

Korea National Oil Corporation and its subsidiaries

Consolidated financial statements
for the years ended December 31, 2020 and 2019
with the independent auditor's report

Korea National Oil Corporation

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Independent auditor's report

The Shareholder and Board of Directors

Korea National Oil Corporation

Opinion

We have audited the accompanying consolidated financial statements of Korea National Oil Corporation and its subsidiaries (collectively referred to as the "Group"), which comprise the consolidated statements of financial position as of December 31, 2020 and 2019, and the consolidated statements of comprehensive loss, consolidated statements of changes in equity and consolidated statements of cash flows for the years then ended, and notes to the consolidated financial statements, including a summary of significant accounting policies.

In our opinion, the consolidated financial statements present fairly, in all material respects, the financial position of the Group as of December 31, 2020 and 2019, and its consolidated financial performance and its consolidated cash flows for the years then ended in accordance with the Rules for Accounting Affairs of Public Corporations and Quasi-governmental Institutions in the Republic of Korea.

Emphasis of matters

Without qualifying our opinion, we draw attention to Note 2 to the consolidated financial statements which states that the Group applies Korean International Financial Reporting Standards ("KIFRS") where specific accounting treatments are not prescribed by the Rules for Accounting Affairs of Public Corporations and Quasi-governmental Institutions in the Republic of Korea. No material matter has been applied differently from KIFRS.

Basis for opinion

We conducted our audit in accordance with Korean Auditing Standards ("KGAAS"). Our responsibilities under those standards are further described in the Auditor's responsibilities for the audit of the consolidated financial statements section of our report. We are independent of the Group in accordance with the ethical requirements that are relevant to our audit of the consolidated financial statements in the Republic of Korea, and we have fulfilled our other ethical responsibilities in accordance with these requirements. We believe that the audit evidence we have obtained is sufficient and appropriate to provide a basis for our opinion.

Responsibilities of management and those charged with governance for the consolidated financial statements

Management is responsible for the preparation and fair presentation of the consolidated financial statements in accordance with the Rules for Accounting Affairs of Public Corporations and Quasi-governmental Institutions in the Republic of Korea, and for such internal control as management determines is necessary to enable the preparation of the consolidated financial statements that are free from material misstatement, whether due to fraud or error.

In preparing the consolidated 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 consolidated financial statements

Our objectives are to obtain reasonable assurance about whether the consolidated 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 our opinion. Reasonable assurance is a high level of assurance but is not a guarantee that an audit conducted in accordance with KGAAS will always detect a material misstatement when it exists. Misstatements can arise from fraud or error and are considered material if, individually or in the aggregate, they could reasonably be expected to influence the economic decisions of users taken on the basis of these consolidated financial statements.

As part of an audit in accordance with KGAAS, we exercise professional judgment and maintain professional skepticism throughout the audit. We also:

- Identify and assess the risks of material misstatement of the consolidated 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 our 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 we conclude that a material uncertainty exists, we are required to draw attention in our auditor's report to the related disclosures in the consolidated financial statements or, if such disclosures are inadequate, to modify our opinion. Our conclusions are based on the audit evidence obtained up to the date of our 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 consolidated financial statements, including the disclosures, and whether the consolidated 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. We are responsible for the direction, supervision and performance of the group audit. We remain solely responsible for our audit opinion.

We 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 we identify during our audit.

We also provide those charged with governance with a statement that we 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 our independence, and where applicable, related safeguards.



February 28, 2021

This audit report is effective as of February 28, 2021, the independent auditor's report date. Accordingly, certain material subsequent events or circumstances may have occurred during the period from the date of the independent auditor's report to the time this report is used. Such events and circumstances could significantly affect the accompanying consolidated financial statements and may result in modifications to this report.

Korea National Oil Corporation and its subsidiaries

Consolidated financial statements
for the years ended December 31, 2020 and 2019

“The accompanying consolidated financial statements, including all footnotes and disclosures, have been prepared by, and are the responsibility of, the Parent Company.”

Su-Yeong, Yang

Chief Executive Officer

Korea National Oil Corporation

Korea National Oil Corporation and its subsidiaries
Consolidated statements of financial position
as of December 31, 2020 and 2019

<i>(in Korean won)</i>	<u>Notes</u>		<u>2020</u>		<u>2019</u>
Assets					
Current assets					
Cash and cash equivalents	5,6,26,42,44	₩	796,778,898,842	₩	725,056,410,891
Current financial assets	7,10,12,42,43,44		617,848,649,667		312,477,148,056
Trade and other receivables, net	8,23,42,44		433,709,955,321		484,674,617,029
Inventories, net	13		92,710,196,125		98,001,120,211
Current tax assets			17,302,153,779		5,467,561,503
Current non-financial assets	14		74,454,260,789		87,677,366,722
Assets held for sale	40		<u>2,565,848,624</u>		<u>-</u>
			2,035,369,963,147		1,713,354,224,412
Non-current assets					
Non-current financial assets, net	6,7,9,10,11,42,43,44		920,401,331,480		1,684,920,064,133
Long-term trade and other receivables, net	8,23,42,44		44,061,506,620		44,162,826,491
Property, plant and equipment, net	16,23,26,27,46,51		8,017,014,312,194		8,717,719,481,763
Goodwill	17		221,020,028,546		152,975,919,835
Intangible assets other than goodwill, net	18,26		1,314,513,699,324		1,406,826,475,801
Investments in associates and joint ventures	15		479,841,131,972		239,920,503,348
Deferred tax assets	39		780,322,777,378		784,338,423,816
Non-current non-financial assets	14		<u>3,691,491,324,932</u>		<u>3,917,584,915,080</u>
			15,468,666,112,446		16,948,448,610,267
Total assets		₩	<u>17,504,036,075,593</u>	₩	<u>18,661,802,834,679</u>
Liabilities					
Current liabilities					
Trade and other payables	20,23,42,44,47	₩	619,687,530,974	₩	771,657,311,606
Current financial liabilities	7,19,21,22,42,43,44,47		3,084,650,983,541		1,575,772,270,504
Current tax liabilities			73,154,083,577		50,950,396,225
Current non-financial liabilities	28		85,561,526,809		150,381,118,367
Current provisions	25		<u>75,542,124,147</u>		<u>60,382,894,748</u>
			3,938,596,249,048		2,609,143,991,450
Non-current liabilities					
Long-term trade and other payables	20,23,42,44,47		528,379,159,028		549,409,820,867
Non-current financial liabilities	7,19,21,41,43,44,47		11,304,246,790,091		12,443,241,329,623
Non-current non-financial liabilities	28		51,752,217,306		57,746,729,186
Defined benefit liabilities	24		12,934,670,657		13,453,938,615
Deferred tax liabilities	39,51		374,960,458,330		221,647,766,711
Non-current provisions	25		<u>2,434,077,157,879</u>		<u>2,236,312,862,677</u>
			14,706,350,453,291		15,521,812,447,679
Total liabilities			18,644,946,702,339		18,130,956,439,129
Equity					
Equity attributable to the owner of the Company					
Share capital	1,29		10,554,372,780,075		10,515,105,780,075
Accumulated deficit	30,31		(12,259,384,485,091)		(9,377,447,616,190)
Other components of equity	32		<u>(8,789,630,188)</u>		<u>(1,155,757,805,551)</u>
			(1,713,801,335,204)		(18,099,641,666)
Non-controlling interests			<u>572,890,708,458</u>		<u>548,946,037,216</u>
Total equity			<u>(1,140,910,626,746)</u>		<u>530,846,395,550</u>
Total liabilities and equity		₩	<u>17,504,036,075,593</u>	₩	<u>18,661,802,834,679</u>

The accompanying notes are an integral part of the consolidated financial statements.

Korea National Oil Corporation and its subsidiaries
Consolidated statements of comprehensive loss
for the years ended December 31, 2020 and 2019

<i>(in Korean won)</i>	<u>Notes</u>	<u>2020</u>	<u>2019</u>
Revenue	4,26,33,45,46	₩ 1,931,222,484,176	₩ 2,929,992,959,600
Cost of sales	4,41	<u>(1,733,602,632,581)</u>	<u>(2,052,413,071,153)</u>
Gross profit	4	197,619,851,595	877,579,888,447
Selling and administrative expenses	4,25,34,41	<u>(251,727,861,919)</u>	<u>(306,110,440,934)</u>
Operating profit (loss)	4	(54,108,010,324)	571,469,447,513
Other income	4,8,35,42,45,46	32,837,024,509	93,597,344,082
Other expenses	4,8,35,42	(14,267,357,272)	(8,259,254,071)
Other profit (losses), net	4,7,16,17,18,36,42	(1,734,680,692,336)	(2,095,013,255)
Finance income	4,7,9,19,37,42,46	266,530,707,585	402,068,273,215
Finance costs	4,7,19,38,42,46	(903,418,086,717)	(731,432,586,748)
Gain (loss) on investments in associates and joint ventures, net	4,15	<u>(27,441,704,887)</u>	<u>53,712,409,399</u>
Profit (loss) before income tax	4	(2,434,548,119,442)	379,060,620,135
Income tax expense	39	<u>(4,625,231,016)</u>	<u>(533,812,592,404)</u>
Loss from continuing operations		<u>(2,439,173,350,458)</u>	<u>(154,751,972,269)</u>
Loss for the year	30,31	<u>(2,439,173,350,458)</u>	<u>(154,751,972,269)</u>
Other comprehensive income (loss)			
<i>Items that will never be reclassified subsequently to profit or loss</i>			
Gains on revaluation, net of tax, of property, plant and equipment	16	489,752,621,439	-
Actuarial losses on defined benefit plans, net of tax	24,30	(5,039,346,163)	(3,200,429,622)
Share of other comprehensive income of associates and joint ventures, net of tax		(13,747,583)	-
Net change in fair value of financial assets measured at fair value through other comprehensive income	9,42	6,682,228,990	(27,087,490,099)
<i>Items that are or may be reclassified subsequently to profit or loss</i>			
Equity adjustments arising from investments in equity-method investees, net of tax	15	12,973,731,671	(2,256,031,648)
Net change in the unrealized fair value of derivative using cash flow hedge accounting, net of tax	7,42	(14,673,039,073)	(110,655,301,372)
Foreign currency translation differences for foreign operations		<u>84,130,123,045</u>	<u>34,276,424,310</u>
Other comprehensive income (loss) for the year, net of tax		<u>573,812,572,326</u>	<u>(108,922,828,431)</u>
Total comprehensive loss for the year		<u>₩ (1,865,360,778,132)</u>	<u>₩ (263,674,800,700)</u>
Income (loss) attributable to:			
Owner of the Company		₩ (2,346,500,826,488)	₩ (173,257,481,130)
Non-controlling interests		<u>(92,672,523,970)</u>	<u>18,505,508,861</u>
Loss for the year		<u>₩ (2,439,173,350,458)</u>	<u>₩ (154,751,972,269)</u>
Total comprehensive income (loss) attributable to:			
Owner of the Company		₩ (1,734,968,693,538)	₩ (299,451,459,878)
Non-controlling interests		<u>(130,392,084,594)</u>	<u>35,776,659,178</u>
Total comprehensive loss for the year		<u>₩ (1,865,360,778,132)</u>	<u>₩ (263,674,800,700)</u>

The accompanying notes are an integral part of the consolidated financial statements.

Korea National Oil Corporation and its subsidiaries
Consolidated statements of changes in equity
for the years ended December 31, 2020 and 2019

(in Korean won)

	Attributable to owner of the Company				Non-controlling interests	Total equity
	Share capital	Accumulated deficit	Other components of equity	Sub total		
Balance at January 1, 2019	W 10,481,533,780,075	W (9,201,495,688,459)	W (1,032,764,256,425)	W 247,273,835,191	W 516,791,143,509	W 764,064,978,700
Total comprehensive income (loss) for the year						
Profit (loss) for the year	-	(173,257,481,130)	-	(173,257,481,130)	18,505,508,861	(154,751,972,269)
Other comprehensive income						
Items that will not be reclassified subsequently to profit or loss						
Actuarial losses on defined benefit plans, net of tax	-	(3,200,429,622)	-	(3,200,429,622)	-	(3,200,429,622)
Net change in fair value of financial assets measured at fair value through other comprehensive income	-	-	(27,087,490,099)	(27,087,490,099)	-	(27,087,490,099)
Items that may be reclassified subsequently to profit or loss						
Equity adjustments arising from investments in equity-method investees, net of tax	-	-	(2,256,031,648)	(2,256,031,648)	-	(2,256,031,648)
Net change in the unrealized fair value of derivative using cash flow hedge accounting, net of tax	-	-	(110,655,301,372)	(110,655,301,372)	-	(110,655,301,372)
Foreign currency translation differences for foreign operations	-	-	17,005,273,993	17,005,273,993	17,271,150,317	34,276,424,310
Total comprehensive loss for the year	-	(176,457,910,752)	(122,993,549,126)	(299,451,459,876)	35,776,659,178	(263,674,800,700)
Transactions with owner of the Company, recognized directly in equity						
Issuance of share capital	33,572,000,000	-	-	33,572,000,000	-	33,572,000,000
Distribution to non-controlling interests	-	505,983,021	-	505,983,021	(3,621,765,471)	(3,115,782,450)
Total transactions with owner of the Company	33,572,000,000	505,983,021	-	34,077,983,021	(3,621,765,471)	30,456,217,550
Balance at December 31, 2019	W 10,515,105,780,075	W (9,377,447,616,190)	W (1,155,757,805,551)	W (18,099,641,666)	W 548,946,037,216	W 530,846,395,550
Balance at January 1, 2020	W 10,515,105,780,075	W (9,377,447,616,190)	W (1,155,757,805,551)	W (18,099,641,666)	W 548,946,037,216	W 530,846,395,550
Total comprehensive income (loss) for the year						
Profit (loss) for the year	-	(2,346,500,826,488)	-	(2,346,500,826,488)	(92,672,523,970)	(2,439,173,350,458)
Other comprehensive income						
Items that will not be reclassified subsequently to profit or loss						
Gains on revaluation, net of tax	-	-	489,752,621,439	489,752,621,439	-	489,752,621,439
Actuarial losses on defined benefit plans, net of tax	-	(5,039,346,163)	-	(5,039,346,163)	-	(5,039,346,163)
Net change in fair value of financial assets measured at fair value through other comprehensive income	-	-	6,682,228,990	6,682,228,990	-	6,682,228,990
Reclassification adjustments in fair value of financial assets measured at fair value through other comprehensive income	-	(530,382,948,667)	530,382,948,667	-	-	-
Share of other comprehensive income of associates and joint ventures, net of tax	-	(13,747,583)	-	(13,747,583)	-	(13,747,583)
Items that may be reclassified subsequently to profit or loss						
Equity adjustments arising from investments in equity-method investees, net of tax	-	-	12,973,731,671	12,973,731,671	-	12,973,731,671
Net change in the unrealized fair value of derivative using cash flow hedge accounting, net of tax	-	-	(14,673,039,073)	(14,673,039,073)	-	(14,673,039,073)
Foreign currency translation differences for foreign operations	-	-	121,849,683,669	121,849,683,669	(37,719,560,624)	84,130,123,045
Total comprehensive loss for the year	-	(2,881,936,868,901)	1,146,968,175,363	(1,734,968,693,538)	(130,392,084,594)	(1,865,360,778,132)
Transactions with owner of the Company, recognized directly in equity						
Issuance of share capital	39,267,000,000	-	-	39,267,000,000	167,219,236,601	206,486,236,601
Dividends paid	-	-	-	-	(41,374,024,522)	(41,374,024,522)
Distribution to non-controlling interests	-	-	-	-	(2,360,117,701)	(2,360,117,701)
Change in the scope of consolidation	-	-	-	-	30,851,661,458	30,851,661,458
Total transactions with owner of the Company	39,267,000,000	-	-	39,267,000,000	154,336,755,836	193,603,755,836
Balance at December 31, 2020	W 10,554,372,780,075	W (12,259,384,485,091)	W (6,789,630,188)	W (1,713,801,335,204)	W 572,890,708,458	W (1,140,910,626,746)

The accompanying notes are an integrated part of the consolidated financial statements.

Korea National Oil Corporation and its subsidiaries
Consolidated statements of cash flows
for the years ended December 31, 2020 and 2019

(in Korean won)

	2020	2019
Cash flows from operating activities		
Loss for the year	₩ (2,439,173,350,458)	₩ (154,751,972,269)
Adjustment for:		
Severance and retirement benefits	10,165,523,024	12,723,526,195
Wages and salaries	15,315,336,747	4,359,067,934
Depreciation	726,480,602,836	965,218,918,919
Amortization of intangible assets	62,255,220,240	81,194,519,000
Other bad debt expenses	4,661,295,775	3,186,538,955
Gains on exemption of debts	-	(76,223,080,929)
Reversal of other bad debt allowances	(120,459,504)	(3,495,036,527)
Non-operating income from overseas oil fields	(3,102,995,887)	(365,395,128)
Non-operating loss from overseas oil fields	837,252,449	-
Gains on disposal of property, plant and equipment	(325,296,642)	(12,234,503,767)
Losses on valuation of inventories	19,873,458,473	404,191,177
Losses on revaluation of property, plant and equipment	2,213,358,552	-
Loss on cancellation of debt exemption	2,599,318,556	1,065,761,174
Other income	(135,204,229)	(4,944,867,160)
Other expenses	2,465,908,003	2,369,477,299
Transfer to other provision	371,732,967	938,611,291
Gains on disposal of intangible assets	(12,656,237)	(87,120,730,552)
Reversal of impairment losses on property, plant and equipment	(2,442,068,314)	(25,224,458,258)
Gains on foreign currency translation (other than finance income)	(49,243,856,929)	(22,942,425,015)
Losses on disposal of property, plant and equipment	6,679,846,717	17,491,127,469
Losses on disposal of intangible assets	173,442,262	-
Impairment losses on property, plant and equipment	1,424,500,981,351	176,250,820,929
Impairment losses on intangible assets	306,090,695,726	18,106,642,179
Reversal of impairment losses on intangible assets	(4,784,241,479)	(53,230,301,443)
Losses on foreign currency translation (other than finance cost)	48,630,115,580	21,518,126,092
Income tax expense	4,625,231,016	533,812,592,404
Interest income	(14,608,760,475)	(22,512,597,370)
Dividends income	(5,840,386)	(10,232,181)
Gains on transaction of derivative (finance income)	(92,375,935,424)	(11,338,703,001)
Gains on valuation of derivative (finance income)	-	(18,630,088,549)
Gains on transaction of derivative (other than finance income)	-	(42,418,004)
Losses on transaction of derivative (other than finance cost)	-	117,357,642
Gains on foreign currency translation (finance income)	(72,133,591,704)	(136,666,853,054)
Interest expense	467,531,643,267	474,593,305,053
Losses on valuation of derivative (finance cost)	18,860,237,629	2,518,652,850
Losses on valuation of financial asset measured at fair value through profit or loss	117,456,567,243	82,191,492,544
Gains on valuation of financial asset measured at fair value through profit or loss	(8,311,881,332)	(167,773,467,775)
Gains on transaction of financial asset measured at fair value through profit or loss	-	(2,072,434,884)
Losses on valuation of financial liabilities measured at fair value through profit or loss	4,862,291,130	15,615,393,575
Gains on valuation of financial liabilities measured at fair value through profit or loss	(37,229,917,380)	-
Losses on foreign currency translation (finance cost)	197,395,882,448	65,411,763,076
Other finance costs (interest expense)	67,133,153,206	77,451,325,484
Transfer to other provisions (sales commissions)	(28,328,412,466)	(24,786,154,683)
Reversal of other provisions	(6,334,527,540)	(2,454,517,994)
Share of gain in associates and joint ventures	(43,024,976,626)	(116,300,551,234)
Gains on disposal of investments in associates and joint ventures	(136,042,411,338)	(37,011,521)
Share of loss in associates and joint ventures	91,432,069,316	23,372,718,406
Impairment losses on investments in associates and joint ventures	115,077,023,535	39,252,434,950
	3,219,125,154,156	1,830,758,535,568
Changes in:		
Inventories	(184,548,763)	2,530,434,890
Trade and other receivables	42,137,169,182	(43,642,565,894)
Other receivables from operating activities	(17,870,718,419)	(13,525,738,194)
Trade and other payables	(220,665,298,806)	(21,999,177,514)
Other payables from operating activities	(63,012,661,744)	(52,016,981,114)
Defined benefit liabilities	-	(180,995,466)
Payments from plan assets	(19,058,831,111)	(11,524,029,215)
Current other provisions	(23,395,220,521)	(17,671,811,111)
Non-current other provisions	(1,722,275,741)	-
Provisions for decommissioning cost	(31,805,242,505)	(39,829,872,292)
	(335,577,628,428)	(197,860,735,910)
Cash generated from operating activities	444,374,175,270	1,478,145,827,389
Dividend received	35,156,461,685	17,257,116,448
Interest paid	(422,978,403,629)	(455,870,627,770)
Interest received	11,695,832,043	76,762,229,700
Income tax paid	(122,285,638,975)	(83,599,099,347)
Net cash provided by (used in) operating activities	₩ (54,037,573,606)	₩ 1,032,695,446,420

(continued)

Korea National Oil Corporation and its subsidiaries
Consolidated statements of cash flows (cont'd)
for the years ended December 31, 2020 and 2019

(in Korean won)

	<u>2020</u>	<u>2019</u>
Cash flows from investing activities		
Acquisition of investments in associates and joint ventures	₩ (333,189,568,924)	₩ (9,056,586,845)
Proceeds from disposal of investments in associates and joint ventures	3,890,757,016	267,540,221
Proceeds from disposal of property, plant and equipment	4,994,459,397	18,739,499,698
Acquisition of property, plant and equipment	(395,017,470,581)	(503,201,535,631)
Proceeds from disposal of intangible assets other than goodwill	96,141,034	234,864,044
Acquisition of intangible assets other than goodwill	(28,069,213,421)	(48,046,370,391)
Acquisition of non-current non-financial assets	-	(25,154,394,323)
Increase in long-term deposits received	(2,894,888,866)	(427,206,447)
Decrease in long-term deposits received	34,979,384	366,209,999
Increase in long-term and short-term financial assets	(334,946,100)	(35,213,926,547)
Decrease in long-term and short-term financial assets	-	34,924,277,443
Increase in long-term loans	(14,594,622,390)	(160,303,832,591)
Decrease in long-term loans	16,169,498,239	169,712,525,315
Increase in leasehold deposits provided	-	452,263,177
Decrease in leasehold deposits provided	(18,951,603)	(5,490,841)
Proceeds from disposal of financial assets measured at fair value through other comprehensive income	37,316,450	-
Proceeds from disposal of financial assets measured at fair value through profit or loss	-	286,522,167,729
Acquisition of financial assets measured at fair value through profit or loss	(203,788,588,424)	(511,219,410,502)
Cash inflows (outflows) from futures contracts, forward contracts, options contracts and swap contracts	4,725,881,941	(4,525,663,331)
Acquisition of a subsidiary, net of cash acquired	<u>127,773,954,157</u>	<u>-</u>
Net cash used in investing activities	<u>(820,185,262,691)</u>	<u>(785,935,069,823)</u>
Cash flows from financing activities		
Proceeds from increase in share capital	39,267,000,000	33,572,000,000
Proceeds from short-term borrowings	1,746,709,986,281	233,130,000,000
Repayments of short-term borrowings	(1,597,185,789,536)	(188,835,300,000)
Repayments of current portion of long-term borrowings	-	(234,684,729,761)
Proceeds from issuance of bond payables	1,938,016,446,081	1,270,571,087,901
Repayments of bond payables	-	(1,490,846,568,698)
Repayments of current portion of bond payables	(1,001,762,974,145)	-
Proceeds from long-term borrowings	-	283,159,024,767
Repayments of long-term borrowings	(60,232,119,971)	(164,291,102,004)
Repayments of lease liabilities	(46,144,450,613)	(28,660,897,898)
Dividends paid	(41,374,024,522)	-
Net cash outflow due to other distribution to non-controlling interests	-	(3,115,782,450)
Net cash provided by (used in) financing activities	<u>977,294,073,575</u>	<u>(290,002,268,143)</u>
Net increase (decrease) in cash and cash equivalents before net effect of foreign exchange differences	103,071,237,278	(43,241,891,546)
Net effect of foreign exchange differences	<u>(31,294,715,220)</u>	<u>(9,888,455,565)</u>
Net increase (decrease) in cash and cash equivalents	<u>71,776,522,058</u>	<u>(53,130,347,111)</u>
Cash and cash equivalents as of January 1 before deduction of government grants	<u>725,067,511,808</u>	<u>778,197,858,919</u>
Cash and cash equivalents as of December 31 before deduction of government grants	<u>796,844,033,866</u>	<u>725,067,511,808</u>
Government grants	<u>(65,135,024)</u>	<u>(11,100,917)</u>
Cash and cash equivalents as of December 31 after deduction of government grants	<u>₩ 796,778,898,842</u>	<u>₩ 725,056,410,891</u>

The accompanying notes are an integral part of the consolidated financial statements.

Korea National Oil Corporation and its subsidiaries
Notes to the consolidated financial statements
December 31, 2020 and 2019

1. Reporting Entity

1.1 Description of the Controlling Company

Korea National Oil Corporation (the “Parent Company” or the “Company”) was incorporated on March 3, 1979 to engage in the development of oil fields, distribution of crude oil, maintenance of petroleum reserve stock and improvement of the petroleum distribution infrastructure under the Korea National Oil Corporation Act. The Parent Company’s head office is located at 305, Jongga-Ro, Jung-Gu, Ulsan in Republic of Korea. The Parent Company also has 9 petroleum stockpile sites, 1 domestic gas field management office, and overseas subsidiaries and affiliates (Dana Petroleum Limited etc.) in other countries.

As of December 31, 2020, the Parent Company’s share capital is \ 10,554,373 million, which is wholly owned by the government of the Republic of Korea.

1.2 Consolidated subsidiaries

Details of the consolidated subsidiaries as of December 31, 2020 and 2019, are as follows:

Subsidiary name ¹	Principal activity	Country of incorporation	Ownership (%)	
			2020	2019
ANKOR E&P Holdings Corp.	Exploration and production (“E&P”)	United States	100.00	100.00
Dana Petroleum Limited	E&P	United Kingdom	100.00	100.00
KNOC Eagleford Corporation	E&P	United States	100.00	100.00
Harvest Operations Corp.	E&P	Canada	100.00	100.00
KNOC Kaz B.V.	E&P	Netherlands	100.00	100.00
KADOC Ltd	E&P	Malaysia	75.00	-
KNOC Sumatra Ltd.	E&P	Indonesia	100.00	100.00
KNOC Yemen Ltd.	E&P	Yemen	60.00	60.00
KNOC Trading Singapore Pte. Ltd.	Trading and Marketing	Singapore	100.00	100.00
KNOC Service	Facility maintenance	Republic of Korea	100.00	100.00

¹ including intermediate parent companies and their subsidiaries

Korea National Oil Corporation and its subsidiaries
Notes to the consolidated financial statements
December 31, 2020 and 2019

1.2 Consolidated subsidiaries (cont'd)

Financial information for subsidiaries as of and for the years ended December 31, 2020 and 2019, are as follows:

(in Korean won)

Subsidiary name	2020			
	Assets	Liabilities	Revenue	Profit (loss) for the year
ANKOR E&P Holdings Corp.	\ 243,584,279,452 \	\ 145,184,285,066 \	\ 49,052,284,509 \	\ (153,699,376,775)
Dana Petroleum Limited ¹	2,265,068,899,245	1,592,133,489,660	734,489,825,806	(541,020,381,227)
KNOC Eagleford Corp.	2,119,722,452,272	574,982,872,444	210,976,821,827	(480,361,290,066)
Harvest Operations Corp.	2,182,023,719,855	3,219,878,220,541	184,924,607,122	(572,522,733,171)
KNOC Kaz B.V. ¹	2,288,797,603,007	559,644,494,354	157,153,404,802	(32,268,562,456)
KADOC Ltd ¹	939,902,229,105	218,018,000,211	102,053,137,757	(8,596,615,760)
KNOC Sumatra Ltd. ²	1,624,016,256	-	-	1,063,430,379
KNOC Yemen Ltd. ²	13,186,712	-	-	-
KNOC Trading Singapore Pte. Ltd.	686,414,184	195,424,166	491,878,837	74,930,945
KNOC Service	1,591,712,328	1,119,990,595	4,402,603,691	5,836,976

¹ The amounts presented are after reflecting the difference between the fair value and the book value that arose during the business combination.

² The entity is in the process of liquidation as of December 31, 2020.

Korea National Oil Corporation and its subsidiaries
Notes to the consolidated financial statements
December 31, 2020 and 2019

1.2 Consolidated subsidiaries (cont'd)

(in Korean won)

Subsidiary name	2019			
	Assets	Liabilities	Revenue	Profit (loss) for the year
ANKOR E&P Holdings Corp.	\ 458,117,682,331 \	\ 202,504,287,239 \	\ 106,456,792,295 \	13,813,665,004
Dana Petroleum Limited ¹	2,908,747,825,043	1,683,849,806,839	1,277,072,045,730	150,443,248,159
KNOC Eagle Ford Corporation	2,713,454,703,094	585,691,411,095	359,524,834,189	74,762,599,776
Harvest Operations Corp.	2,681,161,729,641	3,175,755,374,775	310,288,485,225	2,388,119,656
KNOC Kaz B.V. ¹	787,546,928,913	573,650,640,634	279,684,849,272	86,474,382,872
KNOC Sumatra Ltd. ²	684,824,806	-	-	60,194
KNOC Yemen Ltd. ²	14,032,698	-	-	-
KNOC Trading Singapore Pte. Ltd.	483,723,398	46,222,595	411,183,003	54,405,175
KNOC Service ³	476,754,496	10,869,739	-	(34,115,230)

¹ The amounts presented are after reflecting the difference between the fair value and the book value that arose during the business combination.

² The entity is in the process of liquidation as of December 31, 2019.

³ The entity was newly established for the year ended December 31, 2019, and its main business is the maintenance of the headquarter building.

The changes in the scope of consolidation during 2020 are as follows:

	Changes	Reason
KADOC Ltd	Included in the consolidation	Business combination

Korea National Oil Corporation and its subsidiaries

Notes to the consolidated financial statements

December 31, 2020 and 2019

2. Basis of Preparation and Changes in Accounting Policies

2.1 Statement of compliance

The consolidated financial statements of the Korea National Oil Corporation (the "Parent Company") and its subsidiaries (collectively referred to as the "Group") have been prepared in accordance with the Rules for Accounting Affairs of Public Corporations and Quasi-governmental Institutions in the Republic of Korea. Pursuant to its Article 2-5, the Group applies Korean International Financial Reporting Standards ("KIFRS"), a standard adopted in accordance with International Financial Reporting Standards by the Korean Accounting Standards Board, for specific accounting treatments that are not prescribed by the Rules for Accounting Affairs of Public Corporations and Quasi-governmental Institutions in the Republic of Korea. There are no accounts of which accounting treatment is materially different compared to KIFRS in order for the Group to be in full compliance with the Rules for Accounting Affairs of Public Corporations and Quasi-governmental Institutions in the Republic of Korea.

The accompanying consolidated financial statements have been translated into English from Korean consolidated financial statements. In the event of any differences in interpreting the consolidated financial statements or the independent auditor's report thereon, Korean version, which is used for regulatory reporting purposes, shall prevail.

(a) Basis of measurement

The consolidated financial statements have been prepared on the historical cost basis, except for the following material items in the statement of financial position:

- ✓ derivative financial instruments measured at fair value
- ✓ financial assets measured at fair value through profit or loss
- ✓ financial assets measured at fair value through other comprehensive income
- ✓ financial liabilities measured at fair value through profit or loss
- ✓ Investments in associates and joint ventures measured at fair value
- ✓ liabilities for defined benefit plans recognized at the net of the total present value of defined benefit obligations less the fair value of plan assets
- ✓ land classified as property, plant and equipment measured at fair value according to the revaluation model.

(b) Functional and presentation currency

Items included in the consolidated financial statements of each of the Group's entities are measured using the currency of the primary economic environment in which the entity operates (the 'functional currency'). The accompanying consolidated financial statements are prepared in the Group's functional currency, the United States dollar, and presented in Korean won, the Group's presentation currency, for the financial reporting purposes in accordance with KIFRS 1021 *The Effects of Changes in Foreign Exchange Rates*. The Group is required to present its financial statements in Korean won in accordance with regulations in the Republic of Korea.

Assets and liabilities for each statement of financial position presented (i.e. including comparatives) were translated at the closing rate at the date of that statement of financial position, income and expenses for

Korea National Oil Corporation and its subsidiaries

Notes to the consolidated financial statements

December 31, 2020 and 2019

2.1 Statement of compliance (cont'd)

each statement presenting profit or loss and other comprehensive income (i.e. including comparatives) were translated at the average exchange rates of the period and all resulting exchange differences were recognized in other comprehensive income.

(c) Estimation and judgement

To prevent the spread of COVID-19 around the world, a variety of prevention and control measures such as factory closure, self-isolation, entry restrictions, and travel restrictions are being implemented worldwide. The ultimate impact of COVID-19 pandemic on the Group's operations is currently unknown and is expected to vary depending on future developments. The duration and severity of COVID-19 are uncertain and unpredictable, and the protective measures of the government or the Group may result in substantial business disruption and decrease in business size. The financial impact therefrom is not reasonably estimable, but management expects that most of the regions and operating sectors in which the Group operates will be affected to some extent. The Group was unable to reasonably estimate the impact of COVID-19 on the Group's consolidated financial statements as of December 31, 2020, and the resulting effects have not been reflected in the consolidated financial statements.

2.2 New standards and interpretations not yet adopted by the Group

There are no certain new accounting standards and interpretations that have been published that are not mandatory for annual reporting period commencing January 1, 2020 and have not been early adopted by the Group.

2.3 New and amended standards adopted by the Group

The Group has applied the following standards and amendments for the first time for their annual reporting period commencing January 1, 2020.

(a) Amendment to KIFRS 1107 *Financial Instruments: Disclosure*, KIFRS 1109 *Financial Instruments* and KIFRS 1039 *Financial Instruments: Recognition and Measurement - Interest Rate Benchmark Reform*

The amendments to KIFRS 1109 *Financial Instruments* and KIFRS 1039 *Financial Instruments: Recognition and Measurement* provide a number of reliefs, which apply to all hedging relationships that are directly affected by interest rate benchmark reform. A hedging relationship is affected if the reform gives rise to uncertainty about the timing and/or amount of benchmark-based cash flows of the hedged item or the hedging instrument. These amendments have no impact on the financial statements of the Group as it does not have any interest rate hedge relationships.

The Group plans to replace Libor interest rates with SOFR rates by joining the ISDA IBOR Fallback Protocol. Interest rate hedging-related borrowing contracts contracted as of the reporting date are subject to the interest rate of April 2023 as the maturity is July 2023, so it is not expected to be affected by the cessation

Korea National Oil Corporation and its subsidiaries

Notes to the consolidated financial statements

December 31, 2020 and 2019

2.3 New and amended standards adopted by the Group (cont'd)

of Libor. Also, the Group does not apply these amendments early. Therefore, there is no significant impact of the amendment on the consolidated financial statements of the Group.

(b) Amendments to KIFRS 1103 *Business Combinations: Definition of a Business*

The amendment to KIFRS 1103 *Business Combinations* clarifies that to be considered a business, an integrated set of activities and assets must include, at a minimum, an input and a substantive process that, together, significantly contribute to the ability to create output. Furthermore, it provides specific guidance and illustrative cases. The assessment method has been established to decide if the acquired subject is a 'business' or 'individual asset.' These amendments had no impact on the consolidated financial statements of the Group.

(c) Amendments to KIFRS 1001 and KIFRS 1008 Definition of Material

The amendments provide a new definition of material that states, "information is material if omitting, misstating or obscuring it could reasonably be expected to influence decisions that the primary users of general purpose financial statements make on the basis of those financial statements, which provide financial information about a specific reporting entity." The amendments clarify that materiality will depend on the nature or magnitude of information, either individually or in combination with other information, in the context of the financial statements. A misstatement of information is material if it could reasonably be expected to influence decisions made by the primary users. These amendments had no impact on the consolidated financial statements of, nor is there expected to be any future impact to the Group.

(d) Conceptual Framework for Financial Reporting issued on 2018

The Conceptual Framework is not a standard, and none of the concepts contained therein override the concepts or requirements in any standard. The purpose of the Conceptual Framework is to assist the IASB in developing standards, to help preparers develop consistent accounting policies where there is no applicable standard in place and to assist all parties to understand and interpret the standards. This will affect those entities which developed their accounting policies based on the Conceptual Framework. The revised Conceptual Framework includes some new concepts, updated definitions and recognition criteria for assets and liabilities and clarifies some important concepts. These amendments had no impact on the consolidated financial statements of the Group.

(e) Amendments to KIFRS 1116 Leases COVID-19 Related Rent Concessions

On May 28, 2020, the IASB issued COVID-19-Related Rent Concessions - amendment to KIFRS 1116 Leases. The amendments provide relief to lessees from applying KIFRS 1116 guidance on lease modification accounting for rent concessions arising as a direct consequence of the COVID-19 pandemic. As a practical expedient, a lessee may elect not to assess whether a COVID-19 related rent concession from a lessor is a lease modification. A lessee that makes this election accounts for any change in lease payments resulting from the COVID-19 related rent concession the same way it would account for the change under KIFRS 1116, if the change were not a lease modification. The amendment applies to annual reporting periods beginning on or after June 1, 2020. Earlier application is permitted. This amendment had no impact on the consolidated financial statements of the Group.

Korea National Oil Corporation and its subsidiaries

Notes to the consolidated financial statements

December 31, 2020 and 2019

2.4 Significant accounting policies

The significant accounting policies applied by the Group in preparation of its consolidated financial statements are included below. The accounting policies set out below have been applied consistently to all periods presented in these consolidated financial statements, except for new and amended standards adopted by the Group as explained in Note 2.3 and changes in accounting policies as explained in Note 51.

(a) Basis of consolidation

(i) Non-controlling interests

Non-controlling interests are measured at their proportionate share of the acquiree's identifiable net assets at the date of acquisition. Changes in the Group's interest in a subsidiary that do not result in a loss of control are accounted for as equity transactions.

(ii) Subsidiaries

Subsidiaries are entities controlled by the Group. The Group controls an entity when it is exposed to, or has rights to, variable returns from its involvement with the entity and has the ability to affect those returns through its power over the entity. The financial statements of subsidiaries are included in the consolidated financial statements from the date on which control commences until the date on which control ceases.

(iii) Loss of control

When the Group loses control over a subsidiary, it derecognizes the assets and liabilities of the subsidiary, and any related non-controlling interests and other components of equity. Any resulting gain or loss is recognized in profit or loss. Any interest retained in the former subsidiary is measured at fair value when control is lost.

(iv) Interests in equity-accounted investees

The Group's interests in equity-accounted investees comprise interests in associates and a joint venture. Associates are those entities in which the Group has significant influence, but not control or joint control, over the financial and operating policies. A joint venture is an arrangement in which the Group has joint control, whereby the Group has rights to the net assets of the arrangement, rather than rights to its assets and obligations for its liabilities.

Interests in associates and the joint venture are accounted for using the equity method. They are initially recognized at cost, which includes transaction costs. Subsequent to initial recognition, the consolidated financial statements include the Group's share of the profit or loss and OCI of equity-accounted investees, until the date on which significant influence or joint control ceases.

Korea National Oil Corporation and its subsidiaries

Notes to the consolidated financial statements

December 31, 2020 and 2019

2.4 Significant accounting policies (cont'd)

(v) Transactions eliminated on consolidation

Intra-group balances and transactions, and any unrealized income and expenses arising from intra-group transactions, are eliminated. Unrealized gains arising from transactions with equity-accounted investees are eliminated against the investment to the extent of the Group's interest in the investee. Unrealized losses are eliminated in the same way as unrealized gains, but only to the extent that there is no evidence of impairment.

(b) Business combination

The acquisition method of accounting is used to account for business combinations by the Group. The consideration transferred in a business combination is measured at the fair values, at the acquisition date (transfer date), of the assets transferred with controlling interest in the acquired entity, liabilities issued or borne by the Group to the former owners of the acquired entity and equity interests issued by the Group in exchange for control of the acquired entity. Acquisition-related costs are generally recognized in profit or loss as incurred.

The identifiable assets acquired and liabilities and contingent liabilities assumed in a business combination are measured initially at their fair values at the acquisition date except that:

- deferred tax assets and liabilities and assets and liabilities related to employ benefit arrangements are recognized and measured in accordance with KIFRS 1012 *Income Tax* and KIFRS 1019 *Employee Benefits*, respectively;
- liabilities and equity instruments incurred due to replacing the share-based payment of the acquired entity with the share-based payment of the Group are measured in accordance with KIFRS 1102 *Share-based Payment*; and
- non-current assets (or disposal groups comprising assets and liabilities) classified as available-for-sale assets pursuant to KIFRS 1105 *Non-current Assets Held for Sale and Discontinued Operations* are measured in accordance with KIFRS 1105 *Non-current Assets Held for Sale and Discontinued Operations*.

Korea National Oil Corporation and its subsidiaries

Notes to the consolidated financial statements

December 31, 2020 and 2019

2.4 Significant accounting policies (cont'd)

Goodwill is measured as the excess of the sum of the consideration transferred, the amount of any non-controlling interests in the acquired entity, and the fair value of the Group's previously held equity interest in the acquired entity (if any) over the net of the acquisition-date amounts of the identifiable assets acquired and the liabilities assumed. If, after reassessment, the net of the acquisition-date amounts of the identifiable assets acquired and liabilities assumed exceeds the sum of the consideration transferred, the amount of any non-controlling interest in the acquired entity and the fair value of the Group's previously held interest in the acquire (if any), the excess is recognized immediately in profit or loss as a bargain purchase gain.

Non-controlling interests that present ownership interests and entitle their holders to a proportionate share of the entity's net assets in the event of liquidation may be initially measured either at fair value or at the non-controlling interests' proportionate share of the recognized amounts of the acquired entity's identifiable net assets. The choice of measurement basis is made on a transaction-by-transaction basis. Other types of non-controlling interests are measured at fair value or, when applicable, on other basis specified in KIFRS.

The Group's consideration transferred includes the assets and liabilities on a contingent consideration agreement. The contingent consideration is measured at its fair value at the acquisition date and is included as a part of the consideration transferred in a business combination. Changes in the fair value of the contingent consideration that qualify as measurement period adjustments are adjusted retrospectively, with corresponding adjustments against goodwill. Measurement period adjustments are the adjustments resulted from obtaining additional information on any fact and circumstance that existed at the acquisition date during the 'adjustment period (which cannot exceed one year from the acquisition date)'.

The subsequent accounting for changes in fair value of the contingent consideration, which does qualify as measurement period adjustments, depends on how the contingent consideration is classified. Contingent consideration that is classified as equity is not remeasured at the subsequent reporting dates and its subsequent settlement is accounted for within equity. Contingent consideration that is classified as an asset or a liability is remeasured at the subsequent reporting dates in accordance with KIFRS 1109 *Financial Instruments* or KIFRS 1037 *Provisions, Contingent Liabilities and Contingent Assets*, as appropriate, with the corresponding gain or loss being recognized in profit or loss.

When a business combination is achieved in stages, the Group's previously held equity interest in the acquired entity is remeasured at fair value at the acquisition date (i.e., the date when the Group obtains control) and the resulting gain or loss, if any, is recognized in profit or loss. The amounts arising from interests in the acquisition prior to the acquisition date that have previously been recognized in other comprehensive income are reclassified to profit or loss where such treatment would be appropriate if that interests were disposed of.

Korea National Oil Corporation and its subsidiaries

Notes to the consolidated financial statements

December 31, 2020 and 2019

2.4 Significant accounting policies (cont'd)

If the initial recognition of the business combination has not been completed until the end of the reporting period in which the combination occurs, the Group reports provisional amounts for the items for which the accounting is incomplete. Those provisional amounts are adjusted during the measurement period (see above), or additional assets or liabilities are recognized, to reflect new information obtained on the facts and circumstances that existed at the acquisition date that, if known, would have affected the amounts recognized at that date.

(c) Investments in associates

An associate is an entity that is not a subsidiary or joint venture of the Group, and over which the Group has significant influence. The Group has a significant influence over an associate when:

- the Group participates in the Board of Directors or such decision-making bodies of the investee;
- the Group participates in making decisions on policies including decisions on dividend payment and other distribution;
- the Group has a material transaction with the investee;
- the Group has a mutual interaction of management with the investee; and
- the Group shares essential information on technology with the investee.

The results and assets and liabilities of associates are incorporated in these consolidated financial statements using the equity method of accounting, except when the investment is classified as held for sale, in which case it is accounted for in accordance with KIFRS 1105 *Non-current Assets Held for Sale and Discontinued Operations*. Under the equity method, an investment in an associate is initially recognized in the consolidated statement of financial position at cost and adjusted thereafter to recognize the Parent Company's share of the profit or loss and other comprehensive income of the associate. When the Parent Company's share of losses of an associate exceeds the Parent Company's interest in that associate (which includes any long-term interests that, in substance, form part of the Parent Company's net investment in the associate), the Parent Company discontinues recognizing its share of further losses. Additional losses are recognized only to the extent that the Parent Company has incurred legal or constructive obligations or made payments on behalf of the associate.

Any excess of the cost of acquisition over the Parent Company's share of the net fair value of the identifiable assets, liabilities and contingent liabilities of an associate recognized at the date of acquisition is recognized as goodwill, which is included within the carrying amount of the investment. Any excess of the Parent Company's share of the net fair value of the identifiable assets, liabilities and contingent liabilities over the cost of acquisition, after reassessment, is recognized immediately in profit or loss.

Korea National Oil Corporation and its subsidiaries

Notes to the consolidated financial statements

December 31, 2020 and 2019

2.4 Significant accounting policies (cont'd)

The requirements of KIFRS 1109 *Financial Instruments* are applied to determine whether it is necessary to recognize any impairment loss with respect to the Group's investment in an associate. When necessary, the entire carrying amount of the investment as a single asset (including goodwill) is tested for impairment in accordance with KIFRS 1036 *Impairment of Assets* by comparing its recoverable amount (higher of value in use and fair value less costs to sell) with its carrying amount, and any impairment loss recognized forms part of the carrying amount of the investment. Any reversal of that impairment loss is recognized in accordance with KIFRS 1036 to the extent that the recoverable amount of the investment subsequently increases.

When an entity has transactions with an associate of the Group, profits and losses resulting from the transactions with the associate are recognized in the Parent Company's consolidated financial statements only to the extent of interests in the associate that are not related to the Group.

(d) Investments in joint ventures

A joint arrangement is an arrangement for the Group and other parties to perform economic activities that are subject to a joint control. A joint control requires a unanimous consent of the parties sharing the control on the decisions related to the major financial and operational policies on the joint arrangement.

In case of that the Group performs the economic activities in accordance with the joint arrangement, the Group's share of a joint venture and the Group's share of the liabilities that the Group incurred jointly with other parties are recognized in the joint venture's financial statement and classified by nature. The liabilities and expenses incurred directly in relation to the Group's share of a joint venture are recognized on accrual basis. The Group recognizes its share of revenues incurred due to sales or use of its share of the joint venture's business results and the its share of costs incurred by the joint venture when it is highly possible that the economic benefits related to such transactions will flow into or out and the amounts can be measured reliably.

The Group's share of a joint venture is incorporated in the consolidated financial statements using the equity method of accounting, except when the investment share is classified as held for sale, in which case it is accounted for in accordance with KIFRS 1105 *Non-current Assets Held for Sale and Discontinued Operations*.

Goodwill arising from acquiring a share of a joint venture is recognized in accordance with the Group's accounting policies on goodwill arising from a business combination. When the Group has a transaction with a joint venture, a gain or loss incurred from the transaction is recognized on the Group's financial statement only for the amounts that are the share of the joint venture not related to the Group.

Korea National Oil Corporation and its subsidiaries

Notes to the consolidated financial statements

December 31, 2020 and 2019

2.4 Significant accounting policies (cont'd)

(e) Goodwill

Goodwill arising on an acquisition of a business is carried at cost as established at the date of acquisition of the business, less accumulated impairment losses, if any. For impairment testing, goodwill is allocated to cash-generating units (or groups of cash-generating units) of the Group that were expected, at the date of acquisition, to benefit from the synergies of the combination giving rise to the goodwill.

A cash-generating unit to which goodwill has been allocated is tested for impairment annually or more frequently when there is an indication that the unit may be impaired. If the recoverable amount of the cash-generating unit is less than its carrying amount, the impairment loss is allocated first to reduce the carrying amount of any goodwill allocated to the unit and then to the other assets of the unit on a pro rata basis based on the carrying amount of each asset in the unit. Any impairment loss for goodwill is recognized directly in profit or loss in the consolidated statement of comprehensive income. An impairment loss recognized for goodwill is not reversed in subsequent periods.

On disposal of the relevant cash-generating unit, the allocated amount of goodwill is included in the determination of the profit or loss on disposal. The Group's accounting policies with respect to the goodwill arising from acquisition of an affiliate are stated in the Note 2.4 (b).

(f) Non-current assets held for sale

The Group classifies non-current assets or disposal groups as held for sale if their carrying amounts will be recovered principally through a sale rather than through continuing use. These conditions are considered met only when the non-current asset (or disposal group) must be available for immediate sale in its present condition and it is highly probable that it will be sold. Management should commit to a plan for the sale of the asset and should be expected to meet the sale completion requirements within one year from the time of classification.

In the event that the Group commits to a sale plan that results in loss of control over a subsidiary, the Group has all of the above-mentioned conditions, regardless of whether the Group holds a non-controlling interest in the previous subsidiary after the sale. Assets and liabilities are classified as held for sale.

Such non-current assets and disposal groups classified as held for sale are measured at the lower of their carrying amount and fair value less costs to sell or to distribute.

(g) Revenue

Under the new standard, KIFRS 1115, the Group recognizes revenue base on the five-step approach (Step 1: Identify the contract(s) with a customer, Step 2: Identify the performance obligations in the contract, Step 3: Determine the transaction price, Step 4: Allocate the transaction price to the performance obligations in the contract, Step 5: Recognize revenue when the entity satisfied a performance obligation) is applied for all types of contracts or agreements. Revenue is measured based on the consideration defined by the contracts with customers, and the amount collected as an agent of a third party is excluded. In addition, the Group recognizes revenue when the control over the goods or service is transferred to the customer.

Korea National Oil Corporation and its subsidiaries

Notes to the consolidated financial statements

December 31, 2020 and 2019

2.4 Significant accounting policies (cont'd)

i) Sale of goods

The contracts which the Group entered with customers for the sale of crude oil and others contain a single performance obligation. Depending on sales contract with customers, performance obligation can be distinguished as 'performance obligation satisfied at a point in time' and 'performance obligation satisfied over time'. In the case of 'performance obligation satisfied at a point in time', the Group has concluded that revenue to be recognized at the time of delivery because control of goods is transferred at a point in time of delivery. Also, in the case of 'performance obligation satisfied over time', although revenue should be recognized by measuring progress towards complete satisfaction of a performance obligation, the Group has applied practical expedient allowed under KIFRS 1115 in relation to measuring progress.

ii) Rendering of services

The Group provides services such as lending stockpile oil resources, storing oil resources, and leasing related facilities. Service contract contains a large number of performance obligations whose promises with customers are distinct within the context of the contract and separately identifiable. The Group has determined that service contract contains 'performance obligation satisfied over time', and applied practical expedient of measuring progress allowed under KIFRS 1115.

(h) Leases

The lessor classifies the lease contract as an operating lease or a financial lease depending on the substance of the transaction, and accounting treatment differs according to the classification.

In accordance with the amendment of the standard, lessee applies a single lease model and recognizes assets and liabilities for all lease which lease term is over 12 months and underlying assets are not low value assets. A lessee is required to recognize a right-of-use asset representing its right to use the underlying leased asset and a lease liability representing its obligation to make lease payments.

For a contract that is, or contains, a lease, the Group shall account for each lease component within the contract as a lease separately from non-lease components of the contract. However, the Group accounts for each lease components and non-lease components as a single lease components without separating the non-lease components from the lease components as a lessee applying the practical expedients.

i) The Group as a lessor

A lease in which the risks and rewards of ownership of the underlying asset are not transferred to the Group is classified as a finance lease, and leases in which the risks and rewards of ownership of the underlying asset are not transferred to the Group are classified as an operating lease.

The Group recognizes the amount equivalent to the net investment in the leases as finance lease receivables. Uncollected part of net investment is recognized as interest income applying the effective interest rate.

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2.4 Significant accounting policies (cont'd)

Lease income from operating leases is recognized in income on a straight-line basis over the lease term. Initial direct costs incurred in negotiating and arranging an operating lease are added to the carrying amount of the lease asset and recognized as expense over the lease term on the same basis as lease income.

ii) The Group as a lessee

Lessee applies a single lease model and recognizes assets and liabilities for all lease which lease term is over 12 months and underlying assets are not low value assets. A lessee is required to recognize a right-of-use asset representing its right to use the underlying leased asset and a lease liability representing its obligation to make lease payments.

- Right-of-use asset

At the commencement date, the Group recognizes right-of-use assets at cost. After the commencement date, the Group measures the right-of-use assets at their costs: (a) less accumulated depreciation and any accumulated impairment losses; and (b) adjusted for any remeasurement of the lease liability. For land, the Group applies the revaluation model, but land-related right-of-use assets are measured at cost.

The cost of the right-of-use assets comprises (a) the amount of the initial measurement of the lease liability, (b) any initial direct costs incurred by the lessee, (c) any lease payments made at or before the commencement date, less any lease incentives received, and (d) an estimate of costs to be incurred by the lessee in dismantling and removing the underlying asset. If the lease does not transfer ownership of the underlying asset to the Group by the end of the lease term, the Group shall depreciate the right-of-use asset from the commencement date to the earlier of the end of the useful life of the right-of-use asset or the end of the lease term. The Group shall apply KIFRS 1036 Impairment of Assets to determine whether the right-of-use asset is impaired and to account for any impairment loss identified.

- Lease liability

The Group measures the lease liability at the present value of the lease payments for the right to use the underlying asset during the lease term that are not paid at the commencement date. Lease payments comprise the following payments:

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

Variable lease payments, which do not depend on the index or a rate, are recognized as an expense as incurred.

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2.4 Significant accounting policies (cont'd)

When measuring the lease liability at the present value of the lease payments, the lease payments shall be discounted using the lessee's incremental borrowing rate if the interest rate implicit in the lease cannot be readily determined. After the commencement date, the Group increases the carrying amount of the lease liability by reflecting the interest on the lease liability and reduces the carrying amount of the lease liability by reflecting the lease payments. In addition, the Group remeasures the lease liability to reflect any reassessment or lease modifications, or to reflect revised in-substance fixed lease payments.

- Short-term leases and leases of low-value assets

The Group elects to apply recognition exemptions to short-term leases (leases that, at the commencement date, have a lease term of 12 months or less and do not contain a purchase option) and leases for which the underlying asset is of low value (i.e., below \$ 5,000). Payments of short-term leases and leases for which the underlying asset is of low-value are recognized as an expense on a straight-line basis over the lease term.

The carrying amounts of the right-of-use assets and lease liabilities as of the reporting date and their changes during the reporting period are explained in Note 23.

(i) Foreign currencies

Transactions in foreign currencies are translated to the respective functional currencies of the Group entities at exchange rates at the dates of the transactions. Monetary assets and liabilities denominated in foreign currencies are retranslated to the functional currency using the reporting date's exchange rate. Non-monetary assets and liabilities denominated in foreign currencies that are measured at fair value are retranslated to the functional currency at the exchange rate at the date that the fair value was determined. Non-monetary assets and liabilities denominated in foreign currencies that are measured in terms of historical cost in a foreign currency are translated using the exchange rate at the dates of the transactions.

Foreign currency differences arising on retranslation are recognized in profit or loss, except for differences arising on the retranslation of available-for-sale equity instruments, a financial liability designated as a hedge of the net investment in a foreign operation, or qualifying cash flow hedges, which are recognized in other comprehensive income. When gains or losses on non-monetary items are recognized in other comprehensive income, exchange components of those gains or losses are recognized in other comprehensive income. Conversely, when gains or losses on non-monetary items are recognized in profit or loss, exchange components of those gains or losses are recognized in profit or loss.

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2.4 Significant accounting policies (cont'd)

(j) Borrowing costs

The Group capitalizes borrowing costs directly attributable to the acquisition, construction or production of a qualifying asset as part of the cost of that asset. Other borrowing costs are recognized in expense as incurred. A qualifying asset is an asset that requires a substantial period of time to get ready for its intended use or sale. Financial assets and inventories that are manufactured or otherwise produced over a short period of time are not qualifying assets. Assets that are ready for their intended use or sale when acquired are not qualifying assets.

To the extent that the Group borrows funds specifically for the purpose of obtaining a qualifying asset, the Group determines the amount of borrowing costs eligible for capitalization as the actual borrowing costs incurred on that borrowing during the period less any investment income on the temporary investment of those borrowings. To the extent that the Group borrows funds generally and uses them for the purpose of obtaining a qualifying asset, the Group shall determine the amount of borrowing costs eligible for capitalization by applying a capitalization rate to the expenditures on that asset. The capitalization rate shall be the weighted average of the borrowing costs applicable to the borrowings of the Group that are outstanding during the period, other than borrowings made specifically for the purpose of obtaining a qualifying asset. The amount of borrowing costs that the Group capitalizes during a period shall not exceed the amount of borrowing costs incurred during that period.

(k) Government grants

Government grants are not recognized until there is reasonable assurance that the Group complies with the conditions relating to the grants and that the grants will be received. The benefits of government grants with interest rates lower than the market interest rate are treated as government grants. The difference between the fair value of government grants based on the market interest rate and the consideration received are accounted for as government grants.

Government grants related to assets are presented as a deduction of related assets. The related government grants are recognized as profit or loss in a way that decreases the depreciation over the expected lives of the related assets.

Government grants related to income are recognized in profit or loss on a systematic basis over the period to match with the related subsidized expenses. Government grants that are receivable as compensation for expenses or losses already incurred or for the purpose of giving immediate financial support to the Group with no future related costs are recognized in profit or loss in the period in which they become receivable.

Korea National Oil Corporation and its subsidiaries

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2.4 Significant accounting policies (cont'd)

(I) Employee benefits

i) Short-term employee benefits

Short-term employee benefits are employee benefits that are due to be settled within 12 months after the end of the period in which the employees render the related service. When an employee has rendered service to the Group during an accounting period, the Group recognizes the undiscounted amount of short-term employee benefits expected to be paid in exchange for that service.

ii) Retirement benefits: defined contribution plans

When an employee has rendered service to the Group during a period, the Group recognizes the contribution payable to a defined contribution plan in exchange for that service as a liability (accrued expense), after deducting any contribution already paid. If the contribution already paid exceeds the contribution due for service before the end of the reporting period, the Group recognizes that excess as an asset (prepaid expense) to the extent that the prepayment will lead to a reduction in future payments or a cash refund.

A defined benefit plan is a post-employment benefit plan other than a defined contribution plan. The Group's net obligation in respect of defined benefit plans is calculated by estimating the amount of future benefit that employees have earned in return for their service in the current and prior periods; that benefit is discounted to determine its present value. The fair value of plan assets is deducted. The calculation is performed annually by an independent actuary using the projected unit credit method.

The discount rate is the yield at the reporting date on high-quality corporate bonds that have maturity dates approximating the terms of the Group's obligations and that are denominated in the same currency in which the benefits are expected to be paid. The Group recognizes all actuarial gains and losses arising from actuarial assumption changes and experiential adjustments in other comprehensive income when incurred.

Re-measurements of net defined benefit liabilities, which comprise actuarial gains and losses, the return on plan assets (excluding interest) and the effect of the asset ceiling (if any, excluding interest), are recognized immediately in other comprehensive income. The Group determines the net interest expense (income) on the net defined benefit liability (asset) for the period by applying the discount rate used to measure the defined benefit obligation at the beginning of the annual period to the then-net defined benefit liability (asset), taking into account any changes in the net defined benefit liability (asset) during the period as a result of contributions and benefit payments, net interest expense and other expenses related to defined benefit plans are recognized in profit or loss.

When the benefits of a plan are changed or when a plan is curtailed, the resulting change in benefit that relates to past service or the gain or loss in curtailment is recognized immediately in profit or loss. The Group recognizes gains and losses on the settlement of a defined benefit plan when the settlement occurs.

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2.4 Significant accounting policies (cont'd)

(m) Income taxes

Income tax expense comprises current and deferred tax. Current tax and deferred tax are recognized in profit or loss except to the extent that it relates to a business combination, or items recognized directly in equity or in other comprehensive income.

i) Current tax

Current tax is the expected tax payable or receivable on the taxable profit or loss for the year, using tax rates enacted or substantively enacted at the end of the reporting period and any adjustment to tax payable in respect of previous years. The taxable profit is different from the accounting profit for the period since the taxable profit is calculated excluding the temporary differences, which will be taxable or deductible in determining taxable profit (tax loss) of future periods, and non-taxable or non-deductible items from the accounting profit.

ii) Deferred tax

The measurement of deferred tax assets and deferred tax liabilities reflects the tax consequences that would follow from the manner in which the Group expects, at the end of the reporting period, to recover or settle the carrying amount of its assets and liabilities. The Group recognizes a deferred tax liability for all taxable temporary differences associated with investments in subsidiaries, associates, and interests in joint ventures, except to the extent that the Group is able to control the timing of the reversal of the temporary difference and it is probable that the temporary difference will not reverse in the foreseeable future. In addition, the Group recognizes a deferred tax asset for all deductible temporary differences to the extent that it is probable that the temporary difference will reverse in the foreseeable future and taxable profit will be available against which the temporary difference can be utilized.

The carrying amount of a deferred tax asset is reviewed at the end of each reporting period and reduces the carrying amount to the extent that it is no longer probable that sufficient taxable profit will be available to allow the benefit of part or all of that deferred tax asset to be utilized. Deferred tax assets and liabilities are measured at the tax rates that are expected to apply to the period when the asset is realized or the liability is settled, based on tax rates (and tax laws) that have been enacted or substantively enacted by the end of the reporting period.

Deferred tax assets and liabilities are offset only if there is a legally enforceable right to offset the related current tax liabilities and assets, and they relate to income taxes levied by the same tax authority and they intend to settle current tax liabilities and assets on a net basis.

Korea National Oil Corporation and its subsidiaries

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2.4 Significant accounting policies (cont'd)

(n) Property, plant and equipment

Property, plant and equipment, except for land, are initially measured at cost and after initial recognition, are carried at cost less accumulated depreciation and accumulated impairment losses.

Land is carried at a revalued amount, being its fair value at the date of the revaluation less subsequent accumulated impairment losses. Revaluations shall be made with sufficient regularity to ensure that the carrying amount does not differ materially from that which would be determined using fair value at the end of the reporting period.

If an asset's carrying amount is increased as a result of a revaluation, the increase shall be recognised in other comprehensive income and accumulated in equity under the heading of revaluation surplus. However, the increase shall be recognised in profit or loss to the extent that it reverses a revaluation decrease of the same asset previously recognised in profit or loss. A revaluation deficit is recognized in the statement of comprehensive income (loss) to the extent that it offsets an existing surplus on the same asset recognized in the asset revaluation reserve.

The cost of property, plant and equipment includes expenditures arising directly from the construction or acquisition of the asset, any costs directly attributable to bringing the asset to the location and condition necessary for it to be capable of operating in the manner intended by management and the initial estimate of the costs of dismantling and removing the item and restoring the site on which it is located.

The following costs are capitalized as oil and gas properties.

- the costs incurred in development stage for constructing facilities and drilling wells for production
- the costs of acquiring production areas or fields with proved reserves
- the construction costs and other expenditures for initiating production
- the estimated costs for decommissioning

Additionally, the Group depreciates the acquisition costs of oil and gas properties which are aggregated on an area-by-area basis or field-by-field basis. For the costs of oil and gas properties which are aggregated on an area-by-area basis, the Group depreciates the acquisition costs using proved reserves as the total estimated production when applying the unit-of-production depreciation method.

For the costs of oil and gas properties which are aggregated on a field-by-field basis, the Group depreciates the acquisition costs using proved developed reserves as the total estimated production when applying the unit-of-production depreciation method.

Costs related to undeveloped oil and gas properties are not immediately included in the depletable pool of developed assets but are transferred to the depletable pool as the reserves become proved (for area-by-area basis) or developed (for field-by-filed basis) through drilling activities.

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2.4 Significant accounting policies (cont'd)

Subsequent costs are recognized in the carrying amount of property, plant and equipment at cost or, if appropriate, as separated items if it is probable that future economic benefits associated with the item will flow to the Group and the cost of the item can be measured reliably. The carrying amount of the replaced part is derecognized. The costs of the day-to-day servicing are recognized in profit or loss as incurred.

Property, plant and equipment, except for land and oil and gas properties, are depreciated on a straight-line basis over estimated useful lives that appropriately reflect the pattern in which the asset's future economic benefits are expected to be consumed.

	<u>Useful lives</u>
Buildings	20 - 40 years
Structures	20 - 40
Machinery	5 - 20
Tools and fixtures	5 - 12
Vehicles	5 - 12
Right-of-use assets	1 - 40
Others	5 - 10

Gains and losses on disposal of an item of property, plant and equipment are determined by comparing the proceeds from disposal with the carrying amount of property, plant and equipment and are recognized in profit or loss. Depreciation methods, useful lives and residual values are reviewed at the end of each reporting date and adjusted, if appropriate. The change is accounted for as a change in an accounting estimate.

(o) Intangible assets other than goodwill

Intangible assets other than goodwill with finite useful lives acquired separately are carried at cost. Intangible assets other than goodwill acquired in a business combination are initially recognized at their fair value at the acquisition date (which is regarded as their cost). Subsequent to initial recognition, intangible assets acquired in a business combination are reported at cost less accumulated amortization and accumulated impairment losses.

Prior to acquiring the legal rights to explore an area, all costs related to exploration and evaluation of an area are charged directly to the statement of comprehensive loss. Once the legal rights to explore are acquired, all costs associated with acquisition of exploration rights, geological, geophysical and geographical research, drilling costs and evaluation of technical and commercial viability of economic production are capitalized as exploration and evaluation assets. All such costs are subject to review for impairment when facts and circumstances suggest that the carrying amount of the assets exceeds their recoverable amount. When technical feasibility and commercial viability are established, the relevant expenditure is transferred to oil and gas properties after impairment is assessed and any resulting impairment loss is recognized. If no potentially commercial petroleum is discovered from exploration drilling, the relating exploration and evaluation assets are written off through the statement of comprehensive loss.

Korea National Oil Corporation and its subsidiaries

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2.4 Significant accounting policies (cont'd)

The useful lives of intangible assets other than goodwill are assessed as either finite or indefinite. Intangible assets other than goodwill with finite lives are amortized over the useful economic life and assessed for impairment whenever there is an indication that the intangible asset other than goodwill may be impaired. The amortization period and the amortization method for intangible assets other than goodwill with a finite useful lives are reviewed at least each financial year end. Changes in the expected useful life or the expected pattern of consumption of future economic benefits embodied in the asset is accounted for by changing the amortization period or method, as appropriate, and are treated as changes in accounting estimates. The amortization expense on intangible assets other than goodwill with finite lives is recognized in the statement of comprehensive income in the expense category consistent with the function of the intangible asset other than goodwill.

When future economic benefits are not expected through the use or disposition of intangible assets other than goodwill, the Group removes the book value of the assets from the consolidated statements of financial position. The difference between the amounts received from the disposal and the book values of assets is recognized in profit or loss when the assets are removed.

(p) Oil stockpiles

The Group stockpiles crude oil and petroleum products to stabilize domestic demand and market prices and classifies those assets as oil stockpiles (non-current non-financial assets) of which the cost is determined using the moving-average method. The Group performs annual impairment test for oil stockpiles.

(q) Impairment of non-financial assets

The carrying amounts of the Group's non-financial assets, other than assets arising from employee benefits, inventories, deferred tax assets and non-current assets held for sale, are reviewed at the end of the reporting period to determine whether there is any indication of impairment. If any such indication exists, then the asset's recoverable amount is estimated. Intangible assets other than goodwill that have indefinite useful lives or that are not yet available for use, irrespective of whether there is any indication of impairment, are tested for impairment annually by comparing their recoverable amount to their carrying amount.

For impairment testing, assets are grouped together into the smallest group of assets that generates cash inflows that are largely independent of the cash inflows from other assets or groups of assets ("CGUs"). The recoverable amount of an asset or CGU is the greater of its value in use and its fair value less costs to sell. The value in use is estimated by applying a pre-tax discount rate that reflect current market assessments of the time value of money and the risks specific to the asset or CGU for which estimated future cash flows have not been adjusted, to the estimated future cash flows expected to be generated by the asset or CGU.

Korea National Oil Corporation and its subsidiaries

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2.4 Significant accounting policies (cont'd)

An impairment loss is recognized in profit or loss if the carrying amount of an asset or a CGU exceeds its recoverable amount. When reversing the impairment loss in prior periods, the carrying amount of an asset shall be lower of the modified recoverable amount and the carrying amount that would have been determined had no impairment loss been recognized for the asset in prior periods. Reversed amount should be accounted as profit or loss immediately.

(r) Inventories

Inventories are measured at the lower of cost and net realizable value. The cost of inventories is based on the moving-weighted average method, and includes expenditures for acquiring the inventories, production or conversion costs and other costs incurred in bringing them to their existing location and condition. Net realizable value is the estimated selling price in the ordinary course of business, less the estimated costs of completion and selling expenses.

The amount of any write-down of inventories to net realizable value and all losses of inventories are recognized as an expense in the period the write-down or loss occurs. The amount of any reversal of any write-down of inventories, arising from an increase in net realizable value, are recognized as a reduction in the amount of inventories recognized as an expense in the period in which the reversal occurs.

(s) Provisions

Provisions are recognized when the Group has a present legal or constructive obligation as a result of a past event, it is probable that an outflow of resources embodying economic benefits will be required to settle the obligation and a reliable estimate can be made of the amount of the obligation.

The risks and uncertainties that inevitably surround many events and circumstances are taken into account in reaching the best estimate of a provision. Where the effect of the time value of money is material, provisions are determined at the present value of the expected future cash flows.

Where some or all of the expenditures required to settle a provision are expected to be reimbursed by another party, the reimbursement shall be recognized when, and only when, it is virtually certain that reimbursement will be received if the entity settles the obligation. The reimbursement shall be treated as a separated asset.

Provisions are reviewed at the end of each reporting period and adjusted to reflect the current best estimates. If it is no longer probable that an outflow of resources embodying economic benefits will be required to settle the obligation, the provision is reversed.

Korea National Oil Corporation and its subsidiaries

Notes to the consolidated financial statements

December 31, 2020 and 2019

2.4 Significant accounting policies (cont'd)

- Restoration costs

When there is a legal or contractual obligation for dismantling, removing facilities and restoring sites on which they are located to their original condition at the end of the useful lives of the facilities, the present value of the estimated future restoration costs is capitalized at the acquisition date as additions to the cost of oil and gas properties and are accounted for as a provision. The Group subsequently depreciates the restoration costs using the unit-of-production method and the difference between estimated restoration costs and their present value is charged to current operations by applying the effective-interest-rate method.

- Employee incentive

Based on the annual management performance, the Ministry of Strategy and Finance conducts an institutional evaluation and pays incentive based on the evaluation. Performance incentives are reasonably estimated in accordance with KIFRS 1037 and presented as provisions for employee benefits.

(t) Financial assets

i) Classification

The Group classifies its financial assets in the following measurement categories:

- those to be measured at fair value through profit or loss;
- those to be measured at fair value through other comprehensive income; and
- those to be measured at amortized cost.

The classification depends on the Group's business model for managing the financial assets and the contractual terms of the cash flows.

For financial assets measured at fair value, gains and losses will either be recorded in profit or loss or other comprehensive income. For investments in debt instruments, this will depend on the business model in which the investment is held. The Group reclassifies debt investments when, and only when its business model for managing those assets changes.

For investments in equity instruments that are not held for trading, this will depend on whether the Group has made an irrevocable election at the time of initial recognition to account for the equity investment at fair value through other comprehensive income.

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2.4 Significant accounting policies (cont'd)

ii) Measurement

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

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

A. Debt instruments

Subsequent measurement of debt instruments^F depends on the Group's business model for managing the asset and the cash flow characteristics of the asset. The Group classifies its debt instruments into one of the following three measurement categories:

- **Amortized cost:** Assets that are held for collection of contractual cash flows where those cash flows represent solely payments of principal and interest are measured at amortized cost. A gain or loss on a debt investment that is subsequently measured at amortized cost and is not part of a hedging relationship is recognized in profit or loss when the asset is derecognized or impaired. Interest income from these financial assets is included in 'finance income' using the effective interest rate method.
- **Fair value through other comprehensive income:** Assets that are held for collection of contractual cash flows and for selling the financial assets, where the assets' cash flows represent solely payments of principal and interest, are measured at fair value through other comprehensive income. Movements in the carrying amount are taken through other comprehensive income, except for the recognition of impairment loss (reversal of impairment loss), interest income and foreign exchange gains and losses which are recognized in profit or loss. When the financial asset is derecognized, the cumulative gain or loss previously recognized in other comprehensive income is reclassified from equity to profit or loss. Interest income from these financial assets is included in 'finance income' using the effective interest rate method. Foreign exchange gains and losses are presented in 'finance income or cost' and impairment losses are presented in 'finance cost'.
- **Fair value through profit or loss:** Assets that do not meet the criteria for amortized cost or fair value through other comprehensive income are measured at fair value through profit or loss. A gain or loss on a debt investment that is subsequently measured at fair value through profit or loss and is not part of a hedging relationship is recognized in profit or loss and presented net in the statement of profit or loss within 'finance income or cost' in the year in which it arises.

Korea National Oil Corporation and its subsidiaries

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2.4 Significant accounting policies (cont'd)

B. Equity instruments

The Group subsequently measures all equity investments at fair value. Where the Group's management has elected to present fair value gains and losses on equity investments, which held for long-term investment or strategic purpose, in other comprehensive income, there is no subsequent reclassification of fair value gains and losses to profit or loss following the derecognition of the investment. Dividend income from such investments continue to be recognized in profit or loss as 'finance income' when the right to receive payments is established.

Changes in the fair value of financial assets at fair value through profit or loss are recognized in 'finance income or cost' in the statement of profit or loss as applicable. Impairment loss (reversal of impairment loss) on equity investments measured at fair value through other comprehensive income are not reported separately from other changes in fair value.

(iii) Impairment

In respect of the impairment of financial assets, the Group accounts for expected credit losses at each reporting date, and changes in those expected credit losses to reflect changes in credit risk since initial recognition. That is, it is not necessary for a credit event to have occurred before credit losses are recognized.

The Group shall recognize expected credit losses as an allowance for bad debts on i) debt instruments subsequently measured at amortized cost or at fair value through other comprehensive income; ii) lease receivables; iii) contract assets; and iv) loan commitments and financial guarantee contracts under KIFRS 1109.

At each reporting date, the Group measures the loss allowance for a financial instrument at an amount equal to the lifetime expected credit losses if the credit risk on that financial instrument has increased significantly or the credit has been impaired upon the acquisition of assets since initial recognition. If, at the reporting date, the credit risk on a financial instrument has not increased significantly since initial recognition (except for financial assets whose credit has been impaired upon the acquisition), the Group measures the loss allowance for that financial instrument at an amount equal to 12-month expected credit losses.

Under KIFRS 1109, for trade receivables, contract assets and lease receivables that contain a significant financing component, the Group measures the loss allowance using the simplified approach at an amount equal to lifetime expected credit losses.

-Trade receivables

The Group applies the simplified approach to measure the loss allowance at an amount equal to lifetime expected credit losses for trade receivables.

Korea National Oil Corporation and its subsidiaries

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2.4 Significant accounting policies (cont'd)

- Debt investments

Debt investments at amortized cost and those at fair value through other comprehensive income are considered to be low risk, and thus the provision for impairment is determined as 12 months expected credit losses.

(iv) Derecognition

The Group derecognizes a financial asset only when the contractual rights to the cash flows from the asset expire or when it transfers the financial asset and substantially all the risks and rewards of ownership of the asset to another entity. If the Group neither transfers nor retains substantially all the risks and rewards of ownership and continues to control the transferred asset, the Group recognizes its retained interest in the asset and an associated liability for amounts it may have to pay. If the Group retains substantially all the risks and rewards of ownership of a transferred financial asset, the Group continues to recognize the financial asset and also recognizes a collateralized borrowing for the proceeds received.

(u) Financial liabilities and equity instruments

The Group classifies non-derivative financial liabilities into financial liabilities at fair value through profit or loss or other financial liabilities in accordance with the substance of the contractual arrangement and the definitions of financial liabilities. The Group recognizes financial liabilities in the consolidated statement of financial position when the Group becomes a party to the contractual provisions of the financial liability.

i) Financial liabilities at fair value through profit or loss

The Group requires the effect of changes in the credit risk on financial liabilities designated at fair value through profit or loss attributable to changes in the credit risk to be recognized in other comprehensive income, unless this treatment of the credit risk component creates or enlarges a measurement mismatch. Amounts presented in other comprehensive income are not subsequently transferred to profit or loss. When financial liabilities are derecognized, they are recognized as retained earnings.

ii) Other financial liabilities

At the date of initial recognition, other financial liabilities are measured at fair value minus transaction costs. Subsequent to initial recognition, other financial liabilities are measured at amortized cost using the effective interest method. The effective interest method is a method of calculating the amortized cost of a financial liability and of allocating the interest expense over the relevant period. The effective interest rate is the rate that exactly discounts estimated future cash payments through the expected life of the financial instrument or, when appropriate, a shorter period to the net carrying amount of the financial asset or financial liability at the date of initial recognition.

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2.4 Significant accounting policies (cont'd)

iii) Derecognition of financial liabilities

The Group derecognizes a financial liability from the consolidated statement of financial position when it is extinguished (i.e. when the obligation specified in the contract is discharged, cancelled or expires). The difference between carrying amount and consideration paid is recognized through profit or loss when derecognizing a financial liability.

(v) Derivative financial instruments

The Group entered into a variety of derivative financial instruments to manage its exposure to interest rate and foreign exchange rate risk, including foreign exchange forward contracts, interest swap and currency swap. Derivatives are initially recognized at fair value at the date the derivative contract is entered into and are subsequently remeasured to their fair value at the end of each reporting period. The resulting gain or loss is recognized in profit or loss immediately, unless the derivative is designated and effective as a hedging instrument, in which case, the timing of the recognition in profit or loss depends on the nature of the hedge relationship.

i) Embedded derivative

In case of which the embedded derivative instrument is not closely related to the economic characteristics and risks of the host contract and a separated instrument with the same terms as the embedded derivative meets the definition of a derivative, if a hybrid contract contains a host that is not an asset at fair value through profit or loss, an embedded derivative is accounted for separately from the host. Changes of an embedded derivative separated from the host are recognized in profit or loss.

ii) Hedge accounting

The Group holds forward exchange contracts, currency swaps and commodity future contracts to manage foreign exchange risk and commodity fair value risk. The Group designated derivative as hedging instruments to hedge the risk of changes in the fair value of assets, liabilities or firm commitments (a fair value hedge) and foreign currency risk of highly probable forecasted transactions or firm commitments (a cash flow hedge).

On initial designation of the hedge, the Group formally documents the relationship between the hedging instruments and hedged items, including the risk management objectives and strategy in undertaking the hedge transaction, together with the methods that will be used to assess the effectiveness of the hedging relationship.

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2.4 Significant accounting policies (cont'd)

iii) Fair value hedge

Changes in the fair value of a derivative hedging instrument designated as a fair value hedge are recognized in profit or loss. The gain or loss from remeasuring the hedging instrument at fair value for a derivative hedging instrument and the gain or loss on the hedged item attributable to the hedged risk are recognized in profit or loss in the same line item of the consolidated statement of comprehensive income. However, the Group elected to present the changes in the fair value as other comprehensive income at the date of initial recognition, the gain or loss from remeasuring the hedging instrument at fair value for a derivative hedging instrument and the gain or loss on the hedged item attributable to the hedged risk are recognized in other comprehensive income.

The Group discontinues fair value hedge accounting if the hedging instrument expires or is sold, terminated or exercised or even after considering re-adjustments, or if the hedge no longer meets the criteria for hedge accounting. Any adjustment arising from gain or loss on the hedged item attributable to the hedged risk is amortized to profit or loss from the date the hedge accounting is discontinued. If the hedge relationship no longer meets the requirements for hedge effectiveness related to the hedge ratio, but the objectives of risk management for the designated hedge relationship remain the same, the hedging ratio of the hedge relationship should be adjusted ('re-adjustments').

iv) Cash flow hedge

When a derivative is designated to hedge the variability in cash flows attributable to a particular risk associated with a recognized asset or liability or a highly probable forecasted transaction that could affect profit or loss, the effective portion of changes in the fair value of the derivative is recognized in other comprehensive income, and accumulated in the hedging reserve. Any ineffective portion of changes in the fair value of the derivative is recognized immediately in profit or loss and is recognized as 'finance income and cost' in the consolidated statement of comprehensive income.

Amounts previously recognized in other comprehensive income and accumulated in equity are reclassified to profit or loss in the periods when the hedged item is recognized in profit or loss, in the same line of the consolidated statement of comprehensive income as the recognized hedged item. However, when the forecast transaction that is hedged results in the recognition of a non-financial asset or a non-financial liability, the gains and losses previously accumulated in equity are transferred from equity and included in the initial measurement of the cost of the non-financial asset or non-financial liability.

If the hedging instrument no longer meets the criteria for hedge accounting, expires or is sold, terminated or exercised, then hedge accounting is discontinued prospectively. The cumulative gain or loss on the hedging instrument that has been recognized in other comprehensive income and accumulated in equity remains in equity. Any gains or losses is reclassified to profit or loss when the forecast transaction is ultimately recognized in profit or loss. If the forecasted transaction is no longer expected to occur, the gains or losses accumulated in equity is reclassified immediately to profit or loss.

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2.4 Significant accounting policies (cont'd)

v) Hedges of net investments in foreign operations

Hedges of net investments in foreign operations are accounted for similarly to cash flow hedges. Any gains or losses on the hedging instrument relating to the effective portion of the hedge are recognized in foreign currency translation reserve in other comprehensive income. The gains or losses relating to the ineffective portion is recognized immediately in profit or loss, and is included in the 'finance income and cost'. When a foreign operation is disposed of, gains and losses on the hedging instrument relating to the effective portion of the hedge accumulated in the foreign currency translation reserve are reclassified to profit or loss.

vi) Other derivatives

Changes in the fair value of a derivative that is not designated as a hedging instrument are recognized immediately in profit or loss.

(w) Other accounting policies

i) Discontinued operations

The Group classifies its business segment or subsidiary as discontinued operation when it disposes a separated line of business or a segment, meets the criteria for assets held for sale, or acquires a subsidiary for sole purpose of sale. The consolidated statements of comprehensive income should be restated as if the operations have been discontinued from the beginning of the comparative fiscal period.

ii) Cash and cash equivalents

Cash and cash equivalents comprise cash on hand, demand deposits, and short-term investments in highly liquid securities that are readily convertible to known amounts of cash with maturities of three months or less from the acquisition date and which are subject to an insignificant risk of changes in value. Equity investments are excluded from cash and cash equivalents unless they are, in substance, cash equivalents, for example in the case of preferred shares when it has a short maturity with a specified redemption date.

iii) Share capital

Common stock is classified as equity and the incremental costs arising directly attributable to the issuance of common stock less their tax effects are deducted from equity.

Korea National Oil Corporation and its subsidiaries

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2.4 Significant accounting policies (cont'd)

iv) Finance income and finance costs

The Group's finance income and finance costs include:

- interest income;
- interest expense;
- dividend income;
- the foreign currency gain or loss on financial assets and financial liabilities;
- the net gain or loss on financial assets measured at fair value through profit or loss;
- hedge ineffectiveness recognized in profit or loss; and
- the net gain or loss on the disposal of investments in debt securities measured at fair value through other comprehensive income.

Interest income or expense is recognized using the effective interest method. Dividend income is recognized in profit or loss on the date on which the Group's right to receive payment is established. The 'effective interest rate' is the rate that exactly discounts estimated future cash payments or receipts through the expected life of the financial instrument to:

- the gross carrying amount of the financial asset; or
- the amortized cost of the financial liability.

In calculating interest income and expense, the effective interest rate is applied to the gross carrying amount of the asset (when the asset is not credit-impaired) or to the amortized cost of the liability. However, for financial assets that have become credit-impaired subsequent to initial recognition, interest income is calculated by applying the effective interest rate to the amortized cost of the financial asset. If the asset is no longer credit-impaired, then the calculation of interest income reverts to the gross basis.

3. Critical Accounting Estimates and Assumptions

The preparation of consolidated financial statements requires the Group to make estimates and assumptions concerning the future. Estimates and judgements are continually evaluated and are based on historical experience and other factors, including expectations of future events that are believed to be reasonable under the circumstances. The resulting accounting estimates will, by definition, seldom equal the related actual results. The estimates and assumptions that have a significant risk of causing a material adjustment to the carrying amounts of assets and liabilities after the end of the reporting period are discussed below.

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3. Critical Accounting Estimates and Assumptions (cont'd)

Estimates and underlying assumptions 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.

(a) Estimated goodwill impairment

The Group assesses annually whether there is any indication of impairment in accordance with the accounting policy stated in Note 2.4 (e). The recoverable amounts of cash-generating units have been determined based on value-in-use calculations. These calculations require the use of estimates.

(b) Impairment of non-financial assets

The Group assesses whether there is any indication of impairment at the end of the reporting period in accordance with the accounting policy stated in Note 2.4 (p). If any such indication exists, then the asset's recoverable amount is estimated to determine the impairment amount. The recoverable amounts of cash-generating units have been determined based on value-in-use calculations. These calculations require the use of estimates.

(c) Income taxes

The Group is operating in numerous countries and the income generated from these operations is subject to income taxes based on tax laws and interpretations of tax authorities in numerous jurisdictions. Judgement is required as there are many transactions and calculations for which the ultimate tax determination is uncertain. The Group recognizes assets and liabilities for anticipated tax audit issues based on the best estimates of whether additional taxes will be due as a result of operation activities up to present. Where the final tax outcome of these matters is different from the amounts that were initially recorded, such differences will impact the current and deferred income tax assets and liabilities in the period in which such determination is made.

(d) Fair value of financial instruments

The fair value of financial instruments that are not traded in an active market is determined by using valuation techniques. The Group uses its judgment to select a variety of methods and make assumptions that are mainly based on market conditions existing at the end of each reporting period.

(e) Provisions

As of the end of each reporting period, the Group recognizes provisions for estimated restoration costs of mining as explained in Note 2.4 (s). These provisions are estimated based on past experience. Based on the annual management performance, the Ministry of Strategy and Finance conducts an institutional evaluation. Performance incentives are reasonably estimated and presented as provisions for employee benefits.

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3. Critical Accounting Estimates and Assumptions (cont'd)

(f) Defined benefit obligations

The present value of the defined benefit obligations depends on a number of factors that are determined on an actuarial basis using a number of assumptions. The assumptions used in determining the net cost (income) for pensions include the discount rate. Any changes in these assumptions will impact the carrying amount of the defined benefit obligations. The Group determines the appropriate discount rate at the end of each year. This is the interest rate that is used to determine the present value of estimated future cash outflows expected to be required to settle the defined benefit obligations. In determining the appropriate discount rate, the Group considers the interest rates of high-quality corporate bonds that are denominated in the currency in which the pension benefits will be paid, and that have terms to maturity approximating to the terms of the related pension liability. Other key assumptions for defined benefit liability are based in part on current market conditions. Additional information is disclosed in Note 24.

(g) Revaluation of property, plant and equipment and investment properties

The land is carried at revalued amounts and the changes in fair value amount is recognized in other comprehensive income. The Group engaged an independent valuation specialist to assess fair values as of December 31, 2020 for the investment properties.

(h) Management's judgment

Information about critical judgments in applying accounting policies that have the most significant effect on the amounts recognized in the consolidated financial statements is included in the following notes:

Note 1: Reporting Entity – whether the Group has de facto control

Note 15: Investments in Associates and Joint Ventures – classification of a joint arrangement

(i) Assumptions and estimation uncertainties

Information about assumptions and estimation uncertainties that have a significant risk of resulting in a material adjustment within the next financial year are included in the following notes:

Note 15: Investments in Associates and Joint Ventures – main assumptions for recoverable amounts

Note 16: Property, Plant and Equipment – estimation of factors for depreciation and recoverable amount, main assumptions for estimating recoverable amounts and fair value

Note 17: Intangible assets – main assumptions for recoverable amounts

Note 18: Intangible assets other than goodwill – estimation of factors for depreciation and recoverable amounts

Note 24: Employee Benefits – main actuarial assumptions

Note 25 and 49 : Provisions and Contingencies – assumptions for possibility of cash outflows and their amounts

Note 39: Income tax expense (benefit) – possibility of realization of deferred tax assets

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4. Segment and Other Information

For management purposes, the Group is organized into business units based on their goods and services. The Group's operating segments are 1) oil and gas, 2) petroleum distribution, 3) oil stockpiling, 4) others.

Segments	Goods and services	Location of business
Oil and gas	Exploration, development and production of domestic and overseas resources and sales of crude oil	Domestic and overseas
Petroleum distribution	Distribution business of gasoline and gas oil and oil trading	Domestic and overseas
Oil stockpiling	Trading of crude oil and petroleum product, lending and sales of oil stockpiles, management, operation and lending of oil stockpiling facilities	Domestic
Others	Oil information services, other research services, etc.	Domestic and overseas

(a) Segment results for the year ended December 31, 2020

(in Korean won)

	2020						
	Oil and gas	Petroleum distribution	Oil stockpiling	Others	Reportable segment total	Reconciling items ¹	Group total
Revenue	\ 1,644,575,449,844	\ 24,207,532,672	\ 255,238,426,811	\ 7,201,074,849	\ 1,931,222,484,176	-	\ 1,931,222,484,176
Cost of sales	1,527,506,254,712	21,263,309,126	182,531,259,213	2,301,809,530	1,733,602,632,581	-	1,733,602,632,581
Gross profit	117,069,195,132	2,944,223,546	72,707,167,598	4,899,265,319	197,619,851,595	-	197,619,851,595
Selling and administrative expenses	177,292,723,871	392,291,715	-	-	177,685,015,586	74,042,846,333	251,727,861,919
Reportable segment operating profit (loss) ²	(60,223,528,739)	2,551,931,831	72,707,167,598	4,899,265,319	19,934,836,009	(74,042,846,333)	(54,108,010,324)
Other income	-	-	-	-	32,837,024,509	-	32,837,024,509
Other expenses	-	-	-	-	14,267,357,272	-	14,267,357,272
Other profit (loss), net	-	-	-	-	(1,734,680,692,336)	-	(1,734,680,692,336)
Finance income	-	-	-	-	266,530,707,585	-	266,530,707,585
Finance costs	-	-	-	-	903,418,086,717	-	903,418,086,717
Loss on investments in associates and joint ventures, net	-	-	-	-	(27,441,704,887)	-	(27,441,704,887)
Loss before income tax	\ -	\ -	\ -	\ -	\ (2,360,505,273,109)	\ (74,042,846,333)	\ (2,434,548,119,442)
Depreciation and amortization of intangible assets other than goodwill	\ 689,153,902,743	\ 345,470,978	\ 92,102,889,956	\ -	\ 781,602,263,677	\ 5,817,795,871	\ 787,420,059,548
Impairment losses on property, plant and equipment	1,424,500,981,351	-	-	-	1,424,500,981,351	-	1,424,500,981,351
Reversal of impairment losses on property, plant and equipment	2,442,068,314	-	-	-	2,442,068,314	-	2,442,068,314
Impairment losses on intangible assets other than goodwill	273,537,773,246	-	-	-	273,537,773,246	-	273,537,773,246
Impairment losses on goodwill	32,552,922,480	-	-	-	32,552,922,480	-	32,552,922,480
Reversal of impairment losses on intangible assets other than goodwill	4,784,241,479	-	-	-	4,784,241,479	-	4,784,241,479

¹ Primarily consists of operating profit (loss) including depreciation and amortization of intangible assets other than goodwill that are not allocated to the segments.

² Segment profit (loss) reported to the group CEO is operating profit (loss).

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4. Segment and Other Information (cont'd)

(b) Segment results for the year ended December 31, 2019

(in Korean won)

	2019						
	Oil and gas	Petroleum distribution	Oil stockpiling	Others	Reportable segment total	Reconciling items ¹	Group total
Revenue	\ 2,662,815,845,497	\ 60,894,664,988	\ 199,546,442,627	\ 6,736,006,488	\ 2,929,992,959,600	-	\ 2,929,992,959,600
Cost of sales	1,801,810,225,004	70,903,269,672	177,440,324,744	2,259,251,733	2,052,413,071,153	-	2,052,413,071,153
Gross profit	861,005,620,493	(10,008,604,684)	22,106,117,883	4,476,754,755	877,579,888,447	-	877,579,888,447
Selling and administrative expenses	236,226,246,615	364,198,693	-	-	236,590,445,308	69,519,995,626	306,110,440,934
Reportable segment operating profit (loss) ²	624,779,373,878	(10,372,803,377)	22,106,117,883	4,476,754,755	640,989,443,139	(69,519,995,626)	571,469,447,513
Other income	-	-	-	-	93,597,344,082	-	93,597,344,082
Other expenses	-	-	-	-	8,259,254,071	-	8,259,254,071
Other profit (loss), net	-	-	-	-	(2,095,013,255)	-	(2,095,013,255)
Finance income	-	-	-	-	402,068,273,215	-	402,068,273,215
Finance costs	-	-	-	-	731,432,586,748	-	731,432,586,748
Loss on investments in associates and joint ventures, net	-	-	-	-	53,712,409,399	-	53,712,409,399
Profit (loss) before income tax	\ -	\ -	\ -	\ -	\ 448,580,615,761	\ (69,519,995,626)	\ 379,060,620,135
Depreciation and amortization of intangible assets other than goodwill	\ 933,639,067,189	\ 9,399,809,655	\ 91,971,649,480	\ 11,402,911,595	\ 1,046,413,437,919	-	\ 1,046,413,437,919
Impairment losses on property, plant and equipment	176,250,820,929	-	-	-	176,250,820,929	-	176,250,820,929
Reversal of impairment losses on property, plant and equipment	25,224,458,258	-	-	-	25,224,458,258	-	25,224,458,258
Impairment losses on intangible assets other than goodwill	18,106,642,179	-	-	-	18,106,642,179	-	18,106,642,179
Reversal of impairment losses on intangible assets other than goodwill	53,230,301,443	-	-	-	53,230,301,443	-	53,230,301,443

¹ Primarily consists of operating profit (loss) including depreciation and amortization of intangible assets other than goodwill that are not allocated to the segments.

² Segment profit (loss) reported to the group CEO is operating profit (loss).

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4. Segment and Other Information (cont'd)

Revenue by geographic area for the years ended December 31, 2020 and 2019, are as follows:

<i>(in Korean won)</i>	<u>2020</u>	<u>2019</u>
Domestic	\ 477,834,031,948	\ 598,411,295,978
Canada	184,924,607,122	310,288,485,225
United Kingdom	734,489,825,806	1,277,072,045,730
United States	260,029,106,336	465,981,626,484
Kazakhstan	163,249,415,657	278,100,479,141
Arab Emirates	110,687,320,965	-
Others	8,176,342	139,027,042
	<u>\ 1,931,222,484,176</u>	<u>\ 2,929,992,959,600</u>

In presenting information about geographical areas, segment revenue is based on the geographical location of the Group's entities which recorded the related revenue.

Customers whose revenue is 10% or more of consolidated revenue for the year ended December 31, 2020 are Shell Co. (2019: BP P.L.C. and Shell Co.) amounting to \ 224,061 million (2019: \ 371,225 million and \ 530,883 million, respectively). Furthermore, revenues from these customers for the year ended December 31, 2020, are related to oil and gas segment (2019: oil and gas segment).

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5. Cash and Cash Equivalents

Cash and cash equivalents in the consolidated statements of cash flows include cash and bank deposit and exclude government grants. Cash and cash equivalents in the consolidated statements of cash flows for the years ended December 31, 2020 and 2019 are comprised of the following items in the consolidated statements of financial position.

<i>(in Korean won)</i>	2020	2019
Cash in hands	\ 106,662,026	\ 484,172,474
Other on demand deposits	236,068,249,091	221,102,996,815
Short-term deposits classified as cash equivalents	321,062,710,823	255,017,200,894
Short-term investments classified as cash equivalents	239,606,411,926	248,463,141,625
Government grants	(65,135,024)	(11,100,917)
	\ 796,778,898,842	\ 725,056,410,891

6. Restricted Cash and Cash Equivalents

Details of restricted cash and cash equivalents and financial assets provided as collateral for liabilities or contingent liabilities as of December 31, 2020 and 2019, are as follows:

<i>(in Korean won)</i>	2020	2019
Long-term financial instruments		
Asset retirement obligation	\ 2,649,960,653	\ 2,704,540,912
	\ 2,649,960,653	\ 2,704,540,912

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7. Financial Assets Measured at Fair Value through Profit or Loss and Derivative Instruments

Details of financial assets measured at fair value through profit or loss as of December 31, 2020 and 2019, are as follows:

<i>(in Korean won)</i>	2020		2019	
	Current	Non-current ¹	Current	Non-current ¹
Debt securities	\ 536,899,617,747	\ 674,664,491,128	\ 268,670,204,196	\ 1,495,749,044,152
	\ 536,899,617,747	\ 674,664,491,128	\ 268,670,204,196	\ 1,495,749,044,152

¹ Includes loans classified as financial assets measured at fair value through profit or loss.

The amounts recognized in profit or loss in relation to financial assets measured at fair value through profit or loss for the years ended December 31, 2020 and 2019, are as follows:

<i>(in Korean won)</i>	2020	2019
Gain on valuation of financial asset measured at fair value through profit or loss	\ 8,311,881,332	\ 167,773,467,775
Loss on valuation of financial asset measured at fair value through profit or loss	(117,456,567,243)	(82,191,492,544)
Gain on transaction of financial asset measured at fair value through profit or loss	-	2,072,434,884
	\ (109,144,685,911)	\ 87,654,410,115

Details of derivatives as of December 31, 2020 and 2019, are as follows:

<i>(in Korean won)</i>	2020		2019	
	Current	Non-current	Current	Non-current
Derivative assets				
Currency forwards	\ 48,035,634,112	\ -	\ 17,253,809,664	\ 9,634,659,643
Currency swap	513,575,690	122,516,278,216	5,208,863,958	8,643,513,255
Interest swap	-	-	161,161,777	-
Other derivatives	924,171,071	-	18,092,980,877	18,608,341,061
	\ 49,473,380,873	\ 122,516,278,216	\ 40,716,816,276	\ 36,886,513,959
Derivative liabilities				
Currency swap	\ 3,435,505,185	\ 23,029,641,947	\ 226,707,484	\ 72,262,073,819
Interest swap	14,783,363,263	29,237,587,231	7,378,119,697	18,829,527,657
Other derivatives	-	-	3,888,054,732	90,948,685
	\ 18,218,868,448	\ 52,267,229,178	\ 11,492,881,913	\ 91,182,550,161

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7. Financial Assets Measured at Fair Value through Profit or Loss and Derivative Instruments (cont'd)

Details of currency swap contracts as of December 31, 2020, are as follows:

(in foreign currencies)

Type	Counter party	Maturity	Contract amount		Contract interest rate per annum (%)	
			Sell	Buy	Sell	Buy
	HSBC	2021-02-08	HKD 500,000,000	USD 64,184,852	4.38	5.03
	BNP PARIBAS	2021-03-04	HKD 390,000,000	USD 50,080,900	4.50	5.20
	HSBC	2022-02-10	HKD 390,000,000	USD 50,281,707	3.95	4.45
	BNP PARIBAS	2022-03-28	EUR 50,000,000	USD 65,075,000	4.00	4.55
	HSBC	2023-01-26	HKD 400,000,000	USD 51,599,587	2.85	3.17
	Development Bank of Singapore	2023-02-06	EUR 37,000,000	USD 49,765,000	2.40	3.19
	HSBC	2025-06-24	EUR 60,000,000	USD 80,070,000	3.00	4.06
	HSBC	2023-07-03	EUR 50,000,000	USD 65,670,000	3.09	4.31
	Development Bank of Singapore	2021-01-29	SGD 400,000,000	USD 305,950,741	1.86	U6L+43bp
Cash flow hedge	BNP PARIBAS	2023-06-01	CHF 200,000,000	USD 199,976,003	0.38	3.69
	Korea Development Bank	2023-06-01	CHF 200,000,000	USD 199,976,003	0.38	3.69
	Standard Chartered Bank	2023-06-01	CHF 100,000,000	USD 99,988,001	0.38	3.68
	CREDIT AGRICOLE	2022-01-21	JPY 30,000,000,000	USD 276,586,917	0.24	3.37
	Mizuho Bank	2022-01-21	JPY 20,000,000,000	USD 184,391,278	0.24	3.39
	BNP PARIBAS	2022-01-21	JPY 20,000,000,000	USD 184,391,278	0.24	3.39
	Korea Development Bank	2024-10-04	CHF 200,000,000	USD 201,940,000	0.00	2.55
	BNP PARIBAS	2024-10-04	CHF 100,000,000	USD 100,970,000	0.00	2.55
	HSBC	2025-03-26	HKD 160,000,000	USD 20,626,531	2.50	2.33
	HSBC	2025-04-22	CHF 200,000,000	USD 204,880,000	0.89	2.34
	Standard Chartered Bank	2027-07-30	CHF 100,000,000	USD 105,970,000	0.27	1.55
	BNP PARIBAS	2027-07-30	CHF 100,000,000	USD 109,340,000	0.27	1.46

Details of interest rate swap contracts as of December 31, 2020, are as follows:

(in USD and CAD)

Type	Counter Party	Terms	Contract amount	Contract interest rate per annum(%)	
				Sell	Buy
Cash flow hedge	Societe Generale	2023-07-17	USD 400,000,000	U3L+87.5bp	3.70
	HSBC	2023-05-11	CAD 300,000,000	1.95	2.82

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7. Financial Assets Measured at Fair Value through Profit or Loss and Derivative Instruments (cont'd)

Details of the currency forward contracts as of December 31, 2020, are as follows:

(in USD, GBP and, Korean won)

Type	Counter party	Contract date	Maturity	Contract amount		Contract currency rate ¹
				Sell	Buy	
Cash flow hedge	ABN AMRO	2020-09-23	2021-01-08	USD 1,270,900	GBP 1,000,000	1.2709
	CIBC	2020-07-09	2021-01-13	USD 3,803,550	GBP 3,000,000	1.2679
	BNP PARIBAS	2020-03-12	2021-01-15	USD 7,692,000	GBP 6,000,000	1.2820
	Royal Bank of Scotland	2020-03-12	2021-01-20	USD 3,825,000	GBP 3,000,000	1.2750
	ABN AMRO	2020-09-23	2021-02-03	USD 2,542,000	GBP 2,000,000	1.2710
	BNP PARIBAS	2020-07-09	2021-02-10	USD 5,080,000	GBP 4,000,000	1.2700
	Royal Bank of Scotland	2020-03-12	2021-02-15	USD 7,678,800	GBP 6,000,000	1.2798
	ABN AMRO	2020-03-12	2021-02-19	USD 3,812,400	GBP 3,000,000	1.2708
	BNP PARIBAS	2020-09-23	2021-03-03	USD 2,548,000	GBP 2,000,000	1.2740
	DNB	2020-07-09	2021-03-10	USD 3,805,800	GBP 3,000,000	1.2686
	CIBC	2020-03-12	2021-03-15	USD 6,388,500	GBP 5,000,000	1.2777
	CIBC	2020-03-12	2021-03-18	USD 3,815,100	GBP 3,000,000	1.2717
	CIBC	2020-07-09	2021-04-15	USD 15,222,060	GBP 12,000,000	1.2685
	CITI	2020-09-23	2021-05-05	USD 3,823,500	GBP 3,000,000	1.2745
	ING	2020-07-09	2021-05-13	USD 10,132,000	GBP 8,000,000	1.2665
	CIBC	2020-09-23	2021-06-09	USD 3,815,190	GBP 3,000,000	1.2717
	CITI	2020-07-09	2021-06-15	USD 12,707,000	GBP 10,000,000	1.2707
	DNB	2020-09-23	2021-07-07	USD 1,271,400	GBP 1,000,000	1.2714
	ABN AMRO	2020-07-09	2021-07-15	USD 8,873,200	GBP 7,000,000	1.2676
	ING	2020-09-23	2021-08-17	USD 10,184,000	GBP 8,000,000	1.2730
	Royal Bank of Scotland	2020-09-23	2021-09-15	USD 10,186,400	GBP 8,000,000	1.2733
	Standard Chartered Bank	2019-05-08	2021-11-23	USD 96,250,000	KRW 115,981,250,000	0.0008
	Bank of America	2019-08-05	2021-11-23	USD 96,250,000	KRW 115,981,250,000	0.0008
	Standard Chartered Bank	2019-08-13	2021-11-23	USD 38,500,000	KRW 45,622,500,000	0.0008
	Standard Chartered Bank	2020-02-24	2021-11-23	USD 38,500,000	KRW 45,260,600,000	0.0009
	Standard Chartered Bank	2020-03-13	2021-11-23	USD 19,250,000	KRW 23,003,750,000	0.0008
	Bank of America	2020-02-24	2021-11-23	USD 38,500,000	KRW 45,260,600,000	0.0009
Bank of America	2020-02-21	2021-11-23	USD 38,500,000	KRW 45,622,500,000	0.0008	
Bank of America	2020-03-13	2021-11-23	USD 19,250,000	KRW 23,003,750,000	0.0008	

¹ The contract currency rate is presented in USD and the contract currency rate is applied to the buy contract amount.

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7. Financial Assets Measured at Fair Value through Profit or Loss and Derivative Instruments (cont'd)

Details of other derivatives (zero cost collar options) as of December 31, 2020, are as follows:

(in BBL, MBTU, US dollar)

Type	Counterparty	Terms	Contract amount	Exercise Price	
				Call	Put
Cash flow	BNP PARIBAS	2021-03-31	21,000	65.03	56.00
Hedge	BNP PARIBAS	2021-06-30	21,000	65.03	56.00
	Standard Chartered Bank	2021-03-31	21,000	57.25	57.00
Held for trading	Citi Bank	2021-06-30	34,000	65.17	56.00

Gains and losses on valuation and transaction of derivative for the years ended December 31, 2020 and 2019, are as follows:

(in Korean won)	Gains(losses) on valuation of derivative instruments		Gains (losses) on transaction of derivative instruments		Gains (losses) on valuation of derivative instruments (other comprehensive income (loss)) ¹	
	2020	2019	2020	2019	2020	2019
	Currency forwards	\ -	\ -	\ -	\ -	\ 29,188,143,551
Currency swaps	-	-	5,079,148	11,338,703,001	(26,856,389,125)	(44,400,266,517)
Interest rate swaps	-	-	227,616,552	-	(16,926,544,003)	(15,742,866,666)
Other derivatives	(18,860,237,629)	16,111,435,699	92,370,856,276	-	(78,249,496)	(50,512,168,189)
	\ (18,860,237,629)	\ 16,111,435,699	\ 92,603,551,976	\ 11,338,703,001	\ (14,673,039,073)	\ (110,655,301,372)

¹ Changes in accumulated other comprehensive income (loss) are net of tax effect amounting to (+) \ 13,876 million and (+) \ 30,093 million for the years ended December 31, 2020 and 2019, respectively.

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8. Trade and Other Receivables

Details of trade and other receivables as of December 31, 2020 and 2019, are as follows:

(in Korean won)

	2020			Book value
	Gross amounts	Allowance for doubtful accounts	Present value discount	
Current				
Trade receivables	\ 200,892,622,246	\ (9,212,085,555)	-	\ 191,680,536,691
Other receivables	200,398,041,806	-	-	200,398,041,806
Accrued income	360,542,191	-	-	360,542,191
Finance lease receivables	3,185,505,174	-	(226,779,913)	2,958,725,261
Other current receivables	38,312,109,372	-	-	38,312,109,372
	<u>443,148,820,789</u>	<u>(9,212,085,555)</u>	<u>(226,779,913)</u>	<u>433,709,955,321</u>
Non-current				
Other receivables	1,076,403,563	-	-	1,076,403,563
Accrued income	8,568,153,767	(8,568,153,767)	-	-
Deposit received	50,323,620,331	-	(16,723,703,357)	33,599,916,974
Finance lease receivables	10,134,830,388	-	(749,644,305)	9,385,186,083
	<u>70,103,008,049</u>	<u>(8,568,153,767)</u>	<u>(17,473,347,662)</u>	<u>44,061,506,620</u>
	<u>\ 513,251,828,838</u>	<u>\ (17,780,239,322)</u>	<u>\ (17,700,127,575)</u>	<u>\ 477,771,461,941</u>

(in Korean won)

	2019			Book value
	Gross amounts	Allowance for doubtful accounts	Present value discount	
Current				
Trade receivables	\ 223,306,827,341	\ (9,732,663,082)	-	\ 213,574,164,259
Other receivables	210,877,607,930	-	-	210,877,607,930
Accrued income	1,002,741,230	(375,601,898)	-	627,139,332
Finance lease receivables	7,566,303,154	-	(367,497,900)	7,198,805,254
Other current receivables	52,396,900,254	-	-	52,396,900,254
	<u>495,150,379,909</u>	<u>(10,108,264,980)</u>	<u>(367,497,900)</u>	<u>484,674,617,029</u>
Non-current				
Other receivables	1,827,674,448	-	-	1,827,674,448
Accrued income	7,121,330,581	(7,121,330,581)	-	-
Deposit received	50,111,179,032	-	(17,680,017,054)	32,431,161,978
Finance lease receivables	11,054,185,658	-	(1,150,195,593)	9,903,990,065
	<u>70,114,369,719</u>	<u>(7,121,330,581)</u>	<u>(18,830,212,647)</u>	<u>44,162,826,491</u>
	<u>\ 565,264,749,628</u>	<u>\ (17,229,595,561)</u>	<u>\ (19,197,710,547)</u>	<u>\ 528,837,443,520</u>

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8. Trade and Other Receivables (cont'd)

Details of other current receivables as of December 31, 2020 and 2019, are as follows:

(in Korean won)

	2020	
	Gross amounts	Book value
Prepaid value added tax	\ 3,353,806,534	\ 3,353,806,534
Overseas prepaid value added tax	1,696,665,019	1,696,665,019
Due from financial institutions	386,374,890	386,374,890
Other current assets	32,875,262,929	32,875,262,929
	<u>\ 38,312,109,372</u>	<u>\ 38,312,109,372</u>

(in Korean won)

	2019	
	Gross amounts	Book value
Prepaid value added tax	\ 24,477,691,765	\ 24,477,691,765
Overseas prepaid value added tax	531,634,089	531,634,089
Due from financial institutions	436,623,643	436,623,643
Other current assets	26,950,950,757	26,950,950,757
	<u>\ 52,396,900,254</u>	<u>\ 52,396,900,254</u>

The trade and other receivables include those receivables without allowance provision as they are considered collectible, including accrued interest on the receivables and have no significant changes in their credit rating as of December 31, 2020. Above trade and other receivables are classified as loans and receivables and measured at amortized cost. If objective evidence of impairment for a portfolio of receivables has occurred but no loss has been realized, based on the Group's past experience of collecting payments as well as observable changes in national or local economic conditions that correlate with default on receivables, an allowance account is recognized. The Group has no right to offset against any related liabilities with the counterparties.

Korea National Oil Corporation and its subsidiaries
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8. Trade and Other Receivables (cont'd)

The aging analysis of trade receivables as of December 31, 2020 and 2019, are as follows:

<i>(in Korean won)</i>	<u>2020</u>	<u>2019</u>
Receivables not past due and impaired	\ 109,169,730,048	\ 156,698,004,965
Past due but not impaired	82,510,806,643	56,876,159,294
- Within 2 months	35,011,113,953	8,787,511,906
- 2~3 months	3,442,188,253	2,422,497,266
- 3~4 months	4,271,946,403	2,967,311,807
- 4~12 months	35,411,971,857	38,489,304,606
- More than 12 months	4,373,586,177	4,209,533,709
Impaired	9,212,085,555	9,732,663,082
- 2~3 months	-	6,450,366,088
- 4~12 months	-	3,282,296,994
- More than 12 months	9,212,085,555	-
	<u>200,892,622,246</u>	<u>223,306,827,341</u>
Less: allowance for doubtful accounts	(9,212,085,555)	(9,732,663,082)
	<u>\ 191,680,536,691</u>	<u>\ 213,574,164,259</u>

The aging analysis of other receivables as of December 31, 2020 and 2019, are as follows:

<i>(in Korean won)</i>	<u>2020</u>	<u>2019</u>
Receivables not past due and impaired	\ 284,951,834,911	\ 331,001,476,901
Past due but not impaired	18,839,217,917	3,459,512,907
- Within 2 months	712,713,286	397,014,344
- 2~3 months	256,041,044	-
- 3~4 months	303,149,908	19,353,403
- 4~12 months	1,351,709,516	70,122,335
- More than 12 months	16,215,604,163	2,973,022,825
Impaired	8,568,153,764	7,496,932,479
- 2~3 months	440,858,449	476,100,517
- 4~12 months	210,293,884	247,598,174
- More than 12 months	-	253,380,273
- Within 2 months	1,224,992,735	2,188,000,433
- 2~3 months	6,692,008,696	4,331,853,082
	<u>312,359,206,592</u>	<u>341,957,922,287</u>
Less: allowance for doubtful accounts	(8,568,153,767)	(7,496,932,479)
Less: present value discounts	(17,700,127,575)	(19,197,710,547)
	<u>\ 286,090,925,250</u>	<u>\ 315,263,279,261</u>

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8. Trade and Other Receivables (cont'd)

Movements in the allowance for doubtful accounts of trade and other receivables for the years ended December 31, 2020 and 2019, are as follows:

<i>(in Korean won)</i>	2020		2019	
	Trade receivables	Other receivables	Trade receivables	Other receivables
Beginning balance	\ 9,732,663,082	\ 7,496,932,479	\ 8,927,800,430	\ 5,299,057,395
Amount recognized in profit or loss	2,505,960,363	2,155,335,411	-	3,186,538,955
Write-off	(2,557,859,712)	-	-	-
Reversal	-	(120,459,504)	-	(3,495,036,527)
Others ¹	(468,678,178)	(963,654,619)	804,862,652	2,506,372,656
Ending balance	\ 9,212,085,555	\ 8,568,153,767	\ 9,732,663,082	\ 7,496,932,479

¹ Include the effect of changes in exchange rates.

9. Financial Assets Measured at Fair Value Through Other Comprehensive Income

Movements in the financial assets at fair value through other comprehensive income for the years ended December 31, 2020 and 2019, are as follows:

<i>(in Korean won)</i>	2020				
	Beginning balance	Disposal ¹	Valuation ³	Others ⁴	Ending balance
Marketable¹	\ 123,121,459	\ (37,316,426)	\ (88,171,118)	\ 2,366,085	-
Non-marketable²	6,335,312,156	-	6,770,400,107	(910,061,591)	12,195,650,672
	\ 6,458,433,615	\ (37,316,426)	\ 6,682,228,989	\ (907,695,506)	\ 12,195,650,672

¹ The Group recognized other comprehensive losses of \ 88 million, due to liquidation of EP Energy, for the year ended December 31, 2020.

² The Group recognized other comprehensive income and losses of \ 7,123 million and \ 353 million respectively from EP Energy and Troika, in accordance with changes in the fair value of financial asset measured at fair value through other comprehensive income.

³ Related income tax effect is not recognized for the year ended December 31, 2020 due to unrecognized deferred tax asset as the amount is not expected be realized in a foreseeable future.

⁴ Include other changes and the effect of changes in exchange rates and others.

<i>(in Korean won)</i>	2019			
	Beginning balance	Valuation ^{1,2}	Others ³	Ending balance
Marketable	\ 24,479,355,138	\ (25,396,444,728)	\ 1,040,211,049	\ 123,121,459
Non-marketable	7,740,142,479	(1,691,045,371)	286,215,048	6,335,312,156
	\ 32,219,497,617	\ (27,087,490,099)	\ 1,326,426,097	\ 6,458,433,615

¹ The Group recognized valuation losses on EP Energy and Troika Resource Investment PEF to \ 25,396 million and \ 1,691 million, respectively, for the year ended December 31, 2019.

² Related income tax effect is not recognized for the year ended December 31, 2019 due to unrecognized deferred tax asset as the amount is not expected be realized in a foreseeable future.

³ Include other changes and the effect of changes in exchange rates and others.

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9. Financial Assets Measured at Fair Value Through Other Comprehensive Income (cont'd)

Details of financial assets measured at fair value through other comprehensive income as of December 31, 2020 and 2019, are as follows:

(in Korean won)

	Ownership interest (%)	Carrying amount		Fair value	
		2020	2019	2020	2019
Marketable					
EP Energy	12.82 \	- \	123,121,459 \	- \	123,121,459
Non-marketable					
Yemen LNG Company Limited	1.06 \	10,757,962,775 \	4,458,690,092 \	10,757,962,775 \	4,458,690,092
Petronado S.A.	5.64	-	-	-	-
Micronic Korea ¹	16.70	832,379,622	885,780,447	832,379,622	885,780,447
Troika Resource Investment PEF	14.47	605,308,275	990,841,617	605,308,275	990,841,617
Global Dynasty Natural Resource PEF	15.67	-	-	-	-
		\ 12,195,650,672	\ 6,458,433,615	\ 12,195,650,672	\ 6,458,433,615

¹ The dividend income associated with Micronic Korea for the years ended December 31, 2020 and 2019, are \ 5 million and \ 10 million, respectively.

10. Loans

Details of loans as of December 31, 2020 and 2019, are as follows:

(in Korean won)

	2020		
	Face value	Provision for loans	Carrying amount
Short-term loans			
Loans to related parties ⁴	\ 30,736,000,000	\ -	\ 30,736,000,000
	30,736,000,000	-	30,736,000,000
Long-term loans			
Loans for tuitions ¹	417,080,774	-	417,080,774
Loans for housing ²	96,529,979,523	-	96,529,979,523
Loans for vehicle ³	521,590,148	-	521,590,148
General loans	9,054,262,126	(1,099,080,192)	7,955,181,934
Loans to related parties ⁴	576,747,247,348	(576,747,247,348)	-
	683,270,159,919	(577,846,327,540)	105,423,832,379
	\ 714,006,159,919	\ (577,846,327,540)	\ 136,159,832,379

¹ The Group provides employees who worked over a year with interest-free loans for their children's tuitions. The loans are repaid from their monthly wages.

² The Group provides employees without housing with loans for housing at market interest rates. The loans are due 5-10 years and repaid by lump sum at maturity.

³ The Group provides non-interest bearing loans to overseas secondees who newly purchase or lease a vehicle. The loans are due when the secondees return to the Headquarters.

⁴ The Group provided Offshore International Group and 9 other related parties with loans at interest rates of 2.33~ 7.99%. The loans are due to be repaid in 1~18 year.

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10. Loans (cont'd)

(in Korean won)

	2019		
	Face value	Provision for loans	Carrying amount
Short-term loans			
Loans to related parties ⁴	\ 2,586,817,903	\ -	\ 2,586,817,903
	<u>2,586,817,903</u>	<u>-</u>	<u>2,586,817,903</u>
Long-term loans			
Loans for tuitions ¹	441,556,913	-	441,556,913
Loans for housing ²	99,434,890,964	-	99,434,890,964
Loans for vehicle ³	252,819,744	-	252,819,744
General loans	8,460,404,108	(1,147,458,530)	7,312,945,578
Loans to related parties ⁴	646,455,977,842	(613,748,127,739)	32,707,850,103
	<u>755,045,649,571</u>	<u>(614,895,586,269)</u>	<u>140,150,063,302</u>
	<u>\ 757,632,467,474</u>	<u>\ (614,895,586,269)</u>	<u>\ 142,736,881,205</u>

¹ The Group provides employees who worked over a year with interest-free loans for their children's tuitions. The loans are repaid from their monthly wages.

² The Group provides employees without housing with loans for housing at market interest rates. The loans are due 5~10 years and repaid by lump sum at maturity.

³ The Group provides non-interest bearing loans to overseas secondees who newly purchase or lease a vehicle. The loans are due when the secondees return to the Headquarters.

⁴ The Group provided Offshore International Group and 14 other related parties with loans at interest rates of 3.00 ~ 7.99%. The loans are due to be repaid in 1 year or at maturity

11. Long-term Financial Instruments

Details of long-term financial instruments as of December 31, 2020 and 2019, are as follows:

(in Korean won)

	2020	2019
Asset retirement obligation	\ 5,601,079,085	\ 5,676,009,105
	<u>\ 5,601,079,085</u>	<u>\ 5,676,009,105</u>

12. Other Financial Assets

Details of other current financial assets as of December 31, 2020 and 2019, are as follows:

(in Korean won)

	2020	2019
Overseas field operations quick assets	\ 739,651,047	\ 503,309,681
	<u>\ 739,651,047</u>	<u>\ 503,309,681</u>

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13. Inventories

Details of inventories as of December 31, 2020 and 2019, are as follows:

(in Korean won)

	2020		
	Acquisition cost	Provision for losses on valuation ¹	Carrying amount
Raw materials ¹	\ 6,758,423,255	\ (580,897,997)	\ 6,177,525,258
Merchandises ¹	7,686,589,658	-	7,686,589,658
Work-in-progress	106,988,698	-	106,988,698
Finished goods	11,654,363,633	(2,202,930,959)	9,451,432,674
Supplies	69,222,519,047	-	69,222,519,047
Goods in-transit	65,140,790	-	65,140,790
	\ 95,494,025,081	\ (2,783,828,956)	\ 92,710,196,125

(in Korean won)

	2019		
	Acquisition cost	Provision for losses on valuation ¹	Carrying amount
Raw materials ¹	\ 4,166,555,201	\ (629,880,018)	\ 3,536,675,183
Merchandises ¹	4,810,645,732	(336,388,393)	4,474,257,339
Work-in-progress	126,555,181	-	126,555,181
Finished goods	17,905,334,509	-	17,905,334,509
Supplies	71,576,332,485	-	71,576,332,485
Goods in-transit	381,965,514	-	381,965,514
	\ 98,967,388,622	\ (966,268,411)	\ 98,001,120,211

¹ The losses on the valuation of inventories recognized in cost of sales for the year ended December 31, 2020 is \ 19,873 million (2019: \ 404 million).

14. Non-financial Assets

Details of non-financial assets as of December 31, 2020 and 2019, are as follows:

(in Korean won)

	2020		2019	
	Current	Non-current	Current	Non-current
Advance payments	\ 54,345,311,364	\ -	\ 56,315,321,907	\ -
Prepaid expenses	20,108,949,425	541,394,294	31,362,044,815	325,745,942
Oil stockpiles	-	3,686,509,114,195	-	3,910,638,405,954
Others	-	4,440,816,443	-	6,620,763,184
	\ 74,454,260,789	\ 3,691,491,324,932	\ 87,677,366,722	\ 3,917,584,915,080

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15. Investments in Associates and Joint Ventures

Details of investments in associates and joint ventures as of December 31, 2020 and 2019, are as follows:

<i>(in Korean won)</i>			2020			2019		
Entity	Principal activity	Country	Equity interest (%)	Acquisition cost	Book value	Equity interest (%)	Acquisition cost	Book value
<i><Investments in associates></i>								
Kernhem B.V.	Exploration and Production (*E&P)	Netherlands	36.67	11,116,944,510	-	36.67	11,830,145,546	-
Oilhub Korea Yeosu Co., Ltd.	Storing of oil	Republic of Korea	29.00	36,781,822,499	63,128,996,115	29.00	39,141,538,685	58,480,114,370
ADA Oil LLP ¹	E&P	Kazakhstan	12.50	19,094,534,150	-	12.50	20,319,532,757	-
Parallel Petroleum LLC ^{2,6}	E&P	United States	10.00	41,742,635,584	-	10.00	44,420,609,815	-
KNOC EF Star LLC ³	E&P	United States	100.00	28,288,000,000	64,950,570,540	100.00	30,102,800,000	40,194,986,889
KOREA GS E&P Pte. Ltd. ¹⁰	E&P	Singapore	30.00	367,539,304,474	276,843,002,551	-	-	-
				<u>504,563,241,217</u>	<u>404,922,569,206</u>		<u>145,814,626,803</u>	<u>98,675,101,259</u>
<i><Investments in joint ventures></i>								
KNOC Inam Ltd	Exploration	Malaysia	40.00	43,520	-	40.00	46,312	-
KNOC Kamchatka Petroleum Ltd. ⁴	Exploration	Cyprus	55.00	1,196,800	-	55.00	1,273,580	-
KNOC Bazian Ltd. ⁴	Exploration	Malaysia	66.72	62,016	-	66.72	65,995	-
KNOC Nigerian East Oil Company Ltd. ⁴	Exploration	Nigeria	75.00	65,280,000	-	75.00	69,468,000	-
KNOC Nigerian West Oil Company Ltd. ⁴	Exploration	Nigeria	75.00	65,280,000	-	75.00	69,468,000	-
Korea kamchatka Co. Ltd	Exploration	Cyprus	50.00	7,394,428,528	-	50.00	7,868,813,741	-
KC kazakh B.V	Exploration	Netherlands	35.00	246,395,508	-	35.00	262,202,867	-
Offshore International Group, Inc.	E&P	United States	50.00	-	-	50.00	735,346,010,333	91,189,025,586
KNOC Ferghana Ltd	Exploration	Malaysia	50.00	544,000	-	50.00	578,900	-
KNOC Ferghana2 Ltd ⁴	Exploration	Malaysia	65.00	71,188	-	65.00	75,755	-
KADOC Ltd ⁵	E&P	Malaysia	-	-	-	75.00	868,350	-
Korea Energy Terminal Ltd ⁴	Storing of oil	Republic of Korea	51.47	43,306,610,908	42,612,869,262	95.00	4,455,105,231	-
Deep Basin Partnership ^{4,7}	Exploration	Canada	83.52	244,870,024,714	-	83.47	258,876,914,781	17,322,008,564
HKMS Partnership ^{4,7}	Gas processing plant operation	Canada	68.51	59,632,820,287	31,870,493,504	68.19	62,874,731,116	32,734,367,939
KNOC-VOGO Eagle Ford LLC ⁸	E&P	United States	50.00	-	-	50.00	-	-
Al Dhafra Petroleum ⁹	E&P	United Arab Emirates	30.00	435,200,000	435,200,000	-	-	-
				<u>356,017,957,469</u>	<u>74,918,562,766</u>		<u>1,069,825,622,961</u>	<u>141,245,402,089</u>
				<u>\ 860,581,198,686 \</u>	<u>\ 479,841,131,972 \</u>		<u>\ 1,215,640,249,764 \</u>	<u>\ 239,920,503,348 \</u>

Korea National Oil Corporation and its subsidiaries

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15. Investments in Associates and Joint Ventures (cont'd)

- ¹ Classified as an investment in associate as the Group's associate, Kernhem B.V. holds 75.00% of the equity interest and by effective equity interest, the Group has the ability to exercise significant influence over the entity.
- ² Classified as an investment in associate as the Group can designate one director in its board of directors. Despite the percentage of ownership is below 20%, the Group has the ability to exercise significant influence over the entity.
- ³ Despite the percentage of ownership of the Group is 100%, it is excluded from the scope of consolidation due to reassessment of entity's control.
- ⁴ Despite the percentage of ownership is over 50%, the investment is classified as an investment in joint ventures as the Group is unable to exercise control over investees solely.
- ⁵ The Group acquired control through a change in the shareholders' contract and reclassified KADOC.Ltd from investments in joint venture to investments in subsidiaries for the year ended December 31, 2020.
- ⁶ Parallel Petroleum LLC is an investment in associate held by ANKOR E&P Holdings Corp.
- ⁷ Deep Basin Partnership and HKMS Partnership are investment in joint ventures held by Harvest Operations Corp.
- ⁸ KNOC-VOGO Eagle Ford LLC is an investment in joint venture with 50% of the shares in KNOC Eagleford Corp., as the Group.
- ⁹ It is a joint venture company owned by KADOC Ltd, which was reclassified as a subsidiary in the year ended December 31, 2020.
- ¹⁰ On April 2, 2020, by exercising the stock option, 30% of stocks were acquired and the difference between the strike price and the fair value of the equity valuation was \ 92,371 million recognized as gains on transaction of derivative financial instruments. Meanwhile, as of the end of the reporting period, arbitration related to business participation costs is in progress and the acquisition price may change depending on the results of the arbitration.
- ¹¹ Offshore International Group was classified as held for sale during the current period.

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15. Investments in Associates and Joint Ventures (cont'd)

Changes in carrying value of investments in associates and joint ventures for the years ended December 31, 2020 and 2019, are as follows:

(in Korean won)

	2020			
	Beginning balance	Acquisition	Disposal	Dividends received
Investment in associates				
Kernhem B.V. ¹	\ -	\ -	\ -	\ -
Oilhub Korea Yeosu Co. Ltd	58,480,114,370	-	-	(3,039,200,000)
ADA Oil LLP ¹	-	-	-	-
Parallel Petroleum LLC ¹	-	-	-	-
KNOC EF Star LLC	40,194,986,901	-	-	-
KOREA GS E&P Pte. Ltd ^{2,3}	-	398,634,886,254	-	(17,700,750,000)
	<u>98,675,101,271</u>	<u>398,634,886,254</u>	<u>-</u>	<u>(20,739,950,000)</u>
Investment in joint ventures				
Offshore International Group, Inc. ^{2,4}	91,189,025,586	-	-	-
KADOC Ltd ^{8,9}	-	-	-	-
Korea Energy Terminal Ltd ⁹	-	44,555,171,097	-	-
Deep Basin Partnership	17,322,007,058	1,735,322,055	-	-
HKMS Partnership	32,734,368,413	595,016,800	-	(14,423,621,592)
KNOC-VOGO Eagle Ford LLC ^{1,6}	-	72,274,109	-	-
Al Dhafra Petroleum ⁷	-	472,020,000	-	-
	<u>141,245,401,057</u>	<u>47,429,804,061</u>	<u>-</u>	<u>(14,423,621,592)</u>
	<u>\ 239,920,502,328</u>	<u>\ 446,064,690,315</u>	<u>\ -</u>	<u>\ (35,163,571,592)</u>

(in Korean won)

	2020				
	Share of profit or loss in equity method	Equity method retained earnings	Changes in equity adjustments	Other changes ⁵	Ending balance
Investment in associates					
Kernhem B.V. ¹	\ (1,868,832,535)	\ -	\ 1,868,832,535	\ -	\ -
Oilhub Korea Yeosu Co. Ltd	7,689,827,946	-	4,215,428,078	(4,217,174,279)	63,128,996,115
ADA Oil LLP ¹	(1,093,470,192)	-	1,093,470,192	-	-
Parallel Petroleum LLC ¹	-	-	-	-	-
KNOC EF Star LLC	29,519,031,229	-	-	(4,763,447,590)	64,950,570,540
KOREA GS E&P Pte. Ltd ^{2,3}	5,811,871,882	-	-	(109,903,005,585)	276,843,002,551
	<u>40,058,428,330</u>	<u>-</u>	<u>7,177,730,805</u>	<u>(118,883,627,454)</u>	<u>404,922,569,206</u>
Investment in joint ventures					
Offshore International Group, Inc. ^{2,4}	(63,439,958,816)	-	1,877,700,280	(29,626,767,050)	-
KADOC Ltd ^{8,9}	-	-	-	-	-
Korea Energy Terminal Ltd ⁹	(2,458,160,317)	(13,747,583)	3,918,300,738	(3,388,694,673)	42,612,869,262
Deep Basin Partnership	(36,697,692,421)	-	-	17,640,363,308	-
HKMS Partnership	14,202,564,643	-	-	(1,237,834,760)	31,870,493,504
KNOC-VOGO Eagle Ford LLC ^{1,6}	(72,274,109)	-	-	-	-
Al Dhafra Petroleum ⁷	-	-	-	(36,820,000)	435,200,000
	<u>(88,465,521,020)</u>	<u>(13,747,583)</u>	<u>5,796,001,018</u>	<u>(16,649,753,175)</u>	<u>74,918,562,766</u>
	<u>\ (48,407,092,690)</u>	<u>\ (13,747,583)</u>	<u>12,973,731,823</u>	<u>(135,533,380,629)</u>	<u>\ 479,841,131,972</u>

¹ The Group does not apply the equity method as the book value of the investment in associates and joint ventures is less than zero due to the cumulative equity method loss. Gains and losses on investments that are not recognized due to the discontinuation of the use of the equity method are as follows:

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15. Investments in Associates and Joint Ventures (cont'd)

(in Korean won)

CGU	Holding company	Gains and losses on investments not recognized (current)	Gains and losses on investments not recognized (cumulative)
ADA Oil LLP	Parent Company	\ (2,707,560,129)	\ (14,293,034,846)
Kernhem B.V.	Parent Company	(6,218,169,182)	(34,530,548,249)
Parallel Petroleum LLC	Ankor E&P Holdings Corp.	(7,503,937,950)	(37,702,597,500)
KNOC-VOGO Eagle Ford LLC	KNOC Eagleford Corp.	(69,129,995,913)	(1,049,503,071,295)

² Main assumptions used in the impairment test and details of impairment losses for the year ended December 31, 2020 are as follows:

(In Korean won)

CGU	Recoverable amounts	Valuation of recoverable method	Discount rate	Primary assumption	Impairment loss	Reason for impairment
KOREA GS E&P Pte. Ltd.	\ 276,843,002,563	Net fair value	7.66%	Estimated production quantities based on reserve reports and long-term oil price forecasts by major forecasting Institutions	\ 86,480,764,760	Decrease in forecasted oil prices, changes in reserves and others
Offshore International Group	\ 2,720,000,000	Net selling value	-	Amount to be sold	\ 28,596,258,775	Held for Sale

³ On April 2, 2020, by exercising the stock option, 30% of stocks were acquired and the difference between the strike price and the fair value of the equity valuation was \ 92,371 million recognized as Gains on transaction of derivative financial instruments. Meanwhile, as of the end of the reporting period, arbitration related to business participation costs is in progress and the acquisition price may change depending on the results of the arbitration.

⁴ Offshore International Group was classified as held for sale during the current period.

⁵ Other changes include the effect of changes in exchange rates and impairment losses that were not recognized as the book value of Deep Basin Partners, an investment in joint ventures, until the previous year was less than zero.

⁶ KNOC-VOGO Eagle Ford LLC is SPC with 50% of the shares in KNOC Eagle Ford Corp. KNOC Eagle Ford Corp. invested in EF Energy LLC through KNOC-VOGO EagleFord LLC. EF Energy LLC is 40% of shares owned by KNOC-VOGO EagleFord LLC and 60% owned by KNOC Eagle Ford Corp. Since KNOC Eagle Ford Corp. recognizes EF Energy LLC as the Group, its investment in KNOC-VOGO EagleFord LLC is recognized as '0' because it is offset by the consolidation adjustment process.

⁷ It is a joint venture owned by KADOC Ltd, which was reclassified as a subsidiary in the year ended December 31, 2020.

⁸ It was reclassified as a subsidiary from a joint venture, as control was acquired through a change in the shareholders' agreement in the year ended December 31, 2020.

⁹ The Group recognized gains on sale of investments in joint ventures of \ 131,969 million while acquiring control of KADOC Ltd., and \ 4,073million of gains on sale of investments in joint ventures by the sale of Korea Energy Terminal Ltd.

Korea National Oil Corporation and its subsidiaries
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15. Investments in Associates and Joint Ventures (cont'd)

(in Korean won)

	2019			
	Beginning balance	Acquisition	Disposal	Dividends received
Investment in associates				
Kernhem B.V. ¹	\	-	-	-
Oilhub Korea Yeosu Co. Ltd	53,338,116,553	-	-	(1,519,599,996)
ADA Oil LLP ¹	-	-	-	-
Parallel Petroleum LLC ¹	-	-	-	-
KNOC EF Star LLC	54,127,002,853	-	-	-
	<u>107,465,119,406</u>	<u>-</u>	<u>-</u>	<u>(1,519,599,996)</u>
Investment in joint ventures				
Offshore International Group, Inc. ²	132,985,475,273	-	-	-
KADOC Ltd ^{1,3}	-	-	-	-
Korea Energy Terminal Ltd ¹	-	401,913,626	(230,528,700)	-
Deep Basin Partnership	-	8,651,901,397	-	(1,414,645,371)
HKMS Partnership	35,506,905,275	2,772,044	-	(14,322,871,081)
KNOC-VOGO Eagle Ford LLC ^{1,5}	-	-	-	-
	<u>168,492,380,548</u>	<u>9,056,587,067</u>	<u>(230,528,700)</u>	<u>(15,737,516,452)</u>
	<u>\ 275,957,499,954</u>	<u>\ 9,056,587,067</u>	<u>\ (230,528,700)</u>	<u>\ (17,257,116,448)</u>

(in Korean won)

	2019			
	Share of profit or loss in equity method ²	Changes in equity adjustments	Other changes ¹	Ending balance
Investment in associates				
Kernhem B.V. ¹	\	-	-	-
Oilhub Korea Yeosu Co. Ltd	6,704,467,065	(1,914,705,083)	1,871,835,831	58,480,114,370
ADA Oil LLP ¹	-	-	-	-
Parallel Petroleum LLC ¹	-	-	-	-
KNOC EF Star LLC	(15,961,376,341)	-	2,029,360,377	40,194,986,889
	<u>(9,256,909,276)</u>	<u>(1,914,705,083)</u>	<u>3,901,196,208</u>	<u>98,675,101,259</u>
Investment in joint ventures				
Offshore International Group, Inc. ²	(7,208,684,954)	(372,598,507)	(34,215,166,226)	91,189,025,586
KADOC Ltd ^{1,3}	-	-	-	-
Korea Energy Terminal Ltd ¹	(202,657,111)	31,272,185	-	-
Deep Basin Partnership	48,063,462,142	-	(37,978,709,604)	17,322,008,564
HKMS Partnership	8,733,946,604	-	2,813,615,097	32,734,367,939
KNOC-VOGO Eagle Ford LLC ^{1,5}	-	-	-	-
	<u>49,386,066,681</u>	<u>(341,326,322)</u>	<u>(69,380,260,733)</u>	<u>141,245,402,089</u>
	<u>\ 40,129,157,405</u>	<u>\ (2,256,031,405)</u>	<u>\ (65,479,064,525)</u>	<u>\ 239,920,503,348</u>

¹ The Group does not apply the equity method as the book value of the investment in associates and joint ventures is less than zero due to the cumulative equity method loss.

² The fair value less cost to sell was measured and evaluated for Offshore International Group, Inc, which is an investment in joint ventures for the year ended December 31, 2019. Impairment losses on investments in joint ventures amounted to \ 39,252 million (Recoverable amount: \ 9,119 million, Discount rate: 6.59%, Reason for impairment: decrease in estimated production quantities), and included in other changes.

³ As the collectability of loans from investments in associates and joint ventures have increased, equity method is not applied to investments in associates and joint ventures for which the investment balance has been reduced to zero. As a result, the Group reclassified the loans previously recognized as net investments in equity method to financial assets at fair value through profit or loss through the judgment of the management. Reversal of loss under equity method of \ 52,799 million related to the loans was recognized.

⁴ Other changes include the effect of changes in exchange rates and impairment losses that were not recognized as the book value of Deep Basin Partners, an investment in joint ventures, until the previous year was less than zero.

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15. Investments in Associates and Joint Ventures (cont'd)

⁵ KNOC-VOGO Eagle Ford LLC is SPC with 50% of the shares in KNOC Eagle Ford Corp. KNOC Eagle Ford Corp. invested in EF Energy LLC through KNOC-VOGO EagleFord LLC. EF Energy LLC is 40% of shares owned by KNOC-VOGO EagleFord LLC and 60% owned by KNOC Eagle Ford Corp. Since KNOC Eagle Ford Corp. recognizes EF Energy LLC as the Group, its investment in KNOC-VOGO EagleFord LLC is recognized as '0' because it is offset by the consolidation adjustment process.

The summaries of financial information of major associates and joint ventures for the years ended December 31, 2020 and 2019, are as follows:

<i>(in Korean won)</i>	2020			
	Total assets	Total liabilities	Revenue	Profit (loss) for the year
<i><Investment in associates></i>				
Kernhem B.V.	\ 163,806,010,079	\ 250,626,263,746	\ 16,498,184,941	\ (16,957,101,678)
Oilhub Korea Yeosu Co., Ltd	499,372,284,961	281,686,091,447	79,821,629,621	26,516,648,081
Parallel Petroleum LLC	156,034,961,921	315,823,383,719	41,166,853,752	(46,358,505,995)
ADA Oil LLP	60,658,093,323	155,801,297,340	21,997,579,921	(21,660,480,985)
KNOC EF Star LLC	483,866,407,965	14,029,553	14,472,478,530	(43,880,415,061)
KOREA GS E&P Pte. Ltd.	1,571,064,659,270	586,584,952,238	862,986,019,442	30,092,089,983
<i><Investment in joint ventures></i>				
Korea Energy Terminal Ltd	235,108,611,603	153,946,871,603	-	(4,668,414,922)
Deep Basin Partnership	195,714,889,335	214,779,363,329	22,012,406,636	(36,697,692,421)
HKMS Partnership	86,610,604,186	66,031,374,356	22,954,604,472	7,225,689,736
KNOC-VOGO Eagle Ford LLC	837,106,222,303	564,589,616,901	-	(166,269,129,961)
Al Dhafra Petroleum	435,200,000	-	-	-
<i>(in Korean won)</i>	2019			
	Total assets	Total liabilities	Revenue	Profit (loss) for the year
<i><Investment in associates></i>				
Kernhem B.V.	\ 179,309,180,761	\ 260,048,559,166	\ 32,237,000,755	\ 8,834,181,877
Oilhub Korea Yeosu Co., Ltd	531,040,914,585	329,385,347,773	74,652,060,604	23,118,851,959
Parallel Petroleum LLC	313,038,649,529	334,104,047,894	67,420,967,894	(12,892,203,409)
ADA Oil LLP	73,984,301,364	162,562,113,239	42,982,667,673	14,076,214,354
KNOC EF Star LLC	484,854,271,594	5,023,845	14,197,883,153	(15,961,376,341)
<i><Investment in joint ventures></i>				
Offshore International Group, Inc.	736,527,934,938	397,781,811,491	188,667,982,844	(14,417,369,913)
KADOC Ltd	757,246,728,169	860,552,941,077	60,568,655,544	(33,608,406,610)
Korea Energy Terminal Ltd	12,918,053,721	14,485,498,771	-	(527,110,986)
Deep Basin Partnership	248,543,992,697	233,155,551,826	35,333,765,217	48,063,462,165
HKMS Partnership	90,587,310,269	82,645,076,528	23,116,036,086	4,157,673,897
KNOC-VOGO Eagle Ford LLC	1,006,980,858,160	599,645,487,886	-	29,547,896,696

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16. Property, Plant and Equipment

Details of property, plant and equipment as of December 31, 2020 and 2019, are as follows:

	2020					
	Acquisition cost	Contributions for construction	Government grants	Accumulated depreciation	Accumulated impairment losses	Book value
Land	\ 1,047,517,159,605	\ -	\ -	\ -	\ -	\ 1,047,517,159,605
Buildings	79,153,385,318	-	-	(29,483,385,067)	-	49,670,000,251
Structures	1,854,978,295,505	(103,755,205)	-	(782,607,969,482)	-	1,072,266,570,818
Machinery	715,667,502,767	(2,612,223,492)	-	(451,915,313,507)	-	261,139,965,768
Vehicles	10,534,528,840	-	-	(9,077,937,342)	-	1,456,591,498
Tools & fixtures	61,346,145,469	-	-	(56,016,220,790)	(306,053,736)	5,023,870,943
Construction-in-progress	252,089,350,859	-	-	-	-	252,089,350,859
Right-of-use assets	405,696,146,781	-	-	(53,054,756,783)	-	352,641,389,998
Others	54,719,821,549	-	-	(47,641,498,583)	(2,067,606,270)	5,010,716,696
Oil & gas properties ¹	22,153,462,200,554	-	(1,921,246,508)	(12,811,601,902,815)	(4,369,740,355,473)	4,970,198,695,758
	<u>\ 26,635,164,537,247</u>	<u>\ (2,715,978,697)</u>	<u>\ (1,921,246,508)</u>	<u>\ (14,241,398,984,369)</u>	<u>\ (4,372,114,015,479)</u>	<u>\ 8,017,014,312,194</u>

¹ Classified as 'other current assets' in the consolidated statements of financial position.

	2019					
	Acquisition cost	Contributions for construction	Government grants	Accumulated depreciation	Accumulated impairment losses	Book value
Land	\ 480,854,588,938	\ -	\ -	\ -	\ -	\ 480,854,588,938
Buildings	77,407,452,207	-	-	(30,119,158,950)	-	47,288,293,257
Structures	1,977,284,407,773	(114,218,857)	-	(785,637,518,393)	-	1,191,532,670,523
Machinery	761,686,352,387	(3,103,564,826)	-	(458,080,500,487)	-	300,502,287,074
Vehicles	10,824,603,088	-	-	(8,883,179,143)	-	1,941,423,945
Tools & fixtures	63,438,214,314	-	-	(56,814,195,882)	(317,964,599)	6,306,053,833
Construction-in-progress	228,623,473,504	-	-	-	-	228,623,473,504
Right-of-use assets	438,425,619,585	-	-	(42,748,588,333)	-	395,677,031,252
Others	57,163,260,738	-	-	(46,508,768,550)	(2,157,949,691)	8,496,542,497
Oil & gas properties ¹	21,996,797,205,688	-	(2,573,235,532)	(12,770,926,682,644)	(3,166,800,170,572)	6,056,497,116,940
	<u>\ 26,092,505,178,222</u>	<u>\ (3,217,783,683)</u>	<u>\ (2,573,235,532)</u>	<u>\ (14,199,718,592,382)</u>	<u>\ (3,169,276,084,862)</u>	<u>\ 8,717,719,481,763</u>

¹ Classified as 'other current assets' in the consolidated statements of financial position

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16. Property, Plant and Equipment (cont'd)

Changes in property, plant and equipment for the years ended December 31, 2020 and 2019, are as follows:

	2020						
	Beginning balance	Acquisition / Capital expenditures	Disposal	Depreciation	Reversal of impairment losses ¹	Others ²	Ending balance
Land ³	\ 480,854,588,938	\ 2,867,134,278	\ (718,698,761)	\ -	\ -	\ 564,514,135,150	\ 1,047,517,159,605
Buildings	47,288,293,257	1,529,271,178	(3,642,312,676)	(2,215,902,492)	-	6,710,650,984	49,670,000,251
Structures	1,191,646,889,380	797,089,660	(1,832,464,421)	(51,459,275,436)	-	(66,781,913,160)	1,072,370,326,023
(Contributions to construction)	(114,218,857)	-	-	3,880,465	-	6,583,187	(103,755,205)
Machinery	303,605,851,900	5,257,260,922	(1,895,460,292)	(31,633,549,903)	-	(11,581,913,367)	263,752,189,260
(Contributions to construction)	(3,103,564,826)	-	-	329,977,441	-	161,363,893	(2,612,223,492)
Vehicles	1,941,423,945	410,955,856	(1,742,863)	(983,712,125)	-	89,666,685	1,456,591,498
Tools & fixtures	6,306,053,833	950,255,942	(22,695,865)	(2,594,472,356)	-	384,729,389	5,023,870,943
Construction-in- progress	228,623,473,504	62,107,997,227	-	-	-	(38,642,119,872)	252,089,350,859
Right-of-use assets	395,677,031,252	7,770,994,154	(1,924,127,667)	(24,063,621,858)	-	(24,818,885,883)	352,641,389,998
Others	8,496,542,497	949,287,734	(43,727,012)	(3,213,018,118)	-	(1,178,368,405)	5,010,716,696
Oil & gas properties	6,059,070,352,481	320,150,558,494	(4,433,442,334)	(611,189,801,947)	(1,422,058,913,037)	630,581,188,609	4,972,119,942,266
(Government grants)	(2,573,235,541)	-	-	538,893,493	-	113,095,540	(1,921,246,508)
	\ 8,717,719,481,763	\ 402,790,805,445	\ (14,514,671,891)	\ (726,480,602,836)	\ (1,422,058,913,037)	\ 1,059,558,212,750	\ 8,017,014,312,194

¹ Impairment loss is a net amount, taking into account reversal amounts.

² Include the effect of changes in exchange rates and others.

³ The Group recognized, pretax valuation gains of \646,112 million through revaluation and pretax valuation losses of \2,213 million during the current period.

	2019							
	Beginning balance	Changes in accounting policies	Acquisition / Capital expenditures	Disposal	Depreciation	Reversal of impairment losses ¹	Others ²	Ending balance
Land	\ 464,743,696,853	-	-	\ (393,254,128)	\ -	\ -	\ 16,504,146,213	\ 480,854,588,938
Buildings	46,982,869,813	-	41,609,299	(1,108,533,558)	(2,010,194,312)	-	3,382,542,015	47,288,293,257
Structures	1,199,476,049,987	-	260,833,899	(20,498,853)	(51,333,323,536)	-	43,263,827,883	1,191,646,889,380
(Contributions to construction)	(113,979,136)	-	-	-	3,833,112	-	(4,072,833)	(114,218,857)
Machinery	316,979,684,881	-	8,027,834,546	(117,266,395)	(33,715,300,069)	-	12,430,898,937	303,605,851,900
(Contributions to construction)	(3,310,095,134)	-	-	-	326,257,905	-	(119,727,597)	(3,103,564,826)
Vehicles	2,171,499,802	-	535,198,643	(4,045,144)	(844,123,152)	-	82,893,796	1,941,423,945
Tools & fixtures	7,264,415,392	-	2,630,265,191	(10,804,744)	(4,163,739,838)	-	585,917,832	6,306,053,833
Finance lease asset	217,840,322,869	(217,840,322,869)	-	-	-	-	-	-
Construction-in- progress	148,150,981,966	-	85,884,351,812	(1,763,802,505)	-	-	(3,648,057,769)	228,623,473,504
Right-of-use assets	-	419,659,531,842	7,758,591,284	(22,285,137,201)	(30,228,178,974)	-	20,772,224,301	395,677,031,252
Others	10,230,437,591	-	1,179,973,225	(12,079,800)	(2,296,211,289)	-	(605,577,230)	8,496,542,497
Oil & gas properties	6,267,203,585,759	-	392,660,591,332	(16,729,605,422)	(842,633,538,287)	(151,026,362,671)	409,595,681,770	6,059,070,352,481
(Government grants)	(3,312,019,239)	-	-	-	862,188,805	-	(123,405,107)	(2,573,235,541)
	\ 8,674,307,451,404	\ 201,819,208,973	\ 498,979,249,231	\ (42,445,027,750)	\ (966,032,329,635)	\ (151,026,362,671)	\ 502,117,292,211	\ 8,717,719,481,763

¹ Impairment loss is a net amount, taking into account reversal amounts.

² Include the effect of changes in exchange rates and others.

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16. Property, Plant and Equipment (cont'd)

Details of impairments recognized by segments for the years ended December 31, 2020 and 2019, are as follows:

<i>(in Korean won)</i>	2020
	Oil and Gas¹
General information	
Type of assets	Oil and gas properties
Valuation method	Value in use
Assumptions	
Discount rate after tax ²	4.61%~17%
Oil prices ³	International indices
Production quantities	Estimated production quantities based on reserve reports
Recoverable amounts	2,691,368,686,505
Impairment losses	1,424,500,981,351
Reason for impairment	Decrease in forecasted oil prices

¹ The CGUs of the oil and gas segment are fields or areas.

² Weighted average costs of capital reflecting its own risk of a CGU and an individual asset.

³ The oil prices are based on the long-term forecasts from globally recognized research institutions.

<i>(in Korean won)</i>	2019
	Oil and Gas¹
General information	
Type of assets	Oil and gas properties
Valuation method	Value in use
Assumptions	
Discount rate after tax ²	9%~14%
Oil prices ³	International indices
Production quantities	Estimated production quantities based on reserve reports
Recoverable amounts	517,882,275,984
Impairment losses	176,250,829,929
Reason for impairment	Decrease in forecasted oil prices

¹ The CGUs of the oil and gas segment are fields or areas.

² Weighted average costs of capital reflecting its own risk of a CGU and an individual asset.

³ The oil prices are based on the long-term forecasts from globally recognized research institutions.

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16. Property, Plant and Equipment (cont'd)

Details of reversal of impairment losses recognized by segments for the years ended December 31, 2020 and 2019, are as follows:

<i>(in Korean won)</i>	2020
	Oil and Gas¹
General information	
Type of assets	Oil and gas properties
Valuation method	Value in use
Assumptions	
Discount rate after tax ²	4.61%~17%
Oil prices ³	International indices
Production quantities	Estimated production quantities based on reserve reports
Reversal of impairment losses	\ 2,442,068,314
Reason for impairment	Increase in probable reserves and others

¹ The CGUs of the oil and gas segment are fields or areas.

² Weighted average costs of capital reflecting its own risk of a CGU and an individual asset.

³ The oil prices are based on the long-term forecasts from globally recognized research institutions.

<i>(in Korean won)</i>	2019
	Oil and Gas¹
General information	
Type of assets	Oil and gas properties
Valuation method	Value in use
Assumptions	
Discount rate after tax ²	9%~14%
Oil prices ³	International indices
Production quantities	Estimated production quantities based on reserve reports
Reversal of impairment losses	\ 25,224,458,258
Reason for impairment	Increase in probable reserves and others

¹ The CGUs of the oil and gas segment are fields or areas.

² Weighted average costs of capital reflecting its own risk of a CGU and an individual asset.

³ The oil prices are based on the long-term forecasts from globally recognized research institutions.

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16. Property, Plant and Equipment (cont'd)

Revaluation of property, plant and equipment (land).

(a) As of December 31, 2020, the Group engaged an independent valuation specialist, Daeil Appraisal Agency and Hana Appraisal Corporation, to assess fair values for the land.

(b) Changes in accumulated other comprehensive income due to revaluation during the year ended December 31, 2020 are as follows:

<i>(In Korean won)</i>	2020
<i>Beginning balance</i>	\ -
<i>Increase in accumulated other comprehensive income due to revaluation</i>	646,111,637,783
<i>Income tax effect of accumulated other comprehensive income due to revaluation</i>	<u>(156,359,016,344)</u>
<i>Ending balance</i>	\ <u>489,752,621,439</u>

(c) As of December 31, 2020, the carrying amount of land measured based on the revaluation model and the cost model are as follows:

<i>(In Korean won)</i>	2020	
	<u>Revaluation model</u>	<u>Cost model</u>
Land	\ <u>1,047,517,159,605</u>	\ <u>453,846,274,657</u>

(d) Fair values of land by hierarchy level as of December 31, 2020, are as follows:

<i>(In Korean won)</i>	2020			
	<u>Level 1</u>	<u>Level 2</u>	<u>Level 3</u>	<u>Total</u>
Land	\ - \	- \	1,047,517,159,605 \	1,047,517,159,605

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16. Property, Plant and Equipment (cont'd)

(e) Description of valuation techniques used and key inputs to valuation of *land*:

Valuation techniques	Significant unobservable inputs	Relationship between unobservable inputs and fair value measurements
	Adjustment based on time (rate of change in land price)	If the rate of change in land price rises (falls), the fair value increases (decreases).
(Act on Publicly Announced Land Price)	Regional factors	If regional factors increase (decrease), fair value increases (decreases)
Determined on the basis of publicly announced price of the standard land for the land subject to measurement and the neighboring land, yet fair values are measured by adjusting based on the time, individual factors and others	Individual factors (conditions of a portion of land, etc.)	If adjustments such as conditions of a portion of land increase (decrease), fair values increase (decrease)
	Others (land price etc.)	If adjustments increase (decrease) by comparing publicly announced standard land price and other similar cases, fair values increase (decrease)

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17. Goodwill

Details of goodwill as of December 31, 2020 and 2019, are as follows:

<i>(in Korean won)</i>	<u>2020</u>	<u>2019</u>
Acquisition cost	\ 1,255,984,175,545	\ 1,163,295,063,317
Accumulated impairment losses	<u>(1,034,964,146,999)</u>	<u>(1,010,319,143,482)</u>
Book value	<u>\ 221,020,028,546</u>	<u>\ 152,975,919,835</u>

Changes in goodwill for the years ended December 31, 2020 and 2019, are as follows:

<i>(in Korean won)</i>	<u>2020</u>	<u>2019</u>
Beginning balance	\ 152,975,919,835	\ 143,792,882,265
Acquisition ¹	104,298,110,592	-
Impairment losses	(32,552,922,480)	-
Other changes ²	<u>(3,701,079,401)</u>	<u>9,183,037,570</u>
Ending balance	<u>\ 221,020,028,546</u>	<u>\ 152,975,919,835</u>

¹ It is the recognition amount of KADOC Ltd. Goodwill that was reclassified as a subsidiary from a joint venture, as control was acquired through a change in the shareholders' agreement in 2020.

² Include the effect of exchange rate changes.

Changes in accumulated impairment losses for the years ended December 31, 2020 and 2019, are as follows:

<i>(in Korean won)</i>	<u>2020</u>	<u>2019</u>
Beginning balance	\ (1,010,319,143,482)	\ (963,785,846,848)
Impairment losses	(32,552,922,480)	-
Other changes ¹	<u>7,907,918,963</u>	<u>(46,533,296,634)</u>
Ending balance	<u>\ (1,034,964,146,999)</u>	<u>\ (1,010,319,143,482)</u>

¹ Include the effect of exchange rate changes.

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17. Goodwill (cont'd)

The Group recognized goodwill for the acquisition of Dana Petroleum Limited, Altius Holdings Inc. and KADOC Ltd., and allocated the goodwill to each of the Group's cash-generating unit that is expected to benefit from the synergies of the acquisition.

The carrying amounts of goodwill allocated to the Group's CGUs and groups of CGUs as of December 31, 2020 and 2019 are as follows:

<i>(in Korean won)</i>	2020	2019
Dana Petroleum Limited ¹	\ 126,100,922,304 \	\ 129,187,626,950
Altius Holdings Inc. (a subsidiary of KNOC Kaz B.V.) ²	20,634,622,402	23,788,292,885
KADOC Ltd. ³	74,284,483,840	-
	\ 221,020,028,546 \	152,975,919,835

¹ Dana Petroleum Limited's recoverable amount is estimated based on the value in use. The value in use is estimated from the cash inflows, which are discounted at 8% and 12% derived from the oil production in the long-term production plan indicated in the reserve reports and the long-term oil price forecasts by the research institutions. There is no impairment loss on goodwill recognized based on the value in use estimated for each CGU for the year ended December 31, 2020.

² Altius Holding Inc.'s recoverable amount is estimated based on the value in use. The value in use is estimated from the cash inflows, which are discounted at 4.34%, derived from the oil production in the long-term production plan indicated in the reserve reports and the long-term oil price forecasts by the research institutions. There is no impairment loss on goodwill recognized based on the value in use estimated for each CGU for the year ended December 31, 2020.

³ KADOC Ltd.'s recoverable amount is estimated based on the value in use. The value in use is estimated from the cash inflows, which are discounted at 8.55%, derived from the oil production in the long-term production plan indicated in the reserve reports and the long-term oil price forecasts by the research institutions. There is impairment loss on goodwill recognized based on the value in use estimated for each CGU for the year ended December 31, 2020.

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18. Intangible Assets Other Than Goodwill

Details of intangible assets other than goodwill as of December 31, 2020 and 2019, are as follows:

(in Korean won)

	2020				
	Acquisition cost	Government grants	Accumulated amortization	Accumulated impairment losses	Book value
Exploration and evaluation assets	\ 3,238,637,976,646 \	- \	- \	(2,861,127,722,371) \	377,510,254,275
Software	34,037,009,408	(34,266,332)	(29,085,354,944)	-	4,917,388,132
Mining rights	2,848,394,486,503	-	(1,598,941,724,895)	(323,983,700,284)	925,469,061,324
Development cost	42,315,240,736	-	(37,727,394,193)	-	4,587,846,543
Land use right	227,828,353	-	(88,062,056)	-	139,766,297
Others	86,898,525,184	-	(1,105,262,888)	(83,903,879,543)	1,889,382,753
	\ 6,250,511,066,830 \	\ (34,266,332) \	\ (1,666,947,798,976) \	\ (3,269,015,302,198) \	1,314,513,699,324

(in Korean won)

	2019			
	Acquisition cost	Accumulated amortization	Accumulated impairment losses	Book value
Exploration and evaluation assets	\ 3,191,284,101,953 \	- \	(2,797,975,632,548) \	393,308,469,405
Software	31,811,939,729	(29,276,965,574)	-	2,534,974,155
Mining rights	2,907,549,721,909	(1,651,866,802,705)	(251,933,962,336)	1,003,748,956,868
Development cost	43,026,248,119	(38,097,329,112)	-	4,928,919,007
Land use right	242,444,478	(87,646,618)	-	154,797,860
Others	92,620,669,009	(1,159,225,321)	(89,311,085,182)	2,150,358,506
	\ 6,266,535,125,197 \	\ (1,720,487,969,330) \	\ (3,139,220,680,066) \	1,406,826,475,801

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18. Intangible Assets Other Than Goodwill (cont'd)

Changes in intangible assets other than goodwill for the years ended December 31, 2020 and 2019, are as follows:

(in Korean won)

	2020						
	Beginning balance	Acquisition / Capital expenditures	Disposal	Amortization	Impairment losses (reversal)	Others ¹	Ending balance
Exploration and evaluation assets	\ 393,308,469,405	\ 17,567,520,561	\ (168,157,125)	-	\ (160,291,360,202)	\ 127,093,781,636	\ 377,510,254,275
Software	2,534,974,155	531,424,329	(1,179,224)	(1,350,620,012)	-	3,202,788,884	4,917,388,132
Mining rights	1,003,748,956,868	9,279,548,352	(1,130,319,696)	(58,756,631,190)	(108,462,171,565)	80,789,678,555	925,469,061,324
Development cost	4,928,919,007	682,441,229	-	(2,089,848,572)	-	1,066,334,879	4,587,846,543
Land use right	154,797,860	-	-	(6,181,031)	-	(8,850,532)	139,766,297
Others	2,150,358,506	9,196,461	(87,590,391)	(51,939,435)	-	(130,642,388)	1,889,382,753
	\ 1,406,826,475,801	\ 28,070,130,932	\ (1,387,246,436)	\ (62,255,220,240)	\ (268,753,531,767)	\ 212,013,091,034	\ 1,314,513,699,324

¹ Impairment loss is a net amount, taking into account reversal amounts.

² Include the effect of changes in exchange rates and others.

(in Korean won)

	2019						
	Beginning balance	Acquisition / Capital expenditures	Disposal ¹	Amortization	Impairment losses (reversal) ²	Others ³	Ending balance
Exploration and evaluation assets	\ 348,543,496,938	\ 46,459,217,970	-	-	\ (2,136,533,745)	\ 442,288,242	\ 393,308,469,405
Software	3,118,804,660	636,241,292	-	(1,378,563,258)	-	158,491,461	2,534,974,155
Mining rights	1,702,800,332,492	685,994,478	(767,240,772,901)	(77,412,177,985)	37,260,193,009	107,655,387,775	1,003,748,956,868
Development cost	6,518,193,161	184,960,458	-	(2,436,939,409)	-	662,704,797	4,928,919,007
Land use right	155,346,578	-	-	(6,105,605)	-	5,556,887	154,797,860
Others	2,231,502,035	85,068,190	(210,497,973)	-	-	44,286,254	2,150,358,506
	\ 2,063,367,675,864	\ 48,051,482,388	\ (767,451,270,874)	\ (81,233,786,257)	\ 35,123,659,264	\ 108,968,715,416	\ 1,406,826,475,801

¹ In accordance with the amendment to the CBSA contract in Iraq, the related mining rights of \ 767,241 million have been disposed of.

² Impairment loss is a net amount, taking into account reversal amounts.

³ Include the effect of changes in exchange rates and others.

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19. Financial Liabilities Measured at Fair Value through Profit or Loss

Details of financial liabilities measured at fair value through profit or loss as of December 31, 2020 and 2019, are as follows:

(in Korean won)

	2020		2019	
	Current	Non-current	Current	Non-current
Non-derivative liabilities	\ 2,585,153,204	\ 29,539,647,462	\ 13,385,977,456	\ 55,382,409,262
	\ 2,585,153,204	\ 29,539,647,462	\ 13,385,977,456	\ 55,382,409,262

The amounts recognized in profit or loss in relation to financial liabilities measured at fair value through profit or loss for the years ended December 31, 2020 and 2019, are as follows:

(in Korean won)

	2020	2019
Profit on valuation of financial liabilities measured at fair value through profit or loss	\ 37,229,917,380	-
Loss on valuation of financial liabilities measured at fair value through profit or loss	(4,862,291,130)	(15,615,393,575)
	\ 32,367,626,250	\ (15,615,393,575)

20. Trade and Other Payables

Details of trade and other payables as of December 31, 2020 and 2019, are as follows:

(in Korean won)

	2020		2019	
	Current	Non-current	Current	Non-current
Trade account payables	\ 76,799,071,681	\ 6,176,382,129	\ 155,458,055,112	-
Other account payables	356,518,241,162	14,830,067,091	426,838,223,343	31,069,709,323
Accrued expenses	107,158,859,364	143,238,704,285	102,733,436,708	137,434,555,894
Deposit received	-	4,729,914,624	-	5,051,954,246
Other deposits received	-	12,885,489	-	14,827,887
Lease liability	31,370,166,488	359,391,205,410	43,652,767,750	375,064,927,912
Other payables ¹	47,841,192,279	-	42,974,828,693	773,845,605
	\ 619,687,530,974	\ 528,379,159,028	\ 771,657,311,606	\ 549,409,820,867

¹ Details of other payables are as follows:

(in Korean won)

	2020		2019	
	Current	Non-current	Current	Non-current
Advances from value added tax	\ 1,979,819,706	-	\ 857,363,867	-
Liabilities from overseas oil fields	38,062,273,793	-	40,531,797,231	-
Other than payables	7,799,098,780	-	1,585,667,595	773,845,605
	\ 47,841,192,279	-	\ 42,974,828,693	\ 773,845,605

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21. Borrowings and Bond Payables

Details of borrowings and bond payables as of December 31, 2020 and 2019, are as follows:

<i>(in Korean won)</i>	2020	2019
Current Liabilities		
Short-term borrowings	\ 259,155,616,000 \	115,780,000,000
Current portion of long-term borrowings	1,151,261,349,987	443,244,598,733
Less: current portion of present discounted value	(123,868,593)	-
Current portion of bond payables	1,645,555,886,017	982,874,600,007
Less: current portion of discount on bond payables	(577,623,378)	(131,552,154)
	<u>3,055,271,360,033</u>	<u>1,541,767,646,586</u>
Non-current Liabilities		
Long-term borrowings	1,011,213,592,813	1,852,512,931,074
Less: present discounted value	(81,855,473)	(412,706,551)
Bond payables	10,231,001,702,493	10,466,083,138,075
Less: discount on bond payables	(23,975,308,461)	(25,574,361,292)
Add: premium on bond payables	4,281,782,079	4,067,368,894
	<u>11,222,439,913,451</u>	<u>12,296,676,370,200</u>
	<u>\ 14,277,711,273,484 \</u>	<u>\ 13,838,444,016,786</u>

Details of payment schedule as of December 31, 2020 and 2019, are as follows:

<i>(in Korean won)</i>	2020		2019	
	Borrowings	Bond payables	Borrowings	Bond payables
Within a year	\ 1,410,416,965,987 \	\ 1,645,555,886,017 \	\ 559,024,598,733 \	\ 982,874,600,007 \
1~5 years	818,739,388,465	7,465,415,702,492	1,647,907,573,778	7,181,131,338,076
More than 5 years	192,474,204,348	2,765,586,000,001	204,605,357,296	3,284,951,799,999
	<u>\ 2,421,630,558,800 \</u>	<u>\ 11,876,557,588,510 \</u>	<u>\ 2,411,537,529,807 \</u>	<u>\ 11,448,957,738,082 \</u>

Details of short-term borrowings as of December 31, 2020 and 2019, are as follows:

<i>(in Korean won)</i>				
Type	Financial Institutions	Interest rate (%)	Maturity	2020
Short-term borrowings	SUMITOMO MITSUI BANKING CORPORATION	2.25	2021-03-31 \	127,997,760,000
	Standard Chartered Bank	2.50	2021-08-24	76,798,656,000
	The Export-Import Bank of Korea	L+0.63	2021-06-28	54,359,200,000
				<u>\ 259,155,616,000</u>

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21. Borrowings and Bond Payables (cont'd)

(in Korean won)

Type	Financial Institutions	Interest rate (%)	Maturity	2019
Short-term borrowings	The Export-Import Bank of Korea	L+0.63	2020-06-25	\ 57,890,000,000
	Development Bank of Singapore	U3L+0.30	2020-03-27	57,890,000,000
				\ 115,780,000,000

Details of long-term borrowings as of December 31, 2020 and 2019, are as follows:

(in Korean won and foreign currencies)

Type	Financial Institution	Interest rate (%)	Maturity	2020		2019	
				Amount	Equivalent to Korean won	Amount	Equivalent to Korean won
Long-term borrowings	The Export-Import Bank of Korea	3ML+0.67	2021-11-28	USD 250,000,000	\ 272,000,000,000	USD 250,000,000	\ 289,450,000,000
	The Export-Import Bank of Korea	3ML +0.78	2022-01-31	USD 100,000,000	108,800,000,000	USD 100,000,000	115,780,000,000
	The Export-Import Bank of Korea	1.28	2022-09-06	USD 45,955,882	50,000,000,000	USD 43,185,352	50,000,000,000
	The Export-Import Bank of Korea	1.61	2022-11-12	USD 45,955,882	50,000,000,000	USD 43,185,352	50,000,000,000
	SAER ¹	Treasury 3Y -1.25	N/A ¹	USD 95,026,814	103,389,172,783	USD 95,026,813	110,022,044,349
	SAER ¹	Treasury 3Y -2.25 ¹	N/A ¹	USD 81,879,625	89,085,031,565	USD 81,692,272	94,583,313,101
	KNOC EF STAR LLC	3.18	2021-11-25	USD 415,994,623	452,602,149,987	USD 390,915,659	452,602,150,002
	Kernhem International B.V	8.13	2038-04-29	USD 16,717,950	18,189,129,600	USD 16,717,950	19,356,042,510
	SUMITOMO MITSU BANKING CORPORATION	3.97	2023-05-11	USD 234,871,492	255,540,182,872	USD 229,126,310	265,282,441,158
	Credit facility	1.65	2022-07-29	USD 309,016,614	336,210,075,993	USD 350,178,736	405,436,939,954
	The Export-Import Bank of Korea	2.27	2021-02-04	USD 392,150,000	426,659,200,000	USD 382,833,476	443,244,598,733
						2,162,474,942,800	
Less: present value discount					(205,724,066)		(412,706,551)
					2,162,269,218,734		2,295,344,823,256
Less: current portion					(1,151,261,349,987)		(443,244,598,733)
Less: current portion of present discounted value					123,868,593		-
					\ 1,011,131,737,340		\ 1,852,100,224,523

¹ SAER stands for Special Accounting for Energy and Resources. Borrowing from SAER have no specific maturity as they were borrowed under the condition that the Group is not obligated to make repayment of the principal and interest until the Group successfully complete the oil exploration.

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21. Borrowings and Bond Payables (cont'd)

Details of bond payables as of December 31, 2020 and 2019, are as follows:

<i>(In Korean won and foreign currencies)</i>			2020		2019	
Type	Interest rate (%)	Maturity	Amount	Equivalent to Korean won	Amount	Equivalent to Korean won
Floating interest rate bond payables	-	-	-	\	USD 500,000,000	\ 578,900,000,000
	3ML+0.88	2023-07-16	USD 400,000,000.00	435,200,000,000	USD 400,000,000	463,120,000,000
	3ML+0.68	2021-12-20	USD 50,000,000.00	54,400,000,000	USD 50,000,000	57,890,000,000
	3ML+0.68	2022-01-22	USD 150,000,000.00	163,200,000,000	USD 150,000,000	173,670,000,000
Fixed interest rate bond payables	4.38	2021-02-08	HKD 500,000,000	70,175,000,000	HKD 500,000,000	74,329,999,997
	4.50	2021-03-04	HKD 390,000,000	54,736,500,000	HKD 390,000,000	57,977,399,995
	3.95	2022-02-10	HKD 390,000,000	54,736,500,000	HKD 390,000,000	57,977,399,995
	4.00	2022-03-28	EUR 50,000,000	66,912,000,000	EUR 50,000,000	64,871,499,995
	2.85	2023-01-24	HKD 400,000,000	56,140,000,000	HKD 400,000,000	59,464,000,004
	2.40	2023-02-04	EUR 37,000,000	49,514,880,000	EUR 37,000,000	48,004,910,001
	3.00	2025-06-24	EUR 60,000,000	80,294,400,000	EUR 60,000,000	77,845,799,999
	3.09	2023-07-03	EUR 50,000,000	66,912,000,000	EUR 50,000,000	64,871,499,995
	4.00	2024-01-23	USD 500,000,000	544,000,000,000	USD 500,000,000	578,900,000,000
	3.25	2024-07-10	USD 550,000,000	598,400,000,000	USD 550,000,000	636,790,000,000
	-	-	-	-	HKD 310,000,000	46,084,599,999
	3.10	2027-01-21	USD 50,000,000	54,400,000,000	USD 50,000,000	57,890,000,000
	3.10	2027-01-21	USD 70,000,000	76,160,000,000	USD 70,000,000	81,046,000,000
	-	-	-	-	USD 50,000,000	57,890,000,000
	-	-	-	-	KRW 100,000,000,000	100,000,000,000
	3.21	2030-03-19	USD 85,000,000	92,480,000,000	USD 85,000,000	98,413,000,000
	2.99	2025-03-19	USD 90,000,000	97,920,000,000	USD 90,000,000	104,202,000,000
	-	-	-	-	KRW 50,000,000,000	50,000,000,000
	2.82	2025-04-29	USD 65,000,000	70,720,000,000	USD 65,000,000	75,257,000,000
	3.02	2030-04-29	USD 60,000,000	65,280,000,000	USD 60,000,000	69,468,000,000
	-	-	-	-	KRW 150,000,000,000	150,000,000,000
	3.25	2025-10-01	USD 600,000,000	652,800,000,000	USD 600,000,000	694,680,000,000
	3.22	2030-11-10	USD 100,000,000	108,800,000,000	USD 100,000,000	115,780,000,000
	2.13	2021-04-14	USD 500,000,000	544,000,000,000	USD 500,000,000	578,900,000,000
	2.63	2026-04-14	USD 500,000,000	544,000,000,000	USD 500,000,000	578,900,000,000
	2.00	2021-10-24	USD 350,000,000	380,800,000,000	USD 350,000,000	405,230,000,000
	2.50	2026-10-24	USD 650,000,000	707,200,000,000	USD 650,000,000	752,570,000,000
	2.88	2022-03-27	USD 500,000,000	544,000,000,000	USD 500,000,000	578,900,000,000
	3.38	2027-03-27	USD 500,000,000	544,000,000,000	USD 500,000,000	578,900,000,000
	1.96	2021-01-30	SGD 400,000,000	328,888,000,000	SGD 400,000,000	343,420,000,000
	0.37	2023-06-01	CHF 500,000,000	617,165,000,000	CHF 500,000,000	597,760,000,004
	0.24	2022-01-21	JPY 70,000,000,000	737,982,000,000	JPY 70,000,000,000	744,428,999,995
	0.00	2024-10-04	CHF 300,000,000	370,299,000,000	CHF 300,000,000	358,656,000,002
	1.09	2023-06-23	KRW 100,000,000,000	100,000,000,000	-	-
	1.03	2023-07-21	KRW 150,000,000,000	150,000,000,000	-	-
	1.02	2023-08-14	KRW 150,000,000,000	150,000,000,000	-	-
	1.03	2023-08-21	KRW 100,000,000,000	100,000,000,000	-	-
	1.18	2023-09-08	KRW 100,000,000,000	100,000,000,000	-	-
	2.50	2025-03-26	HKD 160,000,000	22,456,000,000	-	-
	0.88	2025-04-21	CHF 200,000,000	246,866,000,000	-	-
	0.88	2025-10-05	USD 400,000,000	435,200,000,000	-	-
	0.26	2027-07-30	CHF 100,000,000	123,433,000,000	-	-
	0.26	2027-07-30	CHF 100,000,000	123,433,000,000	-	-
	1.63	2030-10-05	USD 300,000,000	326,400,000,000	-	-
	2.33	2021-04-14	USD 195,364,325	212,556,386,017	USD 194,649,689	225,365,410,040
	3.00	2022-09-21	USD 482,320,025	524,764,187,200	USD 479,663,240	555,354,099,828
	4.20	2023-06-01	USD 395,159,684	429,933,735,293	USD 393,202,728	455,250,118,233
				11,876,557,588,510		11,448,957,738,082
Less: discount on bond payables				(24,552,931,839)		(25,705,913,446)
Add: premium on bond payables				4,281,782,079		4,067,368,894
				11,856,286,438,750		11,427,319,193,530
Less: current portion				(1,645,555,886,017)		(982,874,600,007)
Add: current portion of discount of bond payables				577,623,378		131,552,154
				\ 10,211,308,176,111		\ 10,444,576,145,677

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22. Other Financial Liabilities

Details of other financial liabilities as of December 31, 2020 and 2019, are as follows:

(in Korean won)

	2020		2019	
	Current	Non-current	Current	Non-current
Financial guarantee liabilities	\ 8,575,601,856	\ -	\ 9,125,764,549	\ -
	\ 8,575,601,856	\ -	\ 9,125,764,549	\ -

23. Lease

(a) *The Group as a lessee*

The Group recognized as the lease contract with a lease term of 12 months or less as a short-term lease of \ 1,519 million in 2020 and of \ 9,499 million in 2019, and as a low value contract with underlying assets below \$ 5,000 of \ 148 million in 2020 and of \ 136 million in 2019.

Details of right-of-use assets as of December 31, 2020, are as follows:

(in Korean won)

	2020		
	Acquisition cost	Accumulated depreciation	Book value
Land	\ 4,155,903,646	\ (228,344,050)	\ 3,927,559,596
Buildings	263,492,841,363	(34,209,874,944)	229,282,966,419
Machinery	273,202,022	(182,136,422)	91,065,600
Vessels	10,671,433,363	(4,120,714,540)	6,550,718,823
Vehicles	4,640,735,381	(3,255,953,569)	1,384,781,812
Others	122,462,031,006	(11,057,733,258)	111,404,297,748
	\ 405,696,146,781	(53,054,756,783)	352,641,389,998

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23. Lease (cont'd)

Details of right-of-use assets as of December 31, 2019, are as follows:

(in Korean won)

	2019		
	Acquisition cost	Accumulated depreciation	Book value
Land	\ 5,477,616,837	\ (852,762,881)	\ 4,624,853,956
Buildings	277,993,991,583	(23,517,644,035)	254,476,347,548
Structures	9,320,024,960	(9,320,024,960)	-
Machinery	314,956,566	(104,986,525)	209,970,041
Vessels	10,130,185,334	(2,036,548,187)	8,093,637,147
Vehicles	4,890,023,255	(1,276,342,592)	3,613,680,663
Others	130,298,821,050	(5,640,279,153)	124,658,541,897
	\ 438,425,619,585	\ (42,748,588,333)	\ 395,677,031,252

Changes in right-of-use assets for the years ended December 31, 2020 and 2019, are as follows:

(in Korean won)

	2020					
	Beginning balance	Increase	Depreciation	Decrease	Others ¹	Ending balance
Land	\ 4,624,853,956	\ 1,831,867,223	\ (535,416,590)	\ (1,924,127,667)	\ (69,617,326)	\ 3,927,559,596
Buildings	254,476,347,548	2,692,157,711	(12,514,526,139)	-	(15,371,012,701)	229,282,966,419
Machinery	209,970,041	-	(98,773,017)	-	(20,131,424)	91,065,600
Vessels	8,093,637,147	3,143,209,173	(2,393,661,171)	-	(2,292,466,326)	6,550,718,823
Vehicles	3,613,680,663	27,869,646	(2,207,793,983)	-	(48,974,514)	1,384,781,812
Others	124,658,541,897	75,890,401	(6,313,450,958)	-	(7,016,683,592)	111,404,297,748
	\ 395,677,031,252	\ 7,770,994,154	\ (24,063,621,858)	\ (1,924,127,667)	\ (24,818,885,883)	\ 352,641,389,998

¹ Include the effect of changes in exchange rates and others.

(in Korean won)

	2019						
	Beginning balance	Changes in accounting policies	Increase	Depreciation	Decrease	Others ¹	Ending balance
Land	\ -	\ 6,285,119,230	\ -	\ (858,544,699)	\ -	\ (801,720,575)	\ 4,624,853,956
Buildings	-	254,128,278,492	547,789,186	(10,872,524,229)	-	10,672,804,099	254,476,347,548
Structures	-	30,376,515,538	-	(9,383,215,663)	(22,285,137,201)	1,291,837,326	-
Machinery	-	304,156,967	-	(105,698,344)	-	11,511,418	209,970,041
Vessels	-	3,610,370,377	1,572,994,180	(2,050,356,188)	-	4,960,628,778	8,093,637,147
Vehicles	-	1,219,224,272	3,610,217,314	(1,279,318,709)	-	63,557,786	3,613,680,663
Others	-	123,735,867,033	2,027,590,604	(5,678,521,545)	-	4,573,605,805	124,658,541,897
	\ -	\ 419,659,531,909	\ 7,758,591,284	\ (30,228,179,377)	\ (22,285,137,201)	\ 20,772,224,637	\ 395,677,031,252

¹ Include the effect of changes in exchange rates and others.

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23. Lease (cont'd)

Details of maturity analysis for lease liabilities as of December 31, 2020 and 2019, are as follows:

(in Korean won)

	2020		2019	
	Contractual undiscounted cash flows	Present value of contractual cash flows	Contractual undiscounted cash flows	Present value of contractual cash flows
Lease of main office building				
Within 1 year	\ 8,526,999,996	\ 8,327,296,335	\ 8,526,999,996	\ 8,327,296,335
1-5 years	38,282,677,083	33,533,698,017	37,216,802,079	32,541,129,971
More than 5 years	453,798,409,707	183,010,609,266	463,391,284,707	182,672,425,176
	<u>500,608,086,786</u>	<u>224,871,603,618</u>	<u>509,135,086,782</u>	<u>223,540,851,482</u>
Lease of public surface of sea, etc.				
Within 1 year	23,895,725,694	23,042,870,153	36,491,534,472	35,325,471,422
1-5 years	59,294,039,722	55,111,112,180	69,043,158,712	63,882,403,525
More than 5 years	114,719,181,243	87,735,785,947	126,113,283,689	95,968,969,233
	<u>197,908,946,659</u>	<u>165,889,768,280</u>	<u>231,647,976,873</u>	<u>195,176,844,180</u>
Total				
Within 1 year	32,422,725,690	31,370,166,488	45,018,534,468	43,652,767,757
1-5 years	97,576,716,805	88,644,810,197	106,259,960,791	96,423,533,496
More than 5 years	568,517,590,950	270,746,395,213	589,504,568,396	278,641,394,409
	<u>\ 698,517,033,445</u>	<u>\ 390,761,371,898</u>	<u>\ 740,783,063,655</u>	<u>\ 418,717,695,662</u>

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23. Lease (cont'd)

Liquidity classification of lease liabilities as of December 31, 2020 and 2019, are as follows:

<i>(in Korean won)</i>	<u>2020</u>	<u>2019</u>
Current	\ 31,370,166,488 \	43,652,767,750
Non-current	359,391,205,410	375,064,927,912
	<u>\ 390,761,371,898 \</u>	<u>418,717,695,662</u>

Changes in lease liabilities in relation to lease contracts for the years ended December 31, 2020 and 2019, are as follows:

<i>(in Korean won)</i>	2020					
	Beginning balance	Increase	Interest expense	Decrease	Others	Ending balance
Lease liabilities	\ 418,717,695,662 \	7,703,366,400 \	14,465,865,954 \	(46,144,450,613) \	(3,981,105,505) \	390,761,371,898

<i>(in Korean won)</i>	2019						
	Beginning balance	Changes in accounting policies	Increase	Interest expense	Decrease	Others	Ending balance
Lease liabilities	\ 222,267,254,416 \	200,697,139,303 \	7,758,591,284 \	14,918,929,729 \	(43,579,827,627) \	16,655,608,557 \	418,717,695,662

The statement of profit or loss shows the following amounts relating to leases:

<i>(in Korean won)</i>	<u>2020</u>	<u>2019</u>
Depreciation of right-of-use assets		
Land	\ (535,416,590) \	(858,544,699)
Buildings	(12,514,526,139)	(10,872,524,229)
Structures	-	(9,383,215,663)
Machinery	(98,773,017)	(105,698,344)
Vessels	(2,393,661,171)	(2,050,356,188)
Vehicles	(2,207,793,983)	(1,279,318,709)
Others	(6,313,450,958)	(5,678,521,545)
	<u>\ (24,063,621,858) \</u>	<u>(30,228,179,377)</u>
Interest expense relating to lease liabilities (included in finance cost)	(14,465,865,954)	(14,918,929,729)
Commitments relating to short-term leases	(1,519,217,221)	(9,498,762,607)
Commitments relating to leases of low value assets	(148,458,822)	(136,412,045)
Deferred revenue recognized sale and leaseback transaction	968,431,616	956,613,969
Interest income from leasehold deposits provided	972,907,977	959,528,169
	<u>\ (38,255,824,262) \</u>	<u>(52,866,141,620)</u>

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23. Lease (cont'd)

(b) The Group as a lessor

The Group has entered into operating leases on its certain property, plant and equipment. The lease terms are between 1 and 40 years.

Lease income from operating leases where the Group is a lessor, is as follows:

<i>(in Korean won)</i>	<u>2020</u>	<u>2019</u>
Lease income	\ 23,490,042,672	\ 64,017,923,241
Related to variable lease payment that does not depend on an index or a rate	<u>10,348,507,525</u>	<u>6,242,117,425</u>
	<u>\ 33,838,550,197</u>	<u>\ 70,260,040,666</u>

The maturity analysis for operating lease payments expected to be received (in undiscounted) as of December 31, 2020 and 2019, is as follows:

<i>(in Korean won)</i>	<u>2020</u>	<u>2019</u>
Within 1 year	\ 1,759,003,598	\ 23,058,772,589
1~5 years	6,585,286,247	7,274,096,432
More than 5 years	<u>34,385,457,655</u>	<u>38,196,952,884</u>
	<u>\ 42,729,747,500</u>	<u>\ 68,529,821,905</u>

Lease income from finance leases where the Group is a lessor, is as follows:

<i>(in Korean won)</i>	<u>2020</u>	<u>2019</u>
Finance income on the net investment in the lease	\ 411,256,388	\ 181,348,821
	<u>\ 411,256,388</u>	<u>\ 181,348,821</u>

The maturity analysis for finance lease payments receivable expected to be received (in undiscounted); reconciliation to the net investment in the lease as of December 31, 2020 and 2019, is as follows:

<i>(in Korean won)</i>	<u>2020</u>	<u>2019</u>
Within 1 year	\ 3,185,505,174	\ 7,566,303,154
1~5 years	6,055,295,096	6,087,878,516
More than 5 years	<u>4,079,535,292</u>	<u>4,966,307,142</u>
	13,320,335,562	18,620,488,812
Unrealized finance income	<u>(976,424,218)</u>	<u>(1,517,693,493)</u>
Net investment in the lease	<u>\ 12,343,911,344</u>	<u>\ 17,102,795,319</u>

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24. Employee Benefits

Defined contribution pension plan

The Group operates both defined contribution and defined benefit pension plans based on choice of directors and employees. Contributions to the DC plan are separately managed by the plan's administrator. When employees terminate their employment before the benefits have vested, the Group's obligation to make contribution to the plan decreases on a pro rata basis.

Details of expenses relating to defined contribution plans for the years ended December 31, 2020 and 2019, are as follows:

<i>(in Korean won)</i>	2020 ¹	2019
Cost of sales	\ 371,626,007 \	543,803,596
Selling and administrative expenses	888,962,110	698,604,876
	\ 1,260,588,117 ² \	1,242,408,472 ²

¹ Profit or loss recognized for defined contribution plan that are capitalized as other construction costs (property, plant and equipment) of \ 5 million are excluded.

² Total expenses of \ 1,277 million and \ 1,242 million for the years ended December 31, 2020 and 2019, respectively, are contributions paid by the Group based on the payment rate as defined in retirement benefits plan. There are no unpaid amounts as of December 31, 2020.

Defined benefit pension plan

The latest actuarial calculation on both plan assets and defined benefit obligation was performed as of December 31, 2020. The Group uses the projected unit credit method to determine the present value of its defined benefit obligations, the related current service costs and past service cost.

The components of defined benefits liabilities as of December 31, 2020 and 2019, are as follows:

<i>(in Korean won)</i>	2020	2019
Present value of defined benefit obligation from funded plans	\ 117,209,580,321 \	106,177,091,120
Fair value of plan assets	(104,274,909,664)	(92,723,152,505)
	\ 12,934,670,657 \	13,453,938,615

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24. Employee Benefits (cont'd)

Changes in the present value of defined benefit obligations for the years ended December 31, 2020 and 2019, are as follows:

<i>(in Korean won)</i>	<u>2020</u>	<u>2019</u>
Beginning balance	\ 106,177,091,120 \	92,282,603,218
Current service cost	9,748,759,356	8,874,687,581
Interest cost	3,607,856,340	3,402,821,953
Remeasurement components	5,176,012,963	2,751,967,063
Actual payments	(7,500,139,458)	(4,181,051,016)
Past service cost resulting from plan amendments, curtailments or settlement	-	3,046,062,321
Ending balance	<u>\ 117,209,580,321 \</u>	<u>106,177,091,120</u>

Changes in the fair value of plan assets for the years ended December 31, 2020 and 2019, are as follows:

<i>(in Korean won)</i>	<u>2020</u>	<u>2019</u>
Beginning balance	\ 92,723,152,505 \	83,532,790,891
Expected return on plan assets	3,191,092,405	3,136,622,990
Remeasurement components	(1,472,200,972)	(1,470,235,041)
Benefit paid by the plan	(7,681,134,910)	(4,000,055,550)
Contributions paid into the plan	17,514,000,636	11,524,029,215
Ending balance	<u>\ 104,274,909,664 \</u>	<u>92,723,152,505</u>

Details of the fair value of plan assets as of December 31, 2020 and 2019, are as follows:

<i>(in Korean won)</i>	<u>Expected rate of return²</u>		<u>Fair value of plan assets</u>	
	<u>2020</u>	<u>2019</u>	<u>2020</u>	<u>2019</u>
Others ¹	3.44%	3.69%	\ 104,274,909,664 \	92,723,152,505

¹ Others are comprised of 17% of deposit and 83% of local and overseas securities, and debt securities as of December 31, 2020.

² The expected rate of return is calculated based on the weighted average of expected rate of returns for each type of assets. The management evaluates the expected rate of returns based on the historical rate of return trends and the analysis of the predicted market during the period when the defined benefits liabilities exist.

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24. Employee Benefits (cont'd)

Principal actuarial assumptions as of December 31, 2020 and 2019, are as follows:

<i>(in percentage, %)</i>	<u>2020</u>	<u>2019</u>
Discount rate	3.53	3.48
Expected rate of return on plan assets	3.44	3.69
Future salary growth	4.60	4.50

Details of expenses relating to defined benefit plans for the years ended December 31, 2020 and 2019, are as follows:

<i>(in Korean won)</i>	<u>2020</u>	<u>2019</u>
Current service cost	\ 9,748,759,356 \	8,874,687,581
Past service cost	-	3,046,062,321
Interest cost	3,607,856,340	3,402,821,953
Expected return on plan assets	(3,191,092,405)	(3,136,622,990)
Transfer to other account	(225,939,914)	(246,032,561)
	<u>\ 9,939,583,377 \</u>	<u>11,940,916,304</u>

Expenses described above are recognized as the following items in the financial statements.

<i>(in Korean won)</i>	<u>2020</u>	<u>2019</u>
Cost of sales	\ 3,626,181,729 \	4,369,984,316
Selling and administrative expenses	6,313,401,648	7,570,931,988
Others ¹	225,939,914	246,032,561
	<u>\ 10,165,523,291 \</u>	<u>12,186,948,865</u>

¹ Amount is attributed to reclassification and it was reflected in the consolidated statement of financial position as other construction expenses (property, plant and equipment).

Remeasurement components recognized in other comprehensive income for the years ended December 31, 2020 and 2019, are as follows:

<i>(in Korean won)</i>	<u>2020</u>	<u>2019</u>
Defined benefit obligations	\ (5,176,012,963) \	(2,751,967,063)
Return on plan assets	(1,472,200,972)	(1,470,235,038)
Income tax effect	1,608,867,772	1,021,772,911
	<u>\ (5,039,346,163) \</u>	<u>(3,200,429,190)</u>

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25. Provisions

Details of provisions as of December 31, 2020 and 2019, are as follows:

(in Korean won)	2020			2019		
	Current	Non-current	Total	Current	Non-current	Total
Decommissioning cost ^{1,3}	\ 34,348,187,211	\ 2,371,886,511,619	\ 2,406,234,698,830	\ 20,038,914,374	\ 2,135,809,540,095	\ 2,155,848,454,469
Social Overhead Capital ²	1,195,316,294	-	1,195,316,294	10,254,072,407	-	10,254,072,407
Allowance for salaries	15,226,205,769	-	15,226,205,769	4,380,766,760	-	4,380,766,760
Provision for litigations ⁴	-	-	-	-	10,165,423,343	10,165,423,343
Onerous contract ⁵	12,160,297,254	43,222,751,872	55,383,049,126	11,310,190,359	88,139,212,702	99,449,403,061
Others ³	12,612,117,619	18,967,894,388	31,580,012,007	14,398,950,848	2,198,686,537	16,597,637,385
	\ 75,542,124,147	\ 2,434,077,157,879	\ 2,509,619,282,026	\ 60,382,894,748	\ 2,236,312,862,677	\ 2,296,695,757,425

¹ The Group recognized provisions for future dismantling, removing and restoring obligations of wells and related facilities. Most of the costs incur at or after the completion of production and the management recognized its best estimations as provisions.

² The Group is committed to providing construction services with regards to the Kurdish regional government's Social Overhead Capital to obtain rights on certain exploratory areas. This commitment has been classified as a provision due to its uncertain timing of related cash outflows.

³ The reclassifications from non-current to current amounted to ₩11,300 million and ₩10,993 million for the years ended December 31, 2020 and 2019, respectively.

⁴ During the current year, the first and second lawsuits related to ordinary wages were confirmed, and all the remaining provisions were reversed.

⁵ The Group recognized as a provision for an obligation to pay for the oil pipelines due to its uncertain amount of related cash outflows even after production ends in Vietnam 11-2.

Changes in provisions for the years ended December 31, 2020 and 2019, are as follows:

(in Korean won)	2020						
	Beginning balance	Business combination	Provision ¹	Payment	Reversal	Others ³	Ending balance
Decommissioning cost	\ 2,155,848,454,469	\ 18,158,873,832	\ 56,703,351,157	\ (27,176,294,485)	\ (1,324,968,684)	\ 204,025,282,541	\ 2,406,234,698,830
Social Overhead Capital	10,254,072,407	-	-	(9,154,684,087)	-	95,927,974	1,195,316,294
Allowance for salaries	4,380,766,760	-	12,049,461,485	-	-	(1,204,022,476)	15,226,205,769
Provision for litigations ⁴	10,165,423,343	-	-	(8,818,402,595)	(5,009,558,857)	3,662,538,109	-
Onerous contract ⁵	99,449,403,061	-	4,623,675,686	(14,603,707,996)	(31,679,676,866)	(2,406,644,759)	55,383,049,126
Others	16,597,637,385	-	117,356,811	-	-	14,865,017,811	31,580,012,007
	\ 2,296,695,757,425	\ 18,158,873,832	\ 73,493,845,139	\ (59,753,089,163)	\ (38,014,204,407)	\ 219,038,099,200	\ 2,509,619,282,026

¹ Include the provisions.

² Recognition of provisions related to KADOC that was reclassified as a subsidiary from a joint venture during the current year.

³ Include decrease in provisions of \ 2,843 million, changes in estimates due to changes in discount rate and the effect of changes in exchange rates regarding disposal of assets.

⁴ Payment includes \ 3,339 million which is substituted provisions to unpaid amount, as the company losses of ordinary wage lawsuit.

⁵ The set amount of provisions of \ 3,351 million and the amount of reversal of \ 31,680 million are reflected in sales commission

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25. Provisions (cont'd)

(in Korean won)	2019						Ending balance
	Beginning balance	Changes in accounting policies ⁴	Provision ¹	Payment	Reversal	Others ²	
Decommissioning cost	\ 1,973,067,598,205	\	- \ 53,255,315,050	\ (37,013,324,879)	\ (6,945,023,876)	\ 173,483,889,969	\ 2,155,848,454,469
Social Overhead Capital	12,465,831,150	-	89,612,001	(2,738,147,589)	-	436,776,845	10,254,072,407
Allowance for salaries	49,304,084	-	4,359,067,934	-	-	(27,605,258)	4,380,766,760
Provision for litigations ³	8,866,454,140	-	990,824,065	-	-	308,145,138	10,165,423,343
Onerous contract	129,907,974,785	(4,313,513,149)	1,585,885,767	(7,666,908,391)	(24,786,154,683)	4,722,118,732	99,449,403,061
Others	57,122,644,320	-	2,213,593,071	(7,932,703,634)	-	(34,805,896,372)	16,597,637,385
	\ 2,181,479,806,684	\ (4,313,513,149)	\ 62,494,297,888	\ (55,351,084,493)	\ (31,731,178,559)	\ 144,117,429,054	\ 2,296,695,757,425

¹ Include the provisions.

² Include decrease in provisions of \ 8,648 million and the effect of changes in exchange rates regarding disposal of assets.

³ The Group recognized provision in relation to litigation amount and statutory interest on the partial loss of litigation on the return of normal wage.

⁴ Amounts were reclassified from the onerous contract to lease liability due to a change in accounting policies.

26. Government Grants

In accordance with the accounting standards and the provisions in the standard for public enterprise and quasi-government, government grants relating to property, plant and equipment are presented as the deduction from related assets.

Details of assets and liabilities of government grants as of December 31, 2020 and 2019, are as follows:

(in Korean won)	2020	
	Assets	Liabilities
Cash	\ 65,135,024	\ -
Others	1,921,246,508	-
Software	34,266,332	-
	\ 2,020,647,864	\ -

(in Korean won)	2019	
	Assets	Liabilities
Cash	\ 11,100,917	\ -
Others	2,573,235,532	-
	\ 2,584,336,449	\ -

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26. Government Grants (cont'd)

Changes in assets and liabilities of government grants for the years ended December 31, 2020 and 2019, are as follows:

(in Korean won)

	2020					
	Beginning balance	Additional grants	Offset with depreciation	Revenue recognized	Others ¹	Ending balance
Cash	\ 11,100,917	\ 1,307,500,000	\ -	\ (1,365,040,373)	\ 111,574,480	\ 65,135,024
Others	2,573,235,532	-	(538,893,493)	-	(113,095,531)	1,921,246,508
Software	-	45,508,687	(8,343,260)	-	(2,899,095)	34,266,332
	\ 2,584,336,449	\ 1,353,008,687	\ (547,236,753)	\ (1,365,040,373)	\ (4,420,146)	\ 2,020,647,864

¹ Include the effect of changes in exchange rates, return of government grants and others.

(in Korean won)

	2019					
	Beginning balance	Additional grants	Offset with depreciation	Revenue recognized	Others ¹	Ending balance
Cash	\ 77,710,041	\ 1,421,000,000	\ -	\ (5,466,365,576)	\ 3,978,756,452	\ 11,100,917
Others	3,312,019,239	-	(862,188,805)	-	123,405,098	2,573,235,532
	\ 3,389,729,280	\ 1,421,000,000	\ (862,188,805)	\ (5,466,365,576)	\ 4,102,161,550	\ 2,584,336,449

¹ Include the effect of changes in exchange rates, return of government grants and others.

Details of government grants income recognized for the years ended December 31, 2020 and 2019, are as follows:

(in Korean won)

	2020	2019
Government grants income	\ 1,365,040,373	\ 5,466,365,576
Offset with depreciation	547,236,753	862,188,805
	\ 1,912,277,126	\ 6,328,554,381

Details of the government grants business by category and changes in government grants for the years ended December 31, 2020 and 2019, are as follows:

(in Korean won)

Business	Details	Period	Budget	Carried over from prior year	2020						Carried forward to subsequent year	
					Increase			Decrease				
					Issuance	Interest	Others	Return	Interest	Others		
					Paid by the Group	Government grants	Paid by the Group	Paid by the Group	Government grants	Paid by the Group		
New Growth Project Promotion Team	Offshore wind power transportation installation national research project	Development of optimal transportation and installation technology of offshore wind power systems	2020.11.01. ~ 2021.1.31	10,500,000	-	10,000,000	500,000	13,617	2,319,130	-	-	8,194,487

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26. Government Grants (cont'd)

(in Korean won)

		2019										
Business	Details	Period	Budget	Carried over from prior year	Increase		Decrease			Others	Carried forward to subsequent year	
					Issuance		Interest		Return			Interest
					Paid by the Group	Government grants	Paid by the Group	Paid by the Group	Government grants			Paid by the Group
Korea Institute of Energy Technology Evaluation and Planning	A Study on the Development and Empirical Study of the Production Enhancement of the Low-Rise Carbonate Layers in UAE Building a Model of Integrated Stationary Deposition Rock	2019.2.1 ~ 2019.11.30	42,000,000	-	46,000,000	46,000,000	476,005	46,000,000	46,000,000	476,005	-	-

27. Contributions for Construction

Details of contributions for construction as of December 31, 2020 and 2019, are as follows:

(in Korean won)

	2020		2019	
Others ¹	\	333,857,906	\	330,091,017
	\	333,857,906	\	330,091,017

¹ The amounts were offset against the depreciation of the related assets for the years ended December 31, 2020 and 2019, from cash equivalents transferred from SK Energy in accordance with the expansion construction of connecting line between the Group (Ulsan branch) and SK Energy.

28. Non-Financial Liabilities

Details of non-financial liabilities as of December 31, 2020 and 2019, are as follows:

(in Korean won)

	2020				2019			
	Current		Non-current		Current		Non-current	
Advance received	\	21,467,610,401	\	-	\	23,136,687,444	\	-
Unearned revenue		3,851,072,429		19,533,807,960		61,973,658,781		23,461,366,740
Withholdings		58,960,771,359		-		65,160,003,401		-
Others		1,282,072,620		32,218,409,346		110,768,741		34,285,362,446
	\	85,561,526,809	\	51,752,217,306	\	150,381,118,367	\	57,746,729,186

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29. Share Capital

Details of share capital as of December 31, 2020 and 2019, are as follows:

(in Korean won)	2020			2019		
	Government	Non-government	Total	Government	Non-government	Total
Share capital	\ 10,554,372,780,075	\ -	\ 10,554,372,780,075	\ 10,515,105,780,075	\ -	\ 10,515,105,780,075
	\ 10,554,372,780,075	\ -	\ 10,554,372,780,075	\ 10,515,105,780,075	\ -	\ 10,515,105,780,075

The changes in share capital for the year ended December 31, 2020, are as follows:

(in Korean won)	Description	Amount
Beginning balance		\ 10,515,105,780,075
2020-04-17	Contribution for oil field development	6,000,000,000
2020-06-15	Contribution for oil stockpiling business	17,967,000,000
2020-07-13	Contribution for oil stockpiling business	2,984,000,000
2020-07-13	Contribution for oil field development	7,483,000,000
2020-09-15	Contribution for oil stockpiling business	908,000,000
2020-10-20	Contribution for oil stockpiling business	1,000,000,000
2020-11-30	Contribution for oil stockpiling business	2,925,000,000
Ending balance		\ 10,554,372,780,075

30. Accumulated Deficit and Dividend

Details of accumulated deficit as of December 31, 2020 and 2019, are as follows:

(in Korean won)	2020	2019
Undisposed accumulated deficit	\ (13,100,233,643,918)	\ (9,393,324,831,534)

Changes in accumulated deficit for the years ended December 31, 2020 and 2019, are as follows:

(in Korean won)	2020	2019
Beginning balance	\ (9,393,324,831,534)	\ (8,627,443,113,991)
Net loss for the year	(3,171,486,517,554)	(762,681,288,353)
Fair value through other comprehensive income - Reclassification adjustments	(530,382,948,667)	-
Remeasurement components of defined benefits plan	(5,039,346,163)	(3,200,429,190)
Ending balance	\ (13,100,233,643,918)	\ (9,393,324,831,534)

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30. Accumulated Deficit and Dividend (cont'd)

Changes in remeasurement components for the years ended December 31, 2020 and 2019, are as follows:

<i>(in Korean won)</i>	<u>2020</u>	<u>2019</u>
Beginning balance	\ (17,992,338,336)	\ (14,791,909,146)
Changes during the current year	(6,648,213,935)	(4,222,202,101)
Income tax effects	1,608,867,772	1,021,772,911
Ending balance	<u>\ (23,031,684,499)</u>	<u>\ (17,992,338,336)</u>

31. Statements of Disposition of Accumulated Deficit

Statements of disposition of accumulated deficit for the years ended December 31, 2020 and 2019, are as follows:

<i>(in Korean won)</i>	<u>2020</u>	<u>2019</u>
I. Undisposed deficit	\ (13,100,233,643,918)	\ (9,393,324,831,534)
Undisposed accumulated deficit carried over from prior years	(9,393,324,831,534)	(8,627,443,113,991)
Loss for the year	(3,171,486,517,554)	(762,681,288,353)
Fair value through other comprehensive income - Reclassification adjustments	(530,382,948,667)	-
Remeasurement components	<u>(5,039,346,163)</u>	<u>(3,200,429,190)</u>
II. Undisposed deficit to be carried forward to the subsequent year	<u>\ (13,100,233,643,918)</u>	<u>\ (9,393,324,831,534)</u>

Dates of disposition for the years ended December 31, 2020 and 2019 are February 26, 2021, and July 24, 2020, respectively.

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32. Other Components of Equity

Details of other components of equity as of December 31, 2020 and 2019, are as follows:

<i>(in Korean won)</i>	<u>2020</u>	<u>2019</u>
Other capital surpluses ¹	\ 24,934,262,869 \	24,934,262,869
Accumulated other comprehensive loss	(33,723,893,057)	(1,180,692,068,420)
	<u>\ (8,789,630,188) \</u>	<u>(1,155,757,805,551)</u>

¹ Details of other capital surpluses as of December 31, 2020 and 2019, are as follows:

<i>(in Korean won)</i>	<u>2020</u>	<u>2019</u>
Assets contributed	\ 24,954,221,211 \	24,954,221,211
Loss on capital reduction	(19,958,342)	(19,958,342)
	<u>\ 24,934,262,869 \</u>	<u>24,934,262,869</u>

Details of accumulated other comprehensive loss as of December 31, 2020 and 2019, are as follows:

<i>(in Korean won)</i>	<u>2020</u>	<u>2019</u>
Revaluation surplus	\ 489,752,621,439 \	-
Loss on valuation of equity instruments measured at fair value through other comprehensive income	(32,247,255,298)	(569,312,432,955)
Equity adjustments in equity method	37,369,469,452	24,395,737,781
Foreign currency translation differences for foreign operations	(518,914,767,154)	(640,764,450,823)
Gains on valuation of derivative instruments	(9,683,961,496)	4,989,077,577
	<u>\ (33,723,893,057) \</u>	<u>(1,180,692,068,420)</u>

33. Revenue

Details of revenues (based on customer locations) except for other income, other profit and financial income (Notes 35, 36, and 37) for the years ended December 31, 2020 and 2019, are as follows:

<i>(in Korean won)</i>	<u>2020</u>		
	<u>Domestic</u>	<u>Overseas</u>	<u>Total</u>
Sales of goods and finished goods	\ 69,849,192,597 \	1,546,553,315,814	\ 1,616,402,508,411
Revenues from services provided	47,310,995,212	213,477,064,872	260,788,060,084
Income on government grants	1,354,434,803	10,605,570	1,365,040,373
Others	1,098,864,837	51,568,010,471	52,666,875,308
	<u>\ 119,613,487,449 \</u>	<u>1,811,608,996,727</u>	<u>\ 1,931,222,484,176</u>

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33. Revenue (cont'd)

(in Korean won)

	2019		
	Domestic	Overseas	Total
Sales of goods and finished goods	\ 149,323,867,319	\ 2,530,369,714,845	\ 2,679,693,582,164
Revenues from services provided	36,396,460,697	163,149,981,930	199,546,442,627
Income on government grants	5,466,365,576	-	5,466,365,576
Others	1,165,754,501	44,120,814,732	45,286,569,233
	<u>\ 192,352,448,093</u>	<u>\ 2,737,640,511,507</u>	<u>\ 2,929,992,959,600</u>

34. Selling and Administrative Expenses

(In Korean won)

	2020	2019
Salaries	\ 106,384,971,560	\ 100,704,455,485
Post-employment benefits	7,732,965,512	9,621,482,551
Employee benefits	12,795,639,800	12,454,874,364
Insurance	2,164,417,961	2,391,010,258
Depreciation	16,780,503,608	18,377,153,596
Amortization	3,155,151,383	3,808,668,508
Commission expense	24,128,123,709	27,296,294,826
Advertising expense	568,273,457	667,137,630
Training	1,364,285,601	1,338,705,884
Vehicle	959,098,583	1,169,775,294
Publication	250,440,336	249,571,167
Promotional expense	76,135,729	134,210,458
Rental expense	746,900,363	1,530,977,066
Communication	596,945,203	478,528,210
Taxes and dues	1,879,794,326	1,918,187,952
Supplies expense	1,685,029,788	1,527,590,550
Utilities expense	1,051,542,402	1,096,977,316
Repairs	4,405,619,616	4,071,598,362
Ordinary research and development expense	3,057,117,278	2,799,743,321
Travel expense	654,906,887	1,764,013,756
Clothing expense	9,880,299	22,358,624
Association expense	309,609,412	401,683,818
Sales promotional expense	180,902	(93,027,403)
Sales commissions	47,713,456,551	99,826,667,823
Other selling and administrative expenses	13,256,871,653	12,551,801,518
	<u>\ 251,727,861,919</u>	<u>\ 306,110,440,934</u>

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34. Selling and Administrative Expenses (cont'd)

Details of accumulated other selling and administrative expenses for the years ended December 31, 2020 and 2019, are as follows:

<i>(In Korean won)</i>	<u>2020</u>	<u>2019</u>
Rewards expense	\ 32,753,515	\ 62,371,915
Litigation expense	2,494,959,973	3,388,258,126
Promotion expense	175,193,928	397,665,029
Overhead expense for production	8,519,789,279	6,500,312,536
Miscellaneous expense	2,034,174,958	2,203,193,912
	<u>\ 13,256,871,653</u>	<u>\ 12,551,801,518</u>

35. Other Income and Expenses

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

<i>(in Korean won)</i>	<u>2020</u>	<u>2019</u>
Reversal of other provisions	\ 6,334,527,540	\ 2,454,517,994
Reversal of other bad debt allowance	120,459,504	3,495,036,527
Gains on exemption of debts	-	76,223,080,929
Compensation and indemnity	23,530,138	9,747,888
Rental income	698,170,482	533,336,117
Others	25,660,336,845	10,881,624,627
	<u>\ 32,837,024,509</u>	<u>\ 93,597,344,082</u>

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

<i>(in Korean won)</i>	<u>2020</u>	<u>2019</u>
Income tax refunds	\ 1,061,273,247	-
Adjusted income resulting from inventory inspection	135,204,028	-
Other income from overseas fields	1,443,299,094	3,867,437,620
Other non-operating income	23,020,560,476	7,014,187,007
	<u>\ 25,660,336,845</u>	<u>\ 10,881,624,627</u>

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

<i>(in Korean won)</i>	<u>2020</u>	<u>2019</u>
Transfer to other provision	\ 371,732,967	\ 938,611,291
Other bad debt expense	4,661,295,775	3,186,538,955
Donations	2,028,563,100	888,857,187
Others	7,205,765,430	3,245,246,638
	<u>\ 14,267,357,272</u>	<u>\ 8,259,254,071</u>

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35. Other Income and Expenses (cont'd)

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

<i>(in Korean won)</i>	2020	2019
Adjusted expense resulting from inventory inspection	\ 518,193,232	\ 407,928,589
Other expenses from overseas fields	535,704,018	5,863
Other non-operating expenses	6,151,868,180	2,837,312,186
	\ 7,205,765,430	\ 3,245,246,638

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36. Other Profit and Loss

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

<i>(in Korean won)</i>	<u>2020</u>	<u>2019</u>
Gains on disposal of property, plant and equipment	\ 325,296,642	\ 12,234,503,767
Gains on disposal of intangible assets other than goodwill	12,656,237	87,120,730,552
Gains on transactions of derivative (other than finance income)	227,616,552	159,775,646
Reversal of impairment losses on property, plant and equipment	2,442,068,314	25,224,458,258
Reversal of impairment losses on intangible assets other than goodwill	4,784,241,479	53,230,301,443
Gains on foreign currency translation (other than finance income)	49,243,856,929	22,942,425,015
Gains on foreign currency transactions	188,298,565,240	47,825,588,716
Gains on insurance contracts	-	15,584,042,427
Other gains	14,314,960,913	14,461,524,928
Losses on disposal of property, plant and equipment	(6,679,846,717)	(17,491,127,469)
Losses on disposal of intangible assets other than goodwill	(173,442,262)	-
Losses on valuation of property, plant and equipment	(2,213,358,552)	-
Losses on transactions of derivative (other than finance cost)	-	(159,775,646)
Impairment losses on property, plant and equipment	(1,424,500,981,351)	(176,250,820,929)
Impairment losses on intangible assets	(306,090,695,726)	(18,106,642,179)
Losses on foreign currency translation (other than finance cost)	(48,630,115,580)	(21,518,126,092)
Losses on foreign currency transactions (other than finance cost)	(189,318,239,778)	(43,341,210,015)
Other losses	(16,723,274,676)	(4,010,661,677)
	<u>\ (1,734,680,692,336)</u>	<u>\ (2,095,013,255)</u>

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

<i>(In Korean won)</i>	<u>2020</u>	<u>2019</u>
Gains on stockpile oil quantity adjustment	\ 1,084,173,203	\ 13,333,276,766
Gains on duty from stockpile lease	118,264,481	79,902,533
Miscellaneous gains	13,112,523,229	1,048,345,629
	<u>\ 14,314,960,913</u>	<u>\ 14,461,524,928</u>

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

<i>(In Korean won)</i>	<u>2020</u>	<u>2019</u>
Losses on duty from stockpile lease	\ 1,499,884,793	\ 1,721,220,669
Losses on disposal of stored items	818,193,757	-
Losses on settlement of stockpiled oil quantity	5,099,826,782	-
Losses on settlement of joint expansion volume	-	488,174,441
Losses on cancellation of debt exemption	2,599,318,580	1,065,761,174
Miscellaneous losses	6,706,050,764	735,505,393
	<u>\ 16,723,274,676</u>	<u>\ 4,010,661,677</u>

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37. Finance income

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

<i>(in Korean won)</i>	<u>2020</u>	<u>2019</u>
Interest income	\ 14,608,760,475	\ 22,512,597,370
Dividend income	5,840,386	10,232,181
Gains on valuation of financial liabilities measured at fair value through profit or loss	37,229,917,380	-
Gains on transactions of financial assets measured at fair value through profit or loss	-	2,072,434,884
Gains on valuation of financial assets measured at fair value through profit or loss	8,311,881,332	167,773,467,775
Gains on valuation of derivative financial instruments	-	18,630,088,549
Gains on transactions of derivative financial instruments	92,375,935,424	11,338,703,001
Gains on foreign currency translation	72,133,591,704	136,666,853,054
Gains on foreign currency transactions	<u>41,864,780,884</u>	<u>43,063,896,401</u>
	<u>\ 266,530,707,585</u>	<u>\ 402,068,273,215</u>

Details of interest income by sources included in finance income for the years ended December 31, 2020 and 2019, are as follows:

<i>(in Korean won)</i>	<u>2020</u>	<u>2019</u>
Cash and cash equivalents	\ 8,068,387,373	\ 16,205,685,110
Loans and receivables	<u>6,540,373,102</u>	<u>6,306,912,260</u>
	<u>\ 14,608,760,475</u>	<u>\ 22,512,597,370</u>

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38. Finance costs

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

<i>(in Korean won)</i>	2020	2019
Interest expenses	\ 467,531,643,267	\ 474,593,305,053
Losses on valuation of financial assets measured at fair value through profit or loss	117,456,567,243	82,191,492,544
Losses on valuation of financial liabilities measured at fair value through profit or loss	4,862,291,130	15,615,393,575
Losses on valuation of derivative financial instruments	18,860,237,629	2,518,652,850
Losses on foreign currency translation	197,395,882,448	65,411,763,076
Losses on foreign currency transactions	30,178,311,794	13,650,654,166
Other financial costs	67,133,153,206	77,451,325,484
	\ 903,418,086,717	\ 731,432,586,748

Details of interest expenses by sources included in finance costs for the years ended December 31, 2020 and 2019, are as follows:

<i>(in Korean won)</i>	2020	2019
Short-term borrowings	\ 10,385,069,144	\ 5,998,164,131
Long-term borrowings	66,138,961,034	82,006,064,345
Bond payables	282,557,464,758	316,132,779,675
Derivative liabilities	90,371,344,993	54,747,916,675
Lease liability	14,465,865,895	14,918,929,729
Other financial liabilities	3,612,937,443	789,450,498
	\ 467,531,643,267	\ 474,593,305,053

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39. Income Tax Expense from Continuing Operations

The components of income tax expense for the years ended December 31, 2020 and 2019, are as follows:

<i>(in Korean won)</i>	<u>2020</u>	<u>2019</u>
Current income tax	\ 245,379,937,624	\ 165,120,598,417
Deferred tax directly charged to equity	(140,874,118,936)	34,114,477,553
Changes in deferred taxes arising from temporary differences	(133,847,525,893)	289,478,488,607
Adjustment for prior periods	<u>33,966,938,221</u>	<u>45,099,027,827</u>
Income tax expense	<u>\ 4,625,231,016</u>	<u>\ 533,812,592,404</u>

¹ The Company had a tax audit from the Busan Regional Tax Office for the corporate taxes reported and paid during 2015-2017. As a result, the Company was notified additional tax about \ 68,772 million on July 23, 2020, and it is reflected in corporate tax expense. The tax notice is under suitability screening before taxation.

Reconciliations of loss before income tax to income tax expense for the years ended December 31, 2020 and 2019, are as follows:

<i>(in Korean won)</i>	<u>2020</u>	<u>2019</u>
Profit (loss) before income tax	<u>\ (2,434,548,119,442)</u>	<u>\ 379,060,620,135</u>
Income tax expense computed at the statutory rate ¹	\ (589,160,644,776)	\ 91,732,670,073
Adjustments		
Adjustments to prior year tax return	68,771,545,351	(957,903,194)
Non-taxable income	(9,515,407,518)	(18,961,389,592)
Non-deductible expenses	38,987,526,804	24,198,713,324
Temporary differences not recognized in deferred tax assets	389,578,972,395	249,616,165,355
Differences in tax rates in overseas entities	(73,706,076,300)	288,843,951,397
Effect of changes in tax rates	<u>145,702,376,839</u>	<u>(145,758,642,786)</u>
	(29,341,707,205)	488,713,564,577
Effect from temporary differences not recognized in prior years	<u>33,966,938,221</u>	<u>45,099,027,827</u>
Income tax expense	<u>\ 4,625,231,016</u>	<u>\ 533,812,592,404</u>
Effective tax rate	-	-

¹ The average effective tax rate for the current and previous years is negative and has not been calculated. The expected applicable statutory tax rate for the years ended December 31, 2020 and 2019, is both 24.2%, which is the Korea statutory corporate income tax rate where the Group is domiciled.

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39. Income Tax Expense from Continuing Operations (cont'd)

Income tax recognized as accumulated other comprehensive income for the years ended December 31, 2020 and 2019, are as follows:

<i>(in Korean won)</i>	2020	2019
Revaluation gain or loss	\ (156,359,016,344)	\ -
Net change in the unrealized fair value of derivative using cash flow hedge accounting	13,876,029,636	33,092,704,642
Remeasurement components	1,608,867,772	1,021,772,911
	\ (140,874,118,936)	\ 34,114,477,553

Changes in deferred income tax assets (liabilities) recognized in the consolidated statements of financial position for the years ended December 31, 2020 and 2019, are as follows:

<i>(in Korean won)</i>	2020				
	Beginning balance	Amounts recognized in profit or loss	Amounts recognized in other comprehensive income	Others	Ending balance
Deferred income tax on temporary differences					
Contributions for construction	\ -	\ 6,178,242	\ -	\ (481,934)	\ 5,696,308
Investment in associates and others	(470,704,667)	1,830,811,572	-	(114,435,511)	1,245,671,394
Investment in subsidiaries	-	37,367,531,164	-	(2,914,860,593)	34,452,670,571
Financial guarantee liabilities	15,125,847	8,151,145,211	-	(636,743,350)	7,529,527,708
Bad debt allowance	24,328,680,926	(50,843,613,399)	-	2,499,367,547	(24,015,564,926)
Financial assets measured at fair value through other comprehensive income	17,390,103	3,112,096,145	-	(243,807,980)	2,885,678,268
Intangible assets other than goodwill	13,481,399,400	(6,698,422,084)	-	(290,238,217)	6,492,739,099
Accrued expenses	-	381,245,137	-	(29,739,092)	351,506,045
Asset retirement obligation	(1,549,395,450)	(4,766,949,399)	-	465,254,712	(5,851,090,137)
Property, plant and equipment	29,576,307,212	(3,107,710,390)	-	(1,540,641,985)	24,927,954,837
Land	-	(68,369,357,357)	(156,359,016,344)	17,529,974,830	(207,198,398,871)
Gain (loss) on valuation of derivative	1,841,518,182	(5,157,049,840)	11,235,817,663	(585,194,461)	7,335,091,544
Defined benefit obligations	(2,451,930,197)	3,660,773,937	1,608,867,772	(263,240,388)	2,554,471,124
Others	6,631,289,018	(58,652,898,036)	-	4,175,450,592	(47,846,158,426)
	71,419,680,374	(143,086,219,097)	(143,514,330,909)	18,050,664,170	(197,130,205,462)
Deferred tax assets of subsidiaries	712,918,743,442	117,082,355,593	2,640,211,973	(52,318,533,728)	780,322,777,280
Increase through business combinations	-	123,961,659,694	-	(9,669,650,587)	114,292,009,107
Deferred tax liabilities of subsidiaries	(221,647,766,711)	(90,929,922,852)	-	20,455,427,686	(292,122,261,877)
	491,270,976,731	150,114,092,435	2,640,211,973	(41,532,756,629)	602,492,524,510
	\ 562,690,657,105	\ 7,027,873,338	\ (140,874,118,936)	\ (23,482,092,459)	\ 405,362,319,048

Temporary differences not recognized in deferred tax assets, tax loss carryforwards and tax deduction are \ 19,324,309 million as of December 31, 2020.

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39. Income Tax Expense from Continuing Operations (cont'd)

(in Korean won)

	2019				Ending balance
	Beginning balance	Amounts recognized in profit or loss	Amounts recognized in other comprehensive income	Others	
Deferred income tax on temporary differences					
Contributions for construction	\ 689,076,085	\ (718,380,768)	\ -	\ 29,304,683	\ -
Investment in associates and others	41,261,540,597	(43,490,186,499)	-	1,757,941,235	(470,704,667)
Financial guarantee liabilities	98,389,028,086	(102,558,039,278)	-	4,184,137,039	15,125,847
Bad debt allowance	62,597,695,028	(40,766,186,488)	-	2,497,172,386	24,328,680,926
Financial assets measured at fair value through other comprehensive income	(21,412,227,719)	22,340,344,535	-	(910,726,713)	17,390,103
Intangible assets other than goodwill	317,695,240,079	(317,633,219,360)	-	13,419,378,681	13,481,399,400
Accrued expenses	15,702,777,532	(16,370,577,536)	-	667,800,004	-
Asset retirement obligation	36,256,829,958	(39,358,643,182)	-	1,552,417,774	(1,549,395,450)
Property, plant and equipment	(1,569,762,086)	31,413,357,607	-	(267,288,309)	29,576,307,212
Land	(64,962,508,952)	67,725,202,123	-	(2,762,693,171)	-
Gain (loss) on valuation of derivative	(13,412,499,508)	(3,899,647,947)	19,736,552,670	(582,887,033)	1,841,518,182
Defined benefit obligations	4,761,545,132	(8,454,368,988)	1,021,772,655	219,121,004	(2,451,930,197)
Others	(74,985,082,805)	84,850,258,180	-	(3,233,886,357)	6,631,289,018
	<u>401,011,651,427</u>	<u>(366,920,087,601)</u>	<u>20,758,325,325</u>	<u>16,569,791,223</u>	<u>71,419,680,374</u>
Deferred tax assets of subsidiaries	605,588,612,356	73,053,469,159	13,356,151,505	20,920,510,422	712,918,743,442
Deferred tax liabilities of subsidiaries	(185,533,918,235)	(29,726,348,460)	-	(6,387,500,016)	(221,647,766,711)
	<u>420,054,694,121</u>	<u>43,327,120,699</u>	<u>13,356,151,505</u>	<u>14,533,010,406</u>	<u>491,270,976,731</u>
	<u>\ 821,066,345,548</u>	<u>\ (323,592,966,902)</u>	<u>\ 34,114,476,830</u>	<u>\ 31,102,801,629</u>	<u>\ 562,690,657,105</u>

Details of deferred income tax assets (liabilities) recognized in the consolidated statements of financial position as of December 31, 2020 and 2019, are as follows:

(in Korean won)

	2020	2019
Deferred income tax assets	\ 780,322,777,378	\ 784,338,423,816
Deferred income tax liabilities	<u>(374,960,458,330)</u>	<u>(221,647,766,711)</u>
	<u>\ 405,362,319,048</u>	<u>\ 562,690,657,105</u>

40. Non-current Assets Held for Sale

Details of non-current assets held for sale as of December 31, 2020, are as follows:

(In Korean won)

	2020
Investments in joint ventures held for sale ¹	\ 2,565,848,624

¹ The Group disposed 50% of ownership interests in Offshore International Group in January 2021. It was presented as net value after recognition of an impairment losses, \ 28,596 million on the investments in joint ventures held for sale, as of December 31, 2020 (See Notes 50).

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41. Expenses Classified by Nature

Expenses classified by nature for the year ended December 31, 2020, are as follows:

<i>(in Korean won)</i>	2020			
	Changes in inventories	Selling and administrative expenses	Cost of sales	Total
Changes in inventories - merchandise	\ (3,776,670,584)	\ -	\ -	\ (3,776,670,584)
Changes in inventories - finished goods	10,571,720,166	-	-	10,571,720,166
Changes in inventories - others	(4,891,157,207)	-	-	(4,891,157,207)
Purchases of inventories	-	-	16,070,640,011	16,070,640,011
Raw materials used	-	-	3,714,515,014	3,714,515,014
Salaries	-	106,384,971,560	109,665,153,229	216,050,124,789
Severance and retirement benefits	-	7,732,965,512	4,287,112,882	12,020,078,394
Other employee benefits	-	12,795,639,800	8,277,486,155	21,073,125,955
Insurance	-	2,164,417,961	11,353,376,329	13,517,794,290
Depreciation	-	16,780,503,608	708,384,335,700	725,164,839,308
Amortization	-	3,155,151,383	59,100,068,857	62,255,220,240
Commissions and fees	-	24,128,123,709	43,771,855,795	67,899,979,504
Advertising expense	-	568,273,457	77,259,207	645,532,664
Education and training	-	1,364,285,601	326,076,408	1,690,362,009
Vehicle maintenance	-	959,098,583	834,382,520	1,793,481,103
Books and printing	-	250,440,336	13,381,791	263,822,127
Business development	-	76,135,729	(28,438,108)	47,697,621
Rental expense	-	746,900,363	21,034,384,217	21,781,284,580
Communications	-	596,945,203	342,902,847	939,848,050
Transport	-	-	67,297,205,209	67,297,205,209
Taxes and dues	-	1,879,794,326	32,096,617,737	33,976,412,063
Supplies	-	1,685,029,788	7,099,873,867	8,784,903,655
Utilities	-	1,051,542,402	48,504,039,592	49,555,581,994
Repairs	-	4,405,619,616	77,694,891,801	82,100,511,417
Research and development	-	3,057,117,278	671,865,008	3,728,982,286
Travel	-	654,906,887	372,968,491	1,027,875,378
Clothing expenses	-	9,880,299	133,157,857	143,038,156
Investigation and analysis	-	-	35,878,240	35,878,240
Association fee	-	309,609,412	15,512,713	325,122,125
Sales promotion	-	180,902	948,160,853	948,341,755
Sales commissions	-	47,713,456,551	4,976,709,829	52,690,166,380
Others	-	13,256,871,653	504,627,366,155	517,884,237,808
	\ 1,903,892,375	\ 251,727,861,919	\ 1,731,698,740,206	\ 1,985,330,494,500

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41. Expenses Classified by Nature (cont'd)

Expenses classified by nature for the year ended December 31, 2019, are as follows:

(in Korean won)	2019			
	Changes in inventories	Selling and administrative expenses	Cost of sales	Total
Changes in inventories - merchandise	\ 4,623,193,955	\ -	\ -	\ 4,623,193,955
Changes in inventories - finished goods	(5,440,776,878)	-	-	(5,440,776,878)
Changes in inventories - others	1,838,057,359	-	-	1,838,057,359
Purchases of inventories	-	-	44,886,072,373	44,886,072,373
Raw materials used	-	-	4,903,613,990	4,903,613,990
Salaries	-	100,704,455,485	198,242,784,353	298,947,239,838
Severance and retirement benefits	-	9,621,482,551	5,637,267,678	15,258,750,229
Other employee benefits	-	12,454,874,364	8,544,833,775	20,999,708,139
Insurance	-	2,391,010,258	17,260,150,506	19,651,160,764
Depreciation	-	18,377,153,596	946,841,765,323	965,218,918,919
Amortization	-	3,808,668,508	77,385,850,492	81,194,519,000
Commissions and fees	-	27,296,294,826	42,916,303,162	70,212,597,988
Advertising expense	-	667,137,630	85,911,331	753,048,961
Education and training	-	1,338,705,884	983,651,365	2,322,357,249
Vehicle maintenance	-	1,169,775,294	663,342,775	1,833,118,069
Books and printing	-	249,571,167	12,615,305	262,186,472
Business development	-	134,210,458	48,034,268	182,244,726
Rental expense	-	1,530,977,066	29,579,778,697	31,110,755,763
Communications	-	478,528,210	624,647,286	1,103,175,496
Transport	-	-	166,498,570,132	166,498,570,132
Taxes and dues	-	1,918,187,952	52,823,893,025	54,742,080,977
Supplies	-	1,527,590,550	9,428,055,149	10,955,645,699
Utilities	-	1,096,977,316	63,721,425,138	64,818,402,454
Repairs	-	4,071,598,362	143,317,219,027	147,388,817,389
Research and development	-	2,799,743,321	-	2,799,743,321
Travel	-	1,764,013,756	540,254,856	2,304,268,612
Clothing expenses	-	22,358,624	119,818,551	142,177,175
Investigation and analysis	-	-	98,734,052	98,734,052
Association fee	-	401,683,818	15,973,590	417,657,408
Sales promotion	-	(93,027,403)	884,142,145	791,114,742
Sales commissions	-	99,826,667,823	-	99,826,667,823
Others	-	12,551,801,518	235,327,888,373	247,879,689,891
	\ 1,020,474,436	\ 306,110,440,934	\ 2,051,392,596,717	\ 2,358,523,512,087

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42. Categories of Financial Instruments

Details of current financial assets by category as of December 31, 2020 and 2019, are as follows:

(in Korean won)

	2020			
	Fair value through profit or loss	Amortized costs	Fair value – hedging instruments	Total
Cash and cash equivalents	\ -	\ 796,778,898,842	\ -	\ 796,778,898,842
Derivative assets	445,915,201	-	49,027,465,672	49,473,380,873
Other current financial assets	-	739,651,047	-	739,651,047
Short-term loans	-	30,736,000,000	-	30,736,000,000
Current portion of financial assets at fair value through profit or loss	536,899,617,747	-	-	536,899,617,747
Trade and other receivables	-	433,709,955,321	-	433,709,955,321
	\ 537,345,532,948	\ 1,261,964,505,210	\ 49,027,465,672	\ 1,848,337,503,830

The above fair values of the financial assets measured at amortized costs do not significantly differ from their book values.

(in Korean won)

	2019			
	Fair value through profit or loss	Amortized costs	Fair value – hedging instruments	Total
Cash and cash equivalents	\ -	\ 725,056,410,891	\ -	\ 725,056,410,891
Derivative assets	17,172,238,357	-	23,544,577,919	40,716,816,276
Other current financial assets	-	503,309,681	-	503,309,681
Short-term loans	-	2,586,817,903	-	2,586,817,903
Current portion of financial assets at fair value through profit or loss	268,670,204,196	-	-	268,670,204,196
Trade and other receivables	-	484,674,617,029	-	484,674,617,029
	\ 285,842,442,553	\ 1,212,821,155,504	\ 23,544,577,919	\ 1,522,208,175,976

The above fair values of the financial assets measured at amortized costs do not significantly differ from their book values

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42. Categories of Financial Instruments (cont'd)

Details of non-current financial assets by category as of December 31, 2020 and 2019, are as follows:

(in Korean won)

	2020				
	Fair value through profit or loss	Fair value through other comprehensive income	Amortized costs	Fair value – Hedging instruments	Total
Financial assets at fair value through profit or loss ¹	\ 674,664,491,128	\ -	\ -	\ -	\ 674,664,491,128
Financial assets at fair value through other comprehensive income	-	12,195,650,672	-	-	12,195,650,672
Long-term loans	-	-	105,423,832,379	-	105,423,832,379
Long-term financial instruments	-	-	5,601,079,085	-	5,601,079,085
Derivative assets	-	-	-	122,516,278,216	122,516,278,216
Long-term trade and other receivables	-	-	44,061,506,620	-	44,061,506,620
	\ 674,664,491,128	\ 12,195,650,672	\ 155,086,418,084	\ 122,516,278,216	\ 964,462,838,100

¹ Loans to related parties and accrued income from related parties are included.

The above fair values of the financial assets measured at amortized costs do not significantly differ from their book values.

(in Korean won)

	2019				
	Fair value through profit or loss	Fair value through other comprehensive income	Amortized costs	Fair value – Hedging instruments	Total
Financial assets at fair value through profit or loss ¹	\ 1,495,749,044,152	\ -	\ -	\ -	\ 1,495,749,044,152
Financial assets at fair value through other comprehensive income	-	6,458,433,615	-	-	6,458,433,615
Long-term loans	-	-	140,150,063,302	-	140,150,063,302
Long-term financial instruments	-	-	5,676,009,105	-	5,676,009,105
Derivative assets	-	-	-	36,886,513,959	36,886,513,959
Long-term trade and other receivables	-	-	44,162,826,491	-	44,162,826,491
	\ 1,495,749,044,152	\ 6,458,433,615	\ 189,988,898,898	\ 36,886,513,959	\ 1,729,082,890,624

¹ Loans to related parties and accrued income from related parties are included.

The above fair values of the financial assets measured at amortized costs do not significantly differ from their book values.

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42. Categories of Financial Instruments (cont'd)

Details of current financial liabilities by category as of December 31, 2020 and 2019, are as follows:

(in Korean won)

	2020			
	Fair value through profit or loss	Amortized costs	Fair value – Hedging instruments	Total
Financial liabilities at fair value through profit or loss	\ 2,585,153,204 \	- \	- \	2,585,153,204
Current portion of long-term borrowings	-	1,151,137,481,394	-	1,151,137,481,394
Current portion of bond payables	-	1,644,978,262,639	-	1,644,978,262,639
Current portion of derivative liabilities	-	-	18,218,868,448	18,218,868,448
Other current financial liabilities	-	8,575,601,856	-	8,575,601,856
Trade and other payables	-	619,687,530,974	-	619,687,530,974
Short-term borrowings	-	259,155,616,000	-	259,155,616,000
	\ 2,585,153,204 \	3,683,534,492,863	18,218,868,448	3,704,338,514,515

The above fair values of the financial liabilities measured at amortized costs do not significantly differ from their book values.

(in Korean won)

	2019			
	Fair value through profit or loss	Amortized costs	Fair value – Hedging instruments	Total
Financial liabilities at fair value through profit or loss	\ 13,385,977,456 \	- \	- \	13,385,977,456
Current portion of long-term borrowings	-	443,244,598,733	-	443,244,598,733
Current portion of bond payables	-	982,743,047,853	-	982,743,047,853
Current portion of derivative liabilities	1,270,493,722	-	10,222,388,191	11,492,881,913
Other current financial liabilities	-	9,125,764,549	-	9,125,764,549
Trade and other payables	-	771,657,311,606	-	771,657,311,606
Short-term borrowings	-	115,780,000,000	-	115,780,000,000
	\ 14,656,471,178 \	2,322,550,722,741	10,222,388,191	2,347,429,582,110

The above fair values of the financial liabilities measured at amortized costs do not significantly differ from their book values.

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42. Categories of Financial Instruments (cont'd)

Details of non-current financial liabilities by category as of December 31, 2020 and 2019, are as follows:

(in Korean won)

	2020			
	Fair value through profit or loss	Amortized costs	Fair value – Hedging instruments	Total
Financial liabilities at fair value through profit or loss	\ 29,539,647,462	\ -	\ -	\ 29,539,647,462
Long-term borrowings	-	1,011,131,737,340	-	1,011,131,737,340
Bond payables	-	10,211,308,176,111	-	10,211,308,176,111
Derivative liabilities	-	-	52,267,229,178	52,267,229,178
Long-term trade and other payables	-	528,379,159,028	-	528,379,159,028
	\ 29,539,647,462	\ 11,750,819,072,479	\ 52,267,229,178	\ 11,832,625,949,119

The above fair values of the financial liabilities measured at amortized costs do not significantly differ from their book values.

(in Korean won)

	2019			
	Fair value through profit or loss	Amortized costs	Fair value – Hedging instruments	Total
Financial liabilities at fair value through profit or loss	\ 55,382,409,262	\ -	\ -	\ 55,382,409,262
Long-term borrowings	-	1,852,100,224,523	-	1,852,100,224,523
Bond payables	-	10,444,576,145,677	-	10,444,576,145,677
Derivative liabilities	90,948,710	-	91,091,601,451	91,182,550,161
Long-term trade and other payables	-	549,409,820,867	-	549,409,820,867
	\ 55,473,357,972	\ 12,846,086,191,067	\ 91,091,601,451	\ 12,992,651,150,490

The above fair values of the financial liabilities measured at amortized costs do not significantly differ from their book values.

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42. Categories of Financial Instruments (cont'd)

Net gains or losses by financial instruments for the years ended December 31, 2020 and 2019, are as follows:

<i>(in Korean won)</i>	<u>2020</u>	<u>2019</u>
Financial assets measured at fair value through profit of loss		
Gain (loss) on valuation, net	\ (109,144,685,911) \	85,581,975,231
Gain on transactions	-	2,072,434,884
Gain (loss) on foreign currency translation, net	(23,248,462,423)	16,102,208,624
Financial assets measured at amortized costs		
Interest income	14,608,760,475	22,512,597,370
Gain (loss) on foreign currency transactions, net	(1,962,416,385)	36,889,675,353
Gain (loss) on foreign currency translation, net	(22,608,968,727)	(36,532,658,552)
Bad debt expenses	(4,661,295,775)	(3,186,538,955)
Reversal of bad debt allowance	120,459,504	3,495,036,527
Financial assets measured at fair value through other comprehensive income		
Dividend income	5,840,870	10,232,367
Other comprehensive gain (loss), net of tax	6,682,228,990	(27,087,489,925)
Financial assets designated as hedging instruments		
Gain on transactions	92,603,551,976	-
Loss on valuation	(18,860,237,629)	(16,111,435,699)
Gain (loss) on foreign currency translation, net	171,546,997,993	14,995,058,552
Other comprehensive gain (loss) , net of tax	(7,200,329,931)	(34,911,286,327)
Financial liabilities measured at fair value through profit or loss		
Gain (loss) on valuation	32,367,626,250	(15,615,393,575)
Financial liabilities measured at amortized cost		
Interest expense ¹	(467,004,743,366)	(474,248,120,081)
Gain (loss) on foreign currency transactions, net	12,629,210,937	(2,992,054,091)
Gain (loss) on foreign currency translation, net	(283,023,137,598)	72,007,244,827
Other financial cost ²	16,348,031,001	24,625,957,678
Financial liabilities designated as hedging instruments		
Gain on transactions, net	-	11,338,703,001
Gain (loss) on foreign currency translation, net	32,685,021,360	6,107,535,252
Other comprehensive gain (loss), net of tax	(7,472,709,338)	(75,744,015,045)
	<u>\ (565,589,257,531) \</u>	<u>(390,690,332,584)</u>

¹ Excludes interest cost on provisions amounting to \ 527 million and \ 345 million for the years ended December 31, 2020 and 2019, respectively.

² Excludes increase in other provisions amounting to \ 50,785 million and \ 52,825 million for the years ended December 31, 2020 and 2019, respectively.

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43. Netting Agreements

Offsetting of financial assets and financial liabilities

As of December 31, 2020 and 2019, financial assets and financial liabilities subject to offsetting, enforceable master netting arrangements and similar agreements are as follows:

(in Korean won)

	2020					
	Gross amounts recognized as financial instruments	Gross amounts of recognized financial instruments set off in the statement of financial position	Net amounts of financial instruments presented in the statement of financial position	Related amounts not set off in the statement of financial position		Net amount ²
				Financial instruments	Collateral received or pledged	
Financial assets						
Derivative ¹	\ 171,989,659,089	\ -	\ 171,989,659,089	\ (70,486,097,626)	\ -	\ 101,503,561,463
	\ 171,989,659,089	\ -	\ 171,989,659,089	\ (70,486,097,626)	\ -	\ 101,503,561,463
Financial liabilities						
Derivative ¹	\ 70,486,097,626	\ -	\ 70,486,097,626	\ (70,486,097,626)	\ -	\ -
	\ 70,486,097,626	\ -	\ 70,486,097,626	\ (70,486,097,626)	\ -	\ -

¹ Some of derivative contracts are made under International Swaps and Derivative Association (ISDA) master netting agreements.

² In general, under such agreements the amounts owed by each counter party on a single day in respect of all transactions outstanding in the same currency are aggregated into a single net amount that is payable by one party to the other. In certain circumstances (i.e. when a default occurs), all standing transactions under the agreement are terminated, the termination value is assessed and only a single amount is payable in settlement of all transactions.

(in Korean won)

	2019					
	Gross amounts recognized as financial instruments	Gross amounts of recognized financial instruments set off in the statement of financial position	Net amounts of financial instruments presented in the statement of financial position	Related amounts not set off in the statement of financial position		Net amount
				Financial instruments	Collateral received or pledged	
Financial assets						
Derivative ¹	\ 56,612,713,477	\ -	\ 56,612,713,477	\ (56,612,713,477)	\ -	\ -
	\ 56,612,713,477	\ -	\ 56,612,713,477	\ (56,612,713,477)	\ -	\ -
Financial liabilities						
Derivative ¹	\ 102,675,432,074	\ -	\ 102,675,432,074	\ (56,612,713,477)	\ -	\ 46,062,718,597
	\ 102,675,432,074	\ -	\ 102,675,432,074	\ (56,612,713,477)	\ -	\ 46,062,718,597

¹ Some of derivative contracts are made under International Swaps and Derivative Association (ISDA) master netting agreements. In general, under such agreements the amounts owed by each counter party on a single day in respect of all transactions outstanding in the same currency are aggregated into a single net amount that is payable by one party to the other. In certain circumstances (i.e. when a default occurs), all standing transactions under the agreement are terminated, the termination value is assessed and only a single amount is payable in settlement of all transactions.

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44. Risk Management

(a) Capital management

The primary objective of the Group's capital management is to ensure that it maintains a strong credit rating and healthy capital ratios in order to support its business and maximize the owners' value. To maintain the sound capital structure, management periodically reviews the Group's capital structure through short- and long-term borrowings and issuance of share capital. The Group's capital structure consists of equity and net debt, net of cash and cash equivalents and borrowing. No changes were made in the objectives, policies or processes for managing capital for the year ended December 31, 2020.

The Group's debt-to-equity ratios as of December 31, 2020 and 2019, are as follows:

<i>(in Korean won)</i>	2020	2019
Total borrowings and debt securities (A)	\ 14,277,711,273,484	\ 13,838,444,016,786
Cash and cash equivalents (B)	796,778,898,842	725,056,410,891
Net borrowings and debt securities (A – B = C)	13,480,932,374,642	13,113,387,605,895
Total equity (D)	(1,140,910,626,746)	530,846,395,550
Total invested capital (C + D = E)	\ 12,340,021,747,896	\ 13,644,234,001,445
Net borrowings and debt securities-to-total invested capital ratio (C/E)	109.25%	96.11%

(b) Financial risk management

The Group is exposed to various risks related to its financial instruments such as credit risk, market risk (currency risk, interest rate risk and price risk) and liquidity risk.

(i) Risk management structure

The board of directors is responsible for implementing and monitoring the Group's risk management structure and the management regularly updates the policies for each risk and confirms the validity of the policies. The purpose of the risk management policies is to identify the risks that could potentially affect the Group's financial results and reduce, to an acceptable level, avoid or eliminate those risks. The policies are reviewed regularly to reflect the current market conditions and the Group's activities. The Group makes constant efforts to improve the policies by monitoring on real time basis and with support from the outside experts. The audit committee oversees the Group's compliance to the risk management policies and procedures and reviews the effectiveness of the structure.

Korea National Oil Corporation and its subsidiaries
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44. Risk Management (cont'd)

(ii) Credit risk

Credit risk is the risk of financial loss to the Group if a customer or counterparty to a financial instrument fails to meet its contractual obligations, and arises principally from the Group's receivables from customers, investment securities, derivatives and financial guarantee contracts.

Credit risk also arises from transactions with financial institutions, and such transactions include transactions of cash and cash equivalents, various deposits, and financial instruments such as derivative contracts. The Group manages its exposure to this credit risk by only entering into transactions with banks that have high international credit ratings. The Group implements a credit risk management policy under which the Group only transacts business with counterparties that have a certain level of credit rate evaluated based on financial condition, historical experience, and other factors.

Book values of the financial assets and guarantee amounts by the contract represent the maximum amounts exposed to the credit risk. Details of the Group's level of maximum exposure to credit risk as of December 31, 2020 and 2019, are as follows:

<i>(in Korean won)</i>	2020	2019
Cash and cash equivalents	\ 796,778,898,842	\ 725,056,410,891
Derivative assets	171,989,659,089	77,603,330,235
Financial assets at amortized costs	620,272,024,452	677,753,643,511
Financial assets measured at fair value through profit or loss	1,211,564,108,875	1,764,419,248,348
Financial guarantee contracts	72,285,617,856	36,658,248,549

The Group recognizes allowance for bad debt to record impairment losses until it is convinced that the amount of the asset amount cannot be recovered. After the Group decides that the asset amount cannot be recovered, the allowance for bad debt is offset against that asset. Further disclosures relating to impairment of assets are provided as follows:

Impairment losses of accounts receivable and other receivables: *Note 8*

Impairment losses of financial assets measured at fair value through OCI: *Note 9*

Impairment losses of loans: *Note 10*

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44. Risk Management (cont'd)

(iii) Market risk

① Crude oil price risk

Crude oil price risk is the risk that the profit or cash flows will fluctuate due to changes in the international market prices of crude oil. The Group entered into derivative contracts according to the expected fluctuations of changes in the international market prices of crude oil to avoid the crude oil price risk and secure the product margin. With all other variables held constant, the changes in Company's profit before tax for the years ended December 31, 2020 and 2019, from crude oil price fluctuations are as follows:

(in Korean won)	2020		2019	
	Increase by 10%	Decrease by 10%	Increase by 10%	Decrease by 10%
Increase (decrease) of profit before tax	\ 141,014,036,202	\ (141,014,036,202)	\ 240,076,760,867	\ (240,076,760,867)

② Interest rate risk

The Group is exposed to interest rate risk due to its borrowings with floating interest rates. Assuming a 100 basis points increase or decrease in interest rates as of December 31, 2020, the Group's total equity and its profit or loss will also increase or decrease. The Group mitigates risks from fluctuation in interest rate through interest rate swap contracts.

Except for the effect of derivative transactions, this analysis considers the Group's total exposed risks associated with the fluctuation in interest rate. This analysis assumes that all other variables are held constant and the same method is applied as the method used in the prior periods. The details of increase or decrease in the total equity and profit or loss are as follows:

(in Korean won)	2020		2019	
	Increase by 100bp	Decrease by 100bp	Increase by 100bp	Decrease by 100bp
Increase (decrease) of profit before tax	\ (21,875,113,849)	\ 21,875,113,849	\ (20,039,662,441)	\ 20,039,662,441

③ Foreign currency risk

Items included in the financial statements of each of the Group's entities are measured using the currency of the primary economic environment in which the entity operates (the 'functional currency'). The Group is exposed to currency risk from the sales, purchases and borrowings not in United States dollar. The Group reduces currency risk from fluctuations in foreign exchange rates by carrying out and interest rate swap and currency swaps.

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44. Risk Management (cont'd)

Without considering the effect of the derivative aforementioned, the Group's exposures to foreign currency risk as of December 31, 2020 and 2019, are as follows:

(in foreign currencies and Korean won)

	Currency unit	2020		2019	
		Foreign currencies	Equivalent to Korean won	Foreign currencies	Equivalent to Korean won
Financial assets					
denominated in foreign currencies					
	KRW	222,396,133,387	\ 204,408,211	287,313,762,103	\ 287,313,762,103
	VND	80,696,621,357	3,469,955	33,545,748,294	1,677,722,133
	EGP	287,700,000	18,297,720	85,300,000	6,152,769,182
			<u>\ 226,175,886</u>		<u>\ 295,144,253,418</u>
Financial liabilities					
denominated in foreign currencies					
	KRW	1,434,104,093,188	\ 1,318,110,380	1,208,015,872,660	\ 1,208,015,872,660
	EUR	375,731,537	462,149,790	422,823,600	543,801,454,808
	SGD	402,173,063	303,922,184	403,304,284	344,008,236,414
	HKD	1,892,815,351	244,173,180	2,044,091,981	303,874,713,869
	CHF	1,202,452,626	1,364,182,504	801,117,083	957,751,495,463
	JPY	69,841,044,542	676,759,722	70,086,700,276	742,489,391,453
	VND	33,936,930,295	1,459,288	80,095,685,087	4,005,822,211
	NOK	-	-	62,300,000	8,179,648,596
	CAD	-	-	1,411,833	1,251,628,112
			<u>\ 4,370,757,048</u>		<u>\ 4,113,378,263,586</u>

The exchange rates applied for the years ended and as of December 31, 2020 and 2019, are as follows:

(in US dollar per one foreign currency)

	Average rates		Reporting date spot rate	
	2020	2019	2020	2019
KRW	0.0008	0.0009	0.0009	0.0009
VND	0.0000	-	0.0000	-
EUR	1.1419	1.1196	1.2300	1.1108
SGD	0.7252	0.7331	0.7557	0.7367
HKD	0.1289	0.1276	0.1290	0.1284
CHF	1.0664	1.0066	1.1345	1.0326
AED	0.2722	0.2722	0.2722	0.2722
JPY	0.0094	0.0092	0.0097	0.0092
EGP	0.0632	0.0595	0.0636	0.0623
NOK	0.1066	0.1137	0.1172	0.1134
CAD	0.7463	0.7537	0.7843	0.7657

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44. Risk Management (cont'd)

The Group and its subsidiaries use various functional currencies depending on their primary economic environment in which the entities operate. The functional currencies of Harvest Operations Corp., Dana Petroleum Limited, and KNOC Kaz B.V. are CAD, GBP and KZT, respectively. A sensitivity analysis below indicates the effect on the Group's profit before tax from the fluctuations in each function currency exchange rate. As of December 31, 2020 and 2019, the effect of a 5% increase or decrease in each functional currency exchange rate on profit before tax assuming all other variables held constant is as follows:

(in Korean won)

		2020		2019	
		Increase by 5%	Decrease by 5%	Increase by 5%	Decrease by 5%
Increase (decrease) of profit before tax	KRW	\ (65,711,212,223)	\ 65,711,212,223	\ (46,347,228,156)	\ 46,347,228,156
	HKD	(14,406,828,069)	14,406,828,069	(15,296,750,744)	15,296,750,744
	CHF	(80,490,178,175)	80,490,178,175	(48,212,257,328)	48,212,257,328
	EUR	(27,267,992,980)	27,267,992,980	(27,374,424,158)	27,374,424,158
	JPY	(39,930,515,474)	39,930,515,474	(37,376,177,196)	37,376,177,196
	SGD	(17,932,168,646)	17,932,168,646	(17,317,032,336)	17,317,032,336
	Others	1,198,245,587	(1,198,245,587)	(282,231,048)	282,231,048

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44. Risk Management (cont'd)

(iv) Liquidity risk

The details of contractual maturities of financial liabilities and other contractual obligations as of December 31, 2020, are as follows:

(in Korean won)	2020					
	Book value	Contractual cash flows ¹	Less than 1 year	1 - 2 years	2 - 5 years	More than 5 years
Short-term borrowings	259,155,616,000	259,155,616,000	259,155,616,000	-	-	-
Bond payables	11,856,286,438,750	12,714,530,237,801	1,843,993,283,153	2,260,345,779,900	5,734,613,686,614	2,875,577,488,134
Long-term borrowings ²	2,162,269,218,734	2,262,363,531,224	1,180,749,873,781	629,496,382,682	259,643,070,413	192,474,204,348
Lease liabilities	390,761,371,898	698,517,033,445	32,422,725,690	25,887,355,176	70,859,941,902	569,347,010,677
Trade and other payables ²	757,305,318,104	757,305,317,907	377,996,978,397	241,995,349,814	2,438,960,918	134,874,028,778
Derivative liabilities	70,486,097,626	70,486,097,626	18,218,868,450	4,561,444,306	47,705,784,870	-
Financial liabilities measured at fair value through profit or loss	32,124,800,666	32,124,800,666	2,585,153,204	-	-	29,539,647,462
Financial guarantee liabilities ³	8,575,601,856	104,438,880,470	101,416,960,470	-	3,021,920,000	-
	<u>15,536,964,463,634</u>	<u>16,898,921,515,139</u>	<u>3,816,539,459,145</u>	<u>3,162,286,311,878</u>	<u>6,118,283,364,717</u>	<u>3,801,812,379,399</u>

¹ Contractual cash flows include the estimated interest payments but exclude the effects of offsetting contracts.

² Loans from Special Accounting for Energy and Resources ("SAER") included in borrowings have no specific maturity as entities were borrowed under the condition that the Group is not obligated to make repayment of the principal and interest until the Group successfully complete the oil exploration.

³ Financial guarantee is allocated at the earliest period that the maximum amount could be requested.

Korea National Oil Corporation and its subsidiaries

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44. Risk Management (cont'd)

The Group had a working capital (current assets minus current liabilities) deficit of ₩ 1,903,226 million as of December 31, 2020. The Group's management currently anticipates that expected future capital contributions from the Government and the cash flows that the Group generates from its operations, together with its existing cash and cash equivalents and credit sources, will be sufficient to meet its currently anticipated needs for working capital, capital expenditures and business expansion throughout the foreseeable future.

(v) Other price risk

Other price risk is the risk that the fair value or cash flows of financial instruments will fluctuate because of changes in market prices other than interest rate risk and foreign currency risk. The Group's marketable available-for-sale equity securities are exposed to market price risk arising from the fluctuation in the price of the securities. However, the Group's management believes that the effect of the fluctuation in the price of the securities on the financial statements is not significant.

(c) Fair value measurement

A number of the Group's accounting policies and disclosures require the measurement of fair values, for both financial and non-financial assets and liabilities. The Group has an established control framework with respect to the measurement of fair values. This includes a valuation team that has overall responsibility for overseeing all significant fair value measurements, including Level 3 fair values, and reports directly to the CFO.

The valuation team regularly reviews significant unobservable inputs and valuation adjustments. If third party information, such as broker quotes or pricing services, is used to measure fair values, then the valuation team assesses the evidence obtained from the third parties to support the conclusion that such valuations meet the requirements of KIFRS, including the level in the fair value hierarchy in which such valuations should be classified.

When measuring the fair value of an asset or a liability, the Group uses market observable data as far as possible. Fair values are categorized into different levels in a fair value hierarchy based on the inputs used in the valuation techniques as follows.

- Level 1: quoted prices (unadjusted) in active markets for identical assets or liabilities.
- Level 2: inputs other than quoted prices included in Level 1 that are observable for the asset or liability, either directly (i.e. as prices) or indirectly (i.e. derived from prices).
- Level 3: inputs for the asset or liability that are not based on observable market data (unobservable inputs).

If the inputs used to measure the fair value of an asset or a liability fall into different levels of the fair value hierarchy, then the fair value measurement is categorized in its entirety in the same level of the fair value hierarchy as the lowest level input that is significant to the entire measurement.

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44. Risk Management (cont'd)

(i) Fair value and book value of financial assets and liabilities as of December 31, 2020 and 2019, are as follows:

(in Korean won)	2020		2019	
	Book value	Fair value	Book value	Fair value
Assets recognized at fair value				
Financial assets measured at fair value through other comprehensive income	\ 12,195,650,672	\ 12,195,650,672	\ 6,458,433,615	\ 6,458,433,615
Financial assets measured at fair value through profit or loss	1,211,564,108,875	1,211,564,108,875	1,764,419,248,348	1,764,419,248,348
Currency forwards	48,035,634,112	48,035,634,112	26,888,469,307	26,888,469,307
Currency swap	123,029,853,906	123,029,853,906	13,852,377,213	13,852,377,213
Interest rate swap	-	-	161,161,777	161,161,777
Other derivative	924,171,071	924,171,071	36,701,321,938	36,701,321,938
	\ 1,395,749,418,636	\ 1,395,749,418,636	\ 1,848,481,012,198	\ 1,848,481,012,198
Assets recognized at amortized costs				
Cash and cash equivalent	\ 796,778,898,842	\ 796,778,898,842	\ 725,056,410,891	\ 725,056,410,891
Loans	136,159,832,379	136,159,832,379	142,736,881,205	142,736,881,205
Long-term financial instruments	5,601,079,085	5,601,079,085	5,676,009,105	5,676,009,105
Other financial assets	739,651,047	739,651,047	503,309,681	503,309,681
Trade receivables and other receivables	477,771,461,941	477,771,461,941	528,837,443,520	528,837,443,520
	\ 1,417,050,923,294	\ 1,417,050,923,294	\ 1,402,810,054,402	\ 1,402,810,054,402
Liabilities recognized at fair value				
Currency swap	\ 26,465,147,132	\ 26,465,147,132	\ 72,488,781,303	\ 72,488,781,303
Interest swap	44,020,950,494	44,020,950,494	26,207,647,354	26,207,647,354
Financial liabilities measured at fair value through profit or loss	32,124,800,666	32,124,800,666	68,768,386,718	68,768,386,718
Other derivative	-	-	3,979,003,417	3,979,003,417
	\ 102,610,898,292	\ 102,610,898,292	\ 171,443,818,792	\ 171,443,818,792
Liabilities recognized at amortized costs				
Bond payables without collateral	\ 11,856,286,438,750	\ 11,856,286,438,750	\ 11,427,319,193,530	\ 11,427,319,193,530
Bank borrowings without collateral	2,421,424,834,734	2,421,424,834,734	2,411,124,823,256	2,411,124,823,256
Trade and payables	1,148,066,690,002	1,148,066,690,002	1,321,067,132,473	1,321,067,132,473
Others	8,575,601,856	8,575,601,856	9,125,764,549	9,125,764,549
	\ 15,434,353,565,342	\ 15,434,353,565,342	\ 15,168,636,913,808	\ 15,168,636,913,808

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44. Risk Management (cont'd)

The fair values of the financial assets and liabilities measured at amortized costs do not significantly differ from their book values.

(ii) Fair value hierarchy

The following table provides an analysis of financial instruments that are measured subsequent to initial recognition at fair value, classified as Level 1, 2, or 3, based on the degree to which the fair value is observable.

- Level 1: Unadjusted quoted prices in active markets for identical assets or liabilities;
- Level 2: Inputs other than quoted prices that are observable for the asset or liability either directly or indirectly; and
- Level 3: Inputs that are not based on observable market data.

Fair values of financial instruments by hierarchy level as of December 31, 2020, are as follows:

<i>(in Korean won)</i>	2020 ¹			
	Level 1	Level 2	Level 3	Total
Financial assets at fair value				
Through other comprehensive income	\	\	- \ 12,195,650,672	\ 12,195,650,672
Through profit or loss		536,899,617,344	674,664,491,531	1,211,564,108,875
Derivative assets		171,989,659,089	-	171,989,659,089
	\	\ 708,889,276,433	\ 686,860,142,203	\ 1,395,749,418,636
Financial liabilities at fair value				
Derivative liabilities	\	- \ 70,486,097,626	-	\ 70,486,097,626
Through profit or loss		-	32,124,800,666	32,124,800,666
	\	- \ 70,486,097,626	\ 32,124,800,666	\ 102,610,898,292

¹ There was no transactions between levels of financial instruments in current period

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45. Transaction with Government and Public Institution

Transactions with government and public institution for the years ended December 31, 2020 and 2019, are as follows:

(in Korean won)

Counter party	Transaction	Income		Expenses	
		2020	2019	2020	2019
KOREA GAS CORPORATION	Sales	\ 47,219,456,999	\ 91,410,158,836	\ -	\ -
Ministry of Trade, Industry and Energy.	Gains on exemption of debts	-	76,223,080,929	-	-
Ministry of Trade, Industry and Energy	Loss on cancellation of debt exemption	-	-	2,599,318,580	1,065,761,174
Ministry of Trade, Industry and Energy	Government grants income	1,365,040,373	5,466,365,576	-	-
		<u>\ 48,584,497,372</u>	<u>\ 173,099,605,341</u>	<u>\ 2,599,318,580</u>	<u>\ 1,065,761,174</u>

The outstanding assets and liabilities, arising from the transactions with government and public institution at December 31, 2020 and 2019, are as follows:

(in Korean won)

Counter party	Transaction	Receivables		Payables	
		2020	2019	2020	2019
KOREA GAS CORPORATION	Trade receivables	\ 2,657,299,332	\ 5,920,959,097	\ -	\ -
Ministry of Trade, Industry and Energy.	Borrowings based on Accounting for Energy and Resources	-	-	192,474,204,348	204,605,357,450
Ministry of Trade, Industry and Energy	Government grants for others	-	-	1,921,246,517	2,573,235,542
Ministry of Trade, Industry and Energy	Government grants for software	-	-	34,266,332	-
		<u>\ 2,657,299,332</u>	<u>\ 5,920,959,097</u>	<u>\ 194,429,717,197</u>	<u>\ 207,178,592,883</u>

Korea National Oil Corporation and its subsidiaries
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46. Related Parties

The Group's major related parties as of December 31, 2020, are as follows:

<u>Type</u>	<u>Related parties</u>
Associates	Oilhub Korea Yeosu Co., Ltd. Kernhem B.V. ADA Oil LLP Korea GS E&P Pte. Ltd. Parallel Petroleum LLC KNOC EF Star LLC and its subsidiaries
Joint ventures	KNOC Inam Ltd KNOC Kamchatka Petroleum Ltd. KNOC Bazian Ltd. KNOC Nigerian West Oil Company Ltd. KNOC Nigerian East Oil Company Ltd. Korea Kamchatka Co. Ltd KC Kazakh B.V Offshore International Group, Inc. KNOC Ferghana Ltd. KNOC Ferghana2 Ltd. KADOC Ltd. ¹ Korea Energy Terminal Co., Ltd Deep Basin Partnership HKMS Partnership KNOC-VOGO Eagle Ford LLC Al Dhafra Petroleum ²

¹ It was reclassified as a subsidiary for the year ended December 31, 2020 and the transactions prior to the reclassifications were disclosed.

² It is a joint venture owned by KADOC Ltd, which was reclassified as a subsidiary for the year ended December 31, 2020

Korea National Oil Corporation and its subsidiaries
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46. Related Parties (cont'd)

Transactions between the company and its subsidiaries have been removed at the time of consolidation and are not disclosed in the notes. Significant transactions with related parties for the years ended December 31, 2020 and 2019, are as follows:

(in Korean won)		Sales and others		Purchases and others	
		2020	2019	2020	2019
Oilhub Korea Yeosu Co., Ltd.	Revenues from rental services	\ 1,593,088,835	\ 1,567,551,293	\	\
	Interest expense	-	-	366,326,903	805,576,952
	Acquisition of right-of-use assets	-	-	-	31,668,352,864
Kernhem B.V.	Interest on loans	1,788,814,241	2,633,894,184	-	-
	Other bad debt expenses	-	-	1,788,814,241	2,633,894,184
	Reversal of bad debt allowance	-	2,629,628,173	-	-
ADA Oil LLP	Interest on loans	366,521,170	552,644,771	-	-
	Other bad debt expenses	-	-	366,521,170	552,644,771
	Reversal of bad debt allowance	120,459,504	865,408,354	-	-
KNOC Nigerian West Oil Company Ltd.	Loss on valuation of financial asset measured at fair value through profit or loss	-	-	332,774,100	37,120,683,552
KNOC Nigerian East Oil Company Ltd.	Loss on valuation of financial asset measured at fair value through profit or loss	-	-	250,465,613	39,319,500,482
Offshore International Group, Inc.	Interest on loans	1,829,835,729	1,857,714,950	-	-
KNOC Ferghana2 Ltd.	Loss on valuation of financial asset measured at fair value through profit or loss	-	-	348,999,788	5,751,308,509
KADOC Ltd. ¹	Gain on valuation of financial asset measured at fair value through profit or loss	7,254,216,265	12,090,737,904	-	-
Korea Energy Terminal Co., Ltd	Interest on loans	275,456,110	-	-	-
	Other income	3,459,998,986	-	-	-
Deep Basin Partnership	Other expenses	-	-	225,625,131	351,486,849
	Other income	524,130,512	621,375,388	-	-
HKMS Partnership	Other income	164,492,484	216,115,380	-	-
KNOC EF STAR LLC	Interest expense	-	-	14,472,478,537	14,197,883,161
		\ 17,377,013,836	\ 23,035,070,397	\ 18,152,005,483	\ 132,401,331,324

¹ The Group made a crude oil purchase contract with KADOC during the period. The purchased crude oil is sold to a third party without risk, which is recognized in net amount \ 640 million as of December 31, 2020.

Korea National Oil Corporation and its subsidiaries
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46. Related Parties (cont'd)

The receivables and payables, arising from the transactions with related parties as of December 31, 2020 and 2019, are as follows:

<i>(in Korean won)</i>			Receivables		Payables	
Transaction			2020	2019	2020	2019
Oilhub Korea Co., Ltd.	Yeosu	Other receivables	\ 700,378	\ -	\ -	\ -
		Account payables	-	-	1,255,507,000	1,341,402,349
		Lease liabilities	-	-	3,406,085,744	17,756,095,979
Offshore International Group, Inc.		Accrued interest	186,173,642	57,573,631	-	-
KADOC Ltd.		Accrued interest	-	41,995,191,781	-	-
		Other receivables	2,038,788,458	-	-	-
ADA Oil LLP		Other payables	-	-	134,229,704	118,003,312
		Trade receivables	-	1,317,507	-	-
Al Dhafra Petroleum		Other receivables	1,611,955,025	-	-	-
		Account payables	-	-	38,050,454,827	-
KNOC EF STAR LLC		Accrued expenses	-	-	1,419,558,741	1,086,982,062
			<u>\ 3,837,617,503</u>	<u>\ 42,054,082,919</u>	<u>\ 44,265,836,016</u>	<u>\ 20,302,483,702</u>

The Group recognized other bad debt expenses of \ 2,155 million and reversal of other bad debt expenses of \ 120 million on receivables arising from the transaction with related parties for the year ended December 31, 2020. The balance of loans and borrowings from related parties is excluded from the balance of receivables and payables above.

Loans to related parties as of December 31, 2020 and 2019, are as follows:

<i>(in Korean won)</i>	2020	2019
Joint ventures		
KNOC Nigerian West Oil Company Ltd.	\ -	\ 118,095,600
KNOC Nigerian East Oil Company Ltd.	-	106,807,050
Offshore International Group, Inc.	30,736,000,000	32,707,850,000
KADOC Ltd. ¹	-	514,706,627,297
Korea Energy Terminal Co., Ltd ²	-	2,586,817,903
	<u>\ 30,736,000,000</u>	<u>\ 550,226,197,850</u>

¹ It was reclassified as a subsidiary from a joint venture, as control was acquired through a change in the shareholders' agreement in 2020.

All loans were converted to equity excluding \ 161 million receivables due to single shares and interest income.

² For the year ended December 31, 2020, \ 2,600 million of loans were converted to investment.

Korea National Oil Corporation and its subsidiaries
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46. Related Parties (cont'd)

For the year ended December 31, 2020, the Group provided associates and joint ventures with additional loans of ₩ 4,951 million and recognized loss on valuation of ₩ 1,039 million. There were increases of ₩ 8,044 million due to the effect of changes in foreign exchange rate.

Borrowings from the related parties as of December 31, 2020 and 2019, are as follows:

<i>(in Korean won)</i>	2020	2019
Associates		
KNOC EF Star LLC	₩ 452,602,149,987	₩ 452,602,150,002

Lease agreements with related parties for the years ended December 31, 2020 and 2019, are as follows:

The Group leases storage facilities with a volume of 240,000 cbm per year through a Commercial Storage Agreement with Oilhub Korea Yeosu Co., Ltd., its associates, and the agreement ends on April 1, 2021. In accordance with the lease agreement entered into with the associates, the Group recognized right-of-use assets of ₩ 30,816 million and lease liabilities of ₩ 32,094 million as of January 1, 2020. The repayment of lease liabilities is ₩ 14,801 million and interest expense is ₩ 366 million for the year ended December 31, 2020.

As of December 31, 2020, the Group does not provide any guarantees to the related parties.

As of December 31, 2020, the Group is not provided with any guarantees from the related parties.

The compensations to the Parent Company's key management personnel for the years ended December 31, 2020 and 2019, are as follows:

<i>(in Korean won)</i>	2020	2019
Salaries	₩ 485,000,550	₩ 444,403,410
Severance and retirement benefits	69,622,950	43,449,303
	₩ 554,623,500	₩ 487,852,713

As of December 31, 2020, other transactions with related parties are as follows:

JB Patriot Investment Type Private Investment Limited Liability Company entered into an agreement of acquiring redeemable preferred shares with KNOC Eagle Ford Corporation and KNOC EF Star LLC, its subsidiary. The Group entered into the cash deficiency support agreement with KNOC Eagle Ford Corporation and its associates.

As of December 31, 2020, the details of rental agreements provided to related parties are as follows:

The Group entered into a USD 70 million loan agreement with maturity date of Feb 19, 2021 with Offshore International Group Inc., an investment in joint venture. As of December 31, 2020, Offshore International Group Inc. had ₩ 30,736 million drawn under the loan agreement.

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47. Additional Cash Flow Statement Information

Non-Cash Transactions

Significant non-cash investment and finance transactions excluded from statements of cash flows for the years ended December 31, 2020 and 2019, are as follows:

<i>(in Korean won)</i>	2020	2019
Revaluation of Land classified as property, plant and equipment	643,898,279,766	-
Bond payables transferred to current portion	1,780,931,360,340	989,538,588,269
Mining rights transferred to financial assets measured at fair value through profit or loss ¹	-	854,313,296,086
Financial assets measured at fair value through profit or loss transferred to investments in subsidiaries ²	2,529,999,174	
Derivative assets transferred to associates and joint ventures ³	17,502,245,529	
Long-term borrowings transferred to current portion	295,012,500,000	233,130,000,000
Effect of changes in accounting policies	-	196,383,626,154
Construction in progress transferred to other accounts	21,581,368,345	8,398,458,920
Provisions transferred to current portion	14,093,666,974	13,884,326,780
Increase (decrease) in other account payables due to acquisition of fixed assets	-	12,162,807,934

¹ In accordance with the amendment to the CBSA contract in Iraq, the related mining rights were transferred to financial assets measured at fair value through profit or loss.

² The loan to Korea Energy Terminal Co. Ltd. has been converted to investment.

³ The Company acquired 30% stake of Korea GS E&P Pte. Ltd, by exercising the stock option.

Korea National Oil Corporation and its subsidiaries
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47. Additional Cash Flow Statement Information (cont'd)

Details of change in liabilities in financing activities are as follows:

(in Korean won)

	Beginning balance	Cash flow	Changes in non-cash			Ending balance
			Change in exchange rate	Change in fair value	Others ¹	
Lease liability	418,717,695,662	(46,144,450,612)	21,803,113,995	-	(3,614,987,147)	390,761,371,898
Short-term borrowings	115,780,000,000	149,524,196,747	-	-	(6,148,580,747)	259,155,616,000
Long term borrowings	1,852,100,224,523	(60,232,119,968)	6,732,852,730	-	(787,469,219,945)	1,011,131,737,340
Current portion of long-term borrowings	443,244,598,733	-	8,542,425,802	-	699,350,456,859	1,151,137,481,394
Bond payables	10,444,576,145,677	1,938,016,446,081	281,105,186,659	-	(2,452,389,602,306)	10,211,308,176,111
Current portion of bond payables ²	982,743,047,853	(1,001,762,974,145)	(7,323,424,132)	-	1,671,321,613,063	1,644,978,262,639
Liabilities held to hedge risk of bond payable ²	77,603,330,235	1,123,240,857	171,546,997,954	81,799,390	(78,365,709,347)	171,989,659,089
Assets held to hedge risk of bond payable ²	102,675,432,098	(61,392,976,847)	(32,685,021,265)	(7,488,695,929)	69,377,359,569	70,486,097,626

¹ Includes liquidity transfer and amortization to present value etc.

² The assets and liabilities above are comprised of currency swap and interest swap derivative and included in the cash flow of related bond payables.

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48. Business Combinations

(a) Details of the Group's business combinations for the year ended December 31, 2020 are as follows:

(In Korean won)

<u>Entity</u>	<u>Principal activity</u>	<u>Acquisition date</u> ¹	<u>Ownership interests</u>	<u>Consideration transferred</u>
KADOC Ltd.	Exploration and Production	June 30, 2020	75.00	\ 121,643,477,145

¹ June 9, 2020, the effective date of the revised contract, is the acquisition date. However, the Company applied June 30, 2020, the earliest closing date that the Company can practically apply, as the deemed acquisition date.

(b) The fair values of consideration transferred with regards to the business combination for the year ended December 31, 2020 are as follows:

(In Korean won)

	<u>Amounts</u>
Cash	-
Settlement of pre-existing investment stocks under equity method accounting	121,643,477,145
Total consideration transferred	<u>₩ 121,643,477,145</u>

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48. Business Combinations (cont'd)

(c) The following table summarises the recognized amounts of assets acquired and liabilities assumed as of the date of acquisition.

In Korean won

	<u>Amounts</u>
Assets	
Cash and cash equivalents	₩ 127,773,954,157
Short-term trade receivable	14,705,338,586
Short-term other receivables	990,211,887
Other current financial assets	224,253,370
Inventories, net	2,372,624,361
Current assets	<u>146,066,382,361</u>
Property, plant and equipment, net	22,043,250
Exploration and production asset	802,879,226,255
Intangible assets other than goodwill, net	2,885,017,352
Other non-current assets	782,177,910
Deferred tax assets	872,169,730
Non-current assets	<u>807,440,634,497</u>
Total identifiable assets	<u>953,507,016,858</u>
Liabilities	
Trade and other payables	54,588,772,287
Short-term accrued expenses	6,523,366,904
Other current liabilities	5,661,267
Current tax liabilities	4,625,484,282
Current liabilities	<u>65,743,284,740</u>
Long-term borrowings	707,353,688,780
Employee benefits, net	59,865,688
Provision for restoration	18,158,873,832
Deferred tax liabilities	139,064,147,001
Non-current liabilities	<u>864,636,575,301</u>
Total identifiable liabilities	<u>930,379,860,041</u>
Total identifiable net assets acquired	<u>₩ 23,127,156,817</u>

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48. Business Combinations (cont'd)

(d) Goodwill arising from the acquisition has been recognized as follows:

In Korean won

Consideration transferred		121,643,477,145
Add: Non-controlling interests		5,781,790,052
Less: Identifiable net assets acquired		23,127,156,816
Goodwill	<u>₩</u>	<u>104,298,110,381</u>

(e) Details of net cash inflows as a result of business combinations are as follows:

In Korean won

Consideration paid in cash		-
Less: acquisition of cash and cash equivalents		127,773,954,157
Total after deduction	<u>₩</u>	<u>(127,773,954,157)</u>

(f) The income and net loss of KADOC Ltd. after the acquisition date included in the consolidated statement of comprehensive loss for the year ended December 31, 2020 are ₩110,687 million and ₩9,324 million, respectively. Assuming that KADOC Ltd. were acquired as of January 1, 2020, the Group's net loss and net loss before income tax would have been ₩2,003,085 million and ₩2,324,178 million, respectively.

Korea National Oil Corporation and its subsidiaries
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49. Contingencies and Commitments

Details of the Group's significant pending litigations as of December 31, 2020, are as follows:

(In Korean won)

Plaintiff	Defendant	Description ¹	Amount	Status
SK Engineering & Construction Co., Ltd. and POSCO Engineering & Construction Co., Ltd.	The Company	Claiming adjustment of contracted amount due to design change and extension of construction period and additional construction charge thereto.(1 st claim)	\ 6,413,302,000	In first trial
SK Engineering & Construction Co., Ltd. and POSCO Engineering & Construction Co., Ltd.	The Company	Claiming adjustment of contracted amount due to design change and extension of construction period and additional construction charge thereto.(2 nd claim)	\ 12,577,605,543	In first trial
SK Engineering & Construction Co., Ltd	The Company	Claiming construction costs, overhead and stone pipe construction cost which is equivalent to late compensation imposed by the Company	\ 2,948,403,700	In first trial
AAA company and Dr. Owolabi ²	The Company	Claims for damages equivalent to brokerage fees, claims for contribution to acquisition of a mining site	\ 108,800,000,000	In first trial
The Company ³	GS Energy Corporation	Claiming for refund of the difference in payment amount, arising from the settlement in USD for the share purchase claim that the Company should have settled in Korean won.	\ 23,666,811,750	In arbitration

¹ As of December 31, 2020, in addition to the above lawsuits, 3 lawsuits have been filed against the Group, with the total litigation value of \ 1,885 million, and 8 cases were filed by the Group, with the total litigation value of \ 6,408 million.

² Dr. Owolabi and others are engaged in a lawsuit demanding that the Company pay for the cooperation to acquire Nigerian mining rights. The Group currently believes that it has no obligations and as of December 31, 2020, it has not recognized any provisions for these litigations.

³ As a result of this litigation case, there is a possibility that the cost of investment stocks in relation to KOREA GS E&P Pte. will fluctuate (Note 15).

In relation to the East Coast oil leakage accident that occurred in 2020, the Company's calculation for the damage to nearby fishermen and residents is underway. The expected amount of damage is not reasonably estimable, and it is unclear whether the Company would be liable for indemnification, and accordingly, the provisions were not recognized.

The Company has provided loan guarantees to non-related parties as of December 31, 2020 and 2019, as follows:

(In US dollar)

Description of guarantee	Guaranteed Party	Guarantee period	2020	2019
Payment guarantees for Parallel business	Samsung C&T Corporation and others	Until loans are fully repaid	\$ 8,458,987 23,780,000	\$ 7,881,987 23,780,000
Payment guarantees for Korea GS E&P	GS Energy	2021.07.06	34,200,000	-

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49. Contingencies and Commitments (cont'd)

As of December 31, 2020, the payment guarantees provided by the Company to others are as follows:

(in thousands of US dollar, millions of Korean won)

Details of contract ¹	Financial institutions	Credit line	Current Balance
Trade finance	BNP Paribas ²	\$ 200,000	\$ -
	Development Bank of Singapore ²	240,000	-
	Bank of America ²	190,000	-
	ING Bank ²	100,000	-
	Standard Chartered Bank ²	150,000	-
	Credit Agricole ²	100,000	-
	Shinhan Bank	100,000	-
	The Export-Import Bank of Korea	200,000	-
		<u>\$ 1,280,000</u>	<u>\$ -</u>
Credit line	BNP Paribas	\$ 200,000	\$ -
	BNP Paribas ²	200,000	-
	Development Bank of Singapore ²	240,000	-
	Mizuho Corporate Bank	100,000	-
	Bank of America ²	190,000	-
	ING Bank ²	100,000	-
	Credit Agricole ²	100,000	-
	Standard Chartered Bank ²	150,000	-
		<u>\$ 1,280,000</u>	<u>\$ -</u>
Bank overdraft	Woori Bank	\ 10,000	\ -

¹ The above arrangement does not include an arrangement on the basis that the Company successfully complete oil exploration.

² A portion of or all of lines of credit for trade finance and financial loans have been integrated

As of December 31, 2020, the Group has received a repayment guarantee of \ 2,025 million from Seoul Guarantee Insurance Company for the repayment of 13 lease deposits provided in connection with the lease contract.

Regarding the investment agreement for Korea Energy Terminal, on November 13, 2019, the Company signed a Joint Venture Agreement with SK Gas Co., Ltd. and MOL Chemical Tanker to promote the Ulsan North Port project. According to this agreement, the total investment cost is expected to be \ 616,005 million, and for the amounts that are not financed through external borrowings, each participant promised to invest in the amounts equivalent to the participant's share.

Korea National Oil Corporation and its subsidiaries
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49. Contingencies and Commitments (cont'd)

As of December 31, 2020, other significant contingencies and commitments related to the Company's subsidiaries are as follows:

(i) Dana Petroleum Limited ("Dana") and its subsidiaries

The Company provided a performance guarantee of GBP 127 million to Nexen and others for the expenses that will incur for restoration of the sites, decommissioning, dismantling and removal of the facilities and structures.

In connection with the acquisition of Dana Petroleum Limited, the Company guaranteed compensation to the Norwegian government for possible environmental and human damage during the exploration and production activities of its subsidiary Dana Petroleum Norway AS.

(ii) Harvest Operations Corp. and its subsidiaries

Guarantees provided by the Company for Harvest Operations Corp. as of December 31, 2020 are as follows:

In foreign currencies

Beneficiary	Description	Amount	Maturity
Harvest Operations Corp.	Guarantees for borrowing from banks	CAD 500,000,000	2021.02.24
Harvest Operations Corp.	Guarantees for borrowing from banks	CAD 500,000,000	2022.07.29
Harvest Operations Corp.	Guarantees for issuing of bonds	USD 195,770,000	2021.04.14
Harvest Operations Corp.	Guarantees for issuing of bonds	USD 285,000,000	2022.09.21
Harvest Operations Corp.	Guarantees for issuing of bonds	USD 200,000,000	2022.09.21
Harvest Operations Corp.	Guarantees for borrowing from banks	CAD 300,000,000	2023.05.11
Harvest Operations Corp.	Guarantees for issuing of bonds	USD 397,500,000	2023.06.01
Harvest Operations Corp.	Guarantees for borrowing from banks	CAD 150,000,000	2021.04.01
Harvest Operations Corp.	Guarantees for borrowing from banks	CAD 90,000,000	2021.08.25

(iii) ANKOR E&P Holdings Corp. ("ANKOR") and its subsidiaries

The Company provided a guarantee of \$ 121 million to Chubb Limited and others for the future restoration of oil and gas sites held by ANKOR.

(iv) KNOC Yemen Ltd.

The Company is discussing business acquisition with local acquirer YICOM regarding the withdrawal of business of its subsidiary, KNOC Yemen Ltd. Depending on the acquisition agreement, there may be settlements to be paid or received between the Company and YICOM, but the amounts are not reasonably estimable.

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49. Contingencies and Commitments (cont'd)

(v) *KNOC Eagle Ford and its subsidiaries*

KNOC EF Star LLC, an associate of KNOC Eagle Ford Corporation, has entered into a contract to acquire redeemable preferred stocks with JB Patriot Private Equity Fund, and the Company has entered into a funding agreement with KNOC Eagle Ford Corporation regarding the aforementioned contract. In case of breach of the contract between the Company and JB Patriot Private Equity Fund, the latter may exercise a drag along right to require the KNOC Eagle Ford Corporation to sell the entire common shares held by KNOC Eagle Ford Corporation together with the preferred shares.

Details of agreements with financial institutions of KNOC Eagle Ford and its subsidiaries are as follows:

(in US dollar)

Agreement	Financial Institution	Credit line amount	Executed amount
Credit line	Bank of America	\$ 25,000,000	\$ -
	Sumitomo Mitsui Banking Corporation	70,000,000	-
	Societe Generale Bank	30,000,000	-
		<u>\$ 125,000,000</u>	<u>\$ -</u>

50. Events after the Reporting Period that do not require adjustments

In January 2021, the Company sold equity securities of Offshore International Group, a joint venture, classified as assets held for sale as of December 31, 2020. This agreement includes an arrangement of which the buyer of equity securities reimburses the Company in case of a refund in connection with a tax dispute that was incurred prior to the sale of Offshore International Group.

51. Changes in Accounting Policies

The Group changed the accounting policy for subsequent measurement method of land classified as property, plant and equipment from cost model to revaluation model for the year ended December 31, 2020. The financial implications of the change in accounting policy are as follows:

(In Korean won)	Cost model	Fair value	Net difference	Deferred tax liabilities
Land	\ 453,846,274,657	\ 1,047,517,159,605	\ 488,074,895,652	\ 155,823,383,572

As a result, the carrying amount of land increased by \ 646,112 million (revaluation gain of \ 489,753 million, net of tax effect), which was recognized in other comprehensive income. The decrease in the carrying amount of land by \ 2,213 million was reflected in other non-operating expenses. The change in accounting policy has

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51. Changes in Accounting Policies (cont'd)

been applied prospectively from the start of 2020 in accordance with the KIFRS 1008 *Accounting Policies, Changes in Accounting Estimates and Errors*.

52. Date of Authorization of Issue

The consolidated financial statements were approved for issue by the Board of Directors on February 26, 2021.