

# POWERING LIFE WITH FUTURE ENERGY *AND* BEYOND







## Report of Board of Directors' Responsibilities for the Financial Reporting

### To Shareholders,

The Board of Directors is responsible for the consolidated financial statements of PTT Public Company Limited and its subsidiaries and the separate financial statements of PTT Public Company Limited. The aforementioned financial statements are prepared in accordance with Thai Financial Reporting Standards. The financial statements are prepared under appropriated accounting policies and applied consistently by using careful judgment and the best estimation. Important information is adequately and transparently disclosed in the notes to financial statements for the company's shareholders and investors.

The Board of Directors provides good corporate governance and maintains the risk management system and internal controls to ensure that accounting records are accurate, reliable, free from material misstatement, timely and adequate to protect the company's assets as well as to prevent fraud and significant irregular operations.

The Board of Directors has appointed an Audit Committee comprising independent directors to be responsible for reviewing the reliability and correctness of financial reports, evaluating the effectiveness and efficiency of internal control process and governing the effectiveness of internal audit function. The audit committee's comments on these issues are presented in the audit committee report included in this annual report.

The Board of Directors considers that the internal control system and the internal audit of the company provide credibility and reliability to the consolidated financial statements of PTT Public Company Limited and its subsidiaries and the separate financial statements of PTT Public Company Limited for the year ended December 31, 2021. The Board of Directors also believes that the financial position, financial results and cash flows, audited by the independent auditors (EY Office Limited), are fairly and accurately presented in all material respects with Thai Financial Reporting Standards. The auditors' opinion is presented in the auditors' report as part of this annual report.



**(Professor Dr. Thosaporn Sirisumphand)**  
Chairman



**(Mr. Auttapol Rerkpiboon)**  
President & CEO

# 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 2021, 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 2021, 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 as issued by the Federation of Accounting Professions as 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. 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 the COVID-19 pandemic**

The spread of the COVID-19 pandemic throughout the world has resulted in a slowdown in the global economy and affected business as a whole, including the energy industry. Although the public have gradually been vaccinated through 2021, to alleviate the severity of the disease, resulting in the relaxation of the pandemic prevention measures and allowing a continuous recovery of economic activity, the pandemic remains present in Thailand, together with general prevention measures. As a result, the Thai economy has not fully recovered. 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 an understanding of the process for assessing the impact of the COVID-19 pandemic 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 used 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 COVID-19 pandemic on the impairment testing of assets and related provisions.

### **Business combinations**

As discussed in Note 42 to the financial statements, the Group invested in various businesses during the year 2021. 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 or gain on the purchase of business at a price lower than fair value of net assets acquired. 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 or gain on the purchase of business at a price lower than fair value of net assets acquired.

I performed the audit procedures by communicating with the component auditors and gaining an understanding of and assessing the auditors' work to obtain sufficient and appropriate audit evidence related to the assessment of the business combination transactions were as follows:

- A review of the terms and conditions of the share purchase agreements and inquiries made 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 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 or gain on the purchase of business at a price lower than fair value of net assets acquired, and the disclosures related to the business combinations 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: 17 February 2022



## Statement of Financial Position

PTT Public Company Limited and Its Subsidiaries  
As at 31 December 2021

	Notes	Consolidated financial statements		Separate financial statements		Unit: Baht
		31 December 2021	31 December 2020	31 December 2021	31 December 2020	
<b>Assets</b>						
<b>Current assets</b>						
Cash and cash equivalents	4	312,730,119,697	332,032,066,865	45,853,391,737	56,341,885,897	
Short-term investments in financial assets	5	48,906,980,038	84,888,667,336	5,533,088,471	44,404,308,007	
Trade accounts receivable	6	196,242,806,275	110,527,807,929	113,907,636,288	72,220,178,987	
Other accounts receivable	7	64,733,543,285	51,698,643,784	20,414,065,309	11,511,656,565	
Short-term lending	8.1	1,579,817,358	1,718,427,619	4,278,921,224	5,136,742,861	
Inventories	10	168,994,348,086	93,526,878,584	12,246,852,998	6,519,530,653	
Supplies	11	41,415,831,974	36,252,194,811	5,346,756,999	5,979,431,745	
Current derivative assets		4,072,920,017	1,628,999,259	308,616,645	521,353,134	
Other current financial assets		2,034,031,239	1,216,108,278	314,540,611	314,540,611	
Other current assets		9,984,015,672	4,677,560,018	1,879,750,419	1,939,359,173	
Assets held for sale	12	2,711,464,728	2,763,089,715	-	-	
<b>Total current assets</b>		<b>853,405,878,369</b>	<b>720,930,444,198</b>	<b>210,083,620,701</b>	<b>204,888,987,633</b>	
<b>Non-current assets</b>						
Other long-term investments in financial assets	13	46,464,436,437	23,055,492,926	16,674,234,308	7,007,138,223	
Investments in subsidiaries	14.1, 14.4	-	-	376,060,328,121	346,437,271,454	
Investments in joint ventures	14.2, 14.5	52,280,017,017	48,931,851,026	4,959,465,773	4,882,107,972	
Investments in associates	14.3	76,499,009,485	26,748,629,329	-	-	
Long-term lending	8.2	8,623,739,545	9,631,511,264	119,596,249,616	44,663,265,547	
Investment properties	15	10,458,680,544	8,026,082,101	3,967,005,551	4,459,121,922	
Property, plant and equipment	16	1,425,414,440,082	1,292,716,831,040	250,669,532,719	261,849,540,708	
Right-of-use assets	17	79,420,061,047	70,830,830,142	18,746,816,426	19,417,093,792	
Goodwill	18	182,651,763,496	106,994,152,763	-	-	
Other intangible assets	19	144,866,464,889	68,473,144,884	2,605,088,537	2,617,468,313	
Exploration and evaluation assets	20	104,594,596,037	86,945,397,084	-	-	
Deferred tax assets	22.3	63,529,293,997	54,694,329,107	-	1,078,327,020	
Non-current derivative assets		2,594,099,816	3,514,915,967	1,231,953,427	1,829,353,715	
Other non-current financial assets		11,178,886,301	7,949,887,131	221,482,588	203,671,556	
Other non-current assets	23	16,037,466,276	14,739,384,961	90,133,721	54,914,640	
<b>Total non-current assets</b>		<b>2,224,612,954,969</b>	<b>1,823,252,439,725</b>	<b>794,822,290,787</b>	<b>694,499,274,862</b>	
<b>Total assets</b>		<b>3,078,018,833,338</b>	<b>2,544,182,883,923</b>	<b>1,004,905,911,488</b>	<b>899,388,262,495</b>	

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



## Statement of Financial Position (Continued)

PTT Public Company Limited and Its Subsidiaries  
As at 31 December 2021

Unit: Baht

	Notes	Consolidated financial statements		Separate financial statements	
		31 December 2021	31 December 2020	31 December 2021	31 December 2020
<b><u>Liabilities and shareholders' equity</u></b>					
<b>Current liabilities</b>					
Bank overdrafts and short-term loans from financial institutions	27	11,631,869,299	4,222,863,582	-	-
Trade accounts payable	24	213,784,468,673	108,188,914,563	104,319,825,067	68,011,843,634
Other accounts payable	25	103,079,152,672	66,684,102,197	30,911,400,257	16,057,161,820
Current portion of long-term borrowings	27	87,648,749,676	73,777,907,740	5,999,383,087	15,225,661,317
Current portion of lease liabilities	27	10,741,801,954	7,652,911,432	609,457,556	717,640,576
Short-term borrowings	27	111,200,400	-	7,217,369,599	2,561,061,960
Income tax payable		33,423,495,520	19,229,931,274	2,581,880,124	2,338,691,840
Short-term provision for decommissioning costs	29	8,897,750,974	1,890,062,490	-	-
Current derivative liabilities		4,411,718,603	3,718,837,372	505,579,363	94,687,441
Other current financial liabilities		5,928,484,788	3,863,740,926	894,359,126	121,509,155
Other current liabilities	26	11,909,663,343	7,221,351,504	3,278,569,169	2,132,247,406
Liabilities directly associated with assets held for sale	12	2,085,885,139	1,575,603,382	-	-
<b>Total current liabilities</b>		<b>493,654,241,041</b>	<b>298,026,226,462</b>	<b>156,317,823,348</b>	<b>107,260,505,149</b>
<b>Non-current liabilities</b>					
Long-term borrowings	27	786,223,589,885	664,732,462,537	183,451,262,580	131,207,226,412
Lease liabilities	27	53,468,016,789	45,117,012,577	6,437,431,471	7,021,593,512
Deferred tax liabilities	22.3	95,944,765,362	57,904,379,545	870,869,816	-
Provisions for employee benefits	28	36,895,459,744	34,198,994,004	6,818,317,240	7,662,342,920
Long-term provision for decommissioning costs	29	84,696,385,818	96,770,501,872	-	-
Deposits on LPG cylinders		12,157,167,752	11,873,799,449	-	-
Non-current derivative liabilities		3,714,841,570	5,428,847,966	1,881,031,983	1,253,759,478
Other non-current financial liabilities	30	12,222,931,830	20,073,353,261	7,173,404,157	17,203,489,070
Other non-current liabilities	31	26,101,711,553	24,212,212,163	4,449,024,963	4,696,856,868
<b>Total non-current liabilities</b>		<b>1,111,424,870,303</b>	<b>960,311,563,374</b>	<b>211,081,342,210</b>	<b>169,045,268,260</b>
<b>Total liabilities</b>		<b>1,605,079,111,344</b>	<b>1,258,337,789,836</b>	<b>367,399,165,558</b>	<b>276,305,773,409</b>

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



## Statement of Financial Position (Continued)

PTT Public Company Limited and Its Subsidiaries  
As at 31 December 2021

	Unit: Baht				
	Notes	Consolidated financial statements		Separate financial statements	
		31 December 2021	31 December 2020	31 December 2021	31 December 2020
<b>Liabilities and shareholders' equity (Continued)</b>					
<b>Shareholders' equity</b>					
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	
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	
Share premium		29,211,131,966	29,211,131,966	29,211,131,966	
Surplus (deficit) from the change in the ownership interests in subsidiaries		3,095,604,331	(31,517,925,559)	-	
Retained earnings					
Appropriated - legal reserve	32	2,857,245,725	2,857,245,725	2,857,245,725	
Appropriated - self-insurance fund reserve	32	1,272,724,959	1,265,209,883	1,272,724,959	
Unappropriated		922,091,718,159	869,260,266,823	570,355,191,388	
Other components of shareholders' equity		19,604,800,651	(17,598,523,257)	5,247,455,642	
Equity attributable to owners of the Company		1,006,696,222,041	882,040,401,831	637,506,745,930	
Non-controlling interests of the subsidiaries		466,243,499,953	403,804,692,256	-	
<b>Total shareholders' equity</b>		<b>1,472,939,721,994</b>	<b>1,285,845,094,087</b>	<b>637,506,745,930</b>	
<b>Total liabilities and shareholders' equity</b>		<b>3,078,018,833,338</b>	<b>2,544,182,883,923</b>	<b>1,004,905,911,488</b>	

**Phannalin Mahawongtikul**  
Chief Financial Officer



## Statement of Income

PTT Public Company Limited and Its Subsidiaries  
For the year ended 31 December 2021

	Notes	Unit: Baht			
		Consolidated financial statements		Separate financial statements	
		2021	2020	2021	2020
Sales and service income	34	2,258,818,487,065	1,615,664,656,670	1,189,700,090,193	842,090,280,589
Cost of sales and services	36	1,882,251,511,450	1,446,649,069,758	1,112,048,521,085	799,776,150,087
<b>Gross profit</b>		<b>376,566,975,615</b>	<b>169,015,586,912</b>	<b>77,651,569,108</b>	<b>42,314,130,502</b>
Other income	35	28,940,025,225	18,312,507,759	44,837,577,011	52,168,389,506
Gain (loss) on derivatives		(31,958,111,626)	2,266,484,771	(9,391,598,643)	(4,728,645,277)
Gain (loss) on foreign exchange rates		(6,468,623,028)	9,269,532,113	861,405,493	6,090,908,810
<b>Profit before expenses</b>		<b>367,080,266,186</b>	<b>198,864,111,555</b>	<b>113,958,952,969</b>	<b>95,844,783,541</b>
Selling and distribution expenses	36	27,245,591,322	27,199,413,803	5,890,348,221	11,573,384,152
Administrative expenses	36	83,044,881,694	68,791,385,136	26,116,781,261	19,997,307,119
Petroleum royalties	37	17,978,441,667	13,398,302,136	-	-
<b>Operating profit</b>		<b>238,811,351,503</b>	<b>89,475,010,480</b>	<b>81,951,823,487</b>	<b>64,274,092,270</b>
Share of profit from investments in joint ventures and associates	14.6	9,010,122,588	4,177,723,193	-	-
<b>Profit before finance costs and income taxes</b>		<b>247,821,474,091</b>	<b>93,652,733,673</b>	<b>81,951,823,487</b>	<b>64,274,092,270</b>
Finance costs	38	28,163,289,021	28,536,472,808	6,312,810,166	5,940,725,903
<b>Profit before income taxes</b>		<b>219,658,185,070</b>	<b>65,116,260,865</b>	<b>75,639,013,321</b>	<b>58,333,366,367</b>
Income tax expenses	22.1	67,590,567,223	25,166,495,951	8,313,623,618	5,815,771,535
<b>Profit for the year</b>		<b>152,067,617,847</b>	<b>39,949,764,914</b>	<b>67,325,389,703</b>	<b>52,517,594,832</b>
<b>Profit attributable to</b>					
Equity holders of the Company		108,363,410,834	37,765,808,355	67,325,389,703	52,517,594,832
Non-controlling interests of the subsidiaries		43,704,207,013	2,183,956,559	-	-
		<b>152,067,617,847</b>	<b>39,949,764,914</b>	<b>67,325,389,703</b>	<b>52,517,594,832</b>
Basic earnings per share	33	3.79	1.32	2.36	1.84

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



## Statement of Comprehensive Income

PTT Public Company Limited and Its Subsidiaries  
For the year ended 31 December 2021

	Unit: Baht			
	Consolidated financial statements		Separate financial statements	
	2021	2020	2021	2020
Profit for the year	152,067,617,847	39,949,764,914	67,325,389,703	52,517,594,832
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	45,680,234,941	(828,450,479)	-	-
Loss on debt investments measured at fair value				
through other comprehensive income	(1,941,559)	(21,996,697)	-	-
Income taxes related to debt investments measured at fair value				
through other comprehensive income	388,312	4,399,340	-	-
Gain (loss) on cash flow hedges	951,280,778	(1,487,882,749)	-	-
Income taxes related to cash flow hedges	(221,989,129)	447,476,563	-	-
Share of other comprehensive income from joint ventures and associates	493,901,669	757,889,576	-	-
Other comprehensive income not to be reclassified to profit or loss in subsequent periods				
Gain (loss) on remeasurements of defined benefits plans	4,502,976,465	(629,884,463)	1,241,615,766	(33,471,884)
Income taxes related to remeasurements of defined benefits plans	(1,481,638,190)	115,578,152	(248,323,153)	6,694,377
Gain (loss) on equity investments designated at fair value				
through other comprehensive income	9,253,348,119	(2,906,540,700)	4,611,499,601	326,808,891
Income taxes related to equity investments designated at fair value				
through other comprehensive income	(2,579,072,039)	66,770,452	(922,299,920)	(65,361,778)
Share of other comprehensive income (loss) from joint ventures and associates	76,023,527	(225,870,914)	-	-
Other comprehensive income (loss) for the year, net of income taxes	56,673,512,894	(4,708,511,919)	4,682,492,294	234,669,606
<b>Total comprehensive income for the year</b>	<b>208,741,130,741</b>	<b>35,241,252,995</b>	<b>72,007,881,997</b>	<b>52,752,264,438</b>
<b>Total comprehensive income attributable to</b>				
Equity holders of the Company	147,818,264,820	34,485,354,315	72,007,881,997	52,752,264,438
Non-controlling interests of the subsidiaries	60,922,865,921	755,898,680	-	-
	<b>208,741,130,741</b>	<b>35,241,252,995</b>	<b>72,007,881,997</b>	<b>52,752,264,438</b>

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



# Statement of Changes in Shareholders' Equity

PTT Public Company Limited and Its Subsidiaries  
For the year ended 31 December 2021

013

Unit: Baht

Consolidated financial statements																
Equity attributable to owners of the Company																
Notes	Retained earnings						Other components of shareholders' equity						Total equity attributable to owners of the Company	Equity attributable to non-controlling interests of the subsidiaries	Total shareholders' equity	
	Issued and fully paid-up share capital	Share premium	Surplus (deficit) from the change in the ownership interests in subsidiaries	Appropriated		Unappropriated	Other comprehensive income (loss)			Share of other comprehensive income (loss) from joint ventures and associates	Put option over non-controlling interest of the subsidiary	Total other components of shareholders' equity				
				Legal reserve	Self-insurance fund reserve		Exchange differences on translation of financial statements in foreign currency	Investments in other long-term financial assets	Cash flow hedges							
<b>Balance as at 1 January 2020</b>	28,562,996,250	29,211,131,966	(36,250,864,803)	2,857,245,725	1,243,656,319	869,016,087,473	(18,399,093,432)	2,858,740,374	19,840,975	(515,631,390)	-	(16,036,143,473)	878,604,109,457	422,435,508,117	1,301,039,617,574	
Cumulative effects of changes in accounting policies	-	-	-	-	-	(494,598,557)	3,941,032	2,009,921,453	16,005,580	19,725,810	(622,712,347)	1,426,881,528	932,282,971	(662,088,051)	270,194,920	
<b>Balance as at 1 January 2020 - as restated</b>	28,562,996,250	29,211,131,966	(36,250,864,803)	2,857,245,725	1,243,656,319	868,521,488,916	(18,395,152,400)	4,868,661,827	35,846,555	(495,905,580)	(622,712,347)	(14,609,261,945)	879,536,392,428	421,773,420,066	1,301,309,812,494	
<b>Changes in shareholders' equity for the year</b>																
Reserve for self-insurance fund	32	-	-	-	21,553,564	(21,553,564)	-	-	-	-	-	-	-	-	-	
Redemption of subordinated capital debentures	-	-	-	-	-	298,248	-	-	-	-	-	-	298,248	(1,035,880,517)	(1,035,582,269)	
Interest expenses for subordinated capital debentures	-	-	-	-	-	(205,634,725)	-	-	-	-	-	-	(205,634,725)	(109,345,852)	(314,980,577)	
Income taxes for subordinated capital debentures	-	-	-	-	-	50,768,048	-	-	-	-	-	-	50,768,048	26,993,584	77,761,632	
Dividends paid	-	-	-	-	-	(36,559,715,727)	-	-	-	-	-	-	(36,559,715,727)	-	(36,559,715,727)	
Dividends paid of subsidiaries	-	-	-	-	-	-	-	-	-	-	-	-	-	(13,233,715,724)	(13,233,715,724)	
Change in the ownership interests in subsidiaries	-	-	4,732,939,244	-	-	-	-	-	-	-	-	-	4,732,939,244	(4,732,939,244)	-	
Increase in share capital of subsidiaries	-	-	-	-	-	-	-	-	-	-	-	-	360,261,263	-	360,261,263	
Profit for the year	-	-	-	-	-	37,765,808,355	-	-	-	-	-	-	37,765,808,355	2,183,956,559	39,949,764,914	
Other comprehensive income (loss) for the year	-	-	-	-	-	(291,192,728)	(535,707,402)	(2,304,171,589)	(657,396,109)	508,013,788	-	(2,989,261,312)	(3,280,454,040)	(1,428,057,879)	(4,708,511,919)	
<b>Balance as at 31 December 2020</b>	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	
<b>Balance as at 1 January 2021</b>	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	
<b>Changes in shareholders' equity for the year</b>																
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	41	-	-	-	-	(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	42	-	-	-	-	-	-	-	-	-	-	-	-	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	
<b>Balance as at 31 December 2021</b>	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	

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





# Statement of Changes in Shareholders' Equity (Continued)

PTT Public Company Limited and Its Subsidiaries  
For the year ended 31 December 2021

Unit: Baht

	Notes	Separate financial statements					Other components of shareholders' equity Other comprehensive income (loss)	Total shareholders' equity
		Issued and fully paid-up share capital	Share premium	Retained earnings				
				Legal reserve	Appropriated			
					Self-insurance fund reserve	Unappropriated		
Investments in other long-term financial assets								
<b>Balance as at 1 January 2020</b>		28,562,996,250	29,211,131,966	2,857,245,725	1,243,656,319	544,005,237,331	1,426,466,098	607,306,733,689
Cumulative effects of changes in accounting policies		-	-	-	-	(266,248,640)	(129,657,250)	(395,905,890)
<b>Balance as at 1 January 2020 - as restated</b>		28,562,996,250	29,211,131,966	2,857,245,725	1,243,656,319	543,738,988,691	1,296,808,848	606,910,827,799
<b>Changes in shareholders' equity for the year</b>								
Reserve for self-insurance fund	32	-	-	-	21,553,564	(21,553,564)	-	-
Dividends paid		-	-	-	-	(36,559,715,727)	-	(36,559,715,727)
Profit for the year		-	-	-	-	52,517,594,832	-	52,517,594,832
Other comprehensive income (loss) for the year		-	-	-	-	(47,664,931)	261,447,113	213,782,182
<b>Balance as at 31 December 2020</b>		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
<b>Balance as at 1 January 2021</b>		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
<b>Changes in shareholders' equity for the year</b>								
Reserve for self-insurance fund	32	-	-	-	7,515,076	(7,515,076)	-	-
Dividends paid	41	-	-	-	-	(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
<b>Balance as at 31 December 2021</b>		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

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



## Statement of Cash Flows

PTT Public Company Limited and Its Subsidiaries  
For the year ended 31 December 2021

Unit: Baht

	Consolidated financial statements		Separate financial statements	
	2021	2020	2021	2020
<b>Cash flows from operating activities</b>				
Profit before income taxes	219,658,185,070	65,116,260,865	75,639,013,321	58,333,366,367
Adjustment of profit before income taxes to net cash provided by (used in) operating activities				
Depreciation and amortization expenses	146,789,779,649	139,879,640,255	18,851,476,185	19,539,718,987
Loss on disposal of assets	121,501,954	318,043,573	133,747,744	38,883,912
(Gain) loss on disposal of investments	1,153,210,864	(1,955,924)	(5,449,431)	(5,743,225,761)
Gain on change in status of investments	(503,791,641)	-	-	-
Gain on bargain purchase	(10,693,778,833)	(125,055,903)	-	-
Loss on impairment of assets	13,287,037,570	11,907,832,508	5,196,577,196	80,941,293
Loss on impairment of investment	-	9,451,455	-	1,722,722,603
Share of profit from investments in joint ventures and associates	(9,010,122,588)	(4,177,723,193)	-	-
Provision for employee benefits	3,397,662,035	2,554,015,587	640,401,880	700,412,116
(Gain) loss on exchange rates	18,977,894,183	(3,682,982,828)	4,910,749,375	(587,655,688)
(Gain) loss on derivatives	(1,703,374,031)	3,605,656,120	1,917,252,104	1,531,877,016
Unrealized (gain) loss on fair value of commodity contracts	268,863,858	837,920,044	(71,232,282)	(39,138,489)
(Gain) loss on investments measured at fair value through profit and loss	(52,665,423)	156,283,646	(27,092,759)	36,956,665
(Reversal of) expected credit loss of accounts receivable	(1,603,917,634)	600,045,398	(1,535,879,765)	(54,546,505)
Write-off exploration assets	6,763,906,152	1,943,211,886	-	-
Reversal of allowance for changes in value of inventories	(163,398,479)	(468,652,569)	(279,849,140)	(39,170,319)
Allowance for obsolete supplies	1,437,607,156	610,670,210	-	1,230,564
Dividend income	(457,214,221)	(620,394,481)	(33,317,981,304)	(31,929,477,375)
Interest income	(2,522,340,731)	(3,933,495,774)	(1,918,737,537)	(2,158,499,945)
Finance costs	28,163,289,021	28,536,472,808	6,312,810,166	5,940,725,903
Others	31,235,162	223,810,952	(528,447,396)	(406,931,994)
Profit from operating activities before changes in operating assets and liabilities	413,339,569,093	243,289,054,635	75,917,358,357	46,968,189,350

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



## Statement of Cash Flows (Continued)

PTT Public Company Limited and Its Subsidiaries  
For the year ended 31 December 2021

	Unit: Baht			
	Consolidated financial statements		Separate financial statements	
	2021	2020	2021	2020
Operating assets (increase) decrease				
Trade accounts receivable	(75,984,989,496)	56,322,036,756	(40,212,760,523)	39,376,567,450
Other accounts receivable	(10,943,931,998)	1,059,837,344	(8,948,279,364)	(1,094,230,091)
Inventories and supplies	(64,612,359,820)	22,119,176,208	(5,534,515,843)	(1,855,733,866)
Other current assets	(5,505,461,479)	4,657,060,862	61,429,343	5,078,582,264
Other non-current assets	(1,805,890,515)	(2,257,228,437)	(52,157,202)	91,235,182
Operating liabilities increase (decrease)				
Trade accounts payable	93,815,413,427	(52,544,873,123)	36,408,146,544	(32,584,166,677)
Other accounts payable	35,448,496,439	(2,342,382,351)	13,978,060,691	(3,650,036,749)
Other current liabilities	12,691,006,641	1,234,683,541	1,918,980,962	(1,116,637,167)
Other non-current liabilities	(23,368,923,464)	(9,092,368,733)	(11,242,656,191)	(692,624,460)
	(40,266,640,265)	19,155,942,067	(13,623,751,583)	3,552,955,886
Cash received from operating activities	373,072,928,828	262,444,996,702	62,293,606,774	50,521,145,236
Income taxes paid	(50,648,238,002)	(43,853,246,803)	(7,291,861,572)	(6,204,047,973)
Net cash provided by operating activities	322,424,690,826	218,591,749,899	55,001,745,202	44,317,097,263

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



## Statement of Cash Flows (Continued)

PTT Public Company Limited and Its Subsidiaries  
For the year ended 31 December 2021

Unit: Baht

	Consolidated financial statements		Separate financial statements	
	2021	2020	2021	2020
<b>Cash flows from investing activities</b>				
Cash payment of property, plant and equipment and investment properties	(135,677,727,733)	(143,343,982,049)	(9,465,894,815)	(16,353,447,040)
Cash payment of intangible assets	(2,466,015,708)	(3,608,598,634)	(191,430,214)	(224,794,789)
Cash payment of exploration and evaluation assets	(4,200,411,986)	(2,929,002,435)	-	-
Cash payment of right-of-use assets	(280,659,789)	(457,407,279)	(162,618,109)	(4,924,450)
Cash payment for other long-term investments in financial assets	(12,242,805,276)	(7,292,636,207)	(5,655,242,632)	(3,792,175,260)
Net cash payment for business acquisition	(207,569,365,101)	(1,615,027,703)	-	-
Cash payment for contingent considerations from participating interest acquisition in a joint venture	(1,745,295,969)	-	-	-
Cash payment of investments in subsidiaries	-	-	(31,959,214,668)	(19,828,276,040)
Cash payment of investments in joint ventures and associates	(50,379,458,539)	(2,569,730,376)	(77,357,800)	(90,196,283)
Cash payment of long-term lending	(9,649,611,689)	(3,482,174)	(104,552,396,920)	(26,969,071,400)
Cash payment for derivatives	(31,367,419)	(773,688,042)	(31,367,419)	(773,688,042)
Cash proceeds from disposals of property, plant and equipment, intangible assets, investment properties and right-of-use assets	372,576,068	253,149,344	82,344,508	917,962,500
Cash proceeds from disposals of other long-term investments in financial assets	4,467,435,884	15,185,632,747	4,333,217,228	11,156,871,670
Cash proceeds from business restructuring	1,560,487,060	-	-	-
Net cash proceeds from asset acquisition	382,071,467	-	-	-
Cash proceeds from dissolution of subsidiaries	-	-	840,290,866	-
Cash proceeds from disposals of investments in subsidiaries	-	-	-	12,625,071,400
Cash proceeds from disposals and capital reduction of investments in joint ventures and investment in associates	1,774,029,229	1,182,300,735	-	1,170,000,000
Cash proceeds from long-term lending	1,221,506,628	2,274,758,685	32,262,469,379	17,932,543,664
Cash proceeds from derivatives	33,648,800	729,983,000	33,648,800	729,983,000
Cash proceeds from cancellation of leasehold in gas stations	-	1,719,000	-	-
Decrease (increase) in short-term lending	(12,383,522,502)	-	(1,553,322,309)	5,782,248,761
Decrease (increase) in short-term investments in financial assets	34,304,077,087	(53,764,919,905)	35,741,229,457	(35,848,776,053)
Interests received	2,008,250,705	2,864,805,266	2,080,352,721	2,039,148,552
Dividends received	5,193,924,046	5,282,514,141	34,840,385,881	31,892,263,820
<b>Net cash used in investing activities</b>	<b>(385,308,234,737)</b>	<b>(188,583,611,886)</b>	<b>(43,434,906,046)</b>	<b>(19,639,255,990)</b>

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



## Statement of Cash Flows (Continued)

PTT Public Company Limited and Its Subsidiaries  
For the year ended 31 December 2021

	Notes	Unit: Baht			
		Consolidated financial statements		Separate financial statements	
		2021	2020	2021	2020
<b>Cash flows from financing activities</b>					
Cash proceeds from issuance of ordinary shares of subsidiaries		53,800,032,347	267,651,233	-	-
Cash proceeds from resale of treasury shares of subsidiaries		1,353,929,175	-	-	-
Cash proceeds from long-term borrowings		207,295,898,664	210,692,854,323	52,952,841,110	57,023,727,626
Cash proceeds from derivatives		58,279,590	-	-	-
Cash repayment of long-term borrowings		(104,120,155,071)	(73,027,210,447)	(15,230,000,000)	(27,118,000,000)
Cash payment for lease installments		(9,416,014,865)	(8,371,814,946)	(564,220,898)	(718,285,162)
Cash payment for derivatives		(179,797,878)	(481,276,589)	(88,298,681)	(87,921,923)
Cash payment for redemption of subordinated capital debentures		-	(964,918,042)	-	-
Cash payment for change in ownership in subsidiaries		(28,512,000)	-	-	-
Increase (decrease) in short-term borrowings		108,734,800	(1,124,546,594)	4,656,307,640	(926,499,476)
Increase (decrease) in bank overdrafts and short-term loans from financial institutions		5,539,097,815	(40,368,107,350)	-	-
Finance costs paid		(29,752,338,860)	(26,938,729,848)	(6,174,811,647)	(5,853,526,617)
Dividends paid		(78,469,132,743)	(51,624,218,700)	(57,694,126,039)	(36,557,695,167)
Net cash provided by (used in) financing activities		46,190,020,974	8,059,683,040	(22,142,308,515)	(14,238,200,719)
Effects of exchange rates on cash and cash equivalents		2,737,215,434	1,432,810,672	86,975,199	(578,564,569)
Exchange differences on translation		(5,014,799,881)	105,035,582	-	-
Cash and cash equivalents classified as held for sale		(330,839,784)	(116,058,395)	-	-
Net increase (decrease) in cash and cash equivalents		(19,301,947,168)	39,489,608,912	(10,488,494,160)	9,861,075,985
Cash and cash equivalents at beginning of year		332,032,066,865	292,542,457,953	56,341,885,897	46,480,809,912
<b>Cash and cash equivalents at end of year</b>	4	<b>312,730,119,697</b>	<b>332,032,066,865</b>	<b>45,853,391,737</b>	<b>56,341,885,897</b>
<b>Non-cash items</b>					
Accounts payable from purchases of fixed assets		18,679,913,157	17,087,410,494	1,820,355,307	1,252,711,363
Accounts payable from purchases of intangible assets		365,171,767	419,054,049	141,989,236	71,341,605

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



## Notes to Financial Statements

PTT Public Company Limited and Its Subsidiaries  
For the year ended 31 December 2021

### 1. General information

#### 1.1 General information of the Company

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 39 Operating segments.

#### 1.2 Coronavirus disease 2019 pandemic

The Coronavirus disease 2019 pandemic is resulting in an economic slowdown and adversely impacting most businesses and industries. This situation may bring uncertainties and have an impact on the environment in which the Group operates. The Group's management has continuously monitored ongoing developments and assessed the financial impact in respect of the valuation of assets, provisions and contingent liabilities, and has used estimates and judgement in respect of various issues as the situation has evolved, using the best information obtained up to the date of this report.

### 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.

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

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.

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 period

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 2021. 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 consolidated financial statements and the separate financial statements.

### 3.2 Financial reporting standards that will become effective for fiscal years beginning on or after 1 January 2022

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 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, for some standards, providing temporary reliefs or temporary exemptions for users.

The management of the Group is currently evaluating the impact of these standards on the financial statements in the year when they are adopted.



### 3. Accounting policies (Continued)

#### 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.

##### 3.3.2 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 - 40 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 50 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 - 90 years
Buildings	2 - 99 years
Machinery and equipment	2 - 40 years
Motor vehicles	2 - 51 years
Others	2 - 12 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 2021 and 2020 are as follows:

Unit: Million Baht

	Consolidated financial statements		Separate financial statements	
	2021	2020	2021	2020
Cash	527	386	10	11
Bank deposits	276,085	220,563	45,841	48,591
Fixed deposits within 3 months	36,070	104,208	2	2,002
Treasury bills	-	1,132	-	-
Bonds	42	5,738	-	5,738
Other investments	6	5	-	-
<b>Total</b>	<b>312,730</b>	<b>332,032</b>	<b>45,853</b>	<b>56,342</b>

Bank deposits, fixed deposits within 3 months, treasury bills, bonds, and other investments, as at 31 December 2021 bear the interest at rates ranging from -0.60% - 14.93% per annum (31 December 2020: interest rates ranging from 0.00% - 7.50% per annum). As at 31 December 2021, cash and cash equivalents are comprised of financial instruments which are rated as investment grade level (31 December 2020: rated as investment grade level).

#### 5. Short-term investments in financial assets

Short-term investments in financial assets as at 31 December 2021 and 2020 are as follows:

Unit: Million Baht

	Consolidated financial statements		Separate financial statements	
	2021	2020	2021	2020
Fixed deposits	29,191	69,715	4,315	29,447
Promissory notes	114	-	-	-
Treasury bills	-	4,996	-	4,996
Bonds	2,114	9,961	1,218	9,961
Other investments	17,488	217	-	-
<b>Total</b>	<b>48,907</b>	<b>84,889</b>	<b>5,533</b>	<b>44,404</b>

Short-term investments in financial assets as at 31 December 2021 bear the interest at rates ranging from 0.15% - 5.52% per annum (31 December 2020: interest at rates ranging from 0.25% - 5.35% per annum). As at 31 December 2021, short-term investments in financial assets are comprised of financial instruments which are rated as investment grade level (31 December 2020: rated as investment grade level).

## 6. Trade accounts receivable

Trade accounts receivable as at 31 December 2021 and 2020 are as follows:

Unit: Million Baht

	Consolidated financial statements		Separate financial statements	
	2021	2020	2021	2020
Trade accounts receivable - unrelated parties	191,415	109,379	53,378	32,089
<u>Less</u> Allowance for expected credit loss	(2,482)	(3,891)	(303)	(1,833)
Trade accounts receivable - unrelated parties - net	188,933	105,488	53,075	30,256
Trade accounts receivable - related parties (Note 9.1)	7,310	5,040	60,833	41,964
Total	196,243	110,528	113,908	72,220

Classified by aging as at 31 December 2021 and 2020 are as follows:

Unit: Million Baht

	Consolidated financial statements		Separate financial statements	
	2021	2020	2021	2020
Within credit terms	191,033	108,407	112,118	71,993
Overdue				
- Within 1 month	4,515	1,380	1,776	42
- Over 1 - 2 months	299	391	38	210
- Over 2 - 3 months	78	81	13	1
- Over 3 - 12 months	234	1,298	1	12
- Over 12 months	2,566	2,862	265	1,795
	198,725	114,419	114,211	74,053
<u>Less</u> Allowance for expected credit loss	(2,482)	(3,891)	(303)	(1,833)
Total	196,243	110,528	113,908	72,220

Trade accounts receivable - unrelated parties as at 31 December 2021 include receivables from government agencies and state enterprises in the consolidated financial statements amounting to Baht 18,921 million (31 December 2020: Baht 12,378 million), and in the separate financial statements amounting to Baht 8,282 million (31 December 2020: Baht 6,464 million).

## 6. Trade accounts receivable (Continued)

Trade accounts receivable as at 31 December 2021 and 2020 are as follows: (Continued)

Movements in trade accounts receivable - allowance for expected credit loss for the year ended 31 December 2021 and 2020 are as follows:

Unit: Million Baht

	Consolidated financial statements		Separate financial statements	
	2021	2020	2021	2020
Balance as at 1 January	3,891	3,145	1,833	1,886
- Net increase (decrease)	(1,534)	728	(1,530)	(53)
- (Gain) loss on exchange rates	50	(24)	-	-
- Exchange differences on translation of financial statements	75	42	-	-
Balance as at 31 December	2,482	3,891	303	1,833

## 7. Other accounts receivable

Other accounts receivable as at 31 December 2021 and 2020 are as follows:

Unit: Million Baht

	Consolidated financial statements		Separate financial statements	
	2021	2020	2021	2020
Other accounts receivable	22,145	19,080	1,144	2,365
<u>Less</u> Allowance for expected credit loss	(527)	(554)	(425)	(432)
Other accounts receivable	21,618	18,526	719	1,933
Advance payments	7,103	5,179	515	144
Refund receivable from the Oil Stabilization Fund	31,220	21,285	17,205	7,775
Current withholding tax receivable	4,400	3,567	7	15
Other accounts receivable - unrelated parties - net	64,341	48,557	18,446	9,867
Other accounts receivable - related parties (Note 9.2)	373	1,813	1,958	1,307
Advance payments - related parties (Note 9.2)	20	1,329	10	338
Total	64,734	51,699	20,414	11,512

## 7. Other accounts receivable (Continued)

Other accounts receivable as at 31 December 2021 and 2020 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 2021 and 2020 are as follows:

Unit: Million Baht

	Consolidated financial statements		Separate financial statements	
	2021	2020	2021	2020
Current portion of finance lease receivable - unrelated parties	1,522	1,176	-	-
Current portion of finance lease receivable - related parties (Note 9.2)	5	5	-	-
Short-term lending - related parties (Note 9.2)	53	537	4,279	5,137
<b>Total</b>	<b>1,580</b>	<b>1,718</b>	<b>4,279</b>	<b>5,137</b>

### 8.2 Long-term lending as at 31 December 2021 and 2020 are as follows:

Unit: Million Baht

	Consolidated financial statements		Separate financial statements	
	2021	2020	2021	2020
Long-term finance lease receivable - unrelated parties	5,116	6,072	-	-
Long-term finance lease receivable - related parties (Note 9.3)	42	46	-	-
Long-term lending - unrelated parties	-	471	-	-
Long-term lending - related parties (Note 9.3)	3,466	3,043	119,596	44,663
<b>Total</b>	<b>8,624</b>	<b>9,632</b>	<b>119,596</b>	<b>44,663</b>

As at 31 December 2021, lendings are mostly comprised of financial instruments with high credit rating (31 December 2020: comprised of financial instruments with high credit rating).

## 8. Lending (Continued)

Lending as at 31 December 2021 and 2020 include finance lease receivables in the consolidated financial statements as follows:

Unit: Million Baht

	Consolidated financial statements	
	2021	2020
Due date		
- Within 1 year	2,206	2,031
- Over 1 but not over 5 years	5,747	7,073
- Over 5 years	373	859
	8,326	9,963
<u>Less</u> Deferred interest	(1,641)	(2,664)
Total	6,685	7,299

## 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 2021 and 2020

Unit: Million Baht

	Consolidated financial statements		Separate financial statements	
	2021	2020	2021	2020
Subsidiaries	-	-	57,495	39,609
Joint ventures	3,913	2,814	1,668	1,151
Associates	2,135	1,265	411	250
Other related parties	1,262	961	1,259	954
Total (Note 6)	7,310	5,040	60,833	41,964

## 9. Related party transactions (Continued)

## 9.1 Trade accounts receivable - related parties as at 31 December 2021 and 2020 (Continued)

Classified by aging as at 31 December 2021 and 2020 are as follows:

	Consolidated		Separate	
	financial statements		financial statements	
	2021	2020	2021	2020
Within credit terms	7,196	4,997	60,833	41,791
Overdue				
- Within 1 month	66	41	-	-
- Over 1 - 2 months	7	1	-	173
- Over 2 - 3 months	13	-	-	-
- Over 3 months	28	1	-	-
Total (Note 6)	7,310	5,040	60,833	41,964

## 9.2 Other accounts receivable, advance payments, current portion of finance lease receivable, and short-term lending - related parties as at 31 December 2021 and 2020

	Consolidated		Separate	
	financial statements		financial statements	
	2021	2020	2021	2020
<u>Other accounts receivable</u>				
Subsidiaries	-	-	1,901	1,225
Joint ventures	341	514	52	75
Associates	31	234	5	7
Other related parties	1	1,065	-	-
Total (Note 7)	373	1,813	1,958	1,307
<u>Advance payments</u>				
Subsidiaries	-	-	10	13
Joint ventures	20	5	-	-
Associates	-	2	-	-
Other related parties	-	1,322	-	325
Total (Note 7)	20	1,329	10	338

## 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 2021 and 2020 (Continued)

Unit: Million Baht

	Consolidated financial statements		Separate financial statements	
	2021	2020	2021	2020
<u>Current portion of finance lease receivable</u>				
Joint ventures (Note 8.1)	5	5	-	-
<u>Short-term lending</u>				
Subsidiaries	-	-	4,279	5,137
Joint ventures	53	537	-	-
Total (Note 8.1)	53	537	4,279	5,137

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

Unit: Million Baht

	Consolidated financial statements		Separate financial statements	
	2021	2020	2021	2020
Balance as at 1 January	-	-	324	5,913
- Loans granted	163	-	1,553	-
- Repayment receipt	(165)	-	-	(5,571)
- Gain (loss) on exchange rate	2	-	70	(18)
Balance as at 31 December	-	-	1,947	324
<u>Add</u> Current portion (Note 9.3)	53	537	2,332	4,813
Balance as at 31 December - net	53	537	4,279	5,137

Short-term lending - related parties as at 31 December 2021 in the separate financial statements bear interest rates ranging from 0.14% - 2.00% per annum (31 December 2020: interest rates at 0.18% per annum).



## 9. Related party transactions (Continued)

## 9.3 Long-term finance lease receivable and long-term lending - related parties as at 31 December 2021 and 2020

Unit: Million Baht

	Consolidated financial statements		Separate financial statements	
	2021	2020	2021	2020
<u>Long-term finance lease receivable</u>				
Joint ventures (Note 8.2)	42	46	-	-
<u>Long-term lending</u>				
Subsidiaries	-	-	119,596	44,663
Joint ventures	806	264	-	-
Associates	2,660	2,779	-	-
Total (Note 8.2)	3,466	3,043	119,596	44,663

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

Unit: Million Baht

	Consolidated financial statements		Separate financial statements	
	2021	2020	2021	2020
Balance as at 1 January	3,580	5,173	49,476	40,438
- Loans granted	567	3	104,552	26,969
- Repayment receipt	(721)	(1,595)	(32,262)	(17,932)
- Gain on exchange rates	79	-	162	1
- Exchange differences on translation of financial statements	14	(1)	-	-
Balance as at 31 December	3,519	3,580	121,928	49,476
<u>Less</u> Current portion (Note 9.2)	(53)	(537)	(2,332)	(4,813)
Balance as at 31 December - net	3,466	3,043	119,596	44,663

Long-term lending - related parties as at 31 December 2021 in the consolidated financial statements bear interest rates ranging from 1.43% - 5.31% per annum (31 December 2020: interest rates ranging from 1.52% - 6.25% per annum), and in the separate financial statements bear interest rates ranging from 1.42% - 4.43% per annum (31 December 2020: interest rates ranging from 1.81% - 4.43% per annum).

## 9. Related party transactions (Continued)

## 9.4 Trade accounts payable - related parties as at 31 December 2021 and 2020

Unit: Million Baht

	Consolidated financial statements		Separate financial statements	
	2021	2020	2021	2020
Subsidiaries	-	-	35,566	24,160
Joint ventures	959	797	274	237
Associates	194	187	-	-
Other related parties	-	4	-	-
Total (Note 24)	1,153	988	35,840	24,397

## 9.5 Other accounts payable, current portion of lease liabilities and short-term borrowings - related parties as at 31 December 2021 and 2020

Unit: Million Baht

	Consolidated financial statements		Separate financial statements	
	2021	2020	2021	2020
<u>Other accounts payable</u>				
Subsidiaries	-	-	7,314	7,162
Joint ventures	34	32	17	15
Associates	13	16	9	12
Other related parties	34	79	32	42
Total (Note 25)	81	127	7,372	7,231
<u>Current portion of lease liabilities</u>				
Subsidiaries	-	-	3	38
Joint ventures	431	1,145	431	383
Associates	2	2	-	-
Total	433	1,147	434	421

## 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 2021 and 2020 (Continued)

Unit: Million Baht

	Consolidated financial statements		Separate financial statements	
	2021	2020	2021	2020
<u>Short-term borrowings*</u>				
Subsidiaries (Note 27.1)	-	-	7,217	2,561

\* 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.

## 9.6 Lease liabilities and long-term borrowings - related parties as at 31 December 2021 and 2020

Unit: Million Baht

	Consolidated financial statements		Separate financial statements	
	2021	2020	2021	2020
<u>Lease liabilities</u>				
Subsidiaries	-	-	1	2
Joint ventures	2,702	3,860	2,696	2,812
Associates	12	7	-	-
Total	2,714	3,867	2,697	2,814
<u>Long-term borrowings</u>				
Subsidiaries	-	-	49,490	45,181

## 9. Related party transactions (Continued)

## 9.6 Lease liabilities and long-term borrowings - related parties as at 31 December 2021 and 2020 (Continued)

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

	Unit: Million Baht	
	Separate	
	financial statements	
	2021	2020
Balance as at 1 January	45,181	23,873
- Additional	-	22,059
- Amortized discount	6	-
- (Gain) loss on exchange rates	4,303	(751)
Balance as at 31 December	49,490	45,181
<u>Less</u> Current portion	-	-
Balance as at 31 December - net	49,490	45,181

Long-term borrowings - related parties as at 31 December 2021 in the separate financial statements bear interest rates ranging from 4.20% - 6.38% per annum (31 December 2020: interest rates ranging from 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 2021 and 2020

Unit: Million Baht

	Consolidated financial statements		Separate financial statements	
	2021	2020	2021	2020
Revenues				
<u>Sales and service income</u>				
Subsidiaries	-	-	677,680	441,846
Joint ventures	31,562	22,517	16,007	11,224
Associates	18,188	12,279	3,492	3,185
Other related parties	6,804	6,050	6,784	6,028
<u>Interest income</u>				
Subsidiaries	-	-	1,278	1,249
Joint ventures	20	71	-	-
Associates	141	149	-	-
<u>Dividend income</u>				
Subsidiaries	-	-	32,471	31,108
Joint ventures	-	-	669	675
Other related parties	248	522	-	132
<u>Other income</u>				
Subsidiaries	-	-	4,586	5,767
Joint ventures	358	316	72	71
Associates	209	188	23	19
Other related parties	125	756	37	60

## 9. Related party transactions (Continued)

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

For the years ended 31 December 2021 and 2020

Unit: Million Baht

	Consolidated financial statements		Separate financial statements	
	2021	2020	2021	2020
Expenses				
<u>Cost of goods purchased and services</u>				
Subsidiaries	-	-	317,815	225,815
Joint ventures	8,641	6,883	1,466	1,402
Associates	3,410	3,328	6	5
Other related parties	547	1,541	83	288
<u>Interest expenses</u>				
Subsidiaries	-	-	2,037	1,489
Joint ventures	69	158	43	48
<u>Other expenses</u>				
Subsidiaries	-	-	3,773	5,768
Joint ventures	23	2	-	-
Associates	59	109	5	48
Other related parties	143	369	29	89

## 9. Related party transactions (Continued)

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

For the years ended 31 December 2021 and 2020

Unit: Million Baht

	Consolidated financial statements		Separate financial statements	
	2021	2020	2021	2020
Purchasing				
Joint ventures	31	-	-	-
Selling				
Subsidiaries	-	-	71	884

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 45.1

## 9.10 Executive remunerations

Details of executive remunerations for the years ended 31 December 2021 and 2020 are as follows:

Unit: Million Baht

	Consolidated financial statements		Separate financial statements	
	2021	2020	2021	2020
<u>Directors remuneration</u>				
Meeting remuneration and bonuses	385	311	72	45
<u>Managements remuneration</u>				
Salaries, bonuses, and other employee benefits	1,191	1,139	105	111
Post-employment benefits	3	30	2	2
Total	1,579	1,480	179	158

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 2021 and 2020 are as follows:

Unit: Million Baht

	Consolidated		Separate	
	financial statements		financial statements	
	2021	2020	2021	2020
Oil products	103,165	64,464	8,698	3,834
Gas products	2,859	2,374	2,519	1,935
Petrochemicals products	58,155	23,879	829	828
Others	5,931	3,957	514	514
	170,110	94,674	12,560	7,111
<u>Less</u> Allowance for decline in value of inventories and obsolescence	(1,116)	(1,147)	(313)	(591)
Total	168,994	93,527	12,247	6,520

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 2021 in the consolidated financial statements amounting to Baht 22,359 million (31 December 2020: Baht 13,913 million), and in the separate financial statements amounting to Baht 944 million (31 December 2020: Baht 749 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 2021 in the consolidated financial statements amounting to Baht 8,693 million (31 December 2020: Baht 6,415 million) and in the separate financial statements amounting to Baht 8,199 million (31 December 2020: Baht 3,266 million).

## 11. Supplies

Supplies as at 31 December 2021 and 2020 are as follows:

Unit: Million Baht

	Consolidated		Separate	
	financial statements		financial statements	
	2021	2020	2021	2020
Spare parts, equipment and others	45,222	38,753	6,094	6,075
<u>Less</u> Allowance for obsolescence	(3,806)	(2,501)	(747)	(96)
Total	41,416	36,252	5,347	5,979



## 12. Assets held for sale

On 25 November 2020, the Board of Directors of Thai Oil Public Company Limited (“TOP”) approved the restructuring of TOP’s marine transport business. TOP would dispose of all of its directly held ordinary shares in Thairoil Marine Company Limited (“TM”) to another company. The Share Purchase Agreement was signed on 24 December 2020. The associated assets and liabilities were consequently presented as held for sale in the 2020 financial statements. On 30 April 2021, TOP completed the disposal of the shares in TM.

On 15 December 2021, the Board of Directors of Global Power Synergy Public Company Limited (“GPSC”) passed a resolution to approve the Share Purchase Agreement dated 7 February 2022 with CES Iwate Taiyoko Hatsudensho G.K. to sell 100% of the registered and paid-up capital of Ichinoseki Solar Power 1 GK (“ISP1”), a company investing in solar power plants. The transaction will be completed in the first quarter of 2022. The associated assets and liabilities were consequently presented as held for sale in GPSC’s 2021 financial statements.

The assets and liabilities which related to the discontinued operation and were reclassified as held for sale as at 31 December 2021 and 2020 are as follows:

	Unit: Million Baht	
	Consolidated	
	financial statements	
	2021	2020
Cash and cash equivalents	331	116
Trade accounts receivable	10	38
Other accounts receivable	13	25
Inventories	-	10
Other current assets	118	-
Investments in joint ventures (Note 14)	-	188
Investments in joint associates (Note 14)	-	6
Property, plant and equipment (Note 16)	1,621	2,362
Right-of-use assets (Note 17)	183	7
Goodwill (Note 18)	15	-
Other intangible assets (Note 19)	407	-
Deferred tax assets	-	1
Other non-current assets	13	10
Assets held for sale	2,711	2,763

## 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 2021 and 2020 are as follows: (Continued)

	Unit: Million Baht	
	Consolidated	
	financial statements	
	2021	2020
Short-term loans from financial institutions (Note 27)	-	165
Trade accounts payable	-	30
Other accounts payable	16	49
Current portion of long-term borrowings (Note 27)	119	150
Current portion of lease liabilities (Note 27)	10	7
Income tax payable	16	-
Other current liabilities	34	-
Long-term borrowings (Note 27)	1,605	1,145
Lease liabilities (Note 27)	177	8
Deferred tax liabilities	80	-
Provisions for employee benefits	-	22
Non-current derivative liabilities	29	-
Liabilities directly associated with the assets held for sale	<u>2,086</u>	<u>1,576</u>
Net assets classified as assets held for sale	<u>625</u>	<u>1,187</u>

The assets and liabilities of GPSC's solar power plant business unit were classified as held for sale in 2021 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 investment at fair value through profit or loss as at 31 December 2021 and 2020 :

Unit: Million Baht

	Consolidated financial statements				Separate financial statements			
	Other long-term investments in financial assets after changes in value of investments		Dividends income		Other long-term investments in financial assets after changes in value of investments		Dividends income	
	2021	2020	2021	2020	2021	2020	2021	2020
<b>Equity securities</b>								
Other Equity securities	191	-	-	-	-	-	-	-
<b>Debt securities</b>								
Foreign unit trust in mutual funds	247	114	-	-	-	-	-	-
Domestic unit trust in mutual funds	1,145	1,071	23	43	386	360	8	14
Other debt securities	33	30	-	-	-	-	-	-
<b>Total investment at fair value through profit or loss</b>	<b>1,616</b>	<b>1,215</b>	<b>23</b>	<b>43</b>	<b>386</b>	<b>360</b>	<b>8</b>	<b>14</b>

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

13.2 Details of investment at fair value through other comprehensive income as at 31 December 2021 and 2020 :

Unit: Million Baht

Company name	Country of Incorporation	Business	Consolidated financial statements					
			Ownership interest (%)		Other long-term investments in financial assets after changes		Dividends income	
			2021	2020	in value of investments		2021	2020
<b>Equity securities</b>								
<b>Mutual funds</b>								
Foreign unit trust in Corporate Venture Capital funds (CVC)			1.88 - 11.86	1.88 - 11.86	1,904	1,004	26	-
<b>Other equity securities</b>								
Dhipaya Insurance Public Co., Ltd. (TIP)	Thailand	Insurance	-	13.33	-	2,120	144	132
Dhipaya Group Holdings Public Co., Ltd. (TIPH)	Thailand	Insurance	13.46	-	6,140	-	-	-
Bangkok Aviation Fuel Services Public Co., Ltd. (BAFS)	Thailand	Aircraft refuelling services	7.06	7.06	1,148	1,071	-	46
Flash Incorporation Co., Ltd. (FLASH)	Thailand	Investing in other companies	-	9.58	-	1,245	-	-
Flash Partners Limited (FLASH PARTNERS)	Cayman Islands	Investing in other companies	8.88	-	2,594	-	-	-
24M Technologies, Inc. (24M)	United States of America	Research and development in battery	14.17	26.02	3,951	1,487	-	-
Ratchaburi Power Co., Ltd. (RPCL)	Thailand	Generate and supply electricity	15.00	15.00	1,229	1,173	248	390
Petronas LNG 9 Sdn. Bhd. (PL9SB)	Malaysia	LNG liquefaction	10.00	10.00	10,207	7,673	-	-

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

13.2 Details of investment at fair value through other comprehensive income as at 31 December 2021 and 2020 : (Continued)

Unit: Million Baht

Company name	Country of Incorporation	Business	Consolidated financial statements					
			Ownership interest (%)		Other long-term investments in financial assets after changes		Dividends income	
			in value of investments					
			2021	2020	2021	2020	2021	2020
<b>Other equity securities (Continued)</b>								
Ubon Bio Ethanol Public Co., Ltd. (UBE)	Thailand	Manufacturing and distributing of ethanol	12.40	-	1,087	-	-	-
Lotus Pharmaceutical Co., Ltd. (LOTUS)	Taiwan	Generic drug production and distribution	6.66	-	2,172	-	7	-
Others					4,926	2,714	5	6
<b>Debt securities</b>								
Domestic private debt securities					1,969	35	-	-
Total investment at fair value through other comprehensive income					37,327	18,522	430	574

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

13.2 Details of investment at fair value through other comprehensive income as at 31 December 2021 and 2020 : (Continued)

Unit: Million Baht

Company name	Country of Incorporation	Business	Separate financial statements					
			Ownership interest (%)		Other long-term investments in financial assets after changes in value of investments		Dividends income	
			2021	2020	2021	2020	2021	2020
<b>Equity securities</b>								
<i>Mutual funds</i>								
Foreign unit trust in Corporate Venture Capital funds (CVC)					1,873	1,004	26	-
<i>Other equity securities</i>								
Dhipaya Insurance Public Co., Ltd. (TIP)	Thailand	Insurance	-	13.33	-	2,120	144	132
Dhipaya Group Holdings Public Co., Ltd. (TIPH)	Thailand	Insurance	13.46	-	6,140	-	-	-
Others					754	205	-	-
Total investment at at fair value through other comprehensive income					8,767	3,329	170	132

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

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

## 13.3 Details of investment at amortized cost as at 31 December 2021 and 2020 :

Unit: Million Baht

	Consolidated financial statements		Separate financial statements	
	2021	2020	2021	2020
<b>Debt securities</b>				
Domestic and foreign private debt securities	7,521	3,318	7,521	3,318
Total investment at amortized cost	7,521	3,318	7,521	3,318

## 13.4 Movements in investment at fair value through profit or loss during the year ended 31 December 2021 and 2020 are as follows:

Unit: Million Baht

	Consolidated financial statements		Separate financial statements	
	2021	2020	2021	2020
Book value at the beginning of period	1,215	1,200	360	397
- Additional investments	93	53	-	-
- Business acquisition	191	-	-	-
- Fair value adjustment of investments	97	(79)	26	(37)
- Reclassifications	-	46	-	-
- Exchange differences on translation of financial statements	20	(5)	-	-
Total investment at fair value through profit or loss at 31 December	1,616	1,215	386	360

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

13.5 Movements in investment at fair value through other comprehensive income during the year ended 31 December 2021 and 2020 are as follows:

Unit: Million Baht

	Consolidated financial statements		Separate financial statements	
	2021	2020	2021	2020
Book value at the beginning of period	18,522	20,767	3,329	2,637
- Additional investments	8,785	2,003	1,138	386
- Disposals of investments	(1,595)	(1,447)	(312)	-
- Fair value adjustment of investments	9,352	(2,863)	4,612	306
- Reclassifications	1,164	(49)	-	-
- Exchange differences on translation of financial statements	1,099	111	-	-
Total investment at fair value through other comprehensive income at 31 December	37,327	18,522	8,767	3,329

13.6 Movements in investment at amortized cost during the year ended 31 December 2021 and 2020 are as follows:

Unit: Million Baht

	Consolidated financial statements		Separate financial statements	
	2021	2020	2021	2020
Book value at the beginning of period	3,318	4,651	3,318	4,202
- Additional investments	4,911	3,306	4,911	3,306
- Disposals of investments	-	(474)	-	-
- Unrealized gain (loss) on exchange rates	525	17	525	(8)
- Amortized premium	(15)	77	(15)	77
- Reclassifications	(1,218)	(4,259)	(1,218)	(4,259)
Total investment at amortized cost at 31 December	7,521	3,318	7,521	3,318



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

#### 13.7 Significant events during the year ended 31 December 2021

##### **Sunfolding**

On 15 March 2021, at the Management Committee Meeting of the Company No.10/2021, the Committee passed a resolution to approve additional investment in Series B Preferred Stock of Sunfolding Inc. (Sunfolding) amounting to USD 0.77 million, representing a 0.35% shareholding. The Company made payment for the shares on 29 April 2021.

##### **Baania**

On 25 May 2021, Baania (Thailand) Co.,Ltd. (Baania) announced an increase in share capital. The Company did not exercise its right to purchase the additional shares and the Company's shareholding, therefore, decreased from 2.89% to 2.73%.

##### **Luminar**

G2VP I Associates, LLC, the fund manager of G2VP I, sent out notices of payment of returns on investment in the form of a total of 179,423 shares of Luminar Technologies, Inc. (Luminar), with a combined value of USD 3.93 million. As a result, the Company's shareholding in Luminar is 0.07%.

##### **TIPH**

Dhipaya Group Holdings Public Co.,Ltd. (TIPH) submitted a tender offer for the securities of Dhipaya Insurance Public Co., Ltd. (TIP) to the existing shareholders, whereby they would be exchanged for shares of TIPH at a ratio of 1:1 between 24 June 2021 and 30 August 2021, in accordance with the restructuring of shareholding plan of TIPH. The Company, as holder of 80 million shares of TIP, accepted TIPH's tender offer for TIP's securities on 9 August 2021, in accordance with a resolution passed at Board of Directors Meeting No. 7/2020 on 3 July 2020. The Company has been listed as a registered shareholder of TIPH, holding 80 million shares, representing a 13.46% shareholding, since 31 August 2021.

##### **Ample**

On 27 July 2021, at the Management Committee Meeting of the Company No.27/2021, the Committee passed a resolution to approve an investment of USD 10 million in Series C Preferred Stock of Ample, Inc. (Ample), representing a 1.16% shareholding. The Company made payment for the shares on 24 August 2021.

On 10 November 2021, Ample announced an increase in share capital. The Company did not exercise its right to purchase the additional shares and the Company's shareholding in Ample, therefore, decreased from 1.16% to 1.13%.

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

#### 13.6 Significant events during the year ended 31 December 2021 (Continued)

##### **HG ROBOTICS**

On 5 July 2021, Management Committee Meeting of the Company No.24/2021 passed a resolution to approve an investment of Baht 18 million in convertible debentures of HG Robotics Co., Ltd. (HG Robotics), and to exercise its right to convert the debentures into Series B Preferred Stock upon the Conversion Event. The Company exercised this right on 23 November 2021, resulting in a change in the Company's shareholding in HG Robotics from 9.49% to 9.47%.

##### **InnoSpace**

On 30 August 2021, InnoSpace (Thailand) Co., Ltd. (InnoSpace) announced the third increase in its share capital. The Company did not exercise its right to purchase the additional shares and the Company's shareholding, therefore, decreased from 15.75% to 13.61%.

##### **Investment in Closed-end fund**

##### **NECO II**

On 15 July 2021, at the Board of Directors Meeting of the Company No.7/2021 passed a resolution to approve an investment in NIO Capital EVE ONE Fund II (NECO II). The fund manager of NECO II issued a letter dated 20 September 2021 calling for payment, amounting to USD 4 million. The Company made payment on 25 October 2021 and the Company's shareholding increased to 5.8% as a result.

## 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 (%)	
			2021	2020
<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 Semai II Limited (PTTEP SM)*	Cayman Islands	Petroleum	-	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	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 30 September 2021, PTTEP SM was approved for the dissolution.

\*\* On 30 June 2021, PTTEP FH has been in the process of dissolution. The dissolution will be effective when formally announced from the Hongkong Government.

## 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 (%)	
			2021	2020
<u>Subsidiaries of PTTEP Group:</u>				
(Continued)				
PTTEP South Sageri Limited (PTTEP SS)	Cayman Islands	Petroleum	100.00	100.00
PTTEP Sadang Limited (PTTEP SD)*	Cayman Islands	Petroleum	100.00	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 Mozambique Rovuma Onshore Limited (CEMROL)**	Cyprus	Petroleum	-	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 7 October 2021, PTTEP approved for the registration for the dissolution of PTTEP SD. It is currently in process of dissolution.

\*\* On 20 October 2021, CEMROL was approved for dissolution and completely liquidated.

## 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 (%)	
			2021	2020
<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
Partex Oil and Gas (Holdings) Corporation (POGHC)*	Cayman Islands	Petroleum	-	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	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	100.00

\* On 4 August 2021, POGHC was approved for dissolution and completely liquidated.

## 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 (%)	
			2021	2020
<u>Subsidiaries of PTTEP Group:</u>				
(Continued)				
Partex Brasil Ltda. (PBL)*	Brazil	Petroleum	-	100.00
Partex Brasil Operações Petrolíferas Ltda (PBO)*	Brazil	Human resource support	-	100.00
Asia Power and Transportation SG Holding Pte. Ltd. (APT)	Singapore	Petroleum related business	100.00	-
Cariva (Thailand) Company Limited (CARIVA)	Thailand	Technology	100.00	-
Delta Gas Transportation SG Holding Pte. Ltd. (DGTH)	Singapore	Gas pipeline service	100.00	-
Rovula (Thailand) Company Limited (ROVULA)	Thailand	Technology	100.00	-
Skyller Solutions Company Limited (SKYLLER)	Thailand	Technology	100.00	-
Varuna (Thailand) Company Limited (VARUNA)	Thailand	Technology	100.00	-
Delta Gas Transportation Limited (DGT)	Myanmar	Gas pipeline service	100.00	-
FutureTech Energy Ventures Company Limited (FEV)	Thailand	Renewable energy business and new related business	100.00	-
FutureTech Solar (Thailand) Company Limited (FST)	Thailand	Solar energy	100.00	-
<u>Subsidiary of PTTNGD Group:</u>				
Amata Natural Gas Distribution Co., Ltd. (AMATA NGD)	Thailand	Natural gas	80.00	80.00
<u>Subsidiary of PTTGL Group:</u>				
PTTGL Investment Limited (PTTGLI)	Hong Kong	Investing in LNG business	100.00	100.00
<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

\* On 30 July 2021, PEC and PBC was entered into Sale and Purchase Agreement (SPA) for sales of PBL and PBO shares, which registered in Brazil, to Ubuntu. The sales of shares was completed on 29 October 2021.

## 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 (%)	
			2021	2020
<u>Subsidiaries of GPSC Group: (Continued)</u>				
Ichinoseki Solar Power 1 GK (ICHINOSEKI)	Japan	Production and distribution of electricity	100.00	99.00
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

\* 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 (%)	
			2021	2020
<u>Subsidiaries of GPSC Group: (Continued)</u>				
Glow Energy Myanmar Company Limited (GEMM)	Myanmar	Technical consultants for electricity businesses	100.00	100.00
GPSC Treasury Center Company Limited (GPSCTC)	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	-
Global Renewable Synergy Company Limited Taiwan (GRSCTW)	Taiwan	Holding company	100.00	-
<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
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	65.00
Care For Car Co., Ltd. (CFC)	Thailand	Online car services	100.00	-
ORZON VENTURES, L.P. (ORZON)	United States of America	Private fund	99.00	-



## 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 (%)	
			2021	2020
<u>Subsidiaries of PTTT Group:</u>				
PTT International Trading DMCC (PTTT DMCC)*	United Arab Emirates	International oil trading	-	100.00
PTT MEA Ltd. (PTTMEA)	United Arab Emirates	Petroleum	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	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
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

\* Completely closed PTTT DMCC on 2 March 2021.

## 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 (%)	
			2021	2020
<u>Subsidiaries of PTTGC Group: (Continued)</u>				
GC Treasury Co., Ltd. (GTC)	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
NPC S&E Security Guard Co., Ltd. (NPCSG)	Thailand	Safety services	100.00	100.00
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

## 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 (%)	
			2021	2020
<u>Subsidiaries of PTTGC Group: (Continued)</u>				
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
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	-

## 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 (%)	
			2021	2020
<u>Subsidiaries of PTTGC Group:</u>				
(Continued)				
Allnex Holding GmbH (ALLNEX)	Germany	Manufacturing and sales of industrial coatings and additives	100.00	-
<u>Subsidiaries of TOP Group:</u>				
Thaioil Power Co., Ltd. (TP)* (The Group holds 100% shareholding)	Thailand	Power and steam generation and distribution	-	73.99
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 Marine Co., Ltd. (TM)**	Thailand	Providing marine transportation services for petroleum and liquid chemical products	-	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
TOP Solvent Co., Ltd. (TS)	Thailand	Distribution of solvent and chemical products	99.99	99.99
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

\* On 24 February 2021, at the General Meeting of shareholders of 2021 of TP passed a resolution of dissolution. TP has already registered for liquidation with DBD on 17 September 2021.

\*\* On 25 November 2020, the Board of Directors Meeting of TOP passed a resolution to restructure the logistics business, by selling all shares in TM. As a result TM and its subsidiaries ceased being subsidiaries of TOP 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 (%)	
			2021	2020
<u>Subsidiaries of TOP Group :</u>				
(Continued)				
Thaioil Marine International Pte. Ltd. (TOMI)	Singapore	Investment in marine transportation for crude oil and petroleum product business	100.00	100.00
TOP Maritime Service Co., Ltd. (TMS)*	Thailand	Providing marine transportation services for crew and utilities in Gulf of Thailand	-	99.99
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	67.00
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	-
TSCHEM India Private Limited (TSI)	India	Distribution of solvent and chemical products	99.99	-
JSKEM Private Limited (JSKEM)	Singapore	Distribution of solvent and chemical products	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 25 November 2020, the Board of Directors Meeting of TOP passed a resolution to restructure the logistics business, by selling all shares in TM. As a result TM and its subsidiaries ceased being subsidiaries of TOP 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 (%)	
			2021	2020
<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	-
<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 Sebuku (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)

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

Company name	Country of Incorporation	Business	Ownership interest (%)	
			2021	2020
<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	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)	Thailand	Holding company	100.00	100.00
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

## 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 (%)	
			2021	2020
<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 Technology Co., Ltd. (MEKHA)	Thailand	Public Cloud, Migration service and Maintenance	100.00	-
ARUN PLUS Co., Ltd. (ARUNPLUS)	Thailand	Stations and chargers for electric vehicles.	100.00	-
Sheng Yang Energy Co., Ltd. (SYE)	Taiwan	Solar power plant	90.00	-
EVME PLUS CO., LTD (EVME)	Thailand	Dealer, rent and sell electric vehicles	100.00	-
REACC Co., Ltd. (REACC)	Thailand	Clean energy and climate neutrality services	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	-
Chaibadan Community Power Plant 2 Co., Ltd. (CCPP2)*	Thailand	Community power plant	100.00	-

\* Held by GPSC group and TOP 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 (%)	
			2021	2020
<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	25.50	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
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	-

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 2021 and 2020

Unit: Million Baht

Company name	Country of Incorporation	Business	Consolidated financial statements							
			Ownership interest (%)		Cost method		Equity method		Dividends income	
			2021	2020	2021	2020	2021	2020	2021	2020
<b>Joint Ventures</b>										
<i>The Company</i>										
Trans Thai-Malaysia (Thailand) Co., Ltd. (TTM(T))	Thailand	Natural gas	50.00	50.00	3,172	3,172	3,656	3,051	355	269
Trans Thai-Malaysia (Malaysia) Sdn. Bhd. (TTM(M))	Malaysia	Natural gas	50.00	50.00	1,001	1,001	948	938	174	289
District Cooling System and Power Plant Co., Ltd. (DCAP)	Thailand	Generation and supply of electricity and chilled water	35.00	35.00	585	585	920	931	140	117
Suez Environmental Services Co., Ltd. (SES)	Thailand	Hazardous waste management plant	40.00	40.00	23	7	10	7	-	-
<i>PTTEP Group</i>										
Erawan 2 FSO Bahamas Limited (Erawan 2)	Bahamas	FSO rental services	13.11	13.11	508	457	1,238	1,236	172	119
APICO LLC (APICOLLC)	United States of America	Petroleum	72.82	72.82	4,463	4,011	4,125	3,863	476	205
Oman LNG LLC (OLNG)	Oman	Petroleum	2.00	2.00	2,772	2,492	1,590	1,905	534	425
ATI Technologies Co., Ltd. (ATI)	Thailand	Technology	50.00	50.00	11	6	6	6	-	-
Zeaquest Co., Ltd. (ZEAQUEST)	Thailand	Technology	50.00	50.00	86	1	59	-	-	-
AeroSky (Thailand) Company Limited (AEROSKY)	Thailand	Technology	33.00	-	10	-	9	-	-	-
<i>GPSC Group</i>										
Thai Solar Renewable Co., Ltd. (TSR)	Thailand	Invest in other company	40.00	40.00	1,697	1,697	1,529	1,584	391	327
Nam Lik 1 Power Co., Ltd. (NL1PC)	Laos	Generate and supply electricity	40.00	40.00	494	494	759	619	-	-
Nava Nakom Electricity Generating Co., Ltd. (NNEG)	Thailand	Generate and supply electricity	30.00	30.00	624	623	788	711	39	-

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 2021 and 2020 (Continued)

Unit: Million Baht

Company name	Country of Incorporation	Business	Consolidated financial statements							
			Ownership interest (%)		Cost method		Equity method		Dividends income	
			2021	2020	2021	2020	2021	2020	2021	2020
<b>Joint Ventures (Continued)</b>										
<i>PTTGC Group</i>										
Thai Ethoxylate Co., Ltd. (TEX)	Thailand	Manufacturing and distributing of petrochemical products	50.00	50.00	210	210	647	602	91	67
Emery Oleochemicals (M) Sdn. Bhd. (EOM)	Malaysia	Manufacturing and distributing of biochemical products	-	50.00	-	4,966	-	4,398	-	-
Emery Specialty Chemicals Sdn. Bhd. (ESC)	Malaysia	Manufacturing and distributing of chemical specialties	-	50.00	-	407	-	-	-	-
NatureWorks LLC (NTR)	United States of America	Manufacturing and distributing of bioplastic products	50.00	50.00	4,793	4,793	4,025	3,033	-	1,245
PTT MCC Biochem Co., Ltd. (PTTMCC)	Thailand	Petrochemicals	50.00	50.00	930	930	251	168	-	-
PTT Asahi Chemicals Co., Ltd. (PTTAC)	Thailand	Petrochemicals	50.00	50.00	6,909	6,909	11,802	10,449	-	-
HMC Polymers Co., Ltd. (HMC)	Thailand	Petrochemicals	41.44	41.44	9,117	9,117	13,001	12,625	828	289
GGC KTIS Bioindustrial Company Limited (GKBI)	Thailand	Manufacturing and distributing of biofuel	50.00	50.00	1,309	1,046	1,232	1,021	-	-
Revolve Group Limited (RGL)	England	Manufacturing and distributing of chemical	49.00	49.00	270	270	273	250	-	-
Emery Oleochemicals UK Ltd. (EOMUK)	England	Manufacturing and distributing of biochemical	50.00	-	2,141	-	2,385	-	-	-
ENTIS Co., LTd. (ENTIS)	South Korea	Chemical	50.00	-	203	-	203	-	-	-
Synthese (Thailand) Co., Ltd. ((SYNTHESE))	Thailand	Chemical	47.50	-	519	-	519	-	-	-
<i>TOP Group</i>										
TOP-NTL Pte. Ltd. (TOP-NTL)	Singapore	Fund management services	-	50.00	-	-	-	-	-	-
TOP-NTL Shipping Trust (TOP-NTL(BT))	Singapore	Investing in other companies	-	50.00	-	24	-	-	-	-
TOP-NYK MarineOne Pte. Ltd. (TOP-NYK)	Singapore	Marine transportation services	-	50.00	-	274	-	-	-	212
TOP Nautical Star Co., Ltd. (TOP-NS)	Thailand	Storage and marine transportation services	-	35.00	-	53	-	-	-	26

#### 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 2021 and 2020 (Continued)

Unit: Million Baht

Company name	Country of Incorporation	Business	Consolidated financial statements							
			Ownership interest (%)		Cost method		Equity method		Dividends income	
			2021	2020	2021	2020	2021	2020	2021	2020
<b>Joint Ventures</b> (Continued)										
<i>IRPC Group</i>										
IRPC Polyol Co., Ltd. (IRPCP)	Thailand	Manufacturing and sales of chemical products for polyurethanes	50.00	50.00	185	185	64	25	-	-
WHA Industrial Estate Rayong Co., Ltd. (WHA IER)	Thailand	Industrial estate development	40.00	40.00	272	266	264	260	-	-
Mytex Polymer (Thailand) (MYTEX)	Thailand	Petrochemicals	50.00	50.00	350	350	352	327	5	24
Vajira Lab for Society Co., Ltd. (VLS)	Thailand	Analysis and certify medical equipments services	50.00	-	11	-	11	-	-	-
<i>PTTGM Group</i>										
OGP Energy Solutions Company Limited (OGPS)	Thailand	Energy management and energy-related services	40.00	40.00	62	55	36	39	-	-
FEE (Bru) Pte. Ltd. (FEEBRU)	Singapore	Coal mines	35.00	35.00	220	197	138	124	-	-
PTT RAISE Co., Ltd. (PTTRAISE)	Thailand	Robotics and AI engineering	50.00	50.00	26	23	21	23	-	-
PTT and TGES Optec Company Limited (OPTEC)	Thailand	One-stop Total Improving Efficiency Technology Solutions	51.00	-	31	-	30	-	-	-
Nutra Regenerative Protein co.,Ltd (NRPT)	Thailand	Production and distribution of alternative protein	50.00	-	38	-	37	-	-	-
<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	54	49	48	38	-	-
Brighter Energy Company Limited (BE)	Myanmar	Warehousing and distribution of petroleum	35.00	35.00	947	672	900	667	-	-
ORC Coffee Passion Group Joint Stock Company (ORCG)	Vietnam	Food and drinks retail	60.00	60.00	140	45	113	37	-	-
Orbit Digital Company Limited (ORBIT)	Thailand	IT and computer services	40.00	-	10	-	12	-	-	-
Global Aero Associates Company Limited (GAA)	Thailand	Jet fuel service within the U-Tapao airport	45.00	-	225	-	220	-	-	-

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 2021 and 2020 (Continued)

Unit: Million Baht

Company name	Country of Incorporation	Business	Consolidated financial statements							
			Ownership interest (%)		Cost method		Equity method		Dividends income	
			2021	2020	2021	2020	2021	2020	2021	2020
<b>Joint Ventures</b> (Continued)										
<i>PTTGL Group</i>										
B.GRIMM POWER LNG JV LIMITED (BGPLNGJV)	Thailand	LNG	50.00	-	6	-	6	-	-	-
<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	117	191	119	-	-
					44,603	45,504	52,418	49,056		
<u>Less Allowance for impairment</u>					(370)	(197)	(138)	(124)		
<b>Total</b>					<b>44,233</b>	<b>45,307</b>	<b>52,280</b>	<b>48,932</b>	<b>3,205</b>	<b>3,614</b>

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 2021 and 2020

Unit: Million Baht

Company name	Country of Incorporation	Business	Consolidated financial statements							
			Ownership interest		Cost method		Equity method		Dividends income	
			(%)		2021	2020	2021	2020	2021	2020
<b>Associates</b>										
<i>PTTEP Group</i>										
PTTEP AP Group's associates*	Australia	Airbase services	50.00	50.00	50	45	185	149	24	-
Leismer Aerodrome Limited (LAL)	Canada	Air transportation	32.00	32.00	146	130	123	111	-	-
Moz LNG1 Holding Company Ltd. (HOLDCO)	United Arab Emirates	Petroleum	8.50	8.50	419	9	425	-	-	-
<i>GPSC Group</i>										
Bangpa-in Cogeneration Co., Ltd. (BIC)	Thailand	Generate and supply electricity	25.00	25.00	924	924	846	872	149	142
Xayaburi Power Co., Ltd. (XPCL)	Laos	Generate and supply electricity	25.00	25.00	6,994	6,994	7,254	7,014	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	372	365	21	7
Avaada Energy Private Limited (AVAADA)	India	Renewable energy	41.62	-	14,985	-	15,049	-	-	-
<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	9	9	-	-
Pluk Phak Praw Rak Mae Company Limited (OKJ)	Thailand	Food and beverage	20.00	-	497	-	497	-	-	-
Imsub Global Cuisine Co., Ltd. (ISGC)	Thailand	Food and beverage	25.00	-	191	-	192	-	-	-
<i>PTTGC Group</i>										
Vinythai Plc. (VNT)**	Thailand	Petrochemicals	24.98	24.98	3,297	3,297	7,260	5,761	266	415
Thai Eastern Topseeds Oil Co., Ltd. (TETSO)	Thailand	Petrochemicals	30.00	30.00	67	67	-	9	-	-
S.P. Petpack Inter Group Co., Ltd. (SPPETPACK)	Thailand	Petrochemicals	25.00	25.00	50	50	39	40	-	-

\* Associates of PTTEP AP Group consist of Mungalalu Truscott Airbase Pty Ltd. and Troughton Island Pty Ltd.

\*\* Fair value of investment in VNT as at 31 December 2021 and 2020 are Baht 11,397 million and Baht 9,473 million, respectively.

#### 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 2021 and 2020 (Continued)

Unit: Million Baht

Company name	Country of Incorporation	Business	Consolidated financial statements							
			Ownership interest (%)		Cost method		Equity method		Dividends income	
			2021	2020	2021	2020	2021	2020	2021	2020
<b>Associates</b> (Continued)										
<i>PTTGC Group</i> (Continued)										
Kuraray GC Advanced Materials Co., Ltd. (KGC)	Thailand	Manufacturing of chemical specialties	33.40	33.40	1,777	1,404	1,714	1,336	-	-
Dynachisso Thai Co., Ltd. (DYCT)	Thailand	PP Compound Manufacturer	41.50	41.50	294	294	282	284	5	-
<i>TOP Group</i>										
T.I.M Ship Management Co., Ltd. (TIM)	Thailand	Marine transportation services	-	33.33	-	1	-	-	-	-
Ubon Bio Ethanol Co., Ltd. (UBE)*	Thailand	Manufacturing and distributing of ethanol	-	24.28	-	770	-	827	79	2
PT Chandra Asri Petrochemical Tbk (CAP)	Indonesia	Production and distribution of chemicals	15.00	-	29,920	-	30,536	-	-	-
<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	4,870	4,708	-	-
<i>PTTER Group</i>										
East Mediterranean Gas Company S.A.E. (EMG)	Egypt	Natural gas transmission pipelines	-	25.00	-	14,685	-	11,819	-	-
<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	262	1,054	264	-	-
GPC International Terminal Company Limited (GPC)	Thailand	Container Port	30.00	-	1,200	-	1,200	-	-	-

\* 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.

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 2021 and 2020 (Continued)

Unit: Million Baht

Company name	Country of Incorporation	Business	Consolidated financial statements							
			Ownership interest (%)		Cost method		Equity method		Dividends income	
			2021	2020	2021	2020	2021	2020	2021	2020
<b>Associates</b> (Continued)										
<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	4,894	4,997	645	850
Eastern Fluid Transport Co., Ltd. (EFT) (PTTGC Group holds 22.65% shareholding)	Thailand	Infrastructure	37.65	37.65	2	2	5	11	20	15
					71,740	38,811	76,807	38,577		
					(327)	(14,816)	(308)	(11,828)		
<u>Less</u> Allowance for impairment										
Total					71,413	23,995	76,499	26,749	1,384	1,431



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 2021 and 2020

Unit: Million Baht

Company name	Country of Incorporation	Business	Separate financial statements					
			Ownership interest (%)		Cost method		Dividends income	
			2021	2020	2021	2020	2021	2020
<b>Subsidiaries</b>								
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	12,029	13,444
PTT LNG Co., Ltd. (PTTLNG)	Thailand	Natural gas	100.00	100.00	26,714	24,425	1,650	3,109
PTT Natural Gas Distribution Co., Ltd. (PTTNGD)	Thailand	Natural gas	58.00	58.00	418	418	551	-
PTT Global LNG Co., Ltd. (PTTGL) (The Group holds 100% shareholding)	Thailand	Investing in LNG business	50.00	50.00	5,211	5,211	-	-
Energy Complex Co., Ltd. (EnCo) (The Group holds 100% shareholding)	Thailand	Real estate development for rent	50.00	50.00	900	900	69	71
PTT Energy Solutions Co., Ltd. (PTTES) (The Group holds 100% shareholding)	Thailand	Technical and operational services	40.00	40.00	63	63	-	-
Global Power Synergy Public Co., Ltd. (GPSC) (The Group holds 75.23% shareholding)	Thailand	Generation and supply of electricity, steam and water for industries	42.53	31.72	60,131	38,781	1,494	836
PTT Oil and Retail Business Public Co., Ltd. (OR)	Thailand	Management services and oil marketing	75.00	100.00	90,000	90,000	3,330	9,450
PTT Tank Terminal Co., Ltd. (PTT TANK)	Thailand	Terminal and warehouse	100.00	100.00	3,888	2,500	90	101
PTT International Trading Pte. Ltd. (PTTT)	Singapore	International trading	100.00	100.00	3	3	102	53
PTT International Trading London Limited (PTTT LDN)	England	International trading	100.00	100.00	348	348	35	33
PTT Global Chemical Public Co., Ltd. (PTTGC) (The Group holds 48.18% shareholding)	Thailand	Petrochemicals and refining	45.18	45.41	44,473	44,473	6,112	2,150

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 2021 and 2020 (Continued)

Unit: Million Baht

Company name	Country of Incorporation	Business	Separate financial statements					
			Ownership interest (%)		Cost method		Dividends income	
			2021	2020	2021	2020	2021	2020
<b>Subsidiaries</b> (Continued)								
Thai Oil Public Co., Ltd. (TOP) (The Group holds 48.03% shareholding)	Thailand	Oil refining	45.03	45.03	10,437	10,437	1,194	480
IRPC Public Co., Ltd. (IRPC) (The Group holds 48.05% shareholding)	Thailand	Petrochemicals and refining	45.05	45.05	39,696	39,696	1,289	972
Thai Oil Power Co., Ltd. (TP) (The Group holds 100% shareholding)	Thailand	Generation and supply of electricity and steam	-	26.00	-	2,305	4,430	314
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	62,275	55,343	-	-
PTT Green Energy Pte. Ltd. (PTTGE)	Singapore	Investing in palm oil business	100.00	100.00	12,403	12,403	-	-
PTT Regional Treasury Center Pte. Ltd. (PTTRTC)	Singapore	Treasury services	-	100.00	-	31	-	16
PTT Treasury Center Co., Ltd. (PTT TCC)	Thailand	Treasury services	100.00	100.00	20	20	-	-
Business Services Alliance Co., Ltd. (BSA)	Thailand	Management services	100.00	100.00	1	1	70	60
PTT Digital Solutions Co., Ltd. (PTT DIGITAL) (The Group holds 100% shareholding)	Thailand	Information technology and communication services	20.00	20.00	30	30	26	19
PTT International Trading USA Inc. (PTTT USA)	United States of America	International trading	100.00	100.00	155	155	-	-
					460,620	430,997		
					(84,560)	(84,560)		
<b>Less</b> Allowance for impairment								
<b>Total</b>					<b>376,060</b>	<b>346,437</b>	<b>32,471</b>	<b>31,108</b>

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 2021 and 2020

Unit: Million Baht

Company name	Country of Incorporation	Business	Separate financial statements					
			Ownership interest (%)		Cost method		Dividends income	
			2021	2020	2021	2020	2021	2020
<b>Joint Ventures</b>								
Trans Thai-Malaysia (Thailand) Co., Ltd. (TTM(T))	Thailand	Natural gas	50.00	50.00	3,172	3,172	355	269
Trans Thai-Malaysia (Malaysia) Sdn. Bhd. (TTM(M))	Malaysia	Natural gas	50.00	50.00	1,001	1,001	174	289
District Cooling System and Power Plant Co., Ltd. (DCAP)	Thailand	Generation and supply of electricity and chilled water	35.00	35.00	585	585	140	117
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	117	-	-
Suez Environmental Services Co., Ltd. (SES)	Thailand	Hazardous waste management plant	40.00	40.00	23	7	-	-
Total					4,960	4,882	669	675

## 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	
	2021	2020
Book value at the beginning of period	48,932	49,405
- Share of profit from investments in joint ventures	5,804	2,706
- Dividend income	(3,205)	(3,613)
- Business acquisitions (Note 42)	723	-
- Additional investments	3,190	1,546
- Disposal and capital reduction of investments	(4,760)	(1,454)
- Reclassified as assets held for sale	-	(188)
- Share of other comprehensive income of joint ventures	949	548
- Exchange differences on translation of financial statements	647	(18)
As at 31 December	<u>52,280</u>	<u>48,932</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	
	2021	2020
As at 1 January	26,749	25,670
- Share of profit from investments in associates	3,207	1,471
- Dividend income	(1,384)	(1,431)
- Additional investments	48,345	1,027
- Reclassifications	(661)	9
- Disposal of investments	(133)	-
- Loss on impairment	-	(9)
- Reclassified as assets held for sale	-	(6)
- Share of other comprehensive income (loss) of associates	(377)	17
- Exchange differences on translation of financial statements	753	1
As at 31 December	<u>76,499</u>	<u>26,749</u>

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

	Unit: Million Baht	
	2021	2020
As at 1 January	351,319	341,175
- Additional investments	32,037	19,919
- Disposal and capital reduction of investments	(2,336)	(8,052)
- Loss on impairment	-	(1,723)
As at 31 December	<u>381,020</u>	<u>351,319</u>

## 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 2021 and 2020

	2021						2020					
	TTM(T)	TTM(M)	DCAP	PTTAC	HMC		TTM(T)	TTM(M)	DCAP	PTTAC	HMC	
Current assets	5,049	2,344	1,297	7,419	9,529		3,500	2,296	1,257	3,407	7,605	
Non-current assets	8,588	2,655	2,602	23,942	29,785		9,721	3,061	2,582	24,904	29,090	
Current liabilities	(1,545)	(894)	(492)	(2,730)	(5,912)		(1,452)	(909)	(520)	(1,793)	(2,463)	
Non-current liabilities	(4,781)	(2,209)	(780)	(5,028)	(9,922)		(5,667)	(2,572)	(659)	(5,619)	(11,109)	
Net assets (100%)	7,311	1,896	2,627	23,603	23,480		6,102	1,876	2,660	20,899	23,123	
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	3,656	948	920	11,802	9,730		3,051	938	931	10,450	9,582	
Adjustment	-	-	-	-	3,271		-	-	-	-	3,043	
Carrying amount of interest in joint ventures	3,656	948	920	11,802	13,001		3,051	938	931	10,450	12,625	

Unit: Million Baht

## 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 2021 and 2020

	2021					2020				
	TTM(T)	TTM(M)	DCAP	PTTAC	HMC	TTM(T)	TTM(M)	DCAP	PTTAC	HMC
Revenue*	3,461	584	3,116	15,937	31,874	2,372	530	2,655	8,588	25,188
Expenses	(1,739)	(330)	(2,677)	(13,218)	(28,433)	(1,724)	(268)	(2,432)	(9,435)	(24,305)
Profit (loss) before taxes	1,722	254	439	2,719	3,441	648	262	223	(847)	883
Income taxes	(545)	(96)	(72)	(14)	(541)	(257)	-	(45)	4	(180)
Net profit (loss)	1,177	158	367	2,705	2,900	391	262	178	(843)	703
Other comprehensive income (loss)	371	105	-	-	(27)	273	1	-	(7)	285
Total comprehensive income (loss)	1,548	263	367	2,705	2,873	664	263	178	(850)	988

Unit: Million Baht

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	589	79	128	1,353	1,202	196	131	62	(422)	291
Share of other comprehensive income (loss) from investments in joint ventures during the year	186	53	-	-	(11)	137	1	-	(4)	118

\* Including gain (loss) on foreign exchange rate

## 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 2021 and 2020

	2021				2020			
	AVAADA	CAP	THAPPLINE	XPCL	UCHA	THAPPLINE	XPCL	UCHA
Current assets	10,665	98,789	7,585	5,510	8,403	4,133	5,410	5,684
Non-current assets	38,100	67,979	16,197	128,970	6,891	8,090	126,055	7,878
Current liabilities	(5,708)	(31,017)	(1,068)	(5,064)	(1,671)	(507)	(3,704)	(757)
Non-current liabilities	(28,186)	(38,132)	(2,330)	(100,538)	(233)	(1,318)	(99,846)	(216)
Net assets (100%)	14,871	97,619	20,384	28,878	13,390	10,398	27,915	12,589
Shareholding (%)	41.62	15.00	49.21	25.00	25.00	49.21	25.00	25.00
The Group's share of net assets	6,189	14,643	10,031	7,220	3,348	5,117	6,979	3,147
Adjustment	8,860	15,893	(5,137)	34	1,522	(120)	35	1,561
Carrying amount of interest in associates	15,049	30,536	4,894	7,254	4,870	4,997	7,014	4,708

Unit: Million Baht



## 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 2021 and 2020

	2021				2020			
	AVAADA	CAP	THAPPLINE	XPCL	UCHA	THAPPLINE	XPCL	UCHA
Revenue*	2,420	82,663	5,180	13,975	14,066	2,963	12,080	8,517
Expenses	(4,368)	(76,474)	(2,440)	(10,192)	(12,917)	(1,247)	(5,156)	(9,367)
Profit (loss) before taxes	(1,948)	6,189	2,740	3,783	1,149	1,716	6,924	(850)
Income taxes	(113)	(1,540)	(547)	-	(342)	(344)	(5,956)	136
Net profit (loss)	(2,061)	4,649	2,193	3,783	807	1,372	968	(714)
Other comprehensive income (loss)	121	(13)	-	(528)	-	-	44	9
Total comprehensive income (loss)	(1,940)	4,636	2,193	3,255	807	1,372	1,012	(705)

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	(858)	697	1,079	946	202	675	242	(179)
Share of other comprehensive income (loss) from investments in associates during the year	50	(2)	-	(132)	-	-	11	2

\* Including gain (loss) on foreign exchange rate

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

### 14.9 Significant events during the year ended 31 December 2021

#### PTTRTC

PTT Regional Treasury Center PTE. LTD. (PTTRTC) has processed with the closure of its business, in accordance with a resolution passed at Board of Directors Meeting No. 5/2019 on 16 May 2019. PTTRTC appointed and authorised a liquidator to carry out liquidation on 20 May 2020. The liquidator has already completed payment of taxes and expenses related to the company's closure returned investment of USD 1.1 million shares to the Company on 24 May 2021.

#### PTTGM

During the year ended 31 December 2021, 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 6,932 million.

#### OR

On 11 February 2021, PTT Oil and Retail Business Public Company Limited (OR) made an Initial Public Offering (IPO) of a total of 3,000 million shares at a price of Baht 18 per share, consisting of (1) an offering of 2,610 million newly-issued ordinary shares through an IPO and (2) allocation of the 390 million shares over-allotment shares that the Over-allotment Agent borrowed from the Company in order to conduct any stabilization activity, totaling Baht 53,497 million (net of relevant costs of issuing the shares). On 12 March 2021, the Over-allotment Agent informed OR to exercise its right to purchase 390 million shares of OR's newly-issued ordinary shares to return those shares to the Company. On 16 March 2021, OR registered the change in its paid-up capital and issued and allocated that number of shares to the Over-allotment Agent to be returned to the Company. As a result, the Company's shareholding in OR has changed from 100% to 75%. The Company presents the effect of the change in its ownership interest in OR, amounting to Baht 30,393 million, as surplus from changes in non-controlling interests in the consolidated statement of changes in shareholders' equity.

The shares of OR have been traded on the Stock Exchange of Thailand (SET) since 11 February 2021.

#### PTT TANK

During the year, PTT Tank Terminal Co., Ltd. (PTT TANK) increased share capital a number of times. The Company made the additional share payments totaling Baht 1,388 million.

#### PTTLNG

During the year, PTT LNG Co., Ltd. (PTTLNG) issued calls for the additional share capital a number of times. The Company made the additional share payments totaling Baht 2,290 million.

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

### 14.9 Significant events during the year ended 31 December 2021 (Continued)

#### GC

On 24 May 2021, the Board of Directors Meeting of PTT Global Chemical Public Co., Ltd. (GC) No. 6/2021 passed a resolution to approve the Share Resale Program for Financial Management Purpose, whereby approximately 22.3 million shares, or 0.49% of all shares, would be resold on the Stock Exchange of Thailand (SET). GC resold all 22.3 million shares of treasury stock and announced the end of the Share Resale Program on 27 September 2021. As a result of the resale, the Company's shareholding changed from 45.41% to 45.18%

#### MAP

During the year, Map Ta Phut Air Products Company Limited (MAP) issued calls for the additional share capital a number of times. The Company made the additional share payments totaling Baht 61 million.

#### SES

During the year, Suez Environmental Services Co., Ltd. (SES) issued calls for the additional share capital a number of times. The Company made the additional share payments totaling Baht 16 million.

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

### 14.9 Significant events during the year ended 31 December 2021 (Continued)

#### Restructuring of Shareholding in Power Business within the Group

On 20 August 2020, the Board of Directors Meeting of the Company No. 8/2020 passed a resolution to approve a restructuring of shareholding in the Company's power business. Details of the restructuring plan are as follows:

1. The Company is to purchase all shares that Thai Oil Public Company Limited (TOP) holds in Global Power Synergy Public Company Limited (GPSC), or 8.91% of GPSC's total paid-up capital. On 22 October 2020, the Company entered into share purchase agreement with TOP, and the Company made payment for the shares, amounting to Baht 16,757 million on 3 December 2020.
2. An Entire Business Transfer from Thaioil Power Company Limited (TP) was completed on 1 February 2021.

During the year, TP registered its company dissolution with the Department of Business Development, Ministry of Commerce. The Company received dividend income at Baht 5,931 million and recognized loss from impairment of investment in TP at Baht 1,501 million in the separate financial statements. The Company was entitled to receive a refund of capital amounting to Baht 806 million.

After the restructuring, the Company owns 31.72% and TOP owns 20.78% of GPSC's issued shares.

Furthermore, on 22 April 2021, at the Board of Directors Meeting of the Company No.4/2021, the Board passed a resolution to approve the Restructuring of Shareholding in Power Business of the Company. Under the restructuring plan, the Company and Siam Management Holding Co., Ltd. (SMH) purchased 359 million shares or about 12.73% of GPSC's total paid-up capital from PTT Global Chemical Public Co., Ltd. (PTTGC) at Baht 70 per share amounting to Baht 25,126 million (the Company: Baht 21,350 million and SMH: Baht 3,776 million). After the restructuring, the Company and SMH own 44.45% and PTTGC owns 10% of GPSC's issued shares.

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

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

### 14.9 Significant events during the year ended 31 December 2021 (Continued)

#### Significant events of subsidiaries of the Company

##### CAP

In September 2021, PT. TOP Investment Indonesia (TII), a subsidiary of TOP, purchased 15% of the shares of PT Chandra Asri Petrochemical Tbk (CAP), a listed company in the Republic of Indonesia, investing USD 913 million or Baht 29,798 million. The Group has classified the investment as investment in associate. Top group made payment for the shares and estimated the future investment expenditure at USD 917 million or Baht 29,911 million.

Moreover, TOP group will purchase additional shares in proportion to its 0.38% interest in registered capital up to a limit of USD 4 million (Baht 136 million) or USD 270 million (Baht 9,159 million), depending on receipt of approval for investment in a petrochemical plant construction project by PT Chandra Asri Perkasa (CAP2), a subsidiary of CAP, within 5 years.

##### Avaada

On 13 July 2021, Global Renewable Synergy Company Limited (GRSC), a subsidiary of GPSC, purchased 41.6% of the shares of Avaada Energy Private Limited (Avaada), a renewable energy producer in the Republic of India, investing Baht 14,984 million. The Group has classified the investment as investment in associate.

#### The business restructuring of the group of EOM and ESC

On 17 August 2021, the Board of Directors' Meeting of PTTGC International Private Limited (GC Inter), a subsidiary of PTTGC, passed a resolution to approved GC Inter entering into a share sale and purchase agreement to sell 50% of shares in Emery Oleochemicals (M) Sdn. Bhd. (EOM) and Emery Specialty Chemicals Sdn. Bhd. (ESC) to Edenor Technology Sdn. Bhd. (Edenor). The share sale and purchase agreement was signed on 19 August, 2021. The sale of these investments is conditional upon the completion of the business restructuring of EOM and ESC group in order to separate their Asia Pacific business from their North American and European business. After the restructuring, the Asia Pacific business will remain under EOM and ESC, which will be sold to Edenor. The North American and European business will be transferred to Emery Oleochemicals UK Limited (EOMUK) which is held directly by GC Inter and Sime Darby Plantation Berhad at 50% each. The restructuring was completed on 12 October 2021 and resulted in a net loss of Baht 2,688 million, including the reversal of the impairment loss on investments in EOM previously recognized in the consolidated statements of income. The investment is aligned with the business restructuring plan of the EOM and ESC group, and PTTGC's strategy focusing on investment in high value products businesses.

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

##### 14.9 Significant events during the year ended 31 December 2021 (Continued)

###### Significant events of subsidiaries of the Company (Continued)

###### VNT

On 18 March 2021, the Extraordinary Board of Directors' Meeting of PTTGC passed a resolution to approve a collaboration between PTTGC and AGC Inc. related to the plan to delist the securities of Vinythai Public Company Limited (VNT) from the Stock Exchange of Thailand (SET). PTTGC will issue a tender offer for all 192,491,246 ordinary shares of VNT (excluding shares owned by PTTGC and AGC Inc.), or equivalent to 16.24% of VNT's issued and paid-up share capital at an offer price of Baht 39 per share, or a total of Baht 7,507 million. The transaction is expected to be completed in March 2022.

## 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 (%)	
		2021	2020
PTT Exploration and Production Public Co., Ltd. (PTTEP)	Thailand	34.71	34.71
Thai Oil Public Co., Ltd. (TOP)	Thailand	51.97	51.97
IRPC Public Co., Ltd. (IRPC)	Thailand	51.95	51.95
PTT Global Chemical Public Co., Ltd. (PTTGC)	Thailand	51.82	51.59
Global Power Synergy Public Co., Ltd. (GPSC)	Thailand	24.77	24.77
PTT Oil and Retail Business Public Co., Ltd. (OR)	Thailand	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 2021 and 2020

Unit: Million Baht

	2021						2020				
	PTTEP	TOP	IRPC	PTTGC	GPSC	OR	PTTEP	TOP	IRPC	PTTGC	GPSC
Current assets	139,584	101,239	67,200	207,244	45,490	126,066	152,716	114,229	43,371	129,911	40,741
Non-current assets	643,952	260,751	123,560	546,871	224,889	81,593	522,921	191,805	130,436	359,472	215,916
Current liabilities	(104,502)	(38,476)	(47,543)	(147,007)	(23,036)	(51,730)	(56,257)	(28,620)	(44,059)	(59,042)	(21,925)
Non-current liabilities	(263,684)	(200,574)	(55,505)	(279,505)	(129,595)	(56,057)	(264,969)	(157,449)	(54,082)	(141,347)	(122,865)
Net assets	415,350	122,940	87,712	327,603	117,748	99,872	354,411	119,965	75,666	288,994	111,867
The Company's share of net assets	267,918	57,981	42,046	153,338	81,502	74,863	228,132	55,748	36,294	136,032	77,414
Non-controlling interests	147,432	64,959	45,666	174,265	36,246	25,009	126,279	64,217	39,372	152,962	34,453



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 2021 and 2020

Unit: Million Baht

	2021						2020				
	PTTEP	TOP	IRPC	PTTGC	GPSC	OR	PTTEP	TOP	IRPC	PTTGC	GPSC
Revenue*	226,544	338,936	255,393	491,621	79,590	516,117	168,725	258,664	176,257	335,716	71,906
Expenses	(146,152)	(326,194)	(238,509)	(439,897)	(70,558)	(501,929)	(127,297)	(262,060)	(183,941)	(335,173)	(62,423)
Profit (loss) before income taxes	80,392	12,742	16,884	51,724	9,032	14,188	41,428	(3,396)	(7,684)	543	9,483
Income taxes	(41,528)	(1,553)	(2,351)	(7,228)	(1,192)	(2,718)	(18,764)	647	1,554	109	(993)
Net profit (loss)	38,864	11,189	14,533	44,496	7,840	11,470	22,664	(2,749)	(6,130)	652	8,490
Loss from discontinued operations during the year, net of tax	-	(63)	-	-	-	-	-	(287)	-	-	-
Other comprehensive income (loss)	41,285	1,279	312	5,515	2,355	1,436	(3,197)	(378)	(82)	324	(508)
Total comprehensive income (loss)	80,149	12,405	14,845	50,011	10,195	12,906	19,467	(3,414)	(6,212)	976	7,982
<b>Net profit (loss) attributable to</b>											
The Company	25,373	5,139	6,970	21,166	5,506	8,606	14,797	(1,656)	(2,956)	97	5,649
Non-controlling interests	13,491	5,987	7,563	23,330	2,334	2,864	7,867	(1,380)	(3,174)	555	2,842
Total dividend paid to non-controlling interests	6,546	1,419	1,507	7,564	1,240	1,110	7,234	595	1,088	2,852	1,465

\* Including gain (loss) on foreign exchange rate

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 2021 and 2020

Unit: Million Baht

	2021						2020				
	PTTEP	TOP	IRPC	PTTGC	GPSC	OR	PTTEP	TOP	IRPC	PTTGC	GPSC
Net cash provided by operating activities	110,069	10,902	11,342	68,650	16,315	24,044	80,230	2,102	11,152	22,146	18,850
Net cash used in investing activities	(123,016)	(43,355)	(2,853)	(148,843)	(19,835)	(25,903)	(27,071)	(48,005)	(3,875)	(28,275)	(5,606)
Net cash provided by (used in) financing activities	(22,199)	8,341	(6,104)	90,036	(2,705)	29,861	(26,469)	21,017	(1,462)	31,794	(11,815)
Others	9,416	564	-	1,457	(528)	(227)	(554)	2,950	-	(192)	28
Net increase (decrease) in cash and cash equivalents	(25,730)	(23,548)	2,385	11,300	(6,753)	27,775	26,136	(21,936)	5,815	25,473	1,457

## 15. Investment properties

Details of investment properties are as follows:

	Unit: Million Baht				
	Consolidated financial statements				
	Land	Buildings and building improvements	Other assets	Right-of-use assets	Total
<b>As at 1 January 2020</b>					
Cost	6,882	2,366	4	124	9,376
<u>Less</u> Accumulated depreciation	-	(1,200)	(1)	(17)	(1,218)
Allowance for impairment of assets	(64)	-	-	-	(64)
Net book value	<u>6,818</u>	<u>1,166</u>	<u>3</u>	<u>107</u>	<u>8,094</u>
<b>For the year ended 31 December 2020</b>					
Beginning net book value	6,818	1,166	3	107	8,094
- Additions	-	2	-	1	3
- Reclassifications	(264)	292	3	-	31
- Disposals - net	-	(4)	-	-	(4)
- Depreciation for the year	-	(91)	(1)	(6)	(98)
Ending net book value	<u>6,554</u>	<u>1,365</u>	<u>5</u>	<u>102</u>	<u>8,026</u>
<b>As at 31 December 2020</b>					
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	<u>6,554</u>	<u>1,365</u>	<u>5</u>	<u>102</u>	<u>8,026</u>

## 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	
<b>For the year ended</b>						
<b>31 December 2021</b>						
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
- Disposals - net	-	(2)	-	-	-	(2)
- Depreciation for the year	-	(127)	(1)	-	(5)	(133)
Ending net book value	8,165	2,150	10	34	100	10,459
<b>As at 31 December 2021</b>						
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

As at 31 December 2021 and 2020, 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	
<b>As at 1 January 2020</b>					
Cost	3,414	1,175	-	-	4,589
<u>Less</u> Accumulated depreciation	-	(846)	-	-	(846)
Net book value	3,414	329	-	-	3,743
<b>For the year ended</b>					
<b>31 December 2020</b>					
Beginning net book value	3,414	329	-	-	3,743
- Reclassifications	167	148	2	476	793
- Disposals - net	-	(10)	-	-	(10)
- Depreciation for the year	-	(41)	-	(26)	(67)
Ending net book value	3,581	426	2	450	4,459
<b>As at 31 December 2020</b>					
Cost	3,581	1,703	2	552	5,838
<u>Less</u> Accumulated depreciation	-	(1,277)	-	(102)	(1,379)
Net book value	3,581	426	2	450	4,459
<b>For the year ended</b>					
<b>31 December 2021</b>					
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	3,581	347	2	37	3,967
<b>As at 31 December 2021</b>					
Cost	3,581	1,652	2	46	5,281
<u>Less</u> Accumulated depreciation	-	(1,305)	-	(9)	(1,314)
Net book value	3,581	347	2	37	3,967

## 15. Investment properties (Continued)

Fair value disclosed as at 31 December 2021 and 2020 using different levels of inputs as follows:

Unit: Million Baht

	Consolidated financial statements		Separate financial statements	
	2021	2020	2021	2020
<b>Fair value hierarchy</b>				
Level 2	11,716	11,323	3,802	3,649
Level 3	14,068	12,762	759	415
<b>Total</b>	25,784	24,085	4,561	4,064

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							Total
	Land	Buildings and building improvements	Machinery and equipment	Exploration and production properties	Mining properties	Other assets	Construction in progress	
<b>As at 1 January 2020</b>								
Cost	47,801	302,478	1,157,647	929,372	52,263	26,434	148,833	2,664,828
<u>Less</u> Accumulated depreciation Allowance for impairment of assets	- (73)	(167,201) (512)	(533,075) (2,896)	(605,247) (10,093)	(28,088) (12,800)	(17,381) (17)	- (1,502)	(1,350,992) (27,893)
Net book value	47,728	134,765	621,676	314,032	11,375	9,036	147,331	1,285,943

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	
<b>For the year ended</b>								
<b>31 December 2020</b>								
Beginning net book value	47,728	134,765	621,676	314,032	11,375	9,036	147,331	1,285,943
- Business acquisition	222	825	776	-	-	7	-	1,830
- Additions	396	2,138	4,531	42,829	1,183	386	91,687	143,150
- Borrowing costs	-	-	-	-	-	-	4,670	4,670
- Reclassifications	1,237	13,017	42,871	527	172	383	(59,470)	(1,263)
- Disposals - net	(14)	(338)	(574)	(2,934)	(24)	(101)	(583)	(4,568)
- Depreciation for the year	-	(11,171)	(49,145)	(61,160)	(1,459)	(2,224)	-	(125,159)
- Loss on impairment of assets	-	(102)	(216)	(1,439)	(7,780)	-	(456)	(9,993)
- Reclassified to assets held for sale	-	(6)	(146)	-	-	(2,206)	(4)	(2,362)
- Exchange differences on translation of financial statements	18	35	1,120	(1,494)	272	537	(19)	469
Ending 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	
<b>As at 31 December 2020</b>								
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	
<b>For the year ended</b>								
<b>31 December 2021</b>								
Beginning net book value	49,587	139,163	620,893	290,361	3,739	5,818	183,156	1,292,717
- Business acquisition (Note 42)	2,612	4,040	20,721	69,381	-	41	2,141	98,936
- 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)
- Disposals - 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 (Note 21)	-	(1,278)	(2,909)	(671)	-	(65)	(1,832)	(6,755)
- Reclassified to assets held for sale (Note 12)	-	-	(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	52,401	148,570	645,463	370,942	4,406	6,164	197,468	1,425,414

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	
<b>As at 31 December 2021</b>								
Cost	52,474	340,682	1,281,500	1,170,951	60,722	24,405	200,069	3,130,803
<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	52,401	148,570	645,463	370,942	4,406	6,164	197,468	1,425,414

As at 31 December 2021, the Group had pledged assets amounting to Baht 91,548 million (31 December 2020: Baht 75,279 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	
<b>As at 1 January 2020</b>						
Cost	5,659	38,796	369,030	17,830	31,672	462,987
<u>Less</u> Accumulated depreciation Allowance for impairment of assets	-	(16,474)	(164,323)	(12,454)	-	(193,251)
Net book value	5,659	22,289	204,181	5,376	31,672	269,177
<b>For the year ended 31 December 2020</b>						
Beginning net book value	5,659	22,289	204,181	5,376	31,672	269,177
- Additions	-	98	284	84	10,519	10,985
- Borrowing costs	-	-	-	-	1,135	1,135
- Reclassifications	86	525	5,285	324	(7,849)	(1,629)
- Disposals - net	(2)	(546)	(307)	(15)	(3)	(873)
- Depreciation for the year	-	(1,630)	(13,924)	(1,310)	-	(16,864)
- Loss on impairment of assets	-	(49)	(32)	-	-	(81)
Ending net book value	5,743	20,687	195,487	4,459	35,474	261,850
<b>As at 31 December 2020</b>						
Cost	5,743	37,254	370,463	17,041	35,474	465,975
<u>Less</u> Accumulated depreciation Allowance for impairment of assets	-	(16,506)	(174,909)	(12,582)	-	(203,997)
Net book value	5,743	20,687	195,487	4,459	35,474	261,850

## 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	
<b>For the year ended</b>						
<b>31 December 2021</b>						
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)
- Disposals - net	-	(210)	(146)	(17)	-	(373)
- Depreciation for the year	-	(1,684)	(13,204)	(1,309)	-	(16,197)
- Loss on impairment of assets (Note 21)	-	(1,291)	(2,864)	(65)	-	(4,220)
Ending net book value	5,847	21,450	188,425	4,858	30,090	250,670
<b>As at 31 December 2021</b>						
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

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 – 5.99 per annum (2020: 0.50% - 5.99% per annum). The Company used capitalization rates at 3.83 per annum (2020: 4.34% per annum).

17. Right-of-use assets

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

Unit: Million Baht

	Consolidated financial statements						Total
	Land	Buildings and building improvements	Machinery and equipment	Vehicles	Exploration and production properties	Other assets	
<b>As at 1 January 2020</b>							
Cost	55,441	1,224	13,009	2,339	13,541	3,121	88,675
<u>Less</u> Accumulated depreciation	(13,512)	(116)	(5,451)	(413)	-	(72)	(19,564)
Net book value	41,929	1,108	7,558	1,926	13,541	3,049	69,111

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	
<b>For the year ended 31 December 2020</b>							
Beginning net book value	41,929	1,108	7,558	1,926	13,541	3,049	69,111
- Additions	5,715	534	896	478	2,773	520	10,916
- Modification	35	-	10	(12)	43	(135)	(59)
- Reclassifications	435	333	97	(11)	-	162	1,016
- Termination	(24)	(7)	(13)	(110)	(21)	(389)	(564)
- Depreciation for the year	(2,553)	(601)	(1,355)	(750)	(2,894)	(1,350)	(9,503)
- Loss on impairment of assets	(53)	-	-	-	-	-	(53)
- Classified to assets held for sale	-	(3)	-	(4)	-	-	(7)
- Exchange differences on translation of financial statements	9	14	(7)	5	(50)	3	(26)
Ending net book value	<u>45,493</u>	<u>1,378</u>	<u>7,186</u>	<u>1,522</u>	<u>13,392</u>	<u>1,860</u>	<u>70,831</u>
<b>As at 31 December 2020</b>							
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	<u>45,493</u>	<u>1,378</u>	<u>7,186</u>	<u>1,522</u>	<u>13,392</u>	<u>1,860</u>	<u>70,831</u>

## 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	
<b>For the year ended 31 December 2021</b>							
Beginning net book value	45,493	1,378	7,186	1,522	13,392	1,860	70,831
- Business acquisition (Note 42)	167	847	592	232	-	-	1,838
- 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 (Note 21)	(7)	-	-	-	-	-	(7)
- Classified to assets held for sale (Note 12)	(183)	-	-	-	-	-	(183)
- Exchange differences on translation of financial statements	170	52	43	14	1,549	2	1,830
Ending net book value	47,665	2,294	7,463	1,794	15,421	4,783	79,420
<b>As at 31 December 2021</b>							
Cost	66,212	3,321	16,190	3,249	21,421	6,514	116,907
Less: 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	47,665	2,294	7,463	1,794	15,421	4,783	79,420



## 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	
<b>As at 1 January 2020</b>						
Cost	24,600	46	10,165	602	14	35,427
<u>Less</u> Accumulated depreciation	(9,895)	(6)	(5,135)	(150)	-	(15,186)
Net book value	14,705	40	5,030	452	14	20,241
<b>For the year ended 31 December 2020</b>						
Beginning net book value	14,705	40	5,030	452	14	20,241
- Additions	796	41	49	97	5	988
- Modification	(4)	-	(14)	(5)	-	(23)
- Reclassifications	(96)	(1)	-	-	-	(97)
- Termination	(3)	-	-	(28)	-	(31)
- Depreciation for the year	(884)	(31)	(589)	(146)	(11)	(1,661)
Ending net book value	14,514	49	4,476	370	8	19,417
<b>As at 31 December 2020</b>						
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

## 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	
<b>For the year ended 31 December 2021</b>						
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 (Note 21)	(7)	-	-	-	-	(7)
Ending net book value	14,509	13	3,938	287	-	18,747
<b>As at 31 December 2021</b>						
Cost	26,046	27	10,223	615	15	36,926
<u>Less</u> Accumulated depreciation Allowance for impairment of assets	(11,530) (7)	(14) -	(6,285) -	(328) -	(15) -	(18,172) (7)
Net book value	14,509	13	3,938	287	-	18,747

## 18. Goodwill

Movements of goodwill are as follows:

Unit: Million Baht

	Consolidated financial statements	
	2021	2020
Net book value as at 1 January	106,994	107,197
- Business acquisition (Note 42)	74,613	14
- Loss on impairment of assets (Note 21)	(5,471)	-
- Classify as assets held-for-sale (Note 12)	(15)	-
- Exchange differences on translation of financial statements	6,531	(217)
Net book value as at 31 December	182,652	106,994

## 19. Other intangible assets

Details of other intangible assets are as follows:

Unit: Million Baht

	Consolidated financial statements				Total
	Computer software	Customer contracts	Copyright, license and trademark	Other intangible assets	
<b>As at 1 January 2020</b>					
Cost	24,588	45,993	11,689	17,670	99,940
<u>Less</u> Accumulated amortization	(14,864)	(2,444)	(4,553)	(8,402)	(30,263)
Allowance for impairment of assets	-	-	-	(713)	(713)
Net book value	9,724	43,549	7,136	8,555	68,964
<b>For the year ended</b>					
<b>31 December 2020</b>					
Beginning net book value	9,724	43,549	7,136	8,555	68,964
- Business acquisition	1	1,043	54	-	1,098
- Additions	1,871	-	215	1,400	3,486
- Reclassifications	1,428	-	886	(1,305)	1,009
- Disposals - net	(10)	-	(161)	(154)	(325)
- Amortization for the year	(2,543)	(1,986)	(394)	(804)	(5,727)
- Loss on impairment of assets	-	-	-	(71)	(71)
- Exchange differences on translation of financial statements	(17)	11	13	32	39
Ending net book value	10,454	42,617	7,749	7,653	68,473
<b>As at 31 December 2020</b>					
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	10,454	42,617	7,749	7,653	68,473

## 19. Other intangible assets (Continued)

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

Unit: Million Baht

	Consolidated financial statements				Total
	Computer software	Customer contracts	Copyright, license and trademark	Other intangible assets	
<b>For the year ended</b>					
<b>31 December 2021</b>					
Beginning net book value	10,454	42,617	7,749	7,653	68,473
- Business acquisition (Note 42)	1,687	34,289	30,612	11,731	78,319
- Additions	1,761	440	42	626	2,869
- Reclassifications	1,592	8	273	(635)	1,238
- Disposals - net	(126)	-	-	-	(126)
- Amortization for the period	(2,879)	(2,009)	(518)	(831)	(6,237)
- Loss on impairment of assets (Note 21)	(40)	-	-	-	(40)
- Classify as assets held-for-sale (Note 12)	-	(340)	-	(67)	(407)
- Exchange differences on translation of financial statements	287	31	4	455	777
Ending net book value	12,736	75,036	38,162	18,932	144,866
<b>As at 31 December 2021</b>					
Cost	35,224	87,870	44,640	32,444	200,178
<u>Less</u> Accumulated amortization	(22,448)	(12,834)	(6,478)	(13,413)	(55,173)
Allowance for impairment of assets	(40)	-	-	(99)	(139)
Net book value	12,736	75,036	38,162	18,932	144,866

## 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
<b>As at 1 January 2020</b>			
Cost	8,131	-	8,131
<u>Less</u> Accumulated amortization	(5,526)	-	(5,526)
Beginning net book value	2,605	-	2,605
		-	
<b>For the year ended 31 December 2020</b>			
Beginning net book value	2,605	-	2,605
- Additions	192	-	192
- Reclassifications	790	-	790
- Disposals - net	(1)	-	(1)
- Amortization for the period	(969)	-	(969)
Ending net book value	2,617	-	2,617
<b>As at 31 December 2020</b>			
Cost	8,869	-	8,869
<u>Less</u> Accumulated amortization	(6,252)	-	(6,252)
Net book value	2,617	-	2,617

## 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
<b>For the year ended 31 December 2021</b>			
Beginning net book value	2,617	-	2,617
- Additions	272	-	272
- Reclassifications	759	31	790
- Disposals - net	(2)	-	(2)
- Amortization for the period	(1,048)	-	(1,048)
- Loss on impairment of assets (Note 21)	(24)	-	(24)
Ending net book value	2,574	-	2,605
<b>As at 31 December 2021</b>			
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

## 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
<b>As at 1 January 2020</b>			
Cost	138,905	828	139,733
<u>Less</u> Allowance for impairment of assets	(52,052)	(151)	(52,203)
Beginning net book value	86,853	677	87,530
<b>For the year ended 31 December 2020</b>			
Beginning net book value	86,853	677	87,530
- Additions	3,234	59	3,293
- Reclassifications	(527)	(103)	(630)
- Disposals - net	(1,099)	-	(1,099)
- Loss on impairment of assets	(1,360)	(390)	(1,750)
- Exchange differences on translation of financial statements	(408)	9	(399)
Ending net book value	86,693	252	86,945
<b>As at 31 December 2020</b>			
Cost	140,981	776	141,757
<u>Less</u> Allowance for impairment of assets	(54,288)	(524)	(54,812)
Net book value	86,693	252	86,945

## 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
<b>For the year ended 31 December 2021</b>			
Beginning net book value	86,693	252	86,945
- Business acquisition (Note 42)	10,285	-	10,285
- Additions	4,280	5	4,285
- Reclassifications	(1,413)	-	(1,414)
- Disposals - 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
<b>As at 31 December 2021</b>			
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



## 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 2021, significant factors indicating that the assets of the Group may be impaired included the COVID-19 pandemic, the determination of retail prices by the government, the investment risk of projects that have ceased operations or been delayed, and the change of project plan.

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 6.40% - 14.00%.

During the year ended 31 December 2021, the Group recognized loss on impairment of assets in statements of income as follows:

	Unit: Million Baht	
	Consolidated	Separate
	financial statements	financial statements
Property, plant and equipment (Note 16)	6,755	4,220
Right-of-use assets (Note 17)	7	7
Goodwill (Note 18)	5,471	-
Intangible assets (Note 19)	40	24
Other assets	1,013	946
<b>Total</b>	<b>13,286</b>	<b>5,197</b>

## 22. Income taxes and deferred taxes

Applicable tax rates for the Group are as follows:

	Rates (%)
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	Exempt, 10, 20
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	3, 20
Corporate income tax in foreign countries	1 - 55
Income tax from the profit distribution	10 - 20

22.1 Income taxes recognized in the statements of income for the years ended 31 December 2021 and 2020 are as follows:

	Unit: Million Baht			
	Consolidated		Separate	
	financial statements		financial statements	
	2021	2020	2021	2020
Current tax:				
Current tax	61,335	32,518	7,487	5,553
Adjustments in respect of current				
tax of previous year	(110)	817	48	30
	61,225	33,335	7,535	5,583
Deferred tax:				
Change in temporary differences	6,072	(11,082)	779	233
Tax effect of currency translation				
on tax base	294	2,913	-	-
	6,366	(8,169)	779	233
Total	67,591	25,166	8,314	5,816

## 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	
	2021	2020	2021	2020
Accounting profit before income taxes	219,658	65,116	75,639	58,333
Applicable tax rate at 20%	49,932	13,023	15,128	11,667
Tax effect of :				
Income not subject to tax	(4,622)	(2,238)	(6,924)	(6,386)
Non-deductible expenses	8,275	11,282	199	251
Expenses deductible at a greater amount	(4,263)	(1,363)	(117)	(63)
(Gain) Loss from the entities not subject to tax	7,920	(483)	-	-
Adjustment in respect of prior period	(110)	817	48	30
Share of profit from investment in joint ventures and associates	(1,533)	(1,105)	-	-
Tax credit on petroleum royalty	(15,606)	(12,272)	-	-
Differences in tax rate	29,348	13,504	-	-
Deferred tax on functional currency	294	2,913	-	-
Others	3,956	1,088	(20)	317
Income taxes	67,591	25,166	8,314	5,816

## 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 35,991 million (2020: Baht 90,320 million) to carry forward against future taxable income. Some portions of tax losses could be carried forward against future taxable income without expiration invalid and some portions will be expired during 2022 to 2041.

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 income (loss)	Business acquisition (Note 42)	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)	-	32	-	-	191	600	(409)
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	-	(26,053)	(6,771)	102	(88,104)	10,889	(98,993)
Right-of-use assets	(2,844)	(133)	-	325	-	(3)	(2,655)	684	(3,339)
Intangible assets	(2,449)	(125)	-	(4,113)	1	175	(6,511)	7,426	(13,937)

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 income (loss)	Business acquisition (Note 42)	Currency translation differences	Others	As at 31 December 2021		
							Net balance	Deferred tax assets	Deferred tax liabilities
Derivatives	431	17	(127)	40	75	-	436	771	(335)
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	-
Tax effect of currency translation on tax base	434	(294)	-	-	(2)	(188)	(50)	-	(50)
Others	9,937	(4,444)	-	9,832	1,214	(21)	16,518	19,121	(2,603)
Total before set-off of taxes	(3,210)	(6,366)	(4,239)	(18,146)	(516)	61	(32,416)	98,242	(130,658)
Set-off of taxes							-	(34,713)	34,713
Net deferred tax assets (liabilities)							(32,416)	63,529	(95,945)

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 2020	Profit (loss)	Other comprehensive income (loss)	Business acquisition	Reclass to assets held for sale	Currency translation differences	Others	As at 31 December 2020		
								Net Balance	Deferred tax assets	Deferred tax Liabilities
Trade and other accounts receivable	(2,956)	(693)	-	-	-	-	-	(3,649)	962	(4,611)
Inventories	225	57	-	-	-	-	-	282	309	(27)
Investments measured at fair value through other comprehensive income - debt instruments	(21)	17	4	-	-	-	-	-	-	-
Investments measured at fair value through other comprehensive income - equity instruments	(116)	-	8	-	-	-	-	(108)	283	(391)
Other investments in financial assets	(13)	98	-	-	-	-	-	85	139	(54)
Property, plant and equipment	(67,715)	4,002	-	-	-	(80)	(13)	(63,806)	9,298	(73,104)
Right-of-use assets	(62)	(2,900)	-	-	-	-	-	(2,962)	257	(3,219)
Intangible assets	(2,082)	(249)	-	(96)	-	(5)	(17)	(2,449)	6,282	(8,731)

22. Income taxes and deferred taxes (Continued)

22.3 Movements in deferred taxes (Continued)

Unit: Million Baht

	Consolidated financial statements							As at 31 December 2020		
	Net balance	Profit (loss)	Other	Business	Reclass to	Currency	Others	Net	Deferred tax	Deferred tax
	as at		comprehensive	acquisition	assets held	translation		Balance	assets	Liabilities
	1 January		income		for sale	differences				
	2020		(loss)							
Derivatives	(246)	152	305	-	-	(17)	-	194	596	(402)
Loans	(412)	296	-	-	-	-	1	(115)	-	(115)
Lease liabilities	65	3,307	-	-	-	(13)	-	3,359	3,359	-
Provisions for employee benefits	7,730	248	116	-	(1)	(23)	8	8,078	8,150	(72)
Provision for decommissioning costs	30,743	3,021	-	2	-	(227)	-	33,539	33,585	(46)
Cumulative loss carried forward	10,874	2,708	67	-	-	63	-	13,712	13,712	-
Tax effect of currency translation on tax base	3,088	(2,725)	-	-	-	71	-	434	434	-
Others	9,393	830	21	-	-	(48)	-	10,196	10,780	(584)
Total before set-off of taxes	(11,505)	8,169	521	(94)	(1)	(279)	(21)	(3,210)	88,146	(91,356)
Set-off of taxes								-	(33,452)	33,452
Net deferred tax assets (liabilities)								(3,210)	54,694	(57,904)

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 income (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)



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 2020	Profit (loss)	Other comprehensive income (loss)	As at 31 December 2020		
				Net balance	Deferred tax assets	Deferred tax liabilities
Trade and other accounts receivable	(329)	(396)	-	(725)	410	(1,135)
Inventories	57	6	-	63	63	-
Investments measured at fair value through other comprehensive income - equity instruments	(324)	-	(66)	(390)	-	(390)
Other investments in financial assets	29	89	-	118	137	(19)
Available-for-sale investments	-	-	-	-	-	-
Property, plant and equipment	(430)	(25)	-	(455)	-	(455)
Right-of-use assets	-	(1,588)	-	(1,588)	-	(1,588)
Intangible assets	138	(66)	-	72	72	-
Derivatives	128	(105)	-	23	23	-
Loans	(336)	308	-	(28)	-	(28)
Lease liabilities	-	1,547	-	1,547	1,547	-
Provisions for employee benefits	1,463	62	7	1,532	1,532	-
Others	974	(65)	-	909	940	(31)
Total before set-off of taxes	1,370	(233)	(59)	1,078	4,724	(3,646)
Set-off of taxes				-	(3,646)	3,646
Net deferred tax assets (liabilities)				1,078	1,078	-

## 23. Other non-current assets

Details of other non-current assets as at 31 December 2021 and 2020 are as follows:

	Unit: Million Baht			
	Consolidated		Separate	
	financial statements		financial statements	
	2021	2020	2021	2020
Advance payments and deferred charge	2,689	3,523	48	10
Decommissioning fund	9,710	7,984	-	-
Others	3,638	3,232	42	45
<b>Total</b>	<b>16,037</b>	<b>14,739</b>	<b>90</b>	<b>55</b>

## 24. Trade accounts payable

Details of trade accounts payable as at 31 December 2021 and 2020 are as follows:

	Unit: Million Baht			
	Consolidated		Separate	
	financial statements		financial statements	
	2021	2020	2021	2020
Trade accounts payable - unrelated parties	209,896	106,221	68,126	43,475
Oil fuel fund payable and excise tax payable	2,735	980	354	140
Trade accounts payable - related parties (Note 9.4)	1,153	988	35,840	24,397
<b>Total</b>	<b>213,784</b>	<b>108,189</b>	<b>104,320</b>	<b>68,012</b>

## 25. Other accounts payable

Details of other accounts payable as at 31 December 2021 and 2020 are as follows:

	Unit: Million Baht			
	Consolidated		Separate	
	financial statements		financial statements	
	2021	2020	2021	2020
Other accounts payable - unrelated parties	58,816	49,644	8,199	7,479
Make-up liability (Note 30)	13,545	-	13,545	-
Accrued interest expenses	5,556	5,060	1,365	1,059
Advance received	8,172	5,315	412	288
Others	16,909	6,538	18	-
Other accounts payable - related parties (Note 9.5)	81	127	7,372	7,231
<b>Total</b>	<b>103,079</b>	<b>66,684</b>	<b>30,911</b>	<b>16,057</b>

## 26. Other current liabilities

Details of other current liabilities as at 31 December 2021 and 2020 are as follows:

	Unit: Million Baht			
	Consolidated		Separate	
	financial statements		financial statements	
	2021	2020	2021	2020
Undue output VAT	4,694	2,941	3,270	2,129
Provision for remuneration for the renewal of petroleum production	3,859	2,631	-	-
Others	3,357	1,649	9	3
<b>Total</b>	<b>11,910</b>	<b>7,221</b>	<b>3,279</b>	<b>2,132</b>

## 27. Borrowings and lease liabilities

27.1 Details of borrowings and lease liabilities are as follows:

Unit: Million Baht

	Consolidated financial statements									
	As at 1 January 2021	Cash flows from financing		Non-cash items					As at 31 December 2021	
		Additions	Repayments	Lease - Addition	(Gain) loss on exchange rates	Business acquisition (Note 42)	Classify as assets held- for-sale (Note 12)	Exchange differences on translation of financial statements		Others
Short-term borrowings from financial institutions	4,223	28,403	(22,864)	-	2	1,270	-	596	2	11,632
Short-term borrowings - others	-	109	-	-	-	-	-	2	-	111
Borrowings - Baht	179,177	64,542	(36,589)	-	-	-	-	-	43	207,173
Borrowings - foreign currencies	46,504	38,041	(9,356)	-	635	278	(1,724)	4,386	(56)	78,708
Debentures - Baht	270,766	64,713	(58,175)	-	(2,851)	-	-	3,107	(145)	277,415
Debentures - foreign currencies	242,063	40,000	-	-	14,820	-	-	14,197	(504)	310,576
Lease liabilities	52,770	-	(9,416)	16,045	727	1,936	(187)	1,405	930	64,210
<b>Total</b>	<b>795,503</b>	<b>235,808</b>	<b>(136,400)</b>	<b>16,045</b>	<b>13,333</b>	<b>3,484</b>	<b>(1,911)</b>	<b>23,693</b>	<b>270</b>	<b>949,825</b>

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 2021
	As at 1 January 2021	Cash flows from financing		Non-cash items			
		Additions	Repayments	Lease - Additions	Loss on exchange rates	Others	
Short-term borrowings - related parties (Note 9.5)	2,561	5,084	(428)	-	-	-	7,217
Borrowings - Baht	-	5,985	-	-	-	1	5,986
Borrowings - foreign currencies	45,181	-	-	-	4,303	6	49,490
Debentures - Baht	92,487	46,968	(15,230)	-	-	(3)	124,222
Debentures - foreign currencies	8,765	-	-	-	982	6	9,753
Lease liabilities	7,739	-	(564)	262	377	(767)	7,047
<b>Total</b>	<b>156,733</b>	<b>58,037</b>	<b>(16,222)</b>	<b>262</b>	<b>5,662</b>	<b>(757)</b>	<b>203,715</b>

## 27. Borrowings and lease liabilities (Continued)

27.2 Interest rates charged on borrowings and lease liabilities as at 31 December 2021 and 2020 are as follows:

	Consolidated		Unit: % per annum Separate	
	financial statements		financial statements	
	2021	2020	2021	2020
Short-term borrowings from financial institutions	0.00 - 15.00	0.55 - 10.00	-	-
Loans - Baht currency	0.29 - 4.18	0.33 - 4.85	1.71	-
Loans - foreign currencies				
- USD	0.13 - 1.35	0.25 - 2.84	4.20 - 6.38	4.20 - 6.38
- EURO	0.50 - 2.50	1.65 - 2.50	-	-
- JPY	4.45	1.50 - 4.45	4.95	4.95
- LAK	4.75	4.75	-	-
- VND	6.40	6.40	-	-
Debentures - Baht currency	0.67 - 6.80	1.21 - 6.80	0.67 - 6.80	1.21 - 6.80
Debentures - foreign currency				
- USD	1.99 - 6.35	2.50 - 5.88	4.50 - 5.88	4.50 - 5.88
Lease liabilities	0.07 - 13.88	0.40 - 10.00	0.68 - 8.28	1.21 - 8.28

## 27. Borrowings and lease liabilities (Continued)

27.3 Details of borrowings and lease liabilities as at 31 December 2021 and 2020 are as follows:

## Current portion of borrowings and lease liabilities

	Unit: Million Baht			
	Consolidated		Separate	
	financial statements		financial statements	
	2021	2020	2021	2020
Loans - Baht currency	21,890	18,231	-	-
Loans - foreign currencies	4,280	1,381	-	-
Debentures - Baht currency	27,995	54,166	5,999	15,226
Debentures - foreign currency	33,484	-	-	-
Leases liabilities	10,742	7,653	610	717
<b>Total</b>	<b>98,391</b>	<b>81,431</b>	<b>6,609</b>	<b>15,943</b>

## Long-term borrowings and lease liabilities

	Unit: Million Baht			
	Consolidated		Separate	
	financial statements		financial statements	
	2021	2020	2021	2020
Loans - Baht currency	185,283	160,946	5,986	-
Loans - foreign currencies	74,428	45,123	49,490	45,181
Debentures - Baht currency	249,420	216,600	118,222	77,261
Debentures - foreign currency	277,092	242,063	9,754	8,765
Lease liabilities	53,468	45,117	6,437	7,022
<b>Total</b>	<b>839,691</b>	<b>709,849</b>	<b>189,889</b>	<b>138,229</b>

27.4 Long-term loans outstanding as at 31 December 2021 and 2020 can be classified by types of interest rate as follows:

	Unit: Million Baht			
	Consolidated		Separate	
	financial statements		financial statements	
	2021	2020	2021	2020
Floating interest rate	265,823	177,268	9,984	-
Fixed interest rate	672,259	614,012	186,514	154,172
<b>Total</b>	<b>938,082</b>	<b>791,280</b>	<b>196,498</b>	<b>154,172</b>

As at 31 December 2021, after taking into account the effect of interest rate swap, in the consolidated financial statements approximately 68.56% of the Group's borrowings are at a fixed rate of interest (31 December 2020: 77.28%), and in the separate financial statements amounting approximately 75.62% of the Company's borrowings are at a fixed rate of interest (31 December 2020: 82.71%).

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 2021, 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.

As at 31 December 2021, 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	1,993	THOR plus margin	Principal is repayable every 3 months, totalling 16 instalments, commencing in October 2022.
2	6,000	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	3,500	1M THOR plus margin	Principal is repayable every 6 months, totalling 19 instalments, commencing in September 2022.
5	9,249	6M FDR plus margin	Principal is repayable every 6 months, totalling 23 instalments, commencing in June 2018.
6	9,825	3M THBFIX plus margin	Principal is repayable every 6 months, totalling 33 instalments, commencing in October 2012
7	169	Fixed rate	Principal is repayable every 6 months, totalling 29 instalments, commencing in June 2017.



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 2021, 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
8	883	3M BIBOR plus margin	Principal is repayable every 6 months, totalling 15 instalments, commencing in May 2021.
9	422	3M BIBOR plus margin	Principal is repayable every 6 months, totalling 11 instalments, commencing in June 2021.
10	3,185	6M THBFIX plus margin	Principal is repayable every 6 months, totalling 20 instalments, commencing in October 2021.
11	6,000	6M THBFIX plus margin	Principal is repayable every 6 months, totalling 17 instalments, commencing in February 2022.
12	1,500	6M THBFIX plus margin	Principal is repayable every 6 months, totalling 16 instalments, commencing in January 2024.
13	3,000	6M BIBOR plus margin	Principal is repayable every 6 months, totalling 16 instalments, commencing in February 2024.
14	6,500	1M THOR plus margin	Principal is repayable every 6 months, totalling 19 instalments, commencing in March 2022.
15	3,000	Fixed rate	Principal is repayable at the end of contract in January 2025.
16	3,000	Fixed rate	Principal is repayable at the end of contract in May 2023.
17	1,000	Fixed rate	Principal is repayable at the end of contract in May 2023.
18	3,000	6M FDR plus margin	Principal is repayable every 6 months, totalling 10 instalments, commencing in September 2017.
19	5,000	6M FDR plus margin	Principal is repayable every 6 months, totalling 10 instalments, commencing in May 2020.
20	4,000	6M FDR plus margin	Principal is repayable every 6 months, totalling 12 instalments, commencing in December 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 2021, 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
21	10,000	6M FDR plus margin	Principal is repayable every 6 months, totalling 12 instalments, commencing in June 2016.
22	15,000	6M FDR plus margin	Principal is repayable every 6 months, totalling 10 instalments, commencing in November 2020.
23	450	6M THBFIX plus margin	Principal is repayable every 3 months, totalling 14 instalments, commencing in April 2023.
24	2,500	6M FDR plus margin	Principal is repayable every 6 months, totalling 10 instalments, commencing in March 2022.
25	3,000	6M FDR plus margin	Principal is repayable every 6 months, totalling 10 instalments, commencing in January 2023.
26	3,000	6M FDR plus margin	Principal is repayable every 6 months, totalling 10 instalments, commencing in June 2023.
27	3,500	6M FDR plus margin	Principal is repayable every 6 months, totalling 10 instalments, commencing in October 2023.
28	1,550	6M FDR plus margin	Principal is repayable every 6 months, totalling 10 instalments, commencing in October 2023.
29	1,000	6M FDR plus margin	Principal is repayable every 6 months, totalling 10 instalments, commencing in October 2023.
30	5,000	6M THBFIX plus margin	Principal is repayable 2 times, in December 2020 and June 2023.
31	10,000	6M THBFIX plus margin	Principal is repayable at the end of contract in June 2025.
32	10,000	6M THBFIX plus margin	Principal is repayable every 6 months, totalling 12 instalments, commencing in January 2022.
33	10,000	MLR minus discount	Principal is repayable every 3 months, totalling 12 instalments, commencing in December 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 2021, 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
34	1,200	Fixed rate	Principal is repayable every 3 months, totalling 17 instalments, commencing in December 2022.
35	900	6M FDR plus margin	Principal is repayable every 6 months, totalling 14 instalments, commencing in April 2016.
36	900	6M FDR plus margin	Principal is repayable every 6 months, totalling 14 instalments, commencing in May 2016.
37	900	6M FDR plus margin	Principal is repayable every 6 months, totalling 12 instalments, commencing in May 2017.
38	8,654	6M FDR (4 banks averaged) plus margin	Principal is repayable every 6 months, totalling 17 instalments, commencing in September 2018.
39	500	Fixed rate	Principal is repayable every 3 months, totalling 13 instalments, commencing in March 2021.
40	575	3M BIBOR plus margin	Principal is repayable every 3 months, totalling 13 instalments, commencing in September 2019.
41	14,357	3M THBFIX plus margin	Principal is repayable every 6 months, totalling 24 instalments, commencing in February 2021.
42	6,004	3M THBFIX plus margin	Principal is repayable every 6 months, totalling 20 instalments, commencing in February 2021.
43	1,250	6M THBFIX plus margin	Principal is repayable every 6 months, totalling 15 instalments, commencing in April 2023.
44	755	6M FDR plus margin	Principal is repayable every 6 months, totalling 10 instalments, commencing in June 2024.
45	700	THOR	Principal is repayable every 6 months, totalling 15 instalments, commencing in October 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 2021, 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
46	700	6M FDR plus margin	Principal is repayable every 6 months, totalling 12 instalments, commencing in April 2023.
47	400	MLR minus discount	Principal is repayable every 6 months, totalling 10 instalments, commencing in June 2024.
48	5,000	6M FDR plus margin	Principal is repayable every 6 months, totalling 17 instalments, commencing in September 2020.
49	10,000	MLR minus discount	Principal is repayable every 6 months, totalling 16 instalments, commencing in March 2021.
50	10,000	3M THBFIX plus margin	Principal is repayable every 6 months, totalling 12 instalments, commencing in June 2021.
51	9,500	3M MHBK BIBOR plus margin	Principal is repayable every 6 months, totalling 9 instalments, commencing in September 2020.
52	3,000	3M BIBOR plus margin	Principal is repayable every 6 months, totalling 15 instalments, commencing in September 2020.
53	5,400	THBFIX plus margin	Principal is repayable every 6 months, totalling 20 instalments, commencing in June 2019.
54	80	MLR minus discount	Principal is repayable every 6 months, totalling 6 instalments, commencing in June 2021.
55	42	MLR minus discount	Principal is repayable every 6 months, totalling 8 instalments, commencing in December 2020.
56	56	MLR minus discount	Principal is repayable every 6 months, totalling 8 instalments, commencing in December 2019.
57	44	MLR minus discount	Principal is repayable every 6 months, totalling 10 instalments, commencing in June 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 2021, 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
58	8,500	3M THBFIX plus margin	Principal is repayable every 6 months, totalling 38 instalments, commencing in June 2018.
59	1,800	6M FDR plus margin	Principal is repayable every 6 months, totalling 20 instalments, commencing in June 2015.
60	504	THBFIX plus margin	Principal is repayable at the end of contract.
61	14,000	3M BIBOR plus margin	Principal is repayable at the end of contract in February 2023.
62	1,500	BIBOR plus margin	Principal is repayable at the end of contract in February 2023.
63	5,109	3M BIBOR plus margin	Principal is repayable at the end of contract in February 2023.
64	9,600	MLR minus discount	Principal is repayable at the end of contract in February 2023.
65	7,000	MLR minus discount	Principal is repayable every 3 months, totalling 20 instalments, commencing in March 2023.
66	5,000	6M BIBOR plus margin	Principal is repayable every 6 months, totalling 20 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 2021, 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 2021, 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	454	3M USDLIBOR plus margin	Principal is repayable every 6 months, totalling 33 instalments, commencing in October 2012.
2	USD	81	6M USDLIBOR plus margin	Principal is repayable every 6 months, totalling 18 instalments, commencing in June 2015.
3	USD	86	3M USDLIBOR plus margin	Principal is repayable at the end of contract in February 2022.
4	USD	200	LIBOR plus margin	Principal is repayable every 6 months, totalling 9 instalments, commencing in June 2020.
5	USD	480	Fixed rate	Principal is repayable at the end of contract in October 2024.
6	USD	120	Fixed rate	Principal is repayable at the end of contract in October 2024.
7	USD	120	LIBOR plus margin	Principal is repayable at the end of contract in December 2023.
8	USD	120	LIBOR plus margin	Principal is repayable at the end of contract in December 2023.
9	USD	125	SOFR plus margin	Principal is repayable at the end of contract in December 2023.
10	USD	100	6M LIBOR plus margin	Principal is repayable every 6 months, totalling 11 instalments, commencing in March 2024.
11	EUR	180	3M EURIBOR plus margin	Principal is repayable every 12 months, totalling 6 instalments, commencing in September 2021.
12	EUR	30	3M EURIBOR plus margin	Principal is repayable every 6 months, totalling 10 instalments, commencing in June 2022.
13	EUR	250	EURIBOR plus margin	Principal is repayable at the end of contract in December 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 (Continued)

As at 31 December 2021, 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	EUR	150	EURIBOR plus margin	Principal is repayable at the end of contract in December 2023.
15	EUR	120	EURIBOR plus margin	Principal is repayable at the end of contract in December 2023.
16	RUB	250	3M MOSPRIME plus margin	Principal is repayable every 6 months, totalling 11 instalments, commencing in July 2021.
17	CNY	700	LPR minus discount	Principal is repayable every 6 months, totalling 18 instalments, commencing in December 2021.
18	BRL	10	Fixed rate	Principal is repayable every month, totalling 21 instalments, commencing in March 2021.
19	LAK	64,278	Fixed rate	Principal is repayable every 3 months, totalling 20 instalments, commencing in January 2018.
20	VND	310,791	Fixed rate	Principal is repayable every 6 months, totalling 18 instalments, commencing in July 2019.
21	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 40.2 and Note 40.4.



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 2021, 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	12	4.50	Interest is repayable every 6 months and mature in February 2022.
2	2,000	1,000	2	1.21	Interest is repayable every 6 months and mature in July 2022.
3	4,000	1,000	1 year 6 months	Compounded THOR plus margin	Interest is repayable at the maturity date and mature in February 2023.
4	2,000	1,000	3	2.25	Interest is repayable every 6 months and mature in July 2023.
5	10,000	1,000	10	6.58	Interest is repayable at the maturity date and mature in September 2023.
6	15,000	1,000	3	0.96	Interest is repayable every 6 months and mature in August 2024.
7	3,000	1,000	5	2.05	Interest is repayable every 6 months and mature in July 2025.
8	15,000	1,000	5	1.31	Interest is repayable every 6 months and mature in August 2026.
9	13,000	1,000	7	2.85	Interest is repayable every 6 months and mature in July 2027.
10	5,000	1,000	7	1.79	Interest is repayable every 6 months and mature in August 2028.
11	2,000	1,000	10	2.84	Interest is repayable every 6 months and mature in July 2030.
12	8,000	1,000	10	2.37	Interest is repayable every 6 months and mature in August 2031.

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 2021, 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	6,000	1,000	15	3.20	Interest is repayable every 6 months and mature in July 2035.
14	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 2021, 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 <sup>th</sup> 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 <sup>th</sup> 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 <sup>th</sup> and 75 <sup>th</sup> 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 2021, 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	1,500	1,000	7	2.82	Interest is repayable every 6 months and mature in September 2024.
2	2,000	1,000	3	1.97	Interest is repayable every 6 months and mature in November 2022.
3	5,000	1,000	5	2.24	Interest is repayable every 6 months and mature in November 2024.
4	6,000	1,000	7	2.52	Interest is repayable every 6 months and mature in November 2026.
5	8,000	1,000	10	2.86	Interest is repayable every 6 months and mature in November 2029.
6	7,500	1,000	12	3.15	Interest is repayable every 6 months and mature in November 2031.
7	6,500	1,000	15	3.25	Interest is repayable every 6 months and mature in November 2034.
8	1,500	1,000	5	2.11	Interest is repayable every 6 months and mature in August 2025.
9	1,000	1,000	10	2.94	Interest is repayable every 6 months and mature in August 2030.
10	2,500	1,000	15	3.24	Interest is repayable every 6 months and mature in August 2035.
11	2,000	1,000	2	2.76	Interest is repayable every 6 months and mature in September 2022.
12	2,000	1,000	3	3.00	Interest is repayable every 6 months and mature in September 2023.
13	4,000	1,000	5	3.50	Interest is repayable every 6 months and mature in September 2025.

## 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 2021, 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	1,300	1,000	10	3.93	Interest is repayable every 6 months and mature in September 2030.
15	2,700	1,000	15	4.40	Interest is repayable every 6 months and mature in September 2035.
16	4,000	1,000	5	3.00	Interest is repayable every 6 months and mature in May 2026.
17	2,000	1,000	3	1.77	Interest is repayable every 6 months and mature in May 2024.
18	2,000	1,000	7	2.91	Interest is repayable every 6 months and mature in May 2028.
19	2,000	1,000	10	3.38	Interest is repayable every 6 months and mature in May 2031.
20	2,000	1,000	15	4.10	Interest is repayable every 6 months and mature in May 2036.
21	11,400	1,000	15	4.82	Interest is repayable every 6 months and mature in June 2029.
22	15,000	1,000	3	2.26	Interest is repayable every 6 months and mature in June 2022.
23	6,000	1,000	5	2.25	Interest is repayable every 6 months and mature in November 2026.
24	1,500	1,000	5	2.20	Interest is repayable every 6 months and mature in September 2024.
25	7,000	1,000	7	2.43	Interest is repayable every 6 months and mature in September 2026.
26	1,500	1,000	10	2.75	Interest is repayable every 6 months and mature in September 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 2021, 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	1,530	1,000	7	2.60	Interest is repayable every 6 months and mature in April 2027.
28	3,310	1,000	10	2.99	Interest is repayable every 6 months and mature in April 2030.
29	4,360	1,000	12	3.29	Interest is repayable every 6 months and mature in April 2032.
30	5,800	1,000	15	3.50	Interest is repayable every 6 months and mature in April 2035.

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 2021, 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	3,000	1,000	10	2.81	Interest is repayable every 6 months and mature in May 2026. (The debenture holders can early redeem regarding the rights and obligations of the issuer and the debenture holders.)
2	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.)
3	3,000	1,000	12	4.80	Interest is repayable every 6 months and mature in April 2022. (The debenture holders can early redeem regarding the rights and obligations of the issuer and the debenture holders.)
4	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.)
5	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.)

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 2021, 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	5.875	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 2021, 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 2021, 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	504	1,000	10	4.25	Interest is repayable every 6 months and mature in September 2022. (The debenture holders can early redeem regarding the rights and obligations of the issuer and the debenture holders.)
5	USD	496	1,000	4	4.25	Interest is repayable every 6 months and mature in September 2022. (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 2021, 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	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.)
7	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.)
8	USD	216	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.)
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 2021, 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 2021, 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 40.2 and Note 40.4.

## 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. Provisions for employee benefits

Details of provisions for employee benefits as at 31 December 2021 and 2020 are as follows:

	Unit: Million Baht			
	Consolidated		Separate	
	financial statements		financial statements	
	2021	2020	2021	2020
Retirement benefits	33,423	31,622	6,607	7,449
Other long-term benefits	6,664	2,577	211	213
Fair value of plan assets	(3,192)	-	-	-
<b>Total</b>	<b>36,895</b>	<b>34,199</b>	<b>6,818</b>	<b>7,662</b>

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

	Unit: Million Baht			
	Consolidated		Separate	
	financial statements		financial statements	
	2021	2020	2021	2020
As at 1 January	34,199	32,590	7,662	7,313
Current service cost	2,383	2,253	524	531
Past service cost	466	(561)	-	-
Interest cost	571	643	121	130
Actuarial (gain) loss from provisions for post-employment benefit	(4,503)	630	(1,242)	33
Actuarial (gain) loss from provisions for other long-term employee benefit	(22)	218	(4)	39
Actual payment	(1,216)	(1,758)	(243)	(384)
Business acquisition (Note 42)	7,830	5	-	-
Defined benefit obligations from fair value of plan assets	(3,192)	-	-	-
Others	1	(17)	-	-
Exchange differences on translation of financial statements	378	196	-	-
<b>As at 31 December</b>	<b>36,895</b>	<b>34,199</b>	<b>6,818</b>	<b>7,662</b>

The Group expects to pay for the long-term employee benefits within 1 year of Baht 1,389 million (the Company only: Baht 326 million).

## 28. Provisions for employee benefits (Continued)

Details of actuarial (gain) loss from provisions for post-employment benefit are as follows:

	Unit: Million Baht			
	Consolidated		Separate	
	financial statements		financial statements	
	2021	2020	2021	2020
(Gain) loss from experience adjustments	(393)	240	113	154
(Gain) loss from changes in financial assumptions	(3,636)	276	(1,109)	(121)
(Gain) loss from changes in demographic assumptions	(474)	114	(246)	-
Total	(4,503)	630	(1,242)	33

Expenses recognized in the statements of income and comprehensive income for the years ended 31 December 2021 and 2020 are as follows:

	Unit: Million Baht			
	Consolidated		Separate	
	financial statements		financial statements	
	2021	2020	2021	2020
Cost of sales and services	1,041	1,072	119	132
Selling and distribution expenses	124	132	35	35
Administrative expenses	2,225	1,301	485	531
Management remuneration	8	49	2	2
Other comprehensive (gain) loss	(4,503)	630	(1,242)	34
Total	(1,105)	3,184	(601)	734

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

	Annual percentage rate	
	2021	2020
Discount rate	0.35 - 6.70	0.36 - 5.86
Inflation rate	0.00 - 10.00	0.00 - 7.00
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. Provisions for employee benefit (Continued)

Sensitivity analysis of principal actuarial assumption used in determining the present value of provisions for post-employment benefits of the Group as at 31 December 2021 and 2020 are as follows:

	Unit: Million Baht	
	Increase (decrease) in present value of the provisions	
	2021	2020
Discount rate		
Increase 1%	(4,329)	(3,696)
Decrease 1%	5,387	4,852

Weighted average duration of the provisions for post-employment benefit of the Group for the year ended 31 December 2021 is 14.30 years (31 December 2020: 15.38 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	
	2021	2020
As at 1 January	98,661	91,889
- Business acquisition (Note 42)	138	40
- Additional provision	3,780	10,290
- Utilization during the year	(1,166)	(759)
- Reversal of non-occurred provision	(17,875)	(2,193)
- Exchange differences on translation of financial statements	10,056	(606)
As at 31 December	93,594	98,661
- Current portion	(8,898)	(1,890)
- Long-term portion	84,696	96,771



**30. Other non-current financial liabilities**

Other non-current financial liabilities as at 31 December 2021 and 2020 are as follows:

	Unit: Million Baht			
	Consolidated		Separate	
	financial statements		financial statements	
	2021	2020	2021	2020
Long-term other accounts payable	7,859	7,245	6,802	6,082
Long-term liability: Make-up*	-	10,782	-	10,782
Others	4,364	2,046	371	339
<b>Total</b>	<b>12,223</b>	<b>20,073</b>	<b>7,173</b>	<b>17,203</b>

\* Long-term liability (Make-up) arises from the difference amount between the natural gas price for the committed gas volumes that the Company paid in advance and the natural gas price as at the date of taking the gas that exceeds the interest paid for the advance payment for untaken-up gas volume (Take-or-Pay). The Company has to distribute the difference to the parties who paid 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 Myanmar natural gas fields, including interest, to be returned to the government. The payment is expected to be completed within 2022. Therefore, the Company reclassified the long-term liability: Make-up as other payables in the statement of financial position as at 31 December 2021.

**31. Other non-current liabilities**

Other non-current liabilities as at 31 December 2021 and 2020 are as follows:

	Unit: Million Baht			
	Consolidated		Separate	
	financial statements		financial statements	
	2021	2020	2021	2020
Provision for remuneration for the renewal of petroleum production*	4,035	3,101	-	-
Deferred revenue**	18,357	18,476	4,449	4,697
Others	3,710	2,635	-	-
<b>Total</b>	<b>26,102</b>	<b>24,212</b>	<b>4,449</b>	<b>4,697</b>

\* 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 14,167 million. (2020 : Baht 14,095 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 2021 and 2020 are as follows:

	Consolidated		Separate	
	financial statements		financial statements	
	2021	2020	2021	2020
Profit attributable to equity holders of the Company	108,363,410,834	37,765,808,355	67,325,389,703	52,517,594,832
Adjustment of profit *	(225,501,422)	(154,568,429)	-	-
Profit for the calculation of earnings per share	108,137,909,412	37,611,239,926	67,325,389,703	52,517,594,832
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)	3.79	1.32	2.36	1.84

Unit: Baht

\*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 2021 and 2020 are as follows:

Unit: Million Baht

	Consolidated		Separate	
	financial statements		financial statements	
	2021	2020	2021	2020
Oil products	1,336,906	914,101	698,799	412,864
Gas products	374,300	334,855	469,377	410,274
Petrochemicals products	438,375	267,370	20,454	16,079
Mining products	15,560	10,202	-	-
Non-oil businesses	17,218	17,079	35	156
Utilities	66,781	62,589	-	-
Services	9,306	8,491	1,035	2,717
Others	372	978	-	-
<b>Total</b>	<b>2,258,818</b>	<b>1,615,665</b>	<b>1,189,700</b>	<b>842,090</b>

Sales and service income for the years ended 31 December 2021 and 2020 include sales to government agencies and state enterprises amounting to Baht 118,459 million and Baht 110,931 million in the consolidated financial statements, and Baht 79,131 million and Baht 80,303 million in the separate financial statements, respectively.

## 35. Other income

Details of other income for the years ended 31 December 2021 and 2020 are as follows:

Unit: Million Baht

	Consolidated		Separate	
	financial statements		financial statements	
	2021	2020	2021	2020
Transportation income	2,943	5,778	3,895	8,022
Dividend income	457	620	33,318	31,929
Interest income	2,522	3,933	1,919	2,158
Gain (loss) on disposals of assets and investments	(1,275)	(316)	(126)	5,710
Gain (loss) on investment at fair value through profit and loss	53	(156)	27	(37)
Gain on debt modification	-	681	-	-
Gain on bargain purchase	10,694	-	-	-
Others	13,546	7,772	5,805	4,386
<b>Total</b>	<b>28,940</b>	<b>18,312</b>	<b>44,838</b>	<b>52,168</b>

## 36. Expenses by nature

Details of expenses by nature for the years ended 31 December 2021 and 2020 are as follows:

	Unit: Million Baht			
	Consolidated		Separate	
	financial statements		financial statements	
	2021	2020	2021	2020
Changes in inventories decrease	1,659,193	1,235,005	1,081,911	768,821
Staff costs	60,718	55,022	9,286	8,149
Depreciation and amortization	146,790	139,880	18,851	19,540
Expenses related to short-term lease agreements	780	981	58	107
Expenses related to low-value assets lease agreements	173	219	118	110
Expenses related to variable rental	737	1,009	653	870
Loss on impairment of assets and investments	13,286	11,917	5,197	1,804
(Reversal of) expected credit loss of accounts receivable and other assets	(1,603)	600	(1,536)	(55)

## 37. Petroleum royalties

Details of petroleum royalties and remuneration for the years ended 31 December 2021 and 2020 are as follows:

	Unit: Million Baht	
	Consolidated	
	financial statements	
	2021	2020
Petroleum royalties	17,978	13,347
Special remuneration benefits	-	51
Total	17,978	13,398

## 38. Finance costs

Details of finance costs for the years ended 31 December 2021 and 2020 are as follows:

	Unit: Million Baht			
	Consolidated		Separate	
	financial statements		financial statements	
	2021	2020	2021	2020
Interest expenses:				
Loans	4,621	5,107	1,944	1,516
Debentures	17,488	16,484	4,084	4,137
Finance leases liabilities	1,784	1,813	177	195
Derivative for cash flow hedge instruments	184	85	-	-
Provision for decommissioning costs	2,080	3,040	-	-
Others	1,039	1,364	5	-
Other finance costs	967	643	103	93
<b>Total</b>	<b>28,163</b>	<b>28,536</b>	<b>6,313</b>	<b>5,941</b>

### 39. 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 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 (former : Technology and Engineering group)

The Group conducts innovation, digital, engineering, real estate, logistics and infrastructure, the production and distribution of electricity, steam and water for industrial purpose, and the project management of the Group. This includes seeking the business opportunities in future energy and beyond for the sustainability of the Group.

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

## 39. Operating segments (Continued)

Consolidated financial statements

For the year ended 31 December 2021

	Unit: Million Baht									
	Upstream petroleum and natural gas			Downstream petroleum			New business and infrastructure	Others	Elimination	Total
	Petroleum Exploration and production	Natural gas	Coal	Oil	International trading	Petrochemicals and refining				
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.

## 39. Operating segments (Continued)

## Consolidated financial statements

As at 31 December 2021

	Upstream petroleum and natural gas						Downstream petroleum			New business and infrastructure	Others	Elimination	Total
	Petroleum		Natural gas		Coal		Oil	International trading	Petrochemicals and refining				
	Exploration and production	Natural gas	Natural gas	Coal	Coal	Oil							
Segment assets	705,686	414,471	29,381	190,907	75,391	1,129,739	258,679	81,457	-	2,885,711			
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	1,241,930	294,725	208,052	(256,956)	3,014,490			
Non-allocated assets										63,529			
Total assets										3,078,019			
Segment liabilities	316,491	68,585	4,561	72,770	94,598	612,642	135,107	204,380	-	1,509,134			
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	730,953	148,698	223,613	(256,659)	1,509,134			
Non-allocated liabilities										95,945			
Total liabilities										1,605,079			
Capital expenditure	153,868	23,758	4,907	9,100	192	206,060	8,394	325	(1,864)	404,740			

Unit: Million Baht



## 39. Operating segments (Continued)

Consolidated financial statements

For the year ended 31 December 2020

	Unit: Million Baht											
	Upstream petroleum and natural gas					Downstream petroleum			Technology and engineering	Others	Elimination	Total
	Petroleum Exploration and production	Natural gas	Coal	Oil	International trading	Petrochemicals and refining						
Sales - others	38,858	281,806	10,203	427,531	348,713	453,283	55,045	226	-	-	1,615,665	
- related parties	121,543	121,820	576	3,074	307,505	275,285	21,181	3,213	(854,197)	-	-	
Net sales	160,401	403,626	10,779	430,605	656,218	728,568	76,226	3,439	(854,197)	1,615,665		
Gross profit*	134,249	63,425	4,098	35,365	692	40,227	23,784	16	(5,255)	296,601		
EBITDA	110,044	54,942	3,176	18,098	(766)	20,638	22,160	(2,669)	49	225,672		
Depreciation and amortization expenses	(65,009)	(19,246)	(1,873)	(5,385)	(288)	(37,192)	(10,457)	(430)	-	(139,880)		
Segment operating profit (loss)	45,035	35,696	1,303	12,713	(1,054)	(16,554)	11,703	(3,099)	49	85,792		
Share of profit (loss) from investments in joint ventures and associates	901	327	(5)	715	-	1,253	987	-	-	4,178		
Others	(2,208)	(70)	(8,778)	(673)	(140)	(440)	402	120	-	(11,787)		
Unallocated revenue and expenses:												
Interest income											3,933	
Gain on derivatives											2,266	
Gain on foreign exchange rate											9,270	
EBIT											93,652	
Profit for the year											39,950	

\* Gross profit excludes depreciation and amortization expenses in cost of sales.

39. Operating segments (Continued)

Consolidated financial statements

As at 31 December 2020

	Unit: Million Baht									
	Upstream petroleum and natural gas			Downstream petroleum			Technology and engineering	Others	Elimination	Total
	Petroleum Exploration and production	Natural gas	Coal	Oil	International trading	Petrochemicals and refining				
Segment assets	613,465	385,906	16,766	127,284	44,831	843,356	259,717	122,483	-	2,413,808
Inter-company assets	15,454	11,380	1,864	4,840	28,661	18,694	6,437	50,673	(138,003)	-
Investments in joint ventures and associates	7,269	4,108	62	5,749	-	46,389	12,097	7	-	75,681
Total segment assets	636,188	401,394	18,692	137,873	73,492	908,439	278,251	173,163	(138,003)	2,489,489
Non-allocated assets										54,694
Total assets										<u>2,544,183</u>
Segment liabilities	276,968	60,835	2,300	72,097	51,189	440,457	134,815	161,773	-	1,200,434
Inter-company liabilities	584	27,020	15,482	32,163	7,801	39,634	5,151	9,873	(137,708)	-
Total segment liabilities	277,552	87,855	17,782	104,260	58,990	480,091	139,966	171,646	(137,708)	1,200,434
Non-allocated liabilities										57,904
Total liabilities										<u>1,258,338</u>
Capital expenditure	51,139	16,754	1,453	10,359	133	78,636	12,265	562	(2,420)	168,881

## 39. 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 2021 and 2020 are as follows:

	Unit: Million Baht	
	Consolidated	
	financial statements	
	2021	2020
Thailand	1,329,573	1,060,596
Asia	773,838	476,622
Europe	87,912	48,861
America	49,960	20,586
Others	17,535	9,000
<b>Total</b>	<b>2,258,818</b>	<b>1,615,665</b>

Non-current assets are presented in respect of the geographical location of the assets as at 31 December 2021 and 2020 are as follows:

	Unit: Million Baht	
	Consolidated	
	financial statements	
	2021	2020
Thailand	1,388,750	1,361,665
Asia	367,235	218,663
Europe	174,246	7,266
America	23,560	19,127
Others	138,431	117,685
<b>Total</b>	<b>2,092,222</b>	<b>1,724,406</b>

## Major customers

For the years ended 31 December 2021 and 2020, The Group has no major customer with revenue of 10 percent or more of an entity's revenues.

#### 40. Financial instruments

##### 40.1 Classification of financial assets and liabilities

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	
<b>Financial assets</b>						
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	-	-	-	-	13,633	13,633
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
<b>Derivatives</b>						
Foreign currency forward contracts	486	567	-	-	-	1,053
Interest rate swap contracts	-	423	-	-	-	423
Cross-currency swap contracts	887	534	-	-	-	1,421
Finance option contracts	-	275	-	-	-	275
Commodity derivatives	-	2,892	-	-	-	2,892
Commodity contracts	-	603	-	-	-	603
Other current financial assets	-	-	-	-	2,034	2,034
Other non-current financial assets	-	2,048	-	-	9,131	11,179
<b>Total financial assets</b>	<b>1,373</b>	<b>9,105</b>	<b>3,006</b>	<b>35,358</b>	<b>599,219</b>	<b>648,061</b>

40. Financial instruments (Continued)

40.1 Classification of financial assets and liabilities (Continued)

Unit: Million Baht

	Consolidated financial statements			
	As at 31 December 2021			
	Measured at fair value - using hedge accounting	Measured at fair value through profit or loss	Measured at amortized cost	Total
<b>Financial liabilities</b>				
Bank overdrafts and short-term loans from financial institutions	-	-	11,632	11,632
Trade accounts payable	-	-	211,049	211,049
Other accounts payable	-	-	91,013	91,013
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				
Foreign currency forward contracts	5	438	-	443
Interest rate swap contracts	317	2,316	-	2,633
Cross-currency swap contracts	1,379	878	-	2,257
Commodity derivatives	-	2,019	-	2,019
Commodity contracts	-	306	-	306
Put options over non-controlling interest	-	470	-	470
Other current financial liabilities	-	32	5,896	5,928
Other non-current financial liabilities	-	2,380	9,843	12,223
Total financial liabilities	1,701	8,839	1,279,783	1,290,323

40. Financial instruments (Continued)

40.1 Classification of financial assets and liabilities (Continued)

Unit: Million Baht

	Consolidated financial statements					Total
	As at 31 December 2020					
	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	
<b>Financial assets</b>						
Cash and cash equivalents	-	-	1	-	332,031	332,032
Short-term investments in financial assets	-	146	71	-	80,414	80,631
Trade accounts receivable	-	-	-	-	110,528	110,528
Other accounts receivable	-	-	-	-	16,688	16,688
Long-term investments in financial assets (include current portion)	-	1,215	35	18,487	7,576	27,313
Long-term lending (include current portion)	-	-	-	-	11,350	11,350
<b>Derivatives</b>						
Foreign currency forward contracts	162	306	-	-	-	468
Interest rate swap contracts	-	773	-	-	-	773
Cross-currency swap contracts	1,473	760	-	-	-	2,233
Finance option contracts	-	526	-	-	-	526
Commodity derivatives	-	692	-	-	-	692
Commodity contracts	-	452	-	-	-	452
Other current financial assets	-	-	-	-	1,216	1,216
Other non-current financial assets	-	1,648	-	-	6,301	7,950
<b>Total financial assets</b>	<b>1,635</b>	<b>6,518</b>	<b>107</b>	<b>18,487</b>	<b>566,105</b>	<b>592,852</b>

40. Financial instruments (Continued)

40.1 Classification of financial assets and liabilities (Continued)

Unit: Million Baht

	Consolidated financial statements			Total
	As at 31 December 2020			
	Measured at fair value - using hedge accounting	Measured at fair value through profit or loss	Measured at amortized cost	
<b>Financial liabilities</b>				
Bank overdrafts and short-term loans from financial institutions	-	-	4,223	4,223
Trade accounts payable	-	-	107,209	107,209
Other accounts payable	-	-	57,790	57,790
Long-term borrowings (include current portion)	-	-	738,510	738,510
Lease liabilities (include current portion)	-	-	52,770	52,770
Deposits on LPG cylinders	-	-	11,874	11,874
Derivatives				
Foreign currency forward contracts	218	1,344	-	1,562
Interest rate swap contracts	2,013	1,342	-	3,355
Cross-currency swap contracts	1,622	66	-	1,688
Commodity derivatives	-	2,281	-	2,281
Commodity contracts	-	167	-	167
Put options over non-controlling interest	-	95	-	95
Other current financial liabilities	-	1,661	2,203	3,864
Other non-current financial liabilities	-	109	19,965	20,074
Total financial liabilities	<u>3,853</u>	<u>7,065</u>	<u>994,544</u>	<u>1,005,462</u>

40. Financial instruments (Continued)

40.1 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	
<b>Financial assets</b>				
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
<b>Derivatives</b>				
Foreign currency forward contracts	69	-	-	69
Interest rate swap contracts	423	-	-	423
Cross-currency swap contracts	533	-	-	533
Finance option contracts	275	-	-	275
Commodity derivatives	14	-	-	14
Commodity contracts	226	-	-	226
Other current financial assets	-	-	315	315
Other non-current financial assets	-	-	221	221
<b>Total financial assets</b>	<b>1,927</b>	<b>8,767</b>	<b>299,841</b>	<b>310,535</b>



40. Financial instruments (Continued)

40.1 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
<b>Financial liabilities</b>			
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			
Foreign currency forward contracts	196	-	196
Interest rate swap contracts	1,339	-	1,339
Cross-currency swap contracts	553	-	553
Commodity derivatives	219	-	219
Commodity contracts	80	-	80
Other current financial liabilities	-	894	894
Other non-current financial liabilities	-	7,173	7,173
Total financial liabilities	2,387	342,996	345,383

40. Financial instruments (Continued)

40.1 Classification of financial assets and liabilities (Continued)

Unit: Million Baht

	Separate financial statements			Total
	As at 31 December 2020			
	Measured at fair value through profit or loss	Measured at fair value through other comprehensive income - equity instruments	Measured at amortized cost	
<b>Financial assets</b>				
Cash and cash equivalents	-	-	56,342	56,342
Short-term investments in financial assets	-	-	40,147	40,147
Trade accounts receivable	-	-	72,220	72,220
Other accounts receivable	-	-	3,178	3,178
Short-term lending	-	-	324	324
Long-term investments in financial assets (include current portion)	360	3,328	7,576	11,264
Long-term lending (include current portion)	-	-	49,476	49,476
Derivatives				
Foreign currency forward contracts	277	-	-	277
Interest rate swap contracts	773	-	-	773
Cross-currency swap contracts	618	-	-	618
Finance option contracts	526	-	-	526
Commodity derivatives	70	-	-	70
Commodity contracts	87	-	-	87
Other current financial assets	-	-	315	315
Other non-current financial assets	-	-	204	204
Total financial assets	2,711	3,328	229,782	235,821

40. Financial instruments (Continued)

40.1 Classification of financial assets and liabilities (Continued)

Unit: Million Baht

	Separate financial statements		
	As at 31 December 2020		
	Measured at fair value through profit or loss	Measured at amortized cost	Total
<b>Financial liabilities</b>			
Trade accounts payable	-	67,872	67,872
Other accounts payable	-	14,719	14,719
Short-term borrowings	-	2,561	2,561
Long-term borrowings (include current portion)	-	146,433	146,433
Lease liabilities (include current portion)	-	7,739	7,739
Derivatives			
Foreign currency forward contracts	67	-	67
Interest rate swap contracts	1,188	-	1,188
Cross-currency swap contracts	66	-	66
Commodity derivatives	15	-	15
Commodity contracts	12	-	12
Other current financial liabilities	-	122	122
Other non-current financial liabilities	-	17,203	17,203
<b>Total financial liabilities</b>	<b>1,348</b>	<b>256,649</b>	<b>257,997</b>

## 40. Financial instruments (Continued)

### 40.2 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

#### 40.2.1 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.

#### 40.2.2 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.

## 40. Financial instruments (Continued)

## 40.2 Disclosure of financial instruments and financial risk managements (Continued)

## 40.2.2 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 2021 and 2020 are as follows:

	Unit: Million Baht	
	Consolidated financial statements	
	2021	2020
Forward foreign exchange purchase contracts		
Rate 29.8870 - 34.0298 Baht = 1 USD	77,357	-
Rate 29.7700 - 32.5850 Baht = 1 USD	-	51,511
Rate 3.3266 - 3.8270 Baht = 1 SEK	291	-
Rate 3.2615 - 3.5733 Baht = 1 SEK	-	1,554
Rate 1.4640 EUR = 1 USD	10	550
Rate 0.2900 - 0.2911 Baht = 1 JPY	-	192
Rate 38.7650 Baht = 1 EUR	129	-
Rate 35.9700 - 37.2600 Baht = 1 EUR	-	105
Rate 8.2155 - 9.3095 NOK = 1 USD	1,090	-
Rate 14,293.5700 - 14,374.8900 IDR = 1 USD	71	-
Rate 103.4100 - 114.9000 JPY = 1 USD	200	-
Rate 1.6799 - 1.7260 NZD = 1 EUR	214	-
Rate 1.5625 - 1.6163 AUD = 1 EUR	881	-
Rate 7.2700 CNY = 1 EUR	153	-
Rate 4.9073 - 5.1042 Baht = 1 CNY	23	-
Forward foreign exchange sale contracts		
Rate 32.7080 - 33.9950 Baht = 1 USD	21,676	-
Rate 29.8830 - 31.5000 Baht = 1 USD	-	17,002
Rate 8.2155 - 9.3095 NOK = 1 USD	1,104	-
Rate 14,293.5700 - 14,374.8900 IDR = 1 USD	72	-
Rate 103.4100 - 114.9000 JPY = 1 USD	193	-
Rate 1.6799 - 1.7260 NZD = 1 EUR	219	-
Rate 1.5625 - 1.6163 AUD = 1 EUR	896	-
Rate 7.2700 CNY = 1 EUR	154	-
Rate 4.9073 - 5.1042 Baht = 1 CNY	24	-
Rate 0.2904 - 0.2961 Baht = 1 JPY	-	11,829
Rate 36.3420 Baht = 1 EUR	-	1,003

## 40. Financial instruments (Continued)

## 40.2 Disclosure of financial instruments and financial risk managements (Continued)

## 40.2.2 Market risk (Continued)

Foreign exchange rate risk (Continued)

	Unit: Million Baht	
	Separate financial statements	
	2021	2020
Forward foreign exchange purchase contracts		
Rate 32.6208 - 33.9136 Baht = 1 USD	36,208	-
Rate 29.7700 - 31.1693 Baht = 1 USD	-	13,534
Forward foreign exchange sale contracts		
Rate 33.0329 - 33.7350 Baht = 1 USD	19,307	-
Rate 29.8830 - 31.5000 Baht = 1 USD	-	15,309
Rate 0.2906 - 0.2961 Baht = 1 JPY	-	8,826

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 2021 and 2020 is as follows:

	Unit: Million Baht			
	Consolidated		Separate	
	financial statements	financial statements	financial statements	financial statements
	2021	2020	2021	2020
JPY 23,000 million/USD 197 million	6,770	6,773	6,770	6,773

This contract has a maturity later than five years.

## 40. Financial instruments (Continued)

## 40.2 Disclosure of financial instruments and financial risk managements (Continued)

## 40.2.2 Market risk (Continued)

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 2021 and 2020 are as follows:

	Unit: Million Baht			
	Consolidated		Separate	
	financial statements		financial statements	
	2021	2020	2021	2020
Baht 39,874 million/USD 1,241 million	39,874	-	-	-
Baht 33,262 million/USD 1,040 million	-	33,262	-	-
Baht 4,000 million/USD 121 million	-	-	4,000	4,000
USD 1,142 million/THB 36,398 million	37,374	-	-	-
USD 772 million/THB 24,883 million	-	24,628	-	-
USD 348 million/THB 10,733 million	-	-	11,708	-
USD 123 million/THB 3,933 million	-	-	-	3,678
<b>Total</b>	<b>77,248</b>	<b>57,890</b>	<b>15,708</b>	<b>7,678</b>

The maturity periods of contracts are as follows:

	Unit: Million Baht			
	Consolidated		Separate	
	financial statements		financial statements	
	2021	2020	2021	2020
Due within 1 year	19,156	2,091	4,000	2,091
Over 1 year but not over 5 years	18,514	24,862	4,982	4,000
Over 5 years	39,578	30,937	6,726	1,587
<b>Total</b>	<b>77,248</b>	<b>57,890</b>	<b>15,708</b>	<b>7,678</b>

## 40. Financial instruments (Continued)

## 40.2 Disclosure of financial instruments and financial risk managements (Continued)

## 40.2.2 Market risk (Continued)

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 2021 and 2020 are as follows:

	Unit: Million Baht			
	Consolidated		Separate	
	financial statements		financial statements	
	2021	2020	2021	2020
Interest rate swap contracts to swap floating for fixed rate in USD currency	6,164	10,465	-	-
Interest rate swap contracts to swap fixed for floating rate in USD currency	18,047	7,162	18,047	7,162
Interest rate swap contracts to swap fixed for lower fixed rate in USD currency	-	3,021	-	3,021
Interest rate swap contracts to swap floating for fixed rate in Baht currency	8,777	9,395	-	-
Interest rate swap contracts to swap fixed for floating rate in Baht currency	10,997	15,500	10,997	15,500
Interest rate swap contracts to swap fixed for lower fixed rate in Baht currency	15,928	16,000	15,928	16,000
Interest rate swap contracts to swap floating for fixed rate in JPY currency	-	293	-	-
Interest rate collar (zero cost collar)	-	9,011	-	-
<b>Total</b>	<b>59,913</b>	<b>70,847</b>	<b>44,972</b>	<b>41,683</b>

The maturity periods of contracts are as follows:

	Unit: Million Baht			
	Consolidated		Separate	
	financial statements		financial statements	
	2021	2020	2021	2020
Due within 1 year	1,520	7,239	-	6,000
Over 1 year but not over 5 years	22,187	35,730	17,931	18,000
Over 5 years	36,206	27,878	27,041	17,683
<b>Total</b>	<b>59,913</b>	<b>70,847</b>	<b>44,972</b>	<b>41,683</b>



## 40. Financial instruments (Continued)

## 40.2 Disclosure of financial instruments and financial risk managements (Continued)

## 40.2.2 Market risk (Continued)

Sensitivity analysis

Sensitivity analysis of financial instruments in consolidated financial statements as at 31 December 2021 and 2020 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 US dollar 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 -	
	2021	2020	currency translation	
			differences Increase	
			(decrease)	
	2021	2020	2021	2020
USD currency appreciate by 10% against by Baht currency	(544)	(13,026)	60,389	40,928
USD currency depreciate by 10% against by Baht currency	621	12,168	(60,652)	(40,932)

- 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 2021 and 2020, with all other variables held constant.

Interest rate effects	Unit: Million Baht	
	Financial costs	
	Increase (decrease)	
	2021	2020
Interest rate increase by 1%	903	808
Interest rate decrease by 1%	(295)	(398)

## 40. Financial instruments (Continued)

## 40.2 Disclosure of financial instruments and financial risk managements (Continued)

## 40.2.2 Market risk (Continued)

Sensitivity analysis (Continued)

Sensitivity analysis of financial instruments in consolidated financial statements as at 31 December 2021 and 2020 are as follows: (Continued)

- 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 2021, with all other variables held constant.

	Unit: Million Baht
Oil market price effects	Profit before tax Increase (decrease)
Increase in oil market price of USD 1 per Barrel	(451)
Decrease in oil market price of USD 1 per Barrel	455

## 40. Financial instruments (Continued)

## 40.2 Disclosure of financial instruments and financial risk managements (Continued)

## 40.2.3 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 2021 and 2020 considering from cash flow of contract which are not discounted as follows:

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	211,049	-	-	211,049
Other accounts payable	85,457	-	-	85,457
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
Interest paid	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	30,644	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

## 40. Financial instruments (Continued)

## 40.2 Disclosure of financial instruments and financial risk managements (Continued)

## 40.2.3 Liquidity risk (Continued)

The details of maturity of financial liabilities of the Group as at 31 December 2021 and 2020 considering from cash flow of contract which are not discounted as follows: (Continued)

As at 31 December 2020

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	4,223	-	-	4,223
Trade accounts payable	107,209	-	-	107,209
Other accounts payable	52,729	-	-	54,729
Other current financial liabilities	3,864	-	-	3,864
Borrowings and debentures:				
Principal	73,933	290,274	378,506	742,713
Interest paid	21,867	75,543	208,232	305,642
Lease liabilities:				
Principal	7,799	17,060	28,857	53,716
Interest paid	1,515	4,890	11,120	17,525
Deposits on LPG cylinders	-	-	11,874	11,874
Other non-current financial liabilities	-	2,655	11,337	13,992
Cash outflow from derivatives	81,768	38,654	39,699	160,121
Cash inflow from derivatives	80,482	37,615	38,323	156,420
Cash outflow from commodity derivatives	1,866	-	-	1,866
Cash inflow from commodity derivatives	314	-	-	314
Cash outflow from commodity contracts	13,684	-	-	13,684
Cash inflow from commodity contracts	14,003	-	-	14,003

## 40. Financial instruments (Continued)

## 40.2 Disclosure of financial instruments and financial risk managements (Continued)

## 40.2.3 Liquidity risk (Continued)

The details of maturity of financial liabilities of the Group as at 31 December 2021 and 2020 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
Interest paid	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

## 40. Financial instruments (Continued)

## 40.2 Disclosure of financial instruments and financial risk managements (Continued)

## 40.2.3 Liquidity risk (Continued)

The details of maturity of financial liabilities of the Group as at 31 December 2021 and 2020 considering from cash flow of contract which are not discounted as follows: (Continued)

As at 31 December 2020

Unit: Million Baht

	Separate financial statements			
	Less than 1 year	1- 5 years	Over 5 years	Total
Trade accounts payable	67,872	-	-	67,872
Other accounts payable	12,897	-	-	12,897
Short-term borrowings	2,561	-	-	2,561
Other current financial liabilities	122	-	-	122
Borrowings and debentures:				
Principal	17,791	45,354	85,809	148,954
Interest paid	6,129	25,866	90,404	122,399
Lease liabilities:				
Principal	717	2,892	4,130	7,739
Interest paid	173	505	618	1,296
Other non-current financial liabilities	-	309	10,813	11,122
Cash outflow from derivatives	39,585	10,842	4,902	55,329
Cash inflow from derivatives	40,348	10,824	3,972	55,144
Cash outflow from commodity derivatives	57	-	-	57
Cash inflow from commodity derivatives	95	-	-	95
Cash outflow from commodity contracts	38,686	-	-	38,686
Cash inflow from commodity contracts	38,795	-	-	38,795

## 40. Financial instruments (Continued)

## 40.2 Disclosure of financial instruments and financial risk managements (Continued)

## 40.2.3 Liquidity risk (Continued)

Principal and undrawn amount as at 31 December 2021 and 2020 are as follows:

Unit: Million Baht

	Consolidated financial statements			
	Credit limit		Undrawn amount	
	2021	2020	2021	2020
Short-term committed bank credit facility	84,548	74,790	70,766	59,486
Short-term uncommitted bank credit facility	257,800	237,565	166,814	206,699

Unit: Million Baht

	Separate financial statements			
	Credit limit		Undrawn amount	
	2021	2020	2021	2020
Short-term committed bank credit facility	4,365	4,395	4,365	4,395
Short-term uncommitted bank credit facility	60,408	46,874	39,722	32,367

## 40. Financial instruments (Continued)

## 40.3 Fair value measurement of financial instruments

As at 31 December 2021 and 2020 the Group had financial assets and financial liabilities measured at fair value as follows:

As at 31 December 2021

Unit: Million Baht

	Consolidated financial statements			
	Level 1	Level 2	Level 3	Total
<b>Financial assets measured at fair value</b>				
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				
Equity instruments				
Mutual funds	-	-	1,904	1,904
Other equity instruments	11,099	-	22,355	33,454
Debt instruments				
Other debt instruments	-	1,969	-	1,969
Investments measured at fair value through profit or loss				
Equity instruments				
Other equity instruments	-	-	191	191
Debt instruments				
Mutual funds	1,145	-	247	1,392
Other debt instruments	-	-	33	33
Derivatives				
Foreign currency forward contracts	-	1,053	-	1,053
Interest rate swap contracts	-	423	-	423
Cross-currency swap contracts	-	1,421	-	1,421
Finance option contracts	-	275	-	275
Commodity derivatives	-	2,452	-	2,452
Commodity contracts	-	603	-	603



## 40. Financial instruments (Continued)

## 40.3 Fair value measurement of financial instruments (Continued)

As at 31 December 2021 and 2020 the Group had financial assets and financial liabilities measured at fair value as follows: (Continued)

As at 31 December 2021 (Continued)

Unit: Million Baht

	Consolidated financial statements			
	Level 1	Level 2	Level 3	Total
<b>Financial assets measured at fair value</b>				
(Continued)				
Other non-current financial assets				
Pension scheme investments from joint operation	2,048	-	-	2,048
<b>Financial liabilities measured at fair value</b>				
Derivatives				
Foreign currency forward contracts	-	444	-	444
Interest rate swap contracts	-	2,632	-	2,632
Cross-currency swap contracts	-	2,256	-	2,256
Commodity derivatives	187	1,832	-	2,019
Commodity contracts	-	306	-	306
Put option over non-controlling interest	-	-	470	470
Other current financial liabilities				
Contingent considerations from business acquisition	-	-	32	32
Other non-current financial liabilities				
Contingent considerations from business acquisition	-	-	2,380	2,380

## 40. Financial instruments (Continued)

## 40.3 Fair value measurement of financial instruments (Continued)

As at 31 December 2021 and 2020 the Group had financial assets and financial liabilities measured at fair value as follows: (Continued)

As at 31 December 2020

Unit: Million Baht

	Consolidated financial statements			
	Level 1	Level 2	Level 3	Total
<b>Financial assets measured at fair value</b>				
Cash and cash equivalents	-	1	-	1
Investments in short-term financial assets	-	217	-	217
Investments measured at fair value through other comprehensive income				
Equity instruments				
Mutual funds	-	-	1,004	1,004
Other equity instruments	3,282	-	14,201	17,483
Debt instruments				
Other debt instruments	-	35	-	35
Investments measured at fair value through profit or loss				
Debt instruments				
Mutual funds	1,071	-	114	1,185
Other equity instruments	-	-	30	30
Derivatives				
Foreign currency forward contracts	-	468	-	468
Interest rate swap contracts	-	773	-	773
Cross-currency swap contracts	-	2,233	-	2,233
Finance option contracts	-	526	-	526
Commodity derivatives	-	692	-	692
Commodity contracts	-	452	-	452
Other non-current financial assets				
Pension scheme investments from joint operation	1,648	-	-	1,648

## 40. Financial instruments (Continued)

## 40.3 Fair value measurement of financial instruments (Continued)

As at 31 December 2021 and 2020 the Group had financial assets and financial liabilities measured at fair value as follows: (Continued)

As at 31 December 2020 (Continued)

	Unit: Million Baht			
	Consolidated financial statements			
	Level 1	Level 2	Level 3	Total
<b>Financial liabilities measured at fair value</b>				
Derivatives				
Foreign currency forward contracts	-	1,562	-	1,562
Interest rate swap contracts	-	3,355	-	3,355
Cross-currency swap contracts	-	1,688	-	1,688
Commodity derivatives	1,561	720	-	2,281
Commodity contracts	-	167	-	167
Put option over non-controlling interest	-	-	95	95
Other current financial liabilities				
Contingent considerations from business acquisition	-	-	60	60
Contingent considerations from interest acquisition in joint venture	-	-	1,601	1,601
Other non-current financial liabilities				
Contingent considerations from business acquisition	-	-	109	109

## 40. Financial instruments (Continued)

## 40.3 Fair value measurement of financial instruments (Continued)

As at 31 December 2021 and 2020 the Group had financial assets and financial liabilities measured at fair value as follows: (Continued)

As at 31 December 2021

Unit: Million Baht

	Separate financial statements			
	Level 1	Level 2	Level 3	Total
<b>Financial assets measured at fair value</b>				
Investments measured at fair value through other comprehensive income				
Equity instruments				
Mutual funds	-	-	1,873	1,873
Other equity instruments	6,140	-	754	6,894
Investments measured at fair value through profit or loss				
Debt instruments				
Mutual funds	387	-	-	387
Derivatives				
Foreign currency forward contracts	-	69	-	69
Interest rate swap contracts	-	423	-	423
Cross-currency swap contracts	-	533	-	533
Finance option contracts	-	275	-	275
Commodity derivatives	-	14	-	14
Commodity contracts	-	226	-	226
<b>Financial liabilities measured at fair value</b>				
Derivatives				
Foreign currency forward contracts	-	196	-	196
Interest rate swap contracts	-	1,339	-	1,339
Cross-currency swap contracts	-	553	-	553
Commodity derivatives	-	220	-	220
Commodity contracts	-	80	-	80

## 40. Financial instruments (Continued)

## 40.3 Fair value measurement of financial instruments (Continued)

As at 31 December 2021 and 2020 the Group had financial assets and financial liabilities measured at fair value as follows: (Continued)

As at 31 December 2020

	Unit: Million Baht			
	Separate financial statements			
	Level 1	Level 2	Level 3	Total
<b>Financial assets measured at fair value</b>				
Investments measured at fair value through other comprehensive income				
Equity instruments				
Mutual funds	-	-	1,004	1,004
Other equity instruments	2,120	-	204	2,324
Investments measured at fair value through profit or loss				
Debt instruments				
Mutual funds	360	-	-	360
Derivatives				
Foreign currency forward contracts	-	277	-	277
Interest rate swap contracts	-	773	-	773
Cross-currency swap contracts	-	618	-	618
Finance option contracts	-	526	-	526
Commodity derivatives	-	70	-	70
Commodity contracts	-	87	-	87
<b>Financial liabilities measured at fair value</b>				
Derivatives				
Foreign currency forward contracts	-	67	-	67
Interest rate swap contracts	-	1,188	-	1,188
Cross-currency swap contracts	-	66	-	66
Commodity derivatives	-	15	-	15
Commodity contracts	-	12	-	12

## 40. Financial instruments (Continued)

## 40.3 Fair value measurement of financial instruments (Continued)

As at 31 December 2021 and 2020 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 2021

Unit: Million Baht

	Consolidated financial statements			
	Level 1	Level 2	Level 3	Total
<b>Financial assets disclosed at fair value</b>				
Amortized cost investments				
Debt instruments	-	8,255	-	8,255
<b>Financial liabilities disclosed at fair value</b>				
Long-term borrowings	-	282,996	6,075	289,071
Debentures	-	622,453	-	622,453

As at 31 December 2020

Unit: Million Baht

	Consolidated financial statements			
	Level 1	Level 2	Level 3	Total
<b>Financial assets disclosed at fair value</b>				
Amortized cost investments				
Debt instruments	-	8,415	-	8,415
<b>Financial liabilities disclosed at fair value</b>				
Long-term borrowings	-	185,877	43,058	228,935
Debentures	-	551,259	-	551,259

## 40. Financial instruments (Continued)

## 40.3 Fair value measurement of financial instruments (Continued)

As at 31 December 2021 and 2020 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 2021

Unit: Million Baht

	Separate financial statements			
	Level 1	Level 2	Level 3	Total
<b>Financial assets disclosed at fair value</b>				
Amortized cost investments				
Debt instruments	-	8,255	-	8,255
<b>Financial liabilities disclosed at fair value</b>				
Long-term borrowings	-	-	66,532	66,532
Debentures	-	145,806	-	145,806

As at 31 December 2020

Unit: Million Baht

	Separate financial statements			
	Level 1	Level 2	Level 3	Total
<b>Financial assets disclosed at fair value</b>				
Amortized cost investments				
Debt instruments	-	8,415	-	8,415
<b>Financial liabilities disclosed at fair value</b>				
Long-term borrowings	-	-	57,397	57,397
Debentures	-	117,657	-	117,657

#### 40. Financial instruments (Continued)

##### 40.3 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.



#### 40. Financial instruments (Continued)

##### 40.3 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 values of derivative liabilities, which are the put options over non-controlling interests, are determined based on the present value of expected payments, determined based on forecasted earnings before financial costs, income taxes, depreciation and amortisation and discounted using a discount rate.

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)

40. Financial instruments (Continued)

40.3 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 Baht

	Consolidated financial statements								
	Investments measured at fair value through other comprehensive income - equity instruments (mutual funds)	Investments measured at fair value through other comprehensive income - other equity instruments	Investments measured at fair value through profit and loss - other equity instruments	Investments measured at fair value through profit and loss - debt instruments (mutual funds)	Investments measured at fair value through profit and loss - other debt instruments	Put options over non-controlling interest	Contingent considerations from business acquisition	Contingent considerations from interest acquisition in joint venture	Total
Balance as at 1 January 2021	1,004	14,201	-	114	30	95	169	1,601	17,214
- Increase (Decrease)	359	3,313	-	93	-	-	(108)	(1,745)	1,912
- Business acquisition	-	-	191	-	-	-	2,132	-	2,323
- Reclassification	-	(60)	-	-	-	-	-	-	(60)
- Net gain (loss) on profit and loss	-	-	-	23	-	371	33	43	470
- Net gain (loss) on other comprehensive income	541	3,930	-	-	-	-	-	-	4,471
- Exchange differences on translation	-	971	-	17	3	4	186	101	1,282
Balance as at 31 December 2021	1,904	22,355	191	247	33	470	2,412	-	27,612

40. Financial instruments (Continued)

40.3 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

	Consolidated financial statements							Total
	Investments measured at fair value through other comprehensive income - equity instruments (mutual funds)	Investments measured at fair value through other comprehensive income - other equity instruments	Investments measured at fair value through profit and loss - debt instruments (mutual funds)	Investments measured at fair value through profit and loss - other debt instruments	Put options over non-controlling interest	Contingent considerations from business acquisition	Contingent considerations from interest acquisition in joint venture	
Balance as at 1 January 2020	653	16,047	-	30	573	214	1,564	19,081
- Increases	235	1,768	54	-	-	-	-	2,057
- Disposals	-	-	-	-	-	(54)	-	(54)
- Reclassification	-	(828)	39	-	-	-	-	(789)
- Net gain (loss) on profit and loss	-	-	26	-	(514)	8	45	(435)
- Net gain (loss) on other comprehensive income	116	(2,898)	-	-	-	-	-	(2,782)
- Exchange differences on translation	-	112	(5)	-	36	1	(8)	136
Balance as at 31 December 2020	<u>1,004</u>	<u>14,201</u>	<u>114</u>	<u>30</u>	<u>95</u>	<u>169</u>	<u>1,601</u>	<u>17,214</u>

40. Financial instruments (Continued)

40.3 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 measured at fair value through other comprehensive income - equity instruments (mutual funds)	Investments measured at fair value through other comprehensive income - other equity instruments	
Balance as at 1 January 2021	1,004	204	1,208
- Increases	329	499	828
- Net gain on other comprehensive income	540	51	591
Balance as at 31 December 2021	1,873	754	2,627

40. Financial instruments (Continued)

40.3 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 measured at fair value through other comprehensive income - equity instruments (mutual funds)	Investments measured at fair value through other comprehensive income - other equity instruments	
Balance as at 1 January 2020	653	55	708
- Increases	235	151	386
- Net gain (loss) on other comprehensive income	116	(2)	114
Balance as at 31 December 2020	1,004	204	1,208

## 40. Financial instruments (Continued)

## 40.4 Cash flow hedge

The Group uses derivatives as hedging instruments as at 31 December 2021 and 2020 as follows:

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>	29.89 - 33.58	30.00 - 31.21	-	29.89 - 33.58
Notional amount (Unit: Million Baht)	997	-	-	997
<i>Average forward rate (Baht : SEK)</i>	3.33 - 3.83	-	-	3.33 - 3.83
Notional amount (Unit: Million Baht)	129	-	-	129
<i>Average forward rate (Baht : EUR)</i>	38.77	-	-	38.77
Foreign currency forward contracts (for debentures)				
Notional amount (Unit: Million Baht)	-	5,276	-	5,276
<i>Average forward rate (Baht : USD)</i>	-	30.12 - 31.35	-	30.12 - 31.35

## 40. Financial instruments (Continued)

## 40.4 Cash flow hedge (Continued)

The Group uses derivatives as hedging instruments as at 31 December 2021 and 2020 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
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)	3,000	-	-	3,000
Average forward rate (Baht : USD)	35.02	-	-	35.02
Average fixed rate (%)	2.79	-	-	2.79
Cross-currency swap contracts (for debentures)				
Notional amount (Unit: Million Baht)	15,000	6,000	31,197	52,197
Average forward rate (Baht : USD)	31.25	33.00	30.72 - 32.66	30.72 - 33.00
Average fixed rate (%)	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
Reference interest rate	-	USDLIBOR	-	-
Interest Rate Cap (%)	-	2.42	-	-
Interest Rate Floor (%)	-	0.20	-	-

## 40. Financial instruments (Continued)

## 40.4 Cash flow hedge (Continued)

The Group uses derivatives as hedging instruments as at 31 December 2021 and 2020 as follows: (Continued)

As at 31 December 2020

	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)	1,510	424	-	1,934
<i>Average forward rate (Baht : USD)</i>	<i>29.89 - 31.45</i>	<i>29.89 - 31.45</i>	-	<i>29.89 - 31.45</i>
Notional amount (Unit: Million Baht)	836	718	-	1,554
<i>Average forward rate (Baht : SEK)</i>	<i>3.33 - 3.43</i>	<i>3.33 - 3.43</i>	-	<i>3.33 - 3.43</i>
Notional amount (Unit: Million Baht)	472	-	-	472
<i>Average forward rate (Baht : EUR)</i>	<i>35.54</i>	-	-	<i>35.54</i>
Notional amount (Unit: Million Baht)	18	-	-	18
<i>Average forward rate (Baht : JPY)</i>	<i>0.2906 - 0.2911</i>	-	-	<i>0.2906 - 0.2911</i>
Foreign currency forward contracts (for debentures)				
Notional amount (Unit: Million Baht)	-	20,276	11,400	31,676
<i>Average forward rate (Baht : USD)</i>	-	<i>31.40 - 32.00</i>	30.62	<i>30.62 - 32.00</i>



## 40. Financial instruments (Continued)

## 40.4 Cash flow hedge (Continued)

The Group uses derivatives as hedging instruments as at 31 December 2021 and 2020 as follows: (Continued)

As at 31 December 2020 (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)	385	991	218	1,594
Average fixed rate (%)	1.96 - 4.49	1.96 - 4.49	3.54 - 4.49	1.96 - 4.49
Interest rate swap contracts (for debentures)				
Notional amount (Unit: Million Baht)	255	897	943	2,095
Average fixed rate (%)	4.34	4.34	4.34	4.34
Cross-currency swap contracts (for loans)				
Notional amount (Unit: Million Baht)	42	23	-	65
Average forward rate (Baht : USD)	35.02	35.02	-	35.02
Average fixed rate (%)	2.79	2.79	-	2.79
Cross-currency swap contracts (for debentures)				
Notional amount (Unit: Million Baht)	-	-	17,950	17,950
Average forward rate (Baht : USD)	-	-	31.90	31.90
Average fixed rate (%)	-	-	3.35	3.35
Interest rate collar (zero cost collar) (for loans)				
Notional amount (Unit: Million Baht)	-	9,011	-	9,011
Reference interest rate	-	6M LIBOR	-	6M LIBOR
Interest Rate Cap (%)	-	2.42	-	2.42
Interest Rate Floor (%)	-	0.20	-	0.20

40. Financial instruments (Continued)

40.4 Cash flow hedge (Continued)

The impact of the derivatives on the statement of financial position as at 31 December 2021 and 2020 as follows:

As at 31 December 2021

Unit: Million Baht

	Consolidated financial statements		
	Provision of cash flow hedge		Provision for cost of hedging
	Continuous hedging	Hedge termination	
Highly probable forecast purchases	148	-	8
Loans	(952)	-	1
Debentures	(474)	-	287

As at 31 December 2020

Unit: Million Baht

	Consolidated financial statements		
	Provision of cash flow hedge		Provision for cost of hedging
	Continuous hedging	Hedge termination	
Highly probable forecast purchases	111	-	-
Loans	(1,297)	-	705
Debentures	(1,230)	-	-

40. Financial instruments (Continued)

40.4 Cash flow hedge (Continued)

The impact of the hedging instruments on the statement of financial position as at 31 December 2021 and 2020 and the impact of cash flow hedge on the statement of income for the year ended 31 December 2021 and 2020 as follows:

As at 31 December 2021

Unit: Million Baht

	Consolidated financial statements					Line item in the statement of incomes or non-financial assets
	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	
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)	-	-

40. Financial instruments (Continued)

40.4 Cash flow hedge (Continued)

The impact of the hedging instruments on the statement of financial position as at 31 December 2021 and 2020 and the impact of cash flow hedge on the statement of income for the year ended 31 December 2021 and 2020 as follows: (Continued)

As at 31 December 2020

Unit: Million Baht

	Consolidated financial statements					Line item in the statement of incomes or non-financial assets
	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	
Foreign currency forward contracts (for highly probable forecast purchases)	4,528	118	395	-	(17)	Property, plant and equipment
Foreign currency forward contracts (for debentures)	31,676	1,301	(529)	(369)	(109)	Gain on foreign exchange rates
Interest rate swap contracts (for loans)	1,881	(1,435)	(433)	-	331	Finance cost
Interest rate swap contracts (for debentures)	5,779	(535)	(428)	-	-	-
Cross-currency swap contracts (for loans)	17,950	(1,125)	(540)	358	-	-
Cross-currency swap contracts (for debentures)	65	(477)	(16)	(8)	34	Finance cost
Interest rate collar (zero cost collar) (for loans)	9,011	(20)	-	-	-	-

## 40. Financial instruments (Continued)

## 40.4 Cash flow hedge (Continued)

Movement of other components of shareholders' equity and other comprehensive income analysis as follows:

As at 31 December 2021

	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 from other comprehensive income to profit and loss	3,088	-
- Exchange differences on translation of financial statements	-	-
- Effect of taxes	(215)	102
As at 31 December 2021	<u>(1,278)</u>	<u>296</u>

As at 31 December 2020

	Unit: Million Baht	
	Consolidated financial statements	
	Provision of cash flow hedge	Provision for cost of hedging
As at 1 January 2020	(1,379)	724
- Change in fair value of hedging instruments	(1,522)	(24)
- Classification from other comprehensive income to profit and loss	348	-
- Exchange differences on translation of financial statements	(109)	-
- Effect of taxes	246	5
As at 31 December 2020	<u>(2,416)</u>	<u>705</u>

## 41. Dividend payment

Dividend	Approved by	Dividend payment rate (Baht/share)	Number of shares (shares)	Total dividend (Million Baht)	Payment date
For the year 2020	The 2021 Annual General Shareholders' Meeting of the Company on 9 April 2021	0.82	28,562,755,654	23,421	30 April 2021
Interim 2021	The Board of Directors Meeting of the Company on 16 September 2021	1.20	28,562,579,047	34,275	15 October 2021
				57,696	

## 42. Business acquisitions

42.1 On 1 February 2021, PTTEP MENA Limited (PTTEP MENA), a subsidiary of PTT Exploration and Production Public Co., Ltd. (PTTEP) Group, signed a Sale and Purchase Agreement (SPA) to acquire the 20% interests in Block 61 Sultanate of Oman (Oman Block 61) from BP Exploration (Epsilon) Limited (BP). The acquisition was completed on 23 March 2021.

During 2021, PTTEP group has finalized the process of determining the fair value of the net identifiable assets acquired, reflecting the current information and situation within 1 year from the acquisition date. Gain from bargain purchase was due to an increase in the oil price and improvement in the operations of the project compared to plans as of the consideration date in the SPA.

Details of net assets acquired and gain on bargain purchase at the acquisition date are as follows:

	Unit: Million Baht
Fair value of net assets acquired	86,236
Purchase consideration	(75,542)
Gain on bargain purchase	<u>10,694</u>

Assets and liabilities arising from the business acquisition at the acquisition date are as follows:

	Unit: Million Baht
Other receivables	48
Inventories	558
Other current assets	228
Property, plant and equipment (Note 16)	69,381
Exploration and evaluation assets (Note 20)	10,286
Deferred tax assets	10,094
Trade accounts payable	(174)
Other accounts payable	(690)
Deferred tax liabilities	(3,357)
Provision for decommissioning costs (Note 29)	(138)
Fair value of net assets acquired	<u>86,236</u>
<u>Less</u> Gain on bargain purchase	<u>(10,694)</u>
Total purchase consideration transferred	<u>75,542</u>

#### 42. Business acquisitions (Continued)

The fair value of the total considerations transferred on the acquisition date of USD 2,368.38 million (Baht 75,541.76 million) consists of cash payment net of adjustments made in accordance with the conditions specified in the SPA of USD 2,299.49 million (Baht 73,409.45 million) and the fair value of contingent consideration of USD 68.89 million (Baht 2,132.31 million). The fair value of the contingent consideration was measured using the discounted cash flows method, based on a discount rate and assumptions as to relevant possibilities, and it is classified as level 3 in the fair value hierarchy.

- 42.2 On 28 May 2021, Global Renewable Power One Co., Ltd. (GRP1) (a wholly owned subsidiary of Global Renewable Power Co., Ltd. (GRP) which GRP is a subsidiary that the Company and Global Power Synergy Public Company Limited (GPSC) equally hold at 50%) has met the conditions precedent under the share purchase agreement to acquire 90% stakes in Sheng Yang Energy Co., Ltd. (Sheng Yang) from Tatung Forever Energy Co., Ltd. with the total value of approximately Baht 2,552 million (comprised the purchase consideration of Baht 1,607 million and a loan of Baht 945 million given to Sheng Yang under the terms of the SPA). Currently, Sheng Yang operates a solar power generation business in Taiwan with a total installed generation capacity of 55.8 MW which all commenced commercial operation.

Details of net assets acquired and goodwill at the acquisition date are as follows:

	Unit: Million Baht
Purchase consideration	1,607
Fair value of net assets acquired	(1,601)
Goodwill (Note 18)	<u>6</u>



## 42. Business acquisitions (Continued)

Assets and liabilities arising from the business acquisition at the acquisition date are as follows:

	Unit: Million Baht
Cash and cash equivalents	29
Trade accounts receivable	8
Other accounts receivable	72
Other current assets	4
Property, plant and equipment (Note 16)	2,277
Right-of-use assets (Note 17)	33
Other intangible assets (Note 19)	430
Other non-current assets	112
Bank overdraft and short-term borrowings from financial Institutions (Note 27)	(883)
Other accounts payable	(143)
Current portion of lease liabilities (Note 27)	(33)
Long-term borrowings (Note 27)	(41)
Deferred tax liabilities	(86)
Fair value of net assets	1,779
<u>Less</u> Non-controlling interests	(178)
Fair value of net assets acquired	1,601
<u>Add</u> Goodwill (Note 18)	6
Total purchase consideration transferred	1,607
<u>Less</u> Cash and cash equivalents of subsidiary	(29)
Net cash outflow on the business acquisition	1,578

42.3 On 1 July 2021, TOP Solvent Company Limited (TS), a subsidiary of Thai Oil Public Company Limited (TOP) Group, purchased 60% of the shares of JSKEM Private Limited (JSKEM), a distributor of solvents and chemical products in the Republic of Singapore and the Republic of India. TS has made payment for the shares and the estimated the contingent consideration payable in the future at USD 1.2 million or Baht 39 million. TOP Group recorded Baht 20 million of goodwill as a result of this business acquisition.

Under the terms of the SPA, an additional purchase consideration of no more than USD 0.52 million, or Baht 17 million, will be paid if JSKEM's sales revenue substantially meets the conditions precedent.

## 42. Business acquisitions (Continued)

Details of net assets acquired and goodwill at the acquisition date are as follows:

	Unit: Million Baht
Purchase consideration	39
Fair value of net assets acquired	(19)
Goodwill (Note 18)	20

Assets and liabilities arising from the business acquisition at the acquisition date are as follows:

	Unit: Million Baht
Cash and cash equivalents	16
Trade accounts receivable	15
Other accounts receivable	3
Trade accounts payable	(1)
Income Tax payable	(1)
Fair value of net assets	32
<u>Less</u> Non-controlling interests	(13)
Fair value of net assets acquired	19
<u>Add</u> Goodwill (Note 18)	20
Total purchase consideration transferred	39
<u>Less</u> Cash and cash equivalents of subsidiary	(16)
Net cash outflow on the business acquisition	23

As of 31 December 2021, TOP group is in the process of determining the fair value of the net identifiable assets at the acquisition date. TOP group expects to finalise the process within 12 months after the acquisition date.

**42. Business acquisitions (Continued)**

42.4 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.

The acquisition under this Shares Purchase Agreement is in accordance with TFRS 3 Business Combinations, which requires the recognition of assets, liabilities and contingent liabilities acquired at the acquisition date at fair value within the measurement period, which must not exceed 12 months from the acquisition date. PTTGC Group approached an independent appraiser to determine the fair value of assets and liabilities acquired at the acquisition date to reflect new information obtained regarding facts and circumstances existed as of the acquisition date. Accordingly, the fair value of assets and liabilities acquired at the acquisition date have been provisionally determined. However, since the fair value determination process has not yet completed, the fair value of assets and liabilities acquired will be adjusted upon completion of the process. Currently, the unallocated differences in fair value of assets and liabilities acquired is recorded as a part of goodwill.

Details of net assets acquired and goodwill at the acquisition date are as follows:

	Unit: Million Baht
Purchase consideration	136,741
Fair value of net assets acquired	(61,334)
Loss on derivative	(820)
Goodwill (Note 18)	<u>74,587</u>

## 42. Business acquisitions (Continued)

Assets and liabilities arising from the business acquisition at the acquisition date are as follows:

	Unit: Million Baht
Cash and cash equivalents	4,068
Short-term investments in financial assets	6
Trade accounts receivable	8,261
Other accounts receivable	1,643
Inventories	16,770
Current derivative assets	5
Investments at fair value through PL	191
Investments in joint ventures	722
Property, plant and equipment (Note 16)	27,278
Right-of-use assets (Note 17)	1,805
Other intangible assets (Note 19)	78,329
Deferred tax assets	1,839
Other non-current assets	266
Bank overdraft and short-term borrowings from financial Institutions (Note 27)	(366)
Trade accounts payable	(12,020)
Other accounts payable	(8,569)
Current portion of lease liabilities	(510)
Short-term borrowings	(12,351)
Current derivative liabilities	(45)
Income tax payable	(798)
Other current liabilities	(1,103)
Long-term borrowings	(9,358)
Lease liabilities	(1,392)
Deferred tax liabilities	(26,634)
Employee benefit obligations	(4,638)
Other non-current liabilities	(937)
Fair value of net assets	62,462
<u>Less</u> Non-controlling interests	(1,128)
Fair value of net assets acquired	61,334

**42. Business acquisitions (Continued)**

Assets and liabilities arising from the business acquisition at the acquisition date are as follows: (Continued)

	Unit: Million Baht
Fair value of net assets acquired (Continued)	61,334
<u>Add</u> Loss on derivative	820
<u>Add</u> Goodwill (Note 18)	74,587
Total purchase consideration transferred	136,741
<u>Less</u> Cash and cash equivalents of subsidiary	(4,068)
Net cash outflow on the business acquisition	132,673

**43. 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 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, research and development of polymer products and chemical formula, lab testing services and refinery. The promotional privileges include exemption from import duties and tax on the machinery approved by the BOI, exemption from corporate income tax on the net income from the promoted business up to 100% of its investment excluded the cost of land and working capital 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.

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.

#### 43. Promotional privileges (Continued)

Some subsidiaries received the following promotional privileges from the BOI under the Investment Promotion Act, B.E. 2520 (Continued)

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.

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.

As promoted company, the Group must comply with certain terms and conditions prescribed in the promotional certificates.

#### 44. Proceeding regarding the Central Administrative Court's ordering temporary suspension of projects in Map Ta Phut area

On 19 June 2009, the Stop Global Warming Association and a group of individuals totaling 43 parties (the Petitioners) filed a complaint with the Central Administrative Court (the Court) as the black case No. 908/2552, against eight government agencies, together with a motion seeking the Court injunction to temporarily suspend all operations and activities of 76 industrial projects in the Map Ta Phut area in Rayong Province.

On 29 September 2009, the Court issued a temporary injunction requiring the eight accused government agencies to issue orders to temporarily suspend all 76 projects pending the Court's judgment or order otherwise, except for those projects or activities which had received permits before the effective date of the Constitution of Kingdom of Thailand B.E. 2550 or which were not required to prepare Environmental Impact Assessment (EIA) reports pursuant to the Ministerial Announcement of the Ministry of Natural Resources and Environment dated 16 June 2009.

The suspension order affected 25 projects of the Group, of which 3 projects belonged to the Company.

On 16 October 2009, the Group, as an interested person, submitted a motion to appeal the Court's order to the Supreme Administrative Court.

On 2 December 2009, the Supreme Administrative Court issued order No. 592/2552 amending the Court's injunction by requiring the eight accused government agencies to order the temporary suspension of all projects or activities listed in the complaint except for 11 projects, which clearly, according to the Supreme Administrative Court, did not severely affect the community but were projects intended to mitigate pollution or only additional installations to the existing projects. Of those 11 projects, 7 belonged to the Group, comprising 1 project of the Company and 6 projects of the other companies in the Group. 2 projects of the Company were still covered by the Court's suspension order.

On 18 December 2009, the public prosecutor submitted an answer rejecting all allegations in the complaint.

On 2 September 2010, the Court rendered a judgment revoking the permits of the projects listed in the complaint which, according to the law, were categorized as projects that might severely affect the community and did not comply with the procedures set forth in Section 67 paragraph 2 of the Constitution, B.E. 2550. The revocation was effective as of the date of the judgment. 1 project of the Group was within the scope of the judgment.

On 1 October 2010, the 43 petitioners appealed the Court's judgment to the Supreme Administrative Court. On 7 December 2010, the eight accused government agencies by the public prosecutors submitted a reply to the appeal.

On 27 October 2021, the Central Administrative Court announced the Supreme Administrative Court's judgment dated 21 September 2021, wherein the Supreme Administrative Court reversed the judgment of the Central Administrative Court to dismiss the case. The case is finalised.

#### 45. Commitments and contingent liabilities

Details of significant changes in commitments and contingent liabilities are as follows:

##### 45.1 Details of commitments to related parties are as follows:

45.1.1 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 217,481 million. As at 31 December 2021, the Company made these loans payments to PTTCC totaling Baht 157,456 million. The remaining credit limits were Baht 60,025 million.

45.1.2 As at 31 December 2021, the Group entered into the Sponsor Support Agreements with their related parties totaling Baht 53,068 million, and USD 4,884 million respectively (separate financial statement: USD 17 million) with credit limits based on the Group's participating interest in those related parties.

The Company has commitments for guaranteeing its subsidiaries' loans and debentures as mentioned in Notes 27.5

45.1.3 The Company had obligations under the Shareholder Agreements to pay for ordinary shares in proportion to its shareholding. As at 31 December 2021, the Company had remaining obligations amounting to Baht 5,543 million.

##### 45.2 Commitments under leases - the Group as a lessee, the future minimum lease payments under uncancellable leases as at 31 December 2021 are as follows:

	Unit: Million Baht	
	Consolidated financial statements	Separate financial statements
- Within 1 year	1,634	65
- Over 1 year but not over 5 years	448	53
- Over 5 years	893	63
Total	<u>2,975</u>	<u>181</u>

45.3 As at 31 December 2021, the Group had capital commitments of Baht 137,602 million in the consolidated financial statements and Baht 20,284 million in the separate financial statements.

45.4 As at 31 December 2021, the Group had outstanding letters of credit of Baht 46,462 million in the consolidated financial statements and Baht 6,331 million in the separate financial statements.

45.5 As at 31 December 2021, the Group had contingent liabilities in the form of letter of guarantee amounting to Baht 32,756 million in the consolidated financial statements and Baht 68 million in the separate financial statements.



#### 45. Commitments and contingent liabilities (Continued)

Details of significant changes in commitments and contingent liabilities are as follows: (Continued)

- 45.6 A subsidiary entered into a contract to sell a product to the Company and the Company entered into a contract to resell the same product to a listed company (i.e. back-to-back contracts). The term of the two contracts was 15 years, expiring on 31 January 2012. Before the expiration of the contract, the subsidiary notified the Company that the contract would not be renewed. The Company had to notify the listed company that the contract would also not be renewed. The Company's notice was served to the listed company in accordance with the terms and conditions set forth in the contract. On 3 December 2009, the listed company submitted claims with the Thai Arbitration Institute (the Institute) requesting the Company and the subsidiary, as the seller and the supplier, respectively, to comply with the contracts by continuing to sell the product to the listed company or be jointly liable to pay damages.

On 10 February 2010, the subsidiary submitted a motion with the Institute asking to dismiss the claims against it from the case list. The Institute issued an order to dismiss the claims relating to the subsidiary.

The Company forwarded the case to the Office of the Attorney General to submit a defense. On 28 April 2010, the public prosecutor submitted the defense with the Institute for the Company. The arbitral tribunal completed witness examination and, on 25 March 2016, ruled that the Company make partial payment of compensation to the listed company. However, the Company was of the opinion that the arbitral award might be both factually and legally inconsistent. Therefore, the Company had a right to file a motion with the competence court to revoke the award and, on 30 June 2016, the Company, by the public prosecutor, filed a motion to revoke the arbitral award with the Civil Court. Subsequently, on 16 December 2016, the listed company submitted a motion to enforce the arbitral award with the Civil Court and the Company, by the public prosecutor, submitted an objection with the Civil Court. On 19 September 2019, the Civil Court rendered a judgment ordering enforcement of the arbitral award, whereby the Company was to make payment of damages in accordance with the award in the amount of Baht 390 million per annum from 1 February 2012 to 25 March 2016, together with interest thereon at a rate of 7.50% per annum accrued from the date of the arbitral award to the date on which the Company makes full payment. However, the Company respectfully cannot concur with the judgment of the Civil Court and, 16 March 2020, submitted an appeal against the Civil Court's judgment with the Supreme Court.

On 23 June 2021, the Supreme Court rendered a judgment in concurrence with the Civil Court's judgment to enforce the arbitral award and the case was finalised. As a result, the Company was obliged to make payment of approximately Baht 2,200 million to the listed company within 30 days from the judgment date. On 23 July 2021, the Company exercised right to offset against the amount that the listed company was obliged to make payment to the Company in another case, in which the Supreme Court rendered the final judgment that the listed company to make the overdue payment for goods to the Company in the approximate amount of Baht 2,800 million accordingly. As a result of the offset, the listed company will be obliged to make a payment to the Company in the approximate amount of Baht 600 million. The Company accepted such payment.

#### 45. Commitments and contingent liabilities (Continued)

Details of significant changes in commitments and contingent liabilities are as follows: (Continued)

- 45.7 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 judgement.

On 8 September 2010 the Contractor, by the official receiver, submitted another claim to the Institute seeking overdue payment and damages from the Company for work performed in connection with another pipeline construction project. The Company, however, considered the submission of the claims was not compliant with the dispute resolution procedure agreed upon under the contract and, therefore, filed an opposition to the Contractor's claim submission with the Institute and reserved the right to protest such contractually non-compliant claim submission in the arbitration procedure. In contending the claims, the Company submitted a defense together with counterclaims seeking damages from the Contractor. Subsequently, an Arbitral Tribunal was mutually appointed to consider the disputes and, on 30 November 2018, the tribunal rendered an award to dismiss both the claims and counterclaims. However, the Company had already submitted a motion for repayment of debt as a creditor in the bankruptcy case. The Contractor then filed a motion to revoke the arbitral award with the Civil Court and the Company, by the Office of the Attorney General, submitted an objection to the revocation of the arbitral award with the Civil Court. On 6 October 2020, the Civil Court rendered judgment to dismiss the Contractor's motion to set aside the arbitral award. On 6 January 2021, the official receiver of NACAP Asia Pacific (Thailand) Co., Ltd. filed an appeal with the Supreme Court to appeal the judgment of the Civil Court. On March 30 2021, the Company, by the public prosecutor, filed the defence to the appeal with the Supreme Court. At present, the case is under the consideration of the Supreme Court.

#### 45. Commitments and contingent liabilities (Continued)

Details of significant changes in commitments and contingent liabilities are as follows: (Continued)

45.8 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 Court. 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.

45.9 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 made judgement on some, but not all, of the issues, finding that oil from the Montara oil spill incident, on the balance of probabilities, reached the lead plaintiff's seaweed farm in late 2009, destroying his 2009 seaweed crops and making it difficult for him to re-establish his crops in the following five years. The court determined the damages caused only to the lead plaintiff of the class action of approximately Indonesian Rupiah 253 million or equivalent to USD 0.02 million (Baht 0.59 million). Interest payable on these damages was agreed to be approximately Indonesian Rupiah 165 million or equivalent to USD 0.01 million (Baht 0.39 million) up until 31 December 2021.

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

At present, PTTEP AAA has not been provided with information on the number of class members, the amount of their individual claims nor on the evidence available to support their claims not being statute barred or to support the magnitude of any claim they may make. Furthermore, PTTEP AAA lodged an appeal against the first instance judgment in its entirety on 13 December 2021. On the basis of this information, no provision has yet been set aside in relation to this matter.

- 45.10 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.

For the case at Rayong Provincial Court, on 28 September 28 2018, the Court has made the judgement ordering PTTGC to pay damage cost with its interest of 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 25 2019. Some plaintiffs filed an appeal with the Rayong Provincial Court and PTTGC has filed an answer to the appeal with the Rayong Provincial Court on 2 October 2019. Subsequently, on 22 January 2020, the Rayong Provincial Court sent an appointment to hear the judgment of the Court of Appeal Region 2 on 19 March 2020 and the Court of Appeal Region 2 has postponed the date of hearing the judgment. 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. Afterwards, on 14 October 2020, the Rayong Provincial Court sent an appointment to hear the judgement or the order of the Court of Appeal Region 2 on 26 November 2020. The plaintiffs have filed the Dika appeal period on 1 March 2021. The Supreme Court is currently consider whether to receive the plaintiffs' Dika appeal. PTTGC is following up on the progress of the case.

#### 45. Commitments and contingent liabilities (Continued)

Details of significant changes in commitments and contingent liabilities are as follows: (Continued)

45.11 On 14 July 2021, a subsidiary of Global Power Synergy Public Company Limited (GPSC) entered into share purchase agreements with Copenhagen Infrastructure II K/S (CI-II) and Copenhagen Infrastructure III K/S (CI-III) to acquire shareholdings in CI Changfang Limited and CI Xidao Limited, which are developing and constructing an offshore wind power project in Taiwan. The subsidiary will acquire 25% of the registered and called up capital of the Target Companies for a total of approximately USD 500 million and the share acquisition will occur upon satisfaction of certain conditions precedent. On 9 November 2021, a subsidiary transferred the rights in share purchase agreement to an indirect subsidiary.

#### 46. Events after the reporting period

46.1 On 11 January 2022, Arun Plus Company Limited (ARUN PLUS), a 100%-owned subsidiary of the Company, established a joint venture company, Nuovo Plus Company Limited (NUOVO PLUS), with Global Power Synergy Public Company Limited (GPSC) with a registered share capital of Baht 4,200 million and initial paid-up capital of Baht 1,050 million. ARUN PLUS and GPSC hold 51% and 49% of the shares of NUOVO PLUS, respectively. NUOVO PLUS was established to engage in the study of possibility of investments in battery value chain in order to support the electric vehicle industry in accordance with Thailand's automotive industry policy to promote electric vehicles, energy storage system for the storage of electricity from renewable sources, as well as investment in related businesses.

On 3 February 2022, ARUN PLUS established a joint venture company, Horizon Plus Company Limited (HORIZON PLUS), with Lin Yin International Investments Company Limited (LIN YIN), a wholly-owned subsidiary of Hon Hai Precision Industry Company Limited (FOXCONN) with a registered share capital not of not exceeding Baht 3,220 million. ARUN PLUS and LIN YIN hold 60% and 40% of the shares of HORIZON PLUS, respectively. HORIZON PLUS was established to engage in the manufacturing of electric vehicle.

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

46.3 In January 2022, PTT Global Management Co., Ltd. (PTTGM) increased share capital several times and issued letters calling up the additional share capital. The Company has made payments totaling Baht 11,085 million.

46.4 On 25 January 2022, PTT Global Chemical Public Company Limited (PTTGC) issued 4 tranches of unsubordinated and unsecured debentures totaling Baht 30,000 million to be offered to institutional investors and/or high net worth investors. The debentures have tenors of 5 years - 12 years and carry fixed interest rates ranging from 2.13% - 3.29% per annum, with interest payable on a semi-annual basis.

#### 46. Events after the reporting period (Continued)

- 46.5 On 4 February 2022, Global Power Synergy Public Company Limited (GPSC) entered into a loan guarantee agreement with a financial institution to guarantee loan facilities of an associate of up to a maximum of INR 7,500 million and obligations related to the loan facilities, including business transactions of the associate. GPSC Group's maximum guarantee obligation is not more than its proportionate shareholding.
- 46.6 On 17 February 2022, at the Board of Directors Meeting No. 2/2022 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 2021. On 15 October 2021, the Company paid an interim dividend of Baht 1.20 per share as described in Note 41. Accordingly, the remaining dividend of Baht 0.80 per share or approximately Baht 22,850 million will be proposed for approval by the Annual General Meeting of the Company's shareholders for the year 2022.
- 46.7 The Board of Directors of the Company approved these financial statements for public issuance on 17 February 2022.
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## Audit Fee

This year, PTT and its subsidiaries paid a total of THB 163,034,402 (one hundred and sixty-three million thirty-four thousand four hundred and two) in audit fees to the office of the external auditors for the previous fiscal year. They also paid THB 48,267,690 (forty-eight million two hundred sixty-seven thousand six hundred ninety) for other services (non-audit fees) such as those for comfort letters issued for subsidiaries' debt management plans for debentures, audit fee according to the conditions in the investment promotion certificate, tax compliance service fees, and other certification fees in the previous fiscal year.










# Powering Life with Future Energy and Beyond

PTT adheres to the principle of powering every life, promoting Thailand's steady progress by generating continuous business growth with excellent performance, as well as enhancing society and community well-being, and valuing environmental sustainability with good governance by focusing on future energy businesses and creating next growth in new businesses beyond energy.



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