

POWERING LIFE WITH FUTURE ENERGY AND BEYOND

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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, 2020. 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 2020, 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 (the Company) 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 2020, 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 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 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 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 are described below.

Accounting judgments and estimates on the impact of the COVID-19 pandemic and the global oil price volatility

During the year 2020, the COVID-19 pandemic has continuously expanded throughout the world, causing a decline in energy demand as economies slowed down and countries implemented lockdown measures to prevent the spread of the pandemic, as well as global oil price volatility. These events have resulted in a slowdown in the global economy and affected business as a whole, including the energy industry. 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 situations 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 and the volatility in oil prices 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 and oil price volatility on the impairment testing of assets and related provisions.

Other Matter

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 31 December 2019 were audited by another auditor who expressed an unmodified opinion on those statements and drew attention to the Ombudsman of Thailand's submission of a complaint against the Company to the Administrative Court, under a report dated 20 February 2020.

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 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 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 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: 18 February 2021

Statement of Financial Position

PTT Public Company Limited and Its Subsidiaries

As at 31 December 2020



Unit: Baht

Assets	Notes	Consolidated financial statements		Separate financial statements	
		31 December 2020	31 December 2019	31 December 2020	31 December 2019
Current assets					
Cash and cash equivalents	5	332,032,066,865	292,542,457,953	56,341,885,897	46,480,809,912
Short-term investments in financial assets	4, 6	84,888,667,336	-	44,404,308,007	-
Current investments	4, 6	-	38,263,305,589	-	15,002,337,892
Trade accounts receivable	7	110,527,807,929	167,641,021,249	72,220,178,987	111,557,959,067
Other accounts receivable	8	51,698,643,784	49,611,747,735	11,511,656,565	8,404,192,746
Short-term lending	9.1	1,718,427,619	2,669,222,092	5,136,742,861	21,369,269,521
Inventories	11	93,526,878,584	117,746,964,312	6,519,530,653	4,797,200,993
Supplies	12	36,252,194,811	34,379,141,870	5,979,431,745	5,744,178,058
Current derivative assets		1,628,999,259	3,686,309,104	521,353,134	1,089,388,849
Other current financial assets		1,216,108,278	6,680,692,163	314,540,611	4,810,279,424
Other current assets		4,677,560,018	3,877,851,232	1,939,359,173	2,522,538,740
Assets held for sale	13	2,763,089,715	-	-	-
Total current assets		720,930,444,198	717,098,713,299	204,888,987,633	221,778,155,202
Non-current assets					
Other long-term investments in financial assets	4, 14	23,055,492,926	-	7,007,138,223	-
Available-for-sale investments	4, 15	-	6,687,351,993	-	2,986,699,279
Investments in subsidiaries	17.1, 17.4	-	-	346,437,271,454	335,213,563,656
Investments in joint ventures	17.2, 17.5	48,931,851,026	49,512,818,297	4,882,107,972	5,961,911,690
Investments in associates	17.3	26,748,629,329	25,670,169,643	-	-
Other long-term investments	4, 16	-	17,931,829,711	-	4,257,167,950
Long-term lending	9.2	9,631,511,264	12,474,409,002	44,663,265,547	24,981,890,696
Investment properties	18	8,026,082,101	7,987,227,078	4,459,121,922	3,742,809,674
Property, plant and equipment	19	1,292,716,831,040	1,294,979,084,151	261,849,540,708	273,820,653,535
Right-of-use assets	4, 20	70,830,830,142	-	19,417,093,792	-
Goodwill	21	106,994,152,763	107,197,340,810	-	-
Other intangible assets	22	68,473,144,884	79,967,673,324	2,617,468,313	13,375,222,267
Exploration and evaluation assets	23	86,945,397,084	87,530,420,736	-	-
Deferred tax assets	25.3	54,694,329,107	47,611,099,702	1,078,327,020	1,256,718,197
Non-current derivative assets		3,514,915,967	3,810,602,110	1,829,353,715	912,740,713
Other non-current financial assets		7,949,887,131	6,616,475,716	203,671,556	274,359,605
Other non-current assets	26	14,739,384,961	21,889,747,367	54,914,640	1,114,298,513
Total non-current assets		1,823,252,439,725	1,769,866,249,640	694,499,274,862	667,898,035,775
Total assets		2,544,182,883,923	2,486,964,962,939	899,388,262,495	889,676,190,977

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 2020



Unit: Baht

Liabilities and shareholders' equity	Notes	Consolidated financial statements		Separate financial statements	
		31 December 2020	31 December 2019	31 December 2020	31 December 2019
Current liabilities					
Bank overdrafts and short-term loans from financial institutions	30	4,222,863,582	44,440,533,236	-	-
Trade accounts payable	27	108,188,914,563	160,669,125,301	68,011,843,634	100,570,030,799
Other accounts payable	28	66,684,102,197	78,396,763,145	16,057,161,820	22,743,735,200
Current portion of long-term borrowings	30	73,777,907,740	50,439,925,974	15,225,661,317	27,118,000,000
Current portion of lease liabilities	30	7,652,911,432	1,342,430,248	717,640,576	484,800,610
Short-term borrowings	30	-	-	2,561,061,960	3,487,561,436
Income tax payable		19,229,931,274	30,136,899,332	2,338,691,840	2,947,212,120
Short-term provision for decommissioning costs	32	1,890,062,490	1,289,373,133	-	-
Current derivative liabilities		3,718,837,372	2,522,074,028	94,687,441	-
Other current financial liabilities		3,863,740,926	4,163,328,971	121,509,155	107,560,356
Other current liabilities	29	7,221,351,504	6,384,853,515	2,132,247,406	3,262,783,960
Liabilities directly associated with assets held for sale	13	1,575,603,382	-	-	-
Total current liabilities		298,026,226,462	379,785,306,883	107,260,505,149	160,721,684,481
Non-current liabilities					
Long-term borrowings	30	664,732,462,537	555,018,258,339	131,207,226,412	90,263,371,322
Lease liabilities	30	45,117,012,577	7,727,508,141	7,021,593,512	3,471,939,120
Deferred tax liabilities	25.3	57,904,379,545	59,199,830,368	-	-
Provisions for employee benefits	31	34,198,994,004	32,590,214,665	7,662,342,920	7,312,721,428
Long-term provision for decommissioning costs	32	96,770,501,872	90,599,917,383	-	-
Deposits on LPG cylinders		11,873,799,449	11,656,784,200	-	-
Non-current derivative liabilities		5,428,847,966	2,702,433,432	1,253,759,478	324,316,495
Other non-current financial liabilities	33	20,073,353,261	18,948,812,986	17,203,489,070	15,306,356,626
Other non-current liabilities	34	24,212,212,163	27,696,278,968	4,696,856,868	4,969,067,816
Total non-current liabilities		960,311,563,374	806,140,038,482	169,045,268,260	121,647,772,807
Total liabilities		1,258,337,789,836	1,185,925,345,365	276,305,773,409	282,369,457,288

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 2020



Unit: Baht

Liabilities and shareholders' equity (Continued)	Notes	Consolidated financial statements		Separate financial statements	
		31 December 2020	31 December 2019	31 December 2020	31 December 2019
Shareholders' equity					
Share capital					
Registered share capital					
28,562,996,250 ordinary shares of Baht 1 each		28,562,996,250	28,562,996,250	28,562,996,250	28,562,996,250
Issued and fully paid-up share capital					
28,562,996,250 ordinary shares of Baht 1 each		28,562,996,250	28,562,996,250	28,562,996,250	28,562,996,250
Share premium		29,211,131,966	29,211,131,966	29,211,131,966	29,211,131,966
Deficit from the change in the ownership interests in subsidiaries		(31,517,925,559)	(36,250,864,803)	-	-
Retained earnings					
Appropriated - legal reserve	35	2,857,245,725	2,857,245,725	2,857,245,725	2,857,245,725
Appropriated - self-insurance fund reserve	35	1,265,209,883	1,243,656,319	1,265,209,883	1,243,656,319
Unappropriated		869,260,266,823	869,016,087,473	559,627,649,301	544,005,237,331
Other components of shareholders' equity		(17,598,523,257)	(16,036,143,473)	1,558,255,961	1,426,466,098
Equity attributable to owners of the Company		882,040,401,831	878,604,109,457	623,082,489,086	607,306,733,689
Non-controlling interests of the subsidiaries		403,804,692,256	422,435,508,117	-	-
Total shareholders' equity		1,285,845,094,087	1,301,039,617,574	623,082,489,086	607,306,733,689
Total liabilities and shareholders' equity		2,544,182,883,923	2,486,964,962,939	899,388,262,495	889,676,190,977

Phannalin Mahawongtikul
Chief Financial Officer

Statement of Income

PTT Public Company Limited and Its Subsidiaries
For the year ended 31 December 2020



Unit: Baht

	Notes	Consolidated financial statements		Separate financial statements	
		2020	2019	2020	2019
Sales and service income	37	1,615,664,656,670	2,219,738,671,119	842,090,280,589	1,200,462,897,055
Cost of sales and services	39	1,446,649,069,758	1,967,529,006,367	799,776,150,087	1,144,029,399,068
Gross profit		169,015,586,912	252,209,664,752	42,314,130,502	56,433,497,987
Other income	38	18,312,507,759	20,397,354,726	52,168,389,506	45,460,087,076
Gain (loss) on derivatives		2,266,484,771	(417,402,046)	(4,728,645,277)	1,225,180,475
Gain on foreign exchange rates		9,269,532,113	15,312,831,823	6,090,908,810	7,923,624,559
Profit before expenses		198,864,111,555	287,502,449,255	95,844,783,541	111,042,390,097
Selling and distribution expenses	39	27,199,413,803	27,573,729,167	11,573,384,152	10,167,504,226
Administrative expenses	39	68,791,385,136	65,002,297,170	19,997,307,119	24,614,415,403
Petroleum royalties	40	13,398,302,136	17,882,466,882	-	-
Operating profit		89,475,010,480	177,043,956,036	64,274,092,270	76,260,470,468
Share of profit from investments in joint ventures and associates	17.6	4,177,723,193	6,007,989,567	-	-
Profit before finance costs and income taxes		93,652,733,673	183,051,945,603	64,274,092,270	76,260,470,468
Finance costs	41	28,536,472,808	27,971,463,717	5,940,725,903	6,164,047,845
Profit before income taxes		65,116,260,865	155,080,481,886	58,333,366,367	70,096,422,623
Income tax expenses	25.1	25,166,495,951	32,988,881,950	5,815,771,535	8,439,114,919
Profit for the year		39,949,764,914	122,091,599,936	52,517,594,832	61,657,307,704
Profit attributable to					
Equity holders of the Company		37,765,808,355	92,950,604,143	52,517,594,832	61,657,307,704
Non-controlling interests of the subsidiaries		2,183,956,559	29,140,995,793	-	-
		39,949,764,914	122,091,599,936	52,517,594,832	61,657,307,704
Basic earnings per share	36	1.32	3.20	1.84	2.16

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 2020



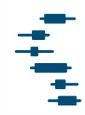
Unit: Baht

	Consolidated financial statements		Separate financial statements	
	2020	2019	2020	2019
Profit for the year	39,949,764,914	122,091,599,936	52,517,594,832	61,657,307,704
Other comprehensive income				
Other comprehensive income to be reclassified to profit or loss in subsequent periods				
Exchange differences on translation of financial statements in foreign currency	(828,450,479)	(27,899,835,334)	-	-
Gain on measurements of available-for-sale investments	-	43,161,764	-	166,031,664
Income taxes related to available-for-sale investments	-	(21,425,435)	-	(33,206,333)
Loss on debt investments measured at fair value through other comprehensive income	(21,996,697)	-	-	-
Income taxes related to debt investments measured at fair value through other comprehensive income	4,399,340	-	-	-
Loss on cash flow hedges	(1,487,882,749)	(1,182,552,979)	-	-
Income taxes related to cash flow hedges	447,476,563	(92,552,256)	-	-
Share of other comprehensive income (loss) of joint ventures and associates	757,889,576	(503,105,474)	-	-
Other comprehensive income not to be reclassified to profit or loss in subsequent periods				
Gain (loss) on remeasurements of defined benefits plans	(629,884,463)	(1,095,553,888)	(33,471,884)	1,167,004,596
Income taxes related to remeasurements of defined benefits plans	115,578,152	408,798,991	6,694,377	(233,400,919)
Gain (loss) on equity investments designated at fair value through other comprehensive income	(2,906,540,700)	-	326,808,891	-
Income taxes related to equity investments designated at fair value through other comprehensive income	66,770,452	-	(65,361,778)	-
Share of other comprehensive loss from joint ventures and associates	(225,870,914)	(97,637,110)	-	-
Other comprehensive income (loss) for the years, net of income taxes	(4,708,511,919)	(30,440,701,721)	234,669,606	1,066,429,008
Total comprehensive income for the year	35,241,252,995	91,650,898,215	52,752,264,438	62,723,736,712
Total comprehensive income attributable to				
Equity holders of the Company	34,485,354,315	73,509,914,687	52,752,264,438	62,723,736,712
Non-controlling interests of the subsidiaries	755,898,680	18,140,983,528	-	-
	35,241,252,995	91,650,898,215	52,752,264,438	62,723,736,712

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 2020



Unit: Baht

		Separate financial statements						Total shareholders' equity
		Retained earnings			Other components of shareholders' equity			
		Legal reserve	Appropriated	Unappropriated	Other comprehensive income (loss)	Investments in other long-term financial assets/available-for-sale investments		
Notes	Issued and fully paid-up share capital	Share premium						
	28,562,996,250	29,211,131,966	2,857,245,725	1,222,675,618	541,414,286,420	1,293,640,767	604,561,976,746	
Balance as at 1 January 2019	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	
Changes in shareholders' equity for the year								
Dividends paid	-	-	-	-	(59,978,979,769)	-	(59,978,979,769)	
Reserve for self-insurance fund	-	-	-	20,980,701	(20,980,701)	-	-	
Profit for the year	-	-	-	-	61,657,307,704	-	61,657,307,704	
Other comprehensive income for the year	-	-	-	-	933,603,677	132,825,331	1,066,429,008	
Balance as at 31 December 2019	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	
Balance as at 1 January 2020	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)	
Balance as at 1 January 2020 - as restated	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	
Changes in shareholders' equity for the year								
Dividends paid	-	-	-	-	(36,559,715,727)	-	(36,559,715,727)	
Reserve for self-insurance fund	-	-	-	21,553,564	(21,553,564)	-	-	
Profit for the year	-	-	-	-	52,517,594,832	-	52,517,594,832	
Other comprehensive gain (loss) for the year	-	-	-	-	(47,664,931)	261,447,113	213,782,182	
Balance as at 31 December 2020	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	

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 2020

Unit: Baht

	Consolidated financial statements		Separate financial statements	
	2020	2019	2020	2019
Cash flows from operating activities				
Profit before income taxes	65,116,260,865	155,080,481,886	58,333,366,367	70,096,422,623
Adjustment of profit before income taxes to net cash provided by (used in) operating activities				
Depreciation and amortization expenses	139,879,640,255	133,204,181,804	19,539,718,987	19,350,137,045
(Gain) loss on disposal of assets	318,043,573	31,182,090	38,883,912	(191,508,782)
(Gain) loss on disposal of investments	(1,955,924)	221,275,460	(5,743,225,761)	(1,564,028,226)
Gain on bargain purchase	(125,055,903)	(31,482,857)	-	-
Allowance for impairment/Expected credit losses of assets	11,907,832,508	291,120,355	80,941,293	506,848,142
(Reversal of) allowance for impairment/Expected credit losses of investments	9,451,455	(434,016,938)	1,722,722,603	7,347,996
Share of profit from investments in joint ventures and associates	(4,177,723,193)	(6,007,989,567)	-	-
Provision for employee benefits	2,554,015,587	7,063,158,543	700,412,116	1,839,534,053
Gain on exchange rates	(3,682,982,828)	(8,259,060,713)	(587,655,688)	(2,557,930,652)
(Gain) loss on derivatives	3,605,656,120	3,123,608,032	1,531,877,016	(1,225,180,475)
Unrealized (gain) loss on fair value of commodity contracts	837,920,044	-	(39,138,489)	-
Loss on investments measured at fair value though profit and loss	156,283,646	-	36,956,665	-
(Reversal of) allowance for doubtful accounts/ Expected credit loss of accounts receivable	600,045,398	(77,020,600)	(54,546,505)	920,415
Write-off exploration assets	1,943,211,886	2,368,682,811	-	-
(Reversal of) allowance for changes in value of inventories	(468,652,569)	(3,079,361,551)	(39,170,319)	65,420,262
Allowance for obsolete supplies	610,670,210	453,008,357	1,230,564	40,302,822
Dividend income	(620,394,481)	(383,031,136)	(31,929,477,375)	(29,676,712,760)
Interest income	(3,933,495,774)	(7,836,966,421)	(2,158,499,945)	(3,342,143,771)
Finance costs	28,536,472,808	27,971,463,717	5,940,725,903	6,164,047,845
Others	223,810,952	4,462,664	(406,931,994)	354,945,076
Profit from operating activities before changes in operating assets and liabilities	243,289,054,635	303,703,695,936	46,968,189,350	59,868,421,613

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 2020

Unit: Baht

	Consolidated financial statements		Separate financial statements	
	2020	2019	2020	2019
Operating assets (increase) decrease				
Trade accounts receivable	56,322,036,756	19,001,930,521	39,376,567,450	27,250,869,944
Other accounts receivable	1,059,837,344	19,903,908,602	(1,094,230,091)	9,069,258,034
Inventories and supplies	22,119,176,208	11,353,360,414	(1,855,733,866)	5,241,961,631
Other current assets	4,657,060,862	(2,264,690,933)	5,078,582,264	596,834,211
Other non-current assets	(2,257,228,437)	6,910,377,794	91,235,182	(111,213,792)
Operating liabilities increase (decrease)				
Trade accounts payable	(52,544,873,123)	(7,439,616,831)	(32,584,166,677)	(19,932,742,937)
Other accounts payable	(2,342,382,351)	(14,050,557,920)	(3,650,036,749)	(4,856,296,140)
Other current liabilities	1,234,683,541	(1,955,970,779)	(1,116,637,167)	(1,133,000,617)
Other non-current liabilities	(9,092,368,733)	(4,795,824,267)	(692,624,460)	128,310,633
	19,155,942,067	26,662,916,601	3,552,955,886	16,253,980,967
Cash received from operating activities	262,444,996,702	330,366,612,537	50,521,145,236	76,122,402,580
Income taxes paid	(43,853,246,803)	(65,259,229,065)	(6,204,047,973)	(29,288,868,748)
Net cash provided by operating activities	218,591,749,899	265,107,383,472	44,317,097,263	46,833,533,832

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 2020

Unit: Baht

	Consolidated financial statements		Separate financial statements	
	2020	2019	2020	2019
Cash flows from investing activities				
Cash payment of property, plant and equipment and investment properties	(143,343,982,049)	(144,336,347,465)	(16,353,447,040)	(19,013,996,689)
Cash payment of intangible assets	(3,608,598,634)	(2,861,367,080)	(224,794,789)	(197,386,569)
Cash payment of exploration and evaluation assets	(2,929,002,435)	(3,700,244,754)	-	-
Cash payment of right-of-use assets	(457,407,279)	-	(4,924,450)	-
Cash payment for other long-term investments in financial assets	(7,292,636,207)	-	(3,792,175,260)	-
Cash payment for available-for-sale investments	-	(241,112,299)	-	(241,112,299)
Net cash payment for business acquisition	(1,615,027,703)	(164,377,947,967)	-	-
Cash payment of investments in subsidiaries	-	-	(19,828,276,040)	(20,607,908,492)
Cash payment of investments in joint ventures and associates	(2,569,730,376)	(4,856,296,891)	(90,196,283)	(34,296,717)
Cash payment of long-term lending	(3,482,174)	(837,243,815)	(26,969,071,400)	(30,992,122,156)
Cash payment of other long-term investments	-	(2,855,860,697)	-	(1,827,467,081)
Cash payment for derivatives	(773,688,042)	-	(773,688,042)	-
Cash proceeds from disposals of property, plant and equipment, intangible assets, investment properties and right-of-use assets	253,149,344	929,635,294	917,962,500	1,007,259,109
Cash proceeds from disposals of other long-term investments in financial assets	15,185,632,747	-	11,156,871,670	-
Cash proceeds from disposals of available-for-sale investments	-	10,693,125,237	-	-
Cash proceeds from disposals of investments in subsidiaries	-	-	12,625,071,400	2,612,512,600
Cash proceeds from disposals and capital reduction of investments in joint ventures and investment in associates	1,182,300,735	488,930,934	1,170,000,000	-
Cash proceeds from long-term lending	2,274,758,685	3,490,281,246	17,932,543,664	28,115,283,133
Cash proceeds from disposal of other long-term investments	-	28,289,253	-	-
Cash proceeds from derivatives	729,983,000	-	729,983,000	-
Cash proceeds from cancellation of leasehold in gas stations	1,719,000	16,679,180	-	-
Decrease (increase) in short-term lendings	-	269,913,000	5,782,248,761	(3,404,653,124)
Decrease in current investments	-	108,719,156,318	-	17,760,919,841
Increase in short-term investments in financial assets	(53,764,919,905)	-	(35,848,776,053)	-
Interests received	2,864,805,266	6,424,633,174	2,039,148,552	3,357,868,462
Dividends received	5,282,514,141	4,787,566,316	31,892,263,820	29,676,712,760
Net cash provided by (used in) investing activities	(188,583,611,886)	(188,218,211,016)	(19,639,255,990)	6,211,612,778

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 2020

Unit: Baht

	Notes	Consolidated financial statements		Separate financial statements	
		2020	2019	2020	2019
Cash flows from financing activities					
Cash proceeds from issuance of ordinary shares of subsidiaries		267,651,233	18,346,174,140	-	-
Cash proceeds from long-term borrowings		210,692,854,323	174,649,440,702	57,023,727,626	24,031,000,790
Cash proceeds from change in ownership in subsidiaries		-	3,960,400	-	-
Cash payment for treasury shares		-	(1,187,603,325)	-	-
Cash repayment of long-term borrowings		(73,027,210,447)	(101,517,722,881)	(27,118,000,000)	(50,044,500,790)
Cash payment for lease installments		(8,371,814,946)	(1,358,237,107)	(718,285,162)	(613,345,103)
Cash payment for derivatives		(481,276,589)	-	(87,921,923)	-
Cash payment for redemption of subordinated capital debentures		(964,918,042)	(30,750,894,428)	-	-
Cash payment for change in ownership in subsidiaries		-	(40,806,272,121)	-	-
Increase (decrease) in short-term borrowings		(1,124,546,594)	(701,550,500)	(926,499,476)	154,866,060
Increase (decrease) in bank overdrafts and short-term loans from financial institutions		(40,368,107,350)	19,910,183,786	-	-
Finance costs paid		(26,938,729,848)	(25,462,319,325)	(5,853,526,617)	(6,720,225,233)
Dividends paid		(51,624,218,700)	(81,350,824,835)	(36,557,695,167)	(59,978,979,769)
Net cash provided by (used in) financing activities		8,059,683,040	(70,225,665,494)	(14,238,200,719)	(93,171,184,045)
Effects of exchange rates on cash and cash equivalents		1,432,810,672	(3,075,298,506)	(578,564,569)	402,798,181
Exchange differences on translation		105,035,582	(3,230,072,876)	-	-
Cash and cash equivalents classified as held for sale		(116,058,395)	-	-	-
Net increase (decrease) in cash and cash equivalents		39,489,608,912	358,135,580	9,861,075,985	(39,723,239,254)
Cash and cash equivalents at the beginning of year		292,542,457,953	292,184,322,373	46,480,809,912	86,204,049,166
Cash and cash equivalents at the end of year	5	332,032,066,865	292,542,457,953	56,341,885,897	46,480,809,912
Non-cash items					
Accounts payable from purchases of property, plant and equipment and investment properties		17,087,410,494	21,829,487,413	1,252,711,363	4,072,072,617
Accounts payable from purchases of intangible assets		419,054,049	212,468,939	71,341,605	91,630,970

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 2020

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, technology and engineering, and other related businesses as described in Note 42 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 (FAP), 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 based on the assumption that users of the financial statements have an understanding of Thai generally accepted accounting principles and practices, which may differ from generally accepted accounting principles adopted in other countries.

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 3.2 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 Thai Financial Reporting Standards (TFRSs) that became effective in current year and will become effective in the future are as follows:

Effective for accounting periods on or after 1 January 2020

◆ TAS 1	Presentation of Financial Statements
◆ TAS 2	Inventories
◆ TAS 7	Statement of Cash Flows
◆ TAS 8	Accounting Policies, Changes in Accounting Estimates and Errors
◆ TAS 10	Events after the Reporting Period
◆ TAS 12	Income Taxes
◆ TAS 16	Property, Plant and Equipment
◆ TAS 19	Employee Benefits
◆ TAS 20	Accounting for Government Grants and Disclosure of Government Assistance
◆ TAS 21	The Effects of Changes in Foreign Exchange Rates
◆ TAS 23	Borrowing Costs

3. Accounting policies (Continued)

3.1 Thai Financial Reporting Standards (TFRSs) that became effective in current year and will become effective in the future are as follows: (Continued)

Effective for accounting periods on or after 1 January 2020 (Continued)

◆ TAS 24	Related Party Disclosures
◆ TAS 26	Accounting and Reporting by Retirement Benefit Plans
◆ TAS 27	Separate Financial Statements
◆ TAS 28	Investments in Associates and Joint Ventures
◆ TAS 29	Financial Reporting in Hyperinflationary Economies
◆ TAS 32	Financial Instruments: Presentation
◆ TAS 33	Earnings per Share
◆ TAS 34	Interim Financial Reporting
◆ TAS 36	Impairment of Assets
◆ TAS 37	Provisions, Contingent Liabilities and Contingent Assets
◆ TAS 38	Intangible Assets
◆ TAS 40	Investment Property
◆ TAS 41	Agriculture
◆ TFRS 1	First-time Adoption of Thai Financial Reporting Standards
◆ TFRS 2	Share-based Payment
◆ TFRS 3	Business Combinations
◆ TFRS 4	Insurance Contracts
◆ TFRS 5	Non-current Assets Held for Sale and Discontinued Operations
◆ TFRS 6	Exploration for and Evaluation of Mineral Resources
◆ TFRS 7	Financial Instruments: Disclosures
◆ TFRS 8	Operating Segments
◆ TFRS 9	Financial Instruments
◆ TFRS 10	Consolidated Financial Statements
◆ TFRS 11	Joint Arrangements
◆ TFRS 12	Disclosure of Interests in Other Entities
◆ TFRS 13	Fair Value Measurement
◆ TFRS 14	Regulatory Deferral Accounts
◆ TFRS 15	Revenue from Contracts with Customers
◆ TFRS 16	Leases
◆ TSIC 7	Introduction of the Euro

3. Accounting policies (Continued)

3.1 Thai Financial Reporting Standards (TFRSs) that became effective in current year and will become effective in the future are as follows: (Continued)

Effective for accounting periods on or after 1 January 2020 (Continued)

◆ TSIC 10	Government Assistance - No Specific Relation to Operating Activities
◆ TSIC 25	Income Taxes - Changes in the Tax Status of an Entity or its Shareholders
◆ TSIC 29	Service Concession Arrangements: Disclosure
◆ TSIC 32	Intangible Assets - Web Site Costs
◆ TFRIC 1	Changes in Existing Decommissioning, Restoration and Similar Liabilities
◆ TFRIC 2	Members' Shares in Co-operative Entities and Similar Instruments
◆ TFRIC 5	Rights to Interests arising from Decommissioning, Restoration and Environmental Rehabilitation Funds
◆ TFRIC 6	Liabilities arising from Participating in a Specific Market - Waste Electrical and Electronic Equipment
◆ TFRIC 7	Applying the Restatement Approach under TAS 29 Financial Reporting in Hyperinflationary Economies
◆ TFRIC 10	Interim Financial Reporting and Impairment
◆ TFRIC 12	Service Concession Arrangements
◆ TFRIC 14	TAS 19 - The Limit on a Defined Benefit Asset, Minimum Funding Requirements and their Interaction
◆ TFRIC 16	Hedges of a Net Investment in a Foreign Operation
◆ TFRIC 17	Distributions of Non-cash Assets to Owners
◆ TFRIC 19	Extinguishing Financial Liabilities with Equity Instruments
◆ TFRIC 20	Stripping Costs in the Production Phase of a Surface Mine
◆ TFRIC 21	Levies
◆ TFRIC 22	Foreign Currency Transactions and Advance Consideration
◆ TFRIC 23	Uncertainty over Income Tax Treatments

3. Accounting policies (Continued)

3.1 Thai Financial Reporting Standards (TFRSs) that became effective in current year and will become effective in the future are as follows: (Continued)

Effective for accounting periods on or after 1 January 2021

◆ Conceptual Framework for Financial Reporting	
◆ TAS 1	Presentation of Financial Statements
◆ TAS 2	Inventories
◆ TAS 7	Statement of Cash Flows
◆ TAS 8	Accounting Policies, Changes in Accounting Estimates and Errors
◆ TAS 10	Events after the Reporting Period
◆ TAS 12	Income Taxes
◆ TAS 16	Property, Plant and Equipment
◆ TAS 19	Employee Benefits
◆ TAS 20	Accounting for Government Grants and Disclosure of Government Assistance
◆ TAS 21	The Effects of Changes in Foreign Exchange Rates
◆ TAS 23	Borrowing Costs
◆ TAS 24	Related Party Disclosures
◆ TAS 26	Accounting and Reporting by Retirement Benefit Plans
◆ TAS 27	Separate Financial Statements
◆ TAS 28	Investments in Associates and Joint Ventures
◆ TAS 29	Financial Reporting in Hyperinflationary Economies
◆ TAS 32	Financial Instruments: Presentation
◆ TAS 33	Earnings per Share
◆ TAS 34	Interim Financial Reporting
◆ TAS 36	Impairment of Assets
◆ TAS 37	Provisions, Contingent Liabilities and Contingent Assets
◆ TAS 38	Intangible Assets
◆ TAS 40	Investment Property
◆ TAS 41	Agriculture
◆ TFRS 1	First-time Adoption of Thai Financial Reporting Standards
◆ TFRS 2	Share-based Payment
◆ TFRS 3	Business Combinations
◆ TFRS 4	Insurance Contracts

3. Accounting policies (Continued)

3.1 Thai Financial Reporting Standards (TFRSs) that became effective in current year and will become effective in the future are as follows: (Continued)

Effective for accounting periods on or after 1 January 2021 (Continued)

◆ TFRS 5	Non-current Assets Held for Sale and Discontinued Operations
◆ TFRS 6	Exploration for and Evaluation of Mineral Resources
◆ TFRS 7	Financial Instruments: Disclosures
◆ TFRS 8	Operating Segments
◆ TFRS 9	Financial Instruments
◆ TFRS 10	Consolidated Financial Statements
◆ TFRS 11	Joint Arrangements
◆ TFRS 12	Disclosure of Interests in Other Entities
◆ TFRS 13	Fair Value Measurement
◆ TFRS 14	Regulatory Deferral Accounts
◆ TFRS 15	Revenue from Contracts with Customers
◆ TFRS 16	Leases
◆ TSIC 10	Government Assistance - No Specific Relation to Operating Activities
◆ TSIC 25	Income Taxes - Changes in the Tax Status of an Entity or its Shareholders
◆ TSIC 29	Service Concession Arrangements: Disclosure
◆ TSIC 32	Intangible Assets - Web Site Costs
◆ TFRIC 1	Changes in Existing Decommissioning, Restoration and Similar Liabilities
◆ TFRIC 2	Members' Shares in Co-operative Entities and Similar Instruments
◆ TFRIC 5	Rights to Interests arising from Decommissioning, Restoration and Environmental Rehabilitation Funds
◆ TFRIC 6	Liabilities arising from Participating in a Specific Market - Waste Electrical and Electronic Equipment
◆ TFRIC 7	Applying the Restatement Approach under TAS 29 Financial Reporting in Hyperinflationary Economies
◆ TFRIC 10	Interim Financial Reporting and Impairment
◆ TFRIC 12	Service Concession Arrangements
◆ TFRIC 14	TAS 19 - The Limit on a Defined Benefit Asset, Minimum Funding Requirements and their Interaction
◆ TFRIC 16	Hedges of a Net Investment in a Foreign Operation
◆ TFRIC 17	Distributions of Non-cash Assets to Owners

3. Accounting policies (Continued)

3.1 Thai Financial Reporting Standards (TFRSs) that became effective in current year and will become effective in the future are as follows: (Continued)

Effective for accounting periods on or after 1 January 2021 (Continued)

◆ TFRIC 19	Extinguishing Financial Liabilities with Equity Instruments
◆ TFRIC 20	Stripping Costs in the Production Phase of a Surface Mine
◆ TFRIC 21	Levies
◆ TFRIC 22	Foreign Currency Transactions and Advance Consideration
◆ TFRIC 23	Uncertainty over Income Tax Treatments

During the year, the Group has adopted the revised (revised 2019) and new financial reporting standards and interpretations which are effective for fiscal years beginning on or after 1 January 2020. The management of the Group has assessed impacts of the amended financial reporting standards and interpretations and it is believed that deploying the amended standards has no significant impact on the consolidated financial statements and the separate financial statements, except where the new standard involves changes to key principles. The financial reporting standards are summarised below:

Financial reporting standards related to financial instruments

◆ TAS 32	Financial Instruments: Presentation
◆ TFRS 7	Financial Instruments: Disclosures
◆ TFRS 9	Financial Instruments
◆ TFRIC 16	Hedges of a Net Investment in a Foreign Operation
◆ TFRIC 19	Extinguishing Financial Liabilities with Equity Instruments

The above financial instruments standards will replace the following standards.

◆ TAS 101	Doubtful Accounts and Bad Debts
◆ TAS 103	Disclosures in the Financial Statements of Banks and Similar Financial Institutions
◆ TAS 104 (revised 2016)	Accounting for Troubled Debt Restructuring
◆ TAS 105 (revised 2016)	Accounting for Investments in Debt and Equity Securities
◆ TAS 106	Accounting for Investment Entities
◆ TAS 107 (revised 2016)	Financial Instruments: Disclosure and Presentation
◆ TI 9	Assets Transferred by Debtors for Debt Settlement

3. Accounting policies (Continued)

3.1 Thai Financial Reporting Standards (TFRSs) that became effective in current year and will become effective in the future are as follows: (Continued)

The TFRSs related to financial instruments establish principles for classification and measurement of financial instruments at fair value or amortized cost, with determination made based on the type of financial instrument, the contractual cash flow characteristics, and the business model. They also establish principles for calculating asset impairment, using the expected credit loss concept, and for hedge accounting, as well as presentation and disclosures related to financial instruments.

The adoption of these standards has the impact on the Group's financial statements to result in the following adjustments.

- Classification and measurement of non-listed equity investments - The Group has decided to measure these investments at fair value and classify them as financial assets at fair value through other comprehensive income.
- Classification and measurement of investments in available-for-sale equity securities - The Group has elected to irrevocably classify some of these investments as financial assets at fair value through other comprehensive income and some of them as financial assets at fair value through profit or loss.
- Classification and measurement of investments in available-for-sale debt securities - The Group has decided to classify some of these investments as financial assets at amortized cost or fair value through other comprehensive income or fair value through profit or loss based on their characteristics of the contractual cash flows and the Group's business model on the TFRS 9 transition date.
- Recognition of expected credit losses - The Group recognizes an allowance for expected credit losses on its debt instruments measured at amortized cost or fair value through other comprehensive income, and it is no longer necessary for a credit-impaired event to have occurred.
- Recognition of derivatives - The Group initially recognizes derivatives at their fair value on the contract date and subsequently measures them at fair value at the end of each reporting period. Changes in the fair value of derivatives are recognized in profit or loss. However, the Group applies hedge accounting for certain derivatives.

3. Accounting policies (Continued)

3.1 Thai Financial Reporting Standards (TFRSs) that became effective in current year and will become effective in the future are as follows: (Continued)

- Hedge accounting - All of the Group's hedging relationships existing before TFRS 9 adoption, that are eligible under TFRS 9 requirements, remain eligible to be treated as hedging relationships. The Group has designated certain derivatives under cash flow hedge. Changes in the fair value of these derivatives are recognized in other comprehensive income. Gains and losses arising on cash flow hedges are eligible to be subsequently reclassified to profit or loss or incorporated into the initial carrying amounts of the non-financial assets.

TFRS 16 Leases will replace the following standards.

◆ TAS 17 (revised 2018)	Leases
◆ TSIC 15 (revised 2018)	Operating Leases - Incentives
◆ TSIC 27 (revised 2018)	Evaluating the Substance of Transactions Involving the Legal Form of a Lease
◆ TFRIC 4 (revised 2018)	Determining Whether an Arrangement Contains a Lease

TFRS 16 establishes principles for the identification, recognition, measurement, presentation and disclosure of leases for both lessees and lessors. It significantly changes the guidance on leases, cancelling the requirement for lessees to classify leases as operating leases and financial leases as specified in TAS 17 and requiring them to recognize right-of-use assets and lease liabilities at the commencement date for all leases, except short-term leases and leases for which the underlying asset is of low value. Lessors are still required to classify leases as operating or finance leases, on the same basis as under TAS 17.

The Group adopted these financial reporting standards using the modified retrospective method of initial adoption, whereby the cumulative effect was recognized as an adjustment to retained earnings as at 1 January 2020, and the comparative information was not restated.

3. Accounting policies (Continued)

3.1 Thai Financial Reporting Standards (TFRSs) that became effective in current year and will become effective in the future are as follows: (Continued)

Announcement of the Federation of Accounting Professions relaxing classification of perpetual bonds

The Group has subordinated capital debentures that are presented under shareholders' equity because of the nature of the debentures, with principal repaid in a single payment when the business is dissolved or when the issuer exercises a call option to redeem the debentures prior to maturity, in compliance with specified conditions. Moreover, the issuer has the right, at its sole discretion, to defer payment for an unlimited period and number of times. Deferred payments are accumulated, with no interest charge. However, in accordance with Paragraph 25 of TAS 32 Financial Instruments: Presentation, effective for annual reporting periods beginning on or after 1 January 2020, the Group would have to classify these debentures as financial liabilities, since certain conditions in "The indenture of subordinated capital debentures" can be interpreted as meaning the debenture holders have the right to receive settlement from redemption of the debentures prior to liquidation. Announcement No. 95/ 2562 of the Federation of Accounting Professions was issued to relax the classification of perpetual bonds, allowing those issued and paid-up prior to 31 December 2019 to continue to be recorded under shareholders' equity until 31 December 2022.

As at 31 December 2020, the Group recorded subordinated capital debentures totaling Baht 4,982 million in the consolidated financial statements and presented this amount under non-controlling interests of subsidiaries.

The cumulative effects of the changes in accounting policies are presented in Note 4.

The management of the Group has assessed impacts of the application of the revised and new financial reporting standards which are effective for fiscal years beginning on or after 1 January 2021 and it is believed that adopting the revised and new standards has no significant impact on the consolidated financial statements and the separate financial statements, except amendments to TFRS 9 - Financial Instruments and TFRS 7 - Financial Instruments: Disclosures change specific hedge accounting requirements in order to provide relief from the uncertainty arising as a result of reform of interest rate benchmarks, such as Interbank Offered Rates (IBORs). The amendments also require additional disclosures regarding hedging relationships that are directly affected by any such uncertainty. The Group is assessing the impacts of applying such standards.

3.2 Significant accounting policies

3.2.1 Cash and cash equivalents

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

3. Accounting policies (Continued)

3.2 Significant accounting policies (Continued)

3.2.2 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 the statement of income. 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.

3.2.3 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.

3.2.4 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)

3.2 Significant accounting policies (Continued)

3.2.5 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 in statement of income.
- Costs related to the acquisition, including professional fees, appraisal fees and other consulting fees, are recognized as expenses in statement of income.

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)

3.2 Significant accounting policies (Continued)

3.2.5 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 17.

3.2.6 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 the business combination under common control. Acquisition costs which are higher than fair value of identifiable assets and liabilities of the Group's equity interest in joint ventures and associates are recorded as goodwill and included in the investment in joint ventures and associates.

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)

3.2 Significant accounting policies (Continued)

3.2.6 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 17.

3.2.7 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 separate and 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 17.

3.2.8 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)

3.2 Significant accounting policies (Continued)

3.2.9 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.

3.2.10 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)

3.2 Significant accounting policies (Continued)

3.2.11 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 5 to 30 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.

3.2.12 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)

3.2 Significant accounting policies (Continued)

3.2.12 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 - 40 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 - 32 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 statement of income 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 the statement of income when incurred.

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

3. Accounting policies (Continued)

3.2 Significant accounting policies (Continued)

3.2.12 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 the statement of income when incurred.

3. Accounting policies (Continued)

3.2 Significant accounting policies (Continued)

3.2.12 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.

3.2.13 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 the statement of income.

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.

3.2.14 Intangible assets

Intangible assets are initially recognized at cost less accumulated amortization and accumulated impairment losses (if any). Amortization is recorded as expenses in profit or loss.

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 their costs.

Intangible assets include computer software licenses, asset rights such as gas transmission pipelines, including customer contracts, copyrights and trademarks and other intangible assets such as other operating rights.

3. Accounting policies (Continued)

3.2 Significant accounting policies (Continued)

3.2.14 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 32 years.

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

3.2.15 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 3.2.12.

The capitalized exploration and evaluation expenditure is charged to statement of income in the period in which the projects have not identified proved reserves or have identified proved reserves, but have not been found to be commercially producible.

Mining properties

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

- a) 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.
- b) 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 3.2.13.

3. Accounting policies (Continued)

3.2 Significant accounting policies (Continued)

3.2.16 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. Accounting policies (Continued)

3.2 Significant accounting policies (Continued)

3.2.17 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

Accounting policies adopted since 1 January 2020

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.

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 - 40 years
Buildings	2 - 28 years
Machinery and equipment	2 - 40 years
Motor vehicles	2 - 6 years
Others	2 - 6 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.

3. Accounting policies (Continued)

3.2 Significant accounting policies (Continued)

3.2.17 Leases (Continued)

The Group as a lessee (Continued)

Accounting policies adopted since 1 January 2020 (Continued)

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.

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.

Accounting policies adopted before 1 January 2020

Leases of property, plant or equipment which transfer substantially all the risks and rewards of ownership are classified as finance leases. Finance leases are capitalized at the lower of the fair value of the leased assets and the present value of the minimum lease payments. The outstanding rental obligations, net of finance charges, are included in long-term payables, while the interest element is charged to profit or loss over the lease period. The assets acquired under finance leases is depreciated over the shorter of the useful life of the asset or the lease period.

Leases of property, plant or equipment which do not transfer substantially all the risks and rewards of ownership are classified as operating leases. Operating lease payments are recognized as an expense in profit or loss on a straight-line basis over the lease term.

3. Accounting policies (Continued)

3.2 Significant accounting policies (Continued)

3.2.17 Leases (Continued)

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.

3.2.18 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.

3. Accounting policies (Continued)

3.2 Significant accounting policies (Continued)

3.2.18 Income taxes (Continued)

Deferred tax (Continued)

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

Deferred tax assets are recognized to the extent that it is highly probable that the future taxable profits of the Group will be available against which the temporary differences can be utilized. Deferred tax assets are reduced to the extent that it is no longer probable that the related tax benefits will be realized.

The Group recognized deferred tax as income or an expense and included in profit or loss for the period, 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.

3.2.19 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.

3.2.20 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.

3. Accounting policies (Continued)

3.2 Significant accounting policies (Continued)

3.2.20 Provision for decommissioning costs (Continued)

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.

3.2.21 Provisions for employee benefits

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

1. Short-term employee benefits are recognized in profit or loss as expenses when incurred.
2. 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.
3. 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.
4. 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.
5. 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. Accounting policies (Continued)

3.2 Significant accounting policies (Continued)

3.2.22 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.

3.2.23 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.

3.2.24 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. Accounting policies (Continued)

3.2 Significant accounting policies (Continued)

3.2.25 Financial instruments

Accounting policies adopted since 1 January 2020

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.

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, 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.

3. Accounting policies (Continued)

3.2 Significant accounting policies (Continued)

3.2.25 Financial instruments (Continued)

Accounting policies adopted since 1 January 2020 (Continued)

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.

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.

3. Accounting policies (Continued)

3.2 Significant accounting policies (Continued)

3.2.25 Financial instruments (Continued)

Accounting policies adopted since 1 January 2020 (Continued)

Derecognition of financial instruments

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 neither transferred nor retained substantially all the risks and rewards of the asset but 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)

3.2 Significant accounting policies (Continued)

3.2.25 Financial instruments (Continued)

Accounting policies adopted since 1 January 2020 (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 in 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. It is 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.

Accounting policies adopted before 1 January 2020

Trade Accounts and Other Accounts Receivable

Trade accounts and other accounts receivable are carried at net realizable value. Allowance for doubtful accounts are estimated based on uncollectible amounts estimating from outstanding receivables at the statement of financial position date based on collection experience of their current financial status, also with percentage of debt aging. Doubtful account is recorded as administrative expenses in profit or loss.

3. Accounting policies (Continued)

3.2 Significant accounting policies (Continued)

3.2.25 Financial instruments (Continued)

Accounting policies adopted before 1 January 2020 (Continued)

Other Investments

Investments other than investments in subsidiaries, joint ventures, and associates are classified as available-for-sale investments and other long-term investments.

Investments in equity securities and mutual funds that are marketable securities are classified as available-for-sale investments and carried at fair value in the statements of financial position. Any changes in value are recognized as gain (loss) from fair value measurement of available-for-sale investments in other comprehensive income or loss and accumulated amounts are accumulated differences are presented in other components of equity under equity.

Investments in non-marketable equity securities, which are classified as other long-term investments, are carried at cost net of allowance for impairment in the statement of financial position. Impairment testing is performed when there is a factor indicating that the investment might be impaired. If the carrying amount of the investment is higher than its recoverable amount, impairment losses are recognized in profit or loss immediately.

Investment in held-to-maturity debt securities which an entity intends and has an ability to hold until the maturity date are classified as other long-term investments and carried at amortized cost in the statement of financial position. The Group will record loss on impairment in the statement of income immediately when it is highly probable that the Group cannot collect entire/some principals or interests as state in contracts.

Upon the disposal of investments, the difference between the net disposal proceeds and the carrying amount is recognized in profit or loss. When the available-for-sale investments are disposed, the Group will record the cumulative amount of fair value in other components of equity under equity as gain (loss) on disposal of investments. When disposing of some parts of the Group's particular investment in debt or equity securities, the carrying amount of the part disposed is calculated by using the weighted average carrying amount of the total holding of the investment.

3. Accounting policies (Continued)

3.2 Significant accounting policies (Continued)

3.2.26 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 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.

3.2.27 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. Accounting policies (Continued)

3.2 Significant accounting policies (Continued)

3.2.28 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.

3.3 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.

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:

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 amount of decommissioning of completed construction that is ready for its intended use. These costs are included as part of 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.

Provisions depend on various current circumstances such as laws and regulations, technologies and market prices. Therefore, the actual result is likely to be different from estimates and assumptions.

3. Accounting policies (Continued)

3.3 Use of significant estimates and assumptions (Continued)

Income tax

The Group is responsible for the payment of tax in various countries. When income tax payable is estimated, the Group uses significant judgment due to the numerous transactions and calculations arising from its operations.

The Group recognizes income tax payable based on estimated incremental tax payments. The difference between the actual tax paid and the estimate will affect income tax and deferred tax in the period the difference occurs.

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

Estimates of petroleum reserves

Petroleum reserves are of fundamental importance when assessing investments in various exploration projects and petroleum production businesses, including impairment testing. Changes in proved reserves will affect the present value of net cash flows and depreciation expenses which are calculated using the unit of production method.

The proved reserves are the volume of commercial petroleum production as of a certain date with a high probability of achievement under current economic conditions and production methods, as well as government's rules and regulations. The proved reserves will be checked and assessed annually by the Group's geologists and reservoir engineers.

Impairment of non-financial assets

The Group considers recording an allowance for impairment of assets when an event or a circumstance indicates 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. As a result, the carrying amount of an asset is written down immediately to its recoverable amount. The decrease is recorded in profit or loss. Thus, the loss on impairment of assets excluding goodwill recognized in the prior period will be reversed if the estimates for indicated recoverable amount changes.

The Group's estimate of the selling price based on global oil market prices, the expected amount of future petroleum production and margin rate in petroleum exploration and production businesses are the key factors in impairment tests. The Group believes that these are the most reasonable indicators for estimating future cash flows which is recoverable amount of value in use. The future petroleum production comprises proved reserves and unproved reserves.

3. Accounting policies (Continued)

3.3 Use of significant estimates and assumptions (Continued)

Impairment of non-financial assets (Continued)

The estimation of discounted future cash flows depends on various factors such as the expected amount of future production, future selling prices, demand and supply in the market, risks and gross margins. The discounted rates used in the calculation of present value of future cash flows depend on the cost of capital of the asset unit.

Consolidation of subsidiaries that Company holds less than half of shares

It is considered by the management of the Company 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 Group and have to be included in the consolidated financial statements from the date on which the Company assumed control over these companies.

Determining the lease term with extension and termination options - The Group as a lessee

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 as a lessee

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 - The Group as a lessor

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. Cumulative effects of changes in accounting policies

The impacts on the beginning balance of 2020 from changes in accounting policies due to the adoption of TFRSs related to financial instruments and TFRS 16 Leases are presented as follows:

Unit: Million Baht

	Consolidated financial statements			1 January 2020
	31 December 2019	The impacts of		
		TFRSs related to financial instruments	TFRS 16	
Statement of financial position				
Assets				
Current assets				
Short-term investments in				
financial assets	-	38,263	-	38,263
Current investments	38,263	(38,263)	-	-
Trade accounts receivable	167,641	(19)	-	167,622
Other accounts receivable	49,612	1,174	(764)	50,022
Short-term lending	2,669	-	(136)	2,533
Inventories	117,747	10	-	117,757
Current derivative assets	3,686	593	-	4,279
Other current financial assets	6,681	(2)	-	6,679
Other current assets	3,878	-	(18)	3,860
Non-current assets				
Other long-term investments in financial				
assets	-	26,618	-	26,618
Available-for-sale investments	6,687	(6,687)	-	-
Investments in joint ventures	49,513	(106)	(2)	49,405
Other long-term investments	17,932	(17,932)	-	-
Long-term lending	12,474	-	(211)	12,263
Investment properties	7,987	-	107	8,094
Property, plant and equipment	1,294,979	-	(9,036)	1,285,943
Right-of-use assets	-	-	69,111	69,111
Other intangible assets	79,968	-	(11,004)	68,964
Deferred tax assets	47,611	(76)	53	47,588
Non-current derivative assets	3,811	1,071	-	4,882
Other non-current financial assets	6,616	(31)	-	6,585
Other non-current assets	21,890	-	(7,910)	13,980
Total assets	1,939,645	4,613	40,190	1,984,448

4. Cumulative effects of changes in accounting policies (Continued)

The impacts on the beginning balance of 2020 from changes in accounting policies due to the adoption of TFRSs related to financial instruments and TFRS 16 Leases are presented as follows: (Continued)

Unit: Million Baht

	Consolidated financial statements			1 January 2020
	31 December 2019	The impacts of		
		TFRSs related to financial instruments	TFRS 16	
Statement of financial position				
Liabilities				
Current liabilities				
Other accounts payable	78,397	1,521	(22)	79,896
Current portion of lease liabilities	1,342	-	5,007	6,349
Current derivative liabilities	2,522	795	-	3,317
Other current financial liabilities	4,163	(110)	-	4,053
Non-current liabilities				
Long-term borrowings	555,018	(16)	-	555,002
Lease liabilities	7,728	-	35,541	43,269
Deferred tax liabilities	56,674	(84)	(23)	56,567
Non-current derivative liabilities	2,702	767	-	3,469
Other non-current financial liabilities	18,949	1,165	-	20,114
Other non-current liabilities	27,696	-	(7)	27,689
Total liabilities	755,191	4,038	40,496	799,725
Shareholders' equity				
Retained earnings - unappropriated	869,016	(335)	(160)	868,521
Other components of shareholders' equity	(16,036)	1,426	1	(14,609)
Non-controlling interests of the subsidiaries	422,436	(516)	(147)	421,773
Total shareholders' equity	1,275,416	575	(306)	1,275,685

4. Cumulative effects of changes in accounting policies (Continued)

The impacts on the beginning balance of 2020 from changes in accounting policies due to the adoption of TFRSs related to financial instruments and TFRS 16 Leases are presented as follows: (Continued)

Unit: Million Baht

	Separate financial statements			1 January 2020
	31 December 2019	The impacts of TFRSs related to financial instruments		
		to financial instruments	TFRS 16	
Statement of financial position				
Assets				
Current assets				
Short-term investments in financial assets	-	15,002	-	15,002
Current investments	15,002	(15,002)	-	-
Other accounts receivable	8,404	1,849	(39)	10,214
Inventories	4,797	6	-	4,803
Current derivative assets	1,089	242	-	1,331
Other current financial assets	4,810	(2)	-	4,808
Non-current assets				
Other long-term investments in financial assets	-	7,236	-	7,236
Available-for-sale investments	2,987	(2,987)	-	-
Other long-term investments	4,257	(4,257)	-	-
Property, plant and equipment	273,821	-	(4,644)	269,177
Right-of-use assets	-	-	20,241	20,241
Other intangible assets	13,375	-	(10,770)	2,605
Deferred tax assets	1,257	113	-	1,370
Non-current derivative assets	913	604	-	1,517
Other non-current financial assets	274	(31)	-	243
Other non-current assets	1,114	-	(1,009)	105
Total assets	332,100	2,773	3,779	338,652

4. Cumulative effects of changes in accounting policies (Continued)

The impacts on the beginning balance of 2020 from changes in accounting policies due to the adoption of TFRSs related to financial instruments and TFRS 16 Leases are presented as follows: (Continued)

	Separate financial statements			Unit: Million Baht
	31 December 2019	The impacts of		1 January 2020
		TFRSs related to financial instruments	TFRS 16	
Statement of financial position				
Liabilities				
Current liabilities				
Other accounts payable	22,744	1,765	-	24,509
Current portion of lease liabilities	485	-	36	521
Current derivative liabilities	-	73	-	73
Non-current liabilities				
Long-term borrowings	90,263	(31)	-	90,232
Lease liabilities	3,472	-	3,743	7,215
Other non-current financial liabilities	15,306	1,361	-	16,667
Total liabilities	132,270	3,168	3,779	139,217
Shareholders' equity				
Retained earnings - unappropriated	544,005	(266)	-	543,739
Other components of shareholders' equity	1,426	(129)	-	1,297
Total shareholders' equity	545,431	(395)	-	545,036

4. Cumulative effects of changes in accounting policies (Continued)

Details of the impact on retained earnings and other components of shareholders' equity as at 1 January 2020 due to the adoption of TFRSs related to financial instruments and TFRS 16 Leases are presented as follows:

	Unit: Million Baht			
	Consolidated financial statements		Separate financial statements	
	Retained earnings	Other components of shareholders' equity	Retained earnings	Other components of shareholders' equity
Fair value measurement of investments in equity instruments of non-listed companies	21	-	21	-
Classification of available-for-sale investments as financial assets at fair value through profit or loss	132	(132)	106	(106)
Recognition of an allowance for expected credit losses on financial assets	(60)	-	-	-
Recognition of derivatives at fair value through profit or loss	(433)	-	(399)	-
Fair value measurement of inventories	10	-	6	-
Adjustment of effective interest rate	(5)	-	-	-
Recognition of lease liabilities	(160)	-	-	-
Exchange differences on translation of financial statements in foreign currency	-	4	-	-
Cash flow hedges	-	16	-	-
Share of other comprehensive income from joint ventures and associates	-	20	-	-
Fair value measurement of investments in equity instruments through other comprehensive income	-	2,142	-	(23)
Put options over non-controlling interest of the subsidiary	-	(623)	-	-
Total impacts	(495)	1,427	(266)	(129)

4. Cumulative effects of changes in accounting policies (Continued)

4.1 Financial instruments

As at 1 January 2020, Reclassification and measurement of financial assets and liabilities in accordance with TFRS 9 to comply the comparative figures presented in the statement of financial position for the year ended 31 December 2019 are presented as follows:

Unit: Million Baht

	Consolidated financial statements							Total
	As of 31 December, 2019	Reclassify	As of 1 January, 2020 after reclass (Exclude FV remeasurement)	Classification and measurement in accordance with TFRS9 as of 1 January, 2020				
				FV - Hedge instruments	FVTPL	FVTOCI	Amortized cost	
Financial assets								
Current assets								
Cash and cash equivalents	292,542	-	292,542	-	-	57	292,485	292,542
Short-term investments in financial assets	-	38,263	38,263	-	6,444	545	31,274	38,263
Current investments	38,263	(38,263)	-	-	-	-	-	-
Trade accounts receivable	167,641	-	167,641	-	-	-	167,622	167,622
Other accounts receivable	14,713	-	14,713	-	-	-	15,887	15,887
Short-term lending	2,669	-	2,669	-	-	-	2,669	2,669
Current derivative assets	3,686	-	3,686	-	4,279	-	-	4,279
Other current financial assets	6,681	-	6,681	-	-	-	6,679	6,679

4. Cumulative effects of changes in accounting policies (Continued)

4.1 Financial instruments (Continued)

As at 1 January 2020, Reclassification and measurement of financial assets and liabilities in accordance with TFRS 9 to comply the comparative figures presented in the statement of financial position for the year ended 31 December 2019 are presented as follows:

Unit: Million Baht

		Consolidated financial statements						
		Classification and measurement in accordance with TFRS9 as of 1 January,2020						
As of 31 December, 2019	Reclassify	As of 1 January, 2020 after reclass (Exclude FV remeasurement)	FV - Hedge instruments	FVTPL	FVTOCI	Amortized cost	Total	
Financial assets								
Non-current assets								
Other long-term								
investments in financial assets	-	24,619	24,619	-	1,200	20,767	4,651	26,618
Available-for-sale investments	6,687	(6,687)	-	-	-	-	-	-
Other long-term investments	17,932	(17,932)	-	-	-	-	-	-
Long-term lending	12,261	-	12,261	-	90	-	12,171	12,261
Non-current derivative assets	3,811	-	3,811	2,523	2,359	-	-	4,882
Other non-current financial assets	6,616	(31)	6,585	-	1,354	-	5,231	6,585
Total financial assets	573,502	(31)	573,471	2,523	15,726	21,369	538,669	578,287

4. Cumulative effects of changes in accounting policies (Continued)

4.1 Financial instruments (Continued)

As at 1 January 2020, Reclassification and measurement of financial assets and liabilities in accordance with TFRS 9 to comply the comparative figures presented in the statement of financial position for the year ended 31 December 2019 are presented as follows:

Unit: Million Baht

		Consolidated financial statements						
		As of 1 January, 2020 after reclass (Exclude FV remeasurement)	Classification and measurement in accordance with TFRS9 as of 1 January,2020					
As of 31 December, 2019	Reclassify		FV - Hedge instruments	FVTPL	FVTOCI	Amortized cost	Total	
Financial liabilities								
Current liabilities								
Bank overdrafts and short-term loans from financial institutions								
44,441	-	44,441	-	-	-	44,441	44,441	
Trade accounts payable								
158,255	-	158,255	-	-	-	158,255	158,255	
Other accounts payable								
73,033	(440)	72,593	-	-	-	74,553	74,553	
Current portion of long-term borrowings								
50,440	-	50,440	-	-	-	50,440	50,440	
Current derivative liabilities								
2,522	509	3,031	4	3,313	-	-	3,317	
Other current financial liabilities								
4,163	(110)	4,053	-	-	-	4,053	4,053	

4. Cumulative effects of changes in accounting policies (Continued)

4.1 Financial instruments (Continued)

As at 1 January 2020, Reclassification and measurement of financial assets and liabilities in accordance with TFRS 9 to comply the comparative figures presented in the statement of financial position for the year ended 31 December 2019 are presented as follows:

Unit: Million Baht

		Consolidated financial statements						
		Classification and measurement in accordance with TFRS9 as of 1 January,2020						
As of 31 December, 2019	Reclassify	As of 1 January, 2020 after reclass (Exclude FV remeasurement)	FV - Hedge instruments	FVTPL	FVTOCI	Amortized cost	Total	
Financial liabilities								
Non-current liabilities								
Long-term borrowings	555,018	(31)	554,987	-	-	-	555,002	555,002
Non-current derivative liabilities	2,702	672	3,374	2,131	1,338	-	-	3,469
Deposits on LPG cylinders	11,657	-	11,657	-	-	-	11,657	11,657
Other non-current financial liabilities	18,949	(631)	18,318	-	1,782	-	18,332	20,114
Total financial liabilities	921,180	(31)	921,149	2,135	6,433	-	916,733	925,301

4. Cumulative effects of changes in accounting policies (Continued)

4.1 Financial instruments (Continued)

As at 1 January 2020, Reclassification and measurement of financial assets and liabilities in accordance with TFRS 9 to comply the comparative figures presented in the statement of financial position for the year ended 31 December 2019 are presented as follows:

Unit: Million Baht

	Separate financial statements						
	As of 31 December, 2019	Reclassify	As of 1 January, 2020 after reclass (Exclude FV remeasurement)	Classification and measurement in accordance with TFRS9 as of 1 January, 2020			
				FVTPL	FVTOCI	Amortized cost	Total
Financial assets							
Current assets							
Cash and cash equivalents	46,481	-	46,481	-	-	46,481	46,481
Short-term investments in financial assets	-	15,002	15,002	-	-	15,002	15,002
Current investments	15,002	(15,002)	-	-	-	-	-
Trade accounts receivable	111,558	-	111,558	-	-	111,558	111,558
Other accounts receivable	2,266	-	2,266	-	-	4,115	4,115
Short-term lending	42,739	-	42,739	-	-	42,739	42,739
Current derivative assets	1,089	-	1,089	1,331	-	-	1,331
Other current financial assets	4,810	-	4,810	-	-	4,808	4,808

4. Cumulative effects of changes in accounting policies (Continued)

4.1 Financial instruments (Continued)

As at 1 January 2020, Reclassification and measurement of financial assets and liabilities in accordance with TFRS 9 to comply the comparative figures presented in the statement of financial position for the year ended 31 December 2019 are presented as follows:

Unit: Million Baht

	Separate financial statements						Total
	As of 31 December, 2019	Reclassify	As of 1 January, 2020 after reclass (Exclude FV remeasurement)	Classification and measurement in accordance with TFRS9 as of 1 January, 2020			
				FVTPL	FVTOCI	Amortized cost	
Financial assets							
Non-current assets							
Other long-term investments in financial assets	-	7,244	7,244	397	2,637	4,202	7,236
Available-for-sale investments	2,987	(2,987)	-	-	-	-	-
Other long-term investments	4,257	(4,257)	-	-	-	-	-
Long-term lending	24,982	-	24,982	-	-	24,982	24,982
Non-current derivative assets	913	-	913	1,517	-	-	1,517
Other non-current financial assets	274	(31)	243	-	-	243	243
Total financial assets	257,358	(31)	257,327	3,245	2,637	254,130	260,012

4. Cumulative effects of changes in accounting policies (Continued)

4.1 Financial instruments (Continued)

As at 1 January 2020, Reclassification and measurement of financial assets and liabilities in accordance with TFRS 9 to comply the comparative figures presented in the statement of financial position for the year ended 31 December 2019 are presented as follows:

Unit: Million Baht

	Separate financial statements						Total
	As of 31 December, 2019	Reclassify	As of 1 January, 2020 after reclass (Exclude FV remeasurement)	Classification and measurement in accordance with TFRS9 as of 1 January, 2020			
				FVTPL	FVTOCI	Amortized cost	
Financial liabilities							
Current liabilities							
Trade accounts payable	100,570	-	100,570	-	-	100,570	100,570
Other accounts payable	21,682	-	21,682	-	-	23,448	23,448
Current portion of long-term borrowings	27,118	-	27,118	-	-	27,118	27,118
Short-term borrowings	3,488	-	3,488	-	-	3,488	3,488
Current derivative liabilities	-	-	-	73	-	-	73
Other current financial liabilities	108	-	108	-	-	108	108
Non-current liabilities							
Long-term borrowings	90,263	(31)	90,232	-	-	90,232	90,232
Non-current derivative liabilities	324	-	324	324	-	-	324
Other non-current financial liabilities	15,306	-	15,306	-	-	16,667	16,667
Total financial liabilities	258,859	(31)	258,828	397	-	261,631	262,028

4. Cumulative effects of changes in accounting policies (Continued)

4.2 Leases

Upon initial application of TFRS 16 the Group recognized lease liabilities previously classified as operating leases at the present value of the remaining lease payments, discounted using the Group's incremental borrowing rate at 1 January 2020. For leases previously classified as finance leases, the Group recognized the carrying amount of the right-of-use assets and lease liabilities based on the carrying amounts of the lease assets and lease liabilities immediately before the date of initial application of TFRS 16.

	Unit: Million Baht	
	Consolidated financial statements	Separate financial statements
Commitments under operating leases as at 31 December 2019	47,827	4,848
Less: Short-term leases and leases of low-value assets	(1,115)	(245)
Add : Option to extend lease term and purchase option	7,235	-
Less: Contracts reassessed as service agreements	(497)	(122)
Add : Others	2,562	441
Less: Deferred interest expenses	(15,463)	(1,143)
Increase in lease liabilities due to TFRS 16 adoption	40,549	3,779
Liabilities under finance lease agreements as at 31 December 2019	9,070	3,957
Lease liabilities as at 1 January 2020	<u>49,619</u>	<u>7,736</u>
Comprise of:		
Current lease liabilities	6,350	521
Non-current lease liabilities	43,269	7,215
	<u>49,619</u>	<u>7,736</u>
Average incremental borrowing rate (% per annum)	1.41 - 14.00	1.48 - 3.23

5. Cash and cash equivalents

Cash and cash equivalents as at 31 December 2020 and 2019 are as follows:

Unit: Million Baht

	Consolidated financial statements		Separate financial statements	
	2020	2019	2020	2019
Cash	386	556	11	11
Bank deposits	220,563	192,074	48,591	36,016
Fixed deposits within 3 months	104,208	87,461	2,002	5,008
Treasury bills	1,132	593	-	-
Promissory notes	-	1,000	-	-
Bonds	5,738	5,446	5,738	5,446
Other investments	5	5,412	-	-
Total	332,032	292,542	56,342	46,481

Bank deposits, fixed deposits within 3 months, treasury bills, promissory notes, bonds, restricted bank cash and other investments, as at 31 December 2020 bear the interest at rates ranging from 0.00% - 7.50% per annum (As at 31 December 2019: interest rates ranging from 0.00% - 7.00% per annum). As at 31 December 2020, cash and cash equivalents are comprised of financial instruments which are rated as investment grade level.

6. Short-term investments in financial assets and current investments

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

Unit: Million Baht

	Consolidated financial statements		Separate financial statements	
	2020	2019	2020	2019
Fixed deposits	69,715	29,447	29,447	
Treasury bills	4,996	4,996	4,996	
Bonds	9,961	9,961	9,961	
Other investments	217	-	-	
Total	84,889	44,404	44,404	

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

6. Short-term investments in financial assets and current investments (Continued)

Current investments as at 31 December 2019 are as follows:

Unit: Million Baht

	Consolidated financial statements	Separate financial statements
Fixed deposits	17,365	1,239
Other investments	20,898	13,763
Total	38,263	15,002

Current investments as at 31 December 2019 bear the interest at rates ranging from 0.75% - 3.60% per annum

7. Trade accounts receivable

Trade accounts receivable as at 31 December 2020 and 2019 are as follows:

Unit: Million Baht

	Consolidated financial statements		Separate financial statements	
	2020	2019	2020	2019
Trade accounts receivable - unrelated parties	109,379	166,558	32,089	55,462
<u>Less</u> Allowance for expected credit loss/Allowance for doubtful accounts	(3,891)	(3,127)	(1,833)	(1,886)
Trade accounts receivable - unrelated parties - net	105,488	163,431	30,256	53,576
Trade accounts receivable - related parties - net (Note 10.1)	5,040	4,210	41,963	57,982
Total	110,528	167,641	72,220	111,558

7. Trade accounts receivable (Continued)

Trade accounts receivable as at 31 December 2020 and 2019 are as follows: (Continued)

Classified by aging as at 31 December 2020 is as follows:

	Unit: Million Baht	
	Consolidated financial statements	Separate financial statements
Within credit terms	108,407	71,993
Overdue		
- Within 1 month	1,380	42
- Over 1 - 2 months	391	210
- Over 2 - 3 months	81	1
- Over 3 - 12 months	1,298	12
- Over 12 months	2,862	1,795
	114,419	74,053
<u>Less Allowance for expected credit loss</u>	(3,891)	(1,833)
Total	110,528	72,220

Classified by aging as at 31 December 2019 is as follows:

	Unit: Million Baht	
	Consolidated financial statements	Separate financial statements
Within credit terms	161,975	108,240
Overdue		
- Within 3 months	5,216	3,006
- Over 3 - 6 months	83	44
- Over 6 - 12 months	382	249
- Over 12 months	3,112	1,905
	170,768	113,444
<u>Less Allowance for doubtful accounts</u>	(3,127)	(1,886)
Total	167,641	111,558

Trade accounts receivable - unrelated parties as at 31 December 2020 include receivables from government agencies and state enterprises in the consolidated financial statements amounting to Baht 12,378 million (As at 31 December 2019: Baht 21,958 million), and in the separate financial statements amounting to Baht 6,464 million (As at 31 December 2019: Baht 14,680 million).

7. Trade accounts receivable (Continued)

Trade accounts receivable as at 31 December 2020 and 2019 are as follows: (Continued)

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

	Unit: Million Baht	
	Consolidated financial statements	Separate financial statements
Balance as at 1 January 2020	3,127	1,886
Cumulative effects of changes in accounting policies	18	-
Balance as at 1 January 2020 after cumulative effects of changes in accounting policies adjustments	3,145	1,886
- Net increase (decrease)	728	(53)
- Gain on exchange rates	(24)	-
- Exchange differences on translation of financial statements	42	-
Balance as at 31 December 2020	3,891	1,833

8. Other accounts receivable

Other accounts receivable as at 31 December 2020 and 2019 are as follows:

Unit: Million Baht

	Consolidated financial statements		Separate financial statements	
	2020	2019	2020	2019
Other accounts receivable	19,080	18,650	2,365	1,660
<u>Less</u> Allowance for expected credit loss/Allowance for doubtful accounts	(554)	(713)	(432)	(432)
Other accounts receivable	18,526	17,937	1,933	1,228
Advance payments	5,179	8,546	144	292
Refund receivable from the Oil Stabilization Fund	21,285	16,116	7,775	5,539
Current tax assets	3,567	5,557	15	-
Other accounts receivable - unrelated parties - net	48,557	48,156	9,867	7,059
Other accounts receivable - related parties (Note 10.2)	1,813	1,010	1,307	1,099
Advance payments - related parties (Note 10.2)	1,329	446	338	246
Total	51,699	49,612	11,512	8,404

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.

9. Lending

9.1 Short-term lending as at 31 December 2020 and 2019 are as follows:

Unit: Million Baht

	Consolidated financial statements		Separate financial statements	
	2020	2019	2020	2019
Current portion of finance lease receivable - unrelated parties	1,176	1,106	-	-
Current portion of finance lease receivable - related parties (Note 10.2)	5	5	-	-
Short-term lending - related parties (Note 10.2)	537	1,558	5,137	21,369
Total	1,718	2,669	5,137	21,369

9.2 Long-term lending as at 31 December 2020 and 2019 are as follows:

Unit: Million Baht

	Consolidated financial statements		Separate financial statements	
	2020	2019	2020	2019
Long-term finance lease receivable - unrelated parties	6,072	7,578	-	-
Long-term finance lease receivable - related parties (Note 10.3)	46	51	-	-
Long-term lending - unrelated parties	471	1,230	-	-
Long-term lending - related parties (Note 10.3)	3,043	3,615	44,663	24,982
Total	9,632	12,474	44,663	24,982

As at 31 December 2020, short-term and long-term lendings are mostly comprised of lendings to entities with high credit rating level.

10. Related party transactions

Significant transactions carried out with related parties are as follows:

10.1 Trade accounts receivable - related parties as at 31 December 2020 and 2019

Unit: Million Baht

	Consolidated		Separate	
	financial statements		financial statements	
	2020	2019	2020	2019
Subsidiaries	-	-	39,609	55,739
Joint ventures	2,814	2,188	1,151	1,000
Associates	1,265	1,056	250	287
Other related parties	961	966	954	956
Total (Note 7)	5,040	4,210	41,964	57,982

Classified by aging as at 31 December 2020 as follows:

Unit: Million Baht

	Consolidated	Separate
	financial	financial
	statements	statements
Within credit terms	4,997	41,791
Overdue		
- Within 1 month	41	-
- Over 1 - 2 months	1	173
- Over 2 - 3 months	-	-
- Over 3 - 12 months	1	-
	5,040	41,964
<u>Less Allowance for expected credit loss</u>	-	-
Total (Note 7)	5,040	41,964

10. Related party transactions (Continued)

10.1 Trade accounts receivable - related parties as at 31 December 2020 and 2019 (Continued)

Classified by aging as at 31 December 2019 as follows:

Unit: Million Baht

	Consolidated financial statements	Separate financial statements
Within credit terms	4,164	57,982
Overdue		
- Within 3 months	34	-
- Over 3 - 6 months	3	-
- Over 6 - 12 months	9	-
	4,210	57,982
<u>Less Allowance for doubtful accounts</u>	-	-
Total (Note 7)	4,210	57,982

10.2 Other accounts receivable, advance payments, current portion of finance lease receivable, and short-term lending - related parties as at 31 December 2020 and 2019

Unit: Million Baht

	Consolidated		Separate	
	financial statements		financial statements	
	2020	2019	2020	2019
<u>Other accounts receivable</u>				
Subsidiaries	-	-	1,225	1,062
Joint ventures	514	322	75	29
Associates	234	208	7	6
Other related parties	1,065	480	-	2
Total (Note 8)	1,813	1,010	1,307	1,099
<u>Advance payments</u>				
Subsidiaries	-	-	13	6
Joint ventures	5	-	-	-
Associates	2	-	-	-
Other related parties	1,322	446	325	240
Total (Note 8)	1,329	446	338	246

10. Related party transactions (Continued)

10.2 Other accounts receivable, advance payments, current portion of finance lease receivable, and short-term lending - related parties as at 31 December 2020 and 2019 (Continued)

Unit: Million Baht

	Consolidated		Separate	
	financial statements		financial statements	
	2020	2019	2020	2019
<u>Current portion of finance lease receivable</u>				
Joint ventures (Note 9.1)	5	5	-	-
<u>Short-term lending</u>				
Subsidiaries	-	-	5,137	21,369
Joint ventures	537	1,558	-	-
Total (Note 9.1)	537	1,558	5,137	21,369

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

Unit: Million Baht

	Consolidated		Separate	
	financial statements		financial statements	
	2020	2019	2020	2019
Balance as at 1 January	-	242	5,913	2,500
- Loans granted	-	-	-	33,115
- Disposals	-	(576)	-	-
- Repayment receipt	-	(225)	(5,571)	(29,710)
- Gain (loss) on exchange rate	-	(17)	(18)	8
- Reversal of allowance for doubtful accounts	-	576	-	-
Balance As at 31 December	-	-	324	5,913
<u>Add Current portion (Note 10.3)</u>	537	1,558	4,813	15,456
Balance as at 31 December - net	537	1,558	5,137	21,369

Short-term lending - related parties as at 31 December 2020 in the separate financial statements bear interest rates ranging at 0.18% per annum (As at 31 December 2019: interest rates ranging from 1.15% - 3.25% per annum).

10. Related party transactions (Continued)

10.3 Long-term finance lease receivable and long-term lending - related parties as at 31 December 2020 and 2019

Unit: Million Baht

	Consolidated		Separate	
	financial statements		financial statements	
	2020	2019	2020	2019
<u>Long-term finance lease receivable</u>				
Joint ventures (Note 9.2)	46	51	-	-
<u>Long-term lending</u>				
Subsidiaries	-	-	44,663	24,982
Joint ventures	264	804	-	-
Associates	2,779	2,811	-	-
Total (Note 9.2)	3,043	3,615	44,663	24,982

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

Unit: Million Baht

	Consolidated		Separate	
	financial statements		financial statements	
	2020	2019	2020	2019
Balance as at 1 January	5,173	6,177	40,438	37,730
- Loans granted	3	837	26,969	30,992
- Repayment receipt	(1,595)	(1,835)	(17,932)	(28,115)
- Gain (loss) on exchange rates	-	(215)	1	(169)
- Business acquisition	-	220	-	-
- Exchange differences on translation of financial statements	(1)	(11)	-	-
Balance as at 31 December	3,580	5,173	49,476	40,438
<u>Less</u> Current portion (Note 10.2)	(537)	(1,558)	(4,813)	(15,456)
Balance as at 31 December - net	3,043	3,615	44,663	24,982

Long-term lending - related parties as at 31 December 2020 in the consolidated financial statements bear interest rates ranging from 0.00% - 6.38% per annum (As at 31 December 2019: interest rates ranging from 3.00% - 7.38% per annum), and in the separate financial statements bear interest rates ranging from 1.81% - 4.43% per annum (As at 31 December 2019: interest rates ranging from 2.57% - 4.68% per annum).

10. Related party transactions (Continued)

10.4 Trade accounts payable - related parties as at 31 December 2020 and 2019

Unit: Million Baht

	Consolidated financial statements		Separate financial statements	
	2020	2019	2020	2019
Subsidiaries	-	-	24,160	29,990
Joint ventures	797	808	237	246
Associates	187	338	-	-
Other related parties	4	4	-	-
Total (Note 27)	988	1,150	24,397	30,236

10.5 Other accounts payable, current portion of lease liabilities and short-term borrowings - related parties as at 31 December 2020 and 2019

Unit: Million Baht

	Consolidated financial statements		Separate financial statements	
	2020	2019	2020	2019
<u>Other accounts payable</u>				
Subsidiaries	-	-	7,162	6,696
Joint ventures	32	59	15	16
Associates	16	19	12	12
Other related parties	79	51	42	35
Total (Note 28)	127	129	7,321	6,759
<u>Current portion of lease liabilities</u>				
Subsidiaries	-	-	38	1
Joint ventures	1,145	375	383	375
Associates	2	-	-	-
Total	1,147	375	421	376
<u>Short-term borrowings*</u>				
Subsidiaries (Note 30.1)	-	-	2,561	3,488

* 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.

10. Related party transactions (Continued)

10.6 Lease liabilities and long-term borrowings - related parties as at 31 December 2020 and 2019

Unit: Million Baht

	Consolidated financial statements		Separate financial statements	
	2020	2019	2020	2019
<u>Lease liabilities</u>				
Subsidiaries	-	-	2	3
Joint ventures	3,860	3,181	2,812	3,181
Associates	7	-	-	-
Total	3,867	3,181	2,814	3,184
<u>Long-term borrowings</u>				
Subsidiaries	-	-	45,181	23,873

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

Unit: Million Baht

	Separate financial statements	
	2020	2019
Balance as at 1 January	23,873	-
- Loans	22,059	24,031
- Gain on exchange rates	(751)	(158)
Balance as at 31 December	45,181	23,873
<u>Less</u> Current portion	-	-
Balance as at 31 December - net	45,181	23,873

Long-term borrowings - subsidiaries as at 31 December 2020 in the separate financial statements bear interest rates ranging from 4.20% - 6.38% per annum (As at 31 December 2019: interest rates ranging from 4.95% - 6.38% per annum).

10. Related party transactions (Continued)

10.7 Revenue and expense transactions carried out with related parties

For the years ended 31 December 2020 and 2019

Unit: Million Baht

	Consolidated financial statements		Separate financial statements	
	2020	2019	2020	2019
Revenues				
<u>Sales and service income</u>				
Subsidiaries	-	-	441,846	634,492
Joint ventures	22,517	23,456	11,224	12,631
Associates	12,279	13,680	3,185	3,596
Other related parties	6,050	11,885	6,028	11,869
<u>Interest income</u>				
Subsidiaries	-	-	1,249	1,835
Joint ventures	71	161	-	-
Associates	149	170	-	-
<u>Dividend income</u>				
Subsidiaries	-	-	31,108	28,896
Joint ventures	-	-	675	657
Other related parties	522	293	132	116
<u>Other income</u>				
Subsidiaries	-	-	5,767	8,103
Joint ventures	316	390	71	118
Associates	188	244	19	19
Other related parties	756	107	60	43

10. Related party transactions (Continued)

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

For the years ended 31 December 2020 and 2019

Unit: Million Baht

	Consolidated		Separate	
	financial statements		financial statements	
	2020	2019	2020	2019
Expenses				
<u>Cost of goods purchased and services</u>				
Subsidiaries	-	-	225,815	288,485
Joint ventures	6,883	8,370	1,402	1,407
Associates	3,328	3,469	5	-
Other related parties	1,541	1,335	288	257
<u>Interest expenses</u>				
Subsidiaries	-	-	1,489	224
Joint ventures	158	53	48	53
<u>Other expenses</u>				
Subsidiaries	-	-	5,768	3,878
Joint ventures	2	11	-	-
Associates	109	82	48	4
Other related parties	369	382	89	144

10. Related party transactions (Continued)

10.8 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 2020 and 2019

Unit: Million Baht

	Consolidated financial statements		Separate financial statements	
	2020	2019	2020	2019
Purchasing				
Subsidiaries	-	-	-	11
Selling				
Subsidiaries	-	-	884	1,001

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. Goods purchased from subsidiaries are charged at the normal prices determined by the subsidiaries with reference to global market prices.

10.9 Details of commitments to subsidiaries and joint ventures are stated in Note 48.1

10. Related party transactions (Continued)

10.10 Executive remunerations

Details of executive remunerations for the years ended 31 December 2020 and 2019 are as follows:

Unit: Million Baht

	Consolidated financial statements		Separate financial statements	
	2020	2019	2020	2019
<u>Directors remuneration</u>				
Meeting remuneration and bonuses	311	504	45	64
<u>Managements remuneration</u>				
Salaries, bonuses, and other employee benefits	1,139	1,230	111	95
Post-employment benefits	30	56	2	2
Total	1,480	1,790	158	161

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

11. Inventories

Inventories as at 31 December 2020 and 2019 are as follows:

Unit: Million Baht

	Consolidated financial statements		Separate financial statements	
	2020	2019	2020	2019
Oil products	64,464	86,699	3,834	2,492
Gas products	2,374	2,867	1,935	2,398
Petrochemicals products	23,879	25,173	828	34
Others	3,957	4,624	514	510
	94,674	119,363	7,111	5,434
<u>Less Allowance for decline in value of inventories and obsolescence</u>	(1,147)	(1,616)	(591)	(637)
Total	93,527	117,747	6,520	4,797

11. Inventories (Continued)

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 2020 in the consolidated financial statements amounting to Baht 13,913 million (As at 31 December 2019: Baht 24,733 million), and in the separate financial statements amounting to Baht 749 million (As at 31 December 2019: Baht 802 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 2020 in the consolidated financial statements amounting to Baht 6,415 million and in the separate financial statements amounting to Baht 3,266 million.

12. Supplies

Supplies as at 31 December 2020 and 2019 are as follows:

	Consolidated		Separate	
	financial statements		financial statements	
	2020	2019	2020	2019
Spare parts, equipment and others	38,753	36,269	6,075	5,838
<u>Less</u> Allowance for obsolescence	(2,501)	(1,890)	(96)	(94)
Total	36,252	34,379	5,979	5,744

Unit: Million Baht

13. Assets held for sale

On 25 November 2020, 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 Thail Marine Company Limited 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. The Group expects this restructuring to be completed in June 2021.

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

	Unit: Million Baht
	Consolidated financial statements
Cash and cash equivalents	116
Trade accounts receivable	38
Other accounts receivable	25
Inventories	10
Investments in joint ventures (Note 17)	188
Investments in joint associates (Note 17)	6
Property, plant and equipment (Note 19)	2,362
Right-of-use assets (Note 20)	7
Deferred tax assets	1
Other non-current assets	10
Assets held for sale	2,763
Short-term loans from financial institutions (Note 30)	165
Trade accounts payable	30
Other accounts payable	49
Current portion of long-term borrowings (Note 30)	150
Current portion of lease liabilities (Note 30)	7
Long-term borrowings (Note 30)	1,145
Lease liabilities (Note 30)	8
Provisions for employee benefits	22
Liabilities directly associated with the assets held for sale	1,576
Net assets classified as assets held for sale	1,187

13. Assets held for sale (Continued)

The assets and liabilities of TOP's marine transportation business unit was classified as held for sale during the year 2020 and was measured at the lower of its 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 a level 2 in the fair value hierarchy.

14. Other long-term investments in financial assets

14.1 Details of other long-term investments in financial assets as at 31 December 2020 are as follows:

Unit: Million Baht

Company name	Country of Incorporation	Business	Ownership interest (%)	Other long-term investments in financial assets after changes in value of investments		Dividends income		
				Consolidated financial statements	Separate financial statements	Consolidated financial statements	Separate financial statements	
Investment at fair value through profit or loss								
Debt securities								
Mutual funds								
<i>TOP Group</i>								
RVP II,L.P. (RVPII)	United States of America	Investment in other companies	13.00	79	-	-	-	
Grove ventures (GROVE)	United States of America	Mutual fund	4.00	35	-	-	-	
<i>The Group</i>								
CIMB - PRINCIPAL Energy and Petrochemical Index Fund (CIMB - PRINCIPAL EPIF)*	Thailand	Mutual fund		1,048	349	43	14	
Vayupak Fund 1 (VAYU1)**	Thailand	Mutual fund		23	11	-	-	
Other debt securities								
<i>PTTGC Group</i>								
NirvaMed Inc.	United States of America	Medical equipments		30	-	-	-	
Total investment at fair value through profit or loss					1,215	360	43	14

* Held by the Company, PTTGC Group and TOP Group

** Held by the Company, PTT LNG, EnCo, PTT TANK Group, PTTNGD Group, OR Group, PTTT Group, PTTER Group and PTTEP Group

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

14.1 Details of other long-term investments in financial assets as at 31 December 2020 are as follows: (Continued)

Unit: Million Baht							
Company name	Country of Incorporation	Business	Ownership interest (%)	Other long-term investments in financial assets after changes in value of investments		Dividends income	
				Consolidated financial statements	Separate financial statements	Consolidated financial statements	Separate financial statements
				<u>Investment at fair value through other comprehensive income</u>			
<u>Equity securities</u>							
<u>Mutual funds</u>							
<i>The Company</i>							
Corporate Venture Capital Fund (CVC)	United States of America/ England/ Japan/ Netherlands	Mutual fund	1.88 - 11.86	1,004	1,004	-	-
<u>Other equity securities</u>							
<i>The Company</i>							
Baania (Thailand) Co.,Ltd. (Baania)	Thailand	Integrated online real estate platform	2.89	10	10	-	-
HG Robotics Co., Ltd. (HG Robotics)	Thailand	Autonomous and robotics solutions	9.49	19	19	-	-
InnoSpace (Thailand) (InnoSpace)	Thailand	Investment in start up companies	15.75	25	25	-	-
Dhipaya Insurance Public Co., Ltd. (TIP)	Thailand	Insurance	13.33	2,120	2,120	132	132

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

14.1 Details of other long-term investments in financial assets as at 31 December 2020 are as follows: (Continued)

Unit: Million Baht							
Company name	Country of Incorporation	Business	Ownership interest (%)	Other long-term investments in financial assets after changes in value of investments		Dividends income	
				Consolidated financial statements	Separate financial statements	Consolidated financial statements	Separate financial statements
<u>Investment at fair value through other comprehensive income</u> (Continued)							
<i>Other equity securities</i> (Continued)							
<i>The Company</i> (Continued)							
Sunfolding, Inc. (SUNFOLDING)	Thailand	Develop, produce and distribute solar tracking system equipment	5.24	149	149	-	-
<i>PTTEP Group</i>							
Wentworth Resources Limited (WRL)	Canada	Oil and natural gas exploration	1.18	15	-	-	-
<i>OR Group</i>							
Bangkok Aviation Fuel Services Public Co., Ltd. (BAFS)	Thailand	Aircraft refuelling services	7.06	1,071	-	46	-
Flash Incorporation Co., Ltd. (FLASH)	Thailand	Investing in other companies	9.58	1,245	-	-	-
<i>IRPC Group</i>							
TPI Polene Public Co., Ltd. (TPIPL)	Thailand	Property, construction and petrochemicals	0.14	52	-	2	-
TPI EOEG Co., Ltd. (TPIE)	Thailand	Finance service	36.31	249	-	-	-

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

14.1 Details of other long-term investments in financial assets as at 31 December 2020 are as follows: (Continued)

						Unit: Million Baht			
Company name	Country of Incorporation	Business	Ownership interest (%)	Other long-term investments in financial assets after changes in value of investments		Dividends income			
				Consolidated financial statements	Separate financial statements	Consolidated financial statements	Separate financial statements		
<u>Investment at fair value through other comprehensive income</u> (Continued)									
<i>Other equity securities</i> (Continued)									
<i>IRPC Group</i>									
TPI Holding Co., Ltd. (TPIH)	Thailand	Investment in other companies	35.01	425	-	-	-		
Pornchai Enterprises Co., Ltd. (PEC)	Thailand	Real estate for rent	23.65	327	-	-	-		
Rayong Acetylene Co., Ltd. (RAC)	Thailand	Industrial gas manufacturing	13.04	16	-	-	-		
DIA Polyacrylate Co., Ltd. (DIA)	Thailand	Plastic resin manufacturing	3.65	20	-	4	-		
Guangzhou Saiju Performance Polymet Ltd. (GZSJ)	China	E-Commerce	15.00	600	-	-	-		
<i>PTTGC Group</i>									
Exeltium SAS (EXS)	France	Electricity business	4.00	260	-	-	-		
TPBI & Myanmar Star Co., Ltd. (TPBIMS)	Myanmar	Manufacturing and distributing of polymer products	10.00	13	-	-	-		
ACTNano, Inc (ACTNANO)	United States of America	Electronic Coating	4.12	30	-	-	-		

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

14.1 Details of other long-term investments in financial assets as at 31 December 2020 are as follows: (Continued)

Unit: Million Baht

Company name	Country of Incorporation	Business	Ownership interest (%)	Other long-term investments in financial assets after changes in value of investments		Dividends income	
				Consolidated financial statements	Separate financial statements	Consolidated financial statements	Separate financial statements
<u>Investment at fair value through other comprehensive income</u> (Continued)							
<i>Other equity securities</i> (Continued)							
<i>PTTGC Group</i> (Continued)							
Arevo Inc. (AREVO)	United States of America	End-to-End 3D Printing for industrial use	2.16	73	-	-	-
Builders VC Fund I, LP. (BUILDERS)	United States of America	Invest in CVC	3.70	105	-	-	-
Emerald Industrial Innovation Fund LP (EMERALDFUND)	Guernsey	Industrial Technology Investment	-	26	-	-	-
ESS TECH, Inc (ESSTECHINC)	United States of America	Clean Technology	2.10	60	-	-	-
Pangaea Ventures Fund IV (Delaware), L.P. (PANGAEA)	United States of America	Invest in Start Up	7.30	99	-	-	-
<i>GPSC Group</i>							
24M Technologies, Inc. (24M)	United States of America	Research and development in battery	26.02	1,487	-	-	-
Ratchaburi Power Co., Ltd. (RPCL)	Thailand	Generate and supply electricity	15.00	1,173	-	390	-
<i>PTTGL Group</i>							
Petronas LNG 9 Sdn. Bhd. (PL9SB)	Malaysia	LNG liquefaction	10.00	7,673	-	-	-

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

14.1 Details of other long-term investments in financial assets as at 31 December 2020 are as follows: (Continued)

Unit: Million Baht

Company name	Country of Incorporation	Business	Ownership interest (%)	Other long-term investments in financial assets after changes in value of investments		Dividends income	
				Consolidated financial statements	Separate financial statements	Consolidated financial statements	Separate financial statements
<u>Investment at fair value through other comprehensive income</u> (Continued)							
<i>Other equity securities</i> (Continued)							
<i>PTTT Group</i>							
ICE Futures Abu Dhabi Holdings Limited (IFAD)	United Arab Emirates	Investment in other companies	1.00	30	-	-	-
<i>TOP Group</i>							
WaveSense, Inc. (WAVESENSE)	United States of America	Technology	1.39	15	-	-	-
Everactive, Inc. (EVERACTIVE)	United States of America	Technology	1.48	60	-	-	-
<i>PTTGM Group</i>							
Xanadu Mines Ltd. (XML)	Mongolia	Mineral exploration	2.26	22	-	-	-
<i>The Group</i>							
Sarn Palung Social Enterprise Co., Ltd. (SPSE)*	Thailand	Social enterprise	100.00	10	2	-	-
Others	Thailand			4	-	-	-

* Held by the Company 20%, PTTEP Group, PTTGC Group, TOP Group, IRPC Group 15% each and GPSC Group, OR Group 10% each.

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

14.1 Details of other long-term investments in financial assets as at 31 December 2020 are as follows: (Continued)

Unit: Million Baht							
Company name	Country of Incorporation	Business	Ownership interest (%)	Other long-term investments in financial assets after changes in value of investments		Dividends income	
				Consolidated financial statements	Separate financial statements	Consolidated financial statements	Separate financial statements
Investment at fair value through other comprehensive income							
(Continued)							
Debt securities							
<i>Other debt securities</i>							
<i>PTTGC Group</i>							
Debt Securities Available for Sale (in Private Fund) (DSAFS)	Thailand	Private Fund		35	-	-	-
Total investment at fair value through other comprehensive income				18,522	3,329	574	132
Investment at amortized cost							
Debt securities							
<i>Other debt securities</i>							
<i>The Company</i>							
Indorama Ventures Public Co., Ltd. (IVL)	Thailand	Petrochemicals and chemicals		534	534	-	-
Gulf Energy Development Public Co., Ltd. (GULF)	Thailand	Energy & Utilities		203	203	-	-
BTS Group Holdings Public Co., Ltd. (BTSG)	Thailand	Transportation & Logistics		500	500	-	-
CP All Public Co., Ltd. (CPALL)	Thailand	Retail		1,450	1,450	-	-

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

14.1 Details of other long-term investments in financial assets as at 31 December 2020 are as follows: (Continued)

Unit: Million Baht

Company name	Country of Incorporation	Business	Ownership interest (%)	Other long-term investments in financial assets after changes in value of investments		Dividends income	
				Consolidated financial statements	Separate financial statements	Consolidated financial statements	Separate financial statements
				<u>Investment at amortized cost</u> (Continued)			
Debt securities (Continued)							
<i>Other debt securities</i> (Continued)							
<i>The Company</i> (Continued)							
Banpu Public Co., Ltd. (BANPU)				631	631	-	-
Total investment at amortized cost				3,318	3,318	-	-
Total other long-term investments in financial assets				23,055	7,007	617	146

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

14.1 Details of other long-term investments in financial assets as at 31 December 2020 are as follows: (Continued)

Equity securities which designated to investment at fair value through other comprehensive income are equity securities of listed company and non-listed company. The Group have considered as strategic investments.

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

Unit: Million Baht

	Consolidated financial	Separate financial
Book value at the beginning of period	-	-
Cumulative effects of changes in accounting policies (Note 4)	1,200	397
Book value at the beginning of period - as restated	1,200	397
- Additional investments	53	-
- Decrease in fair value of investments	(79)	(37)
- Reclassifications	46	-
- Exchange differences on translation of financial statements	(5)	-
Total investment at fair value through profit or loss at 31 December	1,215	360

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

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

Unit: Million Baht

	Consolidated financial	Separate financial
Book value at the beginning of period	-	-
Cumulative effects of changes in accounting policies (Note 4)	20,767	2,637
Book value at the beginning of period - as restated	20,767	2,637
- Additional investments	2,003	385
- Disposals of investments	(1,447)	-
- Increase (Decrease) in fair value of investments	(2,863)	306
- Reclassifications	(49)	-
- Exchange differences on translation of financial statements	111	-
Total investment at fair value through other comprehensive income at 31 December 2020	18,522	3,328

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

Unit: Million Baht

	Consolidated financial	Separate financial
Book value at the beginning of period	-	-
Cumulative effects of changes in accounting policies (Note 4)	4,651	4,202
Book value at the beginning of period - as restated	4,651	4,202
- Additional investments	3,306	3,306
- Disposals of investments	(474)	-
- Unrealized gain (loss) on exchange rates	17	(8)
- Amortized premium	77	77
- Reclassifications	(4,259)	(4,259)
Total investment at amortized cost at 31 December	3,318	3,318

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

14.5 Significant events during the year ended 31 December 2020

PetroAsia (Sanshui) Co.,Ltd and PetroAsia (Maoming) Co.,Ltd

The Company wrote off investment in PetroAsia (Sanshui) Co.,Ltd and PetroAsia (Maoming) Co.,Ltd of which the costs before allowance for impairment were Baht 6 million and Baht 15 million, respectively. Both investments were fully impaired.

InnoSpace

On 21 April 2020, InnoSpace (Thailand) (InnoSpace) announced a share capital increase. However, Company did not exercise the right to purchase additional shares; therefore, the Company's shareholding portion was decreased from 19.42% to 15.75%.

Sunfolding

On 28 September 2020, at the Management Committee Meeting No. 36/2020 of the Company, the Committee passed a resolution to approve an investment in 5.24% of Series B Preferred Stock of Sunfolding, Inc. (Sunfolding) amounting to USD 5 million. The Company signed the Series B Preferred Stock Purchase Agreement and made payment for shares on 30 November 2020.

Flash

On 24 June 2020, at the General Meeting of the shareholders No. 1/2020 of a subsidiary of OR, the Shareholders passed a resolution to approve an investment in 479,231 shares of Preferred Stock of Flash Incorporation Co., Ltd. (Flash), or approximately 9.58% amounting to Baht 1,245 million. The subsidiary made payment for the shares on 26 August 2020.

15. Available-for-sale investments

Details of available-for-sale investments as at 31 December 2019

Company name	Country of Incorporation	Business	Ownership interest (%)	Unit: Million Baht			
				Other long-term investments in financial assets after changes in value of investments		Dividends income	
				Consolidated financial statements	Separate financial statements	Consolidated financial statements	Separate financial statements
Investments in Equity Securities							
<i>The Company</i>							
Dhipaya Insurance Public Co., Ltd. (TIP)	Thailand	Insurance	13.33	312	312	116	116
<i>PTTEP Group</i>							
Wentworth Resources Limited (WRL)	Canada	Oil and natural gas exploration	1.18	34	-	-	-
<i>OR Group</i>							
Bangkok Aviation Fuel Services Public Co., Ltd. (BAFS)	Thailand	Aircraft refuelling services	7.06	24	-	62	-
<i>IRPC Group</i>							
Bangkok Union Insurance Public Co., Ltd. (BUI)	Thailand	Insurance	0.35	2	-	-	-
TPI Polene Public Co., Ltd. (TPIPL)	Thailand	Property, construction and petrochemicals	0.14	65	-	1	-
<i>PTTGM Group</i>							
Xanadu Mines Ltd. (XML)	Mongolia	Mineral exploration	3.46	221	-	-	-
Total				658	312	179	116

15. Available-for-sale investments (Continued)

Details of available-for-sale investments as at 31 December 2019 (Continued)

Company name	Country of Incorporation	Business	Ownership interest (%)	Unit: Million Baht			
				Other long-term investments in financial assets after changes in value of investments	Dividends income		
					Consolidated financial statements	Separate financial statements	Consolidated financial statements
Investment in Debt Securities							
<i>PTTGC Group</i>							
Debt Securities Available for Sale (in Private Fund) (DSAFS)	Thailand	Private Fund		1,482	-	-	-
Total				1,482	-	-	-
Investments in Mutual Funds							
<i>The Company</i>							
Corporate Venture Capital Fund (CVC)	United States of America/England/Japan/Netherlands	Mutual fund		628	628	-	-
<i>The Group</i>							
CIMB - PRINCIPAL Energy and Petrochemical Index Fund (CIMB - PRINCIPAL EPIF)*	Thailand	Mutual fund		854	254	22	7
Vayupak Fund 1 (VAYU1)**	Thailand	Mutual fund		14	10	-	-
Total				1,496	892	22	7

* Held by the Company, PTTGC Group and TOP Group

** Held by the Company, PTTLNG, EnCo, PTTRTC, PTT TANK Group, PTTNGD Group, OR Group, PTTT Group and PTTER Group

15. Available-for-sale investments (Continued)

Details of available-for-sale investments as at 31 December 2019 (Continued)

Unit: Million Baht

Company name	Country of Incorporation	Business	Ownership interest (%)	Other long-term investments in financial assets after changes in value of investments		Dividends income	
				Consolidated financial statements	Separate financial statements	Consolidated financial statements	Separate financial statements
Total available-for-sale investments before changes in value of investments				3,636	1,204		
Allowance for changes in value				3,087	1,783		
<u>Less</u> Allowance for impairment				(36)	-		
Total available-for-sale investments				<u>6,687</u>	<u>2,987</u>	<u>201</u>	<u>123</u>

16. Other long-term investments

Details of other long-term investments as at 31 December 2019

							Unit: Million Baht	
Company name	Country of Incorporation	Business	Ownership interest (%)	Other long-term investments in financial assets after changes in value of investments		Dividends income		
				Consolidated financial statements	Separate financial statements	Consolidated financial statements	Separate financial statements	
Long-term Investments in equity securities								
<i>The Company</i>								
Petro Asia (Sanshui) Co., Ltd. (PA (Sanshui))	China	Oil marketing	25.00	6	6	-	-	
Petro Asia (Maoming) Co., Ltd. (PA (Maoming))	China	Oil marketing	20.00	15	15	-	-	
Baania (Thailand) Co.,Ltd. (Baania)	Thailand	Integrated online real estate platform	2.89	10	10	-	-	
HG Robotics Co., Ltd. (HG Robotics)	Thailand	Autonomous and robotics solutions	9.49	19	19	-	-	
InnoSpace (Thailand) (InnoSpace)	Thailand	Investment in start up companies	19.42	25	25	-	-	
<i>PTTEP Group</i>								
Moz LNG1 Holding Company Ltd. (HOLDCO)*	United Arab Emirates	Petroleum	8.50	9	-	-	-	
<i>PTTGL Group</i>								
Petronas LNG 9 Sdn. Bhd. (PL9SB)	Malaysia	LNG liquefaction	10.00	8,987	-	-	-	

* On 7 May 2019, a subsidiary in PTTEP Group has transferred its participating interests in MZ LNG1 to participating interests in HOLDCO.

16. Other long-term investments (Continued)

Details of other long-term investments as at 31 December 2019 (Continued)

Company name	Country of Incorporation	Business	Ownership interest (%)	Unit: Million Baht			
				Other long-term investments in financial assets after changes in value of investments		Dividends income	
				Consolidated financial statements	Separate financial statements	Consolidated financial statements	Separate financial statements
<u>Long-term Investments in equity securities</u> (Continued)							
<i>GPSC Group</i>							
24M Technologies, Inc. (24M)	United States of America	Research and development in battery	29.50	1,066	-	-	-
Ratchaburi Power Co., Ltd. (RPCL)	Thailand	Generate and supply electricity	15.00	889	-	177	-
<i>PTTT Group</i>							
KIC Oil Terminal Sdn. Bhd. (KOT)	Malaysia	Logistics services	10.00	106	-	-	-
Kadriah Integrated Facilities Sdn. Bhd. (KIF)	Malaysia	Logistics services	10.00	44	-	-	-
Kadriah I Ltd. (K I)	Malaysia	Logistics services	10.00	221	-	-	-
Kadriah II Ltd. (K II)	Malaysia	Logistics services	10.00	59	-	-	-
ICE Futures Abu Dhabi Holdings Limited (IFAD)	United Arab Emirates	Investment in other companies	1.00	30	-	-	-
<i>PTTGC Group</i>							
Exeltium SAS (EXS)	France	Electricity business	4.00	238	-	-	-
TPBI & Myanmar Star Co., Ltd. (TPBIMS)	Myanmar	Manufacturing and distributing of polymer products	10.00	16	-	-	-

16. Other long-term investments (Continued)

Details of other long-term investments as at 31 December 2019 (Continued)

Company name	Country of Incorporation	Business	Ownership interest (%)	Unit: Million Baht			
				Other long-term investments in financial assets after changes in value of investments		Dividends income	
				Consolidated financial statements	Separate financial statements	Consolidated financial statements	Separate financial statements
<u>Long-term Investments in equity securities</u> (Continued)							
<i>IRPC Group</i>							
TPI EOEG Co., Ltd. (TPIE)	Thailand	Finance service	36.31	829	-	-	-
TPI Holding Co., Ltd. (TPIH)	Thailand	Investment in other companies	35.01	1,416	-	-	-
Pornchai Enterprises Co., Ltd. (PEC)	Thailand	Real estate for rent	23.65	1,119	-	-	-
Thai Special Steel Industries Public Co.,Ltd. (TSSI)	Thailand	Steel wire manufacturing	16.24	673	-	-	-
Rayong Acetylene Co., Ltd. (RAC)	Thailand	Industrial gas manufacturing	13.04	15	-	-	-
DIA Polyacrylate Co., Ltd. (DIA)	Thailand	Plastic resin manufacturing	3.65	8	-	1	-
Guangzhou Saiju Performance Polymet Ltd. (GZSJ)	China	E-Commerce	15.00	600	-	-	-
<i>The Group</i>							
Sarn Palung Social Enterprise Co., Ltd. (SPSE)*	Thailand	Social enterprise	100.00	10	2	-	-
Others			-	327	-	-	-
Long-term investments in equity securities				16,737	77		
<u>Less Allowance for impairment</u>				(3,487)	(21)		
Total				13,250	56	178	-

* Held by the Company 20%, PTTEP Group, PTTGC Group, TOP Group, IRPC Group 15% each and GPSC Group, OR Group 10% each.

16. Other long-term investments (Continued)

Details of other long-term investments as at 31 December 2019 (Continued)

Company name	Country of Incorporation	Business	Ownership interest (%)	Unit: Million Baht			
				Other long-term investments in financial assets after changes in value of investments		Dividends income	
				Consolidated financial statements	Separate financial statements	Consolidated financial statements	Separate financial statements
<u>Long-term investments in debt securities</u>							
<i>The Company</i>							
Emirates NBD (ENBD)	United Arab Emirates	Banking		2,098	2,098	-	-
Thai Beverage Public Co., Ltd. (TBEV)	Thailand	Manufacturing and distributing of food and beverage		1,400	1,400	-	-
Gulf Energy Development Public Co., Ltd. (GULF)	Thailand	Energy & Utilities		203	203	-	-
BTS Group Holdings Public Co., Ltd. (BTSG)	Thailand	Transportation & Logistics		500	500	-	-
<i>The Group</i>							
Others				480	-	-	-
Total other long-term investments				4,681	4,201	-	-
Grand total				17,931	4,257	178	-

17. Investments in subsidiaries, joint ventures and associates

17.1 Details of subsidiaries and joint operations of the subsidiaries

Company name	Country of Incorporation	Business	Ownership interest (%)	
			2020	2019
<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	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 10 July 2020, PTTEP approved for the registration for the dissolution of PTTEP SM. It is currently in process of dissolution.

** On 24 August 2017, PTTEP approved for the registration for the dissolution of PTTEP FH. It is currently in process of dissolution.

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

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

Company name	Country of Incorporation	Business	Ownership interest (%)	
			2020	2019
Subsidiaries of PTTEP Group: (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	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
Cove Energy Kenya Limited (CEKL)**	Kenya	Petroleum	-	100.00
Sinphuhorm Holdings Limited (SHL)	Cayman Islands	Petroleum	100.00	100.00

* On 22 May 2017, PTTEP approved for the registration for the dissolution of CEMROL, which currently in process of dissolution.

** On 27 May 2020, PTTEP was approved for the dissolution of CEKL.

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

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

Company name	Country of Incorporation	Business	Ownership interest (%)	
			2020	2019
Subsidiaries of PTTEP Group: (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) (Former : Partex Holding B.V. (PHBV))	Netherlands	Petroleum	100.00	100.00
Partex Oil and Gas (Holdings) Corporation (POGHC)	Cayman Islands	Petroleum	100.00	100.00
PTTEP (Kazakhstan) Corporation (PKC) (Former : Partex (Kazakhstan) Corporation)	Cayman Islands	Petroleum	100.00	100.00
PTTEP (Angola) Corporation (PANG) (Former : Partex (Angola) Corporation)	Cayman Islands	Petroleum	100.00	100.00
Partex (Brazil) Corporation (PBC)	Cayman Islands	Petroleum	100.00	100.00
PTTEP Gas Corporation (PGC) (Former : Partex Gas Corporation)	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

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

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

Company name	Country of Incorporation	Business	Ownership interest (%)	
			2020	2019
<u>Subsidiaries of PTTEP Group:</u>				
(Continued)				
PTTEP Oman E&P Corporation (POC)	Panama	Petroleum	100.00	100.00
(Former : Partex (Oman) Corporation)				
Partex Services Portugal – Serviços para a Indústria Petrolífera, S.A. (PSP)	Portugal	Human resource support	100.00	100.00
Partex Brasil Ltda. (PBL)	Brazil	Petroleum	100.00	100.00
Partex Brasil Operações Petrolíferas Ltda (PBO)	Brazil	Human resource support	100.00	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)	Thailand	Production and distribution of electricity, steam and water for industrial purpose	51.00	51.00
(The Group holds 100% shareholding)				
Ichinoseki Solar Power 1 GK (ICHINOSEKI)	Japan	Production and distribution of electricity	99.00	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
Global Renewable Power Co., Ltd. (GRP)	Thailand	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

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

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

Company name	Country of Incorporation	Business	Ownership interest (%)	
			2020	2019
<u>Subsidiaries of GPSC Group: (Continued)</u>				
Glow SPP 2 Company Limited (GSPP2)	Thailand	Production and distribution of electricity power and steam for industrial	100.00	100.00
Glow SPP 3 Company Limited (GSPP3)	Thailand	Production and distribution of electricity power, steam and water for industrial	100.00	100.00
Glow SPP 11 Company Limited (GSPP11)	Thailand	Production and distribution of electricity power and water for industrial	100.00	100.00
Glow IPP 3 Company Limited (GIPP3)	Thailand	Development of electricity power production project	100.00	100.00
Glow IPP 2 Holding Company Limited (GIPP2)	Thailand	Investing in other companies	100.00	100.00
Houay Ho Thai Company Limited (HHTC)	Thailand	Investing in other companies	49.00	49.00
Glow IPP Company Limited (GIPP)	Thailand	Production and distribution of electricity to EGAT	95.00	95.00
GHECO-One Company Limited (GHECO1)	Thailand	Production and distribution of electricity power to EGAT	65.00	65.00
Glow Energy Myanmar Company Limited (GEMM)	Myanmar	Technical consultants for electricity businesses	100.00	100.00
GPSC Treasury Center Company Limited (GPSCTC)	Thailand	Financial service	100.00	-
Global Renewable Power 1 Co.,Ltd. (GRP1)	Thailand	Holding Company	100.00	-
Global Renewable Power Operating Co., Ltd. (GRPO)	Thailand	Operation service and solar power plant consultant	100.00	-
World X Change Asia Company Limited (WXA)	Thailand	Production and distribution of electricity	100.00	-
P.P. Solar Company Limited (PPS)	Thailand	Production and distribution of electricity	100.00	-
N.P.S. Stargroup Company Limited (NPS)	Thailand	Production and distribution of electricity	100.00	-

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

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

Company name	Country of Incorporation	Business	Ownership interest (%)	
			2020	2019
<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) (Former : PTTOR International Holdings (Thailand) Company Limited (THHOLDCO))	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	-
Peaberry Thai Company Limited (PEABERRYTHAI)	Thailand	Retailing	100.00	-
<u>Subsidiary of PTTT Group:</u>				
PTT International Trading DMCC (PTTT DMCC)	United Arab Emirates	International oil trading	100.00	100.00
<u>Subsidiaries of PTTGC Group:</u>				
PTT Phenol Co., Ltd. (PPCL)	Thailand	Manufacturing and distributing petrochemical products	100.00	100.00
GC Maintenance & Engineering Co., Ltd. (GCME)	Thailand	Factory maintenance and engineering services	100.00	100.00
Thai Tank Terminal Limited (TTT)	Thailand	Service for the storage and handling of liquid chemicals, oil and gas	51.00	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

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

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

Company name	Country of Incorporation	Business	Ownership interest (%)	
			2020	2019
Subsidiaries of PTTGC Group: (Continued)				
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
GC Treasury Co., Ltd. (GCTC)	Thailand	Financial service management for the group	100.00	100.00
GC Logistics Solutions Co., Ltd. (GCL)	Thailand	Transportation, warehouse and bagging packing management of polyethylene	100.00	100.00
GC Marketing Solutions Co., Ltd. (GCM)	Thailand	Development, marketing and distributing polymers products, by products and other polymers-related products	100.00	100.00
GC International Corporation (GCI) (Former : PTTGC International (USA) Inc. (GCINTERUSA))	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	72.29	72.29
PTTGC Innovation America Corporation (GCIA)	United States of America	Research and development of bio-based chemicals	100.00	100.00

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

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

Company name	Country of Incorporation	Business	Ownership interest (%)	
			2020	2019
Subsidiaries of PTTGC Group: (Continued)				
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 Marketing DMCC (GCM DMCC)	United Arab Emirates	Distributing polymer products and other polymers-related products	100.00	100.00
GC Marketing Solutions Vietnam Company Ltd. (GCM Vietnam)	Vietnam	Distributing polymer products and other polymers-related products	100.00	100.00
GC Estate Co., Ltd. (GCEC)	Thailand	Real estate development for rent and to invest in petrochemical and related industries	100.00	100.00
GC Ventures Co., Ltd. (GCV)	Thailand	Invest in form of Corporate Venture Capital (CVC)	100.00	100.00
GC Ventures America Corporation (GCVA)	United States of America	Invest in form of Corporate Venture Capital (CVC) outside Thailand	100.00	100.00
GC Marketing Solutions Myanmar Company Limited (GCM Myanmar)	Myanmar	Distributing polymer products and other polymers-related products	100.00	100.00
GC-M PTA Company Limited (GCM PTA)	Thailand	Manufacturing and distributing petrochemical products	74.00	74.00
Thai PET Resin Co., Ltd. (TPRC)	Thailand	Manufacturing and distributing petrochemical products	84.00	74.00

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

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

Company name	Country of Incorporation	Business	Ownership interest (%)	
			2020	2019
<u>Subsidiaries of PTTGC Group:</u>				
(Continued)				
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	-
<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	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	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

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

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

Company name	Country of Incorporation	Business	Ownership interest (%)	
			2020	2019
<u>Subsidiaries of TOP Group :</u>				
(Continued)				
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
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	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	67.00	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

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

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

Company name	Country of Incorporation	Business	Ownership interest (%)	
			2020	2019
<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
I-polymer Company Limited (IPOL)	Thailand	Distributing plastic resin and chemical products via E-Commerce system	55.00	55.00
<u>Subsidiaries of PTTGM Group:</u>				
PTT Mining Limited (PTTML)	Hong Kong	Investing in other companies	100.00	100.00
Straits (Brunei) Pte. Ltd. (Straits (Brunei))	Singapore	Investing in other companies	100.00	100.00
Sakari Resources Ltd. (SAR)	Singapore	Investing in coal mine business	95.82	95.82
Yoxford Holdings (YOXFORD)	Mauritius	Investing in other companies	100.00	100.00
Madagascar Consolidated Mining SA (MCM)	Madagascar	Coal mines	80.00	80.00
Tiger Energy Trading Pte. Ltd. (TET)	Singapore	Coal mine marketing	100.00	100.00
Sakari Energy Pte. Ltd. (SAEnergy)	Singapore	Investing in other companies	100.00	100.00
Reyka Wahana Digdjaya Pte. Ltd. (RWD)	Singapore	Investing in other companies	100.00	100.00
Sakari Energy Trading Pte. Ltd. (SET)	Singapore	Investing in other companies	100.00	100.00
Sakari Marine & Infrastructure Pte. Ltd. (SMI)	Singapore	Marine engineering	100.00	100.00
PT Straits Consultancy Services (SCS)	Indonesia	Management services	100.00	100.00
PT Bahari Perdana Persada (BPPD)	Indonesia	Investing in other companies	100.00	100.00
PT Bahari Putra Perdana (BPPN)	Indonesia	Investing in other companies	100.00	100.00
PT Reyka Wahana Digdjaya (PTRWD)	Indonesia	Investing in other companies	100.00	100.00
PT Bahari Cakrawala Sebuk (BCS)	Indonesia	Coal mines	100.00	100.00
PT Bumi Borneo Metalindo (BBM)	Indonesia	Investing in other companies	100.00	100.00

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

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

Company name	Country of Incorporation	Business	Ownership interest (%)	
			2020	2019
<u>Subsidiaries of PTTGM Group:</u>				
(Continued)				
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
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 (PTT Inter (Sing))	Singapore	Investing in other companies	100.00	100.00
Sakari Royal Limited (SRL)*	Cambodia	Coal mines	70.00	70.00
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	-
Swap and Go Co., Ltd. (SWAPANDGO)	Thailand	Battery swap	100.00	-
Innobic (Asia) Company Limited (INBA)	Thailand	Life science	100.00	-
Innobic LL Holding Company Limited (INBL)	Thailand	Domestic investing	100.00	-

* Completely closed SRL on 21 February 21 2020.

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

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

Company name	Country of Incorporation	Business	Ownership interest (%)	
			2020	2019
<u>Subsidiaries of PTTGE Group:</u>				
PTT Green Energy (Thailand) Co., Ltd. (PTTGE TH)	Thailand	Management services for PTTGE Group	100.00	100.00
<u>Subsidiary of BSA Group:</u>				
Sport Services Alliance Co., Ltd. (SSS) (Former : SSA)	Thailand	Football club management	100.00	100.00
Business Professional Solutions Co., Ltd. (BPS)	Thailand	Business management	100.00	100.00
<u>Joint operations of PTTEP Group:</u>				
Carigali - PTTEPI Operating Company Sdn. Bhd. (CPOC)	Malaysia	Petroleum	50.00	50.00
Moattama Gas Transportation Company (MGTC)	Bermuda	Gas pipeline transportation	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 (ADGP)	United Arab Emirates	Petroleum	2.00	2.00
Private Oil Holdings Oman Limited (POHOL)	England	Petroleum	5.00	5.00

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

17.2 Details of investments in joint ventures in the consolidated financial statements as at 31 December 2020 and 2019

Unit: Million Baht

Company name	Country of Incorporation	Business	Consolidated financial statements							
			Ownership interest (%)		Cost method		Equity method		Dividends income	
			2020	2019	2020	2019	2020	2019	2020	2019
Joint Ventures										
<i>The Company</i>										
Trans Thai-Malaysia (Thailand) Co., Ltd. (TTM(T))	Thailand	Natural gas	50.00	50.00	3,172	4,342	3,051	4,125	269	439
Trans Thai-Malaysia (Malaysia) Sdn. Bhd. (TTM(M))	Malaysia	Natural gas	50.00	50.00	1,001	1,001	938	1,097	289	200
District Cooling System and Power Plant Co., Ltd. (DCAP)	Thailand	Generation and supply of electricity and chilled water	35.00	35.00	585	585	931	986	117	19
Suez Environmental Services Co., Ltd. (SES)	Thailand	Hazardous waste management plant	40.00	-	7	-	7	-	-	-
<i>PTTEP Group</i>										
Erawan 2 FSO Bahamas Limited (Erawan 2)	Bahamas	FSO rental services	13.11	13.11	457	470	1,236	546	119	77
APICO LLC (APICOLLC)	United States of America	Petroleum	72.82	72.82	4,011	3,939	3,863	3,841	205	197
Oman LNG LLC (OLNG)	Oman	Petroleum	2.00	2.00	2,492	2,501	1,905	2,409	425	95
ATI Technologies Co., Ltd. (ATI)	Thailand	Technology	50.00	-	6	-	6	-	-	-
Zeaquest Co., Ltd. (ZEAQUEST)	Thailand	Technology	50.00	-	1	-	-	-	-	-
<i>GPSC Group</i>										
Thai Solar Renewable Co., Ltd. (TSR)	Thailand	Invest in other company	40.00	40.00	1,697	1,697	1,584	1,579	327	404
Nam Lik 1 Power Co., Ltd. (NL1PC)	Laos	Generate and supply electricity	40.00	40.00	494	494	619	555	-	-
Nava Nakom Electricity Generating Co., Ltd. (NNEG)	Thailand	Generate and supply electricity	30.00	30.00	623	489	711	482	-	120

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

17.2 Details of investments in joint ventures in the consolidated financial statements as at 31 December 2020 and 2019

Unit: Million Baht

Company name	Country of Incorporation	Business	Consolidated financial statements							
			Ownership interest (%)		Cost method		Equity method		Dividends income	
			2020	2019	2020	2019	2020	2019	2020	2019
Joint Ventures (Continued)										
<i>PTTGC Group</i>										
Thai Ethoxylate Co., Ltd. (TEX)	Thailand	Manufacturing and distributing of petrochemical products	50.00	50.00	210	210	602	585	67	223
Emery Oleochemicals (M) Sdn. Bhd. (EOM)	Malaysia	Manufacturing and distributing of biochemical products	50.00	50.00	4,966	4,966	4,398	4,495	-	-
Emery Specialty Chemicals Sdn. Bhd. (ESC)	Malaysia	Manufacturing and distributing of chemical specialties	50.00	50.00	407	407	-	-	-	-
NatureWorks LLC (NTR)	United States of America	Manufacturing and distributing of bioplastic products	50.00	50.00	4,793	4,793	3,033	3,274	1,245	316
PTT MCC Biochem Co., Ltd. (PTTMCC)	Thailand	Petrochemicals	50.00	50.00	930	930	168	176	-	-
PTT Asahi Chemicals Co., Ltd. (PTTAC)	Thailand	Petrochemicals	50.00	50.00	6,909	6,909	10,449	10,878	-	-
HMC Polymers Co., Ltd. (HMC)	Thailand	Petrochemicals	41.44	41.44	9,117	9,117	12,625	12,337	289	828
GGC KTIS Bioindustrial Company Limited (GKBI)	Thailand	Manufacturing and distributing of biofuel	50.00	50.00	1,046	524	1,021	512	-	-
Revolve Group Limited (RGL)	England	Manufacturing and distributing of chemical	49.00	49.00	270	270	250	195	-	-
<i>TOP Group</i>										
TOP-NTL Pte. Ltd. (TOP-NTL)	Singapore	Fund management services	50.00	50.00	-	-	-	18	-	-
TOP-NTL Shipping Trust (TOP-NTL(BT))	Singapore	Investing in other companies	50.00	50.00	24	24	-	74	-	-
TOP-NYK MarineOne Pte. Ltd. (TOP-NYK)	Singapore	Marine transportation services	50.00	50.00	274	274	-	405	212	-
TOP Nautical Star Co., Ltd. (TOP-NS)	Thailand	Storage and marine transportation services	35.00	35.00	53	53	-	120	26	-

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

17.2 Details of investments in joint ventures in the consolidated financial statements as at 31 December 2020 and 2019 (Continued)

Unit: Million Baht

Company name	Country of Incorporation	Business	Consolidated financial statements							
			Ownership interest (%)		Cost method		Equity method		Dividends income	
			2020	2019	2020	2019	2020	2019	2020	2019
Joint Ventures (Continued)										
IRPC Polyol Co., Ltd. (IRPCP)	Thailand	Manufacturing and sales of chemical products for polyurethanes	50.00	50.00	185	150	25	-	-	-
WHA Industrial Estate Rayong Co., Ltd. (WHA IER)	Thailand	Industrial estate development	40.00	40.00	266	260	260	257	-	-
Mytex Polymer (Thailand) (MYTEX)	Thailand	Petrochemicals	50.00	-	350	-	327	-	24	-
<i>PTTGM Group</i>										
OGP Energy Solutions Company Limited (OGPS)	Thailand	Energy management and energy-related services	40.00	40.00	55	55	39	42	-	-
FEE (Bru) Pte. Ltd. (FEEBRU)	Singapore	Coal mines	35.00	35.00	197	198	124	125	-	-
PTT RAISE Co., Ltd. (PTTRAISE)	Thailand	Robotics and AI engineering	50.00	-	23	-	23	-	-	-
<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	49	7	38	6	-	-
Brighter Energy Company Limited (BE)	Myanmar	Warehousing and distribution of petroleum	35.00	35.00	672	494	667	487	-	-
ORC Coffee Passion Group Joint Stock Company (ORCG)	Vietnam	Food and drinks retail	60.00	-	45	-	37	-	-	-
<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	117	36	119	32	-	-
					45,504	45,195	49,056	49,638		
<u>Less</u> Allowance for impairment					(197)	(348)	(124)	(125)		
Total					45,307	44,847	48,932	49,513	3,614	2,918

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

17.3 Details of investments in associates in the consolidated financial statements as at 31 December 2020 and 2019

Unit: Million Baht

Company name	Country of Incorporation	Business	Consolidated financial statements							
			Ownership interest (%)		Cost method		Equity method		Dividends income	
			2020	2019	2020	2019	2020	2019	2020	2019
Associates										
<i>PTTEP Group</i>										
PTTEP AP Group's associates*	Australia	Airbase services	50.00	50.00	45	45	149	150	-	-
Leismer Aerodrome Limited (LAL)	Canada	Air transportation	32.00	32.00	130	128	111	116	-	-
Moz LNG1 Holding Company Ltd. (HOLDCO)**	United Arab Emirates	Petroleum	8.50	-	9	-	-	-	-	-
<i>GPSC Group</i>										
Bangka-in Cogeneration Co., Ltd. (BIC)	Thailand	Generate and supply electricity	25.00	25.00	924	924	872	866	142	132
Xayaburi Power Co., Ltd. (XPCL)	Laos	Generate and supply electricity	25.00	25.00	6,994	6,994	7,014	6,728	-	-
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	365	333	7	-
<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	-	-
<i>PTTGC Group</i>										
Vinythai Plc. (VNT)***	Thailand	Petrochemicals	24.98	24.98	3,297	3,297	5,761	5,642	415	385
Thai Eastern Topseeds Oil Co., Ltd. (TETSO)	Thailand	Petrochemicals	30.00	30.00	67	67	9	28	-	-
S.P. Petpack Inter Group Co., Ltd. (SPPETPACK)	Thailand	Petrochemicals	25.00	25.00	50	50	40	49	-	-

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

**During the year 2020, PTTEP Group had reassessed the classification of investment consistently with current situation, resulted to the reclassification of HOLDCO to Associates with equity method.

*** Fair value of investment in VNT as at 31 December 2020 and 2019 are Baht 9,473 million and Baht 7,475 million, respectively.

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

17.3 Details of investments in associates in the consolidated financial statements as at 31 December 2020 and 2019 (Continued)

Unit: Million Baht

Company name	Country of Incorporation	Business	Consolidated financial statements							
			Ownership interest (%)		Cost method		Equity method		Dividends income	
			2020	2019	2020	2019	2020	2019	2020	2019
Associates (Continued)										
<i>PTTGC Group</i> (Continued)										
Kuraray GC Advanced Materials Co., Ltd. (KGC)	Thailand	Manufacturing of chemical specialties	33.40	33.40	1,404	670	1,336	629	-	-
Dynachisso Thai Co., Ltd. (DYCT)	Thailand	PP Compound Manufacturer	41.50	-	294	-	284	-	-	-
<i>TOP Group</i>										
T.I.M Ship Management Co., Ltd. (TIM)	Thailand	Marine transportation services	33.33	33.33	1	1	-	3	-	-
Ubon Bio Ethanol Co., Ltd. (UBE)	Thailand	Manufacturing and distributing of ethanol	24.28	21.28	770	770	827	810	2	-
<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	4,708	4,917	-	99
<i>PTTER Group</i>										
East Mediterranean Gas Company S.A.E. (EMG)	Egypt	Natural gas transmission pipelines	25.00	25.00	14,685	14,742	11,819	11,864	-	-
<i>PTT TANK Group</i>										
Gulf MTP LNG Terminal Co., Ltd. (GMTP)		Boat picking up service, Unloading and storage of liquefied natural gas, as well as transforming from liquid to gas	30.00	30.00	262	262	264	263	-	-
<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	3,953	4,997	5,113	850	860
Eastern Fluid Transport Co., Ltd. (EFT) (PTTGC Group holds 22.65% shareholding)	Thailand	Infrastructure	37.65	37.65	2	4	11	14	15	21
					38,811	37,678	38,577	37,535		
<u>Less Allowance for impairment</u>					(14,816)	(14,873)	(11,828)	(11,865)		
Total					23,995	22,805	26,749	25,670	1,431	1,497

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

17.4 Details of investments in subsidiaries in the separate financial statements as at 31 December 2020 and 2019

Unit: Million Baht

Company name	Country of Incorporation	Business	Separate financial statements					
			Ownership interest (%)		Cost method		Dividends income	
			2020	2019	2020	2019	2020	2019
Subsidiaries								
PTT Exploration and Production Public Co., Ltd. (PTTEP) (The Group holds 65.29% shareholding)	Thailand	Petroleum exploration and production	63.79	65.29	69,751	71,390	13,444	14,255
PTT LNG Co., Ltd. (PTTLNG)	Thailand	Natural gas	100.00	100.00	24,425	22,422	3,109	2,117
PTT Natural Gas Distribution Co., Ltd. (PTTNGD)	Thailand	Natural gas	58.00	58.00	418	418	-	986
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	71	70
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	31.72	22.81	38,781	22,025	836	440
PTT Oil and Retail Business Public Co., Ltd. (OR) (Former : PTTOR)	Thailand	Management services and oil marketing	100.00	100.00	90,000	90,000	9,450	-
PTT Tank Terminal Co., Ltd. (PTT TANK)	Thailand	Terminal and warehouse	100.00	100.00	2,500	2,500	101	120
PTT International Trading Pte. Ltd. (PTTT)	Singapore	International trading	100.00	100.00	3	3	53	8
PTT International Trading London Limited (PTTT LDN)	England	International trading	100.00	100.00	348	348	33	11
PTT Global Chemical Public Co., Ltd. (PTTGC) (The Group holds 48.41% shareholding)	Thailand	Petrochemicals and refining	45.41	47.92	44,473	46,934	2,150	7,581

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

17.4 Details of investments in subsidiaries in the separate financial statements as at 31 December 2020 and 2019 (Continued)

Unit: Million Baht

Company name	Country of Incorporation	Business	Separate financial statements					
			Ownership interest (%)		Cost method		Dividends income	
			2020	2019	2020	2019	2020	2019
Subsidiaries (Continued)								
Thai Oil Public Co., Ltd. (TOP) (The Group holds 48.03% shareholding)	Thailand	Oil refining	45.03	47.53	10,437	11,016	480	2,096
IRPC Public Co., Ltd. (IRPC) (The Group holds 48.05% shareholding)	Thailand	Petrochemicals and refining	45.05	47.55	39,696	41,899	972	884
Thai Oil Power Co., Ltd. (TP) (The Group holds 100% shareholding)	Thailand	Generation and supply of electricity and steam	26.00	26.00	2,305	2,305	314	237
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	55,343	54,429	-	-
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	100.00	31	31	16	40
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	60	33
PTT Digital Solutions Co., Ltd. (PTT DIGITAL) (The Group holds 100% shareholding)	Thailand	Information technology and communication services	20.00	20.00	30	30	19	18
PTT International Trading USA Inc. (PTTT USA)	United States of America	International trading	100.00	-	155	-	-	-
					430,997	418,051		
					(84,560)	(82,837)		
					346,437	335,214	31,108	28,896
<u>Less Allowance for impairment</u>								
Total								

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

17.5 Details of investments in joint ventures in the separate financial statements as at 31 December 2020 and 2019

Unit: Million Baht

Company name	Country of Incorporation	Business	Separate financial statements					
			Ownership interest (%)		Cost method		Dividends income	
			2020	2019	2020	2019	2020	2019
Joint Ventures								
Trans Thai-Malaysia (Thailand) Co., Ltd. (TTM(T))	Thailand	Natural gas	50.00	50.00	3,172	4,342	269	438
Trans Thai-Malaysia (Malaysia) Sdn. Bhd. (TTM(M))	Malaysia	Natural gas	50.00	50.00	1,001	1,001	289	200
District Cooling System and Power Plant Co., Ltd. (DCAP)	Thailand	Generation and supply of electricity and chilled water	35.00	35.00	585	585	117	19
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	117	34	-	-
Suez Environmental Services Co., Ltd. (SES)	Thailand	Hazardous waste management plant	40.00	-	7	-	-	-
Total					4,882	5,962	675	657

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

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

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

	Unit: Million Baht	
	2020	2019
As at 1 January	49,513	41,317
Cumulative effects of changes in accounting policies (Note 4)	(108)	-
Book value at the beginning of period - as restated	49,405	41,317
- Share of profit from investments in joint ventures	2,706	3,991
- Dividend income	(3,613)	(2,918)
- Additional investments	1,546	5,667
- Business acquisitions	-	2,503
- Disposal and capital reduction of investments	(1,454)	(2,822)
- Reversal of loss on impairment	-	2,822
- Reclassified as assets held for sale (Note 13)	(188)	-
- Share of other comprehensive income (loss) of joint ventures	548	(988)
- Exchange differences on translation of financial statements	(18)	(59)
As at 31 December	<u>48,932</u>	<u>49,513</u>

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

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

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

	Unit: Million Baht	
	2020	2019
As at 1 January	25,670	24,368
- Share of profit from investments in associates	1,471	2,017
- Dividend income	(1,431)	(1,498)
- Additional investments	1,027	784
- Business acquisitions	-	330
- Reclassifications	9	-
- Disposal of investments	-	(212)
- Loss on impairment (Note 24)	(9)	-
- Reclassified as assets held for sale (Note 13)	(6)	-
- Share of other comprehensive income (loss) of associates	17	(88)
- Exchange differences on translation of financial statements	1	(31)
As at 31 December	<u>26,749</u>	<u>25,670</u>

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

	Unit: Million Baht	
	2020	2019
As at 1 January	341,175	321,582
- Additional investments	19,919	20,642
- Disposal and capital reduction of investments	(8,052)	(1,049)
- Loss on impairment (Note 24)	(1,723)	-
As at 31 December	<u>351,319</u>	<u>341,175</u>

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

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

Statements of financial position as at 31 December 2020 and 2019

	2020				2019				Unit: Million Baht	
	TTM(T)	TTM(M)	DCAP	PTTAC	HMC	TTM(T)	TTM(M)	DCAP		PTTAC
Current assets	3,500	2,296	1,257	3,407	7,605	4,843	2,354	1,024	5,158	7,510
Non-current assets	9,721	3,061	2,582	24,904	29,090	11,276	3,694	2,264	21,186	25,477
Current liabilities	(1,452)	(909)	(520)	(1,793)	(2,463)	(1,400)	(781)	(467)	(1,428)	(5,365)
Non-current liabilities	(5,667)	(2,572)	(659)	(5,619)	(11,109)	(6,470)	(3,074)	(5)	(3,160)	(5,186)
Net assets (100%)	6,102	1,876	2,660	20,899	23,123	8,249	2,193	2,816.00	21,756	22,436
Shareholding (%)	50.00	50.00	35.00	50.00	41.44	50.00	50.00	35.00	50.00	41.44
Group's share of net assets	3,051	938	931	10,450	9,582	4,125	1,097	986	10,878	9,297
Adjustment	-	-	-	-	3,043	-	-	-	-	3,040
Carrying amount of interest in joint ventures	3,051	938	931	10,450	12,625	4,125	1,097	986	10,878	12,337

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

17.7 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 2020 and 2019

	2020						2019					
	TTM(T)	TTM(M)	DCAP	PTTAC	HMC		TTM(T)	TTM(M)	DCAP	PTTAC	HMC	
Revenue*	2,372	530	2,655	8,588	25,188		3,068	665	2,776	13,942	27,557	
Expenses	(1,724)	(268)	(2,432)	(9,435)	(24,305)		(1,947)	(306)	(2,531)	(11,329)	(25,724)	
Profit (loss) before taxes	648	262	223	(847)	883		1,121	359	245	2,613	1,833	
Income taxes	(257)	-	(45)	4	(180)		(91)	(17)	(49)	4	(177)	
Net profit (loss)	391	262	178	(843)	703		1,030	342	196	2,617	1,656	
Other comprehensive income	273	1	-	(7)	285		(312)	(162)	-	-	(394)	
Total comprehensive income	664	263	178	(850)	988		718	180	196	2,617	1,262	

During the year, the Company 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	196	131	62	(422)	291		515	171	69	1,309	686
Share of other comprehensive income (loss) from investments in joint ventures during the year	137	1	-	(4)	118		(156)	(81)	-	-	(163)

* Including gain (loss) on foreign exchange rate

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

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

Statements of financial position as at 31 December 2020 and 2019

Unit: Million Baht

	2020			2019		
	THAPPLINE	XPCL	UCHA	THAPPLINE	XPCL	UCHA
Current assets	4,133	5,410	5,684	4,764	2,857	5,880
Non-current assets	8,090	126,055	7,878	6,727	127,000	8,406
Current liabilities	(507)	(3,704)	(757)	(544)	(4,663)	(815)
Non-current liabilities	(1,318)	(99,846)	(216)	(206)	(98,263)	(155)
Net assets (100%)	10,398	27,915	12,589	10,741	26,931	13,316
Shareholding (%)	49.21	25.00	25.00	49.21	25.00	25.00
Group's share of net assets	5,117	6,979	3,147	5,286	6,733	3,329
Adjustment	(120)	35	1,561	(173)	(5)	1,588
Carrying amount of interest in associates	4,997	7,014	4,708	5,113	6,728	4,917

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

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

Statements of comprehensive income for the years ended 31 December 2020 and 2019

Unit: Million Baht

	2020			2019		
	THAPPLINE	XPCL	UCHA	THAPPLINE	XPCL	UCHA
Revenue*	2,963	12,080	8,517	3,636	3,154	10,381
Expenses	(1,247)	(5,156)	(9,367)	(1,349)	(2,104)	(10,775)
Profit (loss) before taxes	1,716	6,924	(850)	2,287	1,050	(394)
Income taxes	(344)	(5,956)	136	(457)	-	73
Net profit (loss)	1,372	968	(714)	1,830	1,050	(321)
Other comprehensive income	-	44	9	(12)	(24)	-
Total comprehensive income	1,372	1,012	(705)	1,818	1,026	(321)
During the year, the Company recognized share of profit (loss) from significant investments in associates as follows :						
Share of profit (loss) from investments in associates during the year	675	242	(179)	901	263	80
Share of other comprehensive income (loss) from investments in associates during the year	-	11	2	(6)	(6)	-

* Including gain (loss) on foreign exchange rate

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

17.9 Significant events during the year ended 31 December 2020

PTTLNG

On 29 November 2019, at the Board of Directors Meeting of PTTLNG No. 12/2019, the Board passed a resolution to approve the call up of remaining additional share capital of Baht 25 million. The Company made the additional payment on 24 January 2020.

On 7 April 2020, at the General Meeting of the shareholders of PTTLNG for the year 2020, the shareholders passed an extraordinary resolution to increase 530 million authorized share capital of PTTLNG at Baht 10 per share amounting to Baht 5,300 million. The Company made the additional payment amounting to Baht 1,325 million on 7 May 2020.

On 28 October 2020, at the Board of Directors Meeting of PTTLNG No. 11/2020, the Board passed a resolution to approve the call up of remaining additional share capital of Baht 625 million. The Company made the payment on 30 November 2020.

PTTGM

On 13 February 2020, at the Extraordinary General Meeting of the shareholders of PTT Global Management Co., Ltd. (PTTGM) No. 1/2020, the shareholders passed a resolution to approve the call up of remaining additional share capital of Baht 2 million. The Company made the additional payment on 25 February 2020.

On 17 December 2019, at the Extraordinary General Meeting of the shareholders of PTTGM, the shareholders passed a resolution to increase 268,000 authorized share capital at Baht 100 per share amounting to Baht 27 million. The Company made the additional payment on 27 February 2020.

On 2 April 2020, at the General Meeting of the shareholders of PTTGM for the year 2020, the shareholders passed a resolution to increase 1,982,000 authorized share capital at Baht 100 per share amounting to Baht 198 million and called up of the additional share capital of Baht 117 million. The Company made the additional payment on 17 August 2020.

On 17 July 2020, at the Board of Directors Meeting of PTTGM No. 5/2020, the Board passed a resolution to approve the call up of additional share capital of Baht 2 million. The Company made the additional payment on 28 August 2020.

On 13 February 2020, at the Extraordinary General Meeting of the shareholders of PTTGM No. 1/2020, the shareholders passed a resolution to approve the call up of additional share capital of Baht 0.7 million.

On 9 September 2020, at the Extraordinary General Meeting of the shareholders of PTTGM No. 3/2020, the shareholders passed a resolution to increase authorized share capital by 80,780 shares of Baht 100 per share amounting to Baht 8 million.

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

17.9 Significant events during the year ended 31 December 2020 (Continued)

PTTGM (Continued)

On 1 October 2020, at the Extraordinary General Meeting of the shareholders of PTTGM No. 4/2020, the shareholders passed a resolution to increase authorized share capital by 30,600 shares of Baht 100 per share amounting to Baht 3 million and to call up share capital of Baht 0.8 million.

The Company paid in additional share capital on 21 October 2020.

On 3 December 2020, at the Extraordinary General Meeting of the shareholders of PTTGM No. 5/2020, the shareholders passed a resolution to increase authorized share capital by 30 million shares of Baht 100 per share amounting to Baht 3,029 million and to call up share capital of Baht 757 million. The Company paid in the additional share capital on 17 December 2020.

PTTT USA

On 16 January 2020, at the Board of Directors Meeting of the Company No. 1/2020, the Board passed a resolution to approve the establishment of PTT International Trading USA Inc. (PTTT USA) in the United States of America. The Company holds a 100% shareholding with the initial registered share capital of USD 5,000. PTTT USA has been completely registered on 2 April 2020.

On 26 October 2020, at the Board of Directors Meeting of PTTT USA No. 3/2020, the Board passed a resolution to approve the call up of additional share capital of USD 5,000 and share premium of USD 4.99 million, totalling USD 5 million. The Company paid in the additional share capital on 16 November 2020.

ORHOLDCO

On 31 January 2020, at the Board of Directors Meeting of a subsidiary of OR No. 1/2020, the Board passed a resolution to approve and increase of Baht 47 million in the share capital of PTTOR International Holdings (Thailand) (THHOLDCO), through the issue of 467,475 additional shares of Baht 100 per share. OR paid in the additional capital on 27 March 2020.

On 17 February 2020, at the Board of Directors Meeting of the OR No. 2/2020, the Board passed a resolution to approve a change in the name of PTTOR International Holdings (Thailand) (THHOLDCO) to PTTOR Holdings Company Limited (ORHOLDCO), corresponding to align with the domestic and international investment policy of OR. The Board of OR approved the change on 11 March 2020 and registered it with Department of Business Development (DBD) on 2 April 2020.

On 22 June 2020, at the Extraordinary General Meeting of the shareholders of ORHOLDCO No. 3/2020, the shareholders passed a resolution to increase 14 million authorized share capital at Baht 100 per share amounting to Baht 1,419 million. OR made payment on 2 July 2020.

17. Investments in subsidiaries, joint ventures and associates (Continued)**17.9 Significant events during the year ended 31 December 2020 (Continued)****ORHOLDCO (Continued)**

On 16 October 2020, at the Extraordinary General Meeting of the shareholders of ORHOLDCO No. 4/2020, the shareholders passed a resolution to increase the share capital by Baht 40 million, through the issue of 404,030 additional shares of Baht 100 per share amounting to. OR made full payment of the additional share capital on 27 October 2020.

MAP

On 15 January 2020, Map Ta Phut Air Products Company Limited (MAP) passed a resolution to approve the call up of remaining additional share capital of Baht 47 million. The Company made the additional payment on 25 February 2020.

On 9 September 2020, MAP passed a resolution to approve the call up of the remaining additional share capital of Baht 17 million.

On 16 September 2020, at the Extraordinary General Meeting of the shareholders of MAP No. 2/2020, the shareholders passed a resolution to increase the authorized share capital by 1.53 million shares of Baht 100 per share amounting to Baht 153 million and to call up payment of share capital amounting to Baht 40 million, of which the Company's portion was Baht 19 million.

The Company made the additional payment on 21 October 2020.

SES

On 20 August 2020, at the Board of Directors Meeting of the Company No. 8/2020, the Board passed a resolution to approve the investment in 40% of share of Suez Environmental Services Co., Ltd. (SES), in order to develop the SANO Project.

On 16 December 2020, at the Extraordinary General Meeting of the shareholders of SES No. 1/2020, the shareholders passed a resolution to increase the authorised share capital by 58,000 shares of Baht 1,000 per share, amounting to Baht 58 million and to call up payment amounting to Baht 18 million, of which the Company's payment portion was Baht 7 million. The Company paid up the additional share capital on 21 December 2020.

TTM(T)

On 2 November 2020, at the Extraordinary General Meeting of the shareholders of Trans Thai-Malaysia (Thailand) Co., Ltd. (TTM(T)) No. 1/2020, the shareholders passed a resolution to decrease the authorised share capital of TTM(T) by Baht 2,340 million, of which the Company's portion was Baht 1,170 million. The Company received the distribution as a result of this share capital decreased on 18 December 2020.

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

17.9 Significant events during the year ended 31 December 2020 (Continued)

Management of shareholding within the Group

On 25 March 2019, at the Board of Directors Meeting of the Company No. 3/2019, the Board passed a resolution to approve procedures for the management of shareholding within the Group. During the year ended 31 December 2020, the Company made disposals of ordinary shares in subsidiaries as follows:

PTTEP

The Company sold 60 million ordinary shares in PTT Exploration and Production Public Co., Ltd. (PTTEP), amounting to Baht 5,282 million, causing its equity interest in PTTEP to decrease to 63.79%. The Company recognized a gain on disposal of investments amounting to Baht 3,642 million in the separate financial statements.

PTTGC

The Company sold 113 million ordinary shares in PTT Global Chemical Public Co., Ltd. (PTTGC), amounting to Baht 3,999 million, causing its equity interest in PTTGC to decrease to 45.41%. The Company recognized a gain on disposal of investments amounting to Baht 1,538 million in the separate financial statements.

TOP

The Company sold 51 million ordinary shares in Thai Oil Public Co., Ltd. (TOP), amounting to Baht 2,129 million, causing its equity interest in TOP to decrease to 45.03%. The Company recognized a gain on disposal of investments amounting to Baht 1,550 million in the separate financial statements.

IRPC

The Company sold 511 million ordinary shares in IRPC Public Co., Ltd. (IRPC), amounting to Baht 1,216 million, causing its equity interest in IRPC to decrease to 45.05%. The Company recognized a loss on disposal of investments amounting to Baht 987 million in the separate financial statements.

The shares were sold to a subsidiary of the Group and there is, therefore, no impact on the consolidated financial statements.

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

17.9 Significant events during the year ended 31 December 2020 (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 Thairoil Power Company Limited (TP) to TOP was completed on 1 February 2021.

After the restructuring, the Company will own 31.72% and TOP will own 20.78% of GPSC's issued shares. The acquisition will increase the Company's shareholding in GPSC to more than 25%, meaning it would be obliged to make a tender offer for all of GPSC's securities. However, the Company and its related parties as per Section 258 of the Securities and Exchange Act B.E. 2535, namely TOP and PTT Global Chemical Public Company Limited (PTTGC), will maintain their combined shareholding in GPSC at 75.23% of all of GPSC's issued shares and there will be no change of control in GPSC. Therefore, the Company submitted an application for a waiver from the obligation to make the tender offer to the Securities and Exchange Commission (SEC), as per Section 247 of the Securities and Exchange Act B.E. 2535 (as amended) and Clause 11(1) of the Notification of the Capital Market Supervisory Board No. TorChor 12/2554 Re: Rules, Conditions and Procedures for the Acquisition of Securities for Business Takeovers, dated 13 May 2011 (as amended). The Company was granted the waiver by the SEC on 17 August 2020.

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

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

17.10 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 (%)	
		2020	2019
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	51.59	51.58
Global Power Synergy Public Co., Ltd. (GPSC)	Thailand	24.77	24.77

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

17.10 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 2020 and 2019

Unit: Million Baht

	2020					2019				
	PTTEP	TOP	IRPC	PTTGC	GPSC	PTTEP	TOP	IRPC	PTTGC	GPSC
Current assets	152,716	114,229	43,371	129,911	40,741	142,125	134,676	44,268	104,494	38,919
Non-current assets	522,921	191,805	130,436	359,472	215,916	527,339	148,849	134,578	348,020	213,015
Current liabilities	(56,257)	(28,620)	(44,059)	(59,042)	(21,925)	(61,841)	(38,667)	(45,707)	(53,033)	(36,706)
Non-current liabilities	(264,969)	(157,449)	(54,082)	(141,347)	(122,865)	(250,564)	(121,267)	(48,896)	(105,886)	(106,312)
Net assets	354,411	119,965	75,666	288,994	111,867	357,059	123,591	84,243	293,595	108,916
Owners of the Company	228,132	55,748	36,294	136,032	77,414	229,182	57,456	40,412	138,009	75,232
Non-controlling interests	126,279	64,217	39,372	152,962	34,453	127,877	66,135	43,831	155,586	33,684

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

17.10 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 2020 and 2019

Unit: Million Baht

	2020					2019				
	PTTEP	TOP	IRPC	PTTGC	GPSC	PTTEP	TOP	IRPC	PTTGC	GPSC
Revenue*	168,725	258,664	176,257	335,716	71,906	195,796	369,385	243,440	423,293	68,635
Expenses	(127,297)	(262,060)	(183,941)	(335,173)	(62,423)	(126,042)	(361,627)	(245,115)	(409,975)	(62,387)
Profit (loss) before income taxes	41,428	(3,396)	(7,684)	543	9,483	69,754	7,758	(1,675)	13,318	6,248
Income taxes	(18,764)	647	1,554	109	(993)	(20,952)	(1,239)	779	(649)	(247)
Net profit (loss)	22,664	(2,749)	(6,130)	652	8,490	48,802	6,519	(896)	12,669	6,001
Loss from discontinued operations during the year, net of tax	-	(287)	-	-	-	-	-	-	-	-
Other comprehensive income (loss)	(3,197)	(378)	(82)	324	(508)	(24,950)	(186)	(1,020)	(1,842)	(903)
Total comprehensive income (loss)	19,467	(3,414)	(6,212)	976	7,982	23,852	6,333	(1,916)	10,827	5,098
Owners of the Company	14,797	(1,656)	(2,956)	97	5,649	15,572	2,929	(934)	4,922	2,682
Non-controlling interests	7,867	(1,380)	(3,174)	555	2,842	8,280	3,402	(982)	5,905	2,416
Total dividend paid to non-controlling interests	7,234	595	1,088	2,852	1,465	7,579	2,282	983	8,733	1,753

* Including gain (loss) on foreign exchange rate

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

17.10 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 2020 and 2019

Unit: Million Baht

	2020					2019				
	PTTEP	TOP	IRPC	PTTGC	GPSC	PTTEP	TOP	IRPC	PTTGC	GPSC
Net cash provided by operating activities	80,230	2,102	11,152	22,146	18,850	109,166	12,775	7,721	30,168	17,338
Net cash provided by (used in) investing activities	(27,071)	(48,005)	(3,875)	(28,275)	(5,606)	(103,769)	23,681	(6,152)	(41,773)	(82,124)
Net cash provided by (used in) financing activities	(26,469)	21,017	(1,462)	31,794	(11,815)	(17,181)	8,129	(870)	(6,461)	77,927
Others	(554)	2,950	-	(192)	28	(6,288)	(3,447)	-	162	(52)
Net increase (decrease) in cash and cash equivalents	26,136	(21,936)	5,815	25,473	1,457	(18,072)	41,138	699	(17,904)	13,089

18. Investment properties

Details of investment properties are as follows:

Unit: Million Baht

	Consolidated financial statements			
	Land	Buildings and building improvements	Other assets	Total
As at 1 January 2019				
Cost	5,570	2,342	4	7,916
<u>Less</u> Accumulated depreciation	-	(1,117)	-	(1,117)
Allowance for impairment of assets	(216)	-	-	(216)
Net book value	5,354	1,225	4	6,583
For the year ended 31 December 2019				
Beginning net book value	4,377	1,225	4	5,606
- Reclassification and adjustment	977	-	-	977
Beginning net book value after reclassification and adjustment	5,354	1,225	4	6,583
- Additions	7	12	-	19
- Reclassifications	1,769	46	-	1,815
- Disposals - net	(464)	(1)	-	(465)
- Depreciation for the year	-	(116)	(1)	(117)
- Reversal of loss on impairment	152	-	-	152
Ending net book value	6,818	1,166	3	7,987
As at 31 December 2019				
Cost	6,882	2,366	4	9,252
<u>Less</u> Accumulated depreciation	-	(1,200)	(1)	(1,201)
Allowance for impairment of assets	(64)	-	-	(64)
Net book value	6,818	1,166	3	7,987

18. Investment properties (Continued)

Details of investment properties are as follows: (Continued)

Unit: Million Baht

	Consolidated financial statements				
	Land	Buildings and building improvements	Other assets	Right of use	Total
For the year ended 31 December 2020					
Beginning net book value	6,818	1,166	3	-	7,987
- Reclassification and adjustment (Note 4)	-	-	-	107	107
Beginning net book value after reclassification and adjustment	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	6,554	1,365	5	102	8,026
As at 31 December 2020					
Cost	6,618	2,658	6	125	9,407
<u>Less</u> Accumulated depreciation	-	(1,293)	(1)	(23)	(1,317)
Allowance for impairment of assets	(64)	-	-	-	(64)
Net book value	6,554	1,365	5	102	8,026

As at 31 December 2020 and 2019, the Group did not have pledged assets.

18. 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	
As at 1 January 2019					
Cost	1,645	1,229	-	-	2,874
<u>Less</u> Accumulated depreciation	-	(841)	-	-	(841)
Net book value	1,645	388	-	-	2,033
For the year ended 31 December 2019					
Beginning net book value	1,645	388	-	-	2,033
- Reclassifications	1,769	-	-	-	1,769
- Disposals - net	-	(21)	-	-	(21)
- Depreciation for the year	-	(38)	-	-	(38)
Ending net book value	3,414	329	-	-	3,743
As at 31 December 2019					
Cost	3,414	1,175	-	-	4,589
<u>Less</u> Accumulated depreciation	-	(846)	-	-	(846)
Net book value	3,414	329	-	-	3,743
For the year ended 31 December 2020					
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
As at 31 December 2020					
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

18. Investment properties (Continued)

Fair value disclosed as at 31 December 2020 and 2019 using different levels of inputs as follows

Unit: Million Baht

	Consolidated financial statements		Separate financial statements	
	2020	2019	2020	2019
Fair value hierarchy				
Level 2	11,323	15,750	3,649	7,775
Level 3	12,762	11,856	415	387
Total	24,085	27,606	4,064	8,162

Fair value hierarchyFair 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.

19. 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	
As at 1 January 2019								
Cost	46,390	295,839	1,034,362	859,932	54,381	27,211	90,219	2,408,334
<u>Less</u> Accumulated depreciation	-	(160,114)	(466,029)	(586,991)	(28,130)	(16,335)	-	(1,257,599)
Allowance for impairment of assets	(100)	(663)	(3,210)	(10,861)	(13,775)	(17)	(1,596)	(30,222)
Net book value	46,290	135,062	565,123	262,080	12,476	10,859	88,623	1,120,513

19. Property, plant and equipment (Continued)

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

Unit: Million Baht

	Consolidated financial statements							Total
	Land	Buildings and building improvements	Machinery and equipment	Exploration and production properties	Mining Properties	Other assets	Construction in progress	
For the year ended 31 December 2019								
Beginning net book value	47,267	135,062	557,808	262,080	12,476	10,859	88,623	1,114,175
- Reclassification and adjustment	(977)	-	7,315	-	-	-	-	6,338
Beginning net book value after reclassification and adjustment	46,290	135,062	565,123	262,080	12,476	10,859	88,623	1,120,513
- Business acquisition	648	304	74,255	64,256	395	14	207	140,079
- Additions	957	3,486	6,062	42,791	1,346	1,128	98,617	154,387
- Borrowing costs	-	-	-	-	-	-	3,518	3,518
- Reclassifications	(73)	7,915	31,201	30,843	100	646	(43,179)	27,453
- Disposals - net	-	(134)	(311)	(1,078)	(41)	(190)	(45)	(1,799)
- Depreciation for the year	-	(11,601)	(48,330)	(61,750)	(2,018)	(2,264)	-	(125,963)
- Reversal of (loss on) impairment	27	154	(612)	-	-	-	-	(431)
- Exchange differences on translation of financial statements	(121)	(421)	(1,474)	(19,448)	(883)	(21)	(410)	(22,778)
Ending net book value	47,728	134,765	625,914	317,694	11,375	10,172	147,331	1,294,979

19. Property, plant and equipment (Continued)

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

Unit: Million Baht

	Consolidated financial statements							Total
	Land	Buildings and building improvements	Machinery and equipment	Exploration and production properties	Mining Properties	Other assets	Construction in progress	
As at 31 December 2019								
Cost	47,801	302,478	1,166,628	933,235	52,263	28,221	148,833	2,679,459
<u>Less</u> Accumulated depreciation	-	(167,201)	(537,818)	(605,448)	(28,088)	(18,032)	-	(1,356,587)
Allowance for impairment of assets	(73)	(512)	(2,896)	(10,093)	(12,800)	(17)	(1,502)	(27,893)
Net book value	47,728	134,765	625,914	317,694	11,375	10,172	147,331	1,294,979

19. Property, plant and equipment (Continued)

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

Unit: Million Baht

	Consolidated financial statements							Total
	Land	Buildings and building improvements	Machinery and equipment	Exploration and production properties	Mining Properties	Other assets	Construction in progress	
For the year ended 31 December 2020								
Beginning net book value	47,728	134,765	625,914	317,694	11,375	10,172	147,331	1,294,979
- Reclassification and adjustment (Note 4)	-	-	(4,238)	(3,662)	-	(1,136)	-	(9,036)
Beginning net book value after reclassification and adjustment	47,728	134,765	621,676	314,032	11,375	9,036	147,331	1,285,943
- Business acquisition (Note 45)	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 (Note 24)	-	(102)	(216)	(1,439)	(7,780)	-	(456)	(9,993)
- Reclassified to assets held for sale (Note 13)	-	(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
As at 31 December 2020								
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

As at 31 December 2020, the Group had pledged assets amounting to Baht 75,279 million (31 December 2019: Baht 78,983 million)

19. Property, plant and equipment (Continued)

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

Unit: Million Baht

	Separate financial statements					Total
	Land	Buildings and building improvements	Machinery and equipment	Other assets	Construction in progress	
As at 1 January 2019						
Cost	7,371	38,360	371,454	17,820	20,752	455,757
<u>Less</u> Accumulated depreciation	-	(15,008)	(155,070)	(11,266)	-	(181,344)
Allowance for impairment of assets	-	(26)	(36)	-	-	(62)
Net book value	7,371	23,326	216,348	6,554	20,752	274,351
For the year ended 31 December 2019						
Beginning net book value	7,371	23,326	216,348	6,554	20,752	274,351
- Additions	9	91	252	431	19,817	20,600
- Borrowing costs	-	-	-	-	996	996
- Reclassifications	(1,721)	880	6,947	304	(9,499)	(3,089)
- Disposals - net	-	(293)	(66)	(47)	(394)	(800)
- Depreciation for the year	-	(1,709)	(14,572)	(1,460)	-	(17,741)
- Loss on impairment	-	(6)	(490)	-	-	(496)
Ending net book value	5,659	22,289	208,419	5,782	31,672	273,821
As at 31 December 2019						
Cost	5,659	38,796	378,011	18,386	31,672	472,524
<u>Less</u> Accumulated depreciation	-	(16,474)	(169,066)	(12,604)	-	(198,144)
Allowance for impairment of assets	-	(33)	(526)	-	-	(559)
Net book value	5,659	22,289	208,419	5,782	31,672	273,821

19. Property, plant and equipment (Continued)

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

Unit: Million Baht

	Separate financial statements					Total
	Land	Buildings and building improvements	Machinery and equipment	Other assets	Construction in progress	
For the year ended 31 December 2020						
Beginning net book value	5,659	22,289	208,419	5,782	31,672	273,821
- Reclassification and adjustment (Note 4)	-	-	(4,238)	(406)	-	(4,644)
Beginning net book value after adjustment	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)
- Disposal - net	(2)	(546)	(307)	(15)	(3)	(873)
- Depreciation for the year	-	(1,630)	(13,924)	(1,310)	-	(16,864)
- Loss on impairment (Note 24)	-	(49)	(32)	-	-	(81)
Ending net book value	5,743	20,687	195,487	4,459	35,474	261,850
As at 31 December 2020						
Cost	5,743	37,254	370,463	17,041	35,474	465,975
<u>Less:</u> Accumulated depreciation	-	(16,506)	(174,909)	(12,582)	-	(203,997)
Allowance for impairment of assets	-	(61)	(67)	-	-	(128)
Net book value	5,743	20,687	195,487	4,459	35,474	261,850

Borrowing costs were capitalized as a part of costs of property, plant and equipment. During the year, the Group used capitalization rates ranging from 0.50% - 5.99% per annum (2019: 0.85% - 5.25% per annum). The Company used capitalization rates at 4.34% per annum (2019: 4.75%).

20. 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	
As at 1 January 2020							
Beginning net book value	-	-	-	-	-	-	-
Cumulative effects of changes in accounting policies (Note 4)	41,929	1,108	7,558	1,926	13,541	3,049	69,111
Beginning net book value - as restated	41,929	1,108	7,558	1,926	13,541	3,049	69,111
For the year ended 31 December 2020							
Beginning net book value - as restated	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)	(111)	(21)	(389)	(564)
- Depreciation for the year	(2,553)	(601)	(1,355)	(750)	(2,894)	(1,350)	(9,503)
- Loss on impairment of assets (Note 24)	(53)	-	-	-	-	-	(53)
- Classified to assets held for sale (Note 13)	-	(3)	-	(4)	-	-	(7)
- Exchange differences on translation of financial statements	9	14	(7)	5	(50)	3	(26)
Ending net book value	45,493	1,378	7,186	1,522	13,392	1,860	70,831
As at 31 December 2020							
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	(53)	-	-	-	-	-	(53)
Net book value	45,493	1,378	7,186	1,522	13,392	1,860	70,831

20. Right-of-use assets (Continued)

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

Unit: Million Baht

	Separate financial statements					Total
	Land	Buildings and building improvements	Machinery and equipment	Vehicles	Other assets	
As at 1 January 2020						
Beginning net book value	-	-	-	-	-	-
Cumulative effects of changes in accounting policies (Note 4)	14,705	40	5,030	452	14	20,241
Beginning net book value - as restated	14,705	40	5,030	452	14	20,241
For the year ended 31 December 2020						
Beginning net book value - as restated	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
As at 31 December 2020						
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

21. Goodwill

Movements of goodwill are as follows:

	Unit: Million Baht
	Consolidated financial statements
Net book value as at 1 January 2020	107,197
- Business acquisition (Note 45)	14
- Exchange differences on translation of financial statements	(217)
Net book value As at 31 December 2020	106,994

22. Other intangible assets

Details of other intangible assets are as follows:

	Unit: Million Baht			
	Consolidated financial statements			
	Computer software	Right-of- use	Other intangible assets	Total
As at 1 January 2019				
Cost	23,155	33,817	10,348	67,320
<u>Less</u> Accumulated amortization	(12,821)	(14,596)	(4,937)	(32,354)
Allowance for impairment	-	(744)	(22)	(766)
Beginning net book value	10,334	18,477	5,389	34,200
For the year ended 31 December 2019				
Beginning net book value				
- as restated	10,334	18,477	5,389	34,200
- Business acquisition	139	45,360	1,125	46,624
- Additions	1,344	573	1,257	3,174
- Reclassifications	559	2,162	(549)	2,172
- Disposals - net	(2)	-	(96)	(98)
- Amortization for the year	(2,331)	(2,748)	(534)	(5,613)
- Exchange differences on translation of financial statements	(173)	(74)	(244)	(491)
Ending net book value	9,870	63,750	6,348	79,968
As at 31 December 2019				
Cost	24,861	82,887	11,675	119,423
<u>Less</u> Accumulated amortization	(14,991)	(18,445)	(5,306)	(38,742)
Allowance for impairment	-	(692)	(21)	(713)
Net book value	9,870	63,750	6,348	79,968

22. Other intangible assets (Continued)

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

Unit: Million Baht

	Consolidated financial statements					Total
	Computer software	Right-of-use	Customer contracts	Copyright, license and trademark	Other intangible assets	
As at 1 January 2020						
Cost	24,865	20,507	45,780	11,689	16,583	119,424
<u>Less</u> Accumulated amortization	(14,994)	(9,674)	(2,300)	(4,721)	(7,053)	(38,742)
Allowance for impairment	-	-	-	-	(714)	(714)
Beginning net book value	9,871	10,833	43,480	6,968	8,816	79,968
Cumulative effects of changes in accounting policies (Note 4)	(147)	(10,833)	69	168	(261)	(11,004)
Beginning net book value - as restated	9,724	-	43,549	7,136	8,555	68,964
For the year ended 31 December 2020						
Beginning net book value - as restated	9,724	-	43,549	7,136	8,555	68,964
- Business acquisition (Note 45)	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 (Note 24)	-	-	-	-	(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
As at 31 December 2020						
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	-	-	-	-	(779)	(779)
Net book value	10,454	-	42,617	7,749	7,653	68,473

22. Other intangible assets (Continued)

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

	Unit: Million Baht		
	Separate financial statements		
	Computer software	Right-of-use	Total
As at 1 January 2019			
Cost	7,178	20,129	27,307
<u>Less</u> Accumulated amortization	(4,641)	(8,852)	(13,493)
Beginning net book value	2,537	11,277	13,814
For the year ended 31 December 2019			
Beginning net book value	2,537	11,277	13,814
- Additions	247	3	250
- Reclassifications	774	19	793
- Disposals - net	(27)	-	(27)
- Amortization for the year	(926)	(529)	(1,455)
Ending net book value	2,605	10,770	13,375
As at 31 December 2019			
Cost	8,131	20,151	28,282
<u>Less</u> Accumulated amortization	(5,526)	(9,381)	(14,907)
Net book value	2,605	10,770	13,375

22. Other intangible assets (Continued)

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

	Unit: Million Baht		
	Separate financial statements		
	Computer software	Right-of-use	Total
For the year ended 31 December 2020			
Beginning net book value	2,605	10,770	13,375
Cumulative effects of changes in accounting policies (Note 4)	-	(10,770)	(10,770)
Beginning net book value - as restated	2,605	-	2,605
Beginning net book value - as restated	2,605	-	2,605
- Additions	192	-	192
- Reclassifications	790	-	790
- Disposals - net	(1)	-	(1)
- Amortization for the year	(969)	-	(969)
Ending net book value	2,617	-	2,617
As at 31 December 2020			
Cost	8,869	-	8,869
<u>Less</u> Accumulated amortization	(6,252)	-	(6,252)
Net book value	2,617	-	2,617

23. Exploration and evaluation assets

Details of exploration and evaluation assets are as follows:

Unit: Million Baht

	Consolidated financial statements		
	Petroleum exploration and evaluation assets	Mining properties	Total
As at 1 January 2019			
Cost	153,013	839	153,852
Less Allowance for impairment	(53,330)	(162)	(53,492)
Beginning net book value	99,683	677	100,360
For the year ended 31 December 2019			
Beginning net book value	107,485	677	108,162
- Reclassification and adjustment	(7,802)	-	(7,802)
Beginning net book value after reclassification and adjustment	99,683	677	100,360
- Business acquisition	23,036	27	23,063
- Additions	3,699	28	3,727
- Reclassifications	(30,914)	-	(30,914)
- Disposals - net	(2,043)	-	(2,043)
- Exchange differences on translation of financial statements	(6,608)	(55)	(6,663)
Ending net book value	86,853	677	87,530
As at 31 December 2019			
Cost	138,905	828	139,733
Less Allowance for impairment	(52,052)	(151)	(52,203)
Net book value	86,853	677	87,530

23. Exploration and evaluation assets (Continued)

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

Unit: Million Baht

	Consolidated financial statements		
	Petroleum exploration and evaluation assets	Mining properties	Total
For the year ended 31 December 2020			
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 (Note 24)	(1,360)	(390)	(1,750)
- Exchange differences on translation of financial statements	(408)	9	(399)
Ending net book value	86,693	252	86,945
As at 31 December 2020			
Cost	140,981	776	141,757
<u>Less</u> Allowance for impairment	(54,288)	(524)	(54,812)
Net book value	86,693	252	86,945

24. 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 an indefinite useful life 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 2020, significant factors indicating that the assets of the Group may be impaired included the current weak global economic climate resulting from the COVID19 pandemic, the volatility of oil prices in the global market, a decline in future coal prices, an increase in mining costs, and the investment risk of projects that have ceased operations or been delayed.

In determining recoverable amounts, the Group applied significant estimates and assumptions relating to matters such as coal reserves, oil and coal 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 4.00% - 10.91%.

During the year ended 31 December , 2020, the Group recognized loss on impairment of assets in statements of income as follows:

	Unit: Million Baht	
	Consolidated financial statements	Separate financial statements
Investments in subsidiaries (Note 17)	-	1,723
Investments in associations (Note 17)	9	-
Property, plant and equipment (Note 19)	9,993	81
Right-of-use assets (Note 20)	53	-
Intangible assets (Note 19)	71	-
Exploration and evaluation assets (Note 20)	1,750	-
Other assets	41	-
Total	11,917	1,804

25. 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	5 - 55
Income tax from the profit distribution	15, 20

25.1 Income taxes recognized in the statements of income for the years ended 31 December 2020 and 2019 are as follows:

	Unit: Million Baht			
	Consolidated		Separate	
	financial statements		financial statements	
	2020	2019	2020	2019
Current tax:				
Current tax	32,518	48,569	5,553	10,203
Adjustments in respect of current tax of previous year	817	(1,176)	30	(30)
	<u>33,335</u>	<u>47,393</u>	<u>5,583</u>	<u>10,173</u>
Deferred tax:				
Change in temporary differences	(11,082)	(13,574)	233	(1,734)
Tax effect of currency translation on tax base	2,913	(830)	-	-
	<u>(8,169)</u>	<u>(14,404)</u>	<u>233</u>	<u>(1,734)</u>
Total	<u>25,166</u>	<u>32,989</u>	<u>5,816</u>	<u>8,439</u>

25. Income taxes and deferred taxes (Continued)

25.2 Reconciliations between income taxes and the product of profit before income taxes multiplied by the applicable tax rate are as follows:

Unit: Million Baht

	Consolidated		Separate	
	financial statements	financial statements	financial statements	financial statements
	2020	2019	2020	2019
Profit before income taxes	65,116	155,080	58,333	70,096
Tax calculated at a tax rate of 20%	13,023	31,016	11,667	14,019
Tax effect of :				
Income not subject to tax	(2,238)	(4,382)	(6,386)	(5,935)
Non-deductible expenses	11,282	1,903	251	343
Expenses deductible at a greater amount	(1,363)	(418)	(63)	(82)
(Gain) Loss from the entities not subject to tax	(483)	902	-	-
Adjustment in respect of prior period	817	(1,176)	30	(31)
Share of profit from investment in joint ventures and associates	(1,105)	(1,083)	-	-
Tax credit on petroleum royalty	(12,272)	(15,693)	-	-
Differences in tax rate	13,504	21,825	-	-
Deferred tax on functional currency	2,913	(830)	-	-
Others	1,088	926	317	125
Income taxes	25,166	32,989	5,816	8,439

25.3 Movements in deferred taxes

Deferred income tax assets are recognized for tax loss and carried forwards only to the extent that realisation of the related tax benefit through the future taxable profits is probable. The PTTEP Group does not recognize deferred tax asset from tax losses of Baht 87,979 million (2019: Baht 86,904 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 2021 to 2038.

25. Income taxes and deferred taxes (Continued)

25.3 Movements in deferred taxes (Continued)

Unit: Million Baht

	Consolidated financial statements											
	Net balance as at 1 January 2020	Cumulative effects of changes in accounting policies (Note 4)	Net balance as restated	Profit (loss)	Other comprehensive income (loss)	Business acquisition (Note 45)	Reclass to assets held for sale (Note 13)	Currency translation differences	Others	As at 31 December 2020		
										Net balance	Deferred tax assets	Deferred tax liabilities
Trade and other accounts receivable	(3,333)	377	(2,956)	(693)	-	-	-	-	-	(3,649)	962	(4,611)
Inventories	172	53	225	57	-	-	-	-	-	282	309	(27)
Investments measured at fair value through other comprehensive income - equity instruments	-	(21)	(21)	17	4	-	-	-	-	-	-	-
Investments measured at fair value through other comprehensive income - debt instruments	-	(116)	(116)	-	8	-	-	-	-	(108)	283	(391)
Other investments in financial assets	85	(81)	4	91	-	-	-	-	-	95	139	(44)
Available-for-sale investments	(355)	338	(17)	7	-	-	-	-	-	(10)	-	(10)
Property, plant and equipment	(67,407)	(308)	(67,715)	4,002	-	-	-	(80)	(13)	(63,806)	9,298	(73,104)
Right-of-use assets	-	(62)	(62)	(2,900)	-	-	-	-	-	(2,962)	257	(3,219)
Intangible assets	(2,082)	-	(2,082)	(249)	-	(96)	-	(5)	(17)	(2,449)	6,282	(8,731)

25. Income taxes and deferred taxes (Continued)

25.3 Movements in deferred taxes (Continued)

Unit: Million Baht

	Consolidated financial statements											
	Net balance as at 1 January 2020	Cumulative effects of changes in accounting policies (Note 4)	Net balance as restated	Profit (loss)	Other comprehensive income (loss)	Business acquisition (Note 45)	Reclass to assets held for sale (Note 13)	Currency translation differences	Others	As at 31 December 2020		
										Net balance	Deferred tax assets	Deferred tax liabilities
Derivatives	-	(246)	(246)	152	305	-	-	(17)	-	194	596	(402)
Loans	(386)	(26)	(412)	296	-	-	-	-	1	(115)	-	(115)
Lease liabilities	-	65	65	3,307	-	-	-	(13)	-	3,359	3,359	-
Provisions for employee benefits	7,730	-	7,730	248	116	-	(1)	(23)	8	8,078	8,150	(72)
Provision for decommissioning costs	30,681	62	30,743	3,021	-	2	-	(227)	-	33,539	33,585	(46)
Cumulative loss carried forward	10,874	-	10,874	2,708	67	-	-	63	-	13,712	13,712	-
Tax effect of currency translation on tax base	3,088	-	3,088	(2,725)	-	-	-	71	-	434	434	-
Others	9,344	49	9,393	830	21	-	-	(48)	-	10,196	10,780	(584)
Total before set-off of taxes	(11,589)	84	(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)

25. Income taxes and deferred taxes (Continued)

25.3 Movements in deferred taxes (Continued)

Unit: Million Baht

	Consolidated financial statements								
	Net balance as at 1 January 2019	Profit (loss)	Other comprehensive income (loss)	Business acquisition	Currency translation differences	Others	As at 31 December 2019		
							Net balance	Deferred tax assets	Deferred tax liabilities
Trade and other accounts receivable	(4,082)	747	-	-	2	-	(3,333)	465	(3,798)
Inventories	(39)	211	-	-	-	-	172	211	(39)
Other investments	70	15	-	-	-	-	85	85	-
Available-for-sale investments	(333)	-	(22)	-	-	-	(355)	43	(398)
Property, plant and equipment	(55,727)	8,589	-	(24,159)	3,912	(22)	(67,407)	11,155	(78,562)
Intangible assets	7,153	(203)	-	(9,035)	3	-	(2,082)	6,846	(8,928)
Loans	(129)	(257)	-	-	-	-	(386)	-	(386)
Provisions for employee benefits	5,855	1,570	409	80	(187)	3	7,730	7,730	-
Provision for decommissioning costs	26,912	2,313	-	3,449	(1,993)	-	30,681	30,681	-
Cumulative loss carried forward	10,394	975	82	15	(592)	-	10,874	10,874	-
Tax effect of currency translation on tax base	2,483	830	-	-	(225)	-	3,088	3,124	(36)
Others	5,415	(386)	65	4,348	(276)	178	9,344	10,767	(1,423)
Total before set-off of taxes	(2,028)	14,404	534	(25,302)	644	159	(11,589)	81,981	(93,570)
Set-off of taxes							-	(34,370)	34,370
Net deferred tax assets (liabilities)							(11,589)	47,611	(59,200)

25. Income taxes and deferred taxes (Continued)

25.3 Movements in deferred taxes (Continued)

Unit: Million Baht

	Separate financial statements							
	Net balance as at 1 January 2020	Cumulative effects of changes in accounting policies (Note 4)	Net balance as restated	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)	-	(329)	(396)	-	(725)	410	(1,135)
Inventories	57	-	57	6	-	63	63	-
Investments measured at fair value through other comprehensive income - equity instruments	-	(324)	(324)	-	(66)	(390)	-	(390)
Other investments in financial assets	55	(26)	29	89	-	118	137	(19)
Available-for-sale investments	(357)	357	-	-	-	-	-	-
Property, plant and equipment	(430)	-	(430)	(25)	-	(455)	-	(455)
Right-of-use assets	-	-	-	(1,588)	-	(1,588)	-	(1,588)
Intangible assets	138	-	138	(66)	-	72	72	-
Derivatives	-	128	128	(105)	-	23	23	-
Loans	(336)	-	(336)	308	-	(28)	-	(28)
Lease liabilities	-	-	-	1,547	-	1,547	1,547	-
Provisions for employee benefits	1,463	-	1,463	62	7	1,532	1,532	-
Others	996	(22)	974	(65)	-	909	940	(31)
Total before set-off of taxes	1,257	113	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	-

25. Income taxes and deferred taxes (Continued)

25.3 Movements in deferred taxes (Continued)

Unit: Million Baht

	Separate financial statements					
	Net balance as at 1 January 2019	Profit (loss)	Other comprehensive loss	As at 31 December 2019		
				Net balance	Deferred tax assets	Deferred tax liabilities
Trade and other accounts receivable	(2,008)	1,679	-	(329)	421	(749)
Inventories	71	(14)	-	57	57	-
Other investments	55	-	-	55	55	-
Available-for-sale investments	(323)	-	(33)	(357)	-	(357)
Property, plant and equipment	(588)	158	-	(430)	-	(430)
Intangible assets	136	2	-	138	138	-
Loans	(91)	(245)	-	(336)	-	(336)
Provisions for employee benefits	1,381	315	(234)	1,463	1,463	-
Others	1,157	(161)	-	996	997	(1)
Total before set-off of taxes	(210)	1,734	(267)	1,257	3,130	(1,873)
Set-off of taxes				-	(1,873)	1,873
Net deferred tax assets (liabilities)				1,257	1,257	-

26. Other non-current assets

Details of other non-current assets as at 31 December 2020 and 2019 are as follows:

Unit: Million Baht

	Consolidated financial statements		Separate financial statements	
	2020	2019	2020	2019
Advance payments and deferred charge	3,523	11,305	10	984
Decommissioning fund	7,984	7,154	-	-
Others	3,232	3,431	45	130
Total	14,739	21,890	55	1,114

27. Trade accounts payable

Trade accounts payable as at 31 December 2020 and 2019 are as follows

Unit: Million Baht

	Consolidated financial statements		Separate financial statements	
	2020	2019	2020	2019
Trade accounts payable - others	106,221	157,105	43,475	70,274
Oil fuel fund payable excise tax payable	980	2,414	140	60
Trade accounts payable - related parties (Note 10.4)	988	1,150	24,397	30,236
Total	108,189	160,669	68,012	100,570

28. Other accounts payable

Other accounts payable as at 31 December 2020 and 2019 are as follows

Unit: Million Baht

	Consolidated		Separate	
	financial statements		financial statements	
	2020	2019	2020	2019
Other accounts payable - others	49,644	56,093	7,479	13,867
Accrued interest expenses	5,060	5,185	1,059	1,692
Advance received	5,315	4,417	288	426
Others	6,538	12,573	-	-
Other accounts payable - related parties (Note 10.5)	127	129	7,231	6,759
Total	66,684	78,397	16,057	22,744

29. Other current liabilities

Details of other current liabilities as at 31 December 2020 and 2019 are as follows:

Unit: Million Baht

	Consolidated		Separate	
	financial statements		financial statements	
	2020	2019	2020	2019
Undue output VAT	2,941	3,763	2,129	2,975
Provision for remuneration for the renewal of petroleum production	2,631	2,348	-	-
Others	1,649	274	3	288
Total	7,221	6,385	2,132	3,263

30. Borrowings and lease liabilities

30.1 Details of borrowings and lease liabilities are as follows:

Unit: Million Baht

	Consolidated financial statements											
	As at 1 January 2020	Cumulative effects of changes in accounting policies (Note 4)	Beginning net book value - as restated	Cash flows from financing		Non-cash items						As at 31 December 2020
				Additions	Repayments	Lease - Addition	(Gain) loss on exchange rates	Exchange differences on translation of financial statements	Business acquisition (Note 45)	Classified to assets held for sale (Note 13)	Others	
Short-term borrowings from financial institutions	44,441	-	44,441	35,963	(76,507)	-	-	444	-	(165)	47	4,223
Short-term borrowings - others	-	-	-	40	(1,165)	-	-	-	1,125	-	-	-
Borrowings - Baht	139,267	-	139,267	63,036	(21,587)	-	-	-	-	(1,295)	(244)	179,177
Borrowings - foreign currencies	47,872	16	47,888	1,248	(3,593)	-	354	505	-	-	102	46,504
Debentures - Baht	230,143	(15)	230,128	66,965	(26,118)	-	107	(107)	-	-	(209)	270,766
Debentures - foreign currencies	188,176	(17)	188,159	79,444	(21,893)	-	(495)	(2,360)	-	-	(792)	242,063
Lease liabilities	9,070	40,548	49,618	-	(8,372)	10,365	65	(50)	-	(15)	1,159	52,770
Total	658,969	40,532	699,501	246,696	(159,235)	10,365	31	(1,568)	1,125	(1,475)	63	795,503

30. Borrowings and lease liabilities (Continued)

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

Unit: Million Baht

	Separate financial statements							As at 31 December 2020	
	As at 1 January 2020	Cumulative effects of changes in accounting policies (Note 4)	Beginning net book value - as restated	Cash flows from financing		Non-cash items			
			Additions	Repayments	Lease - Additions	Gain (loss) on exchange rates	Others		
Short-term borrowings - related party (Note 10.5)	3,488	-	3,488	945	(1,872)	-	-	-	2,561
Borrowings - Baht	1,000	-	1,000	-	(1,000)	-	-	-	-
Borrowings - foreign currencies	23,873	-	23,873	22,059	-	-	(751)	-	45,181
Debentures - Baht	83,702	(14)	83,688	34,965	(26,118)	-	-	(48)	92,487
Debentures - foreign currencies	8,806	(17)	8,789	-	-	-	(26)	2	8,765
Lease liabilities	3,957	3,779	7,736	-	(718)	977	79	(335)	7,739
Total	124,826	3,748	128,574	57,969	(29,708)	977	(698)	(381)	156,733

30. Borrowings and lease liabilities (Continued)

30.2 Interest rates charged on borrowings and lease liabilities as at 31 December 2020 and 2019 are as follows:

	Unit: % per annum			
	Consolidated financial statements		Separate financial statements	
	2020	2019	2020	2019
Short-term borrowings from financial institutions	0.55 - 10.00	1.00 - 4.75	-	-
Loans - Baht currency	0.33 - 4.85	1.50 - 7.83	-	7.83
Loans - foreign currencies				
- USD	0.25 - 2.84	1.89 - 5.00	4.20 - 6.38	5.00 - 6.38
- EURO	1.65 - 2.50	1.65 - 2.50	-	-
- JPY	1.50 - 4.45	1.50 - 4.45	4.95	4.95
- LAK	4.75	4.75	-	-
- VND	6.40	6.40	-	-
Debentures - Baht currency	1.21 - 6.80	1.97 - 6.80	1.21 - 6.80	3.50 - 6.80
Debentures - foreign currency				
- USD	2.50 - 5.88	3.50 - 6.35	4.50 - 5.88	4.50 - 5.88
Lease liabilities	0.40 - 10.00	1.10 - 10.73	1.21 - 8.28	1.15 - 8.28

30. Borrowings and lease liabilities (Continued)

30.3 Details of borrowings and lease liabilities as at 31 December 2020 and 2019 are as follows:

Current portion of borrowings and lease liabilities

Unit: Million Baht

	Consolidated financial statements		Separate financial statements	
	2020	2019	2020	2019
Loans - Baht currency	18,231	20,797	-	1,000
Loans - foreign currencies	1,381	3,525	-	-
Debentures - Baht currency	54,166	26,118	15,226	26,118
Leases liabilities	7,653	1,342	717	485
Total	81,431	51,782	15,943	27,603

Long-term borrowings and lease liabilities

Unit: Million Baht

	Consolidated financial statements		Separate financial statements	
	2020	2019	2020	2019
Loans - Baht currency	160,946	118,470	-	-
Loans - foreign currencies	45,123	44,347	45,181	23,872
Debentures - Baht currency	216,600	204,025	77,262	57,584
Debentures - foreign currencies	242,063	188,176	8,765	8,807
Lease liabilities	45,117	7,728	7,021	3,472
Total	709,849	562,746	138,229	93,735

30. Borrowings and lease liabilities (Continued)

30.4 Long-term loans outstanding as at 31 December 2020 and 2019 can be classified by types of interest rate as follows:

Unit: Million Baht

	Consolidated financial statements		Separate financial statements	
	2020	2019	2020	2019
Floating interest rate	177,268	173,324	-	-
Fixed interest rate	614,012	441,204	154,172	121,338
Total	791,280	614,528	154,172	121,338

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

30. Borrowings and lease liabilities (Continued)

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

30.5.1 Loans

Loans - Baht currency

As at 31 December 2020, 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	3,500	6M THBFIX plus margin	Principal is repayable every 6 months, totalling 22 instalments, commencing in October 2020.
2	1,000	3M BIBOR plus margin	Principal is repayable every 6 months, totalling 17 instalments, commencing in May 2020.
3	500	3M BIBOR plus margin	Principal is repayable every 6 months, totalling 13 instalments, commencing in June 2020.
4	6,000	6M THBFIX plus margin	Principal is repayable every 6 months, totalling 17 instalments, commencing in February 2022.
5	6,000	Fixed rate	Principal is repayable every 6 months, totalling 20 instalments, commencing in September 2020.
6	3,000	Fixed rate	Principal is repayable at the end of contract in July 2023.
7	4,000	Fixed rate	Principal is repayable at the end of contract in May 2023.
8	3,000	Fixed rate	Principal is repayable at the end of contract in January 2025.
9	9,825	3M THBFIX plus margin	Principal is repayable every 6 months, totalling 33 instalments, commencing in October 2012
10	169	Fixed rate	Principal is repayable every 6 months, totalling 29 instalments, commencing in June 2017.
11	9,249	6M FDR plus margin	Principal is repayable every 6 months, totalling 24 instalments, commencing in June 2018.
12	3,000	6M FDR plus margin	Principal is repayable every 6 months, totalling 12 instalments, commencing in September 2017.
13	5,000	6M FDR plus margin	Principal is repayable every 6 months, totalling 10 instalments, commencing in May 2020.

30. Borrowings and lease liabilities (Continued)

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

30.5.1 Loans (Continued)

Loans - Baht currency (Continued)

As at 31 December 2020, 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
14	4,000	6M FDR plus margin	Principal is repayable every 6 months, totalling 12 instalments, commencing in December 2018.
15	10,000	6M FDR plus margin	Principal is repayable every 6 months, totalling 12 instalments, commencing in June 2016.
16	15,000	6M FDR plus margin	Principal is repayable every 6 months, totalling 10 instalments, commencing in November 2020.
17	450	6M THBFIX plus margin	Principal is repayable every 6 months, totalling 14 instalments, commencing in April 2023.
18	2,500	6M FDR plus margin	Principal is repayable every 6 months, totalling 10 instalments, commencing in March 2022.
19	3,000	6M FDR plus margin	Principal is repayable every 6 months, totalling 10 instalments, commencing in January 2023.
20	3,000	6M FDR plus margin	Principal is repayable every 6 months, totalling 10 instalments, commencing in June 2023.
21	3,500	6M FDR plus margin	Principal is repayable every 6 months, totalling 10 instalments, commencing in October 2023.
22	1,550	6M FDR plus margin	Principal is repayable every 6 months, totalling 10 instalments, commencing in October 2023.
23	1,000	6M FDR plus margin	Principal is repayable every 6 months, totalling 10 instalments, commencing in October 2023.
24	5,000	6M FDR plus margin	Principal is repayable 2 times, in December 2020 and June 2025.
25	10,000	6M FDR plus margin	Principal is repayable at the end of contract in June 2025.
26	10,000	6M FDR plus margin	Principal is repayable every 6 months, totalling 12 instalments, commencing in January 2022.

30. Borrowings and lease liabilities (Continued)

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

30.5.1 Loans (Continued)

Loans - Baht currency (Continued)

As at 31 December 2020, 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
27	10,000	MLR minus discount	Principal is repayable every 3 months, totalling 12 instalments, commencing in December 2022.
28	1,200	Fixed rate	Principal is repayable every months, totalling 17 instalments, commencing in April 2022.
29	900	6M FDR plus margin	Principal is repayable every 6 months, totalling 14 instalments, commencing in April 2016.
30	900	6M FDR plus margin	Principal is repayable every 6 months, totalling 14 instalments, commencing in May 2016.
31	8,654	6M FDR (4 banks averaged) plus margin	Principal is repayable every 6 months, totalling 17 instalments, commencing in September 2018.
32	500	Fixed rate	Principal is repayable every 3 months, totalling 10 instalments, commencing in June 2019.
33	500	Fixed rate	Principal is repayable every 3 months, totalling 13 instalments, commencing in March 2021.
34	575	3M BIBOR plus margin	Principal is repayable every 3 months, totalling 13 instalments, commencing in September 2019.
35	14,357	3M THBFIX plus margin	Principal is repayable every 6 months, totalling 24 instalments, commencing in February 2021.
36	6,004	3M THBFIX plus margin	Principal is repayable every 6 months, totalling 20 instalments, commencing in February 2021.
37	1,250	6M THBFIX plus margin	Principal is repayable every 6 months, totalling 15 instalments, commencing in April 2023.
38	900	6M FDR plus margin	Principal is repayable every 6 months, totalling 12 instalments, commencing in May 2017.
39	5,000	6M FDR plus margin	Principal is repayable every 6 months, totalling 17 instalments, commencing in September 2020.

30. Borrowings and lease liabilities (Continued)

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

30.5.1 Loans (Continued)

Loans - Baht currency (Continued)

As at 31 December 2020, 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
40	10,000	MLR minus discount	Principal is repayable every 6 months, totalling 16 instalments, commencing in March 2021.
41	10,000	3M THBFIX plus margin	Principal is repayable every 6 months, totalling 12 instalments, commencing in June 2021.
42	9,500	3M MHBK BIBOR plus margin	Principal is repayable every 6 months, totalling 9 instalments, commencing in September 2020.
43	3,000	3M BIBOR plus margin	Principal is repayable every 6 months, totalling 15 instalments, commencing in September 2020.
44	5,400	THBFIX plus margin	Principal is repayable every 6 months, totalling 20 instalments, commencing in March 2019.
45	80	MLR minus discount	Principal is repayable every 6 months, totalling 6 instalments, commencing in June 2021.
46	42	MLR minus discount	Principal is repayable every 6 months, totalling 8 instalments, commencing in June 2020.
47	56	MLR minus discount	Principal is repayable every 6 months, totalling 8 instalments, commencing in June 2019.
48	44	MLR minus discount	Principal is repayable every 6 months, totalling 10 instalments, commencing in June 2020.
49	8,500	3M THBFIX plus margin	Principal is repayable every 6 months, totalling 38 instalments, commencing in December 2018.
50	1,800	6M FDR plus margin	Principal is repayable every 6 months, totalling 20 instalments, commencing in June 2015.

30. Borrowings and lease liabilities (Continued)

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

30.5.1 Loans (Continued)

Loans - foreign currency

As at 31 December 2020, 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.

As at 31 December 2020, 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	86	3M USDLIBOR plus margin	Principal is repayable at the end of contract in February 2022.
2	USD	454	3M USDLIBOR plus margin	Principal is repayable every 6 months, totalling 33 instalments, commencing in October 2012.
3	USD	82	6M USDLIBOR plus margin	Principal is repayable every 6 months, totalling 18 instalments, commencing in June 2015.

30. Borrowings and lease liabilities (Continued)

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

30.5.1 Loans (Continued)

Loans - foreign currency (Continued)

As at 31 December 2020, 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
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	180	3M EURIBOR plus margin	Principal is repayable every 12 months, totalling 6 instalments, commencing in September 2021.
8	EURO	30	3M EURIBOR plus margin	Principal is repayable every 6 months, totalling 10 instalments, commencing in June 2022.
9	JPY	7,900	JPYLIBOR plus margin	Principal is repayable every 6 months, totalling 37 instalments, commencing in May 2018.
10	JPY	23,000*	Fixed rate	Principal is repayable at the end of contract in April 2036.
11	LAK	81,500	Fixed rate	Principal is repayable every 3 months, totalling 20 instalments, commencing in March 2018.
12	VND	310,791	Fixed rate	Principal is repayable every 6 months, totalling 18 instalments, commencing in July 2019.

* 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 28,750.00 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 43.2 and Note 43.4.

30. Borrowings and lease liabilities (Continued)

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

30.5.2 Debentures

Debentures - Baht currency

As at 31 December 2020, 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	1,030	1,000	15	6.53	Interest is repayable every 6 months and mature in May 2021.
2	10,000	1,000	6 years	4.00	Interest is repayable every 6 months and mature in November 2021.
3	4,200	1,000	11 months	3.50	Interest is repayable every 6 months and mature in November 2021.
4	4,000	1,000	6 years	4.50	Interest is repayable every 6 months and mature in February 2022.
5	2,000	1,000	27 days	1.21	Interest is repayable every 6 months and mature in July 2022.
6	2,000	1,000	2	2.25	Interest is repayable every 6 months and mature in July 2023.
7	10,000	1,000	3	6.58	Interest is repayable at the maturity date and mature in September 2023.
8	3,000	1,000	10	2.05	Interest is repayable every 6 months and mature in July 2025.
9	13,000	1,000	5	2.85	Interest is repayable every 6 months and mature in July 2027.
10	2,000	1,000	7	2.84	Interest is repayable every 6 months and mature in July 2030.
11	6,000	1,000	10	3.20	Interest is repayable every 6 months and mature in July 2035.
12	7,000	1,000	15	3.74	Interest is repayable every 6 months and mature in July 2045.

30. Borrowings and lease liabilities (Continued)

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

30.5.2 Debentures (Continued)

Debentures - Baht currency (Continued)

As at 31 December 2020, the details of unsecured, unsubordinated debentures with the debenture holders' early redemption right of the Company in Baht currency are as follows:

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

30. Borrowings and lease liabilities (Continued)

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

30.5.2 Debentures (Continued)

Debentures - Baht currency (Continued)

As at 31 December 2020, 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	3,500	1,000	4	2.21	Interest is repayable every 6 months and mature in September 2021.
2	1,500	1,000	7	2.82	Interest is repayable every 6 months and mature in September 2024.
3	2,000	1,000	3	1.97	Interest is repayable every 6 months and mature in November 2022.
4	5,000	1,000	5	2.24	Interest is repayable every 6 months and mature in November 2024.
5	6,000	1,000	7	2.52	Interest is repayable every 6 months and mature in November 2026.
6	8,000	1,000	10	2.86	Interest is repayable every 6 months and mature in November 2029.
7	7,500	1,000	12	3.15	Interest is repayable every 6 months and mature in November 2031.
8	6,500	1,000	15	3.25	Interest is repayable every 6 months and mature in November 2034.
9	1,500	1,000	5	2.11	Interest is repayable every 6 months and mature in August 2025.
10	1,000	1,000	10	2.94	Interest is repayable every 6 months and mature in August 2030.
11	2,500	1,000	15	3.24	Interest is repayable every 6 months and mature in August 2035..
12	5,555	1,000	10	5.00	Interest is repayable every 6 months and mature in August 2021.
13	6,890	1,000	7	4.96	Interest is repayable every 6 months and mature in May 2021.

30. Borrowings and lease liabilities (Continued)

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

30.5.2 Debentures (Continued)

Debentures - Baht currency (Continued)

As at 31 December 2020, the details of unsecured, unsubordinated debentures in Baht currency of the subsidiaries are as follows: (Continued)

No.	Principal (unit: million Baht)	Par value (per share)	Period (years)	Interest rate percent (per annum)	Repayment terms
14	2,000	1,000	2	2.76	Interest is repayable every 6 months and mature in September 2022.
15	2,000	1,000	3	3.00	Interest is repayable every 6 months and mature in September 2023.
16	4,000	1,000	5	3.50	Interest is repayable every 6 months and mature in September 2025.
17	1,300	1,000	10	3.93	Interest is repayable every 6 months and mature in September 2030.
18	2,700	1,000	15	4.40	Interest is repayable every 6 months and mature in September 2035.
19	11,400	1,000	15	4.82	Interest is repayable every 6 months and mature in September 2029.
20	15,000	1,000	3	2.26	Interest is repayable every 6 months and mature in September 2022.
21	10,000	1,000	7	4.50	Interest is repayable every 6 months and mature in September 2021.
22	1,500	1,000	5	2.20	Interest is repayable every 6 months and mature in September 2024.
23	7,000	1,000	7	2.43	Interest is repayable every 6 months and mature in September 2026.
24	1,500	1,000	10	2.75	Interest is repayable every 6 months and mature in September 2029.
25	1,530	1,000	7	2.60	Interest is repayable every 6 months and mature in September 2027.
26	3,310	1,000	10	2.99	Interest is repayable every 6 months and mature in September 2030.

30. Borrowings and lease liabilities (Continued)

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

30.5.2 Debentures (Continued)

Debentures - Baht currency (Continued)

As at 31 December 2020, 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	4,360	1,000	12	3.29	Interest is repayable every 6 months and mature in April 2032.
28	5,800	1,000	15	3.50	Interest is repayable every 6 months and mature in April 2035.

As at 31 December 2020, 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	4,000	1,000	10	3.95	Interest is repayable every 6 months and mature in September 2025. (The debenture holders can early redeem regarding the rights and obligations of the issuer and the debenture holders.)
2	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.)
3	10,000	1,000	4	3.05	Interest is repayable every 6 months and mature in August 2021. (The debenture holders can early redeem regarding the rights and obligations of the issuer and the debenture holders.)

30. Borrowings and lease liabilities (Continued)

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

30.5.2 Debentures (Continued)

Debentures - Baht currency (Continued)

As at 31 December 2020, the detail of unsecured, unsubordinated debentures with the debenture holders' early redemption right of the subsidiaries in Baht currency is as follows: (Continued)

No.	Principal (unit: million Baht)	Par value (per share)	Period (years)	Interest rate percent (per annum)	Repayment terms
4	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.)
5	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.)
6	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.)
7	3,000	1,000	7	4.61	Interest is repayable every 6 months and mature in March 2021. (The debenture holders can early redeem regarding the rights and obligations of the issuer and the debenture holders.)
8	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.)

30. Borrowings and lease liabilities (Continued)

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

30.5.2 Debentures (Continued)

Debentures - foreign currency

As at 31 December 2020, the details of unsecured, unsubordinated debentures in foreign currency 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.

As at 31 December 2020, 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	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.)

30. Borrowings and lease liabilities (Continued)

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

30.5.2 Debentures (Continued)

Debentures - foreign currency (Continued)

As at 31 December 2020, 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.
2	USD	504	1,000	10	4.25	Interest is repayable every 6 months and mature in September 2022.
3	USD	496	1,000	4	4.25	Interest is repayable every 6 months and mature in September 2022.
4	USD	245*	1,000	16	5.88	Interest is repayable every 6 months and mature in August 2035.

* 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.

As at 31 December 2020, 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 December 2059. (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 August 2035. (The debenture holders can early redeem regarding the rights and obligations of the issuer and the debenture holders.)

30. Borrowings and lease liabilities (Continued)

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

30.5.2 Debentures (Continued)

Debentures - foreign currency (Continued)

As at 31 December 2020, 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
3	USD	500	1,000	7	2.59	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.)
4	USD	216	1,000	10	3.625	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.)
5	USD	172	1,000	30	4.875	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.)
6	USD	284	1,000	10	3.625	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.)
7	USD	328	1,000	30	4.875	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.)

30. Borrowings and lease liabilities (Continued)

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

30.5.2 Debentures (Continued)

Debentures - foreign currency (Continued)

As at 31 December 2020, 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
8	USD	400	1,000	10	4.625	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.)
9	USD	600	1,000	30	5.375	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.)
10	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.)
11	USD	400	1,000	10	2.50	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.)
12	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.)

30. Borrowings and lease liabilities (Continued)

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

30.5.2 Debentures (Continued)

Debentures - foreign currency (Continued)

As at 31 December 2020, 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
13	USD	330*	1,000	23	4.50	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.)
14	USD	700**	1,000	50	3.70	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.)

* 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 43.2 and Note 43.4.

30. Borrowings and lease liabilities (Continued)

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

Significant events of long-term loans and debentures

On 15 January 2020, the group of PTT Exploration and Production Public Co., Ltd. (PTTEP Group) refinanced its debentures by which the existing debentures in the nominal value of USD 220 million were exchanged for the new debentures with the nominal value of USD 153 million. The present value discounted using effective interest rate of existing debentures is in the amount of USD 121 million. And the cash amount of USD 67 million paid to the existing debenture holders. PTTEP Group recognized modification gain net of refinancing costs in the amount of USD 22 million or equivalent to Baht 681 million as described in Note 38. On accounting basis, this refinancing of debentures is considered as an exchange between an existing debenture holders and PTTEP, since the newly issue debentures are issued to existing debenture holders, for which the term were not substantially different as the discounted cash flow value of new debentures varies from discounted cash flow value of previously issued debentures is less than 10%.

During the period, a subsidiary of PTTEP Group redeemed USD 700 million of unsubordinated and unsecured debentures that were to mature in April 2021 and recognized a loss on the redemption of these debentures of USD 20 million, or equivalent to Baht 637 million.

Another subsidiary of PTTEP Group issued and offered USD 850 million of unsubordinated and unsecured debentures with tenors of 7 years and 10 years and fixed interest rates of 2.59% per annum and 2.99% per annum respectively, with PTTEP as guarantor. Some of the debentures were the result of the refinancing of the PTTEP Group's debentures disclosed above.

The proceeds from the borrowings and debentures are to be used for capital expenditure, business expansion, repayment of borrowings from financial institutions, repayment of debentures, working capital and general corporate purposes to support the growth of the Group.

Under the terms of the borrowings and debentures, The Group has to comply with certain conditions as stipulated, such as maintaining net debt to equity ratios, maintain leverage ratio, no increasing any future obligations for any assets of the Group, providing financial support based on shareholding proportion and maintaining ownership interest of the Group, etc.

31. Provisions for employee benefits

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

Unit: Million Baht

	Consolidated financial statements		Separate financial statements	
	2020	2019	2020	2019
As at 1 January	32,590	23,921	7,313	6,906
Current service cost	2,253	1,983	531	526
Past service cost	(561)	4,219	-	1,069
Interest cost	643	680	130	222
Actuarial loss from provisions for post-employment benefit	630	1,096	33	(1,167)
Actuarial loss from provisions for other long-term employee benefit	218	181	39	22
Actual payment	(1,758)	(1,023)	(384)	(266)
Business acquisition (Note 45)	5	1,610	-	-
Others	(17)		-	
Exchange differences on translation of financial statements	196	(78)	-	-
As at 31 December	34,199	32,590	7,662	7,313

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

Unit: Million Baht

	Consolidated financial statements		Separate financial statements	
	2020	2019	2020	2019
Loss from experience adjustments	240	640	154	-
(Gain) loss from changes in financial assumptions	276	1,585	(121)	(369)
(Gain) loss from changes in demographic assumptions	114	(1,129)	-	(798)
Total	630	1,096	33	(1,167)

31. Provisions for employee benefit (Continued)

Expenses recognized in the statements of income and comprehensive income for the years ended 31 December 2020, and 2019 are as follows:

Unit: Million Baht

	Consolidated		Separate	
	financial statements		financial statements	
	2020	2019	2020	2019
Cost of sales and services	1,072	2,529	132	331
Selling and distribution expenses	132	384	35	77
Administrative expenses	1,301	4,093	531	1,429
Management remuneration	49	57	2	2
Other comprehensive (gain) loss	630	1,096	34	(1,166)
Total	3,184	8,159	734	673

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

	Annual percentage rate	
	2020	2019
Discount rate	0.36 - 5.86	1.18 - 7.15
Inflation rate	0.00 - 7.00	0.00 - 5.00
Employee turnover rate	0.00 - 60.00	0.00 - 70.00
Mortality rate	based on the published statistics of each country	based on the published statistics of each country

31. 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 2020, and 2019 are as follows:

Unit: Million Baht

	Increase (decrease) in present value of the provisions	
	2020	2019
Discount rate		
Increase 1%	(3,696)	(3,916.23)
Decrease 1%	4,852	4,942.54

Weighted average duration of the provisions for post-employment benefit of the Group for the year ended 31 December 2020 is 15.38 years (for the year ended 31 December 2019: 18.14 years).

32. 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	
	2020	2019
As at 1 January	91,889	74,723
- Business acquisition (Note 45)	40	10,367
- Additional provision	10,290	13,647
- Use during the year	(759)	(454)
- Reversal of non-occurred provision	(2,193)	(588)
- Exchange differences on translation of financial statements	(606)	(5,806)
As at 31 December	98,661	91,889
- Current portion	(1,890)	(1,289)
- Long-term portion	96,771	90,600

33. Other non-current financial liabilities

Other non-current liabilities as at 31 December 2020 and 2019 are as follows:

Unit: Million Baht

	Consolidated		Separate	
	financial statements		financial statements	
	2020	2019	2020	2019
Long-term other accounts payable	7,245	4,272	6,082	4,148
Long-term liability: Make-up*	10,782	10,782	10,782	10,782
Others	2,046	3,895	339	376
Total	20,073	18,949	17,203	15,306

* 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.

34. Other non-current liabilities

Other non-current liabilities as at 31 December 2020 and 2019 are as follows:

Unit: Million Baht

	Consolidated		Separate	
	financial statements		financial statements	
	2020	2019	2020	2019
Provision for remuneration for the renewal of petroleum production*	3,101	5,752	-	-
Deferred revenue**	18,476	19,130	4,697	4,969
Others	2,635	2,814	-	-
Total	24,212	27,696	4,697	4,969

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

** Deferred revenue for the years ended 31 December 2020 and 2019 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 14,095 million and Baht 14,171 million in the consolidated financial statements, respectively.

35. Reserves

35.1 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 as 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 its authorized share capital, stipulated in the Act.

35.2 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 interest income of the self-insurance fund each year to the fund.

36. Basic earnings per share

Basic earnings per share for the years ended 31 December 2020 and 2019 are as follows:

	Unit: Baht			
	Consolidated financial statements		Separate financial statements	
	2020	2019	2020	2019
Profit attributable to equity holders of the Company	37,765,808,355	92,950,604,143	52,517,594,832	61,657,307,704
Adjustment of profit*	(154,568,429)	(1,491,678,204)	-	-
Profit for the calculation of earnings per share	37,611,239,926	91,458,925,939	52,517,594,832	61,657,307,704
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)	1.32	3.20	1.84	2.16

*Adjustments of profit are adjustments related to redemption of perpetual subordinated debentures, interests, and income taxes are presented in the statement of changes in shareholders' equity.

37. Sales and service income

Details of sales and service income for the years ended 31 December 2020 and 2019 are as follows:

Unit: Million Baht

	Consolidated financial statements		Separate financial statements	
	2020	2019	2020	2019
Oil products	914,101	1,362,259	412,864	665,455
Gas products	334,855	406,177	410,274	503,553
Petrochemicals products	267,370	348,251	16,079	26,467
Mining products	10,202	15,078	-	-
Non-oil businesses	17,079	17,273	156	417
Utilities	62,589	60,121	-	-
Services	8,491	9,159	2,717	3,814
Others	978	1,421	-	757
Total	1,615,665	2,219,739	842,090	1,200,463

Sales and service income for the years ended 31 December 2020 and 2019 include sales to government agencies and state enterprises amounting to Baht 110,931 million and Baht 132,609 million in the consolidated financial statements, and Baht 80,303 million and Baht 90,606 million in the separate financial statements, respectively.

38. Other income

Details of other income for the years ended 31 December 2020 and 2019 are as follows:

Unit: Million Baht

	Consolidated financial statements		Separate financial statements	
	2020	2019	2020	2019
Transportation income	5,778	4,921	8,022	6,916
Dividend income	620	383	31,929	29,677
Interest income	3,933	7,837	2,158	3,342
Gain (loss) on disposals of assets and investments	(316)	(252)	5,710	1,759
Loss on investment at fair value through profit and loss	(156)	-	(37)	-
Gain on debt modification (Note 30)	681	-	-	-
Others	7,772	7,508	4,386	3,766
Total	18,312	20,397	52,168	45,460

39. Expenses by nature

Details of expenses by nature for the the years ended 31 December 2020 and 2019 are as follows:

Unit: Million Baht

	Consolidated financial statements		Separate financial statements	
	2020	2019	2020	2019
Changes in inventories decrease	1,235,005	1,745,810	768,821	1,111,650
Staff costs	55,022	60,823	8,149	9,865
Depreciation and amortization	139,880	133,204	19,540	19,350
Expenses related to short-term lease agreements	981	-	107	-
Expenses related to low-value assets lease agreements	219	-	110	-
Expenses related to variable rental	1,009	-	870	-
(Reversal of) loss on impairment of assets and Investments	11,917	(143)	1,804	514

40. Petroleum Royalties and Remuneration

Details of petroleum royalties and remuneration for the years ended 31 December 2020 and 2019 are as follows:

Unit: Million Baht

	Consolidated financial statements	
	2020	2019
Petroleum royalties	13,347	17,312
Special remuneration benefits	51	570
Total	13,398	17,882

41. Finance costs

Details of finance costs for the years ended 31 December 2020 and 2019 are as follows:

Unit: Million Baht

	Consolidated financial statements		Separate financial statements	
	2020	2019	2020	2019
Interest expenses:				
Loans	5,107	7,696	1,516	510
Debentures	16,484	13,976	4,137	5,161
Finance leases liabilities	1,813	252	195	81
Derivative for cash flow hedge instruments	85	-	-	-
Provision for decommissioning costs	3,040	3,245	-	-
Others	1,364	1,188	-	-
Other finance costs	643	1,614	93	412
Total	28,536	27,971	5,941	6,164

42. 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.

Technology and Engineering group

The Group conducts innovation, digital, technology, engineering, 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 for the sustainability of the Group.

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

42. 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.

42. 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	122,482	-	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	173,162	(138,003)	2,489,489
Non-allocated assets										54,694
Total assets										2,544,183
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										1,258,338
Capital expenditure	51,139	16,754	1,453	10,359	133	78,636	12,265	562	(2,420)	168,881

42. Operating segments (Continued)

Consolidated financial statements

For the year ended 31 December 2019

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	36,330	349,411	15,078	575,777	596,180	594,596	52,174	193	-	2,219,739
- related parties	154,723	152,700	302	3,891	488,850	381,554	20,511	3,210	(1,205,740)	-
Net sales	191,053	502,111	15,380	579,667	1,085,030	976,150	72,685	3,404	(1,205,740)	2,219,739
Gross profit (loss) *	166,296	83,076	5,045	37,503	2,844	67,335	20,099	(166)	(6,821)	375,211
EBITDA	136,854	71,407	3,731	17,894	(136)	45,283	18,489	(3,004)	(1,545)	288,972
Depreciation and amortization xpenses	(62,811)	(18,924)	(2,437)	(4,109)	(118)	(35,223)	(9,229)	(353)	-	(133,204)
Segment operating profit (loss)	74,043	52,483	1,294	13,785	(254)	10,060	9,260	(3,357)	(1,545)	155,768
Share of profit (loss) from investments										
in joint ventures and associates	120	682	(6)	903	-	3,403	906	-	-	6,008
Others	-	(2,611)	(13)	89	(30)	1,171	72	(134)	-	(1,456)
Unallocated revenue and expenses:										
Interest income										7,837
Loss on derivatives										(417)
Gain on foreign exchange rate										15,313
EBIT										183,052
Profit for the year										122,092

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

42. Operating segments (Continued)

Consolidated financial statements

As at 31 December 2019

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	610,369	406,650	25,659	135,286	75,971	775,737	253,762	80,737	-	2,364,171
Inter-company assets	18,995	14,653	918	5,133	44,532	27,492	4,644	45,520	(161,887)	-
Investments in joint ventures and associates	7,061	5,254	42	5,616	-	45,681	11,529	-	-	75,183
Total segment assets	636,425	426,557	26,619	146,035	120,503	848,910	269,935	126,257	(161,887)	2,439,354
Non-allocated assets										47,611
Total assets										2,486,965
Segment liabilities	270,802	75,323	3,190	69,651	96,500	354,575	126,927	129,757	-	1,126,725
Inter-company liabilities	633	32,453	2,634	42,669	9,762	52,976	10,585	9,918	(161,630)	-
Total segment liabilities	271,435	107,776	5,824	112,320	106,262	407,551	137,512	139,675	(161,630)	1,126,725
Non-allocated liabilities										59,200
Total liabilities										1,185,925
Capital expenditure	48,255	24,867	2,035	10,382	155	73,159	6,390	586	(1,006)	164,823

42. 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 2020 and 2019 are as follows:

Unit: Million Baht

	Consolidated financial statements	
	2020	2019
Thailand	1,060,596	1,369,540
Asia	476,622	745,411
Europe	48,861	53,150
America	20,586	31,871
Others	9,000	19,767
Total	1,615,665	2,219,739

Non-current assets are presented in respect of the geographical location of the assets as at 31 December 2020 and 2019 are as follows:

Unit: Million Baht

	Consolidated financial statements	
	2020	2019
Thailand	1,361,665	1,306,624
Asia	218,663	229,860
Europe	7,266	6,855
America	19,127	19,187
Others	117,685	112,208
Total	1,724,406	1,674,734

Major customers

For the years ended 31 December 2020 and 2019, The group has no major customer with revenue of 10 percent or more of an entity's revenues.

43. Financial instruments

43.1 Classification of financial assets and liabilities

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	
Financial assets						
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
Derivatives						
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
Total financial assets	1,635	6,518	107	18,487	566,105	582,852

43. Financial instruments (Continued)

43.1 Classification of financial assets and liabilities (Continued)

Unit: Million Baht

	Consolidated financial statements			
	As at 31 December 2020			
	Measured at fair value - using hedge accounting	Measured at fair value through profit or loss	Measured at amortized cost	Total
Financial liabilities				
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	3,853	7,065	994,544	1,005,462

43. Financial instruments (Continued)

43.1 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	
Financial assets				
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

43. Financial instruments (Continued)

43.1 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
Financial liabilities			
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
Total financial liabilities	1,348	256,649	257,997

43. Financial instruments (Continued)

43.2 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

43.2.1 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.

43.2.2 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.

43. Financial instruments (Continued)

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

43.2.2 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 2020 and 2019 are as follows:

Unit: Million Baht

	Consolidated financial statements	
	2020	2019
Forward foreign exchange purchase contracts		
Rate 29.7700 - 32.5850 Baht = 1 USD	51,511	-
Rate 29.9625 - 34.0525 Baht = 1 USD	-	76,363
Rate 3.2615 - 3.5733 Baht = 1 SEK	1,554	-
Rate 1.4640 EUR = 1 USD	550	-
Rate 0.2900 - 0.2911 Baht = 1 JPY	192	-
Rate 0.3224 - 0.3234 Baht = 1 JPY	-	339
Rate 35.9700 - 37.2600 Baht = 1 EUR	105	-
Rate 34.1000 Baht = 1 EUR	-	6
Forward foreign exchange sale contracts		
Rate 29.8830 - 31.5000 Baht = 1 USD	17,002	-
Rate 29.9950 - 31.1025 Baht = 1 USD	-	10,352
Rate 0.2904 - 0.2961 Baht = 1 JPY	11,829	-
Rate 0.2790 - 0.2806 Baht = 1 JPY	-	5,596
Rate 36.3420 Baht = 1 EUR	1,003	-
Rate 1.1125 - 1.1363 EUR = USD	-	1,820

Unit: Million Baht

	Separate financial statements	
	2020	2019
Forward foreign exchange purchase contracts		
Rate 29.7700 - 31.1693 Baht = 1 USD	13,534	-
Rate 30.1085 - 30.3866 Baht = 1 USD	-	21,778
Forward foreign exchange sale contracts		
Rate 29.8830 - 31.5000 Baht = 1 USD	15,309	-
Rate 29.9950 - 31.1025 Baht = 1 USD	-	9,537
Rate 0.2906 - 0.2961 Baht = 1 JPY	8,826	-
Rate 0.2790 - 0.2806 Baht = 1 JPY	-	5,596

43. Financial instruments (Continued)

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

43.2.2 Market risk (Continued)

Foreign exchange rate risk (Continued)

The Group has entered into a cross-currency swap contract of a long-term loan in the form of a participating swap contracts. The term of such contract as at 31 December 2020 and 2019 is as follows:

	Unit: Million Baht			
	Consolidated		Separate	
	financial statements	financial statements	financial statements	financial statements
	2020	2019	2020	2019
JPY 23,000 million/USD 197 million	6,773	6,431	6,773	6,431

This contract has a maturity later than five years.

Currency and interest rate risks

The Group has entered into cross-currency swap contracts of other long-term investments, long-term loans and debentures. The terms of the outstanding cross-currency swap contracts as at 31 December 2020 and 2019 are as follows:

	Unit: Million Baht			
	Consolidated		Separate	
	financial statements	financial statements	financial statements	financial statements
	2020	2019	2020	2019
Baht 33,262 million/USD 1,040 million	33,262	-	-	-
Baht 4,000 million/USD 121 million	-	-	4,000	4,000
Baht 39,723 million/USD 1,230 million	-	39,723	-	-
USD 772 million/THB 24,883 million	24,628	-	-	-
USD 123 million/THB 3,933 million	-	-	3,678	-
USD 340 million/THB 11,395 million	-	10,192	-	10,192
Total	57,890	49,915	7,678	14,192

43. Financial instruments (Continued)

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

43.2.2 Market risk (Continued)

Currency and interest rate risks (Continued)

The maturity periods of contracts are as follows:

Unit: Million Baht

	Consolidated financial statements		Separate financial statements	
	2020	2019	2020	2019
Due within 1 year	2,091	8,094	2,091	8,094
Over 1 year but not over 5 years	24,862	30,421	4,000	6,098
Over 5 years	30,937	11,400	1,587	-
Total	57,890	49,915	7,678	14,192

43. Financial instruments (Continued)

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

43.2.2 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 2020 and 2019 are as follows:

Unit: Million Baht

	Consolidated		Separate	
	financial statements	financial statements	financial statements	financial statements
	2020	2019	2020	2019
Interest rate swap contracts to swap floating for fixed rate in USD currency	10,465	501	-	-
Interest rate swap contracts to swap fixed for floating rate in USD currency	7,162	-	7,162	-
Interest rate swap contracts to swap fixed for lower fixed rate in USD currency	3,021	3,033	3,021	3,033
Interest rate swap contracts to swap floating for fixed rate in Baht currency	9,395	6,393	-	-
Interest rate swap contracts to swap fixed for floating rate in Baht currency	15,500	16,000	15,500	16,000
Interest rate swap contracts to swap fixed for lower fixed rate in Baht currency	16,000	12,000	16,000	12,000
Interest rate swap contracts to swap floating for fixed rate in JPY currency	293	-	-	-
Interest rate collar (zero cost collar)	9,011	-	-	-
Total	70,847	37,927	41,683	31,033

The maturity periods of contracts are as follows:

Unit: Million Baht

	Consolidated		Separate	
	financial statements	financial statements	financial statements	financial statements
	2020	2019	2020	2019
Due within 1 year	7,239	301	6,000	-
Over 1 year but not over 5 years	35,730	27,233	18,000	27,033
Over 5 years	27,878	10,393	17,683	4,000
Total	70,847	37,927	41,683	31,033

43. Financial instruments (Continued)

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

43.2.2 Market risk (Continued)

Fluctuation in oil market price risk

The Group has entered into oil price derivatives. As at 31 December 2020, the volume of oil under those contracts that mature during the year 2021 is 37 million barrels in the consolidated financial statements (31 December 2019: 41 million barrels), and 4 million barrels in the separate financial statements (31 December 2019: 1 million barrels).

Sensitivity analysis

Sensitivity analysis of financial instruments in consolidated financial statements are as follows:

- Foreign exchange rate

This table shows the impact on earning before taxes and shareholders' equity of the Group from the change that reasonably possible happen in USD currency while other factors are fixed. The Group has no significant risk from the change in other foreign currency.

Financial instrument effects	Earning before taxes Increase (decrease)	Other components of shareholders' equity - currency translation differences Increase (decrease)
USD currency appreciate by 10% against by Baht currency	(13,026)	40,928
USD currency depreciate by 10% against by Baht currency	12,168	(40,932)

- Interest rate

The impact on earning before taxes cause by the change in reasonably possible happen of interest rate's lending and borrowings, with floating interest rate as at 31 December 2020 while other factors are fixed, are shown as follows:

Financial instrument effects	Financial costs for the year 2020 Increase (decrease)
Interest rate increase by 1%	808
Interest rate decrease by 1%	(398)

43. Financial instruments (Continued)

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

43.2.3 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 2020 considering from cash flow of contract which are not discounted as follows:

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:				
Principle	73,933	290,274	378,506	742,713
Interest paid	21,867	75,543	208,232	305,642
Lease liabilities:				
Principle	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

43. Financial instruments (Continued)

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

43.2.3 Liquidity risk (Continued)

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

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:				
Principle	17,791	45,354	85,809	148,954
Interest paid	6,129	25,866	90,404	122,399
Lease liabilities:				
Principle	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

43. Financial instruments (Continued)

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

43.2.3 Liquidity risk (Continued)

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

Unit: Million Baht

	Consolidated financial statements	
	Credit limit	Undrawn amount
Short-term committed bank credit facility	74,790	59,486
Short-term uncommitted bank credit facility	237,565	206,699

Unit: Million Baht

	Saparate financial statements	
	Credit limit	Undrawn amount
Short-term committed bank credit facility	4,395	4,395
Short-term uncommitted bank credit facility	46,874	32,367

43. Financial instruments (Continued)

43.3 Fair value measurement of financial instruments

As at 31 December 2020 and 2019 the Group had financial assets and financial liabilities measured at fair value as follows:

As at 31 December 2020

Unit: Million Baht

	Consolidated financial statements			
	Level 1	Level 2	Level 3	Total
Financial assets measured at fair value				
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 debt 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

43. Financial instruments (Continued)

43.3 Fair value measurement of financial instruments (Continued)

As at 31 December 2020 and 2019 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
Financial liabilities measured at fair value				
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 options 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

43. Financial instruments (Continued)

43.3 Fair value measurement of financial instruments (Continued)

As at 31 December 2020 and 2019 the Group had financial assets and financial liabilities measured at fair value as follows: (Continued)

As at 31 December 2019

Unit: Million Baht

	Consolidated financial statements			
	Level 1	Level 2	Level 3	Total
Financial assets measured at fair value				
Available-for-sale investments				
Equity instruments	3,360	-	-	3,360
Debt instruments	-	1,503	-	1,503
Mutual funds	1,170	-	654	1,824
Derivatives				
Foreign currency forward contracts	-	357	-	357
Interest rate swap contracts	-	265	-	265
Cross-currency swap contracts	-	4,949	-	4,949
Commodity swap contracts	-	696	-	696
Other derivative contracts	-	1,230	-	1,230
Other non-current assets				
Pension scheme investments from joint operation	1,354	-	-	1,354
Financial liabilities measured at fair value				
Derivatives				
Foreign currency forward contracts	-	727	-	727
Interest rate swap contracts	-	2,492	-	2,492
Cross-currency swap contracts	-	154	-	154
Commodity swap contracts	1,365	412	-	1,777
Other derivative contracts	-	73	-	73
Other non-current liabilities				
Contingent considerations from business acquisition	-	-	214	214
Contingent considerations from interest acquisition in joint venture	-	-	1,564	1,564

43. Financial instruments (Continued)

43.3 Fair value measurement of financial instruments (Continued)

As at 31 December 2020 and 2019 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
Financial assets measured at fair value				
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
Financial liabilities measured at fair value				
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

43. Financial instruments (Continued)

43.3 Fair value measurement of financial instruments (Continued)

As at 31 December 2020 and 2019 the Group had financial assets and financial liabilities measured at fair value as follows: (Continued)

As at 31 December 2019

Unit: Million Baht

	Separate financial statements			
	Level 1	Level 2	Level 3	Total
Financial assets measured at fair value				
Available-for-sale investments				
Equity instruments	1,936	-	-	1,936
Mutual funds	397	-	654	1,051
Derivatives				
Interest rate swap contracts	-	239	-	239
Cross-currency swap contracts	-	1,763	-	1,763
Financial liabilities measured at fair value				
Derivatives				
Interest rate swap contracts	-	324	-	324

43. Financial instruments (Continued)

43.3 Fair value measurement of financial instruments (Continued)

As at 31 December 2020 and 2019 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 2020

Unit: Million Baht

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

As at 31 December 2019

Unit: Million Baht

	Consolidated financial statements			
	Level 1	Level 2	Level 3	Total
Financial assets disclosed at fair value				
Amortized cost investments				
Debt instruments	-	15,014	-	15,014
Financial liabilities disclosed at fair value				
Debentures	-	393,143	-	393,143

43. Financial instruments (Continued)

43.3 Fair value measurement of financial instruments (Continued)

As at 31 December 2020 and 2019 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 2020

Unit: Million Baht

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

As at 31 December 2019

Unit: Million Baht

	Separate financial statements			
	Level 1	Level 2	Level 3	Total
Financial assets disclosed at fair value				
Amortized cost investments				
Debt instruments	-	15,014	-	15,014
Financial liabilities disclosed at fair value				
Debentures	-	107,048	-	107,048

43. Financial instruments (Continued)

43.3 Fair value measurement of financial instruments (Continued)

Fair value valuation techniques and inputs for level 2 valuation

The fair values of debt securities and available-for-sale investments 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 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 market that are quoted in an active market.

43. Financial instruments (Continued)

43.3 Fair value measurement of financial instruments (Continued)

Fair value valuation techniques and inputs for level 3 valuation

The fair values of investments in financial assets and available-for-sale investments in mutual funds were determined based on the net asset value or the net asset value as reported in the capital call statement and translated using the closing exchange rate or a company valuation based on the latest round of funding or using business plan and market conditions or costs, depending upon which value is more appropriate. For some financial assets measured at fair value through other comprehensive income, a significant unobservable input is the risk-adjusted discount rate. This is estimated based on public companies' the weighted average cost of capital and cost of equity that are, in the opinion of the Group, in a comparable financial position with the counterparty to the contract. The valuation processes and results are reviewed regularly.

The fair values of long-term loans were determined based on discounted future cash flow 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, were determined based on present value of expected payments, which is determined by considering forecasted earnings before depreciation, financial costs and taxes, 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.

During the year, there were no transfers of items within the fair value hierarchy.

43. Financial instruments (Continued)

43.3 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 - 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 2020 - revised	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)	-	-	-	-	-	(2,781)
- Exchange differences on translation	-	112	(5)	-	36	1	(8)	135
Balance as at 31 December 2020	1,004	14,201	114	30	95	169	1,601	17,214

43. Financial instruments (Continued)

43.3 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		
	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	Total
Balance as at 1 January 2020 - revised	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

43. Financial instruments (Continued)

43.4 Cash flow hedge

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

	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>	<i>30.62</i>	<i>30.62 - 32.00</i>

43. Financial instruments (Continued)

43.4 Cash flow hedge (Continued)

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

	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

43. Financial instruments (Continued)

43.4 Cash flow hedge (Continued)

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

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)	-	-

43. Financial instruments (Continued)

43.4 Cash flow hedge (Continued)

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

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)	-	-	-	-

43. Financial instruments (Continued)

43.4 Cash flow hedge (Continued)

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

	Unit: Million Baht	
	Consolidated financial statements	
	Provision of cash flow hedge	Provision for cost of hedging
As at 1 January 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>

44. Dividend payment

On 26 March 2020, at the Special Board of Directors Meeting of the Company No.1/2020, the meeting approved interim dividend payments for the year 2019 of Baht 2 per share, approximately amounting to Baht 57,124 million. On 25 October 2019, the Company paid an interim dividend from the operating results of the first half of 2019 at Baht 0.90 per share for 28,562,203,593 shares, amounting to Baht 25,706 million. The remaining dividend as follow:

Dividend	For operating period	Dividend payment rate (Baht/share)	Number of shares (shares)	Total dividend (Million Baht)	Payment date
Interim	1 July 2019 - 31 December 2019	1.10	28,562,204,838	31,418	24 April 2020

The interim dividend payments have been approved by the 2020 Annual General Meeting of shareholders of the Company on 3 July 2020.

On 17 September 2020, at the Board of Directors Meeting of the Company, the Board approved interim dividend payments for the first half of 2020 as follows:

Dividend	For operating period	Dividend payment rate (Baht/share)	Number of shares (shares)	Total dividend (Million Baht)	Payment date
Interim	1 January 2020 - 30 June 2020	0.18	28,562,204,838	5,142	16 October 2020

45. Business acquisition

45.1 On 6 December 2018, Global Power Synergy Public Co., Ltd. (GPSC) and Terraform Global Operating LLC. entered into a Share Purchase Agreement to authorise Global Renewable Power Company Limited, GPSC's subsidiary, to acquire shareholding interests of Global Renewable Power Operating Company Limited (formerly Terraform Global Operating (Thailand) Company Limited), World X Change Asia Company Limited, P.P. Solar Company Limited and N.P.S. Stargroup Company Limited. Their principal business operations are to generate and supply electricity from solar farms and provide management and consultancy services to solar farm sector. Total investment value was Baht 1,957 million.

On 26 March 2020, the subsidiary made a full payment to Terraform Global Operating LLC and changed the shareholder's name on the same date.

During the third quarter of 2020, GPSC Group completed the measurement of the fair value of the acquired identifiable net assets at the acquisition date, which was done in accordance with the measurement period of a business combination of Thai Financial Reporting Standard 3 Business Combinations.

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	2,082
Purchase consideration	(1,957)
Gain on bargain purchase	125

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

	Unit: Million Baht
Cash and cash equivalents	480
Trade accounts receivable	71
Other accounts receivable	2
Other current assets	2
Property, plant and equipment (Note 19)	1,773
Other intangible assets (Note 22)	1,031
Trade accounts payable	(2)
Other accounts payable	(10)
Short-term borrowings (Note 30)	(1,125)
Other current liabilities	(5)
Deferred tax liabilities (Note 25.3)	(94)
Provisions for employee benefits (Note 31)	(1)
Provision for decommissioning costs (Note 32)	(40)
Fair value of net assets acquired	2,082
<u>Less</u> Gain on bargain purchase	(125)
Total purchase consideration transferred	1,957
<u>Less</u> Cash and cash equivalents of subsidiaries	(480)
Cash outflow on the business acquisition	1,477

The GPSC group amortized power purchase agreements, which were classified as intangible assets, using the straight line method based on estimated useful life of 21 years.

45. Business acquisition (Continued)

45.2 On 21 March 2019, PTTEP HK Offshore Limited (PTTEP HKO), a subsidiary of the PTT Exploration and Production Public Co., Ltd. (PTTEP) Group, signed the Share Sale and Purchase Agreement (SSPA) to acquire the 100% shareholding interests of Murphy Oil Corporation (Murphy) in Malaysia through acquisition of shares in Murphy's subsidiaries, which are Murphy Sabah Oil Co., Ltd. (Murphy Sabah) and Murphy Sarawak Oil Co., Ltd. (Murphy Sarawak), with total acquisition value of approximately USD 2,131 million (Baht 65,724 million). Moreover, according to the SSPA, there may be contingent consideration of not exceeding USD 100 million if there is significant petroleum found from exploration of the SK405B project. The acquisition was completed on 10 July 2019.

During the second quarter of 2020, the PTTEP group measured the fair value of the net identifiable assets acquired, which reflected additional information obtained about facts and circumstances that existed as of the acquisition date. The measurement period did not exceed one year from the acquisition date. Such information affected the fair value of the net identifiable assets at the acquisition date and goodwill as follows:

	Unit: Million Baht		
	Fair value as previously stated	Increase (Decrease)	Fair value
Cash and cash equivalents	1,817	-	1,817
Trade accounts receivable	4,258	-	4,258
Other accounts receivable	2,331	-	2,331
Inventories	240	-	240
Materials and supplies	605	-	605
Other current assets	347	-	347
Property, plant and equipment	50,195	-	50,195
Intangible assets	77	-	77
Exploration and evaluation assets	12,660	7,428	20,088
Deferred tax assets	3,027	-	3,027
Other non-current assets	1,635	-	1,635
Trade accounts payable	(194)	-	(194)
Other accounts payable	(4,918)	-	(4,918)
Current portion of long-term loans	(529)	-	(529)
Other current liabilities	(1,104)	-	(1,104)
Long-term loans	(4,102)	-	(4,102)
Deferred tax liabilities	(11,185)	(2,584)	(13,769)
Provision for decommissioning costs	(8,286)	-	(8,286)
Fair value of net assets acquired	46,874	4,844	51,718
<u>Add</u> Goodwill	18,850	(4,844)	14,006
Total purchase consideration transferred	65,724	-	65,724
<u>Less</u> Cash and cash equivalents of subsidiaries	(1,817)	-	(1,817)
Cash outflow on the business acquisition	63,907	-	63,907

45. Business acquisition (Continued)

45.2 Goodwill of USD 454 million (Baht 14,006 million) arises primarily from the recognition of deferred tax liabilities arising from the difference between the fair value of net identifiable assets acquired from the acquisition and the book value which is the tax base of these net assets.

The fair value of total considerations transferred on the acquisition date of USD 2,131 million (Baht 65,724 million) consists of cash payment on acquisition date of USD 2,124 million (Baht 65,505 million) and deferred consideration of USD 7 million (Baht 219 million), which is the fair value discounted from deferred consideration of USD 7 million (Baht 231 million). The deferred consideration is presented in other non-current liabilities in the consolidated statement of financial position.

45.3 On 17 November 2020, Modulus Venture Company Limited (MODULUS), a subsidiary of the PTT Oil and Retail Business Public Co., Ltd. (OR) Group, signed the contract to subscribe 17,199,000 Peaberry Thai Company Limited (PEABERRYTHAI)'s newly-issued shares, with 65% the OR Group's shareholding.

On 1 December 2020, PEABERRYTHAI signed the Asset purchase agreement with Peaberry Company Limited, which is the shareholder of PEABERRYTHAI, to operate as a distributor of coffee beans and equipments and to operate a specialty coffee shop.

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

	Unit: Million Baht
Purchase consideration	138
Fair value of net assets acquired	(124)
Goodwill (Note 21)	<u>14</u>

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

	Unit: Million Baht
Cash and cash equivalents	1
Other current assets	9
Property, plant and equipment (Note 19)	57
Other intangible assets (Note 22)	67
Other non-current assets	2
Other accounts payable	(1)
Other current liabilities	(7)
Provisions for employee benefits (Note 31)	(4)
Fair value of net assets acquired	<u>124</u>
<u>Add</u> Goodwill (Note 21)	<u>14</u>
Total purchase consideration transferred	138
<u>Less</u> Cash and cash equivalents of subsidiaries	(1)
Cash outflow on the business acquisition	<u>137</u>

46. 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, chemical product production, ethanol product production, marine transportation, offshore crude oil unloading facilities and industrial zone. 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) and Floating Solar 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.

46. 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.

47. 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 totalling 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. The appeal is currently under the consideration of the Supreme Administrative Court.

48. Commitments and contingent liabilities

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

48.1 Details of commitments to subsidiaries and joint ventures are as follows:

48.1.1 The Company has provided loans to its subsidiaries with credit limits totalling Baht 107,658 million. As at 31 December 2020, the Company made these loans payments to its subsidiaries totalling Baht 53,850 million. The remaining credit limits were Baht 53,808 million.

48.1.2 The Company entered into the Sponsor Support Agreements with subsidiaries and joint ventures with credit limits equal to the sum of the loan obligations to financial institutions of such subsidiaries and joint ventures. Under these agreements, as at 31 December 2020, the Company had commitments of USD 17 million or equivalent to Baht 511 million.

48.1.3 The Company had obligations under the Shareholder Agreements to pay for ordinary shares in proportion to its shareholding. As at 31 December 2020, the Company had remaining obligations amounting to Baht 39,078 million.

48.2 Commitments under leases - the Group as a lessee, the future minimum lease payments under uncancellable leases as at 31 December 2020 are as follows:

	Unit: Million Baht	
	Consolidated financial statements	Separate financial statements
- Within 1 year	1,659	118
- Over 1 year but not over 5 years	423	84
- Over 5 years	513	70
Total	<u>2,595</u>	<u>272</u>

48. Commitments and contingent liabilities (Continued)

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

- 48.3 As at 31 December 2020, the Group had capital commitments of Baht 88,200 million in the consolidated financial statements and Baht 9,089 million in the separate financial statements.
- 48.4 As at 31 December 2020, the Group had outstanding letters of credit of Baht 26,555 million in the consolidated financial statements and Baht 980 million in the separate financial statements.
- 48.5 As at 31 December 2020, the Group had contingent liabilities in the form of letter of guarantee amounting to Baht 40,668 million in the consolidated financial statements and Baht 66 million in the separate financial statements.
- 48.6 As at 31 December 2020, PTT Exploration and Production Public Co., Ltd. (PTTEP) had commitment for the guarantee of senior debt financing agreements of a subsidiary of Moz LNG1 Holding Company Ltd with the facility in the amount of USD 14,900 million. PTTEP is a guarantor under this agreement with the value based on the PTTEP Group's participating interest in Moz LNG1 Holding Company Ltd of 8.5%. The PTTEP Group had not yet drawdown the loan from financial institution.

48. Commitments and contingent liabilities (Continued)

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

- 48.7 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. The case is currently under the consideration of the Supreme Court.

48. Commitments and contingent liabilities (Continued)

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

48.8 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. Nonetheless, the Parties have right to appeal the Civil Court's judgment with the Supreme Court. Currently the case is still within the appeal period.

48. Commitments and contingent liabilities (Continued)

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

- 48.9 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 that, 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.

- 48.10 On 11 March 2016, the group of PTTEP Australasia (PTTEP AA) received a letter from a lawyer firm in Australia representing a group of West Timorese seaweed farmers, notifying the group of PTTEP AA of their intention to commence a legal action for compensation relating to the Montara oil spill incident in the Timor Sea in 2009. Subsequently, on 9 August 2016, PTTEP AA was notified of a claim made in the Sydney Registry of the Federal Court of Australia seeking damages on behalf of a group of seaweed farmers (Class Action). The Statement of Claim as filed does not quantify the claim, and no supporting evidence has yet been presented to the court. The group of PTTEP AA has appointed lawyers and to defend against the claim. Currently, the case is under the court determination. PTT Exploration and Production Public Co., Ltd. (PTTEP) considers that the claims from representative of West Timorese seaweed farmers related to Montara oil spill incident remain unproven due to insufficient evidence to support the claim.

48. Commitments and contingent liabilities (Continued)

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

48.11 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 2018, the Court has made the judgement ordering PTTGC to pay damage cost with its interest approximately Baht 38 million by deducting the remedy payment paid to the plaintiffs of Baht 24 million. PTTGC deposited the remaining damage cost with its interest to the Rayong Provincial Court on 25 February 2019. Some plaintiffs filed an appeal with the Rayong Provincial Court 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. However, the plaintiffs have applied a motion to extend the Dika appeal period to 1 March 2021.

49. Other events

49.1 On 4 April 2016, the Ombudsman of Thailand submitted a complaint to the Administrative Court against the Ministry of Finance, the Ministry of Energy, the Company and other defendants as black case No. 510/2559, requesting the Court as follows:

- 1) To revoke the Cabinet Resolutions on 18 December 2007 and 10 August 2010.
- 2) To order the Ministry of Finance, the Ministry of Energy and the Company to segregate and transfer the net assets per the plaintiff's allegation, amounting to Baht 68,567 million as of 30 September 2001, together with compensation and other benefits.
- 3) To revoke the segregation of those assets that are public property and the preferential rights for installation of a gas pipeline system, per the plaintiff's allegation.

On 26 May 2016, the Administrative Court ordered the Company to submit a defense, responding to the particular issue of whether and to what extent the Company had transferred the assets of the Petroleum Authority of Thailand (the tenth defendant) that were public assets to the first defendant (the Ministry of Finance) in accordance with the Cabinet Resolution dated 18 December 2007. The Company had the public prosecutor prepare the statement and an additional statement for submission to the Administrative Court, and on 11 May 2018, the Administrative Court issued an order to end the fact finding process. Currently, the case is under the consideration of the Administrative Court. On 28 December 2020, The Central Administrative Court ordered that the judgment to be handed down on 25 February 2021.

Nevertheless, on 14 December 2007, the Supreme Administrative Court in red case No. Fo. 35/2550, ordered the defendants to jointly segregate the public assets to the Ministry of Finance, in accordance with the judgment. On 18 December 2007, the Cabinet acknowledged the judgment and assigned the Ministry of Finance and the Ministry of Energy to jointly segregate the public assets in compliance with the judgment. Consequently, on 26 December 2008, the Supreme Administrative Court declared that the defendants had completely complied with the judgment of the Court. In addition, the plaintiff and the co-plaintiffs submitted complaints regarding this segregation of public assets to the Court on four occasions, but the Court ordered to dismiss these complaints and reaffirmed the judgment of the Supreme Administrative Court in red case No. Fo. 35/2550. Consequently, on 10 August 2010, the Cabinet passed a resolution acknowledging the action taken in compliance with the Supreme Administrative Court's judgment, as proposed by the Ministry of Energy and the Ministry of Finance.

49. Other events (Continued)

49.2 On 22 October 2020, an accident caused a natural gas leakage and a fire in Bang Bo District, Samut Prakarn Province. The initial damage assessment shows that the accident did not affect the Company's operations in any way. The Company has a comprehensive insurance policy covering property damage, business interruption, and third-party legal liability.

49.3 The restructuring of the oil business unit

On 18 June 2018, the Company and PTT Oil and Retail Business Public Co., Ltd. (OR) successfully executed the Business Transfer Agreement to transfer various assets and liabilities, and shares of related companies (Bangkok Aviation Fuel Services Public Co., Ltd. (BAFS), PTT (Cambodia) Limited (PTTCL), PTT Oil Myanmar Co., Ltd. (PTTOM), Thai Lube Blending Co., Ltd. (TLBC), Thai Petroleum Pipeline Co., Ltd. (THAPPLINE), Petro Asia (Thailand) Co., Ltd. (PAT), Intoplane Services Co., Ltd. (IPS) and Fuel Pipeline Transportation Co., Ltd. (FPT)) to OR. The Company has commenced the process of transferring various assets and liabilities, and shares of related companies to OR since 1 July 2018. The business transfer price is Baht 117,203 million. On 28 June 2018, OR made the initial payment of Baht 85,367 million to the Company. Then, OR made the remaining payment of Baht 31,836 million on 28 September 2018.

The valuation of the business transferred had been evaluated by financial advisors following relevant international standards in order to provide the most reasonable prices.

In cases where the registration process for the transfer of various assets and liabilities is not completed within 6 months after the date of the business transfer, the Company must comply with the conditions under the Business Transfer Agreement, whereby the Company has to transfer the right of ownership and use in assets to OR, which is entitled to benefits, interests or profits from the assets under the agreement from the date of the business transfer until the registration process is completed.

49. Other events (Continued)

49.3 The restructuring of the oil business unit (Continued)

On 28 February 2019, the Company and OR successfully executed the memorandum for the revision of the Business Transfer Agreement for extending the period for the process of registering the transfer of ownership in assets, rights, duties and responsibilities under agreements, in accordance with the Business Transfer Agreement. In cases where the registration process is not completed within 31 December 2019, the Company and OR will consider the best solution in order to achieve their interests.

On 12 February 2020, the Company and OR successfully executed the memorandum for the revision of the Business Transfer Agreement for extending the period for the process of registering the transfer of ownership in assets, rights, duties and responsibilities under agreements, in accordance with the Business Transfer Agreement, whereby it is to be completed within 31 December 2020. This Agreement is effective on 1 January 2020. As at 31 December 2020, some assets and contracts have not yet been transferred.

On 15 February 2021, the Company and OR successfully executed the memorandum for the revision of the Business Transfer Agreement for extending the period for the process of registering the transfer of ownership in assets, rights, duties and responsibilities under agreements, in accordance with the Business Transfer Agreement, whereby it is to be completed within 31 December 2022. This Agreement is effective on 1 January 2021.

49. Other events (Continued)

49.4 The filing for an initial public offering (IPO) of PTT Oil and Retail Business Public Co., Ltd. (OR)

Subsequently, on 2 April 2020, OR submitted to the Securities and Exchange Commission (SEC) its application to make an initial public offering (IPO), of its shares, together with a registration statement and draft prospectus and submitted a request to accept its ordinary shares as listed securities on the Stock Exchange of Thailand (SET).

On 16 September 2020, the SEC approved OR's application to make an IPO. OR plans to make an offering ordinary shares of not more than 2,700 million shares and there would be over-allotment of 300 million shares, or a total of 3,000 million shares, which will be equivalent to 25% of the paid-up shares after the IPO.

On 1 December 2020, at the Extraordinary General Meeting of the shareholders of OR No.2/2020, the shareholders passed a resolution to adjust the share allocation of OR and to allocate newly issued ordinary shares of OR, with the number of shares in the over-allotment option increased from up to 300 million shares to up to 390 million shares. As a result, the number of shares allocated to the public offering will be decreased from up to 2,700 million shares to up to 2,610 million shares.

On 9 February 2021, OR received payment for 2,610 million new ordinary shares issued a price of Baht 18 per share, or a total of Baht 46,860 million before deducting relevant expenses. OR registered the change in its issued and paid-up capital with the Ministry of Commerce on the same day.

On 11 February 2021, the ordinary shares of OR commenced trading on the SET. OR may allocate up to 390 million additional ordinary shares to support the exercise of the option, with the over-allotment agent borrowing the shares from the Company in order to deliver them to subscribers and to obtain shares for delivery to the Company within 30 days from the first day the stock started trading on the stock market.

50. Events after the reporting period

- 50.1 PTT Global Management Co., Ltd. (PTTGM) issued a letter to call up of remaining additional share capital of Baht 1,897 million. The Company paid up the additional share capital on 4 January 2021.
- 50.2 On 23 December 2020, Global Power Synergy Public Co., Ltd. (GPSC) and PTT Global Management Co., Ltd. (PTTGM), which is a subsidiary of the Company, signed a Share Purchase Agreement to sell 4,655,000 shares, represents 50% of total registered and paid-up share capital in Global Renewable Power Co., Ltd. (GRP), a company that operates in solar power plants, at the consideration of Baht 149 per share or totaling Baht 693 million. The transaction was completed on 4 January 2021.
- 50.3 On 22 December 2020, at the Board of Directors Meeting of Suez Environmental Services Co., Ltd. (SES) No.2/2020, the Board passed a resolution to approve the call up of remaining unpaid share capital consisting of Baht 250 per share for 24,000 shares, amounting to Baht 6 million. The Company paid up the additional share capital on 29 January 2021.
- 50.4 On 1 February 2021, PTTEP MENA Limited (PTTEP MENA), which is a subsidiary of the PTT Exploration and Production Public Co., Ltd. (PTTEP) Group, signed a Sale and Purchase Agreement (SPA) to acquire a 20% interest in Block 61 Sultanate of Oman (Oman Block 61) from BP Exploration (Epsilon) Limited (BP). The transaction value of this acquisition is around USD 2,450 million, subject to final net working capital and other closing adjustments per the SPA, and the contingent payment at maximum amount of USD 140 million, if the pre-agreed conditions under the SPA are accomplished. The completion date is expected to be within 2021, including necessary regulatory approvals.
- 50.5 On 18 February 2021, at the Board of Directors Meeting No. 2/2021 of the Company, the Board passed a resolution to propose to the Annual General Meeting of the Company's shareholders for approval a dividend payment of Baht 1.00 per share for the year 2020. On 16 October 2020, the Company paid an interim dividend of Baht 0.18 per share as described in Note 44. Accordingly, the remaining dividend of Baht 0.82 per share or approximately Baht 23,422 million will be proposed for approval by the Annual General Meeting of the Company's shareholders for the year 2021.
- 50.6 The Board of Directors of the Company approved these financial statements for public issuance on 18 February 2021.
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Audit Fee

This year PTT and its subsidiaries paid a total of Baht 156,732,930 (one hundred fifty-six million seven hundred thirty-two thousand nine hundred thirty) in audit fees to the office of the external auditors for previous fiscal year. They also paid Baht 68,363,920 (sixty-eight million three hundred sixty-three thousand nine hundred twenty) for other services (non-audit fees) such as those for comfort letters issued for subsidiaries' debt management plans for debentures, those for revisiting the Updated Global Medium-Term Notes, and other certification fees in the previous fiscal year.



บริษัท ปตท. จำกัด (มหาชน)
PTT Public Company Limited

Emanating its capability while forging synergy with others,
PTT continue to strengthen technological and national development,
including society, community and environment throughout Thailand,
where it operates with transparency and sustainability.
PTT is poised to thrive in the midst of changes with confidence.
Thus, drives Thailand to stride toward strength and security.



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