of unsecured and unsubordinated capital debenture of US Dollar 490 million for PTTEP Canada International Finance Limited (PTTEP CIF), a subsidiary of the Group.

The Company has commitment for the guarantee of unsecured and unsubordinated capital debentures of Baht 15,000 million and US Dollar 1,500 million for PTTEP Treasury Center Company Limited (PTTEP TC), a subsidiary of the Group.

The Company has commitment for the guarantee of unsecured and unsubordinated loans of US Dollar 600 million for PTTEP TC.

The Company has commitment for the guarantee of a cross currency swap transaction for PTTEP TC to swap Baht debenture for US Dollar with guaranteed amount of US Dollar 360 million.

The Company has commitment for the guarantee of the interest rate collar (zero cost collar) for PTTEP TC with guaranteed amount of US Dollar 150 million.

The Company has commitment for the guarantee of senior debt financing agreements of a subsidiary of Moz LNG1 Holding Company Ltd with the facility in the amount of US Dollar 14,900 million, which is guaranteed by the Company based on the Group's participating interest in Moz LNG1 Holding Company Ltd of 8.5%, which is equivalent to US Dollar 1,267 million.

The Company has commitment for the guarantee of PTTEP TC's short-term US Dollar loan agreement which is committed revolving credit facilities with a financial institution. The total loan facility is in amount of US Dollar 400 million. As at 31 December 2021, there is unutilised credit facilities of US Dollar 400 million.

37 Events occurring after the reporting date

On 10 January 2022, MoZ LNG1 Holding Company Ltd (HoldCo), an associate of the Group, increased its authorised share capital amounting to US Dollar 20.66 million by issuing 20.66 million new ordinary shares at a par value of US Dollar 1 each. The Group has paid-up shares in the Group's shareholding to US Dollar 1.76 million.

On 18 January 2022, HoldCo increased its authorised share capital amounting to US Dollar 54.07 million by issuing 54.07 million new ordinary shares at a par value of US Dollar 1 each. The Group has paid-up shares in the Group's shareholding to US Dollar 4.60 million.

On 20 January 2022, PTTEP Energy Holding (Thailand) Company Limited (PTTEP EH), a subsidiary of the Company, increased its authorised share capital amounting to Baht 182.85 million by issuing 1.83 million new ordinary shares at a par value of Baht 100 each. The Company has paid-up shares in the Company's shareholding to US Dollar 5.45 million.

On 21 January 2022, TotalEnergies EP Myanmar, a partner and operator of Yadana and Moattama Gas Transportation Company (MGTC) project with participating interest of 31.2375%, has notified its intention to withdraw, as both partner and operator, from the project. TotalEnergies EP Myanmar will continue its operatorship of the project for the next 6 months to maintain continuity in gas production. The Group is in process of considering its direction.