

PTT Public Company Limited
and its subsidiaries
Report and consolidated financial statements
31 December 2022

Independent Auditor's Report

To the Shareholders of PTT Public Company Limited

Opinion

I have audited the accompanying consolidated financial statements of PTT Public Company Limited and its subsidiaries (the Group), which comprise the consolidated statement of financial position as at 31 December 2022, and the related consolidated statements of income, comprehensive income, changes in shareholders' equity and cash flows for the year then ended, and notes to the consolidated financial statements, including a summary of significant accounting policies, and have also audited the separate financial statements of PTT Public Company Limited for the same period.

In my opinion, the financial statements referred to above present fairly, in all material respects, the financial position of PTT Public Company Limited and its subsidiaries and of PTT Public Company Limited as at 31 December 2022, their financial performance and cash flows for the year then ended in accordance with Thai Financial Reporting Standards.

Basis for Opinion

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

Key Audit Matters

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

I have fulfilled the responsibilities described in the *Auditor's Responsibilities for the Audit of the Financial Statements* section of my report, including in relation to these matters. Accordingly, my audit included the performance of procedures designed to respond to my assessment of the risks of material misstatement of the financial statements. The results of my audit procedures, including the procedures performed to address the matters below, provide the basis for my audit opinion on the accompanying financial statements as a whole.

Key audit matters and how audit procedures respond to each matter are described below.

Use of accounting judgments and estimates during oil price volatility caused by the global energy crisis

The economic situation in 2022, driven by each country wishing to accelerate its recovery from the impact of the COVID-19 pandemic, the war in Ukraine and other factors, affected energy supply and demand and resulted in global oil price volatility. This has resulted in volatility in the global economy and affected business as a whole, including the energy industry. This situation may bring uncertainty and affect the environment in which the Group operates. As a result, I focused on considering the impairment of certain assets: namely, goodwill, property, plant and equipment, other intangible assets, and exploration and evaluation assets and related provisions, since impairment assessments of assets and associated provisions constitute significant accounting estimates, which require management to exercise judgment and make accounting estimates, particularly with respect to the identification of cash-generating units, the estimates of future cash flows that the Group expects to receive from those groups of assets and determination of an appropriate discount rate. The circumstances described above affect these judgments and estimates.

I have gained an understanding of the Group's business environment and of the process for assessing the impact of the oil price volatility on considerations regarding the impairment testing of assets and related provisions, including the recording of relevant accounting transactions, by making inquiries with the Group's management and examining supporting documents. I have assessed the identification of cash-generating units, having gained an understanding of and evaluated the key assumptions selected by management in making estimates of the expected future cash flows and determining the discount rate by making inquiry of the responsible persons and performing comparative analysis with different sources of information regarding both the Group and the industry. Moreover, I compared the cash flow projections for previous periods with actual operating results, including relevant variables, in order to assess management's use of judgment in estimating the expected future cash flows. For this purpose, I have been following the Group's assessment of the impact of these circumstances up to the date of this report. In addition, I reviewed the disclosure of the impact of the oil price volatility on the impairment testing of assets and related provisions.

Business combinations

As discussed in Note 41 to the financial statements, the Group has invested in various businesses. As at the date of acquisition, the Group recorded these transactions by applying the acquisition method, recognising and measuring the assets acquired and liabilities assumed at their fair value and recognising goodwill. I have focused on these business acquisitions since they are material to the financial statements as a whole, and management was required to exercise substantial judgment when appraising the fair values of the assets acquired and liabilities assumed. Therefore, there is a risk with respect to the recognition and measurement of the assets acquired and liabilities assumed, including the recognition of goodwill.

In performing my audit procedures, I communicated with the component auditors and gained an understanding of and assessed the auditors' work to obtain sufficient and appropriate audit evidence related to the following matters.

- A review of the terms and conditions of the share purchase agreements and made inquiries with the management as to the nature and objectives of the acquisition in order to evaluate whether the acquisition meets the definition of a business combination, including a check of the fair value of the consideration transferred for the business acquisition.

- Testing of the calculation of the fair value of the assets acquired and liabilities assumed under the Purchase Price Allocation method, as prepared by the management, including evaluating the competency, qualifications, and independence of management's experts, through assessment of the methods and significant assumptions used in the calculation of the fair value of the assets acquired and liabilities assumed, comparison of those assumptions with information from both internal and external sources and comparison of the past cash flow projections with the actual operating results in order to evaluate the cash flow projections and the discount rate applied by the management of the subsidiaries.
- A review of the recognition of goodwill, and the disclosures related to the business acquisitions in the notes to the financial statements.

Other Matter

The State Audit standards as described in the *Basis for Opinion* section and the *Auditor's Responsibilities for the Audit of the Financial Statements* section are relevant only to the audit of the financial statements, which are prepared by management in accordance with Thai Financial Reporting Standards.

Other Information

Management is responsible for the other information. The other information comprise the information included in annual report of the Group, but does not include the financial statements and my auditor's report thereon.

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

In connection with my audit of the financial statements, my responsibility is to read the other information and, in doing so, consider whether the other information is materially inconsistent with the financial statements or my knowledge obtained in the audit or otherwise appears to be materially misstated. If, based on the work I have performed, I conclude that there is a material misstatement of this other information, I am required to report that fact. I have nothing to report in this regard.

Responsibilities of Management and Those Charged with Governance for the Financial Statements

Management is responsible for the preparation and fair presentation of the financial statements in accordance with Thai Financial Reporting Standards, and for such internal control as management determines is necessary to enable the preparation of financial statements that are free from material misstatement, whether due to fraud or error.

In preparing the financial statements, management is responsible for assessing the Group'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 management either intends to liquidate the Group or to cease operations, or has no realistic alternative but to do so.

Those charged with governance are responsible for overseeing the Group's financial reporting process.

Auditor's Responsibilities for the Audit of the Financial Statements

My objectives are to obtain reasonable assurance about whether the 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 the State Audit Standards and Thai Standards on Auditing 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 financial statements.

As part of an audit in accordance with the State Audit Standards and Thai Standards on Auditing, I exercise professional judgement and maintain professional skepticism throughout the audit.

I also:

- Identify and assess the risks of material misstatement of the 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 internal control.
- Evaluate the appropriateness of accounting policies used and the reasonableness of accounting estimates and related disclosures made by management.
- Conclude on the appropriateness of management's 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 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 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 to cease to continue as a going concern.
- Evaluate the overall presentation, structure and content of the financial statements, including the disclosures, and whether the 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 those charged with governance 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 those charged with governance with a statement that I have complied with the State Audit Standards and relevant ethical requirements 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 those charged with governance, I determine those matters that were of most significance in the audit of the 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.

I am responsible for the audit resulting in this independent auditor's report.

Waraporn Prapasirikul
Certified Public Accountant (Thailand) No. 4579

EY Office Limited
Bangkok: 16 February 2023

PTT PUBLIC COMPANY LIMITED AND ITS SUBSIDIARIES
STATEMENT OF FINANCIAL POSITION
AS AT 31 DECEMBER 2022

Unit: Baht

	Notes	Consolidated financial statements		Separate financial statements	
		31 December 2022	31 December 2021	31 December 2022	31 December 2021
Assets					
Current assets					
Cash and cash equivalents	4	340,054,258,218	312,730,119,697	52,787,983,676	45,853,391,737
Short-term investments in financial assets	5	12,600,203,556	48,906,980,038	3,468,734,142	5,533,088,471
Trade accounts receivable	6	219,054,350,287	196,242,806,275	161,459,456,807	113,907,636,288
Other accounts receivable	7	142,265,877,656	64,752,490,685	35,695,995,643	20,414,065,309
Short-term lending	8.1	2,173,584,524	1,579,817,358	2,043,911,233	4,278,921,224
Inventories	10	222,347,607,982	170,823,071,494	27,192,390,126	12,246,852,998
Supplies	11	49,506,527,001	41,415,831,974	5,488,234,310	5,346,756,999
Current derivative assets		14,764,120,162	4,072,920,017	824,582,845	308,616,645
Other current financial assets		1,924,001,716	2,034,031,239	297,045,802	314,540,611
Other current assets		13,592,699,390	9,984,015,672	2,346,735,149	1,879,750,419
Assets held for sale	12	22,579,601,336	2,711,464,728	-	-
Total current assets		1,040,862,831,828	855,253,549,177	291,605,069,733	210,083,620,701
Non-current assets					
Other long-term investments in financial assets	13	54,092,774,460	46,464,436,437	13,028,827,422	16,674,234,308
Investments in subsidiaries	14.1, 14.4	-	-	435,703,629,724	376,060,328,121
Investments in joint ventures	14.2, 14.5	60,356,655,237	52,280,017,017	4,959,465,773	4,959,465,773
Investments in associates	14.3	104,658,121,922	76,499,009,485	-	-
Long-term lending	8.2	8,045,563,028	8,623,739,545	56,066,587,558	119,596,249,616
Investment properties	15	10,736,084,109	10,458,680,544	3,927,382,145	3,967,005,551
Property, plant and equipment	16	1,499,329,679,429	1,436,877,101,339	248,276,170,223	250,669,532,719
Right-of-use assets	17	124,052,955,042	80,388,810,683	24,869,287,411	18,746,816,426
Goodwill	18	188,963,836,957	182,853,842,824	-	-
Other intangible assets	19	137,051,494,679	123,496,235,155	2,702,425,852	2,605,088,537
Exploration and evaluation assets	20	106,160,968,871	104,594,596,037	-	-
Deferred tax assets	22.3	50,759,602,063	63,794,973,758	-	-
Non-current derivative assets		1,632,692,190	2,594,099,816	406,331,243	1,231,953,427
Other non-current financial assets		11,424,805,434	11,167,517,861	178,496,135	221,482,588
Other non-current assets	23	17,504,226,657	16,037,466,276	48,127,759	90,133,721
Total non-current assets		2,374,769,460,078	2,216,130,526,777	790,166,731,245	794,822,290,787
Total assets		3,415,632,291,906	3,071,384,075,954	1,081,771,800,978	1,004,905,911,488

The accompanying notes are an integral part of these financial statements.

PTT PUBLIC COMPANY LIMITED AND ITS SUBSIDIARIES
STATEMENT OF FINANCIAL POSITION (CONTINUED)
AS AT 31 DECEMBER 2022

Unit: Baht

Notes	Consolidated financial statements		Separate financial statements		
	31 December 2022	31 December 2021	31 December 2022	31 December 2021	
<u>Liabilities and shareholders' equity</u>					
Current liabilities					
Bank overdrafts and short-term loans from financial institutions	27	90,757,365,238	11,631,869,299	-	-
Trade accounts payable	24	230,366,158,328	213,944,280,994	144,671,410,600	104,319,825,067
Other accounts payable	25	88,322,204,627	103,850,590,899	25,696,976,392	30,911,400,257
Current portion of long-term borrowings	27	73,237,306,068	87,648,749,676	15,954,936,982	5,999,383,087
Current portion of lease liabilities	27	16,190,978,583	10,741,801,954	1,202,289,541	609,457,556
Short-term borrowings	27	784,118,026	111,200,400	9,447,477,560	7,217,369,599
Income tax payable		30,846,381,120	33,423,495,520	-	2,581,880,124
Short-term provision for decommissioning costs	29	10,889,461,758	8,897,750,974	-	-
Current derivative liabilities		23,012,778,342	4,411,718,603	627,263,806	505,579,363
Other current financial liabilities		6,069,311,742	5,924,695,308	3,308,991,894	894,359,126
Other current liabilities	26	16,712,910,561	10,978,412,795	4,856,387,303	3,278,569,169
Liabilities directly associated with assets held for sale	12	5,351,425,781	2,085,885,139	-	-
Total current liabilities		592,540,400,174	493,650,451,561	205,765,734,078	156,317,823,348
Non-current liabilities					
Long-term borrowings	27	924,943,365,018	786,223,589,885	219,596,549,709	183,451,262,580
Lease liabilities	27	87,680,577,734	53,468,016,789	8,269,079,146	6,437,431,471
Deferred tax liabilities	22.3	90,971,519,778	89,313,797,458	1,438,179,256	870,869,816
Provision for employee benefits	28	32,355,934,190	36,895,459,744	5,998,145,391	6,818,317,240
Long-term provision for decommissioning costs	29	99,161,887,598	84,696,385,818	-	-
Deposits on LPG cylinders		12,683,944,332	12,157,167,752	-	-
Non-current derivative liabilities		7,642,867,621	3,714,841,570	5,005,805,102	1,881,031,983
Other non-current financial liabilities	30	4,661,683,967	12,222,931,830	1,588,081,637	7,173,404,157
Other non-current liabilities	31	29,297,346,561	26,101,711,553	5,316,681,443	4,449,024,963
Total non-current liabilities		1,289,399,126,799	1,104,793,902,399	247,212,521,684	211,081,342,210
Total liabilities		1,881,939,526,973	1,598,444,353,960	452,978,255,762	367,399,165,558

The accompanying notes are an integral part of these financial statements.

PTT PUBLIC COMPANY LIMITED AND ITS SUBSIDIARIES
STATEMENT OF FINANCIAL POSITION (CONTINUED)
AS AT 31 DECEMBER 2022

Unit: Baht

	Consolidated financial statements		Separate financial statements	
	31 December 2022	31 December 2021	31 December 2022	31 December 2021
Liabilities and shareholders' equity (Continued)				
Shareholders' equity				
Share capital				
Registered share capital				
28,562,996,250 ordinary shares of Baht 1 each	28,562,996,250	28,562,996,250	28,562,996,250	28,562,996,250
Issued and fully paid-up share capital				
28,562,996,250 ordinary shares of Baht 1 each	28,562,996,250	28,562,996,250	28,562,996,250	28,562,996,250
Share premium	29,211,131,966	29,211,131,966	29,211,131,966	29,211,131,966
Surplus from the change in the ownership interests				
in subsidiaries	10,068,142,437	3,095,604,331	-	-
Retained earnings				
Appropriated - legal reserve	32 2,857,245,725	2,857,245,725	2,857,245,725	2,857,245,725
Appropriated - self-insurance fund reserve	32 1,293,274,044	1,272,724,959	1,293,274,044	1,272,724,959
Unappropriated	957,167,125,835	922,091,718,159	563,628,611,939	570,355,191,388
Other components of shareholders' equity	23,430,961,528	19,604,800,651	3,240,285,292	5,247,455,642
Equity attributable to owners of the Company	1,052,590,877,785	1,006,696,222,041	628,793,545,216	637,506,745,930
Non-controlling interests of the subsidiaries	481,101,887,148	466,243,499,953	-	-
Total shareholders' equity	1,533,692,764,933	1,472,939,721,994	628,793,545,216	637,506,745,930
Total liabilities and shareholders' equity	3,415,632,291,906	3,071,384,075,954	1,081,771,800,978	1,004,905,911,488

The accompanying notes are an integral part of these financial statements.

(Phannalin Mahawongtikul)
Chief Financial Officer

PTT PUBLIC COMPANY LIMITED AND ITS SUBSIDIARIES
STATEMENT OF INCOME
FOR THE YEAR ENDED 31 DECEMBER 2022

Unit: Baht

	Notes	Consolidated financial statements		Separate financial statements	
		2022	2021	2022	2021
Sales and service income	34	3,367,202,701,454	2,258,818,487,065	2,128,816,674,894	1,189,700,090,193
Cost of sales and services	36	2,906,725,865,808	1,882,251,511,450	2,071,743,772,189	1,112,048,521,085
Gross profit		460,476,835,646	376,566,975,615	57,072,902,705	77,651,569,108
Other income	35	24,420,164,771	28,940,025,225	52,478,489,606	44,837,577,011
Loss on derivatives		(74,913,812,974)	(31,958,111,626)	(18,318,184,587)	(9,391,598,643)
Gain (loss) on foreign exchange rates		5,552,364,342	(6,468,623,028)	8,446,958,150	861,405,493
Profit before expenses		415,535,551,785	367,080,266,186	99,680,165,874	113,958,952,969
Selling and distribution expenses	36	46,212,116,583	27,245,591,322	9,509,855,968	5,890,348,221
Administrative expenses	36	98,015,113,077	83,044,881,694	24,576,044,278	26,116,781,261
Petroleum royalties		27,504,417,516	17,978,441,667	-	-
Operating profit		243,803,904,609	238,811,351,503	65,594,265,628	81,951,823,487
Share of profit from investments in joint ventures and associate	14.6	5,848,984,585	9,010,122,588	-	-
Profit before finance costs and income taxes		249,652,889,194	247,821,474,091	65,594,265,628	81,951,823,487
Finance costs	37	37,090,860,839	28,163,289,021	8,231,278,971	6,312,810,166
Profit before income taxes		212,562,028,355	219,658,185,070	57,362,986,657	75,639,013,321
Income tax expenses	22.1	90,462,362,303	67,590,567,223	4,782,466,799	8,313,623,618
Profit for the year		122,099,666,052	152,067,617,847	52,580,519,858	67,325,389,703
Profit attributable to					
Equity holders of the Company		91,174,857,528	108,363,410,834	52,580,519,858	67,325,389,703
Non-controlling interests of the subsidiaries		30,924,808,524	43,704,207,013	-	-
		122,099,666,052	152,067,617,847	52,580,519,858	67,325,389,703
Basic earnings per share	33	3.20	3.79	1.84	2.36

The accompanying notes are an integral part of these financial statements.

PTT PUBLIC COMPANY LIMITED AND ITS SUBSIDIARIES
STATEMENT OF COMPREHENSIVE INCOME
FOR THE YEAR ENDED 31 DECEMBER 2022

	Unit: Baht			
	Consolidated financial statements		Separate financial statements	
	2022	2021	2022	2021
Profit for the year	122,099,666,052	152,067,617,847	52,580,519,858	67,325,389,703
Other comprehensive income (loss)				
Other comprehensive income to be reclassified to profit or loss in subsequent periods				
Exchange differences on translation of financial statements				
in foreign currency	9,951,723,600	45,680,234,941	-	-
Loss on debt investments measured at fair value				
through other comprehensive income	(26,848,618)	(1,941,559)	-	-
Income taxes related to debt investments measured at fair value				
through other comprehensive income	5,369,723	388,312	-	-
Gain (loss) on cash flow hedges	(37,962,354)	951,280,778	-	-
Income taxes related to cash flow hedges	61,702,344	(221,989,129)	-	-
Share of other comprehensive income (loss) from joint ventures and associates	(1,512,199,412)	493,901,669	-	-
Other comprehensive income not to be reclassified to profit or loss in subsequent periods				
Gain on remeasurements of defined benefits plans	5,800,241,814	4,502,976,465	1,091,617,640	1,241,615,766
Income taxes related to remeasurements of defined benefits plans	(1,331,725,929)	(1,481,638,190)	(218,323,528)	(248,323,153)
Gain (loss) on equity investments designated at fair value				
through other comprehensive income	(4,393,068,700)	9,253,348,119	(2,508,962,938)	4,611,499,601
Income taxes related to equity investments designated at fair value				
through other comprehensive income	1,038,149,025	(2,579,072,039)	501,792,588	(922,299,920)
Share of other comprehensive income from joint ventures and associates	502,522,795	76,023,527	-	-
Other comprehensive income (loss) for the year, net of income taxes	10,057,904,288	56,673,512,894	(1,133,876,238)	4,682,492,294
Total comprehensive income for the year	132,157,570,340	208,741,130,741	51,446,643,620	72,007,881,997
Total comprehensive income attributable to				
Equity holders of the Company	97,177,433,881	147,818,264,820	51,446,643,620	72,007,881,997
Non-controlling interests of the subsidiaries	34,980,136,459	60,922,865,921	-	-
	132,157,570,340	208,741,130,741	51,446,643,620	72,007,881,997

The accompanying notes are an integral part of these financial statements.

PTT PUBLIC COMPANY LIMITED AND ITS SUBSIDIARIES
STATEMENT OF CHANGES IN SHAREHOLDERS' EQUITY
FOR THE YEAR ENDED 31 DECEMBER 2022

Unit: Baht

Consolidated financial statements

	Equity attributable to owners of the Company														Total equity attributable to owners of the Company	Equity attributable to non-controlling interests of the subsidiaries	Total shareholders' equity
	Retained earnings						Other components of shareholders' equity										
	Surplus (deficit) from the change in the ownership interests			Appropriated			Other comprehensive income (loss)				Put option over non-controlling interest of the subsidiary shareholders' equity	Total other components of shareholders' equity					
	Issued and fully paid-up share capital	Share premium	in subsidiaries	Legal reserve	Self-insurance fund reserve	Unappropriated	Exchange differences on translation of financial statements in foreign currency	Investments in other long-term financial assets	Cash flow hedges	Share of other comprehensive income (loss) from joint ventures and associates							
Notes	share capital	Share premium	in subsidiaries	Legal reserve	Self-insurance fund reserve	Unappropriated	in foreign currency	financial assets	Cash flow hedges	and associates	of the subsidiary shareholders' equity	of the Company	of the subsidiaries	shareholders' equity			
Balance as at 1 January 2021	28,562,996,250	29,211,131,966	(31,517,925,559)	2,857,245,725	1,265,209,883	869,260,266,823	(18,930,859,802)	2,564,490,238	(621,549,554)	12,108,208	(622,712,347)	(17,598,523,257)	882,040,401,831	403,804,692,256	1,285,845,094,087		
Changes in shareholders' equity for the year																	
Reserve for self-insurance fund	32	-	-	-	7,515,076	(7,515,076)	-	-	-	-	-	-	-	-	-		
Interest expenses for subordinated capital debentures		-	-	-	-	(191,884,277)	-	-	-	-	-	-	(191,884,277)	(102,023,907)	(293,908,184)		
Income taxes for subordinated capital debentures		-	-	-	-	(33,617,145)	-	-	-	-	-	-	(33,617,145)	(17,874,067)	(51,491,212)		
Dividends paid		-	-	-	-	(57,696,554,493)	-	-	-	-	-	-	(57,696,554,493)	-	(57,696,554,493)		
Dividends paid of subsidiaries		-	-	-	-	-	-	-	-	-	-	-	-	(20,018,249,708)	(20,018,249,708)		
Change in the ownership interests in subsidiaries		-	-	34,613,529,890	-	(13,082,263)	-	-	-	-	-	-	34,600,447,627	(33,286,228,505)	1,314,219,122		
Increase in share capital of subsidiaries		-	-	-	-	-	-	-	-	-	-	-	-	53,800,032,347	53,800,032,347		
Non-controlling interest arising from business combinations		-	-	-	-	-	-	-	-	-	-	-	-	1,138,852,712	1,138,852,712		
Profit for the year		-	-	-	-	108,363,410,834	-	-	-	-	-	-	108,363,410,834	43,704,207,013	152,067,617,847		
Other comprehensive income for the year		-	-	-	-	2,410,693,756	30,708,868,960	5,813,063,713	299,965,556	381,425,679	-	37,203,323,908	39,614,017,664	17,220,091,812	56,834,109,476		
Balance as at 31 December 2021		28,562,996,250	29,211,131,966	3,095,604,331	2,857,245,725	1,272,724,959	922,091,718,159	11,778,009,158	8,377,553,951	(321,583,998)	393,533,887	(622,712,347)	19,604,800,651	1,006,696,222,041	466,243,499,953	1,472,939,721,994	
Balance as at 1 January 2022		28,562,996,250	29,211,131,966	3,095,604,331	2,857,245,725	1,272,724,959	922,091,718,159	11,778,009,158	8,377,553,951	(321,583,998)	393,533,887	(622,712,347)	19,604,800,651	1,006,696,222,041	466,243,499,953	1,472,939,721,994	
Changes in shareholders' equity for the year																	
Reserve for self-insurance fund	32	-	-	-	20,549,085	(20,549,085)	-	-	-	-	-	-	-	-	-		
Redemption of subordinated capital debentures		-	-	-	-	320,294,860	-	-	-	-	-	-	320,294,860	(4,811,693,179)	(4,491,398,319)		
Interest expenses for subordinated capital debentures		-	-	-	-	(94,726,685)	-	-	-	-	-	-	(94,726,685)	(50,365,703)	(145,092,388)		
Income taxes for subordinated capital debentures		-	-	-	-	(9,324,666)	-	-	-	-	-	-	(9,324,666)	(4,957,878)	(14,282,544)		
Dividends paid	40	-	-	-	-	(59,982,106,341)	-	-	-	-	-	-	(59,982,106,341)	-	(59,982,106,341)		
Dividends paid of subsidiaries		-	-	-	-	-	-	-	-	-	-	-	-	(26,070,043,928)	(26,070,043,928)		
Change in the ownership interests in subsidiaries		-	-	6,972,538,106	-	(64,626,345)	57,999,390	-	-	-	622,712,347	680,711,737	7,588,623,498	(9,342,816,379)	(1,754,192,881)		
Increase in share capital of subsidiaries		-	-	-	-	-	-	-	-	-	-	-	-	8,465,594,576	8,465,594,576		
Non-controlling interest arising from business combinations	41	-	-	-	-	-	-	-	-	-	-	-	-	11,740,600,309	11,740,600,309		
Profit for the year		-	-	-	-	91,174,857,528	-	-	-	-	-	-	91,174,857,528	30,924,808,524	122,099,666,052		
Other comprehensive income (loss) for the year		-	-	-	-	3,751,588,410	6,825,941,535	(3,255,020,459)	245,296,101	(670,768,037)	-	3,145,449,140	6,897,037,550	4,007,260,853	10,904,298,403		
Balance as at 31 December 2022		28,562,996,250	29,211,131,966	10,068,142,437	2,857,245,725	1,293,274,044	957,167,125,835	18,661,950,083	5,122,533,492	(76,287,897)	(277,234,150)	-	23,430,961,528	1,052,590,877,785	481,101,887,148	1,533,692,764,933	

The accompanying notes are an integral part of these financial statements.

PTT PUBLIC COMPANY LIMITED AND ITS SUBSIDIARIES
STATEMENT OF CHANGES IN SHAREHOLDERS' EQUITY (CONTINUED)
FOR THE YEAR ENDED 31 DECEMBER 2022

Unit: Baht

	Separate financial statements							
	Notes	Issued and fully paid-up share capital	Share premium	Retained earnings			Other components of shareholders' equity	Total shareholders' equity
				Appropriated		Unappropriated	Other comprehensive income (loss)	
				Legal reserve	Self-insurance fund reserve		Investments in other long-term financial assets	
Balance as at 1 January 2021		28,562,996,250	29,211,131,966	2,857,245,725	1,265,209,883	559,627,649,301	1,558,255,961	623,082,489,086
Changes in shareholders' equity for the year								
Reserve for self-insurance fund	32	-	-	-	7,515,076	(7,515,076)	-	-
Dividends paid		-	-	-	-	(57,696,554,493)	-	(57,696,554,493)
Profit for the year		-	-	-	-	67,325,389,703	-	67,325,389,703
Other comprehensive income for the year		-	-	-	-	1,106,221,953	3,689,199,681	4,795,421,634
Balance as at 31 December 2021		<u>28,562,996,250</u>	<u>29,211,131,966</u>	<u>2,857,245,725</u>	<u>1,272,724,959</u>	<u>570,355,191,388</u>	<u>5,247,455,642</u>	<u>637,506,745,930</u>
Balance as at 1 January 2022		28,562,996,250	29,211,131,966	2,857,245,725	1,272,724,959	570,355,191,388	5,247,455,642	637,506,745,930
Changes in shareholders' equity for the year								
Reserve for self-insurance fund	32	-	-	-	20,549,085	(20,549,085)	-	-
Dividends paid	40	-	-	-	-	(59,982,106,341)	-	(59,982,106,341)
Profit for the year		-	-	-	-	52,580,519,858	-	52,580,519,858
Other comprehensive income (loss) for the year		-	-	-	-	695,556,119	(2,007,170,350)	(1,311,614,231)
Balance as at 31 December 2022		<u>28,562,996,250</u>	<u>29,211,131,966</u>	<u>2,857,245,725</u>	<u>1,293,274,044</u>	<u>563,628,611,939</u>	<u>3,240,285,292</u>	<u>628,793,545,216</u>

The accompanying notes are an integral part of these financial statements.

PTT PUBLIC COMPANY LIMITED AND ITS SUBSIDIARIES
STATEMENT OF CASH FLOWS
FOR THE YEAR ENDED 31 DECEMBER 2022

	Unit: Baht			
	Consolidated financial statements		Separate financial statements	
	2022	2021	2022	2021
Cash flows from operating activities				
Profit before income taxes	212,562,028,355	219,658,185,070	57,362,986,657	75,639,013,321
Adjustment of profit before income taxes to net cash provided by (used in) operating activities				
Depreciation and amortization expenses	167,329,599,023	146,789,779,649	18,826,520,033	18,851,476,185
(Gain) loss on disposal of assets	(1,084,638,265)	121,501,954	(7,586,459)	133,747,744
(Gain) loss on disposal of investments	(801,567,034)	1,153,210,864	641,700,056	(5,449,431)
Gain on change in status of investments	(847,962,520)	(503,791,641)	-	-
Gain on bargain purchase	-	(10,693,778,833)	-	-
(Reversal of) loss on impairment of assets	12,303,617,084	13,287,037,570	(3,177,757)	5,196,577,196
Loss on impairment of investment	305,292,173	-	24,442,324	-
Share of profit from investments in joint ventures and associates	(5,848,984,585)	(9,010,122,588)	-	-
Provision for employee benefits	2,931,108,247	3,397,662,035	589,068,480	640,401,880
Loss on exchange rates	11,648,818,620	18,977,894,183	85,158,978	4,910,749,375
(Gain) loss on derivatives	10,243,204,814	(1,703,374,031)	3,869,015,872	1,917,252,104
Unrealized (gain) loss on fair value of commodity contracts	7,920,457,008	268,863,858	(198,775,269)	(71,232,282)
(Gain) loss on investments measured at fair value through profit and loss	(277,215,121)	(52,665,423)	53,100,575	(27,092,759)
(Reversal of) expected credit loss of accounts receivable and other asse	298,185,044	(1,603,917,634)	(81,478,676)	(1,535,879,765)
Write-off exploration assets	1,178,276,436	6,763,906,152	-	-
(Reversal of) allowance for changes in value of inventories	5,885,937,848	(163,398,479)	980,802,135	(279,849,140)
(Reversal of) allowance for obsolete supplies	(360,855,737)	1,437,607,156	20,613,334	-
Dividend income	(467,202,903)	(457,214,221)	(37,760,947,300)	(33,317,981,304)
Interest income	(3,920,530,559)	(2,522,340,731)	(2,256,153,482)	(1,918,737,537)
Finance costs	37,090,860,839	28,163,289,021	8,231,278,971	6,312,810,166
Others	63,131,567	31,235,162	(173,436,390)	(528,447,396)
Profit from operating activities before changes in operating assets and liabilities	456,151,560,334	413,339,569,093	50,203,132,082	75,917,358,357

The accompanying notes are an integral part of these financial statements.

PTT PUBLIC COMPANY LIMITED AND ITS SUBSIDIARIES
STATEMENT OF CASH FLOWS (CONTINUED)
FOR THE YEAR ENDED 31 DECEMBER 2022

	Unit: Baht			
	Consolidated financial statements		Separate financial statements	
	2022	2021	2022	2021
Operating assets (increase) decrease				
Trade accounts receivable	(20,361,023,129)	(75,984,989,496)	(47,611,506,352)	(40,212,760,523)
Other accounts receivable	(76,304,298,610)	(10,943,931,998)	(14,746,969,833)	(8,948,279,364)
Inventories and supplies	(63,378,486,718)	(64,612,359,820)	(16,179,915,362)	(5,534,515,843)
Other current assets	(2,789,886,875)	(5,505,461,479)	(448,412,755)	61,429,343
Other non-current assets	(7,501,078,584)	(1,805,890,515)	85,233,353	(52,157,202)
Operating liabilities increase (decrease)				
Trade accounts payable	15,370,767,864	93,815,413,427	41,255,197,922	36,408,146,544
Other accounts payable	(10,265,408,725)	35,448,496,439	(12,304,819,704)	13,978,060,691
Other current liabilities	6,106,470,203	12,691,006,641	3,992,446,681	1,918,980,962
Other non-current liabilities	(19,847,285,785)	(23,368,923,464)	(650,138,258)	(11,242,656,191)
	<u>(178,970,230,359)</u>	<u>(40,266,640,265)</u>	<u>(46,608,884,308)</u>	<u>(13,623,751,583)</u>
Cash received from operating activities	277,181,329,975	373,072,928,828	3,594,247,774	62,293,606,774
Income taxes paid	(85,481,632,089)	(50,648,238,002)	(7,198,139,063)	(7,291,861,572)
Net cash provided by (used in) operating activities	<u>191,699,697,886</u>	<u>322,424,690,826</u>	<u>(3,603,891,289)</u>	<u>55,001,745,202</u>

The accompanying notes are an integral part of these financial statements.

PTT PUBLIC COMPANY LIMITED AND ITS SUBSIDIARIES
STATEMENT OF CASH FLOWS (CONTINUED)
FOR THE YEAR ENDED 31 DECEMBER 2022

	Unit: Baht			
	Consolidated financial statements		Separate financial statements	
	2022	2021	2022	2021
Cash flows from investing activities				
Cash payment of property, plant and equipment and investment properties	(161,874,422,998)	(135,677,727,733)	(15,083,182,995)	(9,465,894,815)
Cash payment of intangible assets	(7,468,541,637)	(2,466,015,708)	(320,646,834)	(191,430,214)
Cash payment of exploration and evaluation assets	(3,336,028,022)	(4,200,411,986)	-	-
Cash payment of right-of-use assets	(566,421,603)	(280,659,789)	(954,798)	(162,618,109)
Cash payment for other long-term investments in financial assets	(15,013,044,044)	(12,242,805,276)	(962,596,895)	(5,655,242,632)
Net cash payment for business acquisitions	(14,507,984,823)	(207,569,365,101)	-	-
Cash payment for contingent considerations from business acquisition and participating interest in a joint venture	(33,397,028)	(1,745,295,969)	-	-
Cash payment of investments in subsidiaries	-	-	(65,601,093,913)	(31,959,214,668)
Decrease in cash from loss of control in a subsidiary	(537,264,908)	-	-	-
Cash payment of investments in joint ventures and associates	(35,299,053,450)	(50,379,458,539)	-	(77,357,800)
Cash payment of long-term lending	(2,126,050,738)	(9,649,611,689)	(16,774,913,287)	(104,552,396,920)
Cash payment for derivatives	(190,076,424)	(31,367,419)	(190,076,424)	(31,367,419)
Cash proceeds from disposals of property, plant and equipment, intangible assets, investment properties and right-of-use assets	1,432,797,919	372,576,068	44,135,118	82,344,508
Cash proceeds from disposals of other long-term investments in financial assets	3,268,672,808	4,467,435,884	1,280,910,942	4,333,217,228
Cash proceeds from business restructuring	-	1,560,487,060	-	-
Net cash proceeds from asset acquisition	-	382,071,467	-	-
Cash proceeds from disposals of investments in subsidiaries	1,407,144,481	-	5,291,649,930	-
Cash proceeds from dissolution of subsidiary	-	-	-	840,290,866
Cash proceeds from disposals of investments in joint ventures and associates	-	1,774,029,229	-	-
Cash proceeds from long-term lending	903,588,647	1,221,506,628	81,552,254,869	32,262,469,379
Cash proceeds from derivatives	-	33,648,800	-	33,648,800
Decrease (increase) in short-term lending	(43,730,633)	(12,383,522,502)	1,141,653,527	(1,553,322,309)
Decrease in short-term investments in financial assets	37,030,827,040	34,304,077,087	2,903,067,958	35,741,229,457
Interests received	2,826,111,188	2,008,250,705	2,298,489,039	2,080,352,721
Dividends received	7,436,536,573	5,193,924,046	37,776,859,079	34,840,385,881
Net cash provided by (used in) investing activities	<u>(186,690,337,652)</u>	<u>(385,308,234,737)</u>	<u>33,355,555,316</u>	<u>(43,434,906,046)</u>

The accompanying notes are an integral part of these financial statements.

PTT PUBLIC COMPANY LIMITED AND ITS SUBSIDIARIES
STATEMENT OF CASH FLOWS (CONTINUED)
FOR THE YEAR ENDED 31 DECEMBER 2022

Unit: Baht

	Notes	Consolidated financial statements		Separate financial statements	
		2022	2021	2022	2021
Cash flows from financing activities					
Cash proceeds from issuance of ordinary shares of subsidiaries		9,033,732,110	53,800,032,347	-	-
Cash proceeds from resale of treasury shares of subsidiaries		-	1,353,929,175	-	-
Cash proceeds from long-term borrowings		289,780,174,199	207,295,898,664	50,950,250,340	52,952,841,110
Cash proceeds from derivatives		85,691,200	58,279,590	75,949,367	-
Cash payment for decrease in share capital of subsidiaries		(258,018,108)	-	-	-
Cash repayment of long-term borrowings		(181,104,685,480)	(104,120,155,071)	(6,000,000,000)	(15,230,000,000)
Cash payment for lease installments		(15,022,171,386)	(9,416,014,865)	(2,128,870,388)	(564,220,898)
Cash payment for derivatives		(1,668,200,159)	(179,797,878)	(96,557,169)	(88,298,681)
Cash payment for redemption of subordinated capital debentures		(4,988,476,412)	-	-	-
Cash payment for change in ownership in subsidiaries		(554,213,758)	(28,512,000)	-	-
Increase in short-term borrowings		718,110,869	108,734,800	2,230,107,961	4,656,307,640
Increase in bank overdrafts and short-term loans					
from financial institutions		76,767,770,502	5,539,097,815	-	-
Finance costs paid		(36,198,375,070)	(29,752,338,860)	(7,871,128,111)	(6,174,811,647)
Dividends paid		(85,922,867,075)	(78,469,132,743)	(59,977,197,660)	(57,694,126,039)
Net cash provided by (used in) financing activities		50,668,471,432	46,190,020,974	(22,817,445,660)	(22,142,308,515)
Effects of exchange rates on cash and cash equivalents		697,586,885	2,737,215,434	373,572	86,975,199
Exchange differences on translation		(20,287,400,777)	(5,014,799,881)	-	-
Cash and cash equivalents classified as held for sale		(8,763,879,253)	(330,839,784)	-	-
Net increase (decrease) in cash and cash equivalents		27,324,138,521	(19,301,947,168)	6,934,591,939	(10,488,494,160)
Cash and cash equivalents at beginning of year		312,730,119,697	332,032,066,865	45,853,391,737	56,341,885,897
Cash and cash equivalents at end of year	4	340,054,258,218	312,730,119,697	52,787,983,676	45,853,391,737
Non-cash items					
Accounts payable from purchases of fixed assets		28,030,190,729	18,679,913,157	2,575,466,692	1,820,355,307
Accounts payable from purchases of intangible assets		497,407,210	365,171,767	76,964,930	141,989,236

The accompanying notes are an integral part of these financial statements.

PTT PUBLIC COMPANY LIMITED AND ITS SUBSIDIARIES
NOTES TO FINANCIAL STATEMENTS
FOR THE YEAR ENDED 31 DECEMBER 2022

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PTT PUBLIC COMPANY LIMITED AND ITS SUBSIDIARIES
NOTES TO FINANCIAL STATEMENTS
FOR THE YEAR ENDED 31 DECEMBER 2022

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PTT PUBLIC COMPANY LIMITED AND ITS SUBSIDIARIES
NOTES TO FINANCIAL STATEMENTS
FOR THE YEAR ENDED 31 DECEMBER 2022

1. General information

PTT Public Company Limited (the Company) is incorporated as a public limited company in Thailand, and is listed on the Stock Exchange of Thailand.

The Head Office of the Company is located at 555 Vibhavadi-Rangsit Road, Chatuchak, Bangkok, Thailand.

The Company has a status of a state enterprise while the Ministry of Finance is the largest shareholder and is under the supervision of Ministry of Energy.

The Company's principal activity is the operation of its petroleum business. The Company has invested in subsidiaries, joint arrangements and associates (the Group), which are engaged in upstream petroleum and natural gas, downstream petroleum, new business and infrastructure, and other related businesses as described in Note 38 Operating segments.

2. Basis for the preparation of financial statements

The consolidated and the separate financial statements have been prepared in accordance with Thai Financial Reporting Standards under the Accounting Act, B.E. 2543. These are Thai Financial Reporting Standards under the Accounting Profession Act, B.E. 2547, including guidelines promulgated by the Federation of Accounting Professions (TFAC), and the financial reporting requirements of the Securities and Exchange Commission under the Securities and Exchange Act, B.E. 2535.

The Company has presented the financial statements in compliance with the notification of the Department of Business Development "Definition of the abbreviated components required in the financial statements (No.3), B.E. 2562", dated 26 December 2019, under the third paragraph of section 11 of the Accounting Act, B.E. 2543.

The consolidated and the separate financial statements have been prepared under the historical cost convention with the exception of certain amounts, which are accounted for using the fair value method as disclosed in Note 3.3 Significant accounting policies.

The financial statements of subsidiaries have been prepared using the same significant accounting policies of the Company. The significant transactions arising between the Company and its subsidiaries have been eliminated from the consolidated financial statements.

The consolidated and the separate financial statements are prepared and presented in Thai Baht and are rounded in the notes to financial statements to the nearest million Baht unless otherwise stated.

2. Basis for the preparation of financial statements (Continued)

This English translation of the financial statements has been prepared from the statutory financial statements that were issued in 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.

3. Accounting policies

3.1 Financial reporting standards that became effective in current year

During the year, the Group has adopted the revised financial reporting standards and interpretations which are effective for fiscal years beginning on or after 1 January 2022. These financial reporting standards were aimed at alignment with the corresponding International Financial Reporting Standards with most of the changes directed towards clarifying accounting treatment and providing accounting guidance for users of the standards.

The adoption of these financial reporting standards does not have any significant impact on the Group's financial statements.

3.2 Financial reporting standards that will become effective for fiscal years beginning on or after 1 January 2023

The Federation of Accounting Professions issued a number of revised financial reporting standards, which are effective for fiscal years beginning on or after 1 January 2023. These financial reporting standards were aimed at alignment with the corresponding International Financial Reporting Standards with most of the changes directed towards clarifying accounting treatment and providing accounting guidance for users of the standards.

The management of the Group believes that adoption of these amendments will not have any significant impact on the Group's financial statements.

3.3 Significant accounting policies

3.3.1 Cash and cash equivalents

Cash and cash equivalents comprise cash on hand, deposits held at call with banks and other short-term highly liquid investments which have original maturities within three months and without withdrawal restrictions. Bank overdrafts and short-term loans from financial institutions are included in current liabilities in the statements of financial position.

3. Accounting policies (Continued)

3.3 Significant accounting policies (Continued)

3.3.2 Inventories

Inventories are stated at the lower of cost and net realizable value. The cost is calculated by using the weighted average cost method. The cost of inventory comprises total purchasing costs, payments related to purchasing, discounts, quantity discounts, as well as contributions to or compensation from taxes and several funds. Net realizable value is calculated from estimated selling price in the ordinary course of business, less the costs of completion and related selling expenses. When net realizable value of inventories is lower than cost of acquisition, it is presented under cost of goods sold in profit or loss. An allowance for obsolescence of inventories will be recognized when inventories are obsoleted or defected.

Inventories using the commodity broker-traders' method are presented at fair value less costs to sell through profit or loss.

3.3.3 Supplies

Supplies are stated at cost calculated by using the weighted average cost method, less allowance for obsolescence of supplies when there are obsolete, defective or unserviceable items, and shall be accounted as part of production cost upon withdrawal.

3.3.4 Non-current assets and liabilities held for sale

Disposed assets or asset groups, including non-current assets and liabilities held for sale, are classified as asset held for sale if their carrying amounts will be recovered through a sale transaction rather than through continuing use. This condition is met only when the sale is highly probable and the asset is available for immediate sale in its present condition, subject only to terms that are usual and customary for sales of such assets. Management must commit to the sale of the assets and they must be actively marketed at a price that is reasonable compared to their current fair value, with the expectation that sale should be recorded as completed within one year from the date of classification. These disposed assets or asset groups are measured at the lower of carrying amount and fair value less costs to sell.

The Group ceases to depreciate and amortize property, plant and equipment and intangible assets from the date the assets meet the criteria for classification as assets held for sale. The Group continues to recognize liabilities, including interests and other expenses attributable to liabilities classified as held for sale.

3. Accounting policies (Continued)

3.3 Significant accounting policies (Continued)

3.3.5 Investments in subsidiaries

Subsidiaries are those companies which directly or indirectly controlled by the parent company. Control exists when the parent company has the power over the subsidiaries so as to obtain variable returns from the involvement with the subsidiaries and has the ability to affect those returns through the power over the subsidiaries. In case of the parent company has voting rights less than half of total voting rights in subsidiaries, the parent company will reconsider the related facts and circumstances in order to determine whether the parent company has the power to control over such subsidiaries or not.

The financial statements of subsidiaries are included in the consolidated financial statements from the date that the control commences until the date that the control ceases.

The parent company allocates profit or loss and each component of other comprehensive income or loss to the equity attributable to owners of the parent and the non-controlling interests even if this results in a deficit non-controlling interest balance.

The purchase method of accounting is used to account for business combinations, except the business combination under common control. The cost of a business combination is measured as the sum of fair value of any consideration transferred, the recognized amount of any non-controlling interest in the acquiree, and the fair value of the existing equity interest as of the purchasing date (if the business combination is achieved in stages).

- For each business combination, the Group measures the recognized amount of any non-controlling interest in the acquiree at either the fair value or the non-controlling interest's proportionate share of the net of identifiable assets of the acquiree.
- In the case of a business combination achieved in stages, the Group measures the acquisition-date fair value of the acquirer's previously-held equity interest in the acquiree and recognized gains or losses profit or loss.
- Costs related to the acquisition, including professional fees, appraisal fees and other consulting fees, are recognized as expenses in profit or loss.

The Group measures the identifiable assets and liabilities acquired at fair value as of the acquisition date.

Any changes in the equity interest in subsidiaries of the Group while control is retained are recorded as surplus (deficit) from the changes in the interests in subsidiaries in equity.

3. Accounting policies (Continued)

3.3 Significant accounting policies (Continued)

3.3.5 Investments in subsidiaries (Continued)

Upon the disposal of investments, the difference between the net disposal proceeds and the carrying amount of the investments is recorded in profit or loss.

Investments in subsidiaries have been presented in the separate financial statements under the cost method.

The list of investments in subsidiaries of the Group and proportion of ownership interests have been set out in Note 14.

3.3.6 Investments in joint ventures and associates

Joint ventures are joint arrangement whereby the Group has joint control of the arrangement and has rights to the net assets of the arrangement. The joint control is the contractually agreed sharing of control of an arrangement, which exists only when decisions about the relevant activities require the unanimous consent of the parties sharing control.

Associates are those companies whereby the Group has significant influence, but not control or joint control, over the financial and operating policies.

The Group uses the purchase method to record the acquisition of joint ventures and associates, except for business combinations under common control. Cost includes the purchase price and other costs directly attributable to the acquisition as of the acquisition date. Any difference between the cost of the investment and the entity's share of the net fair value of the investee's identifiable assets and liabilities is accounted for as follows:

- Goodwill related to an associate or a joint venture is included in the carrying amount of the investment. Goodwill is not amortised.
- Any excess of the entity's share of the net fair value of the investee's identifiable assets and liabilities over the cost of the investment is treated as income in determining the entity's share of the associate or joint venture's profit or loss.

The consolidated financial statements of the Group include the share of profit and loss from joint ventures and associates under equity method, from the date that significant influence commences until the date that significant influence ceases. Unrealized gains or losses on transactions between the Group and its joint ventures and associates are eliminated to the extent of the Group's interest in the joint ventures and associates unless the transactions provide evidence of impairment of the transferred assets.

The Group records share of profit or loss from joint ventures and associates in proportion to the Group's equity interest in those gains and losses. Any dividends received from joint ventures and associates are deducted from the book value of the investments.

3. Accounting policies (Continued)

3.3 Significant accounting policies (Continued)

3.3.6 Investments in joint ventures and associates (Continued)

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

Upon the disposal of investments, the difference between the net disposal proceeds and the carrying amount of the investments is recorded in profit or loss.

Investments in joint ventures and associates have been presented under the cost method in the separate financial statements and under the equity method in the consolidated financial statements.

The list of investments in joint ventures and associates of the Group and proportion of ownership interests have been set out in Note 14.

3.3.7 Joint operations

Joint operations are joint arrangement whereby the Group has rights to assets and obligations relating to the joint arrangement. The Group has recognized assets, liabilities, revenues and expenses by the portion of joint operations in the consolidated financial statements from the date that joint control commences until the date that joint control ceases.

The list of joint operations of the Group and transactions relating to its involvements have been set out in Note 14.

3.3.8 Related parties

Related parties of the Company are those enterprises or individuals that control or are controlled by the Company, or are under common control with the Company, including holding companies of subsidiaries and fellow Group subsidiaries, as well as those that have equity interests in the Company that result in significant influence or joint control over the Company. In addition, related parties include associates, joint ventures, the management and directors of the Company, and entities which the management or directors of the Company, directly or indirectly, control, jointly controlled, or have significant influence.

In considering each possible related party relationship, attention is directed more to the substance of the relationship than to the legal form.

3. Accounting policies (Continued)

3.3 Significant accounting policies (Continued)

3.3.9 Foreign currency translation

The consolidated financial statements and the separate financial statements have been presented in Thai Baht, which is the Company's functional currency. Transactions of each company included in the consolidated financial statements are recorded in their own functional currencies.

Foreign currency transactions are translated into functional currency at the exchange rates prevailing at the transaction date. Monetary assets and liabilities at the statements of financial position date denominated in foreign currencies are translated into functional currency at the exchange rate prevailing at that date. Gains and losses resulting from the settlement of such transactions and from the translation of monetary assets and liabilities denominated in foreign currencies are recognized in profit or loss.

Assets and liabilities of foreign operations, that presentation currencies are foreign currencies, are translated into Thai Baht using the closing rate at the statements of financial position date. Revenues and expenses are translated into Thai Baht using the average rate during the period. Differences arising from currency translation are included in other comprehensive income and accumulated differences are presented in other components of equity under equity.

Upon the disposal of self-sustaining foreign entities, accumulated currency translation differences under shareholders' equity are recognized as gains or losses on disposal.

3.3.10 Borrowing costs

Borrowing costs comprise interest and other costs associated with the borrowings. Borrowing costs incurred on qualifying assets are capitalized as a cost of the qualifying property until all the activities necessary to prepare the property for its intended use are substantially completed. When funds are specifically borrowed for the construction or the production of asset, the amount of borrowing costs capitalized is determined from the actual borrowing costs during the year less any income on the temporary investment of those borrowings. When funds are borrowed for general purpose, the Group multiplies the capitalization rate by the capital expenditure in allocating borrowing costs to costs of assets.

All other borrowing costs are expensed in the period they incurred.

3. Accounting policies (Continued)

3.3 Significant accounting policies (Continued)

3.3.11 Investment properties

Investment properties are initially recognized at cost, including expenses directly associated with the asset acquisition, less accumulated depreciation and allowance for impairment.

The Group has selected the cost model for accounting for its investment properties. This model is in accordance with that described in the accounting policy for property, plant and equipment.

Depreciation is recorded as expenses in profit or loss and is calculated using the straight-line method over the estimated useful lives of the assets, which range from 2 to 32 years. Land and construction in progress are not depreciated.

The Group recognizes the difference between the net disposal proceeds and the carrying amount of the asset in profit or loss in the period of the disposal.

3.3.12 Property, plant and equipment

Property, plant and equipment are initially recognized at cost less accumulated depreciation and accumulated impairment losses (if any). The costs comprise any costs directly attributable to bringing the asset to the location and condition necessary for it to be capable of operating. These include decommissioning costs, delivery and restoration costs, and any obligation associated with either its acquisition or a consequence of having used the items.

Repair and maintenance costs are recognized in profit or loss during the financial period in which they are incurred. The costs of significant asset improvements, major turnarounds and inspections are included in the carrying amount of the asset. In case of replacement, the Group writes off carrying value of replaced items.

The Group depreciates each significant component of property, plant and equipment separately.

The Group estimates the residual value of the property, plant and equipment based on current assessment of the amount that would currently obtain from disposal of the assets, after deducting the estimated costs of disposal, if the assets were already of the age and in the condition expected at the end of its useful life.

The Group reviews the residual value, the useful lives and depreciation methods of assets at least once a year.

3. Accounting policies (Continued)

3.3 Significant accounting policies (Continued)

3.3.12 Property, plant and equipment (Continued)

Depreciation is recorded as expenses in profit or loss and is calculated using the straight-line method or unit of production method over the estimated useful lives of the assets, which are as follows:

Buildings and building improvements	2 - 50 years
Machinery and equipment	2 - 50 years
Petroleum exploration and production properties	5 - 30 years or unit of production
Mining properties	Unit of production
Other assets	2 - 40 years

Land and construction in progress are not depreciated.

Gains or losses on disposal of property, plant and equipment are determined by comparing the proceeds from sales with the carrying amounts on the disposal dates, and are recorded in profit or loss when incurred.

Petroleum exploration and production properties

The petroleum exploration and production business accounts for its petroleum exploration and production properties in accordance with the successful efforts method for which the accounting policies are as follows:

Cost of properties

The cost of properties comprises the 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 capitalized as petroleum exploration and evaluation assets, and will be classified as petroleum exploration and production 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.

Exploratory costs, comprising geological and geophysical costs as well as area reservation fees during the exploration stage, are charged as expenses in profit or loss when incurred.

Development costs, whether relating to successful or unsuccessful development wells, are capitalized and classified as assets.

3. Accounting policies (Continued)

3.3 Significant accounting policies (Continued)

3.3.12 Property, plant and equipment (Continued)

Petroleum exploration and production properties (Continued)

Depreciation

The capitalized 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 recognizes changes in reserve estimates prospectively.

Proved reserves and proved developed reserves are calculated by the Group's own engineers and are based on the information received from the joint operators.

Depreciation of support equipment, facilities and others are determined using the straight-line method over the useful lives of assets.

Mining properties

The coal business accounts for its coal exploration and production properties, including coal mining property rights and deferred mining exploration and development expenditures, by the accounting policies as follows:

Coal mining property rights

Coal mining property rights comprise the total acquisition costs of concession rights in coal mining including both coal mining exploration and development expenditures.

Deferred mining exploration and development expenditures

Development expenditures and costs of area development are capitalized as mining properties under exploration and evaluation assets and will be classified as mining properties under property, plant and equipment if they meet the criteria and it is highly probable that they can create future economic benefit. However, if it is proved that they cannot create future economic benefit, development expenditures and costs of area development will be fully expensed in profit or loss when incurred.

3. Accounting policies (Continued)

3.3 Significant accounting policies (Continued)

3.3.12 Property, plant and equipment (Continued)

Mining properties (Continued)

Depreciation

The capitalized acquisition costs of mining properties are depreciated using the unit of production method based on proved reserves.

The volume of proportional production and the useful lives of coal mining concessions are estimated and reviewed by the Group.

3.3.13 Goodwill

The Group initially records goodwill at cost, which equals to the excess of the acquisition costs over the fair value of the net assets acquired, and carries out a test for impairment of goodwill at least once a year or when there are circumstances indicate that an investment might be impaired. Where the fair value of the net assets exceeds the cost of acquisition at the acquisition date, the excess is recognized as a gain in profit or loss.

To test for impairment, the Group allocates goodwill from business combinations to each cash-generating unit (or group of cash-generating units) that is expected to receive benefit from the synergies of the combination. The Group evaluates the recoverable amount of each cash-generating unit (or group of cash-generating units) and if it is lower than the carrying amount of the unit, the Group recognizes impairment losses in profit or loss. Impairment losses of goodwill will not be reversed.

3.3.14 Intangible assets

Intangible assets are initially recognized at cost less accumulated amortization and accumulated impairment losses (if any).

The Group records the initial costs of intangible assets from business combination at the acquisition-date fair value of the assets. Intangible assets from other sources are initially recognized at costs.

Intangible assets include computer software licenses, customer contracts, copyrights and trademarks and other intangible assets such as other operating rights.

3. Accounting policies (Continued)

3.2 Significant accounting policies (Continued)

3.3.14 Intangible assets (Continued)

Intangible assets are amortized and recorded as expenses in profit or loss using the straight-line method over the useful lives of the assets which range from 2 to 35 years.

The Group reviews the residual value, useful lives and amortization methods of intangible assets at least once a year.

3.3.15 Exploration and evaluation assets

Petroleum exploration and evaluation assets

Petroleum exploration and evaluation expenditures are capitalized at cost as exploration and evaluation assets. If the projects have identified the proved reserves that have been found to be commercially producible, the capitalized exploration and evaluation expenditures under these projects will be transferred to petroleum exploration and production properties under property, plant and equipment, which are subsequently measured as stated in Note 3.3.12.

The capitalized exploration and evaluation expenditure is charged to profit or loss 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.

Mining properties

Exploration and evaluation expenditures are capitalized as assets at cost, where:

- Such costs are expected to be recovered when the areas are successfully developed and mining operations commence, or from the sales of the areas of interest, or.
- Exploration activities in the areas of interest have not reached the stage which permits a reasonable assessment of the existence of commercial recoverable reserves, and exploration activities in the areas of interest are continuing.

Exploration and evaluation expenditures which do not meet the above criteria will be fully expensed in profit or loss. If the areas are developed and mining operations commence, exploration and evaluation expenditures that capitalized as assets will reclassify to mining properties under property, plant and equipment, which are subsequently measured as stated in Note 3.3.12.

3. Accounting policies (Continued)

3.3 Significant accounting policies (Continued)

3.3.16 Impairment of non-financial assets

At the end of each reporting period, the Group performs impairment reviews in respect of the investment in subsidiaries, joint ventures and associates, property, plant and equipment, right-of-use asset, investment properties or other intangible assets, whenever events or changes in circumstances indicate that an asset may be impaired. The Group also carries out annual impairment reviews in respect of goodwill and intangible assets with indefinite useful lives. An impairment loss is recognized when the recoverable amount of an asset, which is the higher of the asset's fair value less costs to sell and its value in use, is less than the carrying amount. In determining value in use, the estimated future cash flows are discounted to their present value using a pre-tax discount rate that reflects current market assessments of the time value of money and the risks specific to the asset. In determining fair value less costs to sell, an appropriate valuation model is used. These calculations are corroborated by a valuation model that, based on information available, reflects the amount that the Group could obtain from the disposal of the asset in an arm's length transaction between knowledgeable, willing parties, after deducting the costs of disposal.

The impairment losses are recognized in profit or loss.

In the assessment of asset impairment (except for goodwill), if there is any indication that previously recognized impairment losses may no longer exist or may have decreased, the Group estimates the asset's recoverable amount. A previously recognized impairment loss is reversed only if there has been a change in the assumptions used to determine the asset's recoverable amount since the last impairment loss was recognized. The increased carrying amount of the asset attributable to a reversal of an impairment loss shall not exceed the carrying amount that would have been determined had no impairment loss been recognized for the asset in prior years. Such reversal is recognized in profit or loss.

3.3.17 Leases

At inception of contract, the Group assesses whether a contract is, or contains, a lease. A contract is, or contains, a lease if the contract conveys the right to control the use of an identified asset for a period of time in exchange for consideration.

The Group as a lessee

The Group applied a single recognition and measurement approach for all leases, except for short-term leases and leases of low-value assets. At the commencement date of the lease (i.e. the date the underlying asset is available for use), the Group recognizes right-of-use assets representing the right to use underlying assets and lease liabilities based on lease payments.

3. Accounting policies (Continued)

3.3 Significant accounting policies (Continued)

3.3.17 Leases (Continued)

The Group as a lessee (Continued)

Right-of-use assets

Right-of-use assets are measured at cost, less accumulated depreciation, any accumulated impairment losses, and adjusted for any remeasurement of lease liabilities. The cost of right-of-use assets includes the amount of lease liabilities initially recognized, initial direct costs incurred, and lease payments made at or before the commencement date of the lease less any lease incentives received.

Depreciation of right-of-use assets are calculated by reference to their costs, on the straight-line basis over the shorter of their estimated useful lives and the lease term.

Land	2 - 96 years
Buildings	2 - 99 years
Machinery and equipment	2 - 40 years
Motor vehicles	2 - 51 years
Others	2 - 33 years

If ownership of the leased asset is transferred to the Group at the end of the lease term or the cost reflects the exercise of a purchase option, depreciation is calculated using the estimated useful life of the asset.

Right-of-use assets which are classified as investment properties are presented as part of investment properties in the statement of financial position.

Lease liabilities

Lease liabilities are measured at the present value of the lease payments to be made over the lease term. The lease payments include fixed payments less any lease incentives receivable, variable lease payments that depend on an index or a rate, and amounts expected to be payable under residual value guarantees. Moreover, the lease payments include the exercise price of a purchase option reasonably certain to be exercised by the Group and payments of penalties for terminating the lease, if the lease term reflects the Group exercising an option to terminate. Variable lease payments that do not depend on an index or a rate are recognized as expenses in the period in which the event or condition that triggers the payment occurs.

3. Accounting policies (Continued)

3.3 Significant accounting policies (Continued)

3.3.17 Leases (Continued)

The Group as a lessee (Continued)

Lease liabilities (Continued)

The Group discounted the present value of the lease payments by the interest rate implicit in the lease or the Group's incremental borrowing rate. After the commencement date, the amount of lease liabilities is increased to reflect the accretion of interest and reduced for the lease payments made. In addition, the carrying amount of lease liabilities is remeasured if there is a change in the lease term, a change in the lease payments or a change in the assessment of an option to purchase the underlying asset.

Short-term leases and leases of low-value assets

A lease that has a lease term less than or equal to 12 months from commencement date or a lease of low-value assets is recognized as expenses on a straight-line basis over the lease term.

The Group as a lessor

Finance leases

A lease that transfers substantially all the risks and rewards incidental to ownership of an underlying asset to a lessee is classified as finance leases. As at the commencement date, an asset held under a finance lease is recognized as a receivable at an amount equal to the net investment in the lease or the present value of the lease payments receivable and any unguaranteed residual value. Subsequently, finance income is recognized over the lease term to reflect a constant periodic rate of return on the net investment in the lease.

Operating leases

A lease is classified as an operating lease if it does not transfer substantially all the risks and rewards incidental to ownership of an underlying asset to a lessee. Lease receivables from operating leases is recognized as income in profit or loss on a straight-line basis over the lease term. Initial direct costs incurred in obtaining an operating lease are added to the carrying amount of the underlying assets and recognized as an expense over the lease term on the same basis as the lease income.

3. Accounting policies (Continued)

3.3 Significant accounting policies (Continued)

3.3.18 Income taxes

Income taxes comprise of current tax and deferred tax.

Current tax

The Group calculates income tax on its non-promoted businesses pursuant to the Revenue Code of Thailand, the Petroleum Income Tax Act, B.E. 2514 and Amendment, B.E. 2532 and other laws and regulations related to corporate income tax of other countries in which the Group has invested.

Current tax is the expected tax payable on the taxable profit for the year, using tax rates enacted at the statements of financial position date in the taxable period, and any adjustment to tax payable in respect of previous years.

Deferred tax

Deferred tax is recognized in the statements of financial position using the liability method for temporary differences between tax base of assets and liabilities and the carrying amounts in the financial statements. The principal temporary differences in consolidated financial statements arise from property, plant and equipment, provisions for employee benefit, provision for decommissioning costs, and cumulative loss carried forward.

Deferred tax is measured using the tax rates enacted at the statements of financial position date.

The Group recognizes deferred tax liabilities for all taxable temporary differences. However, deferred tax assets are recognized for all deductible temporary differences and unused tax losses to the extent that it is probable that taxable profit will be available against which the deductible temporary difference can be utilized. The Group reviews the carrying amounts of deferred tax assets at the end of each reporting period and they are reduced to the extent that the tax benefits can be utilized.

The Group recognized deferred tax as income or an expense and included in profit or loss for the year, except to the extent that the tax arises from a transaction or event which is recognized outside profit or loss, either in other comprehensive income or directly in equity, or a business combination.

Deferred tax assets and liabilities can only be offset if the entity has the legal right to settle on a net basis and the deferred tax balances relate to the same taxation authority.

The Group offsets deferred tax assets and deferred tax liabilities for presentation in the statement of financial position.

3. Accounting policies (Continued)

3.3 Significant accounting policies (Continued)

3.3.19 Advance payments for gas purchase under take-or-pay agreements

The Company has entered into gas purchase agreements with natural gas producers, under which the Company is required to take delivery of natural gas at annual minimum quantities. During each contract year, if the Company cannot accept natural gas according to the minimum quantities under the agreements, it is required to pay for the volume of natural gas which it cannot actually take (Take-or-Pay). After the end of each contract year, the Company and the natural gas producers have to agree on and accept the volume of gas that should be taken into the calculation of Take-or-Pay for that contract year, which is subject to the basis and conditions in the agreements. Under the agreements, the Company can take certain volumes of prepaid gas (Make-up) in subsequent years after taking delivery of natural gas at the minimum quantities for that given contract year. The Company recognizes its obligations under the agreements as advance payments for gas purchase.

3.3.20 Provision for decommissioning costs

The Group records a provision for decommissioning costs whenever it is highly probable that an obligation will arise as a result of a past event and the amount of the obligation can be reliably estimated.

The Group recognizes a provision for decommissioning costs based on an estimate of the eventual costs relate to the removal of petroleum exploration and production properties and plant and equipment. These costs are included as part of the cost of the assets and are amortized based on proved reserves using the unit of production method and the straight-line method over the estimated useful lives of the assets, respectively. The estimates of decommissioning costs are determined based on reviews and estimates by the Group's engineers and management's judgment.

3.3.21 Provisions for employee benefits

Provisions for employee benefits of the Group are measured and recognized as follows:

- Short-term employee benefits are recognized in profit or loss as expenses when incurred.
- Post-employment benefits - defined contribution plans
The Group and its employees have jointly established a provident fund. The fund is monthly contributed by employees and by the Group. The fund's assets are held in a separate trust fund and the Group's contributions are recognized as expenses in profit or loss when incurred.
- Post-employment benefits - defined benefit plans
The provisions under the defined benefit plan is determined based on actuarial techniques, using the projected unit credit method, in order to determine present value of the provisions and be recognized as a liability in the statements of financial position. Current service cost, past service cost, net interest on the net defined benefit liability are recognized as expenses in profit or loss. Remeasurements of the net defined benefit liability or asset, including actuarial gains and losses are recognized in other comprehensive income and accumulated amounts are recognized as retained earnings in equity.

3. Accounting policies (Continued)

3.3 Significant accounting policies (Continued)

3.3.21 Provisions for employee benefits (Continued)

- Other long-term employment benefits

The provisions under the defined benefit plan is determined based on actuarial techniques, using the projected unit credit method, in order to determine present value of the provisions and be recognized as a liability in the statements of financial position. Current service cost, past service cost, net interest on the net defined benefit liability are recognized as expenses in profit or loss. Remeasurements of the net other long-term benefit liability or asset, including actuarial gains and losses are recognized in profit or loss immediately.

- Termination benefits are recognized as a liability and an expense when, and only when, the Company is demonstrably committed to either:

- Terminate the employment of an employee or a group of employees before the normal retirement date; or
- Provide termination benefits as a result of an offer made in order to encourage voluntary redundancy.

3.3.22 Revenue and expense recognition

Sales and service income

The Group recognizes revenue upon completion and the delivery of promised goods or services to customers at the transaction price which is entitled in exchange for transferring goods or services. Service income shall be recognized throughout the service duration with consideration to percentage of completion.

Interest income

Interest income is recognized using the effective interest rate ("EIR") method by multiplying initial carrying amount of the financial asset with EIR, except subsequently credit-impaired financial assets in which net carrying amount of such assets (net of allowance for expected credit loss) shall be multiplied by EIR.

Finance cost

Interest expenses arising from financial liabilities measured at amortized cost is calculated using the effective interest rate method.

Dividend income

Dividend income is recognized as revenue when rights on such dividend is obtained by the Group.

3. Accounting policies (Continued)

3.3 Significant accounting policies (Continued)

3.3.23 Government grants

Government grants, including non-monetary grants, are recognized where there is reasonable assurance that the recipient will comply with all attached conditions and that the grant will be received. The Group recognizes the grants as income on a systematic basis over the periods for which the costs that the government grants are compensating. The Group recognizes the grants as a part of income in profit or loss.

3.3.24 Earnings per share

Basic earnings per share is calculated by adjusting the profit attributable to owners of the Company (exclude other comprehensive income) with interests and other items related to subordinated capital debentures net of taxes related to such debentures and dividing the adjusted profit by the weighted average number of ordinary shares held by third parties during the year.

3.3.25 Financial instruments

The Group initially measures financial assets at its fair value plus, in the case of financial assets that are not measured at fair value through profit or loss, transaction costs. However, trade receivables, that do not contain a significant financing component, are measured at the transaction price as disclosed in the accounting policy relating to revenue recognition.

Classification and measurement of financial assets

Financial assets are classified, at initial recognition, as to be subsequently measured at amortized cost, fair value through other comprehensive income ("FVOCI"), or fair value through profit or loss ("FVTPL"). The classification of financial assets at initial recognition is driven by the Group's business model for managing the financial assets and the contractual cash flows characteristics of the financial assets.

Financial assets at amortized cost

The Group measures financial assets at amortized cost if the financial asset is held in order to collect contractual cash flows and the contractual terms of the financial asset give rise on specified dates to cash flows that are solely payments of principal and interest on the principal amount outstanding.

Financial assets at amortized cost are subsequently measured using the effective interest rate ("EIR") method and are subject to impairment. Gains and losses are recognized in profit or loss when the asset is derecognized, modified, or impaired.

3. Accounting policies (Continued)

3.3 Significant accounting policies (Continued)

3.3.25 Financial instruments (Continued)

Classification and measurement of financial assets (Continued)

Financial assets at FVOCI (debt instruments)

The Group measures financial assets at FVOCI if the financial asset is held to collect contractual cash flows and selling and the contractual terms of the financial asset give rise on specified dates to cash flows that are solely payments of principal and interest on the principal amount outstanding.

Interest income, gain or loss from foreign exchange revaluation and impairment losses or reversals are recognized in profit or loss and computed in the same manner as for financial assets measured at amortized cost. The remaining fair value changes are recognized in other comprehensive income. Upon derecognition, the cumulative fair value change recognized in other comprehensive income is recycled to profit or loss.

Financial assets designated at FVOCI (equity instruments)

Upon initial recognition, the Group can elect to irrevocably classify its equity investments which are not held for trading as equity instruments designated at FVOCI. The classification is determined on an instrument-by-instrument basis.

Gains and losses recognized in other comprehensive income on these financial assets are never recycled to profit or loss.

Dividends are recognized as other income in profit or loss, except when the dividends clearly represent a recovery of part of the cost of the financial asset, in which case, the gains are recognized in other comprehensive income.

Equity instruments designated at FVOCI are not subject to impairment assessment.

Financial assets at FVTPL

Financial assets measured at FVTPL are carried in the statement of financial position at fair value with net changes in fair value recognized in profit or loss.

These financial assets include derivatives, security investments held for trading, equity investments which the Group has not irrevocably elected to classify at FVOCI and financial assets with cash flows that are not solely payments of principal and interest.

Dividends on listed equity investments are recognized as other income in profit or loss.

3. Accounting policies (Continued)

3.3 Significant accounting policies (Continued)

3.3.25 Financial instruments (Continued)

Classification and measurement of financial liabilities

Except for derivative liabilities, at initial recognition the Group's financial liabilities are recognized at fair value net of transaction costs and classified as liabilities to be subsequently measured at amortized cost using the EIR method. Gains and losses are recognized in profit or loss when the liabilities are derecognized as well as through the EIR amortization process. In determining amortized cost, the Group takes into account any discounts or premiums on acquisition and fees or costs that are an integral part of the EIR. The EIR amortization is included in finance costs in profit or loss.

Recognition and derecognition of financial instruments

Regular way purchases and sales of financial assets are recognized or derecognized on the trade date, i.e., the date on which the Group becomes a party to contractual provisions of the instrument

A financial asset is primarily derecognized when the rights to receive cash flows from the asset have expired or have been transferred and either the Group has transferred substantially all the risks and rewards of the asset, or the Group has transferred control of the asset.

A financial liability is derecognized when the obligation under the liability is discharged or cancelled or expires. When an existing financial liability is replaced by another from the same lender on substantially different terms, or the terms of an existing liability are substantially modified, such an exchange or modification is treated as the derecognition of the original liability and the recognition of a new liability. The difference in the respective carrying amounts is recognized in profit or loss.

Impairment of financial assets

The Group recognizes an allowance for expected credit losses ("ECLs") for all debt instruments not held at FVTPL. ECLs are based on the difference between the contractual cash flows due in accordance with the contract and all the cash flows that the Group expects to receive, discounted at an approximation of the original effective interest rate.

For credit exposures for which there has not been a significant increase in credit risk since initial recognition, ECLs are provided for credit losses that result from default events that are possible within the next 12-months (a 12-month ECL). For those credit exposures for which there has been a significant increase in credit risk since initial recognition, a loss allowance is required for credit losses expected over the remaining life of the exposure (a lifetime ECL).

3. Accounting policies (Continued)

3.3 Significant accounting policies (Continued)

3.3.25 Financial instruments (Continued)

Impairment of financial assets (Continued)

The Group considers a significant increase in credit risk to have occurred when contractual payments are more than 30 days past due and considers a financial asset as credit impaired or default when contractual payments are 90 days past due. However, in certain cases, the Group may also consider a financial asset to have a significant increase in credit risk and to be in default using other internal or external information, such as credit rating of issuers.

For trade receivables, the Group applies a simplified approach in calculating ECLs. Therefore, the Group does not track changes in credit risk, but instead recognizes a loss allowance based on lifetime ECLs at each reporting date. ECLs are calculated based on its historical credit loss experience and adjusted for forward-looking factors specific to the debtors and the economic environment.

A financial asset is written off when there is no reasonable expectation of recovering the contractual cash flows.

Offsetting of financial instruments

Financial assets and financial liabilities are offset, and the net amount is reported in the statement of financial position if there is a currently enforceable legal right to offset the recognized amounts and there is an intention to settle on a net basis, to realize the assets and settle the liabilities simultaneously.

3.3.26 Derivatives and hedge accounting

The Group uses derivatives, such as forward currency contracts, cross currency swaps, interest rate swaps and commodity forward contracts, to hedge its foreign currency risks, interest rate risks and commodity price risks, respectively.

Derivatives are initially recognized at fair value on the date on which a derivative contract is entered into and are subsequently remeasured at fair value. The subsequent changes including interest income are recognized in profit or loss unless the derivative is designated and effective as a hedging instrument under cash flow hedge. Derivatives are carried as financial assets when the fair value is positive and as financial liabilities when the fair value is negative.

3. Accounting policies (Continued)

3.3 Significant accounting policies (Continued)

3.3.27 Fair value measurement

The Group has measured fair value and disclosed the information relating to fair value measurement in accordance with TFRS 13 “Fair Value Measurement”. The guidance under this standard will be applied when the Group requires to measure any assets and liabilities at fair value under relevant standards.

Fair value is the price that would be received to sell an asset or paid to transfer liability in an orderly transaction between buyer and seller (market participants) at the measurement date. The Group applies a quoted market price in an active market to measure their assets and liabilities that are required to be measured at fair value by relevant financial reporting standards. Except in case of no active market of an identical asset or liability or when a quoted market price is not available, the Group measures fair value using valuation technique that are appropriate in the circumstances and maximises the use of relevant observable inputs related to assets and liabilities that are required to be measured at fair value.

Fair value hierarchy

In applying the above-mentioned valuation techniques, the Group endeavors to use relevant observable inputs as much as possible by determining a fair value hierarchy that categorizes inputs into three levels as follows:

Level 1	Use of quoted market prices in an observable active market for such assets or liabilities
Level 2	Use of other observable inputs for such assets or liabilities, whether directly or indirectly
Level 3	Used of unobservable inputs for such assets or liabilities such as the Group’s estimates of future cash flows

At the end of each reporting period, the Group determines whether transfers have occurred between levels within the fair value hierarchy for assets and liabilities held at the end of the reporting period that are measured at fair value on recurring basis.

3.3.28 Operating segment

The operating segment information is reported by business segments and based on the internal management reports that are received and regularly reviewed by the Chief Operating Decision Maker (CODM) for allocating resources to the segments and assessing its performance.

3. Accounting policies (Continued)

3.4 Use of significant estimates and assumptions

The preparation of financial statements in conformity with Thai Financial Reporting Standards requires management to make estimates and assumptions that affect the reported amounts of assets, liabilities, income and expenses.

The estimates and underlying assumptions used in the preparation of financial statements are reviewed on an ongoing basis. Revisions to accounting estimates are recognized in the period in which the estimates are revised and in any future periods affected.

Information about significant estimates and assumptions are as follows:

3.4.1 Provisions

The Group recognizes a provision in the statements of financial position if, as a result of a past event, the Group has a present obligation that can be estimated reliably and it is probable that an outflow of economic benefits will be required to settle the obligation.

The Group records provisions for decommissioning costs when it is highly probable that a commitment will arise as a result of past circumstances and the amount can be estimated reliably. The Group recognizes the provisions for decommissioning costs based on estimated cost of decommissioning of completed construction that is ready for its intended use. These costs are recorded as assets and are amortized using the units of production method based on estimated proved reserves and the straight-line method over the estimated useful lives of the assets. The provision for decommissioning costs is determined based on reviews and estimates by the Group's engineers, together with the management's judgment.

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.

3.4.2 Income tax

The Group is responsible for the payment of tax in various countries. In estimating income tax payable, the Group uses significant judgment since numerous transactions and calculations occur as a result of the Group's operations.

The Group recognizes income tax payable based on estimated incremental tax payments. Differences between the actual tax payments and the estimates affects income tax and deferred tax in the period the difference occurs.

A deferred tax asset is recognized when it is highly probable that the Group will have sufficient net income against which to utilize a temporary difference. Assumptions related to future taxable income are uncertain and may change, affecting the recognition of deferred tax assets.

3. Accounting policies (Continued)

3.4 Use of significant estimates and assumptions (Continued)

3.4.3 Estimates of petroleum reserves

Petroleum reserves are key elements in the petroleum exploration and production businesses' investment decision-making process. They are also important elements in testing for impairment. Changes in proved reserves will also affect the present value of the net cash flows and depreciation calculated using the unit-of-production method.

Proved reserves are the quantities of petroleum that are demonstrated with reasonable certainty to be commercially producible in future years from known reservoirs under existing economic and operating conditions including government rules and regulations. The proved reserves have to be examined and assessed annually by the Group's geologists and reservoir engineers.

3.4.4 Impairment of non-financial assets

The Group considers recording allowance for impairment of assets when events or circumstances indicate that the carrying amount of an asset is higher than its recoverable amount, which is the higher of the anticipated discounted cash flows from the continuing use of the asset or the fair value of the asset less any costs of disposal. The carrying amount of the asset is then written down immediately to its recoverable amount, with the decrease recorded in profit or loss. Losses on impairment of assets other than goodwill recognized in a prior period may be reversed if the estimate of an asset's recoverable amount changes.

The Group has established selling prices based on global oil market prices, the expected amount of future petroleum production and gross margins as key factors in impairment testing for the petroleum exploration and production businesses. The Group believes that these are the most appropriate indicators for estimating future cash flows which are the recoverable amount for measuring value in use. Future petroleum production comprises both proved reserves and unproved reserves.

Estimates of discounted future cash flows used in considering asset impairment are dependent on various factors such as the expected amount of future production, future selling prices, demand and supply in the market, risk factors and gross margins. The discount rates used in calculating the present value of future cash flows depend on the cost of capital of the asset unit.

3.4.5 Consolidation of subsidiaries that Company holds less than half of shares

The management of the Company determined that the Company has control over many subsidiaries, even though the Company holds shares and voting rights that is less than half of shares and voting rights. This is because the Company is a major shareholder and has the ability to direct the significant activities, while other shareholders are only minor shareholders. Therefore, such companies are deemed to be subsidiaries of the Company and have to be included in the consolidated financial statements from the date on which the Company assumed control.

3. Accounting policies (Continued)

3.4 Use of significant estimates and assumptions (Continued)

3.4.6 Use of significant estimates and assumptions related with the Group as a lessee

Determining the lease term with extension and termination options

In determining the lease term, the management is required to exercise judgement in assessing whether the Group is reasonably certain to exercise the option to extend or terminate the lease considering all relevant facts and circumstances that create an economic incentive for the Group to exercise either the extension or termination option.

Estimating the incremental borrowing rate

The Group cannot readily determine the interest rate implicit in the lease, therefore, the management is required to exercise judgement in estimating its incremental borrowing rate to discount lease liabilities. The incremental borrowing rate is the rate of interest that the Group would have to pay to borrow over a similar term, and with a similar security, the funds necessary to obtain an asset of a similar value to the right-of-use asset in a similar economic environment.

Lease classification

In determining whether a lease is to be classified as an operating lease or finance lease, the management is required to exercise judgement as to whether significant risk and rewards of ownership of the leased asset has been transferred, taking into consideration terms and conditions of the arrangement.

4. Cash and cash equivalents

Cash and cash equivalents as at 31 December 2022 and 2021 are as follows:

	Unit: Million Baht			
	Consolidated		Separate	
	financial statements		financial statements	
	2022	2021	2022	2021
Cash	136	527	20	10
Bank deposits	254,236	276,085	47,772	45,841
Fixed deposits within 3 months	65,381	36,070	4,996	2
Promissory notes	7,700	-	-	-
Bonds	281	42	-	-
Other investments	12,320	6	-	-
Total	340,054	312,730	52,788	45,853

Bank deposits, fixed deposits within 3 months, promissory notes, bonds, and other investments, as at 31 December 2022 bear the interest at rates ranging from 0.00% - 12.93% per annum (31 December 2021: interest rates ranging from -0.60% - 14.93% per annum). As at 31 December 2022, cash and cash equivalents are comprised of financial instruments which are rated as investment grade level (31 December 2021: rated as investment grade level).

5. Short-term investments in financial assets

Short-term investments in financial assets as at 31 December 2022 and 2021 are as follows:

	Unit: Million Baht			
	Consolidated		Separate	
	financial statements		financial statements	
	2022	2021	2022	2021
Fixed deposits	4,321	29,191	1,343	4,315
Promissory notes	114	114	-	-
Bonds	2,780	2,114	2,054	1,218
Other debt instruments	72	-	72	-
Money market fund	23	-	-	-
Other investments	5,290	17,488	-	-
Total	12,600	48,907	3,469	5,533

Short-term investments in financial assets as at 31 December 2022 bear the interest at rates ranging from 0.00% - 8.50% per annum (31 December 2021: interest at rates ranging from 0.15% - 5.52% per annum). As at 31 December 2022, short-term investments in financial assets are comprised of financial instruments which are rated as investment grade level (31 December 2021: rated as investment grade level).

6. Trade accounts receivable

Trade accounts receivable as at 31 December 2022 and 2021 are as follows:

	Unit: Million Baht			
	Consolidated		Separate	
	financial statements		financial statements	
	2022	2021	2022	2021
Trade accounts receivable - unrelated parties	215,481	191,415	69,662	53,378
<u>Less</u> Allowance for expected credit loss	(2,783)	(2,482)	(227)	(303)
Trade accounts receivable - unrelated parties - net	212,698	188,933	69,435	53,075
Trade accounts receivable - related parties (Note 9.1)	6,356	7,310	92,024	60,833
Total	219,054	196,243	161,459	113,908

Classified by aging as at 31 December 2022 and 2021 are as follows:

	Unit: Million Baht			
	Consolidated		Separate	
	financial statements		financial statements	
	2022	2021	2022	2021
Within credit terms	213,187	191,033	159,513	112,118
Overdue				
- Within 1 month	3,821	4,515	1,908	1,776
- Over 1 - 2 months	584	299	54	38
- Over 2 - 3 months	402	78	25	13
- Over 3 - 12 months	1,396	234	-	1
- Over 12 months	2,447	2,566	186	265
Total	221,837	198,725	161,686	114,211
<u>Less</u> Allowance for expected credit loss	(2,783)	(2,482)	(227)	(303)
Total - net	219,054	196,243	161,459	113,908

Trade accounts receivable - unrelated parties as at 31 December 2022 include receivables from government agencies and state enterprises in the consolidated financial statements amounting to Baht 27,103 million (31 December 2021: Baht 18,921 million), and in the separate financial statements amounting to Baht 18,681 million (31 December 2021: Baht 8,282 million).

6. Trade accounts receivable (Continued)

Trade accounts receivable as at 31 December 2022 and 2021 are as follows: (Continued)

Movements in trade accounts receivable - allowance for expected credit loss for the year ended 31 December 2022 and 2021 are as follows:

	Unit: Million Baht			
	Consolidated financial statements		Separate financial statements	
	2022	2021	2022	2021
Balance as at 1 January	2,482	3,891	303	1,833
- Net increase (decrease)	307	(1,534)	(76)	(1,530)
- Loss on exchange rates	18	50	-	-
- Business acquisitions	54	-	-	-
- Classified as assets held for sale	(36)	-	-	-
- Exchange differences on translation of financial statements	(42)	75	-	-
Balance as at 31 December	<u>2,783</u>	<u>2,482</u>	<u>227</u>	<u>303</u>

7. Other accounts receivable

Other accounts receivable as at 31 December 2022 and 2021 are as follows:

	Unit: Million Baht			
	Consolidated financial statements		Separate financial statements	
	2022	2021	2022	2021
Other accounts receivable	36,718	20,351	6,620	1,144
<u>Less</u> Allowance for expected credit loss	<u>(522)</u>	<u>(527)</u>	<u>(420)</u>	<u>(425)</u>
Other accounts receivable	36,196	19,824	6,200	719
Advance payments	13,035	7,103	645	515
Refund receivable from the Oil Stabilization Fund	84,577	33,032	25,995	17,205
Current withholding tax receivable	7,805	4,400	685	7
Other accounts receivable - unrelated parties - net	141,613	64,359	33,525	18,446
Other accounts receivable - related parties (Note 9.2)	621	373	2,139	1,958
Advance payments - related parties (Note 9.2)	32	20	32	10
Total	<u>142,266</u>	<u>64,752</u>	<u>35,696</u>	<u>20,414</u>

7. **Other accounts receivable** (Continued)

Other accounts receivable as at 31 December 2022 and 2021 are as follows: (Continued)

The refund receivable from the Oil Stabilization Fund mostly comprised of compensation for locally manufactured oil and liquefied petroleum gas (LPG) or imported LPG for local uses, as well as compensation for Natural Gas for Vehicles (NGV) prices. The compensation rates are determined by the Committee of Energy Policy Administration.

8. **Lending**

8.1 Short-term lending as at 31 December 2022 and 2021 are as follows:

	Unit: Million Baht			
	Consolidated		Separate	
	financial statements		financial statements	
	2022	2021	2022	2021
Current portion of finance lease receivable - unrelated parties	1,433	1,522	-	-
Current portion of finance lease receivable - related parties (Note 9.2)	5	5	-	-
Short-term lending - unrelated parties	106	-	-	-
Short-term lending - related parties (Note 9.2)	630	53	2,044	4,279
Total	2,174	1,580	2,044	4,279

8.2 Long-term lending as at 31 December 2022 and 2021 are as follows:

	Unit: Million Baht			
	Consolidated		Separate	
	financial statements		financial statements	
	2022	2021	2022	2021
Long-term finance lease receivable - unrelated parties	3,823	5,116	-	-
Long-term finance lease receivable - related parties (Note 9.3)	37	42	-	-
Long-term lending - related parties (Note 9.3)	4,186	3,466	56,067	119,596
Total	8,046	8,624	56,067	119,596

As at 31 December 2022, lendings are mostly comprised of financial instruments with high credit rating (31 December 2021: comprised of financial instruments with high credit rating).

8. Lending (Continued)

8.3 Lending as at 31 December 2022 and 2021 include finance lease receivables in the consolidated financial statements as follows:

	Unit: Million Baht	
	Consolidated financial statements	
	2022	2021
Due date		
- Within 1 year	1,955	2,206
- Over 1 but not over 5 years	4,485	5,747
- Over 5 years	16	373
	6,456	8,326
<u>Less</u> Deferred interest	(1,159)	(1,641)
Total	5,297	6,685

9. Related party transactions

Significant transactions carried out with related parties are as follows:

9.1 Trade accounts receivable - related parties as at 31 December 2022 and 2021

	Unit: Million Baht			
	Consolidated financial statements		Separate financial statements	
	2022	2021	2022	2021
Subsidiaries	-	-	89,755	57,495
Joint ventures	3,559	3,913	1,092	1,668
Associates	2,075	2,135	458	411
Other related parties	722	1,262	719	1,259
Total (Note 6)	6,356	7,310	92,024	60,833

9. Related party transactions (Continued)

9.2 Other accounts receivable, advance payments, current portion of finance lease receivable, and short-term lending - related parties as at 31 December 2022 and 2021

	Unit: Million Baht			
	Consolidated		Separate	
	2022	2021	2022	2021
<u>Other accounts receivable</u>				
Subsidiaries	-	-	1,876	1,901
Joint ventures	611	341	262	52
Associates	10	31	1	5
Other related parties	-	1	-	-
Total (Note 7)	621	373	2,139	1,958
<u>Advance payments</u>				
Subsidiaries	-	-	32	10
Joint ventures	32	20	-	-
Total (Note 7)	32	20	32	10
<u>Current portion of finance lease receivable</u>				
Joint ventures (Note 8.1)	5	5	-	-
<u>Short-term lending</u>				
Subsidiaries	-	-	2,044	4,279
Joint ventures	630	53	-	-
Total (Note 8.1)	630	53	2,044	4,279

9. Related party transactions (Continued)

9.2 Other accounts receivable, advance payments, current portion of finance lease receivable, and short-term lending - related parties as at 31 December 2022 and 2021 (Continued)

Movements in short-term lending - related parties are as follows:

	Unit: Million Baht			
	Consolidated		Separate	
	financial statements		financial statements	
	2022	2021	2022	2021
Balance as at 1 January	-	-	1,947	324
- Increase (decrease)	42	(2)	(1,142)	1,533
- Gain (loss) on exchange rate	4	2	(123)	70
- Exchange differences on translation of financial statements	(1)	-	-	-
Balance as at 31 December	45	-	682	1,947
Add Current portion (Note 9.3)	585	53	1,362	2,332
Balance as at 31 December - net	630	53	2,044	4,279

Short-term lending - related parties as at 31 December 2022 in the consolidated financial statements bear interest rate at 7.00% per annum (31 December 2021: nil), and in the separate financial statements bear interest rate at 3.17% per annum (31 December 2021: 0.14% - 2.00% per annum).

9.3 Long-term finance lease receivable and long-term lending - related parties as at 31 December 2022 and 2021

	Unit: Million Baht			
	Consolidated		Separate	
	financial statements		financial statements	
	2022	2021	2022	2021
<u>Long-term finance lease receivable</u>				
Joint ventures (Note 8.2)	37	42	-	-
<u>Long-term lending</u>				
Subsidiaries	-	-	56,067	119,596
Joint ventures	318	806	-	-
Associates	3,868	2,660	-	-
Total (Note 8.2)	4,186	3,466	56,067	119,596

9. Related party transactions (Continued)

9.3 Long-term finance lease receivable and long-term lending - related parties as at 31 December 2022 and 2021 (Continued)

Movements in long-term lending - related parties are as follows:

	Unit: Million Baht			
	Consolidated		Separate	
	financial statements		financial statements	
	2022	2021	2022	2021
Balance as at 1 January	3,519	3,580	121,928	49,476
- Loans granted	2,126	567	16,775	104,552
- Repayment receipt	(904)	(721)	(81,552)	(32,262)
- Gain on exchange rates	30	79	278	162
- Exchange differences on translation of financial statements	-	14	-	-
Balance as at 31 December	4,771	3,519	57,429	121,928
<u>Less</u> Current portion (Note 9.2)	(585)	(53)	(1,362)	(2,332)
Balance as at 31 December - net	4,186	3,466	56,067	119,596

Long-term lending - related parties as at 31 December 2022 in the consolidated financial statements bear interest rates ranging from 1.56% - 9.00% per annum (31 December 2021: 1.43% - 5.31% per annum), and in the separate financial statements bear interest rates ranging from 1.42% - 4.43% per annum (31 December 2021: 1.42% - 4.43% per annum).

9.4 Trade accounts payable - related parties as at 31 December 2022 and 2021

	Unit: Million Baht			
	Consolidated		Separate	
	financial statements		financial statements	
	2022	2021	2022	2021
Subsidiaries	-	-	54,435	35,566
Joint ventures	681	959	281	274
Associates	376	194	-	-
Total (Note 24)	1,057	1,153	54,716	35,840

9. Related party transactions (Continued)

9.5 Other accounts payable, current portion of lease liabilities and short-term borrowings - related parties as at 31 December 2022 and 2021

Unit: Million Baht

	Consolidated financial statements		Separate financial statements	
	2022	2021	2022	2021
<u>Other accounts payable</u>				
Subsidiaries	-	-	4,538	7,314
Joint ventures	110	34	13	17
Associates	306	13	9	9
Other related parties	33	34	32	32
Total (Note 25)	449	81	4,592	7,372
<u>Current portion of lease liabilities</u>				
Subsidiaries	-	-	57	3
Joint ventures	1,943	431	451	431
Associates	-	2	-	-
Total	1,943	433	508	434
<u>Short-term borrowings*</u>				
Subsidiaries (Note 27.1)	-	-	9,447	7,217

* The Company has liquidity management policies within the Group include the use of the cash pooling method. Inter-company borrowings were used for short-term financial management of cash surpluses or deficits of each affiliate. Interests on these were calculated by using market interest rates.

9. Related party transactions (Continued)

9.6 Lease liabilities and long-term borrowings - related parties as at 31 December 2022 and 2021

	Unit: Million Baht			
	Consolidated		Separate	
	financial statements		financial statements	
	2022	2021	2022	2021
<u>Lease liabilities</u>				
Subsidiaries	-	-	195	1
Joint ventures	23,091	2,702	2,336	2,696
Associates	-	12	-	-
Total	23,091	2,714	2,531	2,697

Long-term borrowings

Subsidiaries	-	-	50,260	49,490
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Movements in long-term borrowings - related parties are as follows:

	Unit: Million Baht	
	Separate	
	financial statements	
	2022	2021
Balance as at 1 January	49,490	45,181
- Amortized discount	6	6
- Loss on exchange rates	764	4,303
Balance as at 31 December	50,260	49,490
<u>Less</u> Current portion	-	-
Balance as at 31 December - net	50,260	49,490

Long-term borrowings - related parties as at 31 December 2022 in the separate financial statements bear interest rates ranging from 4.20% - 6.38% per annum (31 December 2021: 4.20% - 6.38% per annum).

9. Related party transactions (Continued)

9.7 Revenue and expense transactions carried out with related parties

For the years ended 31 December 2022 and 2021

	Unit: Million Baht			
	Consolidated		Separate	
	financial statements		financial statements	
	2022	2021	2022	2021
Revenue				
<u>Sales and service income</u>				
Subsidiaries	-	-	1,280,395	677,680
Joint ventures	41,399	31,562	21,006	16,007
Associates	25,608	18,188	6,167	3,492
Other related parties	4,738	6,804	4,671	6,784
<u>Interest income</u>				
Subsidiaries	-	-	1,852	1,278
Joint ventures	38	20	-	-
Associates	151	141	-	-
<u>Other income</u>				
Subsidiaries	-	-	9,186	4,586
Joint ventures	368	358	77	72
Associates	223	209	15	23
Other related parties	36	125	35	37

9. Related party transactions (Continued)

9.7 Revenue and expense transactions carried out with related parties (Continued)

For the years ended 31 December 2022 and 2021

	Unit: Million Baht			
	Consolidated		Separate	
	financial statements		financial statements	
	2022	2021	2022	2021
Expenses				
<u>Cost of goods purchased and services</u>				
Subsidiaries	-	-	597,141	317,815
Joint ventures	8,780	8,641	1,628	1,466
Associates	2,679	3,410	-	6
Other related parties	144	547	-	83
<u>Interest expenses</u>				
Subsidiaries	-	-	2,328	2,037
Joint ventures	234	69	38	43
Associates	1	-	-	-
<u>Other expenses</u>				
Subsidiaries	-	-	4,313	3,773
Joint ventures	401	23	-	-
Associates	69	59	4	5
Other related parties	17	143	14	29

9. Related party transactions (Continued)

9.8 Significant purchasing and selling of investment properties, property, plant and equipment, right-of-use assets and other intangible assets transactions carried out with related parties

For the years ended 31 December 2022 and 2021

	Unit: Million Baht			
	Consolidated		Separate	
	financial statements		financial statements	
	2022	2021	2022	2021
Purchasing				
Joint ventures	124	31	-	-
Associates	2	-	-	-
Selling				
Subsidiaries	-	-	75	71

The aforementioned related party transactions exclude transactions carried out with government agencies and state enterprises.

Stipulation prices between the Company and its related parties are based on normal prices for the same types of business transactions carried out with unrelated parties.

9.9 Details of commitments to related parties are stated in Note 43.1

9.10 Executive remunerations

Details of executive remunerations for the years ended 31 December 2022 and 2021 are as follows:

	Unit: Million Baht			
	Consolidated		Separate	
	financial statements		financial statements	
	2022	2021	2022	2021
<u>Directors remuneration</u>				
Meeting remuneration and bonuses	542	385	80	72
<u>Managements remuneration</u>				
Salaries, bonuses, and other				
employee benefits	1,208	1,191	106	105
Post-employment benefits	18	3	2	2
Total	1,768	1,579	188	179

Managements are those persons who have authority and responsibility for planning, directing and controlling the activities of an entity, directly or indirectly.

10. Inventories

Inventories as at 31 December 2022 and 2021 are as follows:

	Unit: Million Baht			
	Consolidated		Separate	
	financial statements		financial statements	
	2022	2021	2022	2021
Oil products	140,852	103,165	19,843	8,698
Gas products	7,240	2,859	6,912	2,519
Petrochemicals products	67,515	58,155	1,144	829
Others	14,627	7,760	585	514
	230,234	171,939	28,484	12,560
<u>Less</u> Allowance for decline in value of inventories and obsolescence	(7,886)	(1,116)	(1,292)	(313)
Total	222,348	170,823	27,192	12,247

The Fuel Oil Trading Act B.E. 2543 was amended by The Fuel Oil Trading Act (No.2) B.E. 2550 in accordance with Notification of the Department of Energy Business "Determination of Types, Rates, Criteria, Methods, and Conditions for Calculation of Oil Reserves B.E. 2558". This Act prescribes that oil traders under section 7 must reserve crude oil and petroleum products at rates ranging from 1% - 20% of the total production output or imported volume. Inventories - legal reserves as at 31 December 2022 in the consolidated financial statements amounting to Baht 34,148 million (31 December 2021: Baht 22,359 million), and in the separate financial statements amounting to Baht 1,167 million (31 December 2021: Baht 944 million). These amounts were net of allowance for net realizable value.

Inventories that are measured at fair value less costs to sell through profit or loss as at 31 December 2022 in the consolidated financial statements amounting to Baht 19,404 million (31 December 2021: Baht 8,693 million) and in the separate financial statements amounting to Baht 18,746 million (31 December 2021: Baht 8,199 million).

11. Supplies

Supplies as at 31 December 2022 and 2021 are as follows:

	Unit: Million Baht			
	Consolidated		Separate	
	financial statements		financial statements	
	2022	2021	2022	2021
Spare parts, equipment and others	52,067	45,222	5,617	6,094
<u>Less</u> Allowance for obsolescence	(2,560)	(3,806)	(129)	(747)
Total	49,507	41,416	5,488	5,347

12. Assets held for sale

On 1 August 2022, PTT International Holdings Limited (PTTIH), which is 100% indirectly owned by the Company, entered into a Share Purchase Agreement with a company listed on the Indonesian Stock Exchange to dispose of its investment in 100% of all issued shares of PTT Mining Limited (PTTML) at a purchase price of approximately USD 471 million, in accordance with a resolution passed by a meeting of the Company's Board of Directors on 21 July 2022. The transaction is expected to be completed within the first quarter of 2023, subjected to conditions precedent specified in the Share Purchase Agreement. The Group classified assets and liabilities associated to that investments as assets held for sale and liabilities directly associated with assets held for sale in 2022 financial statements.

On 31 August 2022, PTTEP Netherlands Holding Coöperatie U.A. (PTTEP NH) and PTTEP Brazil Investment B.V. (PTTEP BI), which is 63.79% indirectly owned by the Company, entered into a Share Purchase Agreement with Ubuntu Engenharia e Serviços Ltda. to dispose all of its investment in PTTEP Brazil Investments in Oil and Gas Exploration and Production Limitada (PTTEP BL). The transaction is expected to be completed within the first quarter of 2023, subjected to conditions precedent specified in the Share Purchase Agreement. The Group classified assets and liabilities associated to that investments as assets held for sale and liabilities directly associated with assets held for sale in 2022 financial statements.

On 16 December 2022, PTTEP (Angola) Corporation (PANG) which is 63.79% indirectly owned by the Company, entered into a Sale and Purchase Agreement with SOMOIL BLOCO 17/06 (SU), S.A. to dispose all of its entire interest in Block 17/06 Project in Angola. The transaction is expected to be completed by mid-2023, subjected to conditions precedent specified in the Sale and Purchase Agreement. The Group classified assets and liabilities associated to that investments as assets held for sale and liabilities directly associated with assets held for sale in 2022 financial statements.

The assets and liabilities which related to the discontinued operation and were reclassified as held for sale as at 31 December 2022 is as follows:

	Unit: Million Baht
Cash and cash equivalents	8,764
Trade accounts receivable	2,676
Other accounts receivable	293
Inventories	456
Supplies	14
Current derivative assets	11
Other current assets	1,531

12. **Assets held for sale** (Continued)

The assets and liabilities which related to the discontinued operation and were reclassified as held for sale as at 31 December is as follows: (Continued)

	Unit: Million Baht
Property, plant and equipment	5,100
Right-of-use assets	15
Goodwill	6
Other intangible assets	2,428
Deferred tax assets	10
Other non-current assets	1,276
Assets held for sale	<u>22,580</u>
Trade accounts payable	1,055
Other accounts payable	1,604
Current portion of lease liabilities	10
Income tax payable	1,557
Other current liabilities	579
Lease liabilities	5
Deferred tax liabilities	82
Provisions for employee benefits	40
Long-term provision for decommissioning costs	420
Liabilities directly associated with the assets held for sale	<u>5,352</u>
Net assets classified as assets held for sale	<u><u>17,228</u></u>

The assets and liabilities of PTTML, PTTEP BL and Block 17/06 Project in Angola were classified as held for sale in 2022 and measured at the lower of carrying amount and fair value less costs to sell at the time of the reclassification. The non-recurring fair value was determined using the market approach and is at level 2 in the fair value hierarchy.

13. Other long-term investments in financial assets

13.1 Details of other long-term investments in financial assets as at 31 December 2022 and 2021 :

Unit: Million Baht

	Consolidated financial statements				Separate financial statements			
	Other long-term investments in financial assets after changes in value of investments		Dividend income		Other long-term investments in financial assets after changes in value of investments		Dividend income	
	2022	2021	2022	2021	2022	2021	2022	2021
Investment at fair value through profit or loss								
Other Equity securities	2,409	191	5	-	-	-	-	-
Foreign unit trust in mutual funds	320	247	-	-	-	-	-	-
Domestic unit trust in mutual funds	1,171	1,145	23	23	395	386	8	8
Other debt securities	134	33	-	-	-	-	-	-
Total investment at fair value through profit or loss	4,034	1,616	28	23	395	386	8	8
Investment at fair value through other comprehensive income								
Foreign unit trust in Corporate Venture Capital funds (CVC)	2,844	1,904	43	26	2,225	1,873	43	26
Listed equity instruments	5,833	7,279	158	146	3,660	6,140	144	144
Non-listed equity instruments	34,146	26,175	243	258	1,131	754	-	-
Domestic private debt securities	1,618	1,969	-	-	-	-	-	-
Total investment at fair value through other comprehensive income	44,441	37,327	444	430	7,016	8,767	187	170
Investment at amortized cost								
Domestic private debt securities	462	2,539	-	-	462	2,539	-	-
Foreign private debt securities	5,156	4,982	-	-	5,156	4,982	-	-
Total investment at amortized cost	5,618	7,521	-	-	5,618	7,521	-	-
Total other long-term investments in financial assets	54,093	46,464	472	453	13,029	16,674	195	178

Equity instruments designated at FVOCI include listed and non-listed equity investments which the Group considers these investments to be strategic in nature.

As at 31 December 2022, investment at fair value through other comprehensive income - debt securities and investment at amortized cost are rated in investment grade.

13. Other long-term investments in financial assets (Continued)

13.2 Movements in investment at fair value through profit or loss during the year ended 31 December 2022 and 2021 are as follows:

Unit: Million Baht

	Consolidated		Separate	
	financial statements		financial statements	
	2022	2021	2022	2021
Book value at the beginning of year	1,616	1,215	386	360
- Additional investments	985	93	-	-
- Business acquisition (Note 41)	1,004	191	-	-
- Fair value adjustment of investments	405	97	9	26
- Reclassifications	70	-	-	-
- Exchange differences on translation of financial statements	(46)	20	-	-
Total investment at fair value through profit or loss at 31 December	<u>4,034</u>	<u>1,616</u>	<u>395</u>	<u>386</u>

13. Other long-term investments in financial assets (Continued)

13.3 Movements in investment at fair value through other comprehensive income during the year ended 31 December 2022 and 2021 are as follows:

	Unit: Million Baht			
	Consolidated		Separate	
	financial statements		financial statements	
	2022	2021	2022	2021
Book value at the beginning of year	37,327	18,522	8,767	3,329
- Business acquisition (Note 41)	329	-	-	-
- Additional investments	13,277	8,785	891	1,138
- Disposals of investments	(2,799)	(1,595)	(133)	(312)
- Fair value adjustment of investments	(2,222)	9,352	(2,509)	4,612
- Reclassifications*	(3,079)	1,164	-	-
- Exchange differences on translation of financial statements	1,608	1,099	-	-
Total investment at fair value through other comprehensive income at 31 December	<u>44,441</u>	<u>37,327</u>	<u>7,016</u>	<u>8,767</u>

* On 7 April 2022, Innobic (Asia) Co., Ltd. (INBA) acquired Aztig II HoldCo Limited to invest in Lotus Pharmaceutical Company Limited (LOTUS) and Adalvo group resulting in LOTUS changed status from investments at FVOCI to a subsidiary as discussed in Note 41.1.

13.4 Movements in investment at amortized cost during the year ended 31 December 2022 and 2021 are as follows:

	Unit: Million Baht			
	Consolidated		Separate	
	financial statements		financial statements	
	2022	2021	2022	2021
Book value at the beginning of year	7,521	3,318	7,521	3,318
- Additional investments	-	4,911	-	4,911
- Unrealized gain on exchange rates	172	525	172	525
- Amortized premium	(22)	(15)	(22)	(15)
- Reclassifications	(2,053)	(1,218)	(2,053)	(1,218)
Total investment at amortized cost at 31 December	<u>5,618</u>	<u>7,521</u>	<u>5,618</u>	<u>7,521</u>

14. Investments in subsidiaries, joint ventures and associates

14.1 Details of subsidiaries and joint operations of the subsidiaries

Company name	Country of Incorporation	Business	Ownership interest (%)	
			2022	2021
<u>Subsidiaries of PTTEP Group:</u>				
PTTEP International Limited (PTTEPI)	Thailand	Petroleum	100.00	100.00
PTTEP Offshore Investment Company Limited (PTTEPO)	Cayman Islands	Petroleum	100.00	100.00
PTTEP Southwest Vietnam Company Limited (PTTEP SV)	Cayman Islands	Petroleum	100.00	100.00
PTTEP Kim Long Vietnam Company Limited (PTTEP KV)	Cayman Islands	Petroleum	100.00	100.00
PTTEP Hoang-Long Company Limited (PTTEP HL)	Cayman Islands	Petroleum	100.00	100.00
PTTEP Hoan-Vu Company Limited (PTTEP HV)	Cayman Islands	Petroleum	100.00	100.00
PTTEP Algeria Company Limited (PTTEP AG)	Cayman Islands	Petroleum	100.00	100.00
PTTEP Services Limited (PTTEP Services)	Thailand	Human resource support	100.00	100.00
PTTEP Siam Limited (PTTEPS)	Thailand	Petroleum	100.00	100.00
PTTEP Holding Company Limited (PTTEPH)	Cayman Islands	Petroleum	100.00	100.00
PTTEP Indonesia Company Limited (PTTEP ID)	Cayman Islands	Petroleum	100.00	100.00
PTTEP Africa Investment Limited (PTTEP AI)	Cayman Islands	Petroleum	100.00	100.00
PTTEP Australia Pty Limited (PTTEP AU)	Australia	Petroleum	100.00	100.00
PTTEP South Asia Limited (PTTEP SA)	Cayman Islands	Petroleum	100.00	100.00
PTTEP Australia Perth Pty Limited (PTTEP AP)	Australia	Petroleum	100.00	100.00
PTTEP International Holding Co., Ltd. (PTTEP IH)	Cayman Islands	Petroleum	100.00	100.00
PTTEP Southwest Vietnam Pipeline Co., Ltd. (PTTEP SVPC)	Cayman Islands	Gas transmission pipelines	100.00	100.00
PTTEP FLNG Holding Co., Ltd. (PTTEP FH)*	Hong Kong	Petroleum	-	100.00
PTTEP Netherland Holding Limited (PTTEP NL)	Cayman Islands	Petroleum	100.00	100.00
JV Marine Limited (JV Marine)	Cayman Islands	Petroleum	100.00	100.00
PTTEP South Mandar Limited (PTTEP SMD)	Cayman Islands	Petroleum	100.00	100.00

* On 15 July 2022, PTTEP FH was approved to dissolve by the Registrar.

14. Investments in subsidiaries, joint ventures and associates (Continued)

14.1 Details of subsidiaries and joint operations of the subsidiaries (Continued)

Company name	Country of Incorporation	Business	Ownership interest (%)	
			2022	2021
<u>Subsidiaries of PTTEP Group:</u>				
(Continued)				
PTTEP South Sageri Limited (PTTEP SS)*	Cayman Islands	Petroleum	-	100.00
PTTEP Sadang Limited (PTTEP SD)**	Cayman Islands	Petroleum	-	100.00
PTTEP Malunda Limited (PTTEP ML)	Cayman Islands	Petroleum	100.00	100.00
PTTEP Netherlands Coöperatie U.A. (PTTEP NC)	Netherlands	Petroleum	100.00	100.00
PTTEP Canada Limited (PTTEP CA)	Canada	Petroleum	100.00	100.00
PTTEP Canada International Finance Limited (PTTEP CIF)	Canada	Funding services for the Group's business	100.00	100.00
PTTEP HK Holding Limited (PTTEP HK)	Hong Kong	Petroleum	100.00	100.00
PTTEP Netherlands Holding Coöperatie U.A. (PTTEP NH)	Netherlands	Petroleum	100.00	100.00
PTTEP Brazil Investment B.V. (PTTEP BI)	Netherlands	Petroleum	100.00	100.00
PTTEP Brazil Investments in Oil and Gas Exploration and Production Limitada (PTTEP BL)	Brazil	Petroleum	100.00	100.00
PTTEP Australia Offshore Pty Ltd (PTTEP AO)	Australia	Petroleum	100.00	100.00
PTTEP Australia Browse Basin Pty Ltd (PTTEP AB)	Australia	Petroleum	100.00	100.00
PTTEP Australia Timor Sea Pty Ltd (PTTEP AT)	Australia	Petroleum	100.00	100.00
PTTEP Australasia (Operations) Pty Ltd (PTTEP AAO)	Australia	Petroleum	100.00	100.00
PTTEP Australasia (Ashmore Cartier) Pty Ltd (PTTEP AAA)	Australia	Petroleum	100.00	100.00
PTTEP Australasia (Staff) Pty Ltd (PTTEP AAS)	Australia	Petroleum	100.00	100.00
Cove Energy Limited (Cove)	England	Petroleum	100.00	100.00
Cove Energy East Africa Limited (CEEAL)	Cyprus	Petroleum	100.00	100.00
PTTEP Mozambique Area 1 Limited (PTTEP MZA1)	Cyprus	Petroleum	100.00	100.00
Sinphuhorm Holdings Limited (SHL)	Cayman Islands	Petroleum	100.00	100.00

* On 30 December 2022, PTTEP SS was approved to dissolve by the Registrar.

** On 31 March 2022, PTTEP SD was approved to dissolve by the Registrar.

14. Investments in subsidiaries, joint ventures and associates (Continued)

14.1 Details of subsidiaries and joint operations of the subsidiaries (Continued)

Company name	Country of Incorporation	Business	Ownership interest (%)	
			2022	2021
<u>Subsidiaries of PTTEP Group:</u>				
(Continued)				
PTTEP SP Limited (PTTEP SP)	England	Petroleum	100.00	100.00
PTTEP G7 Limited (PTTEP G7)*	Thailand	Petroleum	100.00	100.00
PTTEP HK Offshore Limited (PTTEP HKO)	Hong Kong	Petroleum	100.00	100.00
PTTEP Treasury Center Company Limited (PTTEP TC)	Thailand	Treasury center for the Group's business	100.00	100.00
PTTEP Business Center Company Limited (PTTEP BC)	Thailand	Petroleum	100.00	100.00
PTTEP Mexico E&P Limited, S. de R.L. de C.V. (PTTEP MEP)	Mexico	Petroleum	100.00	100.00
PTTEP Energy Holding (Thailand) Company Limited (PTTEP EH)	Thailand	Petroleum	100.00	100.00
PTTEP Energy Development Company Limited (PTTEP ED)	Thailand	Petroleum	100.00	100.00
EP-Tech Ventures Holding Company Limited (EP-Tech)	Thailand	Petroleum related Technology	100.00	100.00
AI and Robotics Ventures Company Limited (ARV)	Thailand	Technology	100.00	100.00
PTTEP MENA Limited (PTTEP MENA)	Hong Kong	Petroleum	100.00	100.00
PTTEP Sabah Oil Limited (PTTEP SBO)	Bahamas	Petroleum	100.00	100.00
PTTEP Sarawak Oil Limited (PTTEP SKO)	Bahamas	Petroleum	100.00	100.00
PTTEP Group Holding B.V. (PGH)	Netherlands	Petroleum	100.00	100.00
PTTEP (Kazakhstan) Corporation (PKC)	Cayman Islands	Petroleum	100.00	100.00
PTTEP (Angola) Corporation (PANG)	Cayman Islands	Petroleum	100.00	100.00
Partex (Brazil) Corporation (PBC)**	Cayman Islands	Petroleum	100.00	100.00
PTTEP Gas Corporation (PGC)	Panama	Petroleum	100.00	100.00
Partex Services Corporation (PSC)	Panama	Human resource support	100.00	100.00
Participations and Explorations Corporation (PEC)***	Panama	Petroleum	-	100.00
PTTEP Oman E&P Corporation (POC)	Panama	Petroleum	100.00	100.00
Partex Services Portugal – Serviços para a Indústria Petrolífera, S.A. (PSP)****	Portugal	Human resource support	-	100.00

* On 4 November 2022, PTTEP G7 has registered the dissolution with the Ministry of Commerce and being currently in the process of liquidation.

** On 28 December 2022, PBC has been approved for registration of dissolution which is currently in the process of closing the company.

*** On 23 December 2022, PEC, was approved to dissolve by the Registrar.

**** On 1 April 2022, PSP registered for the dissolution and completed the liquidation.

14. Investments in subsidiaries, joint ventures and associates (Continued)

14.1 Details of subsidiaries and joint operations of the subsidiaries (Continued)

Company name	Country of Incorporation	Business	Ownership interest (%)	
			2022	2021
<u>Subsidiaries of PTTEP Group:</u>				
(Continued)				
Asia Power and Transportation SG Holding Pte. Ltd. (APT)	Singapore	Petroleum related business	100.00	100.00
Cariva (Thailand) Company Limited (CARIVA)	Thailand	Technology	100.00	100.00
Delta Gas Transportation SG Holding Pte. Ltd. (DGTH)	Singapore	Gas pipeline service	100.00	100.00
Rovula (Thailand) Company Limited (ROVULA)	Thailand	Technology	100.00	100.00
Skyller Solutions Company Limited (SKYLLER)	Thailand	Technology	100.00	100.00
Varuna (Thailand) Company Limited (VARUNA)	Thailand	Technology	100.00	100.00
Delta Gas Transportation Limited (DGT)	Myanmar	Gas pipeline service	100.00	100.00
FutureTech Energy Ventures Company Limited (FEV)	Thailand	Renewable energy business and new related business	100.00	100.00
FutureTech Solar (Thailand) Company Limited (FST)	Thailand	Solar energy	100.00	100.00
Xplor Ventures Company Limited (XPV)	Thailand	Invest in new technology	100.00	-
<u>Subsidiary of PTTNGD Group:</u>				
Amata Natural Gas Distribution Co., Ltd. (AMATA NGD)	Thailand	Natural gas	80.00	80.00
<u>Subsidiaries of GPSC Group:</u>				
Combined Heat and Power Producing Co., Ltd. (CHPP)	Thailand	Production and distribution of electricity and chilled water/construction and installation of electricity generating system	100.00	100.00
Natee Synergy Co., Ltd. (NSC)	Thailand	Holding company	100.00	100.00
IRPC Clean power Co.,Ltd. (IRPCCP) (The Group holds 100% shareholding)	Thailand	Production and distribution of electricity, steam and water for industrial purpose	51.00	51.00
Ichinoseki Solar Power 1 GK (ICHINOSEKI)*	Japan	Production and distribution of electricity	-	100.00

* On 18 March 2022, GPSC sold all shares in Ichinoseki and received full payment on 27 May 2022.

14. Investments in subsidiaries, joint ventures and associates (Continued)

14.1 Details of subsidiaries and joint operations of the subsidiaries (Continued)

Company name	Country of Incorporation	Business	Ownership interest (%)	
			2022	2021
<u>Subsidiaries of GPSC Group: (Continued)</u>				
Houay Ho Power Company Limited (HHPC)*	Lao	Production and distribution of electricity power to EGAT and EDL	67.25	67.25
GPSC International Holdings Limited (GPSCIH)	Hong Kong	Holding company	100.00	100.00
Glow Energy Public Company Limited (GEN)	Thailand	Production and distribution of electricity	99.83	99.83
GPSC Holding (Thailand) Co., Ltd. (GHT)	Thailand	Holding company	100.00	100.00
Energy Recovery Unit Co., Ltd. (ERU)	Thailand	Production and distribution of electricity	100.00	100.00
Glow Company Limited (GCO)	Thailand	Consultant management service for related companies	100.00	100.00
Glow SPP 2 Company Limited (GSPP2)	Thailand	Production and distribution of electricity power and steam for industrial	100.00	100.00
Glow SPP 3 Company Limited (GSPP3)	Thailand	Production and distribution of electricity power, steam and water for industrial	100.00	100.00
Glow SPP 11 Company Limited (GSPP11)	Thailand	Production and distribution of electricity power and water for industrial	100.00	100.00
Glow IPP 3 Company Limited (GIPP3)	Thailand	Development of electricity power production project	100.00	100.00
Glow IPP 2 Holding Company Limited (GIPP2)	Thailand	Investing in other companies	100.00	100.00
Houay Ho Thai Company Limited (HHTC)	Thailand	Investing in other companies	49.00	49.00
Glow IPP Company Limited (GIPP)	Thailand	Production and distribution of electricity to EGAT	95.00	95.00
GHECO-One Company Limited (GHECO1)*	Thailand	Production and distribution of electricity power to EGAT	65.00	65.00
Glow Energy Myanmar Company Limited (GEMM)	Myanmar	Technical consultants for electricity businesses	100.00	100.00

* On 31 December 2021, GPSC group had pledged the ordinary shares certificate of GHECO1 and HHPC as collateral for their long term loans.

14. Investments in subsidiaries, joint ventures and associates (Continued)

14.1 Details of subsidiaries and joint operations of the subsidiaries (Continued)

Company name	Country of Incorporation	Business	Ownership interest (%)	
			2022	2021
<u>Subsidiaries of GPSC Group:</u>				
(Continued)				
GPSC Treasury Center Company Limited (GPSCCTC)	Thailand	Financial service	100.00	100.00
GPSC Singapore PTE. LTD. (GPSCSG)*	Singapore	Holding company	-	100.00
Global Renewable Synergy Company Limited (GRSC)	Thailand	Holding company	100.00	100.00
Global Renewable Synergy Company Limited Taiwan (GRSCTW)	Taiwan	Holding company	100.00	100.00
BoreePlus Company Limited (BOREEPLUS)	Thailand	Wind power project development	51.00	-
EurusPlus Company Limited (EURUSPLUS)	Thailand	Wind power project development	51.00	-
Helios 1 Company Limited (HELIOS1)	Thailand	Production and distribution of electricity	50.00	-
Helios 2 Company Limited (HELIOS2)	Thailand	Production and distribution of electricity	50.00	-
Helios 3 Company Limited (HELIOS3)	Thailand	Production and distribution of electricity	50.00	-
Helios 4 Company Limited (HELIOS4)	Thailand	Production and distribution of electricity	50.00	-
Helios 5 Company Limited (HELIOS5)	Thailand	Production and distribution of electricity	50.00	-
<u>Subsidiaries of OR Group:</u>				
PTT Retail Management Co., Ltd. (PTTRM)	Thailand	Petrol station and convenience store management	100.00	100.00
PTT Retail Service Co., Ltd. (PTTRS)	Thailand	Human resource management	100.00	100.00
Thai Lube Blending Co., Ltd. (TLBC)	Thailand	Blending and bottling of lube oil	100.00	100.00
PTT Philippines Trading Corporation (PTTTC)	Philippines	Oil marketing	100.00	100.00
PTT Philippines Corporation (PTTPC)	Philippines	Oil marketing	100.00	100.00
PTT (Cambodia) Limited (PTTCL)	Cambodia	Oil marketing	100.00	100.00
PTT Oil Myanmar Co., Ltd. (PTTOM)	Myanmar	Business services	100.00	100.00
PTT (Lao) Co., Ltd. (PTT Lao)	Lao	Oil marketing	100.00	100.00
PTTOR China (Shanghai) Co., Ltd. (PTTOR China)	China	Lube products	100.00	100.00

** During the year ended 31 December 2022, GPSC transferred 100% of ordinary shares in GPSCSG to NUOVOPLUS.

14. Investments in subsidiaries, joint ventures and associates (Continued)

14.1 Details of subsidiaries and joint operations of the subsidiaries (Continued)

Company name	Country of Incorporation	Business	Ownership interest (%)	
			2022	2021
<u>Subsidiaries of OR Group: (Continued)</u>				
PTTOR Singapore Pte. Ltd. (PTTORSG)	Singapore	Retail business	100.00	100.00
PTTOR Holdings Company Limited (ORHOLDCO)	Thailand	Investing in other companies	100.00	100.00
PTTOR International Holdings (Singapore) Pte. Ltd. (SGHOLDCO)	Singapore	Investing in other companies	100.00	100.00
Modulus Venture Company Limited (MODULUS)	Thailand	Investing in other companies	100.00	100.00
Peaberry Thai Company Limited (PEABERRYTHAI)	Thailand	Retailing	81.00	81.00
Care For Car Co., Ltd. (CFC)	Thailand	Online car services	100.00	100.00
ORZON VENTURES, L.P. (ORZON)	United States of America	Private fund	99.00	99.00
Blue Wealth Land 1 Company Limited (BWL1)	Cambodia	Real estate	49.00	-
<u>Subsidiaries of PTTT Group:</u>				
PTT MEA Ltd. (PTTMEA)	United Arab Emirates	Petroleum	100.00	100.00
<u>Subsidiaries of PTTGC Group:</u>				
PTT Phenol Co., Ltd. (PPCL)	Thailand	Manufacturing and distributing petrochemical products	100.00	100.00
GC Maintenance & Engineering Co., Ltd. (GCME)	Thailand	Factory maintenance and engineering services	100.00	100.00
Thai Tank Terminal Limited (TTT)*	Thailand	Service for the storage and handling of liquid chemicals, oil and gas	-	51.00
NPC Safety and Environmental Service Co., Ltd. (NPCSE)	Thailand	Safety and environmental services	100.00	100.00
GC Styrenics Co., Ltd. (GCS)**	Thailand	Manufacturing and distributing petrochemical products	100.00	100.00
PTTGC International (Netherlands) B.V. (GCINTERNL)	Netherlands	Holding and operating international business	100.00	100.00
GC Glycol Co., Ltd. (Glycol)**	Thailand	Manufacturing and distributing petrochemical products	100.00	100.00

* On 19 September 2022, TTT entered into a 28.57% share purchase agreement with Gulf Energy Development Public Company Limited (Gulf) to restructure its shareholding. of TTT. Gulf completed the share payment on 7 December 2022. PTTGC's shareholding in TTT decreased from 51% to 36.43%, therefore; PTTGC reclassified the remaining investment in TTT to be the investment in joint venture.

** During the year ended 31 December 2022, PTTGC acquired the entire business transfer of GCS and Glycol, both subsidiaries are in the process of liquidation.

14. Investments in subsidiaries, joint ventures and associates (Continued)

14.1 Details of subsidiaries and joint operations of the subsidiaries (Continued)

Company name	Country of Incorporation	Business	Ownership interest (%)	
			2022	2021
<u>Subsidiaries of PTTGC Group: (Continued)</u>				
Global Green Chemicals Plc. (GGC)	Thailand	Manufacturing and distributing biochemical products	72.29	72.29
Solution Creation Co., Ltd. (SOLUTIONCRE)	Thailand	Manufacturing and distributing petrochemical products and health and nutrition products	100.00	100.00
PTTGC International Private Limited (GC Inter)	Singapore	Holding and operating international business	100.00	100.00
GC Oxirane Co., Ltd. (GCO)	Thailand	Manufacturing and distributing petrochemicals products	100.00	100.00
GC Polyols Co., Ltd. (GCP)	Thailand	Manufacturing and distributing petrochemicals products	82.10	82.10
GC Treasury Co., Ltd. (GCTC)	Thailand	Financial service management for the group	100.00	100.00
GC Logistics Solutions Co., Ltd. (GCL)	Thailand	Transportation, warehouse and bagging packing management of polyethylene	100.00	100.00
GC Marketing Solutions Co., Ltd. (GCM)	Thailand	Development, marketing and distributing polymers products, by products and other polymers-related products	100.00	100.00
GC International Corporation (GCI)	United States of America	Holding and operating international business	100.00	100.00
Thai Fatty Alcohols Co., Ltd. (TFA)	Thailand	Manufacturing and distributing biochemical products	100.00	100.00
PTTGC Innovation America Corporation (GCIA)	United States of America	Research and development of bio-based chemicals	100.00	100.00
PTTGC America Corporation (AMERICACORP)	United States of America	Holding and operating international business	100.00	100.00
PTTGC America LLC (AMERICALLC)	United States of America	Petrochemical	100.00	100.00
NPC S&E Security Guard Co., Ltd. (NPCSG)	Thailand	Safety services	100.00	100.00

14. Investments in subsidiaries, joint ventures and associates (Continued)

14.1 Details of subsidiaries and joint operations of the subsidiaries (Continued)

Company name	Country of Incorporation	Business	Ownership interest (%)	
			2022	2021
<u>Subsidiaries of PTTGC Group: (Continued)</u>				
Vencorex (Thailand) Co., Ltd. (VENCOREXTH)	Thailand	Manufacturing and distributing chemical specialties	100.00	100.00
Vencorex France S.A.S. (VCF)	France	Manufacturing and distributing chemical specialties	100.00	100.00
Vencorex Holding (VCR)	France	Manufacturing and distributing chemical specialties	90.82	90.82
PL Global Transport Co., Ltd. (PLGT)	Thailand	Transportation of polyethylene	100.00	100.00
GCM Polymer Trading DMCC (GCM DMCC)	United Arab Emirates	Distributing polymer products and other polymers-related products	100.00	100.00
GC Marketing Solutions Vietnam Company Ltd. (GCM Vietnam)	Vietnam	Distributing polymer products and other polymers-related products	100.00	100.00
GC Estate Co., Ltd. (GCEC)	Thailand	Real estate development for rent and to invest in petrochemical and related industries	100.00	100.00
GC Ventures Co., Ltd. (GCV)	Thailand	Invest in form of Corporate Venture Capital (CVC)	100.00	100.00
GC Ventures America Corporation (GCVA)	United States of America	Invest in form of Corporate Venture Capital (CVC) outside Thailand	100.00	100.00
GC Marketing Solutions Myanmar Company Limited (GCM Myanmar)	Myanmar	Distributing polymer products and other polymers-related products	100.00	100.00
GC-M PTA Company Limited (GCM PTA)	Thailand	Manufacturing and distributing petrochemical products	74.00	74.00
Thai PET Resin Co., Ltd. (TPRC)	Thailand	Manufacturing and distributing petrochemical products	84.40	84.40
GGC Biochemicals Co., Ltd. (GGC Biochemicals)	Thailand	Holding and operating in Thailand	100.00	100.00

14. Investments in subsidiaries, joint ventures and associates (Continued)

14.1 Details of subsidiaries and joint operations of the subsidiaries (Continued)

Company name	Country of Incorporation	Business	Ownership interest (%)	
			2022	2021
<u>Subsidiaries of PTTGC Group:</u>				
(Continued)				
GC Logistics Solutions (Vietnam) Co., Ltd. (GCLSVN)	Vietnam	Logistics, warehouse management and polyethylene resin containment	100.00	100.00
PT GCM Marketing Solutions Indonesia (GCMINDONESIA)	Indonesia	Distribution of polymers products and other polymers-related products	67.00	67.00
ENVICCO Limited (ENVICCO)	Thailand	Production, Distribution and development of Recycle Polyethylene terephthalate	70.00	70.00
GC Marketing Solutions (Shanghai) Company Limited (GCM CHINA)	China	Trading	100.00	100.00
Allnex Holding GmbH (ALLNEX)	Germany	Manufacturing and sales of industrial coatings and additives	100.00	100.00
Allnex (Thailand) Ltd. (ALLNEXTH)	Thailand	Chemical	94.96	94.96
<u>Subsidiaries of TOP Group:</u>				
Thai Paraxylene Co., Ltd. (TPX)	Thailand	Paraxylene manufacturing and distribution	99.99	99.99
Thai Lube Base Public Company Limited (TLB)	Thailand	Lube base oil refining and distribution	99.99	99.99
Thaioil Ethanol Co., Ltd. (TET)	Thailand	Investment in ethanol business and alternative energy products	99.99	99.99
Thaioil Energy Services Co., Ltd. (TES)	Thailand	Providing human resource management	99.99	99.99
Thaioil Solvent Co., Ltd. (TOS)	Thailand	Investment in solvent and chemical businesses	99.99	99.99
TOP SPP Co., Ltd. (TOPSPP)	Thailand	Power and steam generation and distribution	99.99	99.99
Thaioil Treasury Center Co., Ltd. (TTC)	Thailand	Treasury center for the Group's business	99.99	99.99
Sapthip Co., Ltd. (SAPTHIP)	Thailand	Ethanol products manufacturing and distribution	50.00	50.00
TOPNEXT International Company Limited (TX) (Former : TOP Solvent Co., Ltd. (TS))	Thailand	Distribution of solvent and chemical products	99.99	99.99

14. Investments in subsidiaries, joint ventures and associates (Continued)

14.1 Details of subsidiaries and joint operations of the subsidiaries (Continued)

Company name	Country of Incorporation	Business	Ownership interest (%)	
			2022	2021
<u>Subsidiaries of TOP Group :</u>				
(Continued)				
Sak Chaisidhi Co., Ltd. (SAKC)	Thailand	Solvent and chemical products manufacturing and distribution	80.52	80.52
TOP Solvent (Vietnam) LLC. (TSV)	Vietnam	Distribution of solvent and chemical products	100.00	100.00
Thaioil Marine International Pte. Ltd. (TOMI)*	Singapore	Investment in marine transportation for crude oil and petroleum product business	-	100.00
LABIX Co., Ltd. (LABIX)	Thailand	Linear Alkyl Benzene manufacturing and distribution	75.00	75.00
Sapthip Green Energy Co., Ltd. (SGE)	Thailand	Biogas power generation and distribution	99.99	99.99
PT.Tirta Surya Raya (PTSR)	Indonesia	Distribution of solvent and chemical products	77.71	77.71
TOP Venture Company Limited (TVT)	Thailand	Invest in Corporate Venture Capital (CVC) and/or Startups business	99.99	99.99
TOP Ventures Hong Kong Limited (TVHK)	Hongkong	Invest in Corporate Venture Capital (CVC) and/or Startups business	100.00	100.00
TOP Ventures America LLC (TVUSLLC)	United States of America	Invest in Corporate Venture Capital (CVC) and/or Startups business	100.00	100.00
PT TOP Investment Indonesia (TII)	Indonesia	Consultant service	100.00	100.00
TSICHEM India Private Limited (TSI)	India	Distribution of solvent and chemical products	99.99	99.99
JSKEM Private Limited (JSKEM)	Singapore	Distribution of solvent and chemical products	60.00	60.00
<u>Subsidiaries of IRPC Group:</u>				
IRPC A&L Company Limited (IRPCAL)	Thailand	Distributing petrochemical products	57.48	57.48
IRPC Oil Company Limited (OIRPC)	Thailand	Sales of oil products and gas	99.99	99.99
Rak Phasak Company Limited (RAKPHASAK)	Thailand	Oil vessel renting	99.99	99.99
IRPC Technology Company Limited (TECHIRPC)	Thailand	Vocational school	99.99	99.99

* On 19 November 2021, TOP approved the dissolution of TOMI, and completed the liquidation and closed the company on 28 December 2022.

14. Investments in subsidiaries, joint ventures and associates (Continued)

14.1 Details of subsidiaries and joint operations of the subsidiaries (Continued)

Company name	Country of Incorporation	Business	Ownership interest (%)	
			2022	2021
<u>Subsidiaries of IRPC Group: (Continued)</u>				
I-polymer Company Limited (IPOL)	Thailand	Distributing plastic resin and chemical products via E-Commerce system	55.00	55.00
Innopolymed Company Limited (IMD) (The Group holds 100% shareholding)	Thailand	Manufacturing and trading of non-woven fabrics and medical consumables	60.00	60.00
<u>Subsidiaries of PTTGM Group:</u>				
PTT Mining Limited (PTTML)	Hong Kong	Investing in other companies	100.00	100.00
Straits (Brunei) Pte. Ltd. (Straits (Brunei))	Singapore	Investing in other companies	100.00	100.00
Sakari Resources Ltd. (SAR)	Singapore	Investing in coal mine business	95.82	95.82
Yoxford Holdings (YOXFORD)	Mauritius	Investing in other companies	100.00	100.00
Madagascar Consolidated Mining SA (MCM)	Madagascar	Coal mines	80.00	80.00
Tiger Energy Trading Pte. Ltd. (TET)	Singapore	Coal mine marketing	100.00	100.00
Sakari Energy Pte. Ltd. (SAEnergy)	Singapore	Investing in other companies	100.00	100.00
Reyka Wahana Digdjaya Pte. Ltd. (RWD)	Singapore	Investing in other companies	100.00	100.00
Sakari Energy Trading Pte. Ltd. (SET)	Singapore	Investing in other companies	100.00	100.00
Sakari Marine & Infrastructure Pte. Ltd. (SMI)	Singapore	Marine engineering	100.00	100.00
PT Straits Consultancy Services (SCS)	Indonesia	Management services	100.00	100.00
PT Bahari Perdana Persada (BPPD)	Indonesia	Investing in other companies	100.00	100.00
PT Bahari Putra Perdana (BPPN)	Indonesia	Investing in other companies	100.00	100.00
PT Reyka Wahana Digdjaya (PTRWD)	Indonesia	Investing in other companies	100.00	100.00
PT Bahari Cakrawala Sebuk (BCS)	Indonesia	Coal mines	100.00	100.00
PT Bumi Borneo Metalindo (BBM)	Indonesia	Investing in other companies	100.00	100.00
PT Citra Pertiwi Nusantara (CPN)	Indonesia	Coal transport equipment and delivery service	100.00	100.00
PT Bumiborneo Pertiwi Nusantara (BPN)	Indonesia	Investing in other companies	100.00	100.00

14 Investments in subsidiaries, joint ventures and associates (Continued)

14. Details of subsidiaries and joint operations of the subsidiaries (Continued)

Company name	Country of Incorporation	Business	Ownership interest (%)	
			2022	2021
<u>Subsidiaries of PTTGM Group:</u>				
(Continued)				
PT Karbon Mahakam (KM)	Indonesia	Coal mines	100.00	100.00
PT Metalindo Bumi Raya (MBR)	Indonesia	Coal mines	100.00	100.00
PT Borneo Citrapertiwi Nusantara (BCN)	Indonesia	Investing in other companies	100.00	100.00
PT Separi Energy (SE)	Indonesia	Investing in other companies	100.00	100.00
PT Jembayan Muarabara (JMB)	Indonesia	Coal mines	100.00	100.00
PT Kemilau Rindang Abadi (KRA)	Indonesia	Coal mines	100.00	100.00
PT Arzara Baraindo Energitama (ABE)	Indonesia	Coal mines	100.00	100.00
PT Cakrawala Abadi Jaya (CAJ)	Indonesia	Investing in other companies	100.00	100.00
PT Sakti Utama Luas (SUL)	Indonesia	Investing in other companies	100.00	100.00
Tri Tunggal Lestari Bersama (TTLB)	Indonesia	Infrastructure business	100.00	100.00
PTT International Holding Limited (PTTIH)	Hong Kong	Investing in other companies	100.00	100.00
PTT International Investment Limited (PTTII)	Hong Kong	Investing in other companies	100.00	100.00
PTT International (Singapore) Company Pte. Limited (PTTINTERSING)*	Singapore	Investing in other companies	-	100.00
Global Management Holding Co., Ltd. (GMH)	Thailand	Domestic investment	100.00	100.00
Siam Management Holding Co., Ltd. (SMH)	Thailand	Domestic investment	100.00	100.00
PT Sentika Mitra Persada (SMP)	Indonesia	Coal mines	100.00	100.00
PT Mutiara Kapuas (MK)	Indonesia	Coal mines	100.00	100.00
Alpha Com Co., Ltd. (ALPHACOM)	Thailand	Develop prototype	100.00	100.00
Swap and Go Co., Ltd. (SWAPANDGO)	Thailand	Battery swap	100.00	100.00
Innobic (Asia) Company Limited (INBA)	Thailand	Life science	100.00	100.00
Innobic LL Holding Company Limited (INBL)	Thailand	Domestic investing	100.00	100.00
Global Renewable Power Co., Ltd. (GRP) (The Group holds 100% shareholding)	Thailand	Holding company	50.00	50.00
Global Renewable Power 1 Co.,Ltd. (GRP1)	Thailand	Holding company	100.00	100.00
Global Renewable Power Operating Co., Ltd. (GRPO)	Thailand	Operation service and solar power plant consultant	100.00	100.00

*On 10 January 2022, PTTINTERSING was closed due to restructuring within the PTTGM group.

14. Investments in subsidiaries, joint ventures and associates (Continued)

14.1 Details of subsidiaries and joint operations of the subsidiaries (Continued)

Company name	Country of Incorporation	Business	Ownership interest (%)	
			2022	2021
<u>Subsidiaries of PTTGM Group:</u>				
(Continued)				
World X Change Asia Company Limited (WXA)	Thailand	Production and distribution of electricity	100.00	100.00
P.P. Solar Company Limited (PPS)	Thailand	Production and distribution of electricity	100.00	100.00
N.P.S. Stargroup Company Limited (NPS)	Thailand	Production and distribution of electricity	100.00	100.00
MEKHA V Co., Ltd. (MEKHAV) (Former : Mekha Technology Co., Ltd. (MEKHA))	Thailand	Public Cloud, Migration service and Maintenance	100.00	100.00
ARUN PLUS Co., Ltd. (ARUNPLUS)	Thailand	Stations and chargers for electric vehicles.	100.00	100.00
Sheng Yang Energy Co., Ltd. (SYE)	Taiwan	Solar power plant	90.00	90.00
EVME PLUS CO., LTD (EVME)	Thailand	Dealer, rent and sell electric vehicles	100.00	100.00
REACC Co., Ltd. (REACC)	Thailand	Clean energy and climate neutrality services	100.00	100.00
T-ECOSYS Company Limited (T-ECOSYS)	Thailand	Industrial Digital Platform	100.00	-
Nuovo Plus Co., Ltd. (NUOVOPLUS) (The Group holds 100% shareholding)	Thailand	Manufacture and sale of Lithium Ion batteries	51.00	-
Aztiq II HoldCo Limited (AZTIQIIHOLDCO)	Hong Kong	Generic Drug Manufacturers and Traders of Drugs and Patents	71.23	-
Lotus Pharmaceutical Co., Ltd. (LOTUS)	Taiwan	Holding company	43.00	-
P-DICTOR Co., Ltd. (P-DICTOR)	Thailand	Predictive Maintenance and Machine Monitoring AI for Industrial Solution	100.00	-
Innobic Nutrition Co., Ltd. (INNT)	Thailand	Nutrition	100.00	-
Global Multimodal Logistics Company Limited (GML)	Thailand	Logistics	100.00	-
PTT Global LNG Company Limited (PTTGL)*	Thailand	LNG business	100.00	-
PTTGL Investment Limited (PTTGLI)*	Thailand	Invest in LNG business	100.00	-
GPSC Singapore PTE. LTD (GPSCSG)**.	Singapore	Invest in other business	100.00	-

* On 1 June 2022, there was a shareholding restructuring in which SMH purchased 100% PTTGL shares from the Company and PTTEP and indirectly held 100% of PTTGLI.

** During the year ended 31 December 2022, GPSC transferred 100% of its ordinary shares in GPSCSG to NUOVOPLUS.

14. Investments in subsidiaries, joint ventures and associates (Continued)

14.1 Details of subsidiaries and joint operations of the subsidiaries (Continued)

Company name	Country of Incorporation	Business	Ownership interest (%)	
			2022	2021
<u>Subsidiaries of PTTGM Group:</u>				
(Continued)				
MEISHI PHARMA SERVICES PRIVATE LIMITED (MEISHIIN)	India	R&D, manufacture and sale of pharmaceutical products	100.00	-
Meishi Pharma Service Pte. Ltd. (MEISHISG)	Singapore	R&D, manufacture and sale of pharmaceutical products	100.00	-
<u>Subsidiary of PTTGE Group:</u>				
PTT Green Energy (Thailand) Co., Ltd. (PTTGE TH)	Thailand	Management services for PTTGE Group	100.00	100.00
<u>Subsidiaries of BSA Group:</u>				
Sport Services Alliance Co., Ltd. (SSS) (Former : SSA)	Thailand	Football club management	100.00	100.00
Business Professional Solutions Recruitments Co., Ltd. (BPS)	Thailand	Business management	100.00	100.00
<u>Indirect subsidiaries of the Group:</u>				
Chaibadan Community Power Plant 1 Co., Ltd. (CCPP1)*	Thailand	Community power plant	100.00	100.00
Chaibadan Community Power Plant 2 Co., Ltd. (CCPP2)*	Thailand	Community power plant	100.00	100.00
<u>Joint operations of PTTEP Group:</u>				
Carigali - PTTEPI Operating Company Sdn. Bhd. (CPOC)	Malaysia	Petroleum	50.00	50.00
Moattama Gas Transportation Company (MGTC)	Bermuda	Gas pipeline transportation	37.08	25.50
Taninthayi Pipeline Company LLC (TPC)**	Cayman Islands	Gas pipeline transportation	19.32	19.32
Orange Energy Limited (Orange)	Thailand	Petroleum	53.95	53.95
B8/32 Partners Limited (B8/32 Partners)	Thailand	Petroleum	25.00	25.00
Andaman Transportation Limited (ATL)	Cayman Islands	Gas pipeline transportation	80.00	80.00
Groupement Bir Seba (GBRS)	Algeria	Petroleum	35.00	35.00
Natuna 2 B.V. (Natuna 2)	Netherlands	Petroleum	50.00	50.00

* Held by GPSC Group and TOP Group, both of which have approved the dissolution of CCPP1 and CCPP2. The subsidiaries have registered its dissolution with the Ministry of Commerce and is in the process of liquidation.

** On 29 April 2022, PTTEPO requested to terminate its 19.32% stake in TPC and withdrew its shares from TPC, which will be effective upon the approval of the Government of the Republic of the Union of Myanmar.

14. Investments in subsidiaries, joint ventures and associates (Continued)

14.1 Details of subsidiaries and joint operations of the subsidiaries (Continued)

Company name	Country of Incorporation	Business	Ownership interest (%)	
			2022	2021
<u>Joint operations of PTTEP Group:</u>				
(Continued)				
Hoang-Long Joint Operating Company (HL JOC)	Vietnam	Petroleum	28.50	28.50
Hoan-Vu Joint Operating Company (HV JOC)	Vietnam	Petroleum	25.00	25.00
Petroleum Development Oman LLC (PDO)	Oman	Petroleum	2.00	2.00
Abu Dhabi Gas Industries Limited (AGP)	United Arab Emirates	Petroleum	2.00	2.00
Private Oil Holdings Oman Limited (POHOL)	England	Petroleum	5.00	5.00
Petroleum Development Oman Services LLC (PDOS)	Oman	Petroleum	2.00	2.00
Yadana Suboo Company Limited (YS)	Bermuda	Community enterprise	37.08	25.50
Groupement Hassi Bir Rekaiz (GHBR)	Algeria	Petroleum	49.00	-

14. Investments in subsidiaries, joint ventures and associates (Continued)

14.2 Details of investments in joint ventures in the consolidated financial statements as at 31 December 2022 and 2021

Unit: Million Baht

Company name	Country of Incorporation	Business	Consolidated financial statements							
			Ownership interest (%)		Cost method		Equity method		Dividends income	
			2022	2021	2022	2021	2022	2021	2022	2021
Joint Ventures										
<i>The Company</i>										
Trans Thai-Malaysia (Thailand) Co., Ltd. (TTM(T))	Thailand	Natural gas	50.00	50.00	3,172	3,172	3,922	3,656	675	355
Trans Thai-Malaysia (Malaysia) Sdn. Bhd. (TTM(M))	Malaysia	Natural gas	50.00	50.00	1,001	1,001	1,071	948	34	174
District Cooling System and Power Plant Co., Ltd. (DCAP)	Thailand	Generation and supply of electricity and chilled water	35.00	35.00	585	585	712	920	255	140
Suez Environmental Services Co., Ltd. (SES)	Thailand	Hazardous waste management plant	40.00	40.00	23	23	6	10	-	-
<i>PTTEP Group</i>										
Erawan 2 FSO Bahamas Limited (Erawan 2)	Bahamas	FSO rental services	13.11	13.11	526	508	1,117	1,238	202	172
APICO LLC (APICOLLC)	United States of America	Petroleum	72.82	72.82	4,615	4,463	3,285	4,125	650	476
Oman LNG LLC (OLNG)	Oman	Petroleum	2.00	2.00	2,888	2,772	1,149	1,590	1,163	534
ATI Technologies Co., Ltd. (ATI)	Thailand	Technology	50.00	50.00	10	11	-	6	-	-
Zeaquest Co., Ltd. (ZEAQUEST)	Thailand	Technology	50.00	50.00	77	86	23	59	-	-
AeroSky (Thailand) Company Limited (AEROSKY)	Thailand	Technology	33.00	33.00	10	10	4	9	-	-
B-MED X Company Limited (BMEDX)	Thailand	Technology	50.00	-	10	-	10	-	-	-
SkyVIV Company Limited (SKYVIV)	Thailand	Technology	23.20	-	20	-	19	-	-	-
<i>GPSC Group</i>										
Thai Solar Renewable Co., Ltd. (TSR)	Thailand	Invest in other company	40.00	40.00	1,697	1,697	1,469	1,529	402	391
Nam Lik 1 Power Co., Ltd. (NL1PC)	Laos	Generate and supply electricity	40.00	40.00	494	494	843	759	-	-
Nava Nakom Electricity Generating Co., Ltd. (NNEG)	Thailand	Generate and supply electricity	30.00	30.00	638	624	613	788	90	39
<i>PTTGC Group</i>										
Thai Ethoxylate Co., Ltd. (TEX)	Thailand	Manufacturing and distributing of petrochemical products	50.00	50.00	210	210	660	647	102	91
NatureWorks LLC (NTR)	United States of America	Manufacturing and distributing of bioplastic products	50.00	50.00	4,793	4,793	4,599	4,025	330	-
PTT MCC Biochem Co., Ltd. (PTTMCC)	Thailand	Petrochemicals	50.00	50.00	930	930	206	251	-	-

14. Investments in subsidiaries, joint ventures and associates (Continued)

14.2 Details of investments in joint ventures in the consolidated financial statements as at 31 December 2022 and 2021 (Continued)

Unit: Million Baht

Company name	Country of Incorporation	Business	Consolidated financial statements							
			Ownership interest		Cost method		Equity method		Dividends income	
			(%)		2022	2021	2022	2021	2022	2021
Joint Ventures (Continued)										
<i>PTTGC Group (Continued)</i>										
PTT Asahi Chemicals Co., Ltd. (PTTAC)	Thailand	Petrochemicals	50.00	50.00	6,909	6,909	10,467	11,802	750	-
HMC Polymers Co., Ltd. (HMC)	Thailand	Petrochemicals	41.44	41.44	9,117	9,117	11,792	13,001	124	828
GGC KTIS Bioindustrial Company Limited (GKBI)	Thailand	Manufacturing and distributing of biofuel	50.00	50.00	1,363	1,309	1,223	1,232	-	-
Revolve Group Limited (RGL)	England	Manufacturing and distributing of chemical	49.00	49.00	270	270	241	273	-	-
Emery Oleochemicals UK Ltd. (EOMUK)	England	Manufacturing and distributing of biochemical	50.00	50.00	2,141	2,141	2,938	2,385	26	-
ENTIS Co., Ltd. (ENTIS)	South Korea	Chemical	50.00	50.00	203	203	179	203	27	-
Synthese (Thailand) Co., Ltd. (SYNTHESE)	Thailand	Chemical	47.50	47.50	519	519	507	519	45	-
Thai Tank Terminal Limited (TTT)	Thailand	Storage and loading Liquid chemicals, oil and gas	36.43	-	459	-	2,826	-	-	-
<i>IRPC Group</i>										
IRPC Polyol Co., Ltd. (IRPCP)	Thailand	Manufacturing and sales of chemical products for polyurethanes	50.00	50.00	185	185	83	64	-	-
WHA Industrial Estate Rayong Co., Ltd. (WHA IER)	Thailand	Industrial estate development	40.00	40.00	284	272	274	264	-	-
Mytex Polymers (Thailand) Co., Ltd. (MYTEX)	Thailand	Petrochemicals	50.00	50.00	350	350	357	352	19	5
Vajira Lab for Society Co., Ltd. (VLS)	Thailand	Analysis and certify medical equipments services	50.00	50.00	14	11	13	11	-	-
<i>PTTGM Group</i>										
OGP Energy Solutions Company Limited (OGPS)	Thailand	Energy management and energy-related services	40.00	40.00	64	62	39	36	-	-
FEE (Bru) Pte. Ltd. (FEEBRU)*	Singapore	Coal mines	-	35.00	-	220	-	138	-	-
PTT RAISE Co., Ltd. (PTTRAISE)	Thailand	Robotics and AI engineering	50.00	50.00	26	26	16	21	-	-
PTT and TGES Optec Company Limited (OPTEC)	Thailand	One-stop total improving efficiency technology solution:	51.00	51.00	31	31	21	30	-	-

* On 31 December 2022, FEEBRU was classified as assets held for sale.

14. Investments in subsidiaries, joint ventures and associates (Continued)

14.2 Details of investments in joint ventures in the consolidated financial statements as at 31 December 2022 and 2021 (Continued)

Unit: Million Baht

Company name	Country of Incorporation	Business	Consolidated financial statements							
			Ownership interest (%)		Cost method		Equity method		Dividends income	
			2022	2021	2022	2021	2022	2021	2022	2021
Joint Ventures (Continued)										
<i>PTTGM Group</i> (Continued)										
Nutra Regenerative Protein Co., Ltd. (NRPT)	Thailand	Production and distribution of alternative protein	50.00	50.00	150	38	140	37	-	-
Horizon Plus Company Limited (HPLUS)	Thailand	Manufacture of parts and assemblies of electric vehicles	60.00	-	6,632	-	6,244	-	-	-
B.GRIMM POWER LNG JV LIMITED (BGPLNGJV)	Thailand	LNG	50.00	50.00	13	6	6	6	-	-
<i>OR Group</i>										
Brighter PTT Oil and Retail Business Company Limited (BOR)	Myanmar	Investing in oil market and retail business	51.00	51.00	56	54	44	48	-	-
Brighter Energy Company Limited (BE)	Myanmar	Warehousing and distribution of petroleum	35.00	35.00	1,005	947	815	900	-	-
ORC Coffee Passion Group Joint Stock Company (ORCG)	Vietnam	Food and drinks retail	60.00	60.00	187	140	133	113	-	-
Orbit Digital Company Limited (ORBIT)	Thailand	IT and computer services	40.00	40.00	10	10	25	12	-	-
Global Aero Associates Company Limited (GAA)	Thailand	Jet fuel service within the U-Tapao airport	45.00	45.00	405	225	398	220	-	-
Phnom Penh Aviation Fuel Service Co., Ltd. (PPAFS)	Cambodia	Refueling service system for aircraft	33.33	-	173	-	169	-	-	-
K-nex Corporation Co., Ltd (KNEX)	Thailand	Industrial washing machine and dryer distributor and laundrybusiness	40.00	-	1,105	-	1,141	-	-	-
Gowabi Thailand Co., Ltd. (GOWABI)	Thailand	Reservation platform for various services related to beauty and health.	18.18	-	142	-	137	-	-	-
Drink Enterprise Co., Ltd (RTD)	Thailand	Production and distribution of beverage products	50.00	-	150	-	144	-	-	-
Dusit Foods Co., Ltd. (DF)	Thailand	Production and distribution of food products	25.00	-	299	-	300	-	-	-

14. Investments in subsidiaries, joint ventures and associates (Continued)

14.2 Details of investments in joint ventures in the consolidated financial statements as at 31 December 2022 and 2021 (Continued)

Unit: Million Baht

Company name	Country of Incorporation	Business	Consolidated financial statements							
			Ownership interest (%)		Cost method		Equity method		Dividends income	
			2022	2021	2022	2021	2022	2021	2022	2021
<u>Joint Ventures</u> (Continued)										
<i>The Group</i>										
Map Ta Phut Air Products Company Limited (MAP) (The Company holds 49.00% shareholding)	Thailand	Production and distribution of industrial gas	51.00	51.00	179	179	282	191	-	-
					54,140	44,603	60,662	52,418		
<u>Less</u> Allowance for impairment					(553)	(370)	(305)	(138)		
Total					53,587	44,233	60,357	52,280	4,894	3,205

14. Investments in subsidiaries, joint ventures and associates (Continued)

14.3 Details of investments in associates in the consolidated financial statements as at 31 December 2022 and 2021

Unit: Million Baht

Company name	Country of Incorporation	Business	Consolidated financial statements							
			Ownership interest (%)		Cost method		Equity method		Dividends income	
			2022	2021	2022	2021	2022	2021	2022	2021
Associates										
<i>PTTEP Group</i>										
PTTEP AP Group's associates*	Australia	Airbase services	50.00	50.00	52	50	191	185	23	24
Leismer Aerodrome Limited (LAL)	Canada	Air transportation	32.00	32.00	148	146	23	123	-	-
Moz LNG1 Holding Company Ltd. (HOLDCO)	United Arab Emirates	Petroleum	8.50	8.50	1,004	419	962	425	-	-
<i>GPSC Group</i>										
Bangpa-in Cogeneration Co., Ltd. (BIC)	Thailand	Generate and supply electricity	25.00	25.00	924	924	815	846	74	149
Xayaburi Power Co., Ltd. (XPCL)	Laos	Generate and supply electricity	25.00	25.00	6,994	6,994	8,366	7,254	121	175
Eastern Seaboard Clean Energy Company Limited (ESCE)	Thailand	Studying, generating and supply electricity for industrial use including generating electricity from renewable energy	33.33	33.33	339	339	337	372	47	21
Avaada Energy Private Limited (AVAADA)	India	Renewable energy	42.93	41.62	14,985	14,985	14,604	15,049	-	-
CI Changfang Limited (CF)	Taiwan	Offshore Wind Power Generation in Taiwan	25.00	-	14,569	-	13,961	-	-	-
CI Xidao Limited (XD)	Taiwan	Offshore Wind Power Generation in Taiwan	25.00	-	441	-	416	-	-	-
<i>OR Group</i>										
FST Aviation Services Limited (FST)	Hong Kong	Aircraft refuelling services	25.00	25.00	1	1	1	1	-	-
Petro Asia (Thailand) Co., Ltd. (PAT)	Thailand	Oil marketing	35.00	35.00	131	131	8	9	-	-
Pluk Phak Praw Rak Mae Company Limited (OKJ)	Thailand	Food and beverage	20.00	20.00	497	497	494	497	-	-
Imsub Global Cuisine Co., Ltd. (ISGC)	Thailand	Food and beverage	25.00	25.00	191	191	186	192	-	-
KAMU KAMU Co., Ltd. (KAMU)	Thailand	Beverage	25.00	-	468	-	468	-	14	-
Polar Bear Mission Company Limited (POLARBEAR)	Thailand	e-Marketplace	27.36	-	482	-	433	-	-	-

* Associates of PTTEP AP Group consist of North Kimberley Airport Pty Ltd (Former : Mungalalu Truscott Airbase Pty Ltd.) and Troughton Island Pty Ltd.

14. Investments in subsidiaries, joint ventures and associates (Continued)

14.3 Details of investments in associates in the consolidated financial statements as at 31 December 2022 and 2021 (Continued)

Unit: Million Baht

Company name	Country of Incorporation	Business	Consolidated financial statements							
			Ownership interest		Cost method		Equity method		Dividends income	
			(%)		2022	2021	2022	2021	2022	2021
Associates (Continued)										
<i>PTTGC Group</i>										
Vinythai Plc. (VNT)*	Thailand	Petrochemicals	-	24.98	-	3,297	-	7,260	1,073	266
Thai Eastern Topseeds Oil Co., Ltd. (TETSO)**	Thailand	Petrochemicals	-	30.00	-	67	-	-	-	-
S.P. Petpack Inter Group Co., Ltd. (SPPETPACK)	Thailand	Petrochemicals	25.00	25.00	50	50	35	39	-	-
Kuraray GC Advanced Materials Co., Ltd. (KGC)	Thailand	Manufacturing of chemical specialties	33.40	33.40	1,870	1,777	1,801	1,714	-	-
Dynachisso Thai Co., Ltd. (DYCT)	Thailand	PP Compound Manufacturer	41.50	41.50	294	294	272	282	5	5
AGC Vinythai Public Company Limited (AVT)*	Thailand		32.72	-	11,375	-	17,466	-	-	-
<i>TOP Group</i>										
Ubon Bio Ethanol Public Co., Ltd. (UBE)***	Thailand	Manufacturing and distributing of ethanol	-	-	-	-	-	-	-	79
PT Chandra Asri Petrochemical Tbk (CAP)****	Indonesia	Production and distribution of chemicals	15.00	15.00	29,920	29,920	30,924	30,536	56	-
<i>IRPC Group</i>										
UBE Chemicals (Asia) Public Co., Ltd. (UCHA)	Thailand	Manufacturing and sales of petrochemical products	25.00	25.00	5,300	5,300	4,594	4,870	94	-
<i>PTTGM Group</i>										
Inter Pharma Public Company Limited (IP)*****	Thailand	Import, manufacture and sale of drugs and dietary supplement for people and animals	20.00	-	1,043	-	1,038	-	-	-

* On 1 July 2022, VNT merged with a subsidiary of AGC Inc. (AGTH) to form a new company called AGC Vinythai Public Company Limited (AVT).

** On 13 January 2022, a subsidiary of PTTGC sold all of its shares in TETSO.

*** During the year 2021, TET sold ordinary shares of UBE for IPO, amounting to Baht 235 million, TET's shareholding, therefore, decreased from 21.28% to 12.39%. As a result, investment in UBE was changed from associate to FVTOCI.

**** As at 31 December 2022, the fair value of the Group's equity in CAP which is listed on the Stock Exchange of the Republic of Indonesia, amounted to IDR 33,350 billion, or equivalent to Baht 73,847 million (2021: IDR 23,764 billion, or equivalent to Baht 55,771 million).

***** Fair value of investment in IP as at 31 December 2022 is Baht 5,513 million.

14. Investments in subsidiaries, joint ventures and associates (Continued)

14.3 Details of investments in associates in the consolidated financial statements as at 31 December 2022 and 2021 (Continued)

Unit: Million Baht

Company name	Country of Incorporation	Business	Consolidated financial statements							
			Ownership interest		Cost method		Equity method		Dividends income	
			(%)		2022	2021	2022	2021	2022	2021
Associates (Continued)										
<i>PTT TANK Group</i>										
Gulf MTP LNG Terminal Co., Ltd. (GMTP)	Thailand	Boat picking up service, Unloading and storage of liquefied natural gas, as well as transforming from liquid to gas	30.00	30.00	1,050	1,050	1,142	1,054	-	-
GPC International Terminal Company Limited (GPC)	Thailand	Container Port	30.00	30.00	1,200	1,200	1,200	1,200	-	-
<i>The Group</i>										
Thai Petroleum Pipeline Co., Ltd. (THAPPLINE) (OR Group holds 40.53% shareholding)	Thailand	Oil transmission pipelines	49.21	49.21	4,106	4,106	5,136	4,894	514	645
Eastern Fluid Transport Co., Ltd. (EFT)*	Thailand	Infrastructure	-	37.65	-	2	-	5	13	20
					97,434	71,740	104,873	76,807		
<u>Less</u> Allowance for impairment					(331)	(327)	(215)	(308)		
Total					97,103	71,413	104,658	76,499	2,034	1,384

* On 7 December 2022, TTT has restructured its shareholding, resulting in PTTGC's shareholding in EFT decreasing from 22.65% to 15%. EFT was classified as FVOCI.

14. Investments in subsidiaries, joint ventures and associates (Continued)

14.4 Details of investments in subsidiaries in the separate financial statements as at 31 December 2022 and 2021

Unit: Million Baht

Company name	Country of Incorporation	Business	Separate financial statements					
			Ownership interest		Cost method		Dividends income	
			(%)		2022	2021	2022	2021
Subsidiaries								
PTT Exploration and Production Public Co., Ltd. (PTTEP) (The Group holds 65.29% shareholding)	Thailand	Petroleum exploration and production	63.79	63.79	69,751	69,751	18,360	12,029
PTT LNG Co., Ltd. (PTTLNG)	Thailand	Natural gas	100.00	100.00	27,748	26,714	790	1,650
PTT Natural Gas Distribution Co., Ltd. (PTTNGD)	Thailand	Natural gas	58.00	58.00	418	418	220	551
PTT Global LNG Co., Ltd. (PTTGL)* (The Group holds 100% shareholding)	Thailand	Investing in LNG business	-	50.00	-	5,211	-	-
Energy Complex Co., Ltd. (EnCo) (The Group holds 100% shareholding)	Thailand	Real estate development for rent	50.00	50.00	900	900	72	69
PTT Energy Solutions Co., Ltd. (PTTES)** (The Group holds 100% shareholding)	Thailand	Technical and operational services	40.00	40.00	63	63	8	-
Global Power Synergy Public Co., Ltd. (GPSC) (The Group holds 75.23% shareholding)	Thailand	Generation and supply of electricity, steam and water for industries	47.27	42.53	70,110	60,131	1,466	1,494
PTT Oil and Retail Business Public Co., Ltd. (OR)	Thailand	Management services and oil marketing	75.00	75.00	90,000	90,000	4,860	3,330
PTT Tank Terminal Co., Ltd. (PTT TANK)	Thailand	Terminal and warehouse	100.00	100.00	3,888	3,888	88	90
PTT International Trading Pte. Ltd. (PTTT)	Singapore	International trading	100.00	100.00	3	3	25	102
PTT International Trading London Limited (PTTT LDN)	England	International trading	100.00	100.00	348	348	18	35
PTT Global Chemical Public Co., Ltd. (PTTGC) (The Group holds 48.18% shareholding)	Thailand	Petrochemicals and refining	45.18	45.18	44,473	44,473	5,093	6,112

* On 17 March 2022, the Board of Directors Meeting of the Company No. 3/2022 passed a resolution to approve a restructuring of shareholding of PTTGL by allowing SMH to purchase 50% of PTTGL's total shares from the Company and 50% from PTTEP BC. The transaction was completed on 1 June 2022.

** On 29 August 2022, the Extraordinary General Meeting of Shareholders of PTTES passed a resolution to approve the dissolution of the business in accordance with the business restructuring policy of the Group. Subsequently, on 29 December 2022, PTTES has registered its dissolution with the Ministry of Commerce and in the process of liquidation.

14. Investments in subsidiaries, joint ventures and associates (Continued)

14.4 Details of investments in subsidiaries in the separate financial statements as at 31 December 2022 and 2021 (Continued)

Unit: Million Baht

Company name	Country of Incorporation	Business	Separate financial statements					
			Ownership interest (%)		Cost method		Dividends income	
			2022	2021	2022	2021	2022	2021
Subsidiaries (Continued)								
Thai Oil Public Co., Ltd. (TOP) (The Group holds 48.00% shareholding)	Thailand	Oil refining	45.03	45.03	15,110	10,437	3,849	1,194
IRPC Public Co., Ltd. (IRPC) (The Group holds 48.05% shareholding)	Thailand	Petrochemicals and refining	45.05	45.05	39,696	39,696	1,657	1,289
Thai Oil Power Co., Ltd. (TP)* (The Group holds 100% shareholding)	Thailand	Generation and supply of electricity and steam	-	-	-	-	-	4,430
PTT Energy Resources Co., Ltd. (PTTER)	Thailand	Investment consulting in energy and mining business	100.00	100.00	33,703	33,703	-	-
PTT Global Management Co., Ltd. (PTTGM)	Thailand	Domestic and international investment	100.00	100.00	111,467	62,275	-	-
PTT Green Energy Pte. Ltd. (PTTGE)	Singapore	Investing in palm oil business	100.00	100.00	12,403	12,403	-	-
PTT Treasury Center Co., Ltd. (PTT TCC)	Thailand	Treasury services	100.00	100.00	20	20	-	-
Business Services Alliance Co., Ltd. (BSA) (The Group holds 100% shareholding)	Thailand	Management services	25.00	25.00	1	1	70	70
PTT Digital Solutions Co., Ltd. (PTT DIGITAL) (The Group holds 100% shareholding)	Thailand	Information technology and communication services	20.00	20.00	30	30	25	26
PTT International Trading USA Inc. (PTTT USA)	United States of America	International trading	100.00	100.00	155	155	-	-
					520,287	460,620		
					(84,584)	(84,560)		
Less Allowance for impairment								
Total					435,703	376,060	36,601	32,471

* In 2021, TP has already registered the dissolution of the company with the Department of Business Development. Ministry of Commerce.

14. Investments in subsidiaries, joint ventures and associates (Continued)

14.5 Details of investments in joint ventures in the separate financial statements as at 31 December 2022 and 2021

Unit: Million Baht

Company name	Country of Incorporation	Business	Separate financial statements					
			Ownership interest (%)		Cost method		Dividends income	
			2022	2021	2022	2021	2022	2021
Joint Ventures								
Trans Thai-Malaysia (Thailand) Co., Ltd. (TTM(T))	Thailand	Natural gas	50.00	50.00	3,172	3,172	676	355
Trans Thai-Malaysia (Malaysia) Sdn. Bhd. (TTM(M))	Malaysia	Natural gas	50.00	50.00	1,001	1,001	34	174
District Cooling System and Power Plant Co., Ltd. (DCAP)	Thailand	Generation and supply of electricity and chilled water	35.00	35.00	585	585	255	140
Map Ta Phut Air Products Company Limited (MAP) (The Group holds 51.00% shareholding)	Thailand	Production and distribution of industrial gas	49.00	49.00	179	179	-	-
Veolia Sustainable Solution (Thailand) Co.,Ltd. (SES)	Thailand	Hazardous waste management plant	40.00	40.00	23	23	-	-
Total					4,960	4,960	965	669

14. Investments in subsidiaries, joint ventures and associates (Continued)

14.6 Movements in investments in the consolidated and the separate financial statements

14.6.1 Movements in investments in joint ventures under the equity method in the consolidated financial statements are as follows:

	Unit: Million Baht	
	2022	2021
As at 1 January	52,280	48,932
- Share of profit from investments in joint ventures	1,590	5,804
- Dividend income	(4,894)	(3,205)
- Business acquisitions	-	723
- Additional investments	11,376	3,190
- Disposal and capital reduction of investments	-	(4,760)
- Loss on impairment (Note 21)	(305)	-
- Share of other comprehensive income (loss) of joint ventures	(66)	949
- Exchange differences on translation of financial statements	376	647
As at 31 December	<u>60,357</u>	<u>52,280</u>

14. Investments in subsidiaries, joint ventures and associates (Continued)

14.6 Movements in investments in the consolidated and the separate financial statements (Continued)

14.6.2 Movements in investments in associates under the equity method in the consolidated financial statements are as follows:

	Unit: Million Baht	
	2022	2021
As at 1 January	76,499	26,749
- Share of profit from investments in associates	4,259	3,207
- Dividend income	(2,034)	(1,384)
- Additional investments	26,518	48,345
- Reclassifications	(20)	(661)
- Disposal of investments	-	(133)
- Share of other comprehensive loss of associates	(1,624)	(377)
- Exchange differences on translation of financial statements	1,060	753
As at 31 December	104,658	76,499

14.6.3 Movements in investments in subsidiaries and joint ventures under the cost method in the separate financial statements are as follows:

	Unit: Million Baht	
	2022	2021
As at 1 January	381,020	351,319
- Additional investments	64,878	32,037
- Disposal and capital reduction of investments	(5,211)	(2,336)
- Loss on impairment	(24)	-
As at 31 December	440,663	381,020

14. Investments in subsidiaries, joint ventures and associates (Continued)

14.7 Summary financial information of the material joint ventures of the Group are as follows:

Statements of financial position as at 31 December 2022 and 2021

Unit: Million Baht

	2022					2021				
	TTM(T)	TTM(M)	DCAP	PTTAC	HMC	TTM(T)	TTM(M)	DCAP	PTTAC	HMC
Current assets	6,047	2,384	1,011	4,397	9,100	5,049	2,344	1,297	7,419	9,491
Non-current assets	6,691	1,913	2,289	22,545	32,733	8,588	2,655	2,602	23,942	31,192
Current liabilities	(1,647)	(754)	(624)	(1,740)	(5,714)	(1,545)	(894)	(492)	(2,730)	(5,912)
Non-current liabilities	(3,246)	(1,400)	(642)	(4,269)	(14,996)	(4,781)	(2,209)	(780)	(5,028)	(10,730)
Net assets (100%)	7,845	2,143	2,034	20,933	21,123	7,311	1,896	2,627	23,603	24,041
Shareholding (%)	50.00	50.00	35.00	50.00	41.44	50.00	50.00	35.00	50.00	41.44
The Group's share of net assets	3,922	1,071	712	10,467	8,753	3,656	948	920	11,802	9,963
Adjustment	-	-	-	-	3,039	-	-	-	-	3,038
Carrying amount of interest in joint ventures	3,922	1,071	712	10,467	11,792	3,656	948	920	11,802	13,001

14. Investments in subsidiaries, joint ventures and associates (Continued)

14.7 Summary financial information of the material joint ventures of the Group are as follows: (Continued)

Statements of comprehensive income for the years ended 31 December 2022 and 2021

Unit: Million Baht

	2022					2021				
	TTM(T)	TTM(M)	DCAP	PTTAC	HMC	TTM(T)	TTM(M)	DCAP	PTTAC	HMC
Revenue*	3,920	626	4,413	14,594	32,848	3,461	584	3,116	15,937	31,874
Expenses	(1,793)	(422)	(4,243)	(15,787)	(34,510)	(1,739)	(330)	(2,677)	(13,218)	(28,362)
Profit (loss) before taxes	2,127	204	170	(1,193)	(1,662)	1,722	254	439	2,719	3,512
Income taxes	(515)	56	(35)	8	34	(545)	(96)	(72)	(14)	(541)
Net profit (loss)	1,612	260	135	(1,185)	(1,628)	1,177	158	367	2,705	2,971
Other comprehensive income (loss)	26	-	2	15	(990)	-	-	-	-	(66)
Total comprehensive income (loss)	1,638	260	137	(1,170)	(2,618)	1,177	158	367	2,705	2,905

During the year, the Group recognized share of profit (loss) from significant investments in joint ventures as follows:

Share of profit (loss) from investments in joint ventures during the year	806	130	47	(593)	(675)	589	79	128	1,353	1,231
Share of other comprehensive income (loss) from investments in joint ventures during the year	13	-	1	8	(410)	-	-	-	-	(27)

* Including gain (loss) on foreign exchange rate and derivatives.

14. Investments in subsidiaries, joint ventures and associates (Continued)

14.8 Summary financial information of the material associates of the Group are as follows:

Statements of financial position as at 31 December 2022 and 2021

Unit: Million Baht

	2022					2021				
	AVAADA	CAP	THAPPLINE	XPCL	UCHA	AVAADA	CAP	THAPPLINE	XPCL	UCHA
Current assets	5,424	98,677	4,399	8,278	6,940	10,665	98,789	3,736	5,510	8,397
Non-current assets	68,420	70,584	8,015	126,320	7,072	38,100	67,979	8,099	128,970	6,893
Current liabilities	(4,869)	(20,937)	(648)	(5,040)	(1,350)	(5,708)	(31,017)	(574)	(5,064)	(1,670)
Non-current liabilities	(47,012)	(51,102)	(1,091)	(96,232)	(218)	(28,524)	(38,132)	(1,075)	(100,538)	(230)
Net assets (100%)	<u>21,963</u>	<u>97,222</u>	<u>10,675</u>	<u>33,326</u>	<u>12,444</u>	<u>14,533</u>	<u>97,619</u>	<u>10,186</u>	<u>28,878</u>	<u>8,397</u>
Shareholding (%)	42.93	15.00	49.21	25.00	25.00	41.62	15.00	49.21	25.00	25.00
The Group's share of net assets	9,429	14,583	5,253	8,332	3,111	6,049	14,643	5,013	7,220	3,348
Adjustment	<u>5,175</u>	<u>16,341</u>	<u>(117)</u>	<u>34</u>	<u>1,483</u>	<u>9,000</u>	<u>15,893</u>	<u>(119)</u>	<u>34</u>	<u>1,522</u>
Carrying amount of interest in associates	<u>14,604</u>	<u>30,924</u>	<u>5,136</u>	<u>8,366</u>	<u>4,594</u>	<u>15,049</u>	<u>30,536</u>	<u>4,894</u>	<u>7,254</u>	<u>4,870</u>

14. Investments in subsidiaries, joint ventures and associates (Continued)

14.8 Summary financial information of the material associates of the Group are as follows: (Continued)

Statements of comprehensive income for the years ended 31 December 2022 and 2021

Unit: Million Baht

	2022					2021				
	AVAADA	CAP	THAPPLINE	XPCL	UCHA	AVAADA	CAP**	THAPPLINE	XPCL	UCHA
Revenue*	6,083	84,672	3,221	16,230	14,627	1,388	29,232	2,583	13,975	14,067
Expenses	(6,682)	(90,666)	(1,339)	(11,135)	(15,305)	(1,410)	(29,365)	(945)	(10,192)	(12,917)
Profit (loss) before taxes	(599)	(5,994)	1,882	5,095	(678)	(22)	(133)	1,638	3,783	1,150
Income taxes	(84)	878	(381)	-	108	(113)	(391)	(547)	-	(342)
Net profit (loss)	(683)	(5,116)	1,501	5,095	(570)	(135)	(524)	1,091	3,783	808
Other comprehensive income (loss)	(766)	1,298	25	(164)	-	291	(89)	-	(2,122)	7
Total comprehensive income (loss)	(1,449)	(3,818)	1,526	4,931	(570)	156	(613)	1,091	1,661	815

During the year, the Group recognized share of profit (loss) from significant investments in associates as follows:

Share of profit (loss) from investments in associates during the year	(293)	(767)	739	1,274	(143)	(56)	(79)	537	946	202
Share of other comprehensive income (loss) from investments in associates during the year	(329)	195	12	(41)	-	121	(13)	-	(531)	2

* Including gain (loss) on foreign exchange rate and derivatives.

** Information for the period from September to December 2021 that the Group started investing in the associate and recognizing share of profit under the equity method.

14. Investments in subsidiaries, joint ventures and associates (Continued)

14.9 Significant events during the year ended 31 December 2022

PTTGM

During the year ended 31 December 2022, PTT Global Management Co., Ltd. (PTTGM) increased share capital a number of times and issued calls for the additional share capital. The Company made the additional share payments totaling Baht 49,193 million.

PTTLNG

During the year ended 31 December 2022, PTT LNG Co., Ltd. (PTTLNG) increased share capital a number of times and issued calls for the additional share capital. The Company made the additional share payments totaling Baht 1,034 million.

PTTGL

On 17 March 2022, the Board of Directors Meeting of the Company No. 3/2022 passed a resolution to approve a restructuring of shareholding in PTT Global LNG Company Limited (PTTGL), whereby Siam Management Holding Co., Ltd. (SMH) would purchase 50% of the shares of PTTGL from the Company and another 50% of shares from PTTEP Business Center Company Limited (PTTEP BC), with the total value of the sale and purchase agreements being USD 255 million. The transactions were completed on 1 June 2022. The Company recognized loss from divestment amounting to Baht 787 million in the separate financial statements. The transaction is a restructuring within the Group and, therefore, has no impact on the consolidated financial statements.

TOP

On 7 April 2022, the 2022 Annual General Meeting of Shareholders of Thai Oil Public Company Limited (TOP) passed a resolution to approve a public offering of newly issued ordinary shares of TOP. The Company and Siam Management Holding Co., Ltd. (SMH) are to invest in 92.6 million of the newly issued ordinary shares, in accordance with a resolution of the Company's Board of Directors meeting. The Company and SMH made full payment for the shares totaling Baht 4,952 million. Following this transaction, the Group will own 48.00% of TOP (existing: 48.03%).

14. Investments in subsidiaries, joint ventures and associates (Continued)

14.9 Significant events during the year ended 31 December 2022 (Continued)

Restructuring of Shareholding in Power Business within the Group

On 17 February 2022, the Board of Directors Meeting of the Company No. 2/2022 passed a resolution to approve a restructuring of shareholding in the Company's power business. The Company and Siam Management Holding Co., Ltd. (SMH) purchased 304 million shares of Global Power Synergy Public Company Limited (GPSC), equivalent to 10.78% of GPSC's total paid-up capital, from Thai Oil Public Company Limited (TOP) at the total price of approximately Baht 22,047 million. The transaction was completed on 7 June 2022. After the Restructuring Transaction, the Company and SMH will own 55.23% and TOP will own 10.00% of GPSC's total paid-up capital.

On 15 August 2022, the Management Committee Meeting of the Company No. 32/2022 passed a resolution to sell 14 million shares of GPSC, amounting to Baht 867 million, resulting in a decrease in the Company's equity in GPSC to 47.27%. The Company recognized a gain from sale of investments of Baht 145 million.

However, the above transaction is a restructuring within the Group and, therefore, has no impact on the consolidated financial statements.

Significant events of subsidiaries of the Company

CI Changfang Limited and CI Xidao Limited

On 26 September 2022, Global Renewable Synergy Company Limited Taiwan (GRSCTW), an indirectly-held subsidiary of GPSC purchased 25% of CI Changfang Limited (CF) and CI Xidao Limited (XD) which are the developers of offshore wind power projects in Taiwan, at a total investment cost of Taiwan Dollar 10,997 million or approximately Baht 14,979 million. GRSCTW made fully payment for the shares.

Avaada

Avaada Energy Private Limited (Avaada), an associate company of GPSC, called up additional share capital for the total amount of Rupee 1,875 million, or equivalent to Baht 841 million, from a subsidiary of GPSC. GPSC's shareholding in Avaada, therefore, increased from 41.62% to 42.93%. The subsidiary made additional payments for the shares on 18 January 2022.

14. Investments in subsidiaries, joint ventures and associates (Continued)

14.9 Significant events during the year ended 31 December 2022 (Continued)

VNT

On 1 March 2022, PTT Global Chemical Public Company Limited (PTTGC) completed the preparation of a tender offer to an associate company of PTTGC, Vinythai Public Company Limited (VNT). PTTGC has purchased 151 million shares of VNT or equivalent to 12.75% of total VNT's issued and paid-up shares, from other shareholders, at an offer price of Baht 39 per share, or the total price of approximately Baht 5,895 million. After the transaction, PTTGC's shareholding in VNT, therefore, increased from 24.98% to 37.73% of VNT's issued and paid-up shares. The Board of Governors of the Stock Exchange of Thailand (SET) also has delisted the securities of VNT from being listed on the SET, which was effective on 12 March 2022 onward.

On 11 April 2022, the Extraordinary General Meeting of Shareholders of VNT passed a resolution to approve the amalgamation of VNT with a subsidiary of AGC Inc., with PTTGC offering to purchase 1 million shares from VNT's dissenting shareholders for a total of Baht 39 million. The share purchases were completed on 3 May 2022 and resulted in an increase in PTTGC's ownership of VNT from 37.73% to 37.82%.

PTTGC proceeded with the amalgamation between VNT and AGC Chemicals (Thailand) Co., Ltd. (AGC-TH) to form a new company, namely AGC Vinythai Public Company Limited (AVT). The amalgamation and the establishment of AVT was completed on 1 July 2022, and after the share allocation, PTTGC holds 27.32% of the shares of AVT.

AVT

On 15 December 2022, the Extraordinary General Meeting of Shareholders of AVT passed a resolution to allocate the newly issued ordinary shares to be offered to PTTGC through a private placement, totaling Baht 2,143 million, resulting in an increase in PTTGC's shareholding in AVT from 27.32% to 32.72%. PTTGC has fully paid up the newly issued shares.

14. Investments in subsidiaries, joint ventures and associates (Continued)

14.10 Material non-controlling interests

Financial information of subsidiaries that have material non-controlling interests are as follow:

Company name	Country of Incorporation	Non-controlling interests Shareholding (%)	
		2022	2021
PTT Exploration and Production Public Co., Ltd. (PTTEP)	Thailand	34.71	34.71
Thai Oil Public Co., Ltd. (TOP)	Thailand	52.00	51.97
IRPC Public Co., Ltd. (IRPC)	Thailand	51.95	51.95
PTT Global Chemical Public Co., Ltd. (PTTGC)	Thailand	51.82	51.82
Global Power Synergy Public Co., Ltd. (GPSC)	Thailand	24.77	24.77
PTT Oil and Retail Business Public Co., Ltd. (OR)	Thailand	25.00	25.00

14. Investments in subsidiaries, joint ventures and associates (Continued)

14.10 Material non-controlling interests (Continued)

Financial information of subsidiaries that have material non-controlling interests, after accounting policy adjustment, before eliminations:

Summary of financial position as at 31 December 2022 and 2021

Unit: Million Baht

	2022						2021					
	PTTEP	TOP	IRPC	PTTGC	GPSC	OR	PTTEP	TOP	IRPC	PTTGC	GPSC	OR
Current assets	196,843	153,828	70,920	172,008	52,822	136,552	139,584	101,239	67,200	207,244	45,490	126,066
Non-current assets	673,022	290,599	127,267	547,957	235,988	88,952	643,952	260,751	123,560	546,871	224,889	81,593
Current liabilities	(114,616)	(103,673)	(62,056)	(103,976)	(32,193)	(68,660)	(104,502)	(38,476)	(47,543)	(147,007)	(23,036)	(51,730)
Non-current liabilities	(288,128)	(182,250)	(56,453)	(317,161)	(141,508)	(53,083)	(263,684)	(200,574)	(55,505)	(279,505)	(129,595)	(56,057)
Net assets	<u>467,121</u>	<u>158,504</u>	<u>79,678</u>	<u>298,828</u>	<u>115,109</u>	<u>103,761</u>	<u>415,350</u>	<u>122,940</u>	<u>87,712</u>	<u>327,603</u>	<u>117,748</u>	<u>99,872</u>
The Group's share of net assets	304,970	74,843	38,181	140,356	78,797	77,776	267,918	57,981	42,046	153,338	81,502	74,863
Non-controlling interests	162,151	83,661	41,497	158,472	36,312	25,985	147,432	64,959	45,666	174,265	36,246	25,009

14. Investments in subsidiaries, joint ventures and associates (Continued)

14.10 Material non-controlling interests (Continued)

Financial information of subsidiaries that have material non-controlling interests, after accounting policy adjustment, before eliminations: (Continued)

Summary of comprehensive income or loss for the years ended 31 December 2022 and 2021

Unit: Million Baht

	2022						2021					
	PTTEP	TOP	IRPC	PTTGC	GPSC	OR	PTTEP	TOP	IRPC	PTTGC	GPSC	OR
Revenue*	331,403	529,517	319,645	669,517	128,089	793,953	226,544	338,936	255,393	491,621	79,590	516,117
Expenses	(188,207)	(489,179)	(325,147)	(679,426)	(127,008)	(780,942)	(146,152)	(326,194)	(238,509)	(439,897)	(70,558)	(501,929)
Profit (loss) before income taxes	143,196	40,338	(5,502)	(9,909)	1,081	13,011	80,392	12,742	16,884	51,724	9,032	14,188
Income taxes	(72,295)	(8,526)	1,142	2,273	376	(2,638)	(41,528)	(1,553)	(2,351)	(7,228)	(1,192)	(2,718)
Net profit (loss)	70,901	31,812	(4,360)	(7,636)	1,457	10,373	38,864	11,189	14,533	44,496	7,840	11,470
Loss from discontinued operations during the year, net of tax	-	-	-	-	-	-	-	(63)	-	-	-	-
Other comprehensive income (loss)	14,981	1,693	(7)	(7,226)	(1,224)	(8)	41,285	1,279	312	5,515	2,355	1,436
Total comprehensive income (loss)	85,882	33,505	(4,367)	(14,862)	233	10,365	80,149	12,405	14,845	50,011	10,195	12,906
Net profit (loss) attributable to												
The Group	46,289	15,064	(2,097)	(4,217)	670	7,778	25,373	5,139	6,970	21,166	5,506	8,606
Non-controlling interests	24,612	16,748	(2,263)	(3,419)	787	2,595	13,491	5,987	7,563	23,330	2,334	2,864
Total dividend paid to non-controlling interests	9,988	4,473	1,941	6,314	978	1,620	6,546	1,419	1,507	7,564	1,240	1,110

* Including gain (loss) on foreign exchange rate and derivatives.

14. Investments in subsidiaries, joint ventures and associates (Continued)

14.10 Material non-controlling interests (Continued)

Financial information of subsidiaries that have material non-controlling interests, after accounting policy adjustment, before eliminations: (Continued)

Summary of cash flows for the years ended 31 December 2022 and 2021

Unit: Million Baht

	2022						2021					
	PTTEP	TOP	IRPC	PTTGC	GPSC	OR	PTTEP	TOP	IRPC	PTTGC	GPSC	OR
Net cash provided by (used in) operating activities	164,916	43,281	(3,900)	(3,427)	3,453	(4,200)	110,069	10,902	11,342	68,650	16,315	24,044
Net cash provided by (used in) investing activities	(58,760)	(9,080)	(8,743)	(12,213)	(15,564)	5,753	(123,016)	(43,355)	(2,853)	(148,843)	(19,835)	(25,903)
Net cash provided by (used in) financing activities	(69,958)	(20,253)	4,637	(14,164)	12,235	(9,853)	(22,199)	8,341	(6,104)	90,036	(2,705)	29,861
Others	598	(68)	-	130	320	37	9,416	564	-	1,457	(528)	(227)
Net increase (decrease) in cash and cash equivalents	<u>36,796</u>	<u>13,880</u>	<u>(8,006)</u>	<u>(29,674)</u>	<u>444</u>	<u>(8,263)</u>	<u>(25,730)</u>	<u>(23,548)</u>	<u>2,385</u>	<u>11,300</u>	<u>(6,753)</u>	<u>27,775</u>

15. Investment properties

Details of investment properties are as follows:

Unit: Million Baht

	Consolidated financial statements					
	Land	Buildings and building improvements	Other assets	Construction in progress	Right-of-use assets	Total
As at 1 January 2021						
Cost	6,618	2,658	6	-	125	9,407
<u>Less</u> Accumulated depreciation	-	(1,293)	(1)	-	(23)	(1,317)
Allowance for impairment of assets	(64)	-	-	-	-	(64)
Net book value	6,554	1,365	5	-	102	8,026
For the year ended						
31 December 2021						
Beginning net book value	6,554	1,365	5	-	102	8,026
- Additions	1,523	396	5	23	3	1,950
- Reclassifications	88	518	1	11	-	618
- Disposal and write-off - net	-	(2)	-	-	-	(2)
- Depreciation for the year	-	(127)	(1)	-	(5)	(133)
Ending net book value	8,165	2,150	10	34	100	10,459
As at 31 December 2021						
Cost	8,229	3,802	12	34	128	12,205
<u>Less</u> Accumulated depreciation	-	(1,652)	(2)	-	(28)	(1,682)
Allowance for impairment of assets	(64)	-	-	-	-	(64)
Net book value	8,165	2,150	10	34	100	10,459

15. Investment properties (Continued)

Details of investment properties are as follows: (Continued)

Unit: Million Baht

	Consolidated financial statements					Total
	Land	Buildings and building improvements	Other assets	Construction in progress	Right-of-use assets	
For the year ended						
31 December 2022						
Beginning net book value	8,165	2,150	10	34	100	10,459
- Additions	-	47	-	234	-	281
- Reclassifications	4	156	2	-	-	162
- Disposal and write-off - net	-	(2)	-	-	-	(2)
- Reversal of loss on impairment of assets	17	-	-	-	-	17
- Depreciation for the year	-	(174)	(1)	-	(6)	(181)
Ending net book value	<u>8,186</u>	<u>2,177</u>	<u>11</u>	<u>268</u>	<u>94</u>	<u>10,736</u>
As at 31 December 2022						
Cost	8,233	3,995	14	268	128	12,638
<u>Less</u> Accumulated depreciation	-	(1,818)	(3)	-	(34)	(1,855)
Allowance for impairment of assets	(47)	-	-	-	-	(47)
Net book value	<u>8,186</u>	<u>2,177</u>	<u>11</u>	<u>268</u>	<u>94</u>	<u>10,736</u>

As at 31 December 2022 and 2021, the Group did not have pledged assets.

15. Investment properties (Continued)

Details of investment properties are as follows: (Continued)

Unit: Million Baht

	Separate financial statements				Total
	Land	Buildings and building improvements	Construction in progress	Right-of-use assets	
As at 1 January 2021					
Cost	3,581	1,703	2	552	5,838
<u>Less</u> Accumulated depreciation	-	(1,277)	-	(102)	(1,379)
Net book value	<u>3,581</u>	<u>426</u>	<u>2</u>	<u>450</u>	<u>4,459</u>
For the year ended					
31 December 2021					
Beginning net book value	3,581	426	2	450	4,459
- Reclassifications	-	(34)	-	(378)	(412)
- Modifications	-	-	-	(19)	(19)
- Depreciation for the year	-	(45)	-	(16)	(61)
Ending net book value	<u>3,581</u>	<u>347</u>	<u>2</u>	<u>37</u>	<u>3,967</u>
As at 31 December 2021					
Cost	3,581	1,652	2	46	5,281
<u>Less</u> Accumulated depreciation	-	(1,305)	-	(9)	(1,314)
Net book value	<u>3,581</u>	<u>347</u>	<u>2</u>	<u>37</u>	<u>3,967</u>
For the year ended					
31 December 2022					
Beginning net book value	3,581	347	2	37	3,967
- Additions	-	-	-	1	1
- Reclassifications	4	-	-	-	4
- Depreciation for the year	-	(39)	-	(6)	(45)
Ending net book value	<u>3,585</u>	<u>308</u>	<u>2</u>	<u>32</u>	<u>3,927</u>
As at 31 December 2022					
Cost	3,585	1,652	2	47	5,286
<u>Less</u> Accumulated depreciation	-	(1,344)	-	(15)	(1,359)
Net book value	<u>3,585</u>	<u>308</u>	<u>2</u>	<u>32</u>	<u>3,927</u>

15. Investment properties (Continued)

Fair value disclosed as at 31 December 2022 and 2021 using different levels of inputs as follows:

Unit: Million Baht

	Consolidated		Separate	
	financial statements		financial statements	
	2022	2021	2022	2021
Fair value hierarchy				
Level 2	12,673	11,716	4,250	3,802
Level 3	13,120	14,068	221	759
Total	25,793	25,784	4,471	4,561

Fair value level 2

The fair values of land for rent categorized as investment property were determined by independent property appraisers under the market approach.

Fair value level 3

The fair values of land and buildings for rent categorized as investment property were determined by using the income approach. The inputs used for the valuation consisted of the rate of return and finance costs.

16. Property, plant and equipment

Details of property, plant and equipment are as follows:

Unit: Million Baht

	Consolidated financial statements							
	Land	Buildings and building improvements	Machinery and equipment	Exploration and production properties	Mining properties	Other assets	Construction in progress	Total
As at 1 January 2021								
Cost	49,660	316,779	1,198,146	949,538	53,338	22,961	185,110	2,775,532
<u>Less</u> Accumulated depreciation	-	(177,025)	(574,851)	(648,152)	(29,380)	(17,143)	-	(1,446,551)
Allowance for impairment of assets	(73)	(591)	(2,402)	(11,025)	(20,219)	-	(1,954)	(36,264)
Net book value	49,587	139,163	620,893	290,361	3,739	5,818	183,156	1,292,717

16. Property, plant and equipment (Continued)

Details of property, plant and equipment are as follows: (Continued)

Unit: Million Baht

	Consolidated financial statements							Total
	Land	Buildings and building improvements	Machinery and equipment	Exploration and production properties	Mining properties	Other assets	Construction in progress	
For the year ended								
31 December 2021								
Beginning net book value	49,587	139,163	620,893	290,361	3,739	5,818	183,156	1,292,717
- Business acquisition	6,920	8,225	23,702	69,381	-	41	2,130	110,399
- Additions	92	4,167	5,282	58,650	1,277	443	82,027	151,938
- Borrowing costs	-	-	-	-	-	-	5,571	5,571
- Reclassifications	(51)	13,827	54,637	1,413	72	1,918	(74,248)	(2,432)
- Disposal and write-off - net	-	(252)	(2,079)	(13,273)	(29)	(15)	(81)	(15,729)
- Depreciation for the year	-	(11,713)	(50,267)	(69,931)	(1,084)	(1,724)	-	(134,719)
- Loss on impairment of assets	-	(1,278)	(2,909)	(671)	-	(65)	(1,832)	(6,755)
- Reclassified to assets held for sale	-	-	(1,621)	-	-	-	-	(1,621)
- Exchange differences on translation of financial statements	161	616	806	35,012	431	(252)	734	37,508
Ending net book value	56,709	152,755	648,444	370,942	4,406	6,164	197,457	1,436,877

16. Property, plant and equipment (Continued)

Details of property, plant and equipment are as follows: (Continued)

Unit: Million Baht

	Consolidated financial statements							Total
	Land	Buildings and building improvements	Machinery and equipment	Exploration and production properties	Mining properties	Other assets	Construction in progress	
As at 31 December 2021								
Cost	56,782	344,867	1,284,481	1,170,951	60,722	24,405	200,058	3,142,266
<u>Less</u> Accumulated depreciation	-	(190,708)	(631,833)	(787,580)	(33,821)	(18,175)	-	(1,662,117)
Allowance for impairment of assets	(73)	(1,404)	(4,204)	(12,429)	(22,495)	(66)	(2,601)	(43,272)
Net book value	56,709	152,755	648,444	370,942	4,406	6,164	197,457	1,436,877

16. Property, plant and equipment (Continued)

Details of property, plant and equipment are as follows: (Continued)

Unit: Million Baht

	Consolidated financial statements							Total
	Land	Buildings and building improvements	Machinery and equipment	Exploration and production properties	Mining properties	Other assets	Construction in progress	
For the year ended								
31 December 2022								
Beginning net book value	56,709	152,755	648,444	370,942	4,406	6,164	197,457	1,436,877
- Business acquisition (Note 41)	1,129	553	776	-	-	79	820	3,357
- Additions	110	2,273	10,088	104,075	1,440	970	91,343	210,299
- Borrowing costs	-	1	32	-	-	-	5,571	5,604
- Reclassifications	743	8,412	25,975	(121)	6	1,561	(40,995)	(4,419)
- Disposal and write-off - net	(4)	(411)	(3,612)	(10,134)	(3)	(31)	(1,260)	(15,455)
- Depreciation for the year	-	(12,264)	(50,082)	(77,339)	(1,425)	(1,835)	-	(142,945)
- Loss on impairment of assets (Note 21)	-	(671)	(364)	-	(221)	-	-	(1,256)
- Reclassified to assets held for sale	-	(135)	(588)	(345)	(4,420)	-	(30)	(5,518)
- Exchange differences on translation of financial statements	(160)	(108)	(10)	12,877	217	-	(30)	12,786
Ending net book value	58,527	150,405	630,659	399,955	-	6,908	252,876	1,499,330

16. Property, plant and equipment (Continued)

Details of property, plant and equipment are as follows: (Continued)

Unit: Million Baht

	Consolidated financial statements							Total
	Land	Buildings and building improvements	Machinery and equipment	Exploration and production properties	Mining properties	Other assets	Construction in progress	
As at 31 December 2022								
Cost	58,600	354,577	1,298,178	1,233,095	-	26,429	255,542	3,226,421
<u>Less</u> Accumulated depreciation	-	(202,118)	(663,980)	(823,510)	-	(19,456)	-	(1,709,064)
Allowance for impairment of assets	(73)	(2,054)	(3,539)	(9,630)	-	(65)	(2,666)	(18,027)
Net book value	<u>58,527</u>	<u>150,405</u>	<u>630,659</u>	<u>399,955</u>	<u>-</u>	<u>6,908</u>	<u>252,876</u>	<u>1,499,330</u>

As at 31 December 2022, the Group had pledged assets amounting to Baht 61,775 million (31 December 2021: Baht 91,548 million)

16. Property, plant and equipment (Continued)

Details of property, plant and equipment are as follows: (Continued)

Unit: Million Baht

	Separate financial statements					Total
	Land	Buildings and building improvements	Machinery and equipment	Other assets	Construction in progress	
As at 1 January 2021						
Cost	5,743	37,254	370,463	17,041	35,474	465,975
<u>Less</u> Accumulated depreciation	-	(16,506)	(174,909)	(12,582)	-	(203,997)
Allowance for impairment of assets	-	(61)	(67)	-	-	(128)
Net book value	5,743	20,687	195,487	4,459	35,474	261,850
For the year ended						
31 December 2021						
Beginning net book value	5,743	20,687	195,487	4,459	35,474	261,850
- Additions	23	104	265	80	9,424	9,896
- Borrowing costs	-	-	-	-	1,047	1,047
- Reclassifications	81	3,844	8,887	1,710	(15,855)	(1,333)
- Disposal and write-off - net	-	(210)	(146)	(17)	-	(373)
- Depreciation for the year	-	(1,684)	(13,204)	(1,309)	-	(16,197)
- Loss on impairment of assets	-	(1,291)	(2,864)	(65)	-	(4,220)
Ending net book value	5,847	21,450	188,425	4,858	30,090	250,670
As at 31 December 2021						
Cost	5,847	40,592	375,365	18,097	30,090	469,991
<u>Less</u> Accumulated depreciation	-	(17,790)	(184,009)	(13,174)	-	(214,973)
Allowance for impairment of assets	-	(1,352)	(2,931)	(65)	-	(4,348)
Net book value	5,847	21,450	188,425	4,858	30,090	250,670

16. Property, plant and equipment (Continued)

Details of property, plant and equipment are as follows: (Continued)

Unit: Million Baht

	Separate financial statements					Total
	Land	Buildings and building improvements	Machinery and equipment	Other assets	Construction in progress	
For the year ended						
31 December 2022						
Beginning net book value	5,847	21,450	188,425	4,858	30,090	250,670
- Additions	-	386	1,107	261	15,250	17,004
- Borrowing costs	-	-	-	-	852	852
- Reclassifications	347	980	9,361	1,251	(16,587)	(4,648)
- Disposal and write-off - net	-	(51)	(6)	(6)	-	(63)
- Depreciation for the year	-	(1,548)	(12,684)	(1,328)	-	(15,560)
- Reversal of loss on impairment of assets	-	16	4	1	-	21
Ending net book value	<u>6,194</u>	<u>21,233</u>	<u>186,207</u>	<u>5,037</u>	<u>29,605</u>	<u>248,276</u>
As at 31 December 2022						
Cost	6,194	41,681	385,119	19,246	29,605	481,845
<u>Less</u> Accumulated depreciation	-	(19,112)	(195,985)	(14,144)	-	(229,241)
Allowance for impairment of assets	-	(1,336)	(2,927)	(65)	-	(4,328)
Net book value	<u>6,194</u>	<u>21,233</u>	<u>186,207</u>	<u>5,037</u>	<u>29,605</u>	<u>248,276</u>

Borrowing costs were capitalized as a part of costs of property, plant and equipment. During the year, the Group used capitalization rates ranging from 0.40% - 5.47% per annum (2021: 0.40% - 5.99% per annum). The Company used capitalization rates at 3.46% per annum (2021: 3.83% per annum).

17. Right-of-use assets

Details of right-of-use assets are as follows:

Unit: Million Baht

	Consolidated financial statements						
	Land	Buildings and building improvements	Machinery and equipment	Vehicles	Exploration and production properties	Other assets	Total
As at 1 January 2021							
Cost	61,573	2,046	14,258	2,554	16,157	2,905	99,493
<u>Less</u> Accumulated depreciation	(16,027)	(668)	(7,072)	(1,032)	(2,765)	(1,045)	(28,609)
Allowance for impairment of assets	(53)	-	-	-	-	-	(53)
Net book value	45,493	1,378	7,186	1,522	13,392	1,860	70,831

17. Right-of-use assets (Continued)

Details of right-of-use assets are as follows: (Continued)

Unit: Million Baht

	Consolidated financial statements						Total
	Land	Buildings and building improvements	Machinery and equipment	Vehicles	Exploration and production properties	Other assets	
For the year ended 31 December 2021							
Beginning net book value	45,493	1,378	7,186	1,522	13,392	1,860	70,831
- Business acquisition	1,136	847	592	232	-	-	2,807
- Additions	4,700	707	1,162	802	4,506	4,077	15,954
- Modification	30	(4)	25	8	150	(69)	140
- Reclassifications	556	3	7	(8)	40	-	598
- Termination	(499)	(9)	-	(61)	(279)	(8)	(856)
- Depreciation for the year	(2,762)	(680)	(1,552)	(715)	(3,937)	(1,079)	(10,725)
- Loss on impairment of assets	(7)	-	-	-	-	-	(7)
- Classified to assets held for sale	(183)	-	-	-	-	-	(183)
- Exchange differences on translation of financial statements	170	52	43	14	1,549	2	1,830
Ending net book value	48,634	2,294	7,463	1,794	15,421	4,783	80,389
As at 31 December 2021							
Cost	67,181	3,321	16,190	3,249	21,421	6,514	117,876
<u>Less</u> Accumulated depreciation	(18,535)	(1,027)	(8,727)	(1,455)	(6,000)	(1,731)	(37,475)
Allowance for impairment of assets	(12)	-	-	-	-	-	(12)
Net book value	48,634	2,294	7,463	1,794	15,421	4,783	80,389

17. Right-of-use assets (Continued)

Details of right-of-use assets are as follows: (Continued)

Unit: Million Baht

	Consolidated financial statements						Total
	Land	Buildings and building improvements	Machinery and equipment	Vehicles	Exploration and production properties	Other assets	
For the year ended 31 December 2022							
Beginning net book value	48,634	2,294	7,463	1,794	15,421	4,783	80,389
- Business acquisition (Note 41)	-	110	-	-	-	14	124
- Additions	1,893	2,361	17,078	3,870	21,498	9,194	55,894
- Modification	17	-	(4)	-	240	(841)	(588)
- Reclassifications	4,121	(84)	(984)	(11)	724	-	3,766
- Termination	(104)	73	(32)	(28)	(253)	-	(344)
- Depreciation for the year	(3,004)	(1,348)	(1,899)	(1,354)	(6,590)	(1,202)	(15,397)
- Reversal of loss on impairment of assets	1	-	-	-	-	-	1
- Classified to assets held for sale (Note 12)	-	(7)	-	(8)	-	-	(15)
- Exchange differences on translation of financial statements	(131)	(49)	(4)	5	411	(9)	223
Ending net book value	51,427	3,350	21,618	4,268	31,451	11,939	124,053
As at 31 December 2022							
Cost	72,539	5,218	31,571	6,570	41,476	13,196	170,570
<u>Less</u> Accumulated depreciation	(21,101)	(1,868)	(9,953)	(2,302)	(10,025)	(1,257)	(46,506)
Allowance for impairment of assets	(11)	-	-	-	-	-	(11)
Net book value	51,427	3,350	21,618	4,268	31,451	11,939	124,053

17. Right-of-use assets (Continued)

Details of right-of-use assets are as follows: (Continued)

Unit: Million Baht

	Separate financial statements					Total
	Land	Buildings and building improvements	Machinery and equipment	Vehicles	Other assets	
As at 1 January 2021						
Cost	25,210	87	10,200	618	19	36,134
<u>Less</u> Accumulated depreciation	(10,696)	(38)	(5,724)	(248)	(11)	(16,717)
Net book value	14,514	49	4,476	370	8	19,417
For the year ended 31 December 2021						
Beginning net book value	14,514	49	4,476	370	8	19,417
- Additions	319	2	32	78	-	431
- Modification	20	(36)	-	13	-	(3)
- Reclassifications	930	-	2	-	-	932
- Termination	(420)	-	-	(33)	-	(453)
- Depreciation for the year	(847)	(2)	(572)	(141)	(8)	(1,570)
- Loss on impairment of assets	(7)	-	-	-	-	(7)
Ending net book value	14,509	13	3,938	287	-	18,747
As at 31 December 2021						
Cost	26,046	27	10,223	615	15	36,926
<u>Less</u> Accumulated depreciation	(11,530)	(14)	(6,285)	(328)	(15)	(18,172)
Allowance for impairment of assets	(7)	-	-	-	-	(7)
Net book value	14,509	13	3,938	287	-	18,747

17. Right-of-use assets (Continued)

Details of right-of-use assets are as follows: (Continued)

Unit: Million Baht

	Separate financial statements					Total
	Land	Buildings and building improvements	Machinery and equipment	Vehicles	Other assets	
For the year ended 31 December 2022						
Beginning net book value	14,509	13	3,938	287	-	18,747
- Additions	301	11	1,183	3,015	213	4,723
- Modification	(7)	-	(5)	-	(1)	(13)
- Reclassifications	3,601	-	6	-	-	3,607
- Termination	(7)	-	-	(1)	-	(8)
- Depreciation for the year	(999)	(10)	(569)	(575)	(34)	(2,187)
Ending net book value	<u>17,398</u>	<u>14</u>	<u>4,553</u>	<u>2,726</u>	<u>178</u>	<u>24,869</u>
As at 31 December 2022						
Cost	29,888	39	11,397	3,611	214	45,149
<u>Less</u> Accumulated depreciation	(12,483)	(25)	(6,844)	(885)	(36)	(20,273)
Allowance for impairment of assets	(7)	-	-	-	-	(7)
Net book value	<u>17,398</u>	<u>14</u>	<u>4,553</u>	<u>2,726</u>	<u>178</u>	<u>24,869</u>

18. Goodwill

Movements in goodwill are as follows:

Unit: Million Baht

	Consolidated financial statements	
	2022	2021
Net book value as at 1 January	182,854	106,994
- Business acquisition (Note 41)	12,573	74,815
- Loss on impairment of assets (Note 21)	(6,611)	(5,471)
- Classified as assets held for sale	(82)	(15)
- Exchange differences on translation of financial statements	230	6,531
Net book value as at 31 December	<u>188,964</u>	<u>182,854</u>

19. Other intangible assets

Details of other intangible assets are as follows:

	Unit: Million Baht				
	Consolidated financial statements				
	Computer software	Customer contracts	Copyright, license and trademark	Other intangible assets	Total
As at 1 January 2021					
Cost	27,582	47,050	12,690	15,057	102,379
<u>Less</u> Accumulated amortization	(17,128)	(4,433)	(4,941)	(6,625)	(33,127)
Allowance for impairment of assets	-	-	-	(779)	(779)
Net book value	<u>10,454</u>	<u>42,617</u>	<u>7,749</u>	<u>7,653</u>	<u>68,473</u>
For the year ended					
31 December 2021					
Beginning net book value	10,454	42,617	7,749	7,653	68,473
- Business acquisition	1,687	17,422	13,001	24,849	56,959
- Additions	1,761	440	42	626	2,869
- Reclassifications	1,592	8	273	(635)	1,238
- Disposal and write-off - net	(126)	-	-	-	(126)
- Amortization for the year	(2,879)	(2,009)	(518)	(831)	(6,237)
- Loss on impairment of assets	(40)	-	-	-	(40)
- Classified as assets held for sale	-	(340)	-	(67)	(407)
- Exchange differences on translation of financial statements	287	31	4	445	767
Ending net book value	<u>12,736</u>	<u>58,169</u>	<u>20,551</u>	<u>32,040</u>	<u>123,496</u>
As at 31 December 2021					
Cost	35,224	68,613	27,029	42,560	173,426
<u>Less</u> Accumulated amortization	(22,448)	(10,444)	(6,478)	(10,421)	(49,791)
Allowance for impairment of assets	(40)	-	-	(99)	(139)
Net book value	<u>12,736</u>	<u>58,169</u>	<u>20,551</u>	<u>32,040</u>	<u>123,496</u>

19. Other intangible assets (Continued)

Details of other intangible assets are as follows: (Continued)

	Unit: Million Baht				
	Consolidated financial statements				
	Computer software	Customer contracts	Copyright, license and trademark	Other intangible assets	Total
For the year ended					
31 December 2022					
Beginning net book value	12,736	58,169	20,551	32,040	123,496
- Business acquisition (Note 41)	22	-	17,468	2,809	20,299
- Additions	2,642	27	3,909	2,282	8,860
- Reclassifications	1,742	-	328	(1,393)	677
- Disposal and write-off - net	(155)	-	(1,003)	(286)	(1,444)
- Amortization for the year	(3,691)	(2,703)	(2,753)	(2,155)	(11,302)
- Loss on impairment of assets	14	-	(4)	(155)	(145)
- Business disposal	(9)	-	-	-	(9)
- Classified as assets held for sale	-	-	-	(2,463)	(2,463)
- Exchange differences on translation of financial statements	69	(516)	124	(595)	(918)
Ending net book value	<u>13,370</u>	<u>54,977</u>	<u>38,620</u>	<u>30,084</u>	<u>137,051</u>
As at 31 December 2022					
Cost	38,467	68,006	47,952	40,064	194,489
<u>Less</u> Accumulated amortization	(25,071)	(13,029)	(9,329)	(9,788)	(57,217)
Allowance for impairment of assets	(26)	-	(3)	(192)	(221)
Net book value	<u>13,370</u>	<u>54,977</u>	<u>38,620</u>	<u>30,084</u>	<u>137,051</u>

19. Other intangible assets (Continued)

Details of other intangible assets are as follows: (Continued)

	Unit: Million Baht		
	Separate financial statements		
	Computer software	Other intangible assets	Total
As at 1 January 2021			
Cost	8,869	-	8,869
<u>Less</u> Accumulated amortization	(6,252)	-	(6,252)
Beginning net book value	2,617	-	2,617
		-	
For the year ended 31 December 2021			
Beginning net book value	2,617	-	2,617
- Additions	272	-	272
- Reclassifications	759	31	790
- Disposal and write-off - net	(2)	-	(2)
- Amortization for the year	(1,048)	-	(1,048)
- Loss on impairment of assets	(24)	-	(24)
Ending net book value	2,574	31	2,605
As at 31 December 2021			
Cost	9,824	31	9,855
<u>Less</u> Accumulated amortization	(7,226)	-	(7,226)
Allowance for impairment of assets	(24)	-	(24)
Net book value	2,574	31	2,605

19. Other intangible assets (Continued)

Details of other intangible assets are as follows: (Continued)

	Unit: Million Baht		
	Separate financial statements		
	Computer software	Other intangible assets	Total
For the year ended 31 December 2022			
Beginning net book value	2,574	31	2,605
- Additions	245	-	245
- Reclassifications	927	5	932
- Disposal and write-off - net	(1)	-	(1)
- Amortization for the year	(1,079)	-	(1,079)
Ending net book value	2,666	36	2,702
As at 31 December 2022			
Cost	10,878	36	10,914
<u>Less</u> Accumulated amortization	(8,188)	-	(8,188)
Allowance for impairment of assets	(24)	-	(24)
Net book value	2,666	36	2,702

20. Exploration and evaluation assets

Details of exploration and evaluation assets are as follows:

Unit: Million Baht

	Consolidated financial statements		
	Petroleum exploration and evaluation assets	Mining properties	Total
As at 1 January 2021			
Cost	140,981	776	141,757
<u>Less</u> Allowance for impairment of assets	(54,288)	(524)	(54,812)
Beginning net book value	86,693	252	86,945
For the year ended 31 December 2021			
Beginning net book value	86,693	252	86,945
- Business acquisition	10,285	-	10,285
- Additions	4,280	5	4,285
- Reclassifications	(1,413)	-	(1,413)
- Disposal and write-off - net	(5,971)	-	(5,971)
- Exchange differences on translation of financial statements	10,440	24	10,464
Ending net book value	104,314	281	104,595
As at 31 December 2021			
Cost	148,599	864	149,463
<u>Less</u> Allowance for impairment of assets	(44,285)	(583)	(44,868)
Net book value	104,314	281	104,595

20. Exploration and evaluation assets (Continued)

Details of exploration and evaluation assets are as follows: (Continued)

	Unit: Million Baht		
	Consolidated financial statements		
	Petroleum exploration and evaluation assets	Mining properties	Total
For the year ended 31 December 2022			
Beginning net book value	104,314	281	104,595
- Additions	3,329	-	3,329
- Reclassifications	(603)	(116)	(719)
- Disposal and write-off - net	(996)	-	(996)
- Loss on impairment of assets	-	(162)	(162)
- Classified as assets held for sale	(3,470)	(12)	(3,482)
- Exchange differences on translation of financial statements	3,587	9	3,596
Ending net book value	106,161	-	106,161
As at 31 December 2022			
Cost	149,032	-	148,995
<u>Less</u> Allowance for impairment of assets	(42,871)	-	(42,834)
Net book value	106,161	-	106,161

21. Impairment of assets

The Group performs an impairment test on assets whenever events or circumstances suggest that the carrying amount of the assets may exceed its recoverable amount. For the intangible assets with indefinite useful lives or not yet available for use and goodwill from business combination, the Group perform impairment tests annually or when the indication exists. A loss on impairment is recognized when the recoverable amount of an asset is lower than its carrying amount. The recoverable amount is the higher of the asset's fair value less cost to sell and its value in use.

Losses on impairment of assets, excluding goodwill, may be reversed if the estimates and assumptions applied in determining the recoverable amount change.

During the year 2022, impairment reviews indicated that there were significant indicators that the assets of the Group may be impaired, such as the adjustment of plans according to the current situation, which caused some development projects to be significantly delayed, halting of production of some products due to high market competition, plans to cease using some equipment in the operations, and the economic and political situation in Myanmar.

In determining recoverable amounts, the Group applied significant estimates and assumptions relating to matters such as petroleum reserves, oil prices, foreign exchange rates, discount rates, capital expenditure, and operating expenditure. The significant assumptions used in testing of the value in use of assets were discount rates of 7.00% - 14.00%.

During the year ended 31 December 2022, the Group recognized loss on impairment of assets in statements of income as follows:

	Unit: Million Baht
	Consolidated financial statements
Investments in joint ventures (Note 14)	305
Property, plant and equipment (Note 16)	1,256
Goodwill (Note 18)	6,611
Other assets	4,437
Total	<u>12,609</u>

22. Income taxes and deferred taxes

Applicable tax rates for the Group are as follows:

	<u>Rates (%)</u>
Petroleum income tax on petroleum business in Thailand	
pursuant to the Petroleum Income Tax Act, B.E. 2514 and B.E. 2532	50
pursuant to the Petroleum Income Tax Act, B.E. 2560	20
Corporate Income tax from the Petroleum business in the Thai-Malaysia co-development area under the Petroleum Income Tax Act (No.5) B.E. 2541 and Petroleum Income tax in Malaysia	10
Petroleum income tax in foreign countries	20 - 80
Petroleum resource rent tax in Australia	40
Income tax under the Revenue Code of the Company and its subsidiaries	Exempt, 3 - 20
Corporate income tax in foreign countries	1 - 80
Income tax from the profit distribution	10 - 20

22.1 Income taxes recognized in the statements of income for the years ended 31 December 2022 and 2021 are as follows:

	Unit: Million Baht			
	Consolidated		Separate	
	financial statements		financial statements	
	2022	2021	2022	2021
Current tax:				
Current tax	76,176	61,335	3,597	7,487
Adjustments in respect of current tax of previous year	1,730	(110)	335	48
	<u>77,906</u>	<u>61,225</u>	<u>3,932</u>	<u>7,535</u>
Deferred tax:				
Change in temporary differences	12,030	6,072	850	779
Tax effect of currency translation on tax base	526	294	-	-
	<u>12,566</u>	<u>6,366</u>	<u>850</u>	<u>779</u>
Total	<u><u>90,462</u></u>	<u><u>67,591</u></u>	<u><u>4,782</u></u>	<u><u>8,314</u></u>

22. Income taxes and deferred taxes (Continued)

22.2 Reconciliations between income taxes and the accounting profit before income taxes multiplied by the applicable tax rate are as follows:

	Unit: Million Baht			
	Consolidated		Separate	
	financial statements		financial statements	
	2022	2021	2022	2021
Accounting profit before income taxes	212,562	219,658	57,363	75,639
Applicable tax rate at 20%	42,512	43,932	11,473	15,128
Tax effect of :				
Income not subject to tax	(2,739)	(4,622)	(7,495)	(6,924)
Non-deductible expenses	15,159	8,275	429	199
Expenses deductible at a greater amount	(2,780)	(4,263)	(126)	(117)
Loss from the entities not subject to tax	7,232	7,920	-	-
Adjustment in respect of prior period	1,730	(110)	335	48
Share of profit from investment in joint ventures and associates	(1,196)	(1,533)	-	-
Tax credit on petroleum royalty	(20,330)	(15,606)	-	-
Differences in tax rate	44,096	29,348	-	-
Deferred tax on functional currency	526	294	-	-
Others	6,252	3,956	166	(20)
Income taxes	<u>90,462</u>	<u>67,591</u>	<u>4,782</u>	<u>8,314</u>

22.3 Movements in deferred taxes

Deferred income tax assets are recognized for tax loss and carried forwards only to the extent that realization of the related tax benefit through the future taxable profits is probable. The Group does not recognize deferred tax asset from tax losses of Baht 41,454 million (2021: Baht 38,206 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 2023 to 2041.

22. Income taxes and deferred taxes (Continued)

22.3 Movements in deferred taxes (Continued)

Unit: Million Baht

	Consolidated financial statements								
	Net balance as at 1 January 2022	Profit (loss)	Other comprehensive income (loss)	Business acquisition (Note 41)	Currency translation differences	Others	As at 31 December 2022		
							Net Balance	Deferred tax assets	Deferred tax liabilities
Trade and other accounts receivable	(5,453)	(6,397)	-	(14)	(2)	36	(11,830)	340	(12,170)
Inventories	(295)	(16)	-	50	19	-	(242)	560	(802)
Investments measured at fair value through other comprehensive income	(4,915)	(2)	1,013	-	(22)	-	(3,926)	150	(4,076)
Other investments in financial assets	105	(19)	-	(563)	-	-	(477)	8	(485)
Property, plant and equipment	(82,771)	4,560	-	(145)	(1,676)	68	(79,964)	11,787	(91,751)
Right-of-use assets	(2,941)	(392)	-	(1)	(13)	-	(3,347)	505	(3,852)
Intangible assets	(4,727)	(191)	-	(2,038)	54	-	(6,902)	6,969	(13,871)
Derivatives	396	1,319	103	-	24	-	1,842	1,950	(108)
Loans	(88)	19	-	-	(3)	-	(72)	4	(76)
Lease liabilities	3,793	923	-	-	(22)	-	4,694	4,694	-
Provisions for employee benefits	8,043	(310)	(1,332)	101	69	(31)	6,540	6,570	(30)
Provision for decommissioning costs	36,942	(3,627)	-	-	1,257	-	34,572	34,648	(76)
Cumulative loss carried forward	9,332	4,903	(14)	12	257	(1)	14,489	14,489	-

22. Income taxes and deferred taxes (Continued)

22.3 Movements in deferred taxes (Continued)

Unit: Million Baht

	Consolidated financial statements						As at 31 December 2022		
	Net balance as at 1 January 2022	Profit (loss)	Other comprehensive income (loss)	Business acquisition (Note 41)	Currency translation differences	Others	Net Balance	Deferred tax assets	Deferred tax liabilities
	Tax effect of currency translation on tax base	(50)	(526)	-	(25)	15	-	(586)	-
Others	17,110	(12,800)	3	131	576	(23)	4,997	10,263	(5,266)
Total before set-off of taxes	(25,519)	(12,556)	(227)	(2,492)	533	49	(40,212)	92,937	(133,149)
Set-off of taxes							-	(42,177)	42,177
Net deferred tax assets (liabilities)							(40,212)	50,760	(90,972)

22. Income taxes and deferred taxes (Continued)

22.3 Movements in deferred taxes (Continued)

Unit: Million Baht

	Consolidated financial statements								
	Net balance as at 1 January 2021	Profit (loss)	Other comprehensive loss	Business acquisition	Currency translation differences	Others	As at 31 December 2021		
							Net Balance	Deferred tax assets	Deferred tax liabilities
Trade and other accounts receivable	(3,649)	(1,811)	-	10	(3)	-	(5,453)	292	(5,745)
Inventories	282	(123)	-	(454)	-	-	(295)	600	(895)
Investments measured at fair value through other comprehensive income - equity instruments	(108)	(2,200)	(2,579)	-	(4)	(24)	(4,915)	128	(5,043)
Other investments in financial assets	86	(5)	-	-	-	24	105	175	(70)
Property, plant and equipment	(63,810)	8,428	-	(20,720)	(6,771)	102	(82,771)	10,889	(93,660)
Right-of-use assets	(2,844)	(133)	-	39	-	(3)	(2,941)	684	(3,625)
Intangible assets	(2,449)	(125)	-	(2,329)	1	175	(4,727)	7,426	(12,153)
Derivatives	431	17	(127)	-	75	-	396	771	(375)
Loans	(87)	(10)	-	-	7	2	(88)	3	(91)
Lease liabilities	3,241	532	-	-	20	-	3,793	3,793	-
Provisions for employee benefits	8,075	224	(1,482)	866	366	(6)	8,043	8,048	(5)
Provision for decommissioning costs	33,539	(228)	-	21	3,610	-	36,942	36,980	(38)
Cumulative loss carried forward	13,712	(6,194)	(51)	894	971	-	9,332	9,332	-

22. Income taxes and deferred taxes (Continued)

22.3 Movements in deferred taxes (Continued)

Unit: Million Baht

	Consolidated financial statements								
							As at 31 December 2021		
	Net balance as at 1 January 2021	Profit (loss)	Other comprehensive loss	Business acquisition	Currency translation differences	Others	Net Balance	Deferred tax assets	Deferred tax liabilities
Tax effect of currency translation on tax base	434	(294)	-	-	(2)	(188)	(50)	-	(50)
Others	9,937	(4,444)	-	10,424	1,214	(21)	17,110	19,387	(2,277)
Total before set-off of taxes	(3,210)	(6,366)	(4,239)	(11,249)	(516)	61	(25,519)	98,508	(124,027)
Set-off of taxes							-	(34,713)	34,713
Net deferred tax assets (liabilities)							(25,519)	63,795	(89,314)

22. Income taxes and deferred taxes (Continued)

22.3 Movements in deferred taxes (Continued)

Unit: Million Baht

	Separate financial statements					
	Net balance as at 1 January 2022	Profit (loss)	Other comprehensive income (loss)	As at 31 December 2022		
				Net balance	Deferred tax assets	Deferred tax liabilities
Trade and other accounts receivable	(3,252)	(1,765)	-	(5,017)	87	(5,104)
Inventories	198	(157)	-	41	41	-
Investments measured at fair value through other comprehensive income - equity instruments	(1,313)	-	502	(811)	-	(811)
Other investments in financial assets	122	(202)	-	(80)	-	(80)
Property, plant and equipment	113	296	-	409	409	-
Right-of-use assets	(1,363)	(652)	-	(2,015)	-	(2,015)
Intangible assets	78	(6)	-	72	72	-
Derivatives	319	859	-	1,178	1,178	-
Lease liabilities	1,392	688	-	2,080	2,080	-
Provisions for employee benefits	1,364	54	(218)	1,200	1,200	-
Others	1,471	34	-	1,505	1,519	(14)
Total before set-off of taxes	(871)	(851)	284	(1,438)	6,586	(8,024)
Set-off of taxes				-	(6,586)	6,586
Net deferred tax assets (liabilities)				(1,438)	-	(1,438)

22. Income taxes and deferred taxes (Continued)

22.3 Movements in deferred taxes (Continued)

Unit: Million Baht

	Separate financial statements					
	Net balance as at 1 January 2021	Profit (loss)	Other comprehensive loss	As at 31 December 2021		
				Net balance	Deferred tax assets	Deferred tax liabilities
Trade and other accounts receivable	(725)	(2,527)	-	(3,252)	103	(3,355)
Inventories	63	135	-	198	198	-
Investments measured at fair value through other comprehensive income - equity instruments	(390)	-	(923)	(1,313)	-	(1,313)
Other investments in financial assets	118	4	-	122	146	(24)
Property, plant and equipment	(455)	568	-	113	114	(1)
Right-of-use assets	(1,588)	225	-	(1,363)	-	(1,363)
Intangible assets	72	6	-	78	78	-
Derivatives	(25)	344	-	319	332	(13)
Lease liabilities	1,547	(155)	-	1,392	1,392	-
Provisions for employee benefits	1,532	80	(248)	1,364	1,364	-
Others	929	542	-	1,471	1,485	(14)
Total before set-off of taxes	1,078	(778)	(1,171)	(871)	5,212	(6,083)
Set-off of taxes				-	(5,212)	5,212
Net deferred tax assets (liabilities)				(871)	-	(871)

23. Other non-current assets

Details of other non-current assets as at 31 December 2022 and 2021 are as follows:

	Unit: Million Baht			
	Consolidated		Separate	
	financial statements		financial statements	
	2022	2021	2022	2021
Advance payments and deferred charge	2,360	2,689	46	48
Decommissioning fund	10,962	9,710	-	-
Others	4,182	3,638	2	42
Total	17,504	16,037	48	90

24. Trade accounts payable

Details of trade accounts payable as at 31 December 2022 and 2021 are as follows:

	Unit: Million Baht			
	Consolidated		Separate	
	financial statements		financial statements	
	2022	2021	2022	2021
Trade accounts payable - unrelated parties	226,064	210,056	89,663	68,126
Oil fuel fund payable and excise tax payable	3,245	2,735	292	354
Trade accounts payable - related parties (Note 9.4)	1,057	1,153	54,716	35,840
Total	230,366	213,944	144,671	104,320

25. Other accounts payable

Details of other accounts payable as at 31 December 2022 and 2021 are as follows:

	Unit: Million Baht			
	Consolidated		Separate	
	financial statements		financial statements	
	2022	2021	2022	2021
Other accounts payable - unrelated parties	62,185	58,816	12,838	8,199
Make-up liability*	-	13,545	-	13,545
Accrued interest expenses	13,177	5,556	7,716	1,365
Advance received	7,240	8,172	346	412
Others	5,272	17,681	205	18
Other accounts payable - related parties (Note 9.5)	448	81	4,592	7,372
Total	88,322	103,851	25,697	30,911

* Long-term liability (Make-up) arises from the difference between the natural gas price for committed gas volumes that the Company paid in advance and the natural gas price as at the date of taking the gas, to the extent that this exceeds the interest obligation on the advance payment for untaken-up gas volume (Take-or-Pay). The difference is allocated to the parties who jointly accepted the obligation for the Take-or-Pay interest for the Yadana and Yetagun gas fields. During the year 2021, The Energy Policy Administration Committee (EPAC) passed a resolution approving, in principle, the allocation of benefits from the Take or Pay account of the Myanmar natural gas fields, including interest, to be returned to the government. The payment was completed during 2022.

26. Other current liabilities

Details of other current liabilities as at 31 December 2022 and 2021 are as follows:

	Unit: Million Baht			
	Consolidated		Separate	
	financial statements		financial statements	
	2022	2021	2022	2021
Undue output VAT	6,095	4,694	4,165	3,270
Provision for remuneration for the renewal of petroleum production	1,514	3,859	-	-
Others	9,104	2,425	691	9
Total	16,713	10,978	4,856	3,279

27. Borrowings and lease liabilities

27.1 Details of borrowings and lease liabilities are as follows:

Unit: Million Baht

	Consolidated financial statements											
	Cash flows from financing			Non-cash items								
	As at 1 January 2022	Additions	Repayments	Lease - Addition	(Gain) loss on exchange rates	Business acquisitions (Note 41)	Business disposal	Classified as assets held for sale	Reclassifi- cations	Exchange differences on translation of financial statements	Others	As at 31 December 2022
Short-term borrowings from financial institutions	11,632	430,408	(353,641)	-	(1)	2,150	-	-	(27)	236	-	90,757
Short-term borrowings - others	111	826	(108)	-	-	-	-	-	-	(45)	-	784
Borrowings - Baht currency	207,173	46,324	(52,092)	-	-	-	-	-	-	-	29	201,434
Borrowings - foreign currencies	78,708	54,370	(62,005)	-	(3,050)	6,219	(2,837)	-	-	1,864	2,705	75,974
Debentures - Baht currency	277,415	143,500	(30,873)	-	(1,832)	-	-	-	-	1,157	66	389,433
Debentures - foreign currencies	310,576	45,587	(36,135)	-	2,641	-	-	-	-	8,805	(134)	331,340
Lease liabilities	64,210	-	(15,022)	52,905	(93)	133	(14)	(15)	-	(414)	2,182	103,872
Total	949,825	721,015	(549,876)	52,905	(2,335)	8,502	(2,851)	(15)	(27)	11,603	4,848	1,193,594

27. Borrowings and lease liabilities (Continued)

27.1 Details of borrowings and lease liabilities are as follows: (Continued)

Unit: Million Baht

	Separate financial statements						As at 31 December 2022
	As at 1 January 2022	Cash flows from financing		Non-cash items			
		Additions	Repayments	Lease - Additions	Loss on exchange rates	Others	
Short-term borrowings from financial institutions	-	24,960	(24,960)	-	-	-	-
Short-term borrowings - related parties (Note 9.5)	7,217	3,039	(809)	-	-	-	9,447
Borrowings - Baht currency	5,986	10,985	-	-	-	4	16,975
Borrowings - foreign currencies	49,490	-	-	-	764	6	50,260
Debentures - Baht currency	124,222	39,965	(6,000)	-	-	39	158,226
Debentures - foreign currencies	9,753	-	-	-	331	7	10,091
Lease liabilities	7,047	-	(2,129)	4,724	110	(281)	9,471
Total	203,715	78,949	(33,898)	4,724	1,205	(225)	254,470

27. Borrowings and lease liabilities (Continued)

27.2 Interest rates charged on borrowings and lease liabilities as at 31 December 2022 and 2021 are as follows:

	Unit: % per annum			
	Consolidated financial statements		Separate financial statements	
	2022	2021	2022	2021
Short-term borrowings from financial institutions	0.00 - 8.15	0.00 - 15.00	-	-
Loans - Baht currency	1.08 - 5.74	0.29 - 4.18	2.08 - 2.26	1.71
Loans - foreign currencies				
- USD	0.80 - 6.30	0.13 - 1.35	4.20 - 6.38	4.20 - 6.38
- EURO	0.50 - 3.67	0.50 - 2.50	-	-
- JPY	4.45	4.45	4.95	4.95
- Others	3.70 - 11.00	4.05 - 12.01	-	-
Debentures - Baht currency	0.80 - 6.80	0.67 - 6.80	0.80 - 6.80	0.67 - 6.80
Debentures - foreign currency				
- USD	2.59 - 6.35	1.99 - 6.35	4.50 - 5.88	4.50 - 5.88
Lease liabilities	0.18 - 23.06	0.07 - 13.88	0.68 - 8.28	0.68 - 8.28

27. Borrowings and lease liabilities (Continued)

27.3 Details of borrowings and lease liabilities as at 31 December 2022 and 2021 are as follows:

Current portion of borrowings and lease liabilities

	Unit: Million Baht			
	Consolidated		Separate	
	financial statements	financial statements	financial statements	financial statements
	2022	2021	2022	2021
Loans - Baht currency	36,100	21,890	-	-
Loans - foreign currencies	1,865	4,280	-	-
Debentures - Baht currency	17,954	27,995	15,955	5,999
Debentures - foreign currency	17,318	33,484	-	-
Leases liabilities	16,191	10,742	1,202	610
Total	89,428	98,391	17,157	6,609

Long-term borrowings and lease liabilities

	Unit: Million Baht			
	Consolidated		Separate	
	financial statements	financial statements	financial statements	financial statements
	2022	2021	2022	2021
Loans - Baht currency	165,334	185,283	16,975	5,986
Loans - foreign currencies	74,109	74,428	50,260	49,490
Debentures - Baht currency	371,478	249,420	142,271	118,222
Debentures - foreign currency	314,022	277,092	10,091	9,754
Lease liabilities	87,681	53,468	8,269	6,437
Total	1,012,624	839,691	227,866	189,889

27.4 Long-term loans can be classified by types of interest rate as follows:

	Unit: Million Baht			
	Consolidated		Separate	
	financial statements	financial statements	financial statements	financial statements
	2022	2021	2022	2021
Floating interest rate	240,654	265,823	16,975	9,984
Fixed interest rate	861,398	672,259	228,048	186,514
Total	1,102,052	938,082	245,023	196,498

As at 31 December 2022, after taking into account the effect of interest rate swap, in the consolidated financial statements approximately 74.59% of the Group's borrowings are at a fixed rate of interest (31 December 2021: 68.56%), and in the separate financial statements amounting approximately 71.16% of the Company's borrowings are at a fixed rate of interest (31 December 2021: 75.62%).

27. Borrowings and lease liabilities (Continued)

27.5 Detail of long-term loans and debentures are as follows:

27.5.1 Loans

Loans - Baht currency

As at 31 December 2022, details of long-term loans from financial institutions in Baht currency of the Company are as follows:

No.	Principal (unit: million Baht)	Interest rate percent (per annum)	Repayment terms
1	6,000	6M Compounded THOR plus margin	Principal is repayable at the end of contract in September 2026.
2	6,000	6M Compounded THOR plus margin	Principal is repayable at the end of contract in June 2027.
3	5,000	6M FDR plus margin	Principal is repayable at the end of contract in June 2027.

As at 31 December 2022, details of long-term loans from financial institutions in Baht currency of the subsidiaries are as follows:

No.	Principal (unit: million Baht)	Interest rate percent (per annum)	Repayment terms
1	2,807	THOR plus margin	Principal is repayable every 3 months, totalling 16 instalments, commencing in October 2022.
2	4,500	Fixed rate	Principal is repayable every 6 months, totalling 20 instalments, commencing in September 2020.
3	3,000	Fixed rate	Principal is repayable at the end of contract in July 2023.
4	3,430	1M THOR plus margin	Principal is repayable every 6 months, totalling 19 instalments, commencing in September 2022.
5	3,403	6M FDR plus margin	Principal is repayable every 6 months, totalling 23 instalments, commencing in June 2018.

27. Borrowings and lease liabilities (Continued)

27.5 Detail of long-term loans and debentures are as follows: (Continued)

27.5.1 Loans (Continued)

Loans - Baht currency (Continued)

As at 31 December 2022, details of long-term loans from financial institutions in Baht currency of the subsidiaries are as follows: (Continued)

No.	Principal (unit: million Baht)	Interest rate percent (per annum)	Repayment terms
6	1,134	THOR plus margin	Principal is repayable every 6 months, totalling 15 instalments, commencing in June 2022.
7	400	THOR plus margin	Principal is repayable every 12 months, totalling 9 instalments, commencing in June 2024.
8	99	Fixed rate	Principal is repayable every 6 months, totalling 29 instalments, commencing in June 2017.
9	60	MLR minus discount	Principal is repayable every 6 months, totalling 13 instalments, commencing in June 2018.
10	233	Fixed rate	Principal is repayable every 3 months, totalling 51 instalments, commencing in October 2022.
11	2,813	3M THBFIX plus margin	Principal is repayable every 6 months, totalling 33 instalments, commencing in October 2012.
12	649	3M BIBOR plus margin	Principal is repayable every 6 months, totalling 15 instalments, commencing in May 2021.
13	290	3M BIBOR plus margin	Principal is repayable every 6 months, totalling 11 instalments, commencing in June 2021.
14	2,713	THOR plus margin	Principal is repayable every 6 months, totalling 22 instalments, commencing in October 2020.
15	5,294	THOR plus margin	Principal is repayable every 6 months, totalling 17 instalments, commencing in February 2022.
16	1,500	6M THBFIX plus margin	Principal is repayable every 6 months, totalling 16 instalments, commencing in January 2024.
17	3,000	6M BIBOR plus margin	Principal is repayable every 6 months, totalling 16 instalments, commencing in February 2024.
18	6,370	1M THOR plus margin	Principal is repayable every 6 months, totalling 19 instalments, commencing in September 2022.

27. Borrowings and lease liabilities (Continued)

27.5 Detail of long-term loans and debentures are as follows: (Continued)

27.5.1 Loans (Continued)

Loans - Baht currency (Continued)

As at 31 December 2022, details of long-term loans from financial institutions in Baht currency of the subsidiaries are as follows: (Continued)

No.	Principal (unit: million Baht)	Interest rate percent (per annum)	Repayment terms
19	3,000	Fixed rate	Principal is repayable at the end of contract in January 2025.
20	3,000	Fixed rate	Principal is repayable at the end of contract in May 2023.
21	1,000	Fixed rate	Principal is repayable at the end of contract in May 2023.
22	700	THOR plus margin	Principal is repayable every 6 months, totalling 9 instalments, commencing in December 2025.
23	2,700	6M FDR plus margin	Principal is repayable every 6 months, totalling 10 instalments, commencing in December 2022.
24	2,000	6M FDR plus margin	Principal is repayable every 6 months, totalling 10 instalments, commencing in May 2020.
25	1,500	6M FDR plus margin	Principal is repayable every 6 months, totalling 12 instalments, commencing in December 2018.
26	1,550	6M FDR plus margin	Principal is repayable every 6 months, totalling 10 instalments, commencing in October 2023.
27	450	6M THBFIX plus margin	Principal is repayable every 6 months, totalling 14 instalments, commencing in April 2023.
28	2,000	6M FDR plus margin	Principal is repayable every 3 months, totalling 10 instalments, commencing in March 2022.
29	3,000	6M FDR plus margin	Principal is repayable every 6 months, totalling 10 instalments, commencing in June 2023.
30	3,500	6M FDR plus margin	Principal is repayable every 6 months, totalling 10 instalments, commencing in October 2023.
31	1,000	6M FDR plus margin	Principal is repayable every 6 months, totalling 10 instalments, commencing in October 2023.

27. Borrowings and lease liabilities (Continued)

27.5 Detail of long-term loans and debentures are as follows: (Continued)

27.5.1 Loans (Continued)

Loans - Baht currency (Continued)

As at 31 December 2022, details of long-term loans from financial institutions in Baht currency of the subsidiaries are as follows: (Continued)

No.	Principal (unit: million Baht)	Interest rate percent (per annum)	Repayment terms
32	7,500	6M FDR plus margin	Principal is repayable every 6 months, totalling 10 instalments, commencing in November 2020.
33	5,000	6M THBFIX plus margin	Principal is repayable 2 times, in December 2020 and June 2023.
34	10,000	6M THBFIX plus margin	Principal is repayable at the end of contract in June 2025.
35	10,000	6M THBFIX plus margin	Principal is repayable every 6 months, totalling 12 instalments, commencing in January 2022.
36	10,000	MLR minus discount	Principal is repayable every 3 months, totalling 12 instalments, commencing in January 2023.
37	12,800	THOR plus margin	Principal is repayable every 6 months, totalling 20 instalments, commencing in March 2023.
38	10,000	MLR minus discount	Principal is repayable every 3 months, totalling 12 instalments, commencing in September 2025.
39	2,000	THOR plus margin	Principal is repayable every 6 months, totalling 10 instalments, commencing in March 2026.
40	2,000	THOR plus margin	Principal is repayable every 6 months, totalling 10 instalments, commencing in March 2026.
41	15,000	MLR minus discount	Principal is repayable every 3 months, totalling 14 instalments, commencing in June 2025.
42	1,000	Prime rate minus discount	Principal is repayable every 6 months, totalling 5 instalments, commencing in June 2026.
43	1,200	Fixed rate	Principal is repayable every 3 months, totalling 17 instalments, commencing in December 2022.
44	500	Fixed rate	Principal is repayable every 3 months, totalling 13 instalments, commencing in March 2021.

27. Borrowings and lease liabilities (Continued)

27.5 Detail of long-term loans and debentures are as follows: (Continued)

27.5.1 Loans (Continued)

Loans - Baht currency (Continued)

As at 31 December 2022, details of long-term loans from financial institutions in Baht currency of the subsidiaries are as follows: (Continued)

No.	Principal (unit: million Baht)	Interest rate percent (per annum)	Repayment terms
45	6,004	3M THBFIX plus margin	Principal is repayable every 6 months, totalling 20 instalments, commencing in February 2021.
46	1,250	6M THBFIX plus margin	Principal is repayable every 6 months, totalling 15 instalments, commencing in April 2023.
47	755	6M FDR plus margin	Principal is repayable every 6 months, totalling 10 instalments, commencing in June 2024.
48	700	THOR plus margin	Principal is repayable every 6 months, totalling 15 instalments, commencing in October 2022.
49	700	6M FDR plus margin	Principal is repayable every 6 months, totalling 12 instalments, commencing in April 2023.
50	400	MLR minus discount	Principal is repayable every 6 months, totalling 10 instalments, commencing in June 2024.
51	755	THOR plus margin	Principal is repayable every 6 months, totalling 10 instalments, commencing in June 2024.
52	5,000	6M FDR plus margin	Principal is repayable every 6 months, totalling 17 instalments, commencing in September 2020.
53	10,000	MLR minus discount	Principal is repayable every 6 months, totalling 16 instalments, commencing in March 2021.
54	10,000	3M THBFIX plus margin	Principal is repayable every 6 months, totalling 12 instalments, commencing in June 2021.
55	9,500	3M MHBK BIBOR plus margin	Principal is repayable every 6 months, totalling 9 instalments, commencing in September 2020.
56	3,000	3M BIBOR plus margin	Principal is repayable every 6 months, totalling 15 instalments, commencing in September 2020.

27. Borrowings and lease liabilities (Continued)

27.5 Detail of long-term loans and debentures are as follows: (Continued)

27.5.1 Loans (Continued)

Loans - Baht currency (Continued)

As at 31 December 2022, details of long-term loans from financial institutions in Baht currency of the subsidiaries are as follows: (Continued)

No.	Principal (unit: million Baht)	Interest rate percent (per annum)	Repayment terms
57	5,000	6M FDR plus margin	Principal is repayable every 6 months, totalling 17 instalments, commencing in December 2022.
58	25	Average THOR plus margin	Principal is repayable every 3 months, totalling 12 instalments, commencing in September 2025.
59	5,400	THOR plus margin	Principal is repayable every 6 months, totalling 20 instalments, commencing in June 2019.
60	80	MLR minus discount	Principal is repayable every 6 months, totalling 6 instalments, commencing in June 2021.
61	42	MLR minus discount	Principal is repayable every 6 months, totalling 8 instalments, commencing in December 2020.
62	56	MLR minus discount	Principal is repayable every 6 months, totalling 8 instalments, commencing in December 2019.
63	44	MLR minus discount	Principal is repayable every 6 months, totalling 10 instalments, commencing in June 2020.
64	8,500	3M THBFIX plus margin	Principal is repayable every 6 months, totalling 38 instalments, commencing in June 2018.
65	1,800	6M FDR plus margin	Principal is repayable every 6 months, totalling 20 instalments, commencing in June 2015.
66	504	THBFIX plus margin	Principal is repayable at the end of contract.
67	7,000	MLR minus discount	Principal is repayable every 3 months, totalling 20 instalments, commencing in March 2023.
68	5,000	6M BIBOR plus margin	Principal is repayable every 6 months, totalling 10 instalments, commencing in June 2023.
69	42	THBFIX plus margin	Principal is repayable every 6 months, totalling 8 instalments, commencing in June 2023.

27. Borrowings and lease liabilities (Continued)

27.5 Detail of long-term loans and debentures are as follows: (Continued)

27.5.1 Loans (Continued)

Loans - foreign currency

As at 31 December 2022, details of long-term loans from a subsidiary in foreign currency of the Company are as follows:

No.	Currency	Principal (unit: million)	Interest rate percent (per annum)	Repayment terms
1	USD	245	Fixed rate	Principal is repayable at the end of contract in August 2035.
2	USD	330	Fixed rate	Principal is repayable at the end of contract in October 2042.
3	USD	700	Fixed rate	Principal is repayable at the end of contract in July 2070.
4	JPY	23,000	Fixed rate	Principal is repayable at the end of contract in April 2036.

27. Borrowings and lease liabilities (Continued)

27.5 Detail of long-term loans and debentures are as follows: (Continued)

27.5.1 Loans (Continued)

Loans - foreign currency (Continued)

As at 31 December 2022, details of long-term loans from financial institutions in foreign currency of the subsidiaries are as follows:

No.	Currency	Principal (unit: million)	Interest rate percent (per annum)	Repayment terms
1	USD	137	3M USDLIBOR plus margin	Principal is repayable every 6 months, totalling 33 instalments, commencing in October 2012.
2	USD	10	6M USDLIBOR plus margin	Principal is repayable every 6 months, totalling 18 instalments, commencing in April 2015.
3	USD	185	SOFR plus margin	Principal is repayable every 12 months, totalling 8 instalments, commencing in September 2025.
4	USD	100	LIBOR plus margin	Principal is repayable every 6 months, totalling 11 instalments, commencing in June 2020.
5	USD	100	6M LIBOR plus margin	Principal is repayable every 6 months, totalling 11 instalments, commencing in March 2024.
6	USD	300	SOFR plus margin	Principal is repayable at the end of contract in November 2027.
7	USD	140	3M USDLIBOR	Principal is repayable at the end of contract in July 2025.
8	USD	10	SOFR plus margin	Principal is repayable every 12 months, totalling 3 instalments, commencing in July 2022.
9	EUR	180	3M EURIBOR plus margin	Principal is repayable every 12 months, totalling 6 instalments, commencing in September 2023.
10	EUR	30	3M EURIBOR plus margin	Principal is repayable every 6 months, totalling 10 instalments, commencing in June 2022.
11	EUR	450	EURIBOR plus margin	Principal is repayable at the end of contract in November 2027.
12	CNY	700	LPR minus discount	Principal is repayable every 6 months, totalling 10 instalments, commencing in December 2025.
13	NTD	5,863	TAIBOR plus margin	Principal is repayable every 12 months, totalling 3 instalments, commencing in July 2022.

27. Borrowings and lease liabilities (Continued)

27.5 Detail of long-term loans and debentures are as follows: (Continued)

27.5.1 Loans (Continued)

Loans - foreign currency (Continued)

As at 31 December 2022, details of long-term loans from financial institutions in foreign currency of the subsidiaries are as follows: (Continued)

No.	Currency	Principal (unit: million)	Interest rate percent (per annum)	Repayment terms
14	KRW	7,500	91D CD plus margin	Principal is repayable every 12 months, totalling 3 instalments, commencing in February 2021.
15	KRW	100,000	Base rate plus margin	Principal is repayable at the end of contract in November 2024.
16	VND	310,791	COF plus margin	Principal is repayable every 6 months, totalling 18 instalments, commencing in July 2019.
17	JPY	23,000*	Fixed rate	Principal is repayable at the end of contract in April 2036.

* Guaranteed by the Company which the maximum liability under the guarantee will be capped at an amount equal to 125% of the principal or equivalent to JPY 28,750 Million.

The Group has entered into derivative contracts on long-term loans to cover foreign currency exchange rates risks and interest rates risks as mentioned in Note 39.2 and Note 39.4.

27. Borrowings and lease liabilities (Continued)

27.5 Detail of long-term loans and debentures are as follows: (Continued)

27.5.2 Debentures

Debentures - Baht currency

As at 31 December 2022, the details of unsecured, unsubordinated debentures in Baht currency of the Company are as follows:

No.	Principal (unit: million Baht)	Par value (per share)	Period (years)	Interest rate percent (per annum)	Repayment terms
1	4,000	1,000	1 year 6 months	1Y6M Compounded THOR plus margin	Interest is repayable at the maturity date and mature in February 2023.
2	2,000	1,000	3	2.25	Interest is repayable every 6 months and mature in July 2023.
3	10,000	1,000	10	6.58	Interest is repayable at the maturity date and mature in September 2023.
4	15,000	1,000	3	0.96	Interest is repayable every 6 months and mature in August 2024.
5	8,000	1,000	3	1.79	Interest is repayable every 6 months and mature in April 2025.
6	3,000	1,000	5	2.05	Interest is repayable every 6 months and mature in July 2025.
7	15,000	1,000	5	1.31	Interest is repayable every 6 months and mature in August 2026.
8	13,000	1,000	7	2.85	Interest is repayable every 6 months and mature in July 2027.
9	3,000	1,000	5 year 6 months	2.45	Interest is repayable every 6 months and mature in October 2027.
10	5,000	1,000	7	1.79	Interest is repayable every 6 months and mature in August 2028.
11	20,000	1,000	7	3.25	Interest is repayable every 6 months and mature in May 2029.
12	2,000	1,000	10	2.84	Interest is repayable every 6 months and mature in July 2030.

27. Borrowings and lease liabilities (Continued)

27.5 Detail of long-term loans and debentures are as follows: (Continued)

27.5.2 Debentures (Continued)

Debentures - Baht currency (Continued)

As at 31 December 2022, the details of unsecured, unsubordinated debentures in Baht currency of the Company are as follows: (Continued)

No.	Principal (unit: million Baht)	Par value (per share)	Period (years)	Interest rate percent (per annum)	Repayment terms
13	8,000	1,000	10	2.37	Interest is repayable every 6 months and mature in August 2031.
14	9,000	1,000	12	3.47	Interest is repayable every 6 months and mature in April 2034.
15	6,000	1,000	15	3.20	Interest is repayable every 6 months and mature in July 2035.
16	7,000	1,000	25	3.74	Interest is repayable every 6 months and mature in July 2045.

27. Borrowings and lease liabilities (Continued)

27.5 Detail of long-term loans and debentures are as follows: (Continued)

27.5.2 Debentures (Continued)

Debentures - Baht currency (Continued)

As at 31 December 2022, the details of unsecured, unsubordinated debentures with the debenture holders' early redemption right of the Company in Baht currency are as follows:

No.	Principal (unit: million Baht)	Par value (per share)	Period (years)	Interest rate percent (per annum)	Repayment terms
1	14,967	1,000	15	Year 1 - 5 : 5.00 Year 6 - 8 : 6.20 Year 9 - 15 : 6.80	Interest is repayable every 6 months and mature in March 2024. (The debenture holders can early redeem at the end of 8 th year.)
2	9,387	1,000	15	Year 1 - 5 : 4.25 Year 6 - 10 : 5.50 Year 11- 15 : 5.75	Interest is repayable every 6 months and mature in July 2024. (The debenture holders can early redeem at the end of 10 th year.)
3	4,000	1,000	100	5.90	Interest is repayable every 6 months and mature in December 2110. (The debenture holders can early redeem at the end of 50 th and 75 th year and other cases specified in the regulations regarding the rights and obligations of the issuer and the debenture holders.)

27. Borrowings and lease liabilities (Continued)

27.5 Detail of long-term loans and debentures are as follows: (Continued)

27.5.2 Debentures (Continued)

Debentures - Baht currency (Continued)

As at 31 December 2022, the details of unsecured, unsubordinated debentures in Baht currency of the subsidiaries are as follows:

No.	Principal (unit: million Baht)	Par value (per share)	Period (years)	Interest rate percent (per annum)	Repayment terms
1	1,000	1,000	3	2.55	Interest is repayable every 6 months and mature in June 2025.
2	3,000	1,000	5	3.04	Interest is repayable every 6 months and mature in June 2027.
3	1,000	1,000	8	3.56	Interest is repayable every 6 months and mature in June 2030.
4	3,000	1,000	10	3.75	Interest is repayable every 6 months and mature in June 2032.
5	4,000	1,000	15	4.40	Interest is repayable every 6 months and mature in June 2037.
6	1,500	1,000	7	2.82	Interest is repayable every 6 months and mature in September 2024.
7	5,000	1,000	5	2.24	Interest is repayable every 6 months and mature in November 2024.
8	6,000	1,000	7	2.52	Interest is repayable every 6 months and mature in November 2026.
9	8,000	1,000	10	2.86	Interest is repayable every 6 months and mature in November 2029.
10	7,500	1,000	12	3.15	Interest is repayable every 6 months and mature in November 2031.
11	6,500	1,000	15	3.25	Interest is repayable every 6 months and mature in November 2034.
12	1,500	1,000	5	2.11	Interest is repayable every 6 months and mature in August 2025.
13	1,000	1,000	10	2.94	Interest is repayable every 6 months and mature in August 2030.

27. Borrowings and lease liabilities (Continued)

27.5 Detail of long-term loans and debentures are as follows: (Continued)

27.5.2 Debentures (Continued)

Debentures - Baht currency (Continued)

As at 31 December 2022, the details of unsecured, unsubordinated debentures in Baht currency of the subsidiaries are as follows: (Continued)

No.	Principal (unit: million Baht)	Par value (per share)	Period (years)	Interest rate percent (per annum)	Repayment terms
14	2,500	1,000	15	3.24	Interest is repayable every 6 months and mature in August 2035.
15	2,000	1,000	3	3.00	Interest is repayable every 6 months and mature in September 2023.
16	4,000	1,000	5	3.50	Interest is repayable every 6 months and mature in September 2025.
17	1,300	1,000	10	3.93	Interest is repayable every 6 months and mature in September 2030.
18	2,700	1,000	15	4.40	Interest is repayable every 6 months and mature in September 2035.
19	4,000	1,000	5	3.00	Interest is repayable every 6 months and mature in May 2026.
20	2,000	1,000	3	1.77	Interest is repayable every 6 months and mature in May 2024.
21	2,000	1,000	7	2.91	Interest is repayable every 6 months and mature in May 2028.
22	2,000	1,000	10	3.38	Interest is repayable every 6 months and mature in May 2031.
23	2,000	1,000	15	4.10	Interest is repayable every 6 months and mature in May 2036.
24	500	1,000	4	3.03	Interest is repayable every 6 months and mature in May 2026.
25	7,000	1,000	5	3.10	Interest is repayable every 6 months and mature in May 2027.
26	750	1,000	7	4.17	Interest is repayable every 6 months and mature in May 2029.

27. Borrowings and lease liabilities (Continued)

27.5 Detail of long-term loans and debentures are as follows: (Continued)

27.5.2 Debentures (Continued)

Debentures - Baht currency (Continued)

As at 31 December 2022, the details of unsecured, unsubordinated debentures in Baht currency of the subsidiaries are as follows: (Continued)

No.	Principal (unit: million Baht)	Par value (per share)	Period (years)	Interest rate percent (per annum)	Repayment terms
27	1,500	1,000	10	4.52	Interest is repayable every 6 months and mature in May 2032.
28	2,250	1,000	12	4.86	Interest is repayable every 6 months and mature in May 2034.
29	11,400	1,000	15	4.82	Interest is repayable every 6 months and mature in June 2029.
30	6,000	1,000	5	2.25	Interest is repayable every 6 months and mature in November 2026.
31	5,000	1,000	5	2.09	Interest is repayable every 6 months and mature in April 2027.
32	1,000	1,000	7	2.69	Interest is repayable every 6 months and mature in April 2029.
33	6,000	1,000	10	3.05	Interest is repayable every 6 months and mature in April 2032.
34	1,500	1,000	5	2.20	Interest is repayable every 6 months and mature in September 2024.
35	7,000	1,000	7	2.43	Interest is repayable every 6 months and mature in September 2026.
36	15,000	1,000	10	2.75	Interest is repayable every 6 months and mature in September 2029.
37	1,530	1,000	7	2.60	Interest is repayable every 6 months and mature in April 2027.
38	3,310	1,000	10	2.99	Interest is repayable every 6 months and mature in April 2030.
39	4,360	1,000	12	3.29	Interest is repayable every 6 months and mature in April 2032.

27. Borrowings and lease liabilities (Continued)

27.5 Detail of long-term loans and debentures are as follows: (Continued)

27.5.2 Debentures (Continued)

Debentures - Baht currency (Continued)

As at 31 December 2022, the details of unsecured, unsubordinated debentures in Baht currency of the subsidiaries are as follows: (Continued)

No.	Principal (unit: million Baht)	Par value (per share)	Period (years)	Interest rate percent (per annum)	Repayment terms
40	5,800	1,000	15	3.50	Interest is repayable every 6 months and mature in April 2035.
41	14,000	1,000	5	2.13	Interest is repayable every 6 months and mature in January 2027.
42	2,000	1,000	7	2.65	Interest is repayable every 6 months and mature in January 2029.
43	2,000	1,000	10	3.05	Interest is repayable every 6 months and mature in January 2032.
44	12,000	1,000	12	3.29	Interest is repayable every 6 months and mature in January 2034.
45	5,000	1,000	5	3.21	Interest is repayable every 6 months and mature in June 2027.
46	3,000	1,000	12	4.00	Interest is repayable every 6 months and mature in June 2034.

27. Borrowings and lease liabilities (Continued)

27.5 Detail of long-term loans and debentures are as follows: (Continued)

27.5.2 Debentures (Continued)

Debentures - Baht currency (Continued)

As at 31 December 2022, the detail of unsecured, unsubordinated debentures with the debenture holders' early redemption right of the subsidiaries in Baht currency is as follows:

No.	Principal (unit: million Baht)	Par value (per share)	Period (years)	Interest rate percent (per annum)	Repayment terms
1	10,000	1,000	5	2.90	Interest is repayable every 6 months and mature in August 2024. (The debenture holders can early redeem regarding the rights and obligations of the issuer and the debenture holders.)
2	17,000	1,000	7	3.50	Interest is repayable every 6 months and mature in June 2029. (The debenture holders can early redeem regarding the rights and obligations of the issuer and the debenture holders.)
3	7,500	1,000	15	5.05	Interest is repayable every 6 months and mature in March 2027. (The debenture holders can early redeem regarding the rights and obligations of the issuer and the debenture holders.)
4	7,000	1,000	10	4.84	Interest is repayable every 6 months and mature in March 2024. (The debenture holders can early redeem regarding the rights and obligations of the issuer and the debenture holders.)
5	1,400	1,000	3	2.99	Interest is repayable every 6 months and mature in November 2025. (The debenture holders can early redeem regarding the rights and obligations of the issuer and the debenture holders.)

27. Borrowings and lease liabilities (Continued)

27.5 Detail of long-term loans and debentures are as follows: (Continued)

27.5.2 Debentures (Continued)

Debentures - Baht currency (Continued)

As at 31 December 2022, the detail of unsecured, unsubordinated debentures with the debenture holders' early redemption right of the subsidiaries in Baht currency is as follows: (Continued)

No.	Principal (unit: million Baht)	Par value (per share)	Period (years)	Interest rate percent (per annum)	Repayment terms
6	600	1,000	5	3.64	Interest is repayable every 6 months and mature in November 2027. (The debenture holders can early redeem regarding the rights and obligations of the issuer and the debenture holders.)
7	2,000	1,000	7	4.13	Interest is repayable every 6 months and mature in November 2029. (The debenture holders can early redeem regarding the rights and obligations of the issuer and the debenture holders.)
8	1,700	1,000	10	4.49	Interest is repayable every 6 months and mature in November 2032. (The debenture holders can early redeem regarding the rights and obligations of the issuer and the debenture holders.)
9	3,100	1,000	12	4.79	Interest is repayable every 6 months and mature in November 2034. (The debenture holders can early redeem regarding the rights and obligations of the issuer and the debenture holders.)
10	3,200	1,000	15	5.09	Interest is repayable every 6 months and mature in November 2037. (The debenture holders can early redeem regarding the rights and obligations of the issuer and the debenture holders.)

27. Borrowings and lease liabilities (Continued)

27.5 Detail of long-term loans and debentures are as follows: (Continued)

27.5.2 Debentures (Continued)

Debentures - foreign currency

As at 31 December 2022, the details of unsecured, unsubordinated debentures in foreign currency with the debenture holders' early redemption right of the Company are as follows:

No.	Currency	Principal (unit: million)	Par value (per share)	Period (years)	Interest rate percent (per annum)	Repayment terms
1	USD	53	1,000	30	5.88	Interest is repayable every 6 months and mature in August 2035. (The debenture holders can early redeem at anytime regarding the rights and obligations of the issuer and the debenture holders and other related documents.)
2	USD	241	1,000	30	4.50	Interest is repayable every 6 months and mature in October 2042. (The debenture holders can early redeem at anytime regarding the rights and obligations of the issuer and the debenture holders and other related documents.)

As at 31 December 2022, the details of unsecured, unsubordinated debentures in foreign currency of the subsidiaries are as follows:

No.	Currency	Principal (unit: million)	Par value (per share)	Period (years)	Interest rate percent (per annum)	Repayment terms
1	USD	490	1,000	30	6.35	Interest is repayable every 6 months and mature in June 2042.

27. Borrowings and lease liabilities (Continued)

27.5 Detail of long-term loans and debentures are as follows: (Continued)

27.5.2 Debentures (Continued)

Debentures - foreign currency (Continued)

As at 31 December 2022, the detail of unsecured, unsubordinated debentures with the debenture holders' early redemption right of the subsidiaries in foreign currency are as follows:

No.	Currency	Principal (unit: million)	Par value (per share)	Period (years)	Interest rate percent (per annum)	Repayment terms
1	USD	350	1,000	10	2.99	Interest is repayable every 6 months and mature in January 2030. (The debenture holders can early redeem regarding the rights and obligations of the issuer and the debenture holders.)
2	USD	650	1,000	40	3.90	Interest is repayable every 6 months and mature in December 2059. (The debenture holders can early redeem regarding the rights and obligations of the issuer and the debenture holders.)
3	USD	500	1,000	7	2.59	Interest is repayable every 6 months and mature in June 2027. (The debenture holders can early redeem regarding the rights and obligations of the issuer and the debenture holders.)
4	USD	700	1,000	10	2.98	Interest is repayable every 6 months and mature in March 2031. (The debenture holders can early redeem regarding the rights and obligations of the issuer and the debenture holders.)
5	USD	550	1,000	30	4.30	Interest is repayable every 6 months and mature in March 2051. (The debenture holders can early redeem regarding the rights and obligations of the issuer and the debenture holders.)

27. Borrowings and lease liabilities (Continued)

27.5 Detail of long-term loans and debentures are as follows: (Continued)

27.5.2 Debentures (Continued)

Debentures - foreign currency (Continued)

As at 31 December 2022, the detail of unsecured, unsubordinated debentures with the debenture holders' early redemption right of the subsidiaries in foreign currency are as follows: (Continued)

No.	Currency	Principal (unit: million)	Par value (per share)	Period (years)	Interest rate percent (per annum)	Repayment terms
6	USD	1,000	1,000	10	4.40	Interest is repayable every 6 months and mature in March 2032. (The debenture holders can early redeem regarding the rights and obligations of the issuer and the debenture holders.)
7	USD	300	1,000	30	5.20	Interest is repayable every 6 months and mature in March 2052. (The debenture holders can early redeem regarding the rights and obligations of the issuer and the debenture holders.)
8	USD	216	1,000	10	3.63	Interest is repayable every 6 months and mature in March 2023. (The debenture holders can early redeem regarding the rights and obligations of the issuer and the debenture holders.)
9	USD	172	1,000	30	4.88	Interest is repayable every 6 months and mature in January 2043. (The debenture holders can early redeem regarding the rights and obligations of the issuer and the debenture holders.)
10	USD	284	1,000	10	3.63	Interest is repayable every 6 months and mature in January 2023. (The debenture holders can early redeem regarding the rights and obligations of the issuer and the debenture holders.)

27. Borrowings and lease liabilities (Continued)

27.5 Detail of long-term loans and debentures are as follows: (Continued)

27.5.2 Debentures (Continued)

Debentures - foreign currency (Continued)

As at 31 December 2022, the detail of unsecured, unsubordinated debentures with the debenture holders' early redemption right of the subsidiaries in foreign currency are as follows: (Continued)

No.	Currency	Principal (unit: million)	Par value (per share)	Period (years)	Interest rate percent (per annum)	Repayment terms
11	USD	328	1,000	30	4.88	Interest is repayable every 6 months and mature in January 2043. (The debenture holders can early redeem regarding the rights and obligations of the issuer and the debenture holders.)
12	USD	400	1,000	10	4.63	Interest is repayable every 6 months and mature in November 2028. (The debenture holders can early redeem regarding the rights and obligations of the issuer and the debenture holders.)
13	USD	600	1,000	30	5.38	Interest is repayable every 6 months and mature in November 2048. (The debenture holders can early redeem regarding the rights and obligations of the issuer and the debenture holders.)
14	USD	565	1,000	30	3.50	Interest is repayable every 6 months and mature in October 2049. (The debenture holders can early redeem regarding the rights and obligations of the issuer and the debenture holders.)
15	USD	400	1,000	10	2.50	Interest is repayable every 6 months and mature in June 2030. (The debenture holders can early redeem regarding the rights and obligations of the issuer and the debenture holders.)

27. Borrowings and lease liabilities (Continued)

27.5 Detail of long-term loans and debentures are as follows: (Continued)

27.5.2 Debentures (Continued)

Debentures - foreign currency (Continued)

As at 31 December 2022, the detail of unsecured, unsubordinated debentures with the debenture holders' early redemption right of the subsidiaries in foreign currency are as follows: (Continued)

No.	Currency	Principal (unit: million)	Par value (per share)	Period (years)	Interest rate percent (per annum)	Repayment terms
16	USD	600	1,000	30	3.75	Interest is repayable every 6 months and mature in June 2050. (The debenture holders can early redeem regarding the rights and obligations of the issuer and the debenture holders.)
17	USD	245*	1,000	16	5.88	Interest is repayable every 6 months and mature in August 2035. (The debenture holders can early redeem regarding the rights and obligations of the issuer and the debenture holders.)
18	USD	330**	1,000	23	4.50	Interest is repayable every 6 months and mature in October 2042. (The debenture holders can early redeem regarding the rights and obligations of the issuer and the debenture holders.)
19	USD	700***	1,000	50	3.70	Interest is repayable every 6 months and mature in July 2070. (The debenture holders can early redeem regarding the rights and obligations of the issuer and the debenture holders.)

* Guaranteed by the Company which the maximum liability under the guarantee will be capped at an amount equal to 125% of the principal or equivalent to approximately USD 306 Million.

** Guaranteed by the Company which the maximum liability under the guarantee will be capped at an amount equal to 125% of the principal or equivalent to approximately USD 413 Million.

*** Guaranteed by the Company which the maximum liability under the guarantee will be capped at an amount equal to 125% of the principal or equivalent to approximately USD 875 Million.

The Group has entered into derivative contracts on debentures to cover foreign currency exchange rates risks and interest rates risks as mentioned in Note 39.2 and Note 39.4.

27. **Borrowings and lease liabilities** (Continued)

27.5 Detail of long-term loans and debentures are as follows: (Continued)

The proceeds from these borrowings and debentures are to be used for working capital and general corporate purposes, repayment of borrowings, capital expenditure, and to provide loans to group companies.

Under the terms of the borrowings and debentures, The Group has to comply with certain conditions as stipulated, such as maintaining net tangible asset, maintaining net debt to equity ratios, maintaining debt service coverage ratio, maintaining the Company's shareholding proportion in the subsidiary, and coal reserves, etc.

28. Provision for employee benefits

Details of provision for employee benefits as at 31 December 2022 and 2021 are as follows:

	Unit: Million Baht			
	Consolidated		Separate	
	financial statements		financial statements	
	2022	2021	2022	2021
Retirement benefits	29,561	33,423	5,794	6,607
Other long-term benefits	5,714	6,664	204	211
Fair value of plan assets	(2,919)	(3,192)	-	-
Total	32,356	36,895	5,998	6,818

Movements in the present value of provision for employee benefits are as follows:

	Unit: Million Baht			
	Consolidated		Separate	
	financial statements		financial statements	
	2022	2021	2022	2021
As at 1 January	36,895	34,199	6,818	7,662
Current service cost	2,410	2,383	442	524
Past service cost	9	466	-	-
Interest cost	716	571	156	121
Actuarial gain from provision for post-employment benefits	(6,003)	(4,503)	(1,092)	(1,242)
Actuarial gain from provision for other long-term employee benefits	(204)	(22)	(8)	(4)
Actual payment	(1,808)	(1,216)	(318)	(243)
Return on plan assets	203	-	-	-
Business acquisition (Note 41)	602	7,830	-	-
Business disposal	(75)	-	-	-
Classified as assets held for sale	(41)	-	-	-
Fair value of plan assets acquired through business acquisition	-	(3,192)	-	-
Others	(32)	1	-	-
Exchange differences on translation of financial statements	(316)	378	-	-
As at 31 December	32,356	36,895	5,998	6,818

The Group expects to pay for the long-term employee benefits within 1 year of Baht 1,777 million (the Company only: Baht 279 million).

28. Provision for employee benefits (Continued)

Details of actuarial gain from provision for post-employment benefits are as follows:

	Unit: Million Baht			
	Consolidated		Separate	
	financial statements		financial statements	
	2022	2021	2022	2021
(Gain) loss from experience adjustments	239	(393)	125	113
Gain from changes in financial assumptions	(6,292)	(3,636)	(1,217)	(1,109)
(Gain) loss from changes in demographic assumptions	50	(474)	-	(246)
Total	(6,003)	(4,503)	(1,092)	(1,242)

Expenses recognized in the statements of income and comprehensive income for the years ended 31 December 2022 and 2021 are as follows:

	Unit: Million Baht			
	Consolidated		Separate	
	financial statements		financial statements	
	2022	2021	2022	2021
Cost of sales and services	1,119	1,041	108	119
Selling and distribution expenses	218	124	33	35
Administrative expenses	1,577	2,225	446	485
Management remuneration	17	8	2	2
Other comprehensive gain	(5,800)	(4,503)	(1,092)	(1,242)
Total	(2,869)	(1,105)	(503)	(601)

Principal actuarial assumptions used in determining the present value of provision for post-employment benefits of the Group are as follows:

	Annual percentage rate	
	2022	2021
Discount rate	0.66 - 7.63	0.35 - 6.70
Inflation rate	0.00 - 8.00	0.00 - 10.00
Employee turnover rate	0.00 - 60.00	0.00 - 60.00
Mortality rate	based on the published statistics of each country	based on the published statistics of each country

28. Provision for employee benefits (Continued)

Sensitivity analysis of principal actuarial assumption used in determining the present value of provision for post-employment benefits of the Group as at 31 December 2022 and 2021 are as follows:

	Unit: Million Baht	
	Increase (decrease) in present value of the provisions	
	2022	2021
Discount rate		
Increase 1%	(3,421)	(4,329)
Decrease 1%	4,387	5,387

Weighted average duration of the provisions for post-employment benefits of the Group for the year ended 31 December 2022 is 15.45 years (31 December 2021: 14.30 years).

29. Provision for decommissioning costs

Movements in the provision for decommissioning costs which will occur in the future are as follows:

	Unit: Million Baht	
	Consolidated financial statements	
	2022	2021
As at 1 January	93,594	98,661
- Business acquisition (Note 41)	12	138
- Additional provision	28,026	3,780
- Utilization during the year	(5,498)	(1,166)
- Reversal of non-occurred provision	(8,528)	(17,875)
- Classified as assets held for sale	(426)	-
- Exchange differences on translation of financial statements	2,871	10,056
As at 31 December	110,051	93,594
- Current portion	(10,889)	(8,898)
- Long-term portion	99,162	84,696

30. Other non-current financial liabilities

Other non-current financial liabilities as at 31 December 2022 and 2021 are as follows:

	Unit: Million Baht			
	Consolidated		Separate	
	financial statements		financial statements	
	2022	2021	2022	2021
Long-term other accounts payable	1,790	7,859	1,276	6,802
Others	2,872	4,364	312	371
Total	4,662	12,223	1,588	7,173

31. Other non-current liabilities

Other non-current liabilities as at 31 December 2022 and 2021 are as follows:

	Unit: Million Baht			
	Consolidated		Separate	
	financial statements		financial statements	
	2022	2021	2022	2021
Provision for remuneration for the renewal of petroleum production*	6,689	4,035	-	-
Deferred revenue**	19,787	18,357	5,317	4,449
Others	2,821	3,710	-	-
Total	29,297	26,102	5,317	4,449

* 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 to the Ministry of Energy. The management has estimated the provision for remuneration using the discounted cash flow method, based on the duration of the new agreement and significant assumptions, which include sales volume and oil price.

** Deferred revenue in the consolidated financial statements include advance receipts of availability payments in relation to the availabilities of a subsidiary's power plant, as agreed with EGAT and in accordance with the terms of PPA, amounting to Baht 14,639 million. (2021 : Baht 14,167 million)

32. Reserves

32.1 Legal reserve

Under the Public Limited Companies Act B.E. 2535, the Company is required to appropriate not less than 5% of its annual net profit to a legal reserve until the reserve fund reaches 10% of the authorized share capital. The reserve is non-distributable. The Company's reserve has already reached the 10% of authorized share capital stipulated in the Act.

32.2 Reserve for self-insurance fund

The self-insurance fund was set up to provide insurance coverage for the Company's business. The Company appropriates net profit from operations and the returns of the fund each year as contributions to the fund.

33. Basic earnings per share

Basic earnings per share for the years ended 31 December 2022 and 2021 are as follows:

	Unit: Baht			
	Consolidated		Separate	
	financial statements		financial statements	
	2022	2021	2022	2021
Profit attributable to equity holders of the Company	91,174,857,528	108,363,410,834	52,580,519,858	67,325,389,703
Adjustment of profit *	216,243,509	(225,501,422)	-	-
Profit for the calculation of earnings per share	91,391,101,037	108,137,909,412	52,580,519,858	67,325,389,703
Number of weighted average of ordinary shares (shares)	28,562,996,250	28,562,996,250	28,562,996,250	28,562,996,250
Earnings per share (Baht/share)	3.20	3.79	1.84	2.36

*Adjustments of profit are adjustments related to redemption of perpetual subordinated debentures, interests, and related income taxes

34. Sales and service income

Details of sales and service income for the years ended 31 December 2022 and 2021 are as follows:

	Unit: Million Baht			
	Consolidated		Separate	
	financial statements		financial statements	
	2022	2021	2022	2021
Oil products	1,995,203	1,336,906	1,379,445	698,799
Gas products	602,201	374,300	732,137	469,377
Petrochemical products	575,133	438,375	16,058	20,454
Mining products	31,331	15,560	-	-
Pharmaceutical products	14,411	-	-	-
Non-oil businesses	21,626	17,218	24	35
Utilities	113,259	66,781	-	-
Services	13,485	9,306	1,153	1,035
Others	554	372	-	-
Total	3,367,203	2,258,818	2,128,817	1,189,700

Sales and service income for the years ended 31 December 2022 and 2021 include sales to government agencies and state enterprises amounting to Baht 210,638 million and Baht 118,459 million in the consolidated financial statements, and Baht 128,238 million and Baht 79,131 million in the separate financial statements, respectively.

35. Other income

Details of other income for the years ended 31 December 2022 and 2021 are as follows:

	Unit: Million Baht			
	Consolidated		Separate	
	financial statements		financial statements	
	2022	2021	2022	2021
Transportation income	2,209	2,943	6,903	3,895
Dividend income	467	457	37,761	33,318
Interest income	3,921	2,522	2,256	1,919
Gain (loss) on disposals of assets and investments	1,886	(1,275)	(634)	(126)
Gain (loss) on investment at fair value through profit and loss	277	53	(53)	27
Gain on bargain purchase	-	10,694	-	-
Others	15,660	13,546	6,245	5,805
Total	24,420	28,940	52,478	44,838

36. Expenses by nature

Details of expenses by nature for the years ended 31 December 2022 and 2021 are as follows:

	Unit: Million Baht			
	Consolidated		Separate	
	financial statements		financial statements	
	2022	2021	2022	2021
Changes in inventories decrease	2,646,512	1,659,193	2,040,258	1,081,911
Staff costs	75,581	60,718	9,993	9,286
Depreciation and amortization	167,330	146,790	18,827	18,851
Expenses related to short-term lease agreements	1,058	780	25	58
Expenses related to low-value assets lease agreements	197	173	100	118
Expenses related to variable rental	920	737	729	653
Loss on impairment of assets and investments	12,609	13,286	21	5,197
(Reversal of) expected credit loss of accounts receivable and other assets	298	(1,603)	(81)	(1,536)

37. Finance costs

Details of finance costs for the years ended 31 December 2022 and 2021 are as follows:

	Unit: Million Baht			
	Consolidated		Separate	
	financial statements		financial statements	
	2022	2021	2022	2021
Interest expenses:				
Loans	7,901	4,621	2,617	1,944
Debentures	21,369	17,488	5,258	4,084
Finance leases liabilities	2,302	1,784	211	177
Derivative for cash flow hedge instruments	270	184	-	-
Provision for decommissioning costs	2,724	2,080	-	-
Others	450	1,039	4	5
Other finance costs	2,075	967	141	103
Total	<u>37,091</u>	<u>28,163</u>	<u>8,231</u>	<u>6,313</u>

38. Operating segments

These operating segments are consistent with the internal management reports provided to the Chief Operating Decision Maker (CODM), who makes decisions related to the allocation of resources to the segments and assesses their performance.

For management purposes, the Group is organized into business groups based on types of products and services. The major segments of the Group are as follows:

Upstream petroleum and Natural gas business group

1. Petroleum exploration and production business:

The Group conducts petroleum exploration and production business both domestically and overseas. The Group is the operator and jointly invests with leading petroleum exploration and production companies. Most domestic projects are located in the Gulf of Thailand, while overseas projects are located in Southeast Asia, Australia, America and Africa.

2. Natural gas business:

The Group conducts natural gas business including procurement, natural gas pipeline transmission, distribution, and natural gas separation. Products from the natural gas separation plants are used as feedstock for the petrochemical industry and as fuel in the household, transportation and industry sectors.

3. Coal business:

The Group conducts coal mining business, involving overseas exploration, production and distribution of coals.

Downstream petroleum business group

1. Oil and retail business:

The Group conducts marketing of petroleum products and lube oil in both domestic and overseas markets under an efficient operating system of procurement, storage, and distribution of products as well as the retail business at service stations.

2. International trading business:

The Group conducts international trading business including the import and export of petroleum and petrochemical products as well as other related products. This includes the price risk management and international chartering.

3. Petrochemical and Refining business:

The Group conducts refining business including the production and distribution of petroleum and petrochemicals products in both domestic and overseas markets.

New business and infrastructure group

NBI Group was established to develop new businesses in accordance with PTT's "Powering Life with Future Energy and Beyond" vision, in areas such as renewable energy, energy storage, EV value chain and hydrogen business. The Group will also look for growth opportunities in new businesses beyond energy, including life science (pharmaceuticals, medical devices, nutrition), logistics and infrastructure and AI, robotics and digitalization, as well as engaging in production and distribution of electricity, steam and hydro power for industrial purposes, property management and engineering project management.

Other operations of the Group are included in other segments, none of which constitutes a separately reportable segment.

38. Operating segments (Continued)

Consolidated financial statements

For the year ended 31 December 2022

	Upstream petroleum and natural gas			Downstream petroleum			New business	Others	Elimination	Total
	Petroleum	Natural gas	Coal	Oil and retail	International	Petrochemicals	and			
	Exploration				trading	and	infrastructure			
	and					refining				
	production									
Sales - others	83,469	509,391	31,331	776,456	957,646	891,721	116,948	241	-	3,367,203
- related parties	247,881	199,461	2,268	15,289	1,214,920	581,957	31,476	3,822	(2,297,074)	-
Net sales	331,350	708,852	33,599	791,745	2,172,566	1,473,678	148,424	4,063	(2,297,074)	3,367,203
Gross profit (loss)*	290,886	69,368	21,887	41,005	17,184	148,699	24,344	(194)	(6,606)	606,573
EBITDA	253,973	61,207	18,347	20,962	13,897	109,719	16,392	(3,263)	54	491,288
Depreciation and amortization expenses	(82,942)	(18,302)	(1,838)	(6,348)	(954)	(43,538)	(12,952)	(456)	-	(167,330)
Segment operating profit (loss)	171,031	42,905	16,509	14,614	12,943	66,181	3,440	(3,719)	54	323,958
Share of profit (loss) from investments in joint ventures and associates	265	1,037	(134)	626	-	2,434	1,625	(4)	-	5,849
Others	(12,841)	(2,988)	(499)	(695)	-	1,215	925	170	-	(14,713)
Unallocated revenue and expenses:										
Interest income										3,921
Loss on derivatives										(74,914)
Gain on foreign exchange rate										5,552
EBIT										249,653
Profit for the year										122,100

* Gross profit (loss) excludes depreciation and amortization expenses in cost of sales.

38. Operating segments (Continued)

Consolidated financial statements

As at 31 December 2022

	Upstream petroleum and natural gas			Downstream petroleum			New business	Others	Elimination	Total
	Petroleum	Natural gas	Coal	Oil and retail	International	Petrochemicals	and			
	Exploration				trading	and	infrastructure			
	and					refining				
	production									
Segment assets	800,834	450,853	22,239	207,360	109,792	1,170,294	338,580	99,906	-	3,199,858
Inter-company assets	26,948	16,990	13,675	2,819	88,961	41,290	13,165	44,225	(248,073)	-
Investments in joint ventures and associates	6,569	5,276	7,504	9,725	-	93,797	42,137	6	-	165,014
Total segment assets	834,351	473,119	43,418	219,904	198,753	1,305,381	393,882	144,137	(248,073)	3,364,872
Non-allocated assets										50,760
Total assets										<u>3,415,632</u>
Segment liabilities	346,589	58,522	5,318	84,275	147,851	717,373	174,930	256,110	-	1,790,968
Inter-company liabilities	1,310	39,182	3	34,145	21,902	83,946	27,433	34,781	(242,702)	-
Total segment liabilities	347,899	97,704	5,321	118,420	169,753	801,319	202,363	290,891	(242,702)	1,790,968
Non-allocated liabilities										90,972
Total liabilities										<u>1,881,940</u>
Capital expenditure	132,751	29,422	10	7,611	3,841	94,287	8,720	482	(2,620)	274,504

Unit: Million Baht

38. Operating segments (Continued)

Consolidated financial statements

For the year ended 31 December 2021

	Upstream petroleum and natural gas			Downstream petroleum			New business	Others	Elimination	Total
	Petroleum	Natural gas	Coal	Oil and retail	International	Petrochemicals	and			
	Exploration				trading	and	infrastructure			
	and					refining				
	production									
Sales - others	63,564	317,522	16,196	503,914	614,374	684,647	58,390	211	-	2,258,818
- related parties	155,504	146,516	787	9,981	532,190	352,629	22,872	3,347	(1,223,826)	-
Net sales	219,068	464,038	16,983	513,895	1,146,564	1,037,276	81,262	3,558	(1,223,826)	2,258,818
Gross profit (loss)*	190,999	96,121	9,078	38,363	12,597	148,323	21,562	(201)	(6,650)	510,192
EBITDA	164,365	86,497	7,158	20,807	10,740	120,733	20,918	(3,349)	87	427,956
Depreciation and amortization expenses	(70,062)	(18,729)	(1,754)	(5,908)	(204)	(38,945)	(10,736)	(452)	-	(146,790)
Segment operating profit (loss)	94,303	67,768	5,404	14,899	10,536	81,788	10,182	(3,801)	87	281,166
Share of profit (loss) from investments in joint ventures and associates	110	676	(6)	474	-	6,085	1,684	(13)	-	9,010
Others	77	(5,289)	1,334	48	1,242	(4,282)	244	176	-	(6,450)
Unallocated revenue and expenses:										
Interest income										2,522
Loss on derivatives										(31,958)
Loss on foreign exchange rate										(6,469)
EBIT										247,821
Profit for the year										152,068

* Gross profit (loss) excludes depreciation and amortization expenses in cost of sales.

38. Operating segments (Continued)

Consolidated financial statements

As at 31 December 2021

	Upstream petroleum and natural gas			Downstream petroleum			New business	Others	Elimination	Total
	Petroleum	Natural gas	Coal	Oil and retail	International	Petrochemicals	and			
	Exploration				trading	and	infrastructure			
	and					refining				
	production									
Segment assets	705,686	414,471	29,381	190,907	75,391	1,122,838	258,679	81,457	-	2,878,810
Inter-company assets	18,857	15,495	10,540	2,655	44,094	30,201	8,529	126,585	(256,956)	-
Investments in joint ventures and associates	7,451	4,801	124	6,886	-	81,990	27,517	10	-	128,779
Total segment assets	731,994	434,767	40,045	200,448	119,485	1,235,029	294,725	208,052	(256,956)	3,007,589
Non-allocated assets										63,795
Total assets										<u>3,071,384</u>
Segment liabilities	316,491	68,585	4,561	72,770	94,598	612,638	135,107	204,380	-	1,509,130
Inter-company liabilities	812	32,459	22,653	32,735	16,865	118,311	13,591	19,233	(256,659)	-
Total segment liabilities	317,303	101,044	27,214	105,505	111,463	730,949	148,698	223,613	(256,659)	1,509,130
Non-allocated liabilities										89,314
Total liabilities										<u>1,598,444</u>
Capital expenditure	153,868	23,758	4,907	9,100	192	206,060	8,394	325	(1,864)	404,740

Unit: Million Baht

38. Operating segments (Continued)

Geographical information

Sales and service income are presented in respect of the geographical location of customers for the years ended 31 December 2022 and 2021 are as follows:

	Unit: Million Baht	
	Consolidated financial statements	
	2022	2021
Thailand	1,933,532	1,329,573
Asia	1,146,884	773,838
Europe	98,015	87,912
America	131,014	49,960
Others	57,758	17,535
Total	<u>3,367,203</u>	<u>2,258,818</u>

Non-current assets are presented in respect of the geographical location of the assets as at 31 December 2022 and 2021 are as follows:

	Unit: Million Baht	
	Consolidated financial statements	
	2022	2021
Thailand	1,517,285	1,388,750
Asia	412,483	367,235
Europe	159,239	165,510
America	21,812	23,560
Others	137,995	138,431
Total	<u>2,248,814</u>	<u>2,083,486</u>

Major customers

For the years 2022 and 2021, the Group has no major customer with revenue of 10% or more of an entity's revenues.

39. Financial instruments

39.1 Classification of financial assets and liabilities

Unit: Million Baht

Consolidated financial statements						
As at 31 December 2022						
	Measured at fair value - using hedge accounting	Measured at fair value through profit or loss	Measured at fair value through other comprehensive income - debt instruments	Measured at fair value through other comprehensive income - equity instruments	Measured at amortized cost	Total
Financial assets						
Cash and cash equivalents	-	-	281	-	339,773	340,054
Short-term investments in financial assets	-	95	916	-	9,535	10,546
Trade accounts receivable	-	-	-	-	219,054	219,054
Other accounts receivable	-	-	-	-	25,149	25,149
Short-term lending	-	-	-	-	151	151
Long-term investments in financial assets (include current portion)	-	4,034	1,618	42,823	7,672	56,147
Long-term lending (include current portion)	-	-	-	-	10,068	10,068
Derivatives	949	15,448	-	-	-	16,397
Other current financial assets	-	-	-	-	1,924	1,924
Other non-current financial assets	-	2,559	-	-	8,866	11,425
Total financial assets	949	22,136	2,815	42,823	622,192	690,915

39. Financial instruments (Continued)

39.1 Classification of financial assets and liabilities (Continued)

Unit: Million Baht

	Consolidated financial statements			Total
	As at 31 December 2022			
	Measured at fair value - using hedge accounting	Measured at fair value through profit or loss	Measured at amortized cost	
Financial liabilities				
Bank overdrafts and short-term loans from financial institutions	-	-	90,757	90,757
Trade accounts payable	-	-	227,121	227,121
Other accounts payable	-	-	74,371	74,371
Short-term borrowings	-	-	784	784
Long-term borrowings (include current portion)	-	-	998,181	998,181
Lease liabilities (include current portion)	-	-	103,872	103,872
Deposits on LPG cylinders	-	-	12,684	12,684
Derivatives	1,536	29,119	-	30,655
Other current financial liabilities	-	25	6,044	6,069
Other non-current financial liabilities	-	25	4,637	4,662
Total financial liabilities	1,536	29,169	1,518,451	1,549,156

39. Financial instruments (Continued)

39.1 Classification of financial assets and liabilities (Continued)

Unit: Million Baht

	Consolidated financial statements					Total
	As at 31 December 2021					
	Measured at fair value - using hedge accounting	Measured at fair value through profit or loss	Measured at fair value through other comprehensive income - debt instruments	Measured at fair value through other comprehensive income - equity instruments	Measured at amortized cost	
Financial assets						
Cash and cash equivalents	-	-	42	-	312,688	312,730
Short-term investments in financial assets	-	147	996	-	46,547	47,690
Trade accounts receivable	-	-	-	-	196,243	196,243
Other accounts receivable	-	-	-	-	13,652	13,652
Long-term investments in financial assets (include current portion)	-	1,616	1,968	35,358	8,739	47,681
Long-term lending (include current portion)	-	-	-	-	10,204	10,204
Derivatives	1,373	5,294	-	-	-	6,667
Other current financial assets	-	-	-	-	2,034	2,034
Other non-current financial assets	-	2,048	-	-	9,120	11,168
Total financial assets	1,373	9,105	3,006	35,358	599,227	648,069

39. Financial instruments (Continued)

39.1 Classification of financial assets and liabilities (Continued)

Unit: Million Baht

	Consolidated financial statements			Total
	As at 31 December 2021			
	Measured at fair value - using hedge accounting	Measured at fair value through profit or loss	Measured at amortized cost	
Financial liabilities				
Bank overdrafts and short-term loans from financial institutions	-	-	11,632	11,632
Trade accounts payable	-	-	211,209	211,209
Other accounts payable	-	-	91,785	91,785
Short-term borrowings	-	-	111	111
Long-term borrowings (include current portion)	-	-	873,872	873,872
Lease liabilities (include current portion)	-	-	64,210	64,210
Deposits on LPG cylinders	-	-	12,157	12,157
Derivatives	1,701	6,427	-	8,128
Other current financial liabilities	-	32	5,896	5,928
Other non-current financial liabilities	-	2,380	9,843	12,223
Total financial liabilities	<u>1,701</u>	<u>8,839</u>	<u>1,280,715</u>	<u>1,291,255</u>

39. Financial instruments (Continued)

39.1 Classification of financial assets and liabilities (Continued)

Unit: Million Baht

	Separate financial statements			Total
	As at 31 December 2022			
	Measured at fair value through profit or loss	Measured at fair value through other comprehensive income - equity instruments	Measured at amortized cost	
Financial assets				
Cash and cash equivalents	-	-	52,788	52,788
Short-term investments in financial assets	72	-	1,343	1,415
Trade accounts receivable	-	-	161,459	161,459
Other accounts receivable	-	-	8,339	8,339
Short-term lending	-	-	682	682
Long-term investments in financial assets (include current portion)	395	7,016	7,672	15,083
Long-term lending (include current portion)	-	-	57,428	57,428
Derivatives	1,231	-	-	1,231
Other current financial assets	-	-	298	298
Other non-current financial assets	-	-	179	179
Total financial assets	1,698	7,016	290,188	298,902

39. Financial instruments (Continued)

39.1 Classification of financial assets and liabilities (Continued)

Unit: Million Baht

	Separate financial statements		
	As at 31 December 2022		
	Measured at fair value through profit or loss	Measured at amortized cost	Total
Financial liabilities			
Trade accounts payable	-	144,380	144,380
Other accounts payable	-	23,959	23,959
Short-term borrowings	-	9,447	9,447
Long-term borrowings (include current portion)	-	235,551	235,551
Lease liabilities (include current portion)	-	9,471	9,471
Derivatives	5,633	-	5,633
Other current financial liabilities	-	3,309	3,309
Other non-current financial liabilities	-	1,588	1,588
Total financial liabilities	5,633	427,705	433,338

39. Financial instruments (Continued)

39.1 Classification of financial assets and liabilities (Continued)

Unit: Million Baht

	Separate financial statements			Total
	As at 31 December 2021			
	Measured at fair value through profit or loss	Measured at fair value through other comprehensive income - equity instruments	Measured at amortized cost	
Financial assets				
Cash and cash equivalents	-	-	45,853	45,853
Short-term investments in financial assets	-	-	4,315	4,315
Trade accounts receivable	-	-	113,908	113,908
Other accounts receivable	-	-	2,614	2,614
Short-term lending	-	-	1,948	1,948
Long-term investments in financial assets (include current portion)	387	8,767	8,739	17,893
Long-term lending (include current portion)	-	-	121,928	121,928
Derivatives	1,540	-	-	1,540
Other current financial assets	-	-	315	315
Other non-current financial assets	-	-	221	221
Total financial assets	1,927	8,767	299,841	310,535

39. Financial instruments (Continued)

39.1 Classification of financial assets and liabilities (Continued)

Unit: Million Baht

	Separate financial statements		
	As at 31 December 2021		
	Measured at fair value through profit or loss	Measured at amortized cost	Total
Financial liabilities			
Trade accounts payable	-	103,965	103,965
Other accounts payable	-	27,248	27,248
Short-term borrowings	-	7,217	7,217
Long-term borrowings (include current portion)	-	189,451	189,451
Lease liabilities (include current portion)	-	7,048	7,048
Derivatives	2,387	-	2,387
Other current financial liabilities	-	894	894
Other non-current financial liabilities	-	7,173	7,173
Total financial liabilities	2,387	342,996	345,383

39. Financial instruments (Continued)

39.2 Disclosure of financial instruments and financial risk managements

Financial instruments of the Group consist of cash and cash equivalents, trade accounts receivable, lending loans, investments, loans and debentures. The Group has financial risks associated with those financial instruments and has risk managements policys as follows

- Credit risk
- Market risks: foreign exchange rate risk, interest rate risk and fluctuation in oil market price risk
- Liquidity risk

39.2.1 Credit risk

Credit risk arises when customers do not comply with the terms of agreements or the conditions of credit agreements, causing financial losses to the Group. However, the Group has managed risk by adjusting its credit policies according to the current economic situation, focusing on using financial instruments, such as the bank guarantee, letter of guarantee or standby letter of credit, making payment by using letter of credit (L/C), trade credit insurance. The Group also manages credit risk in various ways, such as cash collateral and advanced payment in order to reduce credit risk and to determine procedures for risk prevention and mitigation, including credit rating for all trading partners. In addition, the Group reviews their credit ratings regularly to be standardized and be effective for credit consideration process.

39.2.2 Market risk

The Group faces the principal financial risks associated with fluctuations in exchange rates, interest rates, and global oil market prices. The Group also has certain portions of sales, purchases and loans for operations nominated in foreign currencies which are paid in both fixed and floating interest rates. Accordingly, the management has entered into derivative contracts to cover these risks. The financial instruments used for hedging risks are forward foreign exchange contracts, interest rate swap contracts, cross-currency swap contracts, participating swap contracts etc.

Risk exposure relating to global oil market prices is managed by derivatives such as swap oil price contracts, forward oil contracts and commodity option contracts. These has to report details of the costs and market prices of all financial instruments to management, including outstanding forward foreign exchange contracts and forward oil contracts to management as well. Moreover, the Group has established structures and processes for governance and risk management consistent with international standards and has set Value at Risk (VaR) in commercial transactions. The Group also regularly prepared a risk status report to management and relvent departments.

39. Financial instruments (Continued)

39.2 Disclosure of financial instruments and financial risk managements (Continued)

39.2.2 Market risk (Continued)

Foreign exchange rate risk

The Group has entered into forward foreign exchange contracts. The contract prices and exchange rates under the forward foreign exchange contracts as at 31 December 2022 and 2021 are as follows:

	Unit: Million Baht	
	Consolidated financial statements	
	2022	2021
Forward foreign exchange purchase contracts		
Rate 30.1200 - 37.8000 Baht = 1 USD	108,160	-
Rate 29.8870 - 34.0298 Baht = 1 USD	-	77,357
Rate 3.2466 - 3.2985 Baht = 1 SEK	1,311	-
Rate 3.3266 - 3.8270 Baht = 1 SEK	-	291
Rate 1.4640 USD = 1 EUR	-	10
Rate 36.9000 - 37.1150 Baht = 1 EUR	124	-
Rate 38.7650 Baht = 1 EUR	-	129
Rate 8.6125 - 10.7068 NOK = 1 USD	1,555	-
Rate 8.2155 - 9.3095 NOK = 1 USD	-	1,090
Rate 15,710.0000 - 15,721.2000 IDR = 1 USD	24	-
Rate 14,293.5700 - 14,374.8900 IDR = 1 USD	-	71
Rate 113.1800 - 148.2900 JPY = 1 USD	195	-
Rate 103.4100 - 114.9000 JPY = 1 USD	-	200
Rate 1.6499 - 1.7800 NZD = 1 EUR	346	-
Rate 1.6799 - 1.7260 NZD = 1 EUR	-	214
Rate 1.5055 - 1.5902 AUD = 1 EUR	1,036	-
Rate 1.5625 - 1.6163 AUD = 1 EUR	-	881
Rate 7.3760 CNY = 1 EUR	85	-
Rate 7.2700 CNY = 1 EUR	-	153
Rate 4.9015 - 5.1915 Baht = 1 CNY	32	-
Rate 4.9073 - 5.1042 Baht = 1 CNY	-	23
Rate 0.6740 - 0.6743 USD = 1 AUD	449	-
Rate 6.9780 - 7.3590 CNY = 1 USD	64	-
Rate 0.8809 - 1.1504 EUR = 1 GBP	105	-
Rate 1.4640 USD = 1 EUR	378	-

39. Financial instruments (Continued)

39.2 Disclosure of financial instruments and financial risk managements (Continued)

39.2.2 Market risk (Continued)

Foreign exchange rate risk (Continued)

	Unit: Million Baht	
	Consolidated financial statements	
	2022	2021
Forward foreign exchange sale contracts		
Rate 34.3650 - 37.1846 Baht = 1 USD	29,025	-
Rate 32.7080 - 33.9950 Baht = 1 USD	-	21,676
Rate 8.6125 - 10.7068 NOK = 1 USD	1,589	-
Rate 8.2155 - 9.3095 NOK = 1 USD	-	1,104
Rate 15,710.0000 - 15,721.2000 IDR = 1 USD	24	-
Rate 14,293.5700 - 14,374.8900 IDR = 1 USD	-	72
Rate 113.1800 - 148.2900 JPY = 1 USD	207	-
Rate 103.4100 - 114.9000 JPY = 1 USD	-	193
Rate 1.6499 - 1.7800 NZD = 1 EUR	351	-
Rate 1.6799 - 1.7260 NZD = 1 EUR	-	219
Rate 1.5055 - 1.5902 AUD = 1 EUR	1,018	-
Rate 1.5625 - 1.6163 AUD = 1 EUR	-	896
Rate 7.3760 CNY = 1 EUR	84	-
Rate 7.2700 CNY = 1 EUR	-	154
Rate 4.9015 - 5.1915 Baht = 1 CNY	32	-
Rate 4.9073 - 5.1042 Baht = 1 CNY	-	24
Rate 0.8809 - 1.1504 EUR = 1 GBP	104	-

	Unit: Million Baht	
	Separate financial statements	
	2022	2021
Forward foreign exchange purchase contracts		
Rate 34.3854 - 37.7552 Baht = 1 USD	47,927	-
Rate 32.6208 - 33.9136 Baht = 1 USD	-	36,208
Rate 37.1150 Baht = 1 EUR	44	-
Forward foreign exchange sale contracts		
Rate 34.4460 - 37.1846 Baht = 1 USD	23,086	-
Rate 33.0329 - 33.7350 Baht = 1 USD	-	19,307

39. Financial instruments (Continued)

39.2 Disclosure of financial instruments and financial risk managements (Continued)

39.2.2 Market risk (Continued)

Foreign exchange rate risk (Continued)

The Group has entered into a cross-currency swap contract of a long-term loan in the form of a participating swap contracts. The term of such contract as at 31 December 2022 and 2021 is as follows:

	Unit: Million Baht	
	Consolidated and separate financial statements	
	2022	2021
JPY 23,000 million/USD 197 million	6,083	6,770

This contract has a maturity later than five years.

Currency and interest rate risks

The Group has entered into cross-currency swap contracts of other long-term investments, long-term loans and debentures. The terms of the outstanding cross-currency swap contracts as at 31 December 2022 and 2021 are as follows:

	Unit: Million Baht			
	Consolidated financial statements		Separate financial statements	
	2022	2021	2022	2021
Baht 71,465 million/USD 2,140 million	71,465	-	-	-
Baht 39,874 million/USD 1,241 million	-	39,874	-	-
Baht 4,000 million/USD 121 million	-	-	-	4,000
USD 429 million/THB 13,994 million	14,733	-	-	-
USD 1,142 million/THB 36,398 million	-	37,374	-	-
USD 348 million/THB 11,281 million	-	-	12,020	-
USD 348 million/THB 10,733 million	-	-	-	11,708
Total	<u>86,198</u>	<u>77,248</u>	<u>12,020</u>	<u>15,708</u>

39. Financial instruments (Continued)

39.2 Disclosure of financial instruments and financial risk managements (Continued)

39.2.2 Market risk (Continued)

Currency and interest rate risks (Continued)

The maturity periods of contracts are as follows:

	Unit: Million Baht			
	Consolidated		Separate	
	financial statements		financial statements	
	2022	2021	2022	2021
Due within 1 year	239	19,156	-	4,000
Over 1 year but not over 5 years	60,975	18,514	5,156	4,982
Over 5 years	24,984	39,578	6,864	6,726
Total	<u>86,198</u>	<u>77,248</u>	<u>12,020</u>	<u>15,708</u>

Interest rate risk

The Group has entered into interest rate swap contracts of long-term loans and debentures. The terms of the outstanding interest rate swap contracts as at 31 December 2022 and 2021 are as follows:

	Unit: Million Baht			
	Consolidated		Separate	
	financial statements		financial statements	
	2022	2021	2022	2021
Interest rate swap contracts to swap floating for fixed rate in USD currency	5,384	6,164	-	-
Interest rate swap contracts to swap fixed for floating rate in USD currency	18,665	18,047	18,665	18,047
Interest rate swap contracts to swap floating for fixed rate in Baht currency	2,813	8,777	-	-
Interest rate swap contracts to swap fixed for floating rate in Baht currency	29,986	10,997	29,986	10,997
Interest rate swap contracts to swap fixed for lower fixed rate in Baht currency	11,954	15,928	11,954	15,928
Total	<u>68,802</u>	<u>59,913</u>	<u>60,605</u>	<u>44,972</u>

39. Financial instruments (Continued)

39.2 Disclosure of financial instruments and financial risk managements (Continued)

39.2.2 Market risk (Continued)

Interest rate risk (Continued)

The maturity periods of contracts are as follows:

	Unit: Million Baht			
	Consolidated		Separate	
	financial statements		financial statements	
	2022	2021	2022	2021
Due within 1 year	13,975	1,520	13,429	-
Over 1 year but not over 5 years	36,886	22,187	29,234	17,931
Over 5 years	17,941	36,206	17,942	27,041
Total	68,802	59,913	60,605	44,972

Sensitivity analysis

Sensitivity analysis of financial instruments in consolidated financial statements as at 31 December 2022 and 2021 are as follows:

- Foreign exchange rate

The following tables demonstrates the sensitivity of the Group's profit before tax and equity to a reasonably possible change in the USD exchange rates, with all other variables held constant. The Group's exposure to foreign currency changes for all other currencies is not material.

Foreign exchange rate effects	Unit: Million Baht			
	Profit before tax		Other components of	
	Increase (decrease)		shareholders' equity - currency translation differences Increase (decrease)	
	2022	2021	2022	2021
USD currency appreciate by 10% against by Baht currency	(5,550)	(544)	54,456	60,389
USD currency depreciate by 10% against by Baht currency	4,913	621	(53,604)	(60,652)

39. Financial instruments (Continued)

39.2 Disclosure of financial instruments and financial risk managements (Continued)

39.2.2 Market risk (Continued)

Sensitivity analysis

Sensitivity analysis of financial instruments in consolidated financial statements as at 31 December 2022 and 2021 are as follows: (Continued)

- Interest rate

The following table demonstrates the sensitivity of the Group's profit before tax to a reasonably possible change in interest rates on floating rate loans as at 31 December 2022 and 2021, with all other variables held constant.

Unit: Million Baht

Interest rate effects	Financial costs Increase (decrease)	
	2022	2021
Interest rate increase by 1%	2,092	903
Interest rate decrease by 1%	(2,087)	(295)

- Oil market price

The following table demonstrates the sensitivity of the Group's profit before tax to a reasonably possible change in market oil price as at 31 December 2022 and 2021, with all other variables held constant.

Unit: Million Baht

Oil market price effects	Profit before tax increase (decrease)	
	2022	2021
Increase in oil market price of USD 1 per Barrel	(135)	(451)
Decrease in oil market price of USD 1 per Barrel	132	455

39. Financial instruments (Continued)

39.2 Disclosure of financial instruments and financial risk managements (Continued)

39.2.3 Liquidity risk

The Group has liquidity risk management by maintaining the level of cash and cash equivalents and having the ability to access a variety of funding sources to ensure sufficient for the operation of the Group.

The details of maturity of financial liabilities of the Group as at 31 December 2022 and 2021 considering from cash flow of contract which are not discounted as follows:

As at 31 December 2022

Unit: Million Baht

	Consolidated financial statements			
	Less than 1 year	1- 5 years	Over 5 years	Total
Bank overdrafts and short-term loans from financial institutions	90,757	-	-	90,757
Trade accounts payable	227,121	-	-	227,121
Other accounts payable	61,194	-	-	61,194
Short-term borrowings	784	-	-	784
Other current financial liabilities	6,069	-	-	6,069
Borrowings and debentures:				
Principal	74,907	387,410	537,892	1,000,209
Interest paid	38,723	106,441	264,665	409,829
Lease liabilities:				
Principal	17,420	63,788	36,163	117,371
Deferred interest expenses	2,311	15,521	7,247	25,079
Deposits on LPG cylinders	-	-	12,684	12,684
Other non-current financial liabilities	-	2,344	1,001	3,345
Cash outflow from derivatives	130,204	59,809	12,271	202,284
Cash inflow from derivatives	129,737	62,497	13,019	205,253
Cash outflow from commodity derivatives	4,920	-	-	4,920
Cash inflow from commodity derivatives	4,630	-	-	4,630
Cash outflow from commodity contracts	14,467	-	-	14,467
Cash inflow from commodity contracts	6,392	-	-	6,392

39. Financial instruments (Continued)

39.2 Disclosure of financial instruments and financial risk managements (Continued)

39.2.3 Liquidity risk (Continued)

The details of maturity of financial liabilities of the Group as at 31 December 2022 and 2021 considering from cash flow of contract which are not discounted as follows: (Continued)

As at 31 December 2021

Unit: Million Baht

	Consolidated financial statements			
	Less than 1 year	1- 5 years	Over 5 years	Total
Bank overdrafts and short-term loans from financial institutions	11,632	-	-	11,632
Trade accounts payable	211,209	-	-	211,209
Other accounts payable	86,229	-	-	86,229
Short-term borrowings	111	-	-	111
Other current financial liabilities	5,928	-	-	5,928
Borrowings and debentures:				
Principal	76,971	310,885	425,799	813,655
Interest paid	25,744	82,720	238,739	347,203
Lease liabilities:				
Principal	11,517	23,916	42,071	77,504
Deferred interest expenses	1,410	5,713	12,531	19,654
Deposits on LPG cylinders	-	-	12,157	12,157
Other non-current financial liabilities	-	4,475	932	5,407
Cash outflow from derivatives	109,953	31,071	52,619	193,643
Cash inflow from derivatives	108,412	30,643	54,404	193,459
Cash outflow from commodity derivatives	2,860	-	-	2,860
Cash inflow from commodity derivatives	2,095	-	-	2,095
Cash outflow from commodity contracts	12,361	-	-	12,361
Cash inflow from commodity contracts	14,818	-	-	14,818

39. Financial instruments (Continued)

39.2 Disclosure of financial instruments and financial risk managements (Continued)

39.2.3 Liquidity risk (Continued)

The details of maturity of financial liabilities of the Group as at 31 December 2022 and 2021 considering from cash flow of contract which are not discounted as follows: (Continued)

As at 31 December 2022

Unit: Million Baht

	Separate financial statements			
	Less than 1 year	1- 5 years	Over 5 years	Total
Trade accounts payable	144,380	-	-	144,380
Other accounts payable	15,361	-	-	15,361
Short-term borrowings	9,447	-	-	9,447
Other current financial liabilities	3,309	-	-	3,309
Borrowings and debentures:				
Principal	25,447	98,354	121,224	245,025
Interest paid	14,527	24,860	95,534	134,921
Lease liabilities:				
Principal	1,424	5,435	4,068	10,927
Deferred interest expenses	222	587	647	1,456
Other non-current financial liabilities	-	193	120	313
Cash outflow from derivatives	75,417	6,793	12,202	94,412
Cash inflow from derivatives	76,009	7,660	12,966	96,635
Cash outflow from commodity derivatives	183	-	-	183
Cash inflow from commodity derivatives	45	-	-	45
Cash outflow from commodity contracts	28,196	-	-	28,196
Cash inflow from commodity contracts	28,540	-	-	28,540

39. Financial instruments (Continued)

39.2 Disclosure of financial instruments and financial risk managements (Continued)

39.2.3 Liquidity risk (Continued)

The details of maturity of financial liabilities of the Group as at 31 December 2022 and 2021 considering from cash flow of contract which are not discounted as follows: (Continued)

As at 31 December 2021

Unit: Million Baht

	Separate financial statements			
	Less than 1 year	1- 5 years	Over 5 years	Total
Trade accounts payable	103,965	-	-	103,965
Other accounts payable	25,032	-	-	25,032
Short-term borrowings	7,217	-	-	7,217
Other current financial liabilities	894	-	-	894
Borrowings and debentures:				
Principal	13,217	79,354	104,116	196,687
Interest paid	6,456	27,897	94,594	128,947
Lease liabilities:				
Principal	609	2,671	3,767	7,047
Deferred interest expenses	162	479	601	1,242
Other non-current financial liabilities	-	261	111	372
Cash outflow from derivatives	62,797	7,747	11,520	82,064
Cash inflow from derivatives	62,679	8,170	12,085	82,934
Cash outflow from commodity derivatives	351	-	-	351
Cash inflow from commodity derivatives	31	-	-	31
Cash outflow from commodity contracts	27,721	-	-	27,721
Cash inflow from commodity contracts	25,453	-	-	25,453

39. Financial instruments (Continued)

39.2 Disclosure of financial instruments and financial risk managements (Continued)

39.2.3 Liquidity risk (Continued)

Principal and undrawn amount of short-term bank credit facilities as at 31 December 2022 and 2021 are as follows:

Unit: Million Baht

	Consolidated financial statements			
	Credit limit		Undrawn amount	
	2022	2021	2022	2021
Short-term committed bank credit facility	65,371	84,548	32,047	70,766
Short-term uncommitted bank credit facility	329,520	257,800	244,479	166,814

Unit: Million Baht

	Separate financial statements			
	Credit limit		Undrawn amount	
	2022	2021	2022	2021
Short-term committed bank credit facility	4,365	4,365	4,365	4,365
Short-term uncommitted bank credit facility	128,731	60,408	75,259	39,722

Principal and undrawn amount of long-term bank credit facilities as at 31 December 2022 are as follows:

	Consolidated financial statements	
	Long-term committed bank credit facility	
	Credit limit	Undrawn amount
Credit facility in Baht (Million Baht)	114,911	56,182
Credit facility in USD (Million USD)	14,544	14,212
Credit facility in VND (Million VND)	460,791	50,614

	Separate financial statements	
	Long-term committed bank credit facility	
	Credit limit	Undrawn amount
Credit facility in Baht (Million Baht)	12,500	12,500

39. Financial instruments (Continued)

39.3 Fair value measurement of financial instruments

As at 31 December 2022 and 2021, the Group had financial assets and financial liabilities measured at fair value as follows:

As at 31 December 2022

Unit: Million Baht

	Consolidated financial statements			
	Level 1	Level 2	Level 3	Total
Financial assets measured at fair value				
Cash and cash equivalents	-	281	-	281
Investments in short-term financial assets	23	916	72	1,011
Investments measured at fair value				
through other comprehensive income	6,073	1,618	36,750	44,441
Investments measured at fair value				
through profit or loss	1,171	-	2,863	4,034
Derivatives	4,481	11,916	-	16,397
Other non-current financial assets	2,559	-	-	2,559
Financial liabilities measured at fair value				
Derivatives	3,903	26,753	-	30,656
Other current financial liabilities	-	-	25	25
Other non-current financial liabilities	-	-	25	25

39. Financial instruments (Continued)

39.3 Fair value measurement of financial instruments (Continued)

As at 31 December 2022 and 2021, the Group had financial assets and financial liabilities measured at fair value as follows: (Continued)

As at 31 December 2021

Unit: Million Baht

	Consolidated financial statements			
	Level 1	Level 2	Level 3	Total
Financial assets measured at fair value				
Cash and cash equivalents	-	42	-	42
Investments in short-term financial assets	-	1,142	-	1,142
Investments measured at fair value				
through other comprehensive income	11,099	1,969	24,259	37,327
Investments measured at fair value				
through profit or loss	1,145	-	471	1,616
Derivatives	-	6,227	-	6,227
Other non-current financial assets	2,048	-	-	2,048
Financial liabilities measured at fair value				
Derivatives	187	7,470	470	8,127
Other current financial liabilities	-	-	32	32
Other non-current financial liabilities	-	-	2,380	2,380

39. Financial instruments (Continued)

39.3 Fair value measurement of financial instruments (Continued)

As at 31 December 2022 and 2021, the Group had financial assets and financial liabilities measured at fair value as follows: (Continued)

As at 31 December 2022

	Unit: Million Baht			
	Separate financial statements			
	Level 1	Level 2	Level 3	Total
Financial assets measured at fair value				
Investments in short-term financial assets	-	-	72	72
Investments measured at fair value through other comprehensive income	3,691	-	3,325	7,016
Investments measured at fair value through profit or loss	395	-	-	395
Derivatives	-	1,231	-	1,231
Financial liabilities measured at fair value				
Derivatives	-	5,633	-	5,633

As at 31 December 2021

	Unit: Million Baht			
	Separate financial statements			
	Level 1	Level 2	Level 3	Total
Financial assets measured at fair value				
Investments measured at fair value through other comprehensive income	6,140	-	2,627	8,767
Investments measured at fair value through profit or loss	387	-	-	387
Derivatives	-	1,540	-	1,540
Financial liabilities measured at fair value				
Derivatives	-	2,388	-	2,388

39. Financial instruments (Continued)

39.3 Fair value measurement of financial instruments (Continued)

As at 31 December 2022 and 2021, the Group had financial assets and financial liabilities that were not measured at fair value, though the fair values approximate their carrying value, except financial assets and liabilities as follows:

As at 31 December 2022

	Unit: Million Baht			
	Consolidated financial statements			
	Level 1	Level 2	Level 3	Total
Financial assets disclosed at fair value				
Amortized cost investments	-	6,988	-	6,988
Financial liabilities disclosed at fair value				
Long-term borrowings	-	250,645	19,778	270,423
Debentures	-	662,399	-	662,399

As at 31 December 2021

	Unit: Million Baht			
	Consolidated financial statements			
	Level 1	Level 2	Level 3	Total
Financial assets disclosed at fair value				
Amortized cost investments	-	8,255	-	8,255
Financial liabilities disclosed at fair value				
Long-term borrowings	-	282,996	6,075	289,071
Debentures	-	622,453	-	622,453

39. Financial instruments (Continued)

39.3 Fair value measurement of financial instruments (Continued)

As at 31 December 2022 and 2021, the Group had financial assets and financial liabilities that were not measured at fair value, though the fair values approximate their carrying value, except financial assets and liabilities as follows: (Continued)

As at 31 December 2022

	Unit: Million Baht			
	Separate financial statements			
	Level 1	Level 2	Level 3	Total
Financial assets disclosed at fair value				
Amortized cost investments	-	6,988	-	6,988
Financial liabilities disclosed at fair value				
Long-term borrowings	-	-	60,132	60,132
Debentures	-	172,118	-	172,118

As at 31 December 2021

	Unit: Million Baht			
	Separate financial statements			
	Level 1	Level 2	Level 3	Total
Financial assets disclosed at fair value				
Amortized cost investments	-	8,255	-	8,255
Financial liabilities disclosed at fair value				
Long-term borrowings	-	-	66,532	66,532
Debentures	-	145,806	-	145,806

39. Financial instruments (Continued)

39.3 Fair value measurement of financial instruments (Continued)

Fair value valuation techniques and inputs for level 2 valuation

The fair values of debt securities were determined based on the latest bid price or the yield rate quoted by the Thai Bond Market Association or other relevant markets. They were also calculated based on the contractual cash flows, discounted using the market reference rate of other debt securities that have observable prices.

In determining the fair values of derivatives, most of the inputs used for the valuations are observable in the relevant markets, adjusted by appropriate risk factors, such as market price, price volatility, foreign exchange rate volatility, spot rates of foreign currencies, yield curves of the respective currencies, the market value of swap price, timing of exercise and commodity price yield curves. Discounting was applied if there was a significant impact to the fair value of the derivative instruments.

The fair values of long-term loans were determined based on the present values of future cash flows, discounted using the market interest rate for similar instruments. The fair values of debentures were based on the latest closing price or the reference interest rate quoted by the bond or other market or ask prices or latest price of comparable market securities. They were also calculated using the reference price in the secondary market of bond or other market that are quoted in an active market.

Fair value valuation techniques and inputs for level 3 valuation

The significant unobservable input for level 3 valuation is the risk-adjusted discount rate. This is estimated based on public companies' weighted average cost of capital and cost of equity that are, in the opinion of the Group, in a comparable financial position with the counterparties to the contract.

The fair values of debt instruments measured at fair value through profit or loss are as follows:

- For investments in startup companies, the fair values are based on the valuation made during the latest round of fundraising.
- For investments in non-marketable securities, the fair values are based on the discounted present value of the future cash flows, estimated based on available performance indicators and an appropriate interest rate, or the fair values are based on the net asset method whereby the information is reasonably available.

39. Financial instruments (Continued)

39.3 Fair value measurement of financial instruments (Continued)

Fair value valuation techniques and inputs for level 3 valuation (Continued)

The fair values of equity instruments measured at fair value through other comprehensive income are as follows:

- For investments in startup companies, the fair values are based on the valuation made during the latest round of fundraising.
- For investments in non-marketable securities, the fair values are based on cost which is treated as an estimate of fair value unless there are significant changes in the operations of the investee, or the fair values are based on the discounted present value of the future cash flows, estimated based on an incremental borrowing rate and likely assumptions related to the conditions in the Share Purchase Agreement, or the fair values are based on the net asset method whereby the information is reasonably available.
- For investments in funds, the fair values are referred to the net asset value of the funds.

The fair values of long-term loans were determined based on discounted future cash flows and valuation model techniques, using an appropriate risk-adjusted discount rate. Most of the inputs used for the valuation are observable in the relevant markets, such as spot rates of foreign currencies, interest rate yield curves and bonds yield curves.

The fair value of other non-current financial liabilities that are categorized as contingent considerations from business acquisition and contingent considerations from interest acquisition in joint venture were determined by discounted cash flow. 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 about related probability according to specified conditions in Sales and Purchase Agreement (SPA).

39. Financial instruments (Continued)

39.3 Fair value measurement of financial instruments (Continued)

The reconciliation of financial assets and liabilities regularly measured fair value and categorized as level 3 as follows:

Unit: Million

	Consolidated financial statements					Total
	Investments in short-term financial assets	Investments measured at fair value through other comprehensive income	Investments measured at fair value through profit and loss	Put options over non-controlling interest	Contingent considerations from business acquisition	
Balance as at 1 January 2022	-	24,259	471	470	2,412	27,612
- Increase (Decrease)	72	10,970	985	(457)	3	11,573
- Business acquisition	-	329	1,004	-	-	1,333
- Reclassification	-	(96)	70	-	-	(26)
- Net gain (loss) on profit and loss	-	-	379	-	(2,478)	(2,099)
- Net loss on other comprehensive income	-	(491)	-	-	-	(491)
- Exchange differences on translation	-	1,779	(46)	(13)	113	1,833
Balance as at 31 December 2022	72	36,750	2,863	-	50	39,735

39. Financial instruments (Continued)

39.3 Fair value measurement of financial instruments (Continued)

The reconciliation of financial assets and liabilities regularly measured fair value and categorized as level 3 as follows: (Continued)

Unit: Million

	Consolidated financial statements					Total
	Investments measured at fair value through other comprehensive income	Investments measured at fair value through profit and loss	Put options over non-controlling interest	Contingent considerations from business acquisition	Contingent considerations from interest acquisition in joint venture	
Balance as at 1 January 2021	15,205	144	95	169	1,601	17,214
- Increase (Decrease)	3,672	93	-	(108)	(1,745)	1,912
- Business acquisition	-	191	-	2,132	-	2,323
- Reclassification	(60)	-	-	-	-	(60)
- Net gain on profit and loss	-	23	371	33	43	470
- Net gain on other comprehensive income	4,471	-	-	-	-	4,471
- Exchange differences on translation	971	20	4	186	101	1,282
Balance as at 31 December 2021	24,259	471	470	2,412	-	27,612

39. Financial instruments (Continued)

39.3 Fair value measurement of financial instruments (Continued)

The reconciliation of financial assets and liabilities regularly measured fair value and categorized as level 3 as follows: (Continued)

Unit: Million Baht

	Separate financial statements		Total
	Investments in short-term financial assets	Investments measured at fair value through other comprehensive income	
Balance as at 1 January 2022	-	2,627	2,627
- Increases	72	758	830
- Reclassification	-	(31)	(31)
- Net loss on other comprehensive income	-	(29)	(29)
Balance as at 31 December 2022	72	3,325	3,397

Unit: Million Baht

	Separate financial statements	
	Investments measured at fair value through other comprehensive income	
Balance as at 1 January 2021	1,208	
- Increases	828	
- Net gain on other comprehensive income	591	
Balance as at 31 December 2021	2,627	

39. Financial instruments (Continued)

39.4 Cash flow hedge

The Group uses derivatives as hedging instruments as at 31 December 2022 and 2021 as follows:

As at 31 December 2022

	Consolidated financial statements			
	Maturity			Total
	Less than 1 year	1 - 5 years	Over 5 years	
Foreign currency forward contracts (for highly probable forecast purchases)				
Notional amount (Unit: Million Baht)	1,675	150	-	1,825
Average forward rate (Baht : USD)	31.01 - 36.68	32.91 - 32.93	-	31.01 - 36.68
Notional amount (Unit: Million Baht)	929	382	-	1,311
Average forward rate (Baht : SEK)	3.30	3.25	-	3.25 - 3.30
Notional amount (Unit: Million Baht)	127	127	124	378
Average forward rate (USD : EUR)	1.46	1.46	1.46	1.46
Foreign currency forward contracts (for debentures)				
Notional amount (Unit: Million Baht)	6,111	-	-	6,111
Average forward rate (Baht : USD)	30.12 - 32.17	-	-	30.12 - 32.17
Interest rate swap contracts (for loans)				
Notional amount (Unit: Million Baht)	639	2,145	3,746	6,530
Average fixed rate (%)	1.96 - 4.49	1.96 - 4.49	1.96 - 4.49	1.96 - 4.49
Cross-currency swap contracts (for loans)				
Notional amount (Unit: Million Baht)	-	-	19,797	19,797
Average forward rate (Baht : USD)	-	-	30.72 - 32.00	30.72 - 32.00
Average fixed rate (%)	-	-	3.50 - 4.88	3.50 - 4.88
Cross-currency swap contracts (for debentures)				
Notional amount (Unit: Million Baht)	-	11,000	18,120	29,120
Average forward rate (Baht : USD)	-	33.69 - 33.75	32.66 - 33.60	32.66 - 33.75
Average fixed rate (%)	-	2.00 - 3.26	2.69 - 4.82	2.00 - 4.82

39. Financial instruments (Continued)

39.4 Cash flow hedge (Continued)

The Group uses derivatives as hedging instruments as at 31 December 2022 and 2021 as follows: (Continued)

As at 31 December 2021

	Consolidated financial statements			
	Maturity			
	Less than 1 year	1 - 5 years	Over 5 years	Total
Foreign currency forward contracts (for highly probable forecast purchases)				
Notional amount (Unit: Million Baht)	1,212	451	-	1,663
<i>Average forward rate (Baht : USD)</i>	<i>29.89 - 33.58</i>	<i>30.00 - 31.21</i>	-	<i>29.89 - 33.58</i>
Notional amount (Unit: Million Baht)	997	-	-	997
<i>Average forward rate (Baht : SEK)</i>	<i>3.33 - 3.83</i>	-	-	<i>3.33 - 3.83</i>
Notional amount (Unit: Million Baht)	129	-	-	129
<i>Average forward rate (Baht : EUR)</i>	<i>38.77</i>	-	-	<i>38.77</i>
Foreign currency forward contracts (for debentures)				
Notional amount (Unit: Million Baht)	-	5,276	-	5,276
<i>Average forward rate (Baht : USD)</i>	-	<i>30.12 - 31.35</i>	-	<i>30.12 - 31.35</i>

39. Financial instruments (Continued)

39.4 Cash flow hedge (Continued)

The Group uses derivatives as hedging instruments as at 31 December 2022 and 2021 as follows: (Continued)

As at 31 December 2021 (Continued)

	Consolidated financial statements			
	Maturity			
	Less than 1 year	1- 5 years	Over 5 years	Total
Interest rate swap contracts (for loans)				
Notional amount (Unit: Million Baht)	344	901	5,586	6,831
<i>Average fixed rate (%)</i>	1.96 - 4.49	1.96 - 4.49	1.96 - 4.49	1.96 - 4.49
Cross-currency swap contracts (for loans)				
Notional amount (Unit: Million Baht)	3,000	-	-	3,000
<i>Average forward rate (Baht : USD)</i>	35.02	-	-	35.02
<i>Average fixed rate (%)</i>	2.79	-	-	2.79
Cross-currency swap contracts (for debentures)				
Notional amount (Unit: Million Baht)	15,000	6,000	31,197	52,197
<i>Average forward rate (Baht : USD)</i>	31.25	33.00	30.72 - 32.66	30.72 - 33.00
<i>Average fixed rate (%)</i>	2.26 - 2.79	2.25 - 2.53	3.50 - 4.99	2.25 - 4.99
Interest rate collar (zero cost collar) (for loans)				
Notional amount (Unit: Million Baht)	-	10,026	-	10,026
<i>Reference interest rate</i>	-	USDLIBOR	-	-
<i>Interest Rate Cap (%)</i>	-	2.42	-	-
<i>Interest Rate Floor (%)</i>	-	0.20	-	-

39. Financial instruments (Continued)

39.4 Cash flow hedge (Continued)

The impact of the derivatives on the statement of financial position as at 31 December 2022 and 2021 as follows:

As at 31 December 2022

Unit: Million Baht

	Consolidated financial statements		
	Provision of cash flow hedge		
	Continuous hedging	Hedge termination	Provision for cost of hedging
Highly probable forecast purchases	(76)	-	(12)
Loans	(35)	-	1
Debentures	(1,086)	-	269

As at 31 December 2021

Unit: Million Baht

	Consolidated financial statements		
	Provision of cash flow hedge		
	Continuous hedging	Hedge termination	Provision for cost of hedging
Highly probable forecast purchases	148	-	8
Loans	(952)	-	1
Debentures	(474)	-	287

39. Financial instruments (Continued)

39.4 Cash flow hedge (Continued)

The impact of the hedging instruments on the statement of financial position as at 31 December 2022 and 2021 and the impact of cash flow hedge on the statement of income for the year ended 31 December 2022 and 2021 as follows:

As at 31 December 2022

Unit: Million Baht

	Consolidated financial statements					
	Notional amount	Carrying amount	Change in fair value used for measuring effectiveness for the period	Cost of hedging recognized in shareholders' equity	Provision of cash flow hedge classified to profit and loss	Line item in the statement of incomes or non-financial assets
Foreign currency forward contracts (for highly probable forecast purchases)	2,328	(32)	(84)	(20)	-	-
Foreign currency forward contracts (for debentures)	6,111	658	16	4	-	-
Interest rate swap contracts (for loans)	6,530	(71)	313	-	144	Gain (Loss) on derivatives
Cross-currency swap contracts (for loans)	3,000	(136)	(1)	(2)	8	Gain (Loss) on derivatives
Cross-currency swap contracts (for debentures)	48,917	2,452	3,558	1,182	(160)	Gain on foreign exchange rates
Interest rate collar (zero cost collar) (for loans)	-	-	(38)	1	-	-

39. Financial instruments (Continued)

39.4 Cash flow hedge (Continued)

The impact of the hedging instruments on the statement of financial position as at 31 December 2022 and 2021 and the impact of cash flow hedge on the statement of income for the year ended 31 December 2022 and 2021 as follows: (Continued)

As at 31 December 2021

Unit: Million Baht

	Consolidated financial statements					
	Notional amount	Carrying amount	Change in fair value used for measuring effectiveness for the period	Cost of hedging recognized in shareholders' equity	Provision of cash flow hedge classified to profit and loss	Line item in the statement of incomes or non-financial assets
Foreign currency forward contracts (for highly probable forecast purchases)	2,789	195	67	11	(29)	Gain (Loss) on derivatives
Foreign currency forward contracts (for debentures)	5,276	394	20	7	-	-
Interest rate swap contracts (for loans)	6,831	(552)	352	-	234	Gain (Loss) on derivatives
Cross-currency swap contracts (for loans)	3,000	(136)	(5)	(10)	56	Gain (Loss) on derivatives
Cross-currency swap contracts (for debentures)	52,197	(519)	(2,746)	218	2,739	Gain on foreign exchange rates
Interest rate collar (zero cost collar) (for loans)	10,026	28	38	(1)	-	-

39. Financial instruments (Continued)

39.4 Cash flow hedge (Continued)

Movement of other components of shareholders' equity and other comprehensive income analysis as follows:

	Unit: Million Baht	
	Consolidated financial statements	
	Provision of cash flow hedge	Provision for cost of hedging
As at 1 January 2022	(1,278)	296
- Change in fair value of hedging instruments	128	(48)
- Classification to profit and loss	(160)	-
- Effect of taxes	113	10
As at 31 December 2022	<u>(1,197)</u>	<u>258</u>

	Unit: Million Baht	
	Consolidated financial statements	
	Provision of cash flow hedge	Provision for cost of hedging
As at 1 January 2021	(2,416)	705
- Change in fair value of hedging instruments	(1,735)	(511)
- Classification to profit and loss	3,088	-
- Effect of taxes	(215)	102
As at 31 December 2021	<u>(1,278)</u>	<u>296</u>

40. Dividend payment

Dividend	Approved by	Dividend payment rate (Baht/share)	Number of shares (shares)	Total dividend (Million Baht)	Payment date
For the year 2021	The 2022 Annual General Shareholders' Meeting of the Company on 8 April 2022	0.80	28,562,885,516	22,850	29 April 2022
Interim 2022	The Board of Directors Meeting of the Company on 15 September 2022	1.30	28,562,921,483	37,132	12 October 2022
				59,982	

41. Business acquisitions

41.1 Innobic (Asia) Company Limited (INBA), a wholly owned subsidiary of the Company, joined with Aztiq HK Limited, (an affiliate of Aztiq Investment Group (Aztiq)), through Aztiq II Holdco Limited and Aztiq II Bidco Limited, acquired all shares of Alvogen Emerging Markets Holdings Limited (AEMH), a major shareholder of Lotus Pharmaceutical Company Limited (Lotus Pharmaceutical, TWSE ticker: 1795). AEMH also holds a 100% stake in Alvogen Malta (Out-Licensing) Holding Limited who owns 100% of Adalvo Group (Adalvo), B2B pharmaceutical companies with a global network. The total value of the transaction was approximately USD 475 million (equivalent to approximately Baht 15,896 million) (excluded investment acquired before business combination) and the Share Purchase Agreement (SPA) was signed on 26 November 2021. The transaction was completed on 7 April 2022, after the conditions precedent under the share purchase agreement were met and, as a result, INBA indirectly holds approximately 42.99% of the total issued and paid up capital of Lotus Pharmaceutical (former stake was 6.66%) and 71.23% of the total issued and paid up capital of Adalvo.

Details of net assets acquired and goodwill at the acquisition date are as follows:

	Unit: Million Baht
Purchase consideration	18,771
Fair value of net assets acquired	(6,198)
Goodwill (Note 18)	<u>12,573</u>

Assets and liabilities arising from the business acquisition at the acquisition date are as follows:

	Unit: Million Baht
Cash and cash equivalents	1,388
Short-term investments in financial assets	42
Trade accounts receivable	5,729
Other accounts receivable	547
Short-term lending	112
Inventories	2,382
Supplies	1,528
Other current assets	671
Investment at fair value through other comprehensive income (Note 13)	329
Investment at fair value through profit or loss (Note 13)	1,004
Property, plant and equipment (Note 16)	3,357
Right-of-use assets (Note 17)	124
Other intangible assets (Note 19)	20,299
Deferred tax assets	348
Other non-current assets	190

41. **Business acquisitions** (Continued)

Assets and liabilities arising from the business acquisition at the acquisition date are as follows: (Continued)

	Unit: Million Baht
Bank overdraft and short-term borrowings from financial Institutions (Note 27)	(2,150)
Trade accounts payable	(2,700)
Other accounts payable	(3,011)
Current portion of long-term borrowings (Note 27)	(938)
Current portion of lease liabilities (Note 27)	(81)
Income tax payable	(434)
Other current liabilities	(1,352)
Long-term borrowings (Note 27)	(5,281)
Lease liabilities (Note 27)	(52)
Deferred tax liabilities	(2,725)
Employee benefit obligations (Note 28)	(602)
Provisions for decommissioning costs (Note 29)	(12)
Other non-current liabilities	(773)
Fair value of net assets	17,939
<u>Less</u> Non-controlling interests	(11,741)
Fair value of net assets acquired	6,198
<u>Add</u> Goodwill (Note 18)	12,573
Total purchase consideration transferred	18,771
<u>Less</u> Investment acquired before business combination	(2,876)
<u>Less</u> Cash and cash equivalents of subsidiary	(1,388)
Net cash outflow on the business acquisition	14,507

41. Business acquisitions (Continued)

41.2 On 10 July 2021, PTT Global Chemical Public Company Limited (PTTGC) Group entered into the Shares Purchase Agreement to acquire 100% share of Allnex Holding GmbH, leader in special coating resins and crosslinkers business, directly from Allnex Holdings S.à.r.l. Subsequently, on 29 December 2021, PTTGC Group completed the share acquisition with cash consideration of EUR 3,561 million or Baht 136,741 million.

PTTGC Group provisionally determined the fair value of assets and liabilities acquired at the acquisition date, and engaged an independent appraiser to calculate the fair value of assets and liabilities acquired within the measurement period, which was not to exceed one year from the acquisition date, to reflect new information obtained about facts and circumstances that existed as of the acquisition date. When the evaluation was completed, the fair value of the assets and liabilities acquired was adjusted to reflect the final fair value determination.

	Fair value as	Increase	Unit: Million Baht
	previously stated	(Decrease)	Fair value
Cash and cash equivalents	4,068	-	4,068
Short-term investments in financial assets	6	-	6
Trade accounts receivable	8,261	-	8,261
Other accounts receivable	1,643	19	1,662
Inventories	16,770	1,829	18,599
Current derivative assets	5	-	5
Investments at fair value through PL	191	-	191
Investments in joint ventures	722	-	722
Property, plant and equipment	27,278	11,463	38,741
Right-of-use assets	1,805	969	2,774
Other intangible assets	78,329	(21,370)	56,959
Deferred tax assets	1,839	266	2,105
Other non-current assets	266	(11)	255

41. Business acquisitions (Continued)

	Fair value as previously stated	Increase (Decrease)	Unit: Million Baht Fair value
Bank overdraft and short-term borrowings			
from financial Institutions	(366)	-	(366)
Trade accounts payable	(12,020)	-	(12,020)
Other accounts payable	(8,569)	-	(8,569)
Current portion of lease liabilities	(510)	-	(510)
Short-term borrowings	(12,351)	-	(12,351)
Current derivative liabilities	(45)	-	(45)
Income tax payable	(798)	-	(798)
Other current liabilities	(1,103)	3	(1,100)
Long-term borrowings	(9,358)	-	(9,358)
Lease liabilities	(1,392)	-	(1,392)
Deferred tax liabilities	(26,634)	6,630	(20,004)
Employee benefit obligations	(4,638)	-	(4,638)
Other non-current liabilities	(937)	-	(937)
Fair value of net assets	62,462	(202)	62,260
<u>Less</u> Non-controlling interests	(1,128)	-	(1,128)
Fair value of net assets acquired	61,334	(202)	61,132
<u>Add</u> Loss on derivative	820	-	820
<u>Add</u> Goodwill	74,587	202	74,789
Total purchase consideration transferred	136,741	-	136,741
<u>Less</u> Cash and cash equivalents of subsidiary	(4,068)	-	(4,068)
Net cash outflow on the business acquisition	132,673	-	132,673

Acquisition-related costs

The PTTGC Group incurred acquisition-related costs of Baht 1,461 million related to external legal fees and due diligence costs. The legal fees and due diligence costs have been included in administrative expenses in consolidated statement of income in the period that the transaction occurred.

42. Promotional privileges

Some subsidiaries received the following promotional privileges from the BOI under the Investment Promotion Act, B.E. 2520

The TOP Group has been granted privileges from the BOI for its power and steam generation, petrochemical product production, and chemical product production. The promotional privileges include exemption from import duties and tax on the machinery and equipment approved by the BOI, exemption from corporate income tax on the net income from the promoted business for seven to eight years starting from the date on which income is first derived from such operations or eight years from the date on which the income is received subsequent to when the privileges were granted, and a 50% reduction of corporate income tax on the net income from the promoted business for five years starting from the expiry date of the corporate income tax exemption.

The PTTGC Group has been granted privileges from the BOI for its production of upstream, intermediate and downstream petrochemical, utilities and production support facilities, jetty for loading and storage of liquid product and transportation by marine vessels, petroleum product production. The promotional privileges include exemption and/or reduction from payment of income tax on the net profit derived from promoted operations.

The GPSC Group has been granted privileges for its production of electricity, steam, water, chilled water, refuse derived fuel and Li-ion battery. The promotional privileges include exemption from various duties and taxes and exemption from corporate income tax on the net income from the promoted business for four or eight years starting from the date on which income is first derived from such operations.

The IRPC Group has been granted privileges for its manufacture of Compounded Plastic, the cogeneration and steam power plant project (CHP), Propylene project (PRP), EBSM Upgrading for ABS Specialties project (EBSM), Multi Product Pipeline project (MPPL), Polypropylene Resin (PPE) project, Polypropylene Compound project (PPC), High Pressure HDPE Compound project, Investment project in Industrial zone, Value Added Products (UHV), Floating Solar project, and PP Melt Blown project. The promotional privileges include exemption from import duties and tax on materials and necessary parts including machinery approved by the BOI, exemption from corporate income tax on the net income from the promoted business for five to eight years starting from the date on which income is first derived from such operations, a 50% reduction of corporate income tax on the net income from the promoted business for five years starting from the expiry date of the corporate income tax exemption, and double deduction of logistics, electricity and water expenses for a period of ten years since income is first derived from such operations.

OR has received two investment promotion certificates granting promotional privileges for the manufacture of quality roasted coffee beans and one investment promotion certificate granting promotional privileges for the electricity generated from solar energy. OR has been granted a range of privileges, including exemption from corporate income tax subject to certain imposed conditions.

The PTT TANK Group has been granted promotional privileges for its loading/unloading facilities for sea transport Category 7.1: Public utilities and basic services. The promotional privileges include exemption from import duties on the machinery approved by the BOI, exemption from corporate income tax on the net income from the promoted business for eight years starting from the date on which income is first derived from such operations, and a 50% reduction of corporate income tax on the net income from the promoted business for five years starting from the expiry date of the corporate income tax exemption. Moreover, the PTT TANK Group has been granted promotional privileges for its loading/unloading facilities for sea transport Category 7.1.4: Loading/unloading facilities for sea transport. The promotional privileges include exemption from import duties on the machinery approved by the BOI, exemption from corporate income tax on the net income from the promoted business for six years starting from the date on which income is first derived from such operations.

42. Promotional privileges (Continued)

Some subsidiaries received the following promotional privileges from the BOI under the Investment Promotion Act, B.E. 2520 (Continued)

PTTLNG has been granted promotional privileges, for its liquefied natural gas transportation business Category 7.1: Public utilities and basic services. The promotional privileges include exemption from import duties on the machinery approved by the BOI, exemption from corporate income tax on the net income from the promoted business for eight years starting from the date on which income is first derived from such operations, and a 50% reduction of corporate income tax on the net income from the promoted business for five years starting from the expiry date of the corporate income tax exemption. Moreover, PTTLNG has been granted promotional privileges for its loading facilities for sea transport Category 7.1.4. under the promotion conditions. The promotional privileges include exemption from corporate income tax on the net income from the promoted business for five years starting from the date on which income is first derived from such operations.

The Group must comply with certain terms and conditions prescribed in the promotional certificates.

43. Commitments and contingent liabilities

Details of significant changes in commitments and contingent liabilities are as follows:

43.1 Details of commitments to related parties are as follows:

43.1.1 The Company has provided loans to its subsidiaries through PTT Treasury Center Company Limited (PTTCC) (a subsidiary of the Company) with credit limits totaling Baht 135,679 million. As at 31 December 2022, the remaining credit limits were Baht 77,033 million.

43.1.2 As at 31 December 2022, the Group entered into the Sponsor Support Agreements with their related parties totaling Baht 2,108 million, and USD 1,273 million respectively with credit limits based on the Group's participating interest in those related parties.

The Company has commitments for guarantee of the subsidiaries' loans and debentures as mentioned in Notes 27.

43.1.3 As at 31 December 2022, the Group had obligations not exceeding USD 270 million in respect of the purchase of shares in the associates under the share purchase agreements.

The Company had obligations under the Shareholder Agreements to pay for ordinary shares in proportion to its shareholding. As at 31 December 2022, the Company had remaining obligations amounting to Baht 10,106 million.

43. Commitments and contingent liabilities (Continued)

Details of significant changes in commitments and contingent liabilities are as follows: (Continued)

43.2 Commitments under leases - the Group as a lessee, the future minimum lease payments under uncancellable leases as at 31 December 2022 are as follows:

	Unit: Million Baht	
	Consolidated	Separate
	financial statements	financial statements
- Within 1 year	2,211	72
- Over 1 year but not over 5 years	626	87
- Over 5 years	877	57
Total	3,714	216

43.3 As at 31 December 2022, the Group had capital commitments of Baht 162,499 million in the consolidated financial statements and Baht 26,902 million in the separate financial statements.

43.4 As at 31 December 2022, the Group had outstanding letters of credit of Baht 62,190 million in the consolidated financial statements and Baht 4,714 million in the separate financial statements.

43.5 As at 31 December 2022, the Group had contingent liabilities in the form of letter of guarantee amounting to Baht 40,761 million in the consolidated financial statements and Baht 75 million in the separate financial statements.

43. Commitments and contingent liabilities (Continued)

Details of significant changes in commitments and contingent liabilities are as follows: (Continued)

- 43.6 On 26 May 2010, the contractor for an onshore natural gas pipeline construction project (the “Contractor”) submitted claims with the Thai Arbitration Institute (the Institute) seeking overdue payment and damages from the Company for work performed on the project. The Company, however, considered that the submission of the claims was not compliant with the dispute resolution procedure agreed upon under the contract. Therefore, the Company filed an opposition to the Contractor’s claim submission with the Institute and reserved right to protest such contractually non-compliant claim submission in the arbitration procedure. After submission of the claim, the Central Bankruptcy Court issued an order placing the Contractor under absolute receivership, which gave the official receiver sole authority over any litigation pertaining to the Contractor’s assets. Subsequently, the Contractor’s official receiver petitioned the Institute to substitute the Contractor in the dispute against the Company. In the bankruptcy case, the Company submitted a motion for repayment of debt as a creditor, while in the arbitration process, the Company submitted a defense of all claims of the Contractor, together with counterclaims seeking damages from the Contractor. Subsequently, the Arbitral Tribunal rendered an award ordering the Company to make payment of the Contractor’s claims. However, the Company considered the arbitral award to contain material factual and legal inconsistencies and filed a motion to revoke the arbitral award, while the Contractor submitted a motion with the Civil Court to enforce the arbitral award. On 17 October 2017, the Civil Court delivered a judgment ordering enforcement of the arbitral award whereby some amounts were reduced. However, the Company submitted an appeal against the Civil Court’s judgment with the Supreme Court, and, placed a saving account book with the Civil Court as security to stay the enforcement of the judgment. Subsequently, the Contractor also submitted an appeal against the Civil Court’s judgment with the Supreme Court. On 18 December 2019, the Supreme Court rendered a judgment not to accept the Company’s appeal for consideration and the case was final. Therefore, the Company was obliged to make payment in accordance with the Civil Court’s judgment. On 8 January 2020, the Company made payment of approximately Baht 4,544 million to the Civil Court, in accordance with the judgment. However, the Contractor had an objection that the Company’s deduction of the withholding tax from the payment was incorrect. At present, the matter is under the Supreme Court’s consideration.

43. Commitments and contingent liabilities (Continued)

Details of significant changes in commitments and contingent liabilities are as follows: (Continued)

- 43.7 On 25 February 2014, the contractor for an onshore natural gas pipeline construction project (the "Contractor") filed a lawsuit against the Company with the Civil Court on the grounds of wrongful termination and breach of contract and claim for outstanding payment for the work and damages. The Company considered all of the Company's actions to have been in accordance with the terms and conditions of the contract and, therefore, forwarded the case to the Office of the Attorney General to consider arguing the case. The Company, by the Office of the Attorney General, submitted an answer with the Civil Court, which subsequently ordered the case to be transferred to the Central Administrative Court for consideration and judgment because the Civil Court and the Central Administrative Court were both of the opinion that the case was an administrative case. The Civil Court transferred the case to the Central Administrative Court. Currently, the case is under the consideration of the Central Administrative Court.

After the Company terminated the contract with the Contractor, the Company completed an onshore natural gas pipeline construction project. Subsequently, on 20 June 2018, the Company filed a lawsuit against the Contractor with the Central Administrative Court on the grounds of breach of contract and abandonment of work and claimed damages. On 15 October 2020, the Central Administrative Court issued an order of joinder that this case to be tried together with the case filed by the pipeline contractor. Currently, the case is under the consideration of the Central Administrative Court.

On 25 September 2019, the Contractor filed a statement of fact with the Central Administrative Court. On 8 March 2019, the National Company Law Tribunal of India had ordered the Contractor to enter the Corporate Insolvency Resolution Process and had appointed a Resolution Professional in accordance with Indian Law. The Company conducted an investigation and found that such statement was true. Subsequently, on 26 November 2019, the Company filed a motion for repayment of debt with the Resolution Professional in India, who is currently considering the claim. Subsequently, the Contractor has been brought into the liquidation process under the Law of India and the Company also filed a petition to request the payment of debt in accordance with the Law of India. At present, the matter is under the consideration of the Indian court.

- 43.8 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 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 USD 0.02 million (Baht 0.54 million). Interest on these damages was agreed to be approximately Indonesian Rupiah 165 million or equivalent to USD 0.01 million (Baht 0.35 million).

43. Commitments and contingent liabilities (Continued)

Details of significant changes in commitments and contingent liabilities are as follows: (Continued)

On 25 October 2021, the court delivered its judgment on the remaining unanswered common questions in the class action. The court identified the impacted areas, on the balance of probabilities, from the Montara oil spill incident, from the period September to at least November 2009. The judgment related 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 did not negate the requirement for individual class members to demonstrate their actual loss and damage.

PTTEP AAA lodged an appeal on 13 December 2021 against the court's first instance judgment in its entirety. The court also made orders requiring a mediation to occur in the Class Action proceeding and PTTEP AAA participated in that mediation. The mediation resulted in PTTEP AAA reaching an in-principle agreement with the group of Indonesian seaweed farmers resulting in signature of a settlement deed in November 2022, that PTTEP AAA will pay Australian Dollar 192.5 million, in full, and finalise settlement of the Class Action (including PTTEP AAA's appeal). The in-principle settlement was made on a no admission of liability basis and is still subject to court approval.

As at 31 December 2022, PTTEP AAA recognised a provision for the Class Action settlement of AUD 192.5 million or equivalent to Baht 4,507.58 million.

- 43.9 During the third quarter of 2014, the number of people in Rayong filed several lawsuits with the Civil Court and the Rayong Provincial Court against PTT Global Chemical Public Co., Ltd. (PTTGC) to claim the extra compensation from oil spill incident and to perform the rehabilitation of the sea and natural environmental recovery. Some cases have been dismissed and some cases have been passed a judgment by the Civil Court on 25 August 2016 ordered PTTGC to compensate for damages including interest and rehabilitation of approximately Baht 11 million. PTTGC has appealed on 17 February 2017. Subsequently, on 11 May 2018, PTTGC made compromise agreements with majority plaintiffs at the Civil Court. On 20 December 2018, the Court of Appeal has passed the judgment according to the compromise contracts which PTTGC has already paid compensation in full amount. For the remaining plaintiffs, the Court of Appeal orders PTTGC to pay compensation with its interest according to the judgement of the Court of First Instance and reduced the amount of interest. PTTGC has paid compensation to all plaintiff completely and no petition is submitted to Supreme Court by any of plaintiff. This case has become final.

43. Commitments and contingent liabilities (Continued)

Details of significant changes in commitments and contingent liabilities are as follows: (Continued)

For the case at Rayong Provincial Court, on 28 September 2018, the court has made the judgement ordering PTTGC to pay damage cost with its interest approximately Baht 38 million by deducting the remedy payment paid to the plaintiffs of Baht 24 million. PTTGC deposited the remaining damage cost with its interest to the Rayong Provincial Court on 25 February 2019. Some plaintiffs filed an appeal with the Rayong Provincial Court. Subsequently, on 1 September 2020, the Court of Appeal Region 2 has made the judgement ordering PTTGC to pay damage cost with its interest to the plaintiffs. PTTGC deposited the amount of Baht 25 million to the Rayong Provincial Court on 30 September 2020. Then, the plaintiffs have filed the Dika appeal period on 1 March 2021. The case is currently under the trial by the Supreme Court.

44. Events after the reporting period

- 44.1 On 16 February 2023, at the Board of Directors Meeting No. 2/2023 of the Company, the Board passed a resolution to propose to the Annual General Meeting of the Company's shareholders for the approval of dividend payment of Baht 2.00 per share for the year 2022. On 12 October 2022, the Company paid an interim dividend of Baht 1.30 per share as described in Note 40. Accordingly, the remaining dividend of Baht 0.70 per share or approximately Baht 19,994 million will be proposed for approval by the Annual General Meeting of the Company's shareholders for the year 2023.
- 44.2 The Board of Directors of the Company approved these financial statements for public issuance on 16 February 2023.