

SK E&S Co., Ltd. and Subsidiaries

**Consolidated Financial Statements
December 31, 2016 and 2015**

SK E&S Co., Ltd. and Subsidiaries
Index
December 31, 2016 and 2015

	Page(s)
Independent Auditor's Report	1 – 2
 Consolidated Financial Statements	
Consolidated Statements of Financial Position.....	3
Consolidated Statements of Profit or Loss.....	4
Consolidated Statements of Comprehensive Income.....	5
Consolidated Statements of Changes in Equity.....	6
Consolidated Statements of Cash Flows.....	7
Notes to the Consolidated Financial Statements.....	8 – 78

Independent Auditor's Report

(English Translation of a Report Originally Issued in Korean)

To the Board of Directors and Shareholders of
SK E&S Co., Ltd.

We have audited the accompanying consolidated financial statements of SK E&S Co., Ltd. and its subsidiaries (collectively referred to as the "Group"), which comprise the consolidated statements of financial position as of December 31, 2016 and 2015, and the consolidated statements of profit or loss, consolidated statements of comprehensive income, consolidated statements of changes in equity and consolidated statements of cash flows for the years then ended, and notes to the consolidated statements including a summary of significant accounting policies and other explanatory information.

Management's responsibility for the financial statements

Management is responsible for the preparation and fair presentation of the consolidated financial statements in accordance with International Financial Reporting Standards as adopted by the Republic of Korea (Korean IFRS) and for such internal control as management determines is necessary to enable the preparation of financial statements that are free from material misstatement, whether due to fraud or error.

Auditor's responsibility

Our responsibility is to express an opinion on the consolidated financial statements based on our audits. We conducted our audits in accordance with Korean Standards on Auditing. Those standards require that we comply with ethical requirements and plan and perform the audit to obtain reasonable assurance about whether the consolidated financial statements are free from material misstatement.

An audit involves performing procedures to obtain audit evidence about the amounts and disclosures in the consolidated financial statements. The procedures selected depend on the auditor's judgment, including the assessment of the risks of material misstatement of the consolidated financial statements, whether due to fraud or error. In making those risk assessments, the auditor considers internal control relevant to the entity's preparation and fair presentation of the consolidated financial statements 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 entity's internal control. An audit also includes evaluating the appropriateness of accounting policies used and the reasonableness of accounting estimates made by management, as well as evaluating the overall presentation of the consolidated financial statements.

We believe that the audit evidence we have obtained is sufficient and appropriate to provide a basis for our audit opinion.

Opinion

In our opinion, the accompanying consolidated financial statements present fairly, in all material respects, the consolidated financial position of SK E&S Co., Ltd. and its subsidiaries as of December 31, 2016 and 2015, and its consolidated financial performance and its consolidated cash flows for the years then ended in accordance with Korean IFRS.

Other Matter

Auditing standards and their application in practice vary among countries. The procedures and practices used in the Republic of Korea to audit such financial statements may differ from those generally accepted and applied in other countries.

Samuel PricewaterhouseCoopers

Seoul, Korea
March 10, 2017

This report is effective as of March 10, 2017, the audit report date. Certain subsequent events or circumstances, which may occur between the audit report date and the time of reading this report, could have a material impact on the accompanying consolidated financial statements and notes thereto. Accordingly, the readers of the audit report should understand that there is a possibility that the above audit report may have to be revised to reflect the impact of such subsequent events or circumstances, if any.

SK E&S Co., Ltd. and Subsidiaries
Consolidated Statements of Financial Position
December 31, 2016 and 2015

(in thousands of Korean won)

	Notes	2016	2015
Assets			
Non-current assets			
Property, plant and equipment	7,32	₩ 4,728,039,898	₩ 4,279,674,500
Investment properties	8	96,451,635	96,532,000
Intangible assets	9,32	701,486,419	572,101,708
Investments in joint ventures and associates	10,32	786,654,463	812,393,892
Deferred tax assets	28	11,980,793	9,969,160
Available-for-sale financial assets	5,6,11	89,351,789	99,716,425
Derivative assets	5,6	2,974,680	908,400
Other financial assets	5,12,32	25,470,023	26,437,613
Other assets	13	11,717,919	14,033,504
		<u>6,454,127,619</u>	<u>5,911,767,202</u>
Current assets			
Inventories	14	52,950,085	22,815,637
Trade receivables	5,15,34	620,985,415	646,182,804
Derivative assets	5,6	1,121,287	-
Other financial assets	5,12,32	18,894,033	25,350,178
Other assets	13	108,022,471	75,415,485
Cash and cash equivalents	4,5,16	558,483,039	419,890,899
		<u>1,360,456,330</u>	<u>1,189,655,003</u>
Total assets		<u>₩ 7,814,583,949</u>	<u>₩ 7,101,422,205</u>
Liabilities			
Non-current liabilities			
Borrowings	4,5,6,17	₩ 2,782,556,437	₩ 2,229,326,150
Derivative liabilities	5,6	7,598,957	7,205,217
Other financial liabilities	4,5,18	5,353,454	4,577,328
Deferred tax liabilities	28	105,416,011	108,099,214
Net defined benefit liabilities	19	6,543,855	5,019,361
Unearned revenue		346,404,251	276,012,546
Other liabilities	20	2,931,790	2,382,401
		<u>3,256,804,755</u>	<u>2,632,622,217</u>
Liabilities Held-for-sale	36	-	-
Current liabilities			
Trade payables	4,5,32,34	788,375,777	833,182,138
Derivative liabilities	5,6	4,249,142	2,344,404
Other financial liabilities	4,5,18,32,34	161,959,649	248,546,579
Other liabilities	20	20,084,682	17,968,592
Current tax liabilities	28	24,667,452	67,106,865
Borrowings	4,5,6,17	549,507,796	275,282,453
		<u>1,548,844,498</u>	<u>1,444,431,031</u>
Total liabilities		<u>4,805,649,253</u>	<u>4,077,053,248</u>
Equity			
Share capital	1,21	221,058,960	221,058,960
Share premium	21	420,107,124	420,107,124
Retained earnings	22	878,188,234	956,677,398
Other components of equity	23	1,052,991,840	1,081,415,120
Equity attributable to owners of the Controlling Company		<u>2,572,346,158</u>	<u>2,679,258,602</u>
Non-controlling interest	33	436,588,538	345,110,355
Total equity		<u>3,008,934,696</u>	<u>3,024,368,957</u>
Total liabilities and equity		<u>₩ 7,814,583,949</u>	<u>₩ 7,101,422,205</u>

The above consolidated statements of financial position should be read in conjunction with the accompanying notes.

SK E&S Co., Ltd. and Subsidiaries
Consolidated Statements of Profit or Loss
Years Ended December 31, 2016 and 2015

<i>(in thousands of Korean won, except per share amounts)</i>	Notes	2016	2015
Continuing operations			
Revenue	32,34,35	₩ 4,044,762,971	₩ 4,654,208,274
Cost of sales	14,26,32,34	<u>3,425,927,897</u>	<u>3,918,615,384</u>
Gross profit		618,835,074	735,592,890
Selling and administrative expenses	24,26,34	<u>464,308,198</u>	<u>448,602,451</u>
Operating profit		154,526,876	286,990,439
Other income	25	73,359,929	88,354,394
Other expenses	25	36,201,665	33,542,850
Share of profit of associates	10	95,890,118	67,935,558
Finance income	5,27	12,952,721	14,706,756
Finance costs	5,27	<u>46,792,069</u>	<u>31,370,369</u>
Profit before income tax		253,735,910	393,073,928
Income tax expense	28	<u>55,361,613</u>	<u>88,495,972</u>
Profit for the year from continuing operations		198,374,297	304,577,956
Discontinued operations			
Profit for the year from discontinued operations	36	-	90,275,396
Profit for the year		<u>₩ 198,374,297</u>	<u>₩ 394,853,352</u>
Profit attributable to:			
Owners of the Controlling Company			
Profit for the year from continuing operations		₩ 172,144,377	₩ 290,845,195
Profit for the year from discontinued operations	36	-	90,275,396
Non-controlling interests			
Profit for the year from continuing operations		26,229,920	13,732,761
Profit for the year from discontinued operations		-	-
Earnings per share from continuing and discontinued operations attributable to the equity holders of the Controlling Company during the year			
Basic and diluted earnings per share			
From continuing operations	29	₩ 4,122	₩ 6,964
From discontinued operations	29	-	2,162

The above consolidated statements of profit or loss should be read in conjunction with the accompanying notes.

SK E&S Co., Ltd. and Subsidiaries
Consolidated Statements of Comprehensive Income
Years Ended December 31, 2016 and 2015

<i>(in thousands of Korean won)</i>	Notes	2016	2015
Profit for the year		₩ 198,374,297	₩ 394,853,352
Other comprehensive income			
Items that will not be reclassified subsequently to profit or loss:			
Remeasurements of net defined benefit liabilities	19	(1,748,472)	(3,194,318)
Items that will be reclassified subsequently to profit or loss:			
Change in value of available-for-sale financial assets	11	(7,391)	41,804
Share of other comprehensive income of associates	10	(52,123,172)	56,241,748
Exchange differences on translation of foreign operations		25,712,552	26,340,267
Cash flow hedges		(2,388,953)	(9,040,153)
Total comprehensive income for the year		<u>₩ 167,818,861</u>	<u>₩ 465,242,700</u>
Attributable to:			
Owners of the Controlling Company		₩ 141,772,215	₩ 450,233,976
Non-controlling interest		<u>26,046,646</u>	<u>15,008,724</u>
Total comprehensive income for the year		<u>₩ 167,818,861</u>	<u>₩ 465,242,700</u>

The above consolidated statements of comprehensive income should be read in conjunction with the accompanying notes

SK E&S Co., Ltd. and Subsidiaries
Consolidated Statements of Changes in Equity
Years Ended December 31, 2016 and 2015

(in thousands of Korean won)

	Attributable to owners of the Parent Company							
	Share Capital	Share Premium	Retained Earnings	Other Components of Equity	Total	Non-controlling Interest	Total Equity	
Balance at January 1, 2015	₩ 221,058,960	₩ 420,107,124	₩ 935,270,213	₩ 615,549,052	₩ 2,191,985,349	₩ 179,811,543	₩ 2,371,796,892	
Comprehensive income								
Profit for the year	-	-	381,120,591	-	381,120,591	13,732,761	394,853,352	
Remeasurements of the net defined benefit liability	-	-	(2,974,352)	-	(2,974,352)	(219,966)	(3,194,318)	
Change in value of available-for-sale financial assets	-	-	-	41,804	41,804	-	41,804	
Share of other comprehensive income of associates	-	-	-	54,961,082	54,961,082	1,280,666	56,241,748	
Exchange differences on translation of foreign operations	-	-	-	26,125,004	26,125,004	215,263	26,340,267	
Cash flow hedges	-	-	-	(9,040,153)	(9,040,153)	-	(9,040,153)	
Total comprehensive income for the year	-	-	378,146,239	72,087,737	450,233,976	15,008,724	465,242,700	
Transactions with owners of the Controlling Company								
Cash dividends	-	-	(336,808,844)	-	(336,808,844)	(1,297,799)	(338,106,643)	
Disposal of subsidiaries	-	-	-	-	-	(18,888,840)	(18,888,840)	
Discount on stock issuance	-	-	-	(3,906,118)	(3,906,118)	(30,651)	(3,936,769)	
Issuance of hybrid bond	-	-	-	398,629,481	398,629,481	170,579,598	569,209,079	
Interest paid on hybrid bond	-	-	(20,334,756)	-	(20,334,756)	(179,981)	(20,514,737)	
Others	-	-	404,546	(945,032)	(540,486)	107,761	(432,725)	
Total transactions with owners of the Controlling Company	-	-	(356,739,054)	393,778,331	37,039,277	150,290,088	187,329,365	
Balance at December 31, 2015	₩ 221,058,960	₩ 420,107,124	₩ 956,677,398	₩ 1,081,415,120	₩ 2,679,258,602	₩ 345,110,355	₩ 3,024,368,957	
Balance at January 1, 2016	₩ 221,058,960	₩ 420,107,124	₩ 956,677,398	₩ 1,081,415,120	₩ 2,679,258,602	₩ 345,110,355	₩ 3,024,368,957	
Comprehensive income								
Profit for the year	-	-	172,144,377	-	172,144,377	26,229,920	198,374,297	
Remeasurements of the net defined benefit liability	-	-	(1,956,785)	-	(1,956,785)	208,313	(1,748,472)	
Change in value of available-for-sale financial assets	-	-	-	(7,391)	(7,391)	-	(7,391)	
Share of other comprehensive income of associates	-	-	-	(51,086,219)	(51,086,219)	(1,036,953)	(52,123,172)	
Exchange differences on translation of foreign operations	-	-	-	25,067,186	25,067,186	645,366	25,712,552	
Cash flow hedges	-	-	-	(2,388,953)	(2,388,953)	-	(2,388,953)	
Total comprehensive income for the year	-	-	170,187,592	(28,415,377)	141,772,215	26,046,646	167,818,861	
Transactions with owners of the Controlling Company								
Cash dividends	-	-	(216,117,268)	-	(216,117,268)	(1,634,071)	(217,751,339)	
Issuance of hybrid bond	-	-	-	-	-	77,413,698	77,413,698	
Interest paid on hybrid bond	-	-	(32,817,663)	-	(32,817,663)	(10,348,090)	(43,165,753)	
Others	-	-	258,175	(7,903)	250,272	-	250,272	
Total transactions with owners of the Controlling Company	-	-	(248,676,756)	(7,903)	(248,684,659)	65,431,537	(183,253,122)	
Balance at December 31, 2016	₩ 221,058,960	₩ 420,107,124	₩ 878,188,234	₩ 1,052,991,840	₩ 2,572,346,158	₩ 436,588,538	₩ 3,008,934,696	

The above consolidated statements of changes in equity should be read in conjunction with the accompanying notes.

SK E&S Co., Ltd. and Subsidiaries
Consolidated Statements of Cash Flows
Years Ended December 31, 2016 and 2015

(in thousands of Korean won)

	Notes	2016	2015
Cash flows from operating activities			
Cash generated from operations			
Profit for the year		₩ 198,374,297	₩ 394,853,352
Adjustments to reconcile net income			
to net cash provided by operating activities	31	200,215,291	132,454,467
Changes in operating assets and liabilities	31	(93,843,555)	(35,041,598)
		<u>304,746,033</u>	<u>492,266,221</u>
Interest received		4,891,852	10,451,521
Interest paid		(84,713,850)	(81,883,068)
Dividends received		27,085,423	20,074,467
Income tax paid		(84,659,922)	(117,236,027)
Net cash inflow from operating activities		<u>167,349,536</u>	<u>323,673,114</u>
Cash flows from investing activities			
Disposal of property, plant and equipment	7	4,327,034	6,655,845
Disposal of intangible assets	9	1,081,600	5,814,982
Disposal of available-for-sale financial assets	11	8,837,037	24,864,135
Decrease in other financial assets		2,671,677	1,747,090
Disposal of investments in joint ventures and associates	10	49,525,554	3,931,680
Disposal of assets held-for-sale	36	-	495,082,000
Collection of contributions for construction		88,192,000	63,259,017
Purchases of property, plant and equipment	7	(663,209,835)	(1,405,879,486)
Purchases of intangible assets	9	(128,340,825)	(199,021,271)
Purchases of available-for-sale financial assets	11	(888,786)	(60,861,244)
Purchases of investments in joint ventures and associates	10	(17,606,940)	(9,078,194)
Increase in other financial assets		(1,000,294)	(2,106,292)
Others		(142,000)	-
Net cash outflow from investing activities		<u>(656,553,778)</u>	<u>(1,075,591,738)</u>
Cash flows from financing activities			
Proceeds from borrowings		1,960,729,874	1,457,232,472
Repayments of borrowings		(1,149,500,783)	(1,113,675,207)
Issuance of hybrid bonds		77,600,000	566,238,711
Cash dividends		(217,415,067)	(338,106,643)
Interest paid on hybrid bonds	23	(43,165,753)	(20,334,756)
Others		(768,556)	(1,835,490)
Net cash inflow from financing activities		<u>627,479,715</u>	<u>549,519,087</u>
Changes in cash and cash equivalents from currency translation		<u>316,668</u>	<u>1,177,397</u>
Net changes in cash and cash equivalents		<u>138,592,141</u>	<u>(201,222,140)</u>
Cash and cash equivalents at the beginning of year		<u>419,890,899</u>	<u>621,113,039</u>
Cash and cash equivalents at the end of the year		<u>₩ 558,483,040</u>	<u>₩ 419,890,899</u>

The above consolidated statements of cash flows should be read in conjunction with the accompanying notes.

SK E&S Co., Ltd. and Subsidiaries

Notes to the Consolidated Financial Statements

December 31, 2016 and 2015

1. General Information

SK E&S Co., Ltd. (the "Controlling Company" or the "Company") was established on January 13, 1999, as a holding company of city gas companies and engages in city gas, power generation, mass energy, renewable energy and foreign resource development. As of December 31, 2016, the Company's share capital amounts to ₩221,058,960 thousand and the Company is wholly owned by SK Holdings Co., Ltd.

1.1 Subsidiaries

The consolidated subsidiaries as of December 31, 2016, are as follows:

	Industry	Location	Closing month	Percentage of ownership
Gangwon City Gas Co., Ltd.	City gas	Korea	December	100.0%
Yeongnam Energy Service Co., Ltd.	City gas	Korea	December	100.0%
Ko-one Energy Service Co., Ltd.	City gas	Korea	December	100.0%
Busan City Gas Co., Ltd.	City gas	Korea	December	67.3%
Jeonbuk Energy Service Co., Ltd.	City gas	Korea	December	100.0%
Jeonnam City Gas Co., Ltd.	City gas	Korea	December	100.0%
Chungcheong Energy Service Co., Ltd.	City gas	Korea	December	100.0%
Paju Energy Service Co., Ltd. (formerly, PMP Co., Ltd.) ¹	Power generation	Korea	December	100.0%
Wirye Energy Service Co., Ltd.	Mass energy	Korea	December	95.2%
Narae Energy Service Co., Ltd.	Mass energy	Korea	December	100.0%
SK E&S Hong Kong Co., Ltd. ²	City gas	Hong Kong	December	83.7%
SK LNG Trading Pte., Ltd.	Wholesale LNG	Singapore	December	100.0%
PT SK E&S Nusantara ³	Management consulting	Indonesia	December	100.0%
SK E&S Australia Pty Ltd.	Resource development	Australia	December	100.0%
SK E&S Americas, Inc.	Holding Company	USA	December	100.0%
SK E&S LNG, LLC ⁴	Sale LNG	USA	December	100.0%
DewBlaine Energy, LLC ⁴	Resource development	USA	December	100.0%
CAILIP Gas Marketing, LLC ⁴	Resource development	USA	December	100.0%
Fajar Energy International Pte., Ltd. ⁵	Sale LNG	Singapore	December	100.0%

¹ PMP Co., Ltd. changed its name to Paju Energy Service Co., Ltd.

² Includes 50% ownership of Busan City Gas Co., Ltd.

³ Includes 0.37% ownership of SK LNG Trading Pte., Ltd.

⁴ SK E&S Americas, Inc., a subsidiary, has 100% ownership.

⁵ SK LNG Trading Pte., Ltd., a subsidiary, has 100% ownership.

SK E&S Co., Ltd. and Subsidiaries
Notes to the Consolidated Financial Statements
December 31, 2016 and 2015

1.2 Summarized Financial Information of Subsidiaries

Summarized financial information of the subsidiaries as of and for the years ended December 31, 2016 and 2015, is as follows:

(in thousands of Korean won)

		2016					
		Assets	Liabilities	Equity	Revenue	Profit(loss) for the year	Total comprehensive income
Gangwon City Gas Co., Ltd.	₩	86,510,490	₩ 42,838,077	₩ 43,672,413	₩ 97,366,355	₩ 3,969,178	₩ 3,465,704
Yeongnam Energy Service Co., Ltd.		376,268,324	182,335,673	193,932,651	591,570,892	28,137,043	28,504,314
Ko-one Energy Service Co., Ltd.		748,494,390	375,213,440	373,280,950	1,023,728,464	16,174,912	16,003,877
Busan City Gas Co., Ltd.		840,641,030	296,220,596	544,420,434	886,881,771	49,691,196	49,319,155
Jeonbuk Energy Service Co., Ltd.		67,770,654	40,717,133	27,053,521	94,425,466	4,394,271	4,145,715
Jeonnam City Gas Co., Ltd.		103,839,547	64,407,359	39,432,188	141,998,668	6,727,491	6,455,211
Chungcheong Energy Service Co., Ltd.		273,438,982	158,212,487	115,226,495	415,968,569	18,285,808	17,949,226
Paju Energy Service Co., Ltd. (formerly, PMP Co., Ltd.)		1,440,081,654	662,707,569	777,374,085	-	(6,110,920)	(6,156,592)
Wirye Energy Service Co., Ltd.		701,182,145	478,264,121	222,918,024	8,619,953	(7,372,633)	(7,347,990)
Narae Energy Service Co., Ltd.		759,352,791	584,470,102	174,882,689	294,558,546	(10,992,571)	(12,591,261)
SK E&S Hong Kong Co., Ltd.		84,179,673	-	84,179,673	-	47,615,662	54,431,734
SK LNG Trading Pte., Ltd.		54,272,853	29,484,712	24,788,141	122,082,975	388,212	1,399,216
PT SK E&S Nusantara		751,504	1,103	750,401	-	(1,105,312)	(1,055,152)
SK E&S Australia Pty Ltd.		370,707,886	168,986,146	201,721,740	-	(3,668,772)	2,594,611
SK E&S Americas, Inc.		577,160,705	158,005,688	419,155,017	-	(5,663,356)	(12,512,116)
SK E&S LNG, LLC		18,245,842	784	18,245,058	-	(1,549)	549,486
DewBlaine Energy, LLC		579,830,850	4,449,568	575,381,282	34,309,883	(3,367,881)	16,860,930
CAILIP Gas Marketing, LLC		1,567,475	2,277,051	(709,576)	-	(57,635)	(1,408,608)
Fajar Energy International Pte., Ltd		1	-	1	-	-	-

SK E&S Co., Ltd. and Subsidiaries
Notes to the Consolidated Financial Statements
December 31, 2016 and 2015

(in thousands of Korean won)

(in thousands of Korean won)	2015											
	Assets		Liabilities		Equity		Revenue		Profit(loss) for the year		Total comprehensive income	
Gangwon City Gas Co., Ltd.	₩	79,936,364	₩	49,681,656	₩	30,254,708	₩	111,793,557	₩	2,407,226	₩	2,572,736
Yeongnam Energy Service Co., Ltd.		361,255,614		195,827,277		165,428,337		727,252,075		26,260,948		25,188,837
Ko-one Energy Service Co., Ltd.		760,084,309		402,769,235		357,315,074		1,244,090,315		9,467,413		9,276,977
Busan City Gas Co., Ltd.		804,159,911		304,058,132		500,101,779		1,054,182,318		41,555,904		45,480,981
Jeonbuk Energy Service Co., Ltd.		63,725,323		40,817,517		22,907,806		112,550,996		4,092,091		3,151,735
Jeonnam City Gas Co., Ltd.		92,521,529		59,544,551		32,976,978		163,085,720		6,335,411		6,645,900
Chungcheong Energy Service Co., Ltd.		256,873,348		159,596,079		97,277,269		499,923,988		16,588,818		16,220,053
Paju Energy Service Co., Ltd. (formerly, PMP Co., Ltd.)		1,261,255,242		544,790,173		716,465,069		-		(1,485,069)		(1,484,505)
Wirye Energy Service Co., Ltd.		538,834,464		308,568,450		230,266,014		3,109,859		(3,793,397)		(3,810,455)
Narae Energy Service Co., Ltd.		800,298,257		612,824,307		187,473,950		68,721,366		(817,180)		(10,168,488)
SK E&S Hong Kong Co., Ltd.		32,142,245		2,394,307		29,747,938		-		24,983,662		25,930,123
SK LNG Trading Pte., Ltd.		2,958,460		218,975		2,739,485		98,733,296		741,355		828,436
PT SK E&S Nusantara		862,113		-		862,113		-		(790,065)		(830,443)
SK E&S Australia Pty Ltd.		337,934,696		163,667,341		174,267,355		-		(2,618,529)		7,707,519
SK E&S Americas, Inc.		338,848,938		1,541,078		337,307,860		59,020		(5,056,948)		(1,738,879)
SK E&S LNG, LLC		17,696,332		761		17,695,571		-		(762)		1,098,492
DewBlaine Energy, LLC		327,227,837		1,373,283		325,854,554		14,924,868		(2,490,029)		8,252,157
CAILIP Gas Marketing, LLC		-		509,468		(509,468)		-		-		(509,468)

SK E&S Co., Ltd. and Subsidiaries

Notes to the Consolidated Financial Statements

December 31, 2016 and 2015

1.3 Changes in the Scope of Consolidation

The subsidiary included in the consolidated financial statements for the year ended December 31, 2016, is as follows:

Name of subsidiary	Reason
Fajar Energy International Pte. Ltd.	Newly established

2. Significant Accounting Policies

The principal accounting policies applied in the preparation of these consolidated financial statements are set out below. These policies have been consistently applied to all the years presented, unless otherwise stated.

2.1 Basis of Preparation

The Group maintains its accounting records in Korean won and prepares statutory financial statements in the Korean language (Hangul) in accordance with the International Financial Reporting Standards as adopted by the Republic of Korea ("Korean IFRS"). The accompanying consolidated financial statements have been condensed, restructured and translated into English from the Korean language financial statements.

Certain information attached to the Korean language financial statements, but not required for a fair presentation of the Group's financial position, financial performance or cash flows, is not presented in the accompanying consolidated financial statements.

The consolidated financial statements of the Group have been prepared in accordance with Korean IFRS. These are the standards, subsequent amendments and related interpretations issued by the International Accounting Standards Board (IASB) that have been adopted by the Republic of Korea.

The preparation of financial statements requires the use of critical accounting estimates. Management also needs to exercise judgement in applying the Group's accounting policies. The areas involving a higher degree of judgment or complexity, or areas where assumptions and estimates are significant to the consolidated financial statements are disclosed in Note 3.

2.2 Changes in Accounting Policy and Disclosures

(a) 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, 2016. The adoption of these amendments did not have any impact on the current period or any prior period and is not likely to affect future periods.

- *Disclosure Initiative* – Amendments to Korean IFRS 1001 *Presentation of Financial Statements*
- Korean IFRS 1011 *Construction Contract*, Korean IFRS 1037 *Provisions, Contingent Liabilities and Contingent Assets* and Interpretation 2115 *Arrangements for Property Construction*
- *Agriculture: Bearer Plants* – Amendments to Korean IFRS 1016 *Property, Plant and Equipment*, and Korean IFRS 1041 *Agriculture*
- *Clarification of Acceptable methods of Depreciation and Amortization* – Amendments to Korean IFRS 1016 *Property, Plant and Equipment*, and Korean IFRS 1038 *Intangible assets*

SK E&S Co., Ltd. and Subsidiaries

Notes to the Consolidated Financial Statements

December 31, 2016 and 2015

- *Investment entities: Applying the Consolidation Exception* – Amendments to Korean IFRS 1110 *Consolidated Financial Statements*, Korean IFRS 1028 *Investments in Associates and Joint Ventures*, and Korean IFRS 1112 *Disclosures of Interests in Other Entities*
- *Accounting for Acquisitions of Interests in Joint Operations* – Amendments to Korean IFRS 1111 *Joint Arrangement*
- Annual Improvements to Korean IFRS 2012-2014 Cycle

(b) New standards and interpretations not yet adopted by the Group

Certain new accounting standards and interpretations that have been published that are not mandatory for December 31, 2016 reporting periods and have not been early adopted by the Group are set out below.

- Amendments to Korean IFRS 1007 *Statement of Cash Flows*

Amendments to Korean IFRS 1007 *Statement of Cash flows* requires to provide disclosures that enable users of financial statements to evaluate changes in liabilities arising from financing activities, including both changes arising from cash flows and non-cash flows. This amendment will be effective for annual periods beginning on or after January 1, 2017, with early adoption permitted. The Group does not expect the amendments to have a significant impact on the consolidated financial statements.

- Amendments to Korean IFRS 1012 *Income Tax*

Amendments to Korean IFRS 1012 clarify how to account for deferred tax assets related to debt instruments measured at fair value. Korean IFRS 1012 provides requirements on the recognition and measurement of current or deferred tax liabilities or assets. The amendments issued clarify the requirements on recognition of deferred tax assets for unrealized losses, to address diversity in practice. This amendment will be effective for annual periods beginning on or after January 1, 2017, with early adoption permitted. The Group does not expect the amendments to have a significant impact on the consolidated financial statements.

- Amendments to Korean IFRS 1102 *Share-based Payment*

Amendments to Korean IFRS 1102 clarifies accounting for a modification to the terms and conditions of a share-based payment that changes the classification of the transaction from cash-settled to equity-settled. The amendment also clarifies that the measurement approach should treat the terms and conditions of a cash-settled award in the same way as for an equity-settled award. This amendment will be effective for annual periods beginning on or after January 1, 2018, with early adoption permitted. The Group does not expect the amendments to have a significant impact on the consolidated financial statements.

SK E&S Co., Ltd. and Subsidiaries

Notes to the Consolidated Financial Statements

December 31, 2016 and 2015

- Korean IFRS 1109 *Financial Instruments*

The new standard for financial instruments issued on September 25, 2015 are effective for annual periods beginning on or after January 1, 2018 with early application permitted. This standard will replace Korean IFRS 1039 *Financial Instruments: Recognition and Measurement*. The Group is analyzing the financial effects of applying the standard and plans to apply the new standard for annual periods beginning on or after January 1, 2018

- Korean IFRS 1115 *Revenue from Contracts with Customers*

The Group will apply Korean IFRS 1115 *Revenue from Contracts with Customers* issued on November 6, 2015 for annual reporting periods beginning on or after January 1, 2018, and earlier application is permitted. This standard replaces Korean IFRS 1018 *Revenue*, Korean IFRS 1011 *Construction Contracts*, Interpretation 2031 *Revenue-Barter Transactions Involving Advertising Services*, Interpretation 2113 *Customer Loyalty Programs*, Interpretation 2115 *Agreements for the Construction of Real Estate* and Interpretation 2118 *Transfers of assets from customers*. The Group must apply Korean IFRS 1115 *Revenue from Contracts with Customers* within annual reporting periods beginning on or after January 1, 2018, and will apply the standard retrospectively to prior reporting period presented in accordance with Korean IFRS 1008 *Accounting Policies, Changes in Accounting Estimates and Errors* and apply simplified transition method with no restatement for completed contracts and other as of January 1, 2017.

The new standard is based on the principle that revenue is recognized when control of a good or service transfers to a customer so the notion of control replaces the existing notion of risks and rewards. A new five-step process must be applied before revenue from contract with customer can be recognized:

- Identify contracts with customers
- Identify the separate performance obligation
- Determine the transaction price of the contract
- Allocate the transaction price to each of the separate performance obligations, and
- Recognize the revenue as each performance obligation is satisfied.

As of December 31, 2016, the Group neither prepared for internal management process nor began to adjust accounting system in relation to implementation of Korean IFRS 1115. Also, the Group did not analyze the financial effects of applying the standard. The Group plans to analyze the financial effects of applying the standard and disclose the result of the analysis in the notes on the financial statements as of September 30, 2017.

SK E&S Co., Ltd. and Subsidiaries

Notes to the Consolidated Financial Statements

December 31, 2016 and 2015

2.3 Consolidation

The Group has prepared the consolidated financial statements in accordance with Korean IFRS 1110 *Consolidated Financial Statements*.

(a) Subsidiaries

Subsidiaries are all entities over which the Company has control. The Company controls the corresponding investee when it is exposed, or has rights, to variable returns from its involvement with the investee and has the ability to affect those returns through its power over the investee. Consolidation of a subsidiary begins from the date the Company obtains control of a subsidiary and ceases when the Company loses control of the subsidiary.

The Group applies the acquisition method to account for business combinations. The consideration transferred is measured at the fair values of the assets transferred, and identifiable assets acquired and liabilities and contingent liabilities assumed in a business combination are initially measured at their fair values at the acquisition date. The Group recognizes any non-controlling interest in the acquiree on an acquisition-by-acquisition basis in the event of liquidation, either at fair value or at the non-controlling interest's proportionate share of the recognized amounts of acquiree's identifiable net assets. All other non-controlling interests are measured at their acquisition-date fair values, unless another measurement basis is required by Korean IFRSs. Acquisition-related costs are expensed as incurred.

The excess of consideration transferred, amount of any non-controlling interest in the acquired entity and acquisition-date fair value of any previous equity interest in the acquired entity over the fair value of the net identifiable assets acquired is recorded as goodwill. If those amounts are less than the fair value of the net identifiable assets of the business acquired, the difference is recognized directly in the profit or loss as a bargain purchase.

Intercompany transactions, balances and unrealized gains on transactions between group companies are eliminated. Unrealized losses are also eliminated unless the transaction provides evidence of an impairment of the transferred asset. Accounting policies of subsidiaries have been changed where necessary to ensure consistency with the policies adopted by the Group.

When the Group ceases to consolidate for a subsidiary because of a loss of control, any retained interest in the subsidiary is remeasured to its fair value with the changed in carrying amount recognized in profit or loss.

(b) Associates

Associates are all entities over which the Group has significant influence, and investments in associates are initially recognized at acquisition cost using the equity method. Unrealized gains on transactions between the Group and its associates are eliminated to the extent of the Group's interest in the associates. If there is any objective evidence that the investment in the associate is impaired, the Group recognizes the difference between the recoverable amount of the associate and its book amount as impairment loss.

(c) Joint arrangement

A joint arrangement of which two or more parties have joint control is classified as either a joint operation or a joint venture. A joint operator has rights to the assets, and obligations for the liabilities, relating to the joint operation and recognizes the assets, liabilities, revenues and expenses relating to its interest in a joint operation. A joint venturer has rights to the net assets relating to the joint venture and accounts for that investment using the equity method.

SK E&S Co., Ltd. and Subsidiaries

Notes to the Consolidated Financial Statements

December 31, 2016 and 2015

2.4 Foreign Currency Translation

(a) Functional and presentation currency

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

(b) Transactions and balances

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

2.5 Property, Plant and Equipment

Property, plant and equipment are stated at its cost less accumulated depreciation and accumulated impairment losses. Historical cost includes expenditures that is directly attributable to the acquisition of the items.

The Group measured certain land at fair value on the transition date January 1, 2010, and used the fair values as deemed cost.

Depreciation of all property, plant and equipment, except for land, is calculated using the straight-line method to allocate their cost or revalued amounts, net of their residual values, over their estimated useful lives as follows:

	Estimated Useful Lives
Buildings	10 – 60 years
Structures	4 – 47 years
Pipelines	20 years
Machinery	4 – 20 years
Vehicles	2 – 10 years
Other	3 – 10 years

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

2.6 Borrowing Costs

General and specific borrowing costs that are directly attributable to the acquisition, construction or production of a qualifying asset are capitalized during the period of time that is required to complete and prepare the asset for its intended use or sale. Investment income earned on the temporary investment of specific borrowings pending their expenditure on qualifying assets is deducted from the borrowing costs eligible for capitalization. Other borrowing costs are expensed in the period in which they are incurred.

SK E&S Co., Ltd. and Subsidiaries
Notes to the Consolidated Financial Statements
December 31, 2016 and 2015

2.7 Customers' Contribution to Construction Costs

According to the city gas supply agreement, applicants for city gas supply are charged part of the installation costs of gas supply if they use the gas supply facilities. Customers' contributions to construction costs received before January 1, 2010 (the transition date), are accounted for as contra-accounts to supply facilities and are offset against depreciation expense based on the remaining useful lives of the supply facilities, and those received after January 1, 2010 (the transition date), are accounted for as unearned revenue and recognized as revenue based on a systematic and reasonable method.

2.8 Government Grants

Grants from the government are recognized at their fair value where there is a reasonable assurance that the grant will be received and the Group will comply with all attached conditions. Government grants related to assets are presented in the statement of financial position either by deducting the grant in arriving at the carrying amount of the asset, and government grants related to costs are deferred and recognized in the profit or loss over the period necessary to match them with the costs that they are intended to compensate.

2.9 Investment Property

Investment property is property held to earn rentals or for capital appreciation or both. An investment property is measured initially at its cost. An investment property is measured after initial measurement at depreciated cost (less any accumulated impairment losses). After recognition as an asset, investment property is carried at cost less accumulated depreciation and impairment losses. The Group depreciates investment properties, except for land, using the straight-line method over their useful lives of 40 years.

The Group revalued certain land and buildings held as investment property at fair value on the transition date January 1, 2010, and used the fair values as deemed cost.

2.10 Intangible Assets

Goodwill is measured as explained in Note 2.3.(a) and carried at its cost less accumulated impairment losses.

Software development costs that are directly attributable to internally generated by the Group are recognized when the criteria; such as, technically feasible, generate probable future economic benefits and other, are met. Membership rights that have an indefinite useful life are not subject to amortization because there is no foreseeable limit to the period over which the assets are expected to be utilized.

The Group amortizes intangible assets with a limited useful life using the straight-line method over the following periods:

	<u>Useful Lives</u>
Industrial property rights	5 – 10 years
Other	3 – 15 years

In relation to investment to the overseas gas development, the Group recognizes development costs that are directly attributable to acquisition, exploration, evaluation and development projects as intangible assets. They are accounted as follows:

SK E&S Co., Ltd. and Subsidiaries
Notes to the Consolidated Financial Statements
December 31, 2016 and 2015

(a) Expenditure for exploration, evaluation and development

Expenditures for acquisition of rights to explore, topographical, geological, geochemical and geophysical studies, exploratory drilling and activities in relation to evaluating the technical feasibility and commercial viability of extracting a mineral resource and expenditure in development stage such as construction of facilities for production are capitalized. Exploration and evaluation assets shall be assessed for impairment when facts and circumstances suggest that the carrying amount of an exploration and evaluation asset may exceed its recoverable amount.

(b) Production wells

Production wells are the wells that discovered the economic reserves and received permission to develop. Its cost includes purchase price, construction cost, expenditure on commencement of other production and the estimated amount of provision for restoration. The Group recognizes amortization on production wells using the unit of production method based on the verified reserves.

2.11 Impairment of Non-financial Assets

Goodwill and intangible assets that have an indefinite useful life are not subject to amortization and are tested annually for impairment, or more frequently if events or changes in circumstances indicate that they might be impaired. An impairment loss is recognized for the amount by which the asset's carrying amount exceeds its recoverable amount. The recoverable amount is the higher of an asset's fair value less costs to sell and value in use. Non-financial assets, other than goodwill, that suffered impairment are reviewed for possible reversal of the impairment at each reporting date.

2.12 Financial Assets

(a) Classification and Measurement

The Group classifies its financial assets into the following categories: financial assets at fair value through profit or loss, available-for-sale financial assets, loans and receivables, and held-to-maturity financial assets. Regular way purchases and sales of financial assets are recognized on trade-date, the date on which the Group commits to purchase or sell the asset.

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. Available-for-sale financial assets and financial assets at fair value through profit or loss are subsequently carried at fair value. And, loans and receivables and held-to-maturity investments are subsequently carried at amortized cost using the effective interest method.

Gains or losses arising from changes in the fair value of financial assets at fair value through profit or loss are recognized in profit or loss within other income or other expenses. Gains or losses arising from changes in the available-for-sale financial assets are recognized in other comprehensive income, and amounts are reclassified to profit or loss when the associated assets are sold or impaired.

(b) Impairment

The Group assesses at the end of each reporting period whether there is objective evidence that a financial asset or a group of financial assets is impaired. A financial asset or a group of financial assets is impaired and impairment losses are incurred only if there is objective evidence of impairment as a result of one or more events that occurred after the initial recognition of the asset (a 'loss event') and that loss event (or events) has an impact on the estimated future cash flows of the financial asset or a group of financial assets that can be reliably estimated.

SK E&S Co., Ltd. and Subsidiaries

Notes to the Consolidated Financial Statements

December 31, 2016 and 2015

Impairment of loans and receivables is presented as a deduction in an allowance account. Impairment of other financial assets is directly deducted from their carrying amount. The Group writes off financial assets when the assets are determined to be no longer recoverable.

The Group considers that there is an objective evidence of impairment if significant financial difficulties of the debtor, or delinquency in interest or principal payments for more than a certain period is indicated. Moreover, in the case of equity investments classified as available-for-sale, a significant decline in the fair value of the security below its cost, or prolonged decline is considered an objective evidence of impairment.

(c) Derecognition

If the Group transfers a financial asset and the transfer does not result in derecognition because the Group has retained substantially of all risks and rewards of ownership of the transferred asset due to a recourse in the event the debtor defaults, the Group continues to recognize the transferred asset in its entirety and recognizes a financial liability for the consideration received.

(d) Offsetting of financial instruments

Financial assets and liabilities are offset and the net amount reported in the consolidated statements of financial position where there is a legally enforceable right to offset the recognized amounts and there is an intention to settle on a net basis or realize the assets and settle the liability simultaneously. The legally enforceable right must not be contingent on future events and must be enforceable in the normal course of business and in the event of default, insolvency or bankruptcy of the Group or the counterparty.

2.13 Derivative Instruments

Derivatives are initially recognized at fair value on the date when a derivative contract is entered into and are subsequently re-measured at their fair value. Changes in the fair value of the derivatives that are not qualified for hedge accounting are recognized in profit or loss within 'other non-operating income (expenses)' or 'finance income (costs)' according to the nature of transactions.

The Group applies cash flow hedge accounting to hedge the price risk associated with forecast inventory purchase. The effective portion of changes in fair value of derivatives that are designated and qualify as cash flow hedges is recognized in other comprehensive income, and the ineffective portion is recognized in profit or loss within 'other non-operating income (expenses)'.

If the hedge no longer meets the criteria for hedge accounting, the adjustment to the carrying amount of a hedged item for which the effective interest method is used is amortized to profit or loss over the period to maturity.

2.14 Assets (or Disposal Group) Held for sale

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

2.15 Inventories

Inventories are stated at the lower of cost and net realizable value. Cost is determined using the moving average method.

SK E&S Co., Ltd. and Subsidiaries

Notes to the Consolidated Financial Statements

December 31, 2016 and 2015

2.16 Financial Liabilities

(a) Classification and measurement

The Group's financial liabilities at fair value through profit or loss are financial instruments held for trading. A financial liability is held for trading if it is incurred principally for the purpose of repurchasing in the near term. A derivative that is not a designated as hedging instruments and an embedded derivative that is separated are also classified as held for trading.

The Group classifies non-derivative financial liabilities, except for financial liabilities at fair value through profit or loss and financial guarantee contracts, as financial liabilities carried at amortized cost and presented as 'trade payables', 'borrowings', and 'other financial liabilities' in the statement of financial position.

Preferred shares that provide for a mandatory redemption at a particular date are classified as liabilities. Interest expenses on these preferred shares calculated using the effective interest method are recognized in the statement of profit or loss as 'finance costs', together with interest expenses recognized on other financial liabilities.

(b) Derecognition

Financial liabilities are removed from the statement of financial position when it is extinguished, for example, when the obligation specified in the contract is discharged, cancelled or expired or when the terms of an existing financial liability are substantially modified.

2.17 Financial Guarantee Contract

Financial guarantee contracts are recognized as a financial liability at the time the guarantee is issued. The liability is initially measured at fair value, subsequently at the higher of the amount determined in accordance with Korean IFRS 1037 *Provisions, Contingent Liabilities and Contingent Assets* and the amount initially recognized less cumulative amortization in accordance with Korean IFRS1018 *Revenue*, and recognized in the statement of financial position within 'other financial liabilities'.

2.18 Provisions

Provisions are measured at the present value of management's best estimate of the expenditure required to settle the present obligation at the end of the reporting period, and the increase in the provision due to the passage of time is recognized as interest expense.

2.19 Employee Benefits

(a) Post-employment benefits

The Group has defined benefit plans. A defined benefit plan is a pension plan that is not a defined contribution plan. Generally, post-employment benefits are payable after the completion of employment, and the benefit amount depended on the employee's age, periods of service or salary levels. The liability recognized in the statement of financial position in respect of defined benefit pension plans is the present value of the defined benefit obligation at the end of the reporting period less the fair value of plan assets. The defined benefit obligation is calculated annually by independent actuaries using the projected unit credit method. The present value of the defined benefit obligation is determined by discounting the estimated future cash outflows using interest rates of high-quality corporate bonds that are denominated in the currency in which the benefits will be paid, and that have terms approximating to the terms of the related obligation. Remeasurement gains and losses arising from experience adjustments and changes in actuarial assumptions are recognized in the period in which they occur, directly in other comprehensive income.

SK E&S Co., Ltd. and Subsidiaries

Notes to the Consolidated Financial Statements

December 31, 2016 and 2015

Changes in the present value of the defined benefit obligation resulting from plan amendments or curtailments are recognized immediately in profit or loss as past service costs.

(b) Long-term employee benefits

Certain entities within the Group provide long-term employee benefits that are entitled to employees with service period for ten years and above. The expected costs of these benefits are accrued over the period of employment using the same accounting methodology as used for defined benefit pension plans. The Group recognizes service cost, net interest on other long-term employee benefits and remeasurements as profit or loss for the year. These liabilities are valued annually by an independent qualified actuary.

2.20 Revenue Recognition

Revenue is measured at the fair value of the consideration received or receivable for the sale of goods or rendering of services arising from the normal activities of the Group. It is stated as net of value added taxes, returns, rebates and discounts, after elimination of intra-company transactions.

The Group recognizes revenue when the amount of revenue can be reliably measured; when it is probable that future economic benefits will flow to the entity; and when specific criteria have been met for each of the Group's activities, as described below. The Group bases its estimate on historical results, taking into consideration the type of customer, the type of transaction and the specifics of each arrangement.

(a) Sales of goods

Sales of products and merchandise are recognized upon delivery when the significant risks and rewards of ownership of goods have transferred to the buyer.

(b) Sales of services

Revenues from services are generally recognized on the basis of the actual service provided.

(c) Interest income

Interest income is recognized using the effective interest method according to the time passed. When a loan and receivable is impaired, the Group reduces the carrying amount to its recoverable amount and continues unwinding the discount as interest income. Interest income on impaired loans and receivables is recognized using the original effective interest rate.

(d) Dividend income

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

2.21 Lease

A lease is an agreement, whereby the lessor conveys to the lessee, in return for a payment or series of payments, the right to use an asset for an agreed period of time. Leases in which a significant portion of the risks and rewards of ownership are not transferred to the Group are classified as operating leases. Payments made under operating leases are charge to profit or loss on a straight-line basis over the period of lease.

2.22 Current and Deferred Tax

The tax expense for the period consists of current and deferred tax. Current and deferred tax is recognized in profit or loss, except to the extent that it relates to items recognized in other comprehensive income or directly in equity. In this case, the tax is also recognized in other comprehensive income or directly in equity, respectively.

SK E&S Co., Ltd. and Subsidiaries

Notes to the Consolidated Financial Statements

December 31, 2016 and 2015

The tax expense is measured using the tax rates (and tax laws) that have been enacted or substantively enacted by the end of the reporting period.

Management periodically evaluates tax policies that are applied in tax returns in which applicable tax regulation is subject to interpretation. The Group recognizes current income tax on the basis of the amount expected to be paid to the tax authorities.

Deferred income tax is provided in full, using the liability method, on temporary differences arising between the tax bases of assets and liabilities and their carrying amounts in the consolidated financial statements. However, deferred income tax is not accounted for if it arises from initial recognition of an asset or liability in a transaction other than a business combination that at the time of the transaction affects neither accounting nor taxable profit or loss.

Deferred tax assets are recognized only if it is probable that future taxable amounts will be available to utilize those temporary differences and losses.

The Group recognizes a deferred tax liability all taxable temporary differences associated with investments in subsidiaries, associates, and interests in joint arrangements, 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 arising from such investments to the extent that it is probable the temporary difference will reverse in the foreseeable future and taxable profit will be available against which the temporary difference can be utilized.

Deferred tax assets and liabilities are offset when there is a legally enforceable right to offset current tax assets and liabilities and when the deferred tax balances relate to the same taxation authority. Current tax assets and tax liabilities are offset where the entity has a legally enforceable right to offset and intends either to settle on a net basis.

2.23 Segment Reporting

Information of each operating segment is reported in a manner consistent with the business segment reporting provided to the chief operating decision-maker (Note 35). The chief operating decision-maker is responsible for allocating resources and assessing performance of the operating segments.

2.24 Approval of Issuance of the Financial Statements

The consolidated financial statements 2016 were approved for issue by the Board of Directors on February 14, 2017, which is subject to change with the approval of the shareholders at their annual shareholders' meeting.

3. Critical Accounting Estimates and Assumptions

The preparation of 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 within the next financial year are discussed below.

(a) Impairment of goodwill

The Group tests whether goodwill has suffered any impairment on an annual basis. The recoverable amount of a cash generating unit (CGU) is determined based on value-in-use calculations (Note 9).

SK E&S Co., Ltd. and Subsidiaries

Notes to the Consolidated Financial Statements

December 31, 2016 and 2015

(b) Income taxes

The Group's taxable income generated from these operations are subject to income taxes based on tax laws and interpretations of tax authorities in numerous jurisdictions. There are many transactions and calculations for which the ultimate tax determination is uncertain (Note 28).

(c) 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 (Note 6).

(d) Net defined benefit liability

The present value of net defined benefit liability depends on a number of factors that are determined on an actuarial basis using a number of assumptions including the discount rate (Note 19).

4. Financial Risk Management

The Group's activities expose it to a variety of financial risks: market risk (including foreign exchange risk, interest rate risk, cash flow interest rate risk and price risk), credit risk and liquidity risk. In order to manage these risk factors, the Group operates corresponding risk management policies and programs to monitor and respond to each risk factor carefully.

Financial assets subject to financial risk management include cash and cash equivalents, short-term investments, available-for-sale financial assets, trade receivables, other financial assets and others and financial liabilities include trade payables, borrowings, other financial liabilities and others.

4.1 Market risk

(a) Foreign exchange risk

The Group procures LNG for generators from overseas and is exposed to foreign exchange risk from various currency exposures, primarily with respect to the US dollar. The purpose of the Group's foreign exchange risk management is to maximize the value of the company by minimizing uncertainty due to fluctuations in the exchange rate and profit or loss.

As at December 31, 2016, based on the assumption that Korean won has strengthened/weakened by 15% against the US dollar with all other variables held constant, the Controlling Company's post-tax profit for the year would increase/decrease by ₩ 16,416,116 thousand (2015: ₩ 12,550,094 thousand) due to the effect of gain or loss on currency translation of assets and liabilities in the foreign currency.

SK E&S Co., Ltd. and Subsidiaries
Notes to the Consolidated Financial Statements
December 31, 2016 and 2015

Details of the Controlling Company's assets and liabilities denominated in foreign currencies as of December 31, 2016 and 2015, are as follows:

(in thousands of foreign currency, in thousands of Korean won)	2016		2015	
	Foreign Currency	Korean won	Foreign Currency	Korean won
Assets				
Cash and cash equivalents	CNY	114,107 ₩ 19,770,249	CNY	97,673 ₩ 17,634,863
	USD	389 470,196	USD	7 7,922
	COP	355,428 142,171	COP	175,252 64,663
	SGD	27 22,759	-	-
	HKD	10 1,616	-	-
	IDR	350,691 31,562	-	-
Liabilities				
Long-term borrowings	USD	118,888 ₩ 143,676,159	USD	93,964 ₩ 110,125,434
Trade payables	SGD	16 13,369	USD	-
Other payables	CNY	133 23,094	CNY	40 7,235
	USD	1,166 1,409,108	USD	289 338,840
	JPY	2,000 20,736	-	-
	-	-	EUR	64 81,470
	-	-	GBP	8 14,229
	-	-	CHF	27 32,006

Gain and loss on foreign currency translation are ₩ 2,383,077 thousand (2015: ₩ 406,448 thousand) and ₩ 7,028,080 thousand (2015: ₩ 3,312,083 thousand), respectively, for the year ended December 31, 2016 (Note 27).

(b) Price risk

The Group is exposed to equity securities price risk arises from available-for-sale financial assets held by the Group for managing liquidity and operations. To manage its price risk arising from investments in equity securities, the Group diversifies its portfolio.

As at December 31, 2016, if the price of the available-for-sale financial assets carried at fair value had increased or decreased by 10%, the Group's equity would have increased or decreased by ₩1,608,097 thousand (2015: ₩1,608,836 thousand).

(c) Interest rate risk

The Group's interest rate risk arises from borrowings. Borrowings issued at variable rates expose the Group to cash flow interest rate risk which is partially offset by cash held at variable rates. Fixed rate borrowings expose the Group to fair value interest rate risk.

As at December 31, 2016, if interest rates on Korean won-denominated borrowings had been 10 basis points higher or lower with all other variables held constant, post-tax profit for the year would have been decreased or increased by ₩ 564,954 thousand (2015: ₩ 115,849 thousand).

SK E&S Co., Ltd. and Subsidiaries
Notes to the Consolidated Financial Statements
December 31, 2016 and 2015

4.2 Credit Risk

Credit risk is managed on a group basis. Credit risk arises from cash and cash equivalents, and deposits with banks and financial institutions, as well as credit exposures to customers, including outstanding receivables and committed transactions. The credit quality of the customer is evaluated taking into account its financial position, past experience and other factors. Individual risk limits are set based on internal or external ratings in accordance with limits set by the board. The utilization of credit limits is regularly monitored.

No credit limits were exceeded during the reporting period, and management does not expect any losses from nonperformance by significant counterparties.

No significant impairment indicators or past due from trade receivables, loans and other receivables have been found during the reporting period, and the risk of nonperformance is low based on the management assessment as of reporting date. Credit risk is also related to the transactions with financial institutions. To reduce such risk, Group has limited business relationship with the financial institutions with higher credit rating.

The maximum exposure to credit risk at the reporting date is the carrying amount of the financial assets.

4.3 Liquidity Risk

The Group monitors rolling forecasts of the Group's liquidity requirements to ensure it has sufficient cash to meet operational needs.

The Group has sufficient assets including cash and cash equivalents and maintains sufficient headroom on its undrawn committed borrowing facilities elastically. Financial liabilities derived from operating activities are mostly due within 3 months. The Group maintains liquidity by holding sufficient cash and cash equivalent exceeds estimated monthly payments.

SK E&S Co., Ltd. and Subsidiaries
Notes to the Consolidated Financial Statements
December 31, 2016 and 2015

The table below analyzes the Group's non-derivative financial liabilities into relevant maturity groupings based on the remaining period at the statement of financial position date to the contractual maturity date. The amounts disclosed in the table are the contractual undiscounted cash flows, and include interest payable.

Details of the Group's maturity analysis as of December 31, 2016 and 2015, are as follows:

(in thousands of Korean won)

		2016					
	<u>Book amount</u>	<u>Contractual undiscounted cash flows</u>	<u>Less than 3 months</u>	<u>Between 3 months and 1 year</u>	<u>Between 1 and 5 years</u>	<u>More than 5 years</u>	
Trade payables	₩ 788,375,777	₩ 788,375,777	₩ 788,375,777	₩ -	₩ -	₩ -	
Other financial liabilities	167,313,103	167,313,103	157,645,243	5,126,372	2,128,503	2,412,985	
Borrowings	3,332,064,232	3,738,938,284	242,506,149	389,426,827	1,891,739,603	1,215,265,705	
Fund raising contract ¹	-	360,000,000	-	-	300,000,000	60,000,000	
Derivative liabilities	11,848,099	12,215,957	660,481	3,613,065	6,913,449	1,028,962	

(in thousands of Korean won)

		2015					
	<u>Book amount</u>	<u>Contractual undiscounted cash flows</u>	<u>Less than 3 months</u>	<u>Between 3 months and 1 year</u>	<u>Between 1 and 5 years</u>	<u>More than 5 years</u>	
Trade payables	₩ 833,182,138	₩ 833,182,138	₩ 829,385,138	₩ 3,797,000	₩ -	₩ -	
Other financial liabilities	253,123,907	253,123,907	168,200,555	80,346,024	1,161,686	3,415,642	
Borrowings	2,504,608,603	2,868,283,283	141,614,637	201,625,794	1,408,771,074	1,116,271,778	
Financial guarantee contract	-	8,485,850	-	8,485,850	-	-	
Fund raising contract ¹	-	200,000,000	-	-	-	200,000,000	
Derivative liabilities	9,549,621	9,917,715	537,324	1,832,281	6,783,304	764,806	

¹ Other than the amounts above, the Group has an obligation to replenish the funds of Boryeong LNG Terminal Co., Ltd., in case of shortage.

SK E&S Co., Ltd. and Subsidiaries

Notes to the Consolidated Financial Statements

December 31, 2016 and 2015

4.4 Capital Risk Management

The purpose of capital management of the Group is to maintain a sound capital structure. The Group uses the debt ratio as a capital management index. This ratio is calculated by dividing total liabilities by total equity. Total liabilities and total equity are based on the amounts disclosed in the consolidated financial statements.

The debt-to-equity ratios as of December 31, 2016 and 2015, are as follows:

<i>(in thousands of Korean won)</i>	2016	2015
Total liabilities	₩ 4,805,649,253	₩ 4,077,053,249
Total equity	3,008,934,696	3,024,368,956
Debt-to-equity ratio	159.71%	134.81%

5. Financial Assets and Liabilities by Category

Categorizations of financial assets and liabilities as of December 31, 2016 and 2015, are as follows:

<i>(in thousands of Korean won)</i>		2016	2015
Financial assets at fair value through profit or loss	Derivative assets	₩ 4,095,966	₩ 908,400
Loans and receivables	Cash and cash equivalents	₩ 558,483,039	₩ 419,890,899
	Trade receivables	620,985,415	646,182,804
	Other financial assets	44,364,057	51,787,791
		<u>₩ 1,223,832,511</u>	<u>₩ 1,117,861,494</u>
Available-for-sale financial assets	Available-for-sale financial assets	₩ 89,351,789	₩ 99,716,425
Financial liabilities at fair value through profit or loss	Derivative liabilities	₩ 418,993	₩ -
Financial liabilities for hedge accounting	Derivative liabilities	₩ 11,429,106	₩ 9,549,621
Financial liabilities at amortized cost	Trade payables	₩ 788,375,777	₩ 833,182,138
	Other payables liabilities	167,313,103	253,123,907
	Borrowings	3,332,064,232	2,504,608,603
		<u>₩ 4,287,753,112</u>	<u>₩ 3,590,914,648</u>

SK E&S Co., Ltd. and Subsidiaries
Notes to the Consolidated Financial Statements
December 31, 2016 and 2015

Net gains or losses on each category of financial instruments for the years ended December 31, 2016 and 2015, are as follows:

<i>(in thousands of Korean won)</i>	2016		2015	
Financial Assets				
Financial assets(liabilities) at fair value through profit or loss				
Gain (loss) on valuation	₩	3,144,289	₩	908,400
Gain (loss) on transactions		(1,193,895)		-
Loans and receivables				
Interest income		4,895,584		12,160,549
Gain (loss) on foreign currency transactions		(12,703)		(206,857)
Gain (loss) on foreign currency translation		(21,290)		76,061
Impairment loss		(76,032)		(1,036,742)
Available-for-sale financial assets				
Gain (loss) on valuation (Other comprehensive income (loss))		(7,391)		41,804
Gain (loss) on disposal		(2,232,402)		1,437,915
Impairment		(51,548)		(5,670,582)
Financial liabilities				
Financial liabilities at amortized cost				
Interest expense	₩	(35,967,798)	₩	(24,668,741)
Gain (loss) on foreign currency transactions		(59,823)		(1,951,329)
Gain (loss) on foreign currency translation		(4,623,713)		(2,981,696)
Financial liabilities for hedge accounting				
Loss on valuation (Other comprehensive income(loss))		(2,388,953)		(9,040,153)

6. Fair Value Estimation

The table below analyzes financial instruments carried at fair value, by valuation method. The different levels have been defined as follows:

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

The following table presents the Group's financial assets that are measured at fair value as of December 31, 2016 and 2015:

<i>(in thousands of Korean won)</i>		2016			
		Level 1	Level 2	Level 3	Total
Available-for-sale financial assets	₩	-	₩ -	₩ 21,215,000	₩ 21,215,000
Derivative assets		-	4,095,966	-	4,095,966
Derivative liabilities		-	(11,848,099)	-	(11,848,099)

<i>(in thousands of Korean won)</i>		2015			
		Level 1	Level 2	Level 3	Total
Available-for-sale financial assets	₩	-	₩ -	₩ 21,224,750	₩ 21,224,750
Derivative assets		-	908,400	-	908,400
Derivative liabilities		-	(9,549,621)	-	(9,549,621)

SK E&S Co., Ltd. and Subsidiaries
Notes to the Consolidated Financial Statements
December 31, 2016 and 2015

There is no significant change in business and economic environments which influence the fair value of financial assets and liabilities of the Group for the year ended December 31, 2016. The classification of financial instruments is identical to the previous classification in 2015.

The details of derivative instruments as of December 31, 2016, are as follows:

<i>(in thousands of Korean won)</i>	Assets		Liabilities		Gain on valuation	Other comprehensive income
Currency forward ¹	₩	4,095,966	₩	-	₩ 3,187,567	₩ -
Interest rate swap ²		-		(9,571,048)	-	(530,895)
Commodity swap ³		-		(785,828)	-	(276,360)
Others ⁴		-		(1,491,223)	(43,277)	(1,072,230)

¹ The currency forward is to hedge long term borrowing in foreign currency of USD 70,000 thousand and short-term borrowing in foreign currency of USD 25,149 thousand in order to avoid risk in fluctuation of currency exchange.

² The interest rate swap exchanges a fixed interest for a floating interest to hedge an interest rate risk of a borrowing of ₩400,000,000 thousand of Narae Energy Service Co., Ltd. which will be redeemed in installments over ten years.

³ It is the commodity swap to hedge a cash flow risk derived from the LNG purchase agreement expiring in 2019 amounts to USD 3,919 thousand of CAILIP Gas Marketing, LLC, a subsidiary.

⁴ The derivatives to fix the sales price of Equity Gas in advance related to the investment in the North American gas field of CAILIP Gas Marketing, LLC.

The following table presents the valuation techniques for recurring fair value measurements categorized within Level 3 of the fair value hierarchy:

<i>(in thousands of Korean won)</i>	Fair value		Valuation techniques
Hana Land Chip Private Real Estate No.33	₩	10,199,400	Net Asset Value per Share
Plus Future Plan Private Securities Investment Trust No.5		10,015,600	Net Asset Value per Share
SK Mutual Funds		1,000,000	Net Asset Value per Share
	₩	<u>21,215,000</u>	

The following table presents the changes in Level 3 instruments for the years ended December 31, 2016 and 2015:

<i>(in thousands of Korean won)</i>	2016		2015	
Beginning balance	₩	21,224,750	₩	21,169,600
Gain(loss) recognized as other comprehensive income		(9,750)		55,150
Ending balance	₩	<u>21,215,000</u>	₩	<u>21,224,750</u>

SK E&S Co., Ltd. and Subsidiaries

Notes to the Consolidated Financial Statements

December 31, 2016 and 2015

The following table presents available-for-sale financial assets that are valued at historical cost as of December 31, 2016 and 2015:

<i>(in thousands of Korean won)</i>		2016		2015	
Available- for-sale financial assets					
		₩		₩	
	SK Technology Innovation Company		2,808,024		2,808,024
	KNOC Ferghana Ltd.		80		80
	Contemporary Painting Art Trust No.1		495,041		495,041
	Gemini Partners Pte., Ltd.		-		8,417,000
	Fitech Global New Growth Investment Private Equity Fund		-		2,652,438
	Sejung21 Co., Ltd.		358,917		358,917
	Construction Guarantee Cooperative		82,597		73,106
	Hana Power generation infrastructure Investment Private Equity Fund		59,000,000		59,000,000
	Plant & Mechanical contractors financial cooperative of Korea		40,862		40,862
	Jeonnam Dragons Football Club		50,000		50,000
	Powertel TRS Co., Ltd.		1		1
	Prostar Energy Infra Fund		5,253,139		4,541,924
	Government bond		40,217		54,282
	HOWON Co., Ltd.		7,910		-
		₩	68,136,788	₩	78,491,675

The range of reasonable fair value estimates of SK Technology Innovation Company shares and other investments is significant and the probabilities of the various estimates cannot be reasonably assessed and therefore, these instruments are measured at cost. The Group does not have any plans to dispose of the above-mentioned equities in the near future. These instruments will be measured at fair value when the Group develops a reliable estimate of the fair value.

Fair value and book amount of financial liabilities as of December 31, 2016 and 2015, are as follows:

<i>(in thousands of Korean won)</i>		2016		2015	
		Book amount	Fair value	Book amount	Fair value
Financial liabilities					
Borrowings		₩ 3,332,064,232	₩ 3,412,007,924	₩ 2,504,608,603	₩ 2,576,721,898

Other financial liabilities whose book amount is a reasonable approximation of fair value are excluded from the fair value disclosures.

SK E&S Co., Ltd. and Subsidiaries
Notes to the Consolidated Financial Statements
December 31, 2016 and 2015

7. Property, Plant and Equipment

The details of property, plant and equipment as of December 31, 2016 and 2015, are as follows:

(in thousands of Korean won)

	2016				
	Acquisition cost	Accumulated depreciation	Customers' contribution to construction costs	Government Grants	Book amount
Land	₩ 658,215,051	₩ -	₩ -	₩ -	₩ 658,215,051
Buildings	187,594,107	(36,898,509)	-	-	150,695,598
Structures	178,471,320	(59,175,956)	-	-	119,295,364
Machinery	988,814,586	(329,231,671)	-	(7,437)	659,575,478
Vehicles	13,346,855	(6,900,443)	-	-	6,446,412
Tools and equipment	69,105,355	(55,966,073)	-	-	13,139,282
Pipelines	2,420,995,841	(1,310,278,644)	(99,075,574)	-	1,011,641,623
Others	291,793,559	(54,169,353)	-	-	237,624,206
Construction-in-progress	1,871,406,884	-	-	-	1,871,406,884
	<u>₩ 6,679,743,558</u>	<u>₩ (1,852,620,649)</u>	<u>₩ (99,075,574)</u>	<u>₩ (7,437)</u>	<u>₩ 4,728,039,898</u>

(in thousands of Korean won)

	2015			
	Acquisition cost	Accumulated depreciation	Customers' contribution to construction costs	Book amount
Land	₩ 657,700,319	₩ -	₩ -	₩ 657,700,319
Buildings	164,425,268	(32,293,489)	-	132,131,779
Structures	182,644,452	(50,407,442)	-	132,237,010
Machinery	991,479,768	(279,699,422)	-	711,780,346
Vehicles	13,223,944	(6,271,350)	-	6,952,594
Tools and equipment	65,638,120	(51,954,137)	-	13,683,983
Pipelines	2,304,028,249	(1,208,107,130)	(111,804,768)	984,116,351
Others	135,823,894	(17,696,745)	-	118,127,149
Construction-in-progress	1,522,944,969	-	-	1,522,944,969
	<u>₩ 6,037,908,983</u>	<u>₩ (1,646,429,715)</u>	<u>₩ (111,804,768)</u>	<u>₩ 4,279,674,500</u>

SK E&S Co., Ltd. and Subsidiaries
Notes to the Consolidated Financial Statements
December 31, 2016 and 2015

Changes in property, plant and equipment for the years ended December 31, 2016 and 2015, are as follows:

(in thousands of Korean won)	2016							
	Beginning balance	Acquisitions	Disposals	Reclas-sification	Depreciation	Impairment	Net exchange differences	Ending Balance
Land	₩ 657,700,319	₩ 427,081	₩ (62,787)	₩ 150,438	₩ -	₩ -	₩ -	₩ 658,215,051
Buildings	132,131,779	2,406,696	(1,602,931)	22,694,118	(4,934,064)	-	-	150,695,598
Structures	132,237,010	32,360	-	(4,205,491)	(8,768,515)	-	-	119,295,364
Machinery	711,780,346	1,924,644	(1,261,489)	(1,764,408)	(51,103,615)	-	-	659,575,478
Vehicles	6,952,594	1,573,100	(397,609)	-	(1,683,439)	-	1,766	6,446,412
Tools and equipment	13,683,983	5,490,639	(211,145)	376,802	(6,209,834)	-	8,837	13,139,282
Pipelines	984,116,351	28,162,571	(268,704)	89,631,465	(90,000,060)	-	-	1,011,641,623
Others	118,127,149	300,673	(6,196)	145,750,438	(34,796,235)	-	8,248,377	237,624,206
Construction- in-progress	1,522,944,969	598,627,957	-	(247,841,375)	-	(2,994,417)	669,750	1,871,406,884
	<u>₩ 4,279,674,500</u>	<u>₩ 638,945,721</u>	<u>₩ (3,810,861)</u>	<u>₩ 4,791,987</u>	<u>₩ (197,495,762)</u>	<u>₩ (2,994,417)</u>	<u>₩ 8,928,730</u>	<u>₩ 4,728,039,898</u>

(in thousands of Korean won)	2015						
	Beginning balance	Acquisitions	Disposals	Reclas- sification	Depreciation	Net exchange differences	Ending balance
Land	₩ 575,000,817	₩ 19,148,803	₩ (2,496,828)	₩ 66,047,527	₩ -	₩ -	₩ 657,700,319
Buildings	64,734,015	2,845,753	(364,322)	68,533,620	(3,617,287)	-	132,131,779
Structures	59,234,080	1,982,290	(558,535)	77,319,909	(5,740,733)	-	132,237,010
Machinery	394,410,568	4,799,698	(1,779,075)	351,985,903	(37,636,748)	-	711,780,346
Vehicles	3,659,442	456,201	(199,353)	4,982,738	(1,948,395)	1,961	6,952,594
Tools and equipment	14,469,799	5,556,385	(520,431)	1,323,968	(7,173,507)	27,769	13,683,983
Pipelines	920,222,943	54,197,234	(524,737)	92,642,742	(82,421,831)	-	984,116,351
Others	562,487	154,449	(1,991)	129,197,254	(15,836,360)	4,051,310	118,127,149
Construction- in-progress	831,425,069	1,437,191,091	(163,529)	(746,322,736)	-	815,074	1,522,944,969
	₩ 2,863,719,219	₩1,526,331,904	₩ (6,608,801)	₩ 45,710,925	₩ (154,374,861)	₩ 4,896,114	₩ 4,279,674,500

For the year ended December 31, 2016, total depreciation expense of ₩ 197,495,762 thousand (2015: ₩ 154,374,861 thousand) was charged to 'cost of sales' of ₩ 99,454,061 thousand (2015: ₩ 59,735,475 thousand), 'selling and administrative expenses' of ₩ 98,041,701 thousand (2015: ₩94,639,386 thousand).

SK E&S Co., Ltd. and Subsidiaries
Notes to the Consolidated Financial Statements
December 31, 2016 and 2015

Details of property, plant and equipment provided as collateral as of December 31, 2016, are as follows:

	Assets provided as collateral				Related borrowings		
	Item		Carrying amount	Secured amount	Secured parties	Related line item	Related amount
Gangwon City Gas Co., Ltd.	PP&E	₩	6,607,904	₩ 6,607,904	The Korea Development Bank	Bank borrowings	₩ 1,778,000
Jeonnam City Gas Co., Ltd.	Land & Buildings		4,882,529	219,761	Dongbu insurance Co., Ltd. and others	Leasehold deposits	187,661
Paju Energy Service Co., Ltd.	PP&E		1,352,434,930	840,000,000	The Korea Development Bank and others	PF borrowings and Hybrid bonds	389,846,908
Wirye Energy Service Co., Ltd.	PP&E		673,692,753	673,692,753	The Korea Development Bank and others	PF borrowings	178,479,950
Narae Energy Service Co., Ltd.	PP&E		640,962,479	480,000,000	The Korea Development Bank and others	Borrowings	398,942,267

For the year ended December 31, 2016, the Group has capitalized borrowing costs amounting to ₩ 53,479,356 thousand (2015: ₩ 63,737,733 thousand) on qualifying assets. Borrowing costs were capitalized at the weighted average rate of its general borrowings of 2.94% (2015: 3.4%)

SK E&S Co., Ltd. and Subsidiaries
Notes to the Consolidated Financial Statements
December 31, 2016 and 2015

8. Investment Properties

Changes in investment properties for the years ended December 31, 2016 and 2015, are as follows:

(in thousands of Korean won)

		2016		
		Land	Buildings	Total
Beginning net book amount	₩	94,782,128	₩ 1,749,872	₩ 96,532,000
Depreciation		-	(80,365)	(80,365)
Ending net book amount	₩	94,782,128	₩ 1,669,507	₩ 96,451,635
Acquisition cost		94,782,128	3,209,701	97,991,829
Accumulated depreciation		-	(1,540,194)	(1,540,194)

(in thousands of Korean won)

		2015		
		Land	Buildings	Total
Beginning net book amount	₩	94,782,128	₩ 1,830,368	₩ 96,612,496
Depreciation		-	(80,496)	(80,496)
Ending net book amount	₩	94,782,128	₩ 1,749,872	₩ 96,532,000
Acquisition cost		94,782,128	3,209,701	97,991,829
Accumulated depreciation		-	(1,459,829)	(1,459,829)

Fair value of investment properties as of December 31, 2016, is ₩ 126,540,094 thousand (2015: ₩ 118,219,273 thousand).

Rental income from investment properties for the year ended December 31, 2016, is ₩ 6,008,763 thousand (2015: ₩ 5,887,136 thousand).

Details of investment property provided as collateral as of December 31, 2016, are as follows:

(in thousands of Korean won)

		Assets provided as collateral		Related borrowings		
		Carrying amount	Secured amount	Secured parties	Related line item	Related amount
Item						
Busan City Gas Co., Ltd	Investment property	₩ 70,653,191	₩ 3,933,333	Megamart Co., Ltd. and others	Leasehold deposits	₩ 3,933,333

SK E&S Co., Ltd. and Subsidiaries
Notes to the Consolidated Financial Statements
December 31, 2016 and 2015

9. Intangible Assets

The details of intangible assets as of December 31, 2016 and 2015, are as follows:

(in thousands of Korean won)

		2016			
		Acquisition cost	Accumulated amortization	Accumulated impairment loss	Book amount
Development costs	₩	1,925,019	₩ (1,544,028)	₩ -	₩ 380,991
Goodwill		42,801,147	-	-	42,801,147
Exploration and evaluation assets		628,581,459	-	-	628,581,459
Industrial property rights		199,308	(123,923)	-	75,385
Memberships		18,552,502	-	(3,287,317)	15,265,185
Other		42,288,953	(27,906,701)	-	14,382,252
	₩	<u>734,348,388</u>	₩ <u>(29,574,652)</u>	₩ <u>(3,287,317)</u>	₩ <u>701,486,419</u>

(in thousands of Korean won)

		2015			
		Acquisition cost	Accumulated amortization	Accumulated impairment loss	Book amount
Development costs	₩	2,010,516	₩ (1,398,038)	₩ -	₩ 612,478
Goodwill		42,801,147	-	-	42,801,147
Exploration and evaluation assets		503,803,390	-	-	503,803,390
Industrial property rights		189,152	(99,837)	-	89,315
Memberships		17,935,359	-	(2,984,188)	14,951,171
Other		30,350,312	(20,506,105)	-	9,844,207
	₩	<u>597,089,876</u>	₩ <u>(22,003,980)</u>	₩ <u>(2,984,188)</u>	₩ <u>572,101,708</u>

SK E&S Co., Ltd. and Subsidiaries
Notes to the Consolidated Financial Statements
December 31, 2016 and 2015

Changes in intangible assets for the years ended December 31, 2016 and 2015, are as follows:

(in thousands of Korean won)

	2016							
	Beginning balance	Acquisition	Disposal	Transfer	Net exchange differences	Amortization	Impairment loss	Ending balance
Development costs	₩ 612,478	₩ 5,612	₩ (129,956)	₩ 38,847	₩ -	₩ (145,990)	₩ -	₩ 380,991
Goodwill	42,801,147	-	-	-	-	-	-	42,801,147
Exploration and evaluation assets	503,803,390	125,196,876	-	(20,537,697)	20,118,890	-	-	628,581,459
Industrial property rights	89,315	-	(1,960)	12,116	-	(24,086)	-	75,385
Memberships	14,951,171	1,911,358	(1,294,215)	-	-	-	(303,129)	15,265,185
Others	9,844,207	1,263,280	(675)	10,676,036	-	(7,400,596)	-	14,382,252
	₩ 572,101,708	₩ 128,377,126	₩ (1,426,806)	₩ (9,810,698)	₩ 20,118,890	₩ (7,570,672)	₩ (303,129)	₩ 701,486,419

(in thousands of Korean won)

	2015							
	Beginning balance	Acquisition	Disposal	Transfer	Net exchange differences	Amortization	Impairment loss	Ending balance
Development costs	₩ 334,486	₩ 395,297	₩ -	₩ -	₩ -	₩ (117,305)	₩ -	₩ 612,478
Goodwill	42,801,147	-	-	-	-	-	-	42,801,147
Exploration and evaluation assets	358,546,902	127,927,504	-	-	17,328,984	-	-	503,803,390
Industrial property rights	92,286	10,639	-	9,729	-	(23,339)	-	89,315
Memberships	16,395,780	4,474,853	(5,660,942)	(83,520)	-	-	(175,000)	14,951,171
Others	19,297,407	66,212,978	(522,642)	(77,317,261)	10,279,583	(8,105,858)	-	9,844,207
	₩ 437,468,008	₩ 199,021,271	₩ (6,183,584)	₩ (77,391,052)	₩ 27,608,567	₩ (8,246,502)	₩ (175,000)	₩ 572,101,708

For the year ended December 31, 2016, total 2016 amortization expense of ₩ 7,570,672 thousand (2015: ₩8,246,502 thousand) was distributed among 'cost of sales' for ₩ 364,930 thousand (2015: ₩ 318,887 thousand), 'selling and administrative expenses' for ₩ 7,205,742 thousand (2015: ₩ 7,927,615 thousand).

SK E&S Co., Ltd. and Subsidiaries
Notes to the Consolidated Financial Statements
December 31, 2016 and 2015

Assets, liabilities, income, expenses, operating cash flows and investing cash flows derived from exploration and evaluation activities as of and for the years ended December 31, 2016 and 2015, are as follows:

<i>(in thousands of Korean won)</i>		2016		2015
Assets	₩	950,538,735	₩	665,162,533
Liabilities		173,435,714		165,040,624
Income		34,309,883		14,924,868
Expenses		(37,729,305)		(17,385,827)
Operating cash flows		5,013,373		9,198,408
Investing cash flows		(258,001,075)		(282,156,816)

The Group used the same goodwill allocation method by cash-generating units (a group of cash-generating units) for the years ended December 31, 2016 and 2015. The following is a summary of goodwill allocation for each operating segment:

<i>(in thousands of Korean won)</i>		2016		2015
Busan City Gas Co., Ltd.	₩	19,682,158	₩	19,682,158
Yeongnam Energy Service Co., Ltd.		933,032		933,032
Jeonnam City Gas Co., Ltd.		14,490,960		14,490,960
Gangwon City Gas Co., Ltd.		1,647,488		1,647,488
Jeonbuk Energy Service Co., Ltd.		6,044,247		6,044,247
Others		3,262		3,262
	₩	42,801,147	₩	42,801,147

Goodwill impairment reviews are undertaken annually. Impairment test suggests that the carrying value of cash generating units does not exceed the recoverable amount. The recoverable amounts of cash-generating units have been determined based on value-in-use calculations. These calculations use pre-tax cash flow projections based on financial budgets approved by management covering a five-year period. The key assumptions used for value-in-use calculations in 2016 and 2015 are as follows:

2016	Sales growth rate	Gross margin rate	Pre-tax discount rate
Busan City Gas Co., Ltd	3.4%	4.7%	6.9%
Yeongnam Energy Service Co., Ltd.	6.6%	4.3%	6.9%
Jeonnam City Gas Co., Ltd	7.1%	4.3%	6.9%
Gangwon City Gas Co., Ltd.	8.3%	3.5%	6.9%
Jeonbuk Energy Service Co., Ltd.	7.7%	4.6%	6.9%
2015	Sales growth rate	Gross margin rate	Pre-tax discount rate
Busan City Gas Co., Ltd	0.9%	4.5%	6.6%
Yeongnam Energy Service Co., Ltd.	2.1%	4.2%	6.6%
Jeonnam City Gas Co., Ltd	4.4%	4.2%	6.6%
Gangwon City Gas Co., Ltd.	7.6%	3.3%	6.6%
Jeonbuk Energy Service Co., Ltd.	3.7%	4.3%	6.6%

The Group determined the budgeted growth rate based on past performance and its expectations of market development. The discount rates used are industrial average weighted average cost of capital.

SK E&S Co., Ltd. and Subsidiaries

Notes to the Consolidated Financial Statements

December 31, 2016 and 2015

10. Investments in Joint Ventures and Associates

Details in investments in joint ventures and associates as of December 31, 2016 and 2015, are as follows:

(in thousands of Korean won)

(in thousands of Korean won)				2016			2015				
	Location	Percentage of ownership	Closing month		Acquisition cost	Net asset value	Book amount		Acquisition cost	Net asset value	Book amount
Joint ventures											
Boryeong LNG Terminal Co., Ltd	Korea	50.0%	Dec.	₩	110,000,000	₩	76,269,957	₩	105,006,373	₩	100,000,000
China Gas-SK E&S LNG Trading Ltd.	Hong Kong	50.0%	Mar.		1,189,110		1,231,358		1,189,110		594,555
					111,189,110		77,501,315		101,189,110		69,255,191
Associates											
Wuhan Zhongran – SK E&S Gas Group Co., Ltd. ^{1,2}	Hong Kong	-	Dec.		-		-		31,788,092		3,658,320
China gas-SK E&S HK Co., Ltd. ^{1,3}	Hong Kong	-	Dec.		-		-		4,483,161		2,520,023
Aisikai Huineng Qinzhou Natural Gas Ltd.	China	-	-		-		-		1,786,026		-
China Gas Holdings Ltd. ^{4,5}	Hong Kong	16.0%	Mar		471,451,662		416,568,433		649,234,675		465,987,066
Global Opportunities Fund	Cayman Islands	20.7%	Dec.		10,000,000		2,909,324		10,000,000		3,893,304
Shinan Green Energy	Korea	22.2%	Dec.		8,559,000		7,481,193		8,249,294		6,416,657
Busan Green Energy	Korea	28.5%	Dec		14,312,700		13,564,868		14,312,700		14,261,516
Gemini Partners Pte., Ltd.	Singapore	20.0%	Dec		7,889,084		3,223,000		6,458,571		7,889,082
					512,212,446		443,746,818		680,416,732		542,662,784
				₩	623,401,556	₩	521,248,133	₩	786,654,463	₩	643,851,894
										₩	548,030,468
										₩	812,393,892

¹ The Group sold its entire shares in Wuhan Zhongran – SK E&S Gas Group Co., Ltd., China gas-SK E&S HK Co., Ltd. and Aisikai Huineng Qinzhou Natural Gas Ltd. for the year ended December 31, 2016.

² Wuhan SK-Sino Natural Gas Group Ltd. changed its name as Wuhan Zhongran – SK E&S Gas Group Co., Ltd. for the year ended December 31, 2016.

³ SK E&S - SINO HongKong Co., Ltd. changed its name as China gas-SK E&S HK Co., Ltd. for the year ended December 31, 2016.

⁴ Although the Group holds less than 20% ownership, the Group exercises a significant influence as the Group's director can exercise its vote at the board of directors of these entities, and thus, the Group classifies these entities as associates.

⁵ The fiscal year end of China Gas Holdings Ltd. is March 31 and its financial statements as December 31 were not available. The semi-annual September 30 report was therefore used and the effects of significant transactions or events which occurred from October to December were reviewed.

SK E&S Co., Ltd. and Subsidiaries

Notes to the Consolidated Financial Statements

December 31, 2016 and 2015

Changes in investments in joint ventures and associates for the years ended December 31, 2016 and 2015, are as follows:

(in thousands of Korean won)

	2016					
	Beginning balance	Acquisition	Disposal and dividends received	Share of profit (loss) ¹	Other changes in equity	Ending balance
Joint ventures						
Boryeong LNG Terminal Co., Ltd	₩ 97,397,052	₩ 10,000,000	₩ -	₩ (2,340,452)	₩ (50,227)	₩ 105,006,373
China Gas-SK E&S LNG Trading Ltd.	1,189,110	-	-	15,240	27,008	1,231,358
Associates						
Wuhan Zhongran – SK E&S Gas Group Co., Ltd.	3,658,320	-	(3,971,344)	350,292	(37,268)	-
China Gas-SK E&S HK Co., Ltd.	2,520,023	-	(4,677,778)	(741,618)	2,899,373	-
Aisikai Huineng Qinzhou Natural Gas Ltd	-	-	(4,135)	-	4,135	-
China Gas Holdings Ltd.	675,534,327	5,464,596	(21,958,500)	62,778,592	(72,584,340)	649,234,675
Global Opportunities Fund	3,893,304	-	-	(983,980)	-	2,909,324
Shinan Green Energy	6,051,158	2,142,344	-	89,357	(33,565)	8,249,294
Busan Green Energy	14,261,516	-	-	(696,648)	-	13,564,868
Gemini Partners Pte., Ltd.	7,889,082	-	-	(1,502,065)	71,554	6,458,571
	<u>₩ 812,393,892</u>	<u>₩ 17,606,940</u>	<u>₩ (30,611,757)</u>	<u>₩ 56,968,718</u>	<u>₩ (69,703,330)</u>	<u>₩ 786,654,463</u>

¹ The amount includes (reversal of) impairment loss on investments in joint ventures and associates.

(in thousands of Korean won)

	2015					
	Beginning balance	Acquisition	Disposal and dividends received	Share of profit (loss)	Other changes in equity	Ending balance
Joint ventures						
Boryeong LNG Terminal Co., Ltd	₩ 99,118,661	₩ -	₩ -	₩ (1,721,609)	₩ -	₩ 97,397,052
China Gas-SK E&S LNG Trading Ltd.	-	1,189,110	-	-	-	1,189,110
Associates						
Kyongnam Renewable Energy Co., Ltd.	466,276	-	(467,735)	1,459	-	-
Wuhan Zhongran – SK E&S Gas Group Co., Ltd.	676,784	-	-	2,960,388	21,148	3,658,320
China Gas-SK E&S HK Co., Ltd.	1,923,289	-	-	988,895	(392,161)	2,520,023
China Gas Holdings Ltd.	553,690,993	-	(19,000,833)	66,703,221	74,140,946	675,534,327
Global Opportunities Fund	7,760,270	-	(3,465,848)	(401,118)	-	3,893,304
Shinan Green Energy	6,179,823	-	-	(542,589)	413,924	6,051,158
Busan Green Energy	-	14,312,700	-	(51,184)	-	14,261,516
Gemini Partners Pte., Ltd.	-	7,889,082	-	-	-	7,889,082
	<u>₩ 669,816,096</u>	<u>₩ 23,390,892</u>	<u>₩ (22,934,416)</u>	<u>₩ 67,937,463</u>	<u>₩ 74,183,857</u>	<u>₩ 812,393,892</u>

SK E&S Co., Ltd. and Subsidiaries
Notes to the Consolidated Financial Statements
December 31, 2016 and 2015

Details of valuation of investments in joint venture and associates accounted under the equity method for the years ended December 31, 2016 and 2015, are as follows:

(in thousands of Korean won)	2016			2015	
	Share of profit (loss)	Gain(loss) on disposal	Reversal of impairment loss	Share of profit (loss)	Gain(loss) on disposal
Joint venture					
Boryeong LNG Terminal Co., Ltd	₩ (2,340,452)	₩ -	₩ -	₩ (1,721,609)	₩ -
China Gas-SK E&S LNG Trading Ltd.	15,240	-	-	-	-
Associates					
Kyongnam Renewable Energy Co., Ltd.	-	-	-	1,459	(1,905)
Wuhan Zhongran – SK E&S Gas Group Co., Ltd.	350,292	30,462,356	-	2,960,388	-
China Gas-SK E&S HK Co., Ltd.	(1,504,479)	7,036,564	762,861	988,895	-
Aisikai Huineng Qinzhou Natural Gas Ltd.	-	1,422,480	-	-	-
China Gas Holdings Ltd.	62,778,592	-	-	66,703,221	-
Global Opportunities Fund	(983,980)	-	-	(401,118)	-
Shinan Green Energy	89,357	-	-	(542,589)	-
Busan Green Energy	(696,648)	-	-	(51,184)	-
Gemini Partners Pte., Ltd.	(1,502,065)	-	-	-	-
	<u>₩ 56,205,857</u>	<u>₩ 38,921,400</u>	<u>₩ 762,861</u>	<u>₩ 67,937,463</u>	<u>₩ (1,905)</u>

SK E&S Co., Ltd. and Subsidiaries
Notes to the Consolidated Financial Statements
December 31, 2016 and 2015

Summarized financial information of the Group's joint venture as of and for the years ended December 31, 2016 and 2015, follows:

(in thousands of Korean won)

	2016							
	Current assets	Non-current assets	Current liabilities	Non-current liabilities	Revenue	Profit (loss)	Total comprehensive income (loss)	Dividends received
Boryeong LNG Terminal Co., Ltd	₩ 214,338,786	₩ 1,080,799,624	₩ 29,316,642	₩ 1,113,281,854	₩ -	₩ (4,680,903)	₩ (4,680,903)	₩ -
	Cash and cash equivalents	Current financial liabilities	Non-current financial liabilities	Depreciation	Other depreciation	Interest income	Interest expenses	Tax expenses (income)
	₩ 17,509,535	₩ 29,070,943	₩ 1,112,350,087	₩ 161,021	₩ -	₩ 63,848	₩ -	₩ (1,850,868)

(in thousands of Korean won)

	2015							
	Current assets	Non-current assets	Current liabilities	Non-current liabilities	Revenue	Profit (loss)	Total comprehensive income (loss)	Dividends received
Boryeong LNG Terminal Co., Ltd	₩ 114,802,613	₩ 893,284,062	₩ 10,542,505	₩ 860,222,899	₩ -	₩ (3,379,596)	₩ (3,443,218)	₩ -
	Cash and cash equivalents	Current financial liabilities	Non-current financial liabilities	Depreciation	Other depreciation	Interest income	Interest expenses	Tax expenses (income)
	₩ 8,189,129	₩ 10,346,824	₩ 859,581,480	₩ 69,937	₩ -	₩ 90,257	₩ -	₩ (1,558,383)

SK E&S Co., Ltd. and Subsidiaries
Notes to the Consolidated Financial Statements
December 31, 2016 and 2015

Summarized financial information of the Group's associates as of and for the years ended December 31, 2016 and 2015, follows:

(in thousands of Korean won)

	2016							
	Current assets	Non-current assets	Current liabilities	Non-current liabilities	Revenue	Profit (loss)	Total comprehensive income (loss)	Dividends received
China Gas Holdings Ltd.	₩ 1,872,266,832	₩ 5,940,449,450	₩ 2,971,771,094	₩ 1,785,526,415	₩ 4,212,700,420	₩ 470,428,368	₩ 319,726,684	₩ 21,958,500
Global Opportunities Fund	689,372	13,366,340	-	-	11,651	(724,974)	(724,974)	-
Shinan Green Energy	5,733,615	112,021,757	27,646,511	56,444,802	-	(424,922)	(424,922)	-
Busan Green Energy	5,538,310	142,226,130	13,585,950	86,582,461	-	(2,444,377)	(2,444,377)	-
Gemini Partners Pte., Ltd.	11,712,573	4,496,443	94,014	-	-	(7,200,916)	(7,200,916)	-

(in thousands of Korean won)

	2015							
	Current assets	Non-current assets	Current liabilities	Non-current liabilities	Revenue	Profit (loss)	Total comprehensive income (loss)	Dividends received
Wuhan Zhongran – SK E&S Gas Group Co., Ltd.	₩ 34,887,666	₩ 100,577,831	₩ 91,116,132	₩ 17,332,800	₩ 88,083,849	₩ 6,058,049	₩ -	₩ -
China gas-SK E&S HK Co., Ltd.	2,060,850	11,869,070	2,235,136	-	1,890,542	2,018,154	1,217,824	-
China Gas Holdings Ltd.	2,050,019,320	5,957,582,266	2,713,057,141	2,017,416,355	4,343,329,130	430,061,383	430,061,383	19,000,833
Global Opportunities Fund	1,414,345	17,395,237	-	-	-	(513,275)	(513,275)	-
Shinan Green Energy	8,350,858	57,493,433	22,251,185	13,447,733	-	(961,219)	(961,219)	-
Busan Green Energy	17,369,104	32,724,068	33,548	19,217	-	(179,593)	(179,593)	-
Gemini Partners Pte., Ltd.	27,761,824	14,693,743	3,443,716	7,866,855	-	(751,130)	(751,130)	-

SK E&S Co., Ltd. and Subsidiaries

Notes to the Consolidated Financial Statements

December 31, 2016 and 2015

Details of adjustments from financial information of joint ventures and associates to the book amount of investments in joint ventures and associates for the years ended December 31, 2016 and 2015, are as follows:

(in thousands of Korean won)

		2016				
		Net asset value (A)	Percentage of ownership (B)	Owned net asset value (AxB)	Goodwill	Book amount
Joint ventures						
Boryeong LNG Terminal Co., Ltd.	₩	152,539,913	50.0%	₩ 76,269,957	₩ 28,736,416	₩ 105,006,373
China Gas-SK E&S LNG Trading Ltd.		2,462,752	50.0%	1,231,358	-	1,231,358
Associates						
China Gas Holdings Ltd.		2,600,795,051	16.02%	416,568,433	232,666,242	649,234,675
Global Opportunities Fund		14,055,711	20.70%	2,909,323	-	2,909,323
Shinan Green Energy		33,664,059	22.22%	7,481,193	768,101	8,249,294
Busan Green Energy		47,596,030	28.50%	13,564,868	-	13,564,868
Gemini Partners Pte., Ltd.		16,115,001	20.00%	3,223,000	3,235,572	6,458,572

(in thousands of Korean won)

		2015				
		Net asset value (A)	Percentage of ownership (B)	Owned net asset value (AxB)	Goodwill	Book amount
Joint ventures						
Boryeong LNG Terminal Co., Ltd.	₩	137,321,271	50.0%	₩ 68,660,636	₩ 28,736,416	₩ 97,397,052
China Gas-SK E&S LNG Trading Ltd.		1,189,110	50.0%	594,555	594,555	1,189,110
Associates						
Wuhan Zhongran – SK E&S Gas Group Co., Ltd.		7,465,959	49.0%	3,658,320	-	3,658,320
China gas-SK E&S HK Co., Ltd.		5,142,903	49.0%	2,520,023	-	2,520,023
China Gas Holdings Ltd.		2,803,866,376	15.7%	439,410,796	236,123,531	675,534,327
Global Opportunities Fund		18,809,582	20.7%	3,893,304	-	3,893,304
Shinan Green Energy		30,145,373	18.2%	5,482,149	569,009	6,051,158
Busan Green Energy		50,040,407	28.5%	14,261,516	-	14,261,516
Gemini Partners Pte., Ltd.		31,144,996	20.0%	6,228,999	1,660,085	7,889,084

Fair value of associate's marketable shares as of December 31, 2016 and 2015, is as follows:

(in thousands of Korean won)

		2016			
		Number of shares owned	Market price per share (Korean Won)	Fair value	Book amount
China Gas Holdings Ltd.	₩	780,908,500	₩ 1,639	₩ 1,280,143,771	₩ 649,234,675

(in thousands of Korean won)

		2015			
		Number of shares owned	Market price per share (Korean Won)	Fair value	Book amount
China Gas Holdings Ltd.	₩	778,042,500	₩ 1,676	₩ 1,304,342,347	₩ 675,534,327

SK E&S Co., Ltd. and Subsidiaries
Notes to the Consolidated Financial Statements
December 31, 2016 and 2015

11. Available-for-Sale Financial Assets

Available-for-sale financial assets as of December 31, 2016 and 2015, are as follows:

(in thousands of Korean won)

	2016			2015		
	Acquisition cost	Fair value ¹	Book amount	Acquisition cost	Fair value ¹	Book amount
Fair value						
Hana Land Chip Private Real Estate No.33	₩ 10,000,000	₩ 10,199,400	₩ 10,199,400	₩ 10,000,000	₩ 10,211,700	₩ 10,211,700
Plus Future Plan Private Securities Investment Trust No.5	15,384,450	10,015,600	10,015,600	15,000,000	10,013,050	10,013,050
SK Mutual Funds	1,000,000	1,000,000	1,000,000	1,000,000	1,000,000	1,000,000
Acquisition cost						
SK Technology Innovation Company	5,257,473	2,808,023	2,808,023	5,257,473	2,808,023	2,808,023
KNOC Ferghana Ltd.	80	80	80	80	80	80
Contemporary Painting Art Trust No.1	495,041	495,041	495,041	495,041	495,041	495,041
Gemini Partners Pte., Ltd.	-	-	-	8,417,000	8,417,000	8,417,000
Fitech Global New Growth Investment Private Equity Fund	-	-	-	5,381,463	2,652,439	2,652,439
Sejung21 Co., Ltd.	669,000	358,917	358,917	669,000	358,917	358,917
Construction Guarantee Cooperative	82,597	82,597	82,597	73,106	73,106	73,106
Hana Power generation infrastructure Investment Private Equity Fund	59,000,000	59,000,000	59,000,000	59,000,000	59,000,000	59,000,000
Plant & Mechanical contractors financial cooperative of Korea	40,862	40,862	40,862	40,862	40,862	40,862
Jeonnam Dragons Football Club	50,000	50,000	50,000	50,000	50,000	50,000
Powertel TRS Co., Ltd.	289,140	1	1	289,140	1	1
Prostar Energy Infra Fund ²	5,253,139	5,253,139	5,253,139	4,541,923	4,541,923	4,541,923
Prostar Energy Resources Fund	-	-	-	2,941,557	-	-
Government bond	40,219	40,219	40,219	54,283	54,283	54,283
HOWON Co., Ltd.	7,910	7,910	7,910	-	-	-
	₩ 97,569,911	₩ 89,351,789	₩ 89,351,789	₩ 113,210,928	₩ 99,716,425	₩ 99,716,425

¹ The acquisition cost after deducting impairment was presented for available-for-sale financial assets measured at cost.

² Although the Group holds more than 20% ownership of Prostar Energy Infra Fund, the Group classified as available-for-sale financial assets as the Group does not have significant influence and hence, the equity method is not applied as the Group has no voting rights in the investment committee, which is the decision-making body of Prostar Energy Infra Fund.

SK E&S Co., Ltd. and Subsidiaries
Notes to the Consolidated Financial Statements
December 31, 2016 and 2015

The changes in available-for-sale financial assets for the years ended December 31, 2016 and 2015, are as follows:

<i>(In thousands of Korean won)</i>		2016		2015	
Beginning balance	₩	99,716,425	₩	67,895,960	
Acquisitions		888,786		60,861,244	
Disposals		(11,196,700)		(23,425,347)	
Impairment loss		(51,548)		(5,670,582)	
Changes in fair value recognized in equity		(9,750)		55,150	
Others		4,576		-	
Ending balance	₩	89,351,789	₩	99,716,425	

12. Other Financial Assets

Other financial assets as of December 31, 2016 and 2015, are as follows:

<i>(in thousands of Korean won)</i>		2016		2015	
		Non-current	Current	Non-current	Current
Loans	₩	45,107	₩ 9,470	₩ 2,678,803	₩ 9,470
Non-trade receivables		158,400	12,465,642	158,400	14,401,486
Accrued income		-	5,994,705	-	10,675,116
Guarantee deposits provided		25,073,868	302,965	23,451,114	264,106
Financial instruments		192,647	121,251	149,296	-
	₩	25,470,022	₩ 18,894,033	₩ 26,437,613	₩ 25,350,178

The maximum exposure to credit risk of above other financial assets as of December 31, 2016 is the carrying amount of other financial assets.

13. Other Assets

Other assets as of December 31, 2016 and 2015, are as follows:

<i>(in thousands of Korean won)</i>		2016		2015	
		Non-current	Current	Non-current	Current
Advance payments	₩	-	₩ 46,932,053	₩ -	₩ 24,673,896
Prepaid expenses		2,768,792	39,863,142	3,368,032	15,412,558
Prepaid value added tax		-	21,227,276	-	35,329,030
Employee benefit fund		8,949,127	-	10,665,472	-
	₩	11,717,919	₩ 108,022,471	₩ 14,033,504	₩ 75,415,484

SK E&S Co., Ltd. and Subsidiaries
Notes to the Consolidated Financial Statements
December 31, 2016 and 2015

14. Inventories

Inventories as of December 31, 2016 and 2015, are as follows:

<i>(In thousands of Korean won)</i>	2016	2015
Raw materials	₩ 41,111,545	₩ 11,758,260
Supplies	10,905,491	10,034,671
Merchandise	878,508	968,164
Others	54,541	54,542
	<u>₩ 52,950,085</u>	<u>₩ 22,815,637</u>

The cost of inventories recognized as expense and included in 'cost of sales' amounted to ₩ 3,226,081,649 thousand in 2016 (2015: ₩ 3,777,590,457 thousand).

15. Trade Receivables

Trade receivables as of December 31, 2016 and 2015, are as follows:

<i>(In thousands of Korean won)</i>	2016	2015
Trade receivables	₩ 629,558,343	₩ 656,716,952
Less: provision for impairment of trade receivables	(8,572,929)	(10,534,148)
Trade receivables, net	<u>₩ 620,985,414</u>	<u>₩ 646,182,804</u>

The aging analysis of trade receivables as of December 31, 2016 and 2015, are as follows:

<i>(In thousands of Korean won)</i>	2016	2015
Receivables not past due	₩ 576,772,990	₩ 567,095,013
Past due but not impaired ¹		
Up to 3 months	25,897,176	68,967,922
3 to 6 months	12,052,988	1,516,492
Over 6 months	6,262,260	8,603,377
	44,212,424	79,087,791
Impaired ²	8,572,929	10,534,148
	<u>₩ 629,558,343</u>	<u>₩ 656,716,952</u>

¹ Trade receivables past due but not impaired relate to a number of customers who have no recent history of default.

² The balance of provision was ₩ 8,572,929 thousand and ₩ 10,534,148 thousand as of December 31, 2016 and 2015, respectively.

SK E&S Co., Ltd. and Subsidiaries
Notes to the Consolidated Financial Statements
December 31, 2016 and 2015

The credit quality of trade receivables that are neither past due nor impaired can be assessed by reference to historical information of counterparty's default rates as of December 31, 2016 and 2015:

<i>(In thousands of Korean won)</i>	2016	2015
Group 1 ¹	₩ 620,956,536	₩ 646,176,783
Group 2 ²	28,878	6,021
	<u>₩ 620,985,414</u>	<u>₩ 646,182,804</u>

¹ Customers with no default in the past.

² Customers with default in the past.

Changes in the provision for impairment of trade receivables for the years ended December 31, 2016 and 2015, are as follows:

<i>(In thousands of Korean won)</i>	2016	2015
Beginning balance	₩ 10,534,148	₩ 10,690,684
Provision for receivables impairment	357,202	1,421,433
Unused amounts reversed	(315,910)	(267,285)
Receivables written off during the year as uncollectible	<u>(2,002,511)</u>	<u>(1,310,684)</u>
Ending balance	<u>₩ 8,572,929</u>	<u>₩ 10,534,148</u>

The maximum exposure to credit risk of trade receivables as of December 31, 2016, is the carrying amount of receivables mentioned above.

16. Cash and Cash Equivalents

Cash and cash equivalents as of December 31, 2016 and 2015, are as follows:

<i>(In thousands of Korean won)</i>	2016	2015
Cash and cash equivalents		
Cash on hand	₩ 39,657	₩ 42,710
Short-term bank deposits	283,572,258	126,850,044
Time deposits	43,805,181	84,339,747
Short-term investments ¹	<u>231,065,943</u>	<u>208,658,397</u>
	<u>₩ 558,483,039</u>	<u>₩ 419,890,898</u>

¹ Short-term financial instruments with very high liquidity whose encashment is immediately possible, and the amounts with small risk of changes in fair values are classified as cash equivalents.

SK E&S Co., Ltd. and Subsidiaries
Notes to the Consolidated Financial Statements
December 31, 2016 and 2015

Classification of the external credit rating of the financial institutions in which the Group deposits its cash and cash equivalents as of December 31, 2016 and 2015, are as follows:

<i>(In thousands of Korean won)</i>		2016		2015
Cash and cash equivalents				
AAA	₩	372,712,456	₩	298,139,427
AA		72,322,234		36,756,545
A		93,486,947		68,306,783
Others ¹		19,921,745		16,645,433
	₩	<u>558,443,382</u>	₩	<u>419,848,188</u>

¹ Consists of financial institutions with no external credit rating.

Financial assets that are restricted in use as of December 31, 2016 and 2015, are as follows:

<i>(in thousands of Korean won)</i>			2016	
	Bank		Restricted amount	Details
Cash and cash equivalents	Korea Development Bank and others	₩	87,257,956	Pledged for PF commitment
<i>(in thousands of Korean won)</i>			2015	
	Bank		Restricted amount	Details
Cash and cash equivalents	Korea Development Bank and others	₩	81,349,749	Pledged for PF commitment

The above restricted cash and cash equivalents are classified as cash and cash equivalents because they are used for operating activities under the syndicate of creditors' agreement.

17. Borrowings

Details of borrowings as of December 31, 2016 and 2015, are as follows:

<i>(In thousands of Korean won)</i>		2016	2015
Non-current			
Bank borrowings	₩	1,167,328,987	₩ 693,754,473
Debentures		<u>1,615,227,450</u>	<u>1,535,571,677</u>
		<u>2,782,556,437</u>	<u>2,229,326,150</u>
Current			
Bank borrowings		289,595,262	125,448,490
Debentures		<u>259,912,534</u>	<u>149,833,963</u>
		<u>549,507,796</u>	<u>275,282,453</u>
	₩	<u>3,332,064,233</u>	₩ <u>2,504,608,603</u>

SK E&S Co., Ltd. and Subsidiaries

Notes to the Consolidated Financial Statements

December 31, 2016 and 2015

Details of bank borrowings as of December 31, 2016 and 2015, are as follows:

<i>(in thousands of Korean won)</i>	Creditors	Interest rate		2016		2015
Loans for exploration of petroleum	Korea National Oil Corporation	0.75%	₩	28,957,239	₩	28,048,216
Loans for construction of pipelines	Kookmin Bank and others	1.75%		16,539,000		11,583,750
Loans for a safety management business	Hana Bank and others	1.75%		1,563,500		466,800
Loans for energy rationalization	Shinhan Bank and others	1.75%		3,811,200		194,400
CP borrowings	KB Investment & Securities Co., Ltd.	1.69%		99,978,331		99,751,516
Loans for facility	Korea Development Bank and others	CD 90days+1.14%		398,942,267		398,739,963
PF borrowings	Korea Development Bank and others	2.63 - 4.45%		320,333,562		-
General borrowings	Korea Development Bank and others	1.67 - 2.49%		261,269,581		35,131,948
Borrowing in foreign currency	Korea Exim Bank	Libor(3M)+0.95 - 1.74%		325,529,569		245,286,370
				1,456,924,249		819,202,963
	Less: Current portion of borrowings			(289,595,262)		(125,448,490)
			₩	1,167,328,987	₩	693,754,473

Under a PF arrangement, the Group provided it's subsidiaries' issued shares, cash and cash equivalents, insurance contractual rights and PP&E to PF syndicate as collaterals (Notes 16, 32, and 34).

Details of debentures as of December 31, 2016 and 2015, are as follows:

<i>(in thousands of Korean won)</i>	Bonds	Issuance date	Maturity date	Annual interest rate	2016	2015
SK E&S Co., Ltd.	Public offering bonds No.8-3	2010.10.08	2017.10.08	4.35%	₩ 60,000,000	₩ 60,000,000
	Public offering bonds No.9-2	2012.04.13	2017.04.13	4.03%	200,000,000	200,000,000
	Public offering bonds No.10-1	2013.02.26	2018.02.26	3.02%	200,000,000	200,000,000
	Public offering bonds No.10-2	2013.02.26	2020.02.26	3.18%	100,000,000	100,000,000
	Public offering bonds No.11-1	2013.10.04	2016.10.04	-	-	150,000,000
	Public offering bonds No.11-2	2013.10.04	2018.10.04	3.46%	100,000,000	100,000,000
	Public offering bonds No.11-3	2013.10.04	2020.10.04	3.65%	50,000,000	50,000,000
	Public offering bonds No.12-1	2016.08.29	2019.08.29	1.48%	100,000,000	-
	Public offering bonds No.12-2	2016.08.29	2021.08.29	1.60%	140,000,000	-
	Public offering bonds No.12-3	2016.08.29	2023.08.29	1.70%	100,000,000	-
Paju Energy Service Co., Ltd.(formerly, PMP Co., Ltd.)	Non-guaranteed private placement bonds No.1-1	2015.03.18	2022.03.18	2.53%	100,000,000	100,000,000
	Non-guaranteed private placement bonds No.1-2	2015.03.18	2025.03.18	2.92%	190,000,000	190,000,000
	Non-guaranteed private placement bonds No.1-3	2015.03.18	2027.03.18	3.01%	60,000,000	60,000,000
	Non-guaranteed private placement bonds No.2-1	2015.09.04	2022.09.04	2.54%	50,000,000	50,000,000
	Non-guaranteed private placement bonds No.2-2	2015.09.04	2025.09.04	2.77%	50,000,000	50,000,000
	Non-guaranteed private placement bonds No.2-3	2015.09.04	2027.09.04	2.97%	50,000,000	50,000,000
Wirye Energy Service Co., Ltd.	Public offering bonds No.1-1	2014.12.09	2024.12.09	3.45%	200,000,000	200,000,000
	Public offering bonds No.1-2	2014.12.09	2026.12.09	3.68%	50,000,000	50,000,000
Narae Energy Service Co., Ltd.	Public offering bonds No.1	2013.02.13	2018.02.13	3.28%	80,000,000	80,000,000
					1,880,000,000	1,690,000,000
	Less: Discount on bonds				(4,860,016)	(4,594,360)
	Less: Current portion of bonds				(259,912,534)	(149,833,963)
					₩ 1,615,227,450	₩ 1,535,571,677

SK E&S Co., Ltd. and Subsidiaries
Notes to the Consolidated Financial Statements
December 31, 2016 and 2015

18. Other Finance Liabilities

Other finance liabilities as of December 31, 2016 and 2015, are as follows:

(in thousands of Korean won)

	2016		2015	
	Non-current	Current	Non-current	Current
Guarantee deposits received	₩ 5,353,454	5,802,348	₩ 4,577,328	₩ 6,873,749
Non-trade accounts payable	-	77,919,151	-	133,210,792
Accrued expenses	-	78,238,150	-	108,462,038
	<u>₩ 5,353,454</u>	<u>161,959,649</u>	<u>₩ 4,577,328</u>	<u>₩ 248,546,579</u>

19. Net Defined Benefit Liabilities

Details of net defined benefit liabilities as of December 31, 2016 and 2015, are as follows:

(In thousands of Korean won)

	2016	2015
Present value of defined benefit obligations	₩ 128,115,660	₩ 115,203,155
Fair value of plan assets	(121,571,805)	(110,183,794)
Net defined benefit liabilities	<u>₩ 6,543,855</u>	<u>₩ 5,019,361</u>

Changes in the present values of defined benefit obligations for the years ended December 31, 2016 and 2015, are as follows:

(In thousands of Korean won)

	2016	2015
Beginning balance	₩ 115,203,155	₩ 102,225,622
Current service costs	14,393,570	13,528,176
Interest costs	2,787,759	2,817,785
Remeasurements	999,110	2,436,946
Benefits paid	(7,289,086)	(8,378,840)
Others	2,021,152	2,573,466
Ending balance	<u>₩ 128,115,660</u>	<u>₩ 115,203,155</u>

Changes in the fair value of plan assets for the years ended December 31, 2016 and 2015, are as follows:

(In thousands of Korean won)

	2016	2015
Beginning balance	₩ 110,183,794	₩ 93,064,568
Interest income	2,834,223	2,771,765
Remeasurements	(959,962)	(1,655,297)
Employers' contributions	16,354,535	13,024,866
Benefits paid	(7,786,856)	(4,809,500)
Others	946,071	7,787,392
Ending balance	<u>₩ 121,571,805</u>	<u>₩ 110,183,794</u>

SK E&S Co., Ltd. and Subsidiaries
Notes to the Consolidated Financial Statements
December 31, 2016 and 2015

Plan assets as of December 31, 2016 and 2015, consist of the following:

<i>(In thousands of Korean won)</i>	2016	2015
Equity instruments	₩ 155,046	₩ 17,602,876
Debt instruments	76,411,266	80,998,603
Time deposits	45,005,493	11,582,315
	<u>₩ 121,571,805</u>	<u>₩ 110,183,794</u>

The rate used to discount defined benefit obligations shall be determined by reference to market yields at the date of the statement of financial position on high quality corporate bonds.

The currency and term of the corporate bonds shall be consistent with the currency and estimated term of the post-employment benefit obligations.

The principal actuarial assumptions as of December 31, 2016 and 2015, are as follows:

	2016	2015
Discount rate	2.5 - 2.8%	2.5 - 2.9%
Inflation rate	2.0%	2.0 - 3.0%
Plan assets' return rate	2.8%	2.8%
Future salary growth rate	2.9 - 5.1%	3.2 - 5.5%

The sensitivity of the defined benefit obligations as of December 31, 2016, to changes in the weighted principal assumptions is:

	Effect on defined benefit obligations		
	Changes in principal assumption	Increase in principal assumption	Decrease in principal assumption
Discount rate	0.5%P	3.7% decrease	4.0% increase
Salary growth rate	0.5%P	4.0% increase	3.7% decrease

Expected maturity analysis of undiscounted pension benefits as of December 31, 2016, is as follows:

<i>(in thousands of Korean won)</i>	Less than 1 year	Between 1 and 2 years	Between 2 and 5 years	Over 5 years	Total
Pension benefits	₩ 5,780,222	₩ 26,471,447	₩ 27,186,011	₩ 271,689,732	₩ 331,127,412

The weighted average of maturities of the defined benefit obligations is 9.8 years and estimated expenses related to the defined benefit plan for the year ending December 31, 2017, is ₩ 13,848,731 thousand.

SK E&S Co., Ltd. and Subsidiaries
Notes to the Consolidated Financial Statements
December 31, 2016 and 2015

20. Other Liabilities

Details of other liabilities as of December 31, 2016 and 2015, are as follows:

<i>(in thousands of Korean won)</i>	2016		2015	
	Non-current	Current	Non-current	Current
Other long-term employee benefits ¹	₩ 1,270,675	-	₩ 1,450,510	₩ -
Advances received	-	4,148,525	-	2,370,977
Withholdings	-	13,311,101	-	11,228,394
Unearned revenues	-	1,068,627	-	1,730,936
Provision for restoration	1,661,115	-	931,891	-
Emission obligations	-	1,556,429	-	2,638,285
	<u>₩ 2,931,790</u>	<u>20,084,682</u>	<u>₩ 2,382,401</u>	<u>₩ 17,968,592</u>

¹ Recognized in relation to long-term employee benefits provided to employees with long service periods, and the same accounting methodology as used for defined benefit obligations was used.

Changes emission obligations for the years ended December 31, 2016 and 2015, are as follows:

<i>(In thousands of Korean won)</i>	2016	2015
Beginning balance	₩ 2,638,285	₩ -
Addition (reversal)¹	(1,081,856)	2,638,285
Ending balance	<u>₩ 1,556,429</u>	<u>₩ 2,638,285</u>

¹ Expected emission of carbon gases for the year ended December 31, 2016 is 1,940,245 tons and free allocated emission credit is 1,625,948 tons. The Group accrued the liability for estimated expenses due to the excess of annual emission allowance.

21. Share Capital and Share Premium

The Company's number of authorized shares is 100,000,000 shares. Total number of ordinary shares issued is 41,761,791 shares with the par value of ₩ 5,000 per share as of December 31, 2016.

There were no changes in share capital and share premium during 2016 and 2015.

The Company retired 2,450,001 treasury shares in 2009. Accordingly, share capital does not agree with the total amount of face value of the shares issued as of December 31, 2016.

22. Retained Earnings

Retained earnings as of December 31, 2016 and 2015, consist of the following:

<i>(In thousands of Korean won)</i>	2016	2015
Legal reserves	₩ 110,529,480	₩ 110,529,480
Unappropriated retained earning	767,658,754	846,147,918
	<u>₩ 878,188,234</u>	<u>₩ 956,677,398</u>

SK E&S Co., Ltd. and Subsidiaries
Notes to the Consolidated Financial Statements
December 31, 2016 and 2015

23. Other Components of Equity

Other components of equity as of December 31, 2016 and 2015, consist of the following:

<i>(In thousands of Korean won)</i>	2016		2015	
Cumulative other comprehensive income				
Share of other comprehensive income of associates	₩	(17,293,081)	₩	33,793,138
Change in value of available-for-sale financial assets		268,658		276,048
Gain(loss) on valuation of derivatives		(11,429,106)		(9,040,153)
Exchange differences on translation of foreign operations		60,401,629		35,334,444
Other capital surplus				
Gain on statutory merger		257,586,894		257,586,894
Consolidated capital surplus		54,919,167		54,919,167
Treasury stock		(8,807,669)		(8,807,669)
Discount on stock issuance		(6,573,551)		(6,565,648)
Other paid-in capital				
Hybrid bonds		723,918,899		723,918,899
	₩	<u>1,052,991,840</u>	₩	<u>1,081,415,120</u>

Changes in accumulated other comprehensive income for the years ended December 31, 2016 and 2015, are as follows:

<i>(in thousands of Korean won)</i>	2016		
	Beginning balance	Increase (decrease)	Ending balance
Share of other comprehensive income of associates	₩ 33,793,138	₩ (51,086,219)	₩ (17,293,081)
Change in value of available-for-sale financial assets	276,048	(7,390)	268,658
Gain (loss) on valuation of derivatives	(9,040,153)	(2,388,953)	(11,429,106)
Exchange differences on translation of foreign operations	35,334,444	25,067,185	60,401,629
	<u>₩ 60,363,477</u>	<u>₩ (28,415,377)</u>	<u>₩ 31,948,100</u>

<i>(in thousands of Korean won)</i>	2015		
	Beginning balance	Increase (decrease)	Ending balance
Share of other comprehensive income of associates	₩ (21,167,944)	₩ 54,961,082	₩ 33,793,138
Change in value of available-for-sale financial assets	234,244	41,804	276,048
Gain (loss) on valuation of derivatives	-	(9,040,153)	(9,040,153)
Exchange differences on translation of foreign operations	9,209,440	26,125,004	35,334,444
	<u>₩ (11,724,260)</u>	<u>₩ 72,087,737</u>	<u>₩ 60,363,477</u>

Changes in accumulated other comprehensive income represent amounts net of tax effect.

SK E&S Co., Ltd. and Subsidiaries
Notes to the Consolidated Financial Statements
December 31, 2016 and 2015

Details of hybrid bond as of December 31, 2016, are as follows:

<i>(in thousands of Korean won)</i>	Issuance Date	Maturity Date	Interest rate	2016	2015
1 st hybrid bond in foreign currency ¹	2014.11.26	2074.11.26	4.875%	₩ 329,520,000	₩ 329,520,000
1-1 st hybrid bond in Korean won	2015.07.15	2045.07.15	3.903%	270,000,000	270,000,000
1-2 nd hybrid bond in Korean won	2015.07.15	2045.07.15	3.853%	130,000,000	130,000,000
Less: Discount of bonds				(5,601,101)	(5,601,101)
				₩ <u>723,918,899</u>	₩ <u>723,918,899</u>

¹ USD 300,000,000 at applied exchange rate of ₩1,098.4/US\$1.

The details of hybrid bond as of December 31, 2016, are as follows:

	Overseas	Domestic	
	1st	1-1 st	1-2 nd
Number of issuance			
Issuance date	2014.11.26	2015.07.15	2015.07.15
Period of adjustment of interest rate	5 years		
Criteria of adjustment of interest rate	5-year US Treasury + initial added rate	5-year Treasury + initial added rate	
Added rate	Add 0.25% to the initial added rate after 10 to 25 years from the issuance date Add 1.00% to the initial added rate after 25 years from the issuance date		
Period of payment of interest	Semiannually	Quarterly	
Postponement of payment of interest	Depending on the Company's option, interest payments can be deferred until the next payment date including accrued interest.		
Early redemption	Early redemption is possible after five years from the issuance date		
Extension of maturity	Depending on the Company's option, the maturity can be extended with the same maturity on the maturity date.		
Priority of payment	When the Company is liquidated, it has the same priority as preferred stock.		

SK E&S Co., Ltd. and Subsidiaries
Notes to the Consolidated Financial Statements
December 31, 2016 and 2015

24. Selling and Administrative Expenses

Selling and administrative expenses for the years ended December 31, 2016 and 2015, are as follows:

<i>(in thousands of Korean won)</i>		2016		2015
Salaries	₩	137,056,269	₩	127,658,338
Post-employment benefits		11,982,853		11,865,871
Welfare expense		26,208,916		24,729,173
Travel expense		4,014,575		4,644,726
Communication expense		5,303,897		5,632,768
Utilities expense		5,770,164		6,279,972
Taxes and dues		16,770,975		16,368,900
Supplies expense		3,382,440		2,947,059
Rent		11,592,610		10,942,516
Depreciation		98,122,066		94,719,882
Amortization		7,205,742		7,927,615
Repairs expense		3,462,614		3,546,635
Vehicles maintenance expense		2,486,437		2,451,920
Insurance expense		1,186,821		1,106,189
Advertisement expense		2,420,030		2,459,819
Management and security service expense		3,065,633		2,541,363
Training and research expense		3,938,779		4,060,534
Service fees		102,278,024		99,912,558
Professional service fees		8,422,902		7,522,436
Carriage expense		2,469		4,882
(Reversal of) impairment loss on receivables		(76,032)		1,036,742
Entertainment expense		4,104,785		5,923,313
Conference expense		1,383,494		991,299
Others		4,221,735		3,327,941
	₩	<u>464,308,198</u>	₩	<u>448,602,451</u>

SK E&S Co., Ltd. and Subsidiaries
Notes to the Consolidated Financial Statements
December 31, 2016 and 2015

25. Other Income and Other Expenses

Other income and other expenses for the years ended December 31, 2016 and 2015, are as follows:

<i>(In thousands of Korean won)</i>		2016		2015
Other income				
Dividend income	₩	5,126,923	₩	1,073,635
Rental income		36,850		44,028
Gain on disposal of property, plant and equipment		658,516		2,510,562
Gain on disposal of intangible assets		198,968		494,517
Gain disposal of available-for-sale financial assets		37,815		1,460,665
Construction deferred income		16,353,185		14,515,640
Other non-operating expenses		50,783,309		68,013,478
Miscellaneous gains		164,363		241,869
	₩	<u>73,359,929</u>	₩	<u>88,354,394</u>
Other expenses				
Loss on disposal of property, plant and equipment	₩	1,075,922	₩	668,734
Loss on disposal of intangible assets		525,535		863,119
Impairment losses on property, plant and equipment		2,994,417		-
Impairment losses on intangible assets		303,129		175,000
Loss disposal of available-for-sale financial assets		2,270,217		22,750
Impairment losses on available-for-sales assets		51,548		5,670,582
Donations		5,251,830		10,200,320
Miscellaneous losses		23,729,067		15,942,345
	₩	<u>36,201,665</u>	₩	<u>33,542,850</u>

26. Expenses by Nature

Expenses by nature for the years ended December 31, 2016 and 2015, are as follows:

<i>(In thousands of Korean won)</i>		2016		2015
Cost of trading goods sold	₩	2,762,815,342	₩	3,454,408,435
Raw materials used		463,266,307		323,182,022
Employee benefit expense		205,076,420		186,612,050
Depreciation and amortization		205,146,799		162,701,859
Advertising expense		2,420,030		2,459,819
Operating leases payments and rents		13,219,142		12,403,062
Other expenses		238,292,055		225,450,588
Total cost of sales and selling and administrative expenses	₩	<u>3,890,236,095</u>	₩	<u>4,367,217,835</u>

SK E&S Co., Ltd. and Subsidiaries
Notes to the Consolidated Financial Statements
December 31, 2016 and 2015

27. Finance Income and Costs

Finance income and costs for the years ended December 31, 2016 and 2015, are as follows:

<i>(In thousands of Korean won)</i>	2016		2015	
Finance income				
Interest income	₩	4,895,584	₩	12,160,549
Gain on foreign currency transactions		2,486,493		1,231,359
Gain on foreign currency translation		2,383,077		406,448
Gain on valuation of derivatives		3,187,567		908,400
	₩	<u>12,952,721</u>	₩	<u>14,706,756</u>
Finance costs				
Interest expense	₩	35,967,798	₩	24,668,741
Loss on foreign currency transactions		2,559,020		3,389,545
Loss on foreign currency translation		7,028,080		3,312,083
Loss on valuation of derivatives		43,277		-
Loss on transaction of derivatives		1,193,895		-
	₩	<u>46,792,070</u>	₩	<u>31,370,369</u>

28. Income Tax

Income tax expense for the years ended December 31, 2016 and 2015, consists of the following:

<i>(In thousands of Korean won)</i>	2016		2015	
Current tax				
Current tax on profits for the year	₩	42,087,376	₩	63,719,329
Adjustments to prior year income tax		175,952		(209,933)
Total current tax		<u>42,263,328</u>		<u>63,509,396</u>
Deferred tax				
Temporary differences		(4,694,835)		42,044,096
Income tax recognized directly in equity		17,793,120		(17,057,520)
Total deferred tax		<u>13,098,285</u>		<u>24,986,576</u>
Income tax expense	₩	<u>55,361,613</u>	₩	<u>88,495,972</u>

SK E&S Co., Ltd. and Subsidiaries
Notes to the Consolidated Financial Statements
December 31, 2016 and 2015

Income tax recognized directly in equity as of December 31, 2016 and 2015, is as follows:

(in thousands
of Korean won)

	2016			2015		
	Before tax	Tax effect	After tax	Before tax	Tax effect	After tax
Share of comprehensive income of associates	₩ (69,703,332)	₩ 17,580,160	₩ (52,123,172)	₩ 74,183,856	₩ (17,942,109)	₩ 56,241,747
Change in value of available-for sale financial assets	(9,750)	2,360	(7,390)	55,150	(13,346)	41,804
Remeasurements of the net benefit liability	(1,959,072)	210,600	(1,748,472)	(4,092,253)	897,935	(3,194,318)
	<u>₩ (71,672,154)</u>	<u>₩ 17,793,120</u>	<u>₩ (53,879,034)</u>	<u>₩ 70,146,753</u>	<u>₩ (17,057,520)</u>	<u>₩ 53,089,233</u>

The tax on the Group's profit before tax differs from the theoretical amount that would arise using the weighted average tax rate applicable to profits of the consolidated entities as follows:

(In thousands of Korean won)

	2016	2015
Profit before tax	₩ 253,735,910	₩ 393,073,928
Tax calculated at domestic tax rates	61,404,090	95,123,891
Adjustments:		
Income not subject to tax	(20,241,006)	(3,912,035)
Expenses not deductible for tax purposes	8,560,057	5,209,728
Tax credits	(611,885)	(902,267)
Tax effect for which no deferred tax was recognized	7,402,559	(5,022,264)
Impact of change in tax rate	64,948	(6,081)
Adjustments to prior year income tax	175,952	(209,933)
Others	(1,393,102)	(1,785,067)
Income tax expense	<u>₩ 55,361,613</u>	<u>₩ 88,495,972</u>
Weighted average effective tax rate	21.82%	22.51%

Deferred tax expected to reverse after December 31, 2016, has been measured using the effective rate of 24.2% that will apply to future periods.

The analysis of deferred tax assets and deferred tax liabilities as of December 31, 2016 and 2015, is as follows:

(In thousands of Korean won)

	2016	2015
Deferred tax assets		
to be recovered after more than 12 months	₩ 96,621,170	₩ 84,916,416
to be recovered within 12 months	<u>17,846,563</u>	<u>16,788,320</u>
	<u>114,467,733</u>	<u>101,704,736</u>
Deferred tax liabilities		
to be recovered after more than 12 months	(179,557,360)	(196,220,950)
to be recovered within 12 months	<u>(28,345,592)</u>	<u>(3,613,840)</u>
	<u>(207,902,952)</u>	<u>(199,834,790)</u>
Deferred tax liabilities, net	<u>₩ (93,435,219)</u>	<u>₩ (98,130,054)</u>

SK E&S Co., Ltd. and Subsidiaries
Notes to the Consolidated Financial Statements
December 31, 2016 and 2015

Changes in deferred tax assets and liabilities during the year, without taking into consideration the offsetting of balances within the same tax jurisdiction, are as follows:

(in thousands
of Korean won)

	2016				
	Beginning balance	Statement of profit or loss	Other comprehensive income	Ending balance	
Deferred tax assets					
Customer's contribution to construction costs	₩ 57,737,319	₩ 4,949,285	₩ -	₩ 62,686,604	
Provision for impairment of receivables	1,937,617	(274,691)	-	1,662,926	
Available-for-sale financial assets	4,317,611	(162,465)	2,360	4,157,506	
Accrued expenses	10,602,744	(542,250)	-	10,060,494	
Loss on foreign currency transaction	15,116	-	-	15,116	
Property, plant and equipment	6,594,870	(1,255,801)	-	5,339,069	
Inventories	23,271	41,273	-	64,544	
Provision for post-employment benefits	18,708,293	1,423,046	107,098	20,238,437	
Investment securities	(515,018)	-	515,018	-	
Others	2,282,913	7,960,124	-	10,243,037	
	<u>101,704,736</u>	<u>12,138,521</u>	<u>624,476</u>	<u>114,467,733</u>	
Deferred tax liabilities					
Interest receivable	(2,248,474)	883,851	-	(1,364,623)	
Employee welfare fund	(2,066,468)	535,256	-	(1,531,212)	
Property, plant and equipment	(60,574,052)	(4,926,886)	-	(65,500,938)	
Temporary depreciation provision	(59,681,106)	(4,847,520)	-	(64,528,626)	
Provision for post-employment benefits	(17,865,717)	(1,611,505)	103,502	(19,373,720)	
Investment securities	(54,989,365)	(12,032,761)	17,065,142	(49,956,984)	
Others	(2,409,608)	(3,237,241)	-	(5,646,849)	
	<u>(199,834,790)</u>	<u>(25,236,806)</u>	<u>17,168,644</u>	<u>(207,902,952)</u>	
	<u>₩ (98,130,054)</u>	<u>₩ (13,098,285)</u>	<u>₩ 17,793,120</u>	<u>₩ (93,435,219)</u>	

SK E&S Co., Ltd. and Subsidiaries
Notes to the Consolidated Financial Statements
December 31, 2016 and 2015

(in thousands
of Korean won)

	2015			
	Beginning balance	Statement of profit or loss	Other comprehensive income	Ending balance
Deferred tax assets				
Customer's contribution to construction costs	₩ 52,695,415	₩ 5,041,904	₩ -	₩ 57,737,319
Provision for impairment of receivables	1,363,918	573,699	-	1,937,617
Available-for-sale financial assets	2,958,676	1,372,281	(13,346)	4,317,611
Accrued expenses	13,822,871	(3,220,127)	-	10,602,744
Loss on foreign currency transaction	15,116	-	-	15,116
Property, plant and equipment	7,804,652	(1,209,782)	-	6,594,870
Tax loss carryforwards	3,249,345	(3,249,345)	-	-
Inventories	89,338	(66,067)	-	23,271
Provision for post-employment benefits	15,503,507	2,550,766	654,020	18,708,293
Investment securities	107,755	(622,773)	-	(515,018)
Present value discount account	22,984	(22,984)	-	-
Others	2,325,190	(42,277)	-	2,282,913
	<u>99,958,767</u>	<u>1,105,295</u>	<u>640,674</u>	<u>101,704,736</u>
Deferred tax liabilities				
Interest receivable	(930,019)	(1,318,455)	-	(2,248,474)
Employee welfare fund	(2,088,100)	21,632	-	(2,066,468)
Property, plant and equipment	(57,998,274)	(2,575,778)	-	(60,574,052)
Temporary depreciation provision	(54,577,080)	(5,104,026)	-	(59,681,106)
Provision for post-employment benefits	(15,225,406)	(2,884,226)	243,915	(17,865,717)
Investment securities	(21,218,690)	(15,828,566)	(17,942,109)	(54,989,365)
Present value discount account	(22,984)	22,984	-	-
Others	(3,984,172)	1,574,564	-	(2,409,608)
	<u>(156,044,725)</u>	<u>(26,091,871)</u>	<u>(17,698,194)</u>	<u>(199,834,790)</u>
	<u>₩ (56,085,958)</u>	<u>₩ (24,986,576)</u>	<u>₩ (17,057,520)</u>	<u>₩ (98,130,054)</u>

SK E&S Co., Ltd. and Subsidiaries
Notes to the Consolidated Financial Statements
December 31, 2016 and 2015

Amounts of deductible temporary differences, unused tax loss carryforwards and tax credit which were not recognized as deferred tax assets as of December 31, 2016, are as follows:

<i>(in thousands of Korean won)</i>	Maturity	Amounts
Deductible temporary differences	-	₩ 6,702,792
	2022	356,015
Tax loss carryforwards	2023	1,098,698
	2024	3,147,606
	2025	6,268,199
	2026	14,830,245
Tax credit	2018	838,313
	2019	73,373
	2020	4,279,177
	2021	138,705

Taxable temporary difference of ₩ 87,532,328 thousand (2015: ₩ 87,532,328 thousand) and deductible temporary differences of ₩ 22,134,330 thousand (2015: ₩ 22,134,330 thousand) arising on investments in subsidiaries, joint ventures and associates were not recognized as deferred tax assets and liabilities as these will not reverse in the foreseeable future.

29. Earnings per Share

Basic earnings per share is calculated by dividing the profit attributable to owners of the Company by the weighted average number of ordinary shares outstanding during the year.

<i>(In Korean won)</i>	2016	2015
Profit from continuing operations attributable to owners of the Controlling Company	₩ 172,144,376,731	₩ 290,845,194,795
Profit from discontinued operations attributable to owners of the Controlling Company	-	90,275,396,154
Total	₩ 172,144,376,731	₩ 381,120,590,949
Weighted average number of ordinary shares outstanding	41,761,791	41,761,791
Basic earnings per share		
Continuing operations basic earnings per share	₩ 4,122	₩ 6,964
Discontinuing operations basic earnings per share	-	2,162

Diluted earnings per share and basic earnings per share are the same because there are no potential dilutive common shares.

30. Dividends

The dividends paid in 2016 and 2015 were ₩ 216,117,268 thousand (₩ 5,175 per share) and ₩336,808,844 thousand (₩8,065 per share), respectively.

A dividend in respect of the year ended December 31, 2016, has not yet been determined. Once confirmed, it will be proposed at the annual shareholders' meeting on March 29, 2017.

These financial statements do not reflect these dividend payables.

SK E&S Co., Ltd. and Subsidiaries
Notes to the Consolidated Financial Statements
December 31, 2016 and 2015

31. Cash Generated from Operations

Adjustments to reconcile profit for the year to net cash provided by operating activities for the years ended December 31, 2016 and 2015, are as follows:

<i>(In thousands of Korean won)</i>	2016		2015	
Interest expense	₩	35,967,798	₩	24,668,741
Income tax expense		55,361,613		112,077,233
Depreciation		197,576,127		154,455,357
Amortization		7,570,672		8,246,502
Post-employment benefits		14,347,107		13,574,197
(Reversal of) Impairment loss on receivables		(75,645)		1,421,433
Loss on foreign currency translation		7,028,080		3,312,083
Share of loss of associates		7,027,624		2,716,500
Losses on disposal of associates		-		1,905
Losses on disposal of available-for-sale financial assets		2,270,217		22,750
Impairment losses on available-for-sales financial assets		51,548		5,670,582
Losses on valuation of derivatives		43,277		-
Losses on disposal of property, plant, and equipment		1,075,922		668,734
Impairment losses on property, plant, and equipment		2,994,417		-
Losses on disposal of intangible assets		525,535		863,119
Impairment losses on intangible assets		303,129		175,000
Employee benefits		-		-
Interest income		(4,895,584)		(12,160,549)
Dividends income		(5,126,923)		(1,073,635)
Gains on foreign currency translation		(2,383,077)		(406,448)
Gains on disposal of associates		(38,921,400)		-
Reversal of impairment losses on associates		(762,861)		-
Gains on disposal of property, plant and equipment		(658,516)		(2,510,562)
Gains on disposal of intangible assets		(198,968)		(494,517)
Gains on disposal of available-for-sale financial assets		(37,815)		(1,460,665)
Share of profit of associates		(63,233,481)		(70,653,963)
Gains on derivatives transactions		(3,187,567)		(908,400)
Gains from discontinued operations		-		(113,856,657)
Others		(12,445,938)		8,105,727
	₩	<u>200,215,291</u>	₩	<u>132,454,467</u>

SK E&S Co., Ltd. and Subsidiaries
Notes to the Consolidated Financial Statements
December 31, 2016 and 2015

Changes in operating assets and liabilities for the years ended December 31, 2016 and 2015, are as follows:

<i>(In thousands of Korean won)</i>		2016		2015
Decrease in trade receivables	₩	32,427,345	₩	266,814,543
Decrease(increase) in non-trade receivables		(1,819,012)		12,534,595
Decrease(increase) in accrued revenues		4,960,428		(6,956,806)
Decrease(increase) in advance payments		(20,833,089)		18,726
Increase in prepaid expenses		(27,030,299)		(11,332,072)
Decrease(increase) in prepaid value added tax		(495,491)		4,907,304
Decrease(increase) in inventories		(28,937,683)		805,653
Decrease(increase) in long-term guarantee deposits provided		(1,495,690)		267,492
Increase in long-term prepaid expenses		(39,423)		(45,340)
Decrease in trade payables		(45,965,060)		(268,164,332)
Increase in advances received		1,777,548		404,967
Increase(decrease) in withholdings		4,802,132		(15,070,225)
Increase(decrease) in unearned revenue		(656,874)		4,132,730
Increase(decrease) in non-trade payables		(5,186,882)		15,264,716
Increase(decrease) in accrued expense		3,469,488		(6,963,635)
Increase(decrease) in value added tax withheld		3,765,110		(1,787,612)
Decrease in other current liabilities		(1,081,856)		(237,733)
Payment of post-employment benefits		(7,289,086)		(8,378,841)
Increase in plan assets		(8,567,679)		(16,733,054)
Increase(decrease) in guarantee deposits received		(419,488)		104,329
Decrease(increase) in derivatives related to operating activities		359,074		-
Others		4,412,932		(4,627,003)
	₩	<u>(93,843,555)</u>	₩	<u>(35,041,598)</u>

Significant transactions not affecting cash flows are as follows:

<i>(In thousands of Korean won)</i>		2016		2015
Reclassification of construction in-progress to specific property, plant and equipment	₩	247,841,375	₩	746,322,736
Reclassification of borrowings to current portion of borrowings		275,712,575		155,625,525

SK E&S Co., Ltd. and Subsidiaries
Notes to the Consolidated Financial Statements
December 31, 2016 and 2015

32. Contingencies and Commitments

Details of commitments on borrowings as of December 31, 2016, are as follows:

*(in thousands of Korean won, in
thousands of US dollars)*

	Financial institution	Details		Amount of Limit
SK E&S Co., Ltd.	Hana Bank	Line of Credit	₩	20,000,000
	Kookmin Bank and others	Consumer loans		52,000,000
	Hana Bank and others	Line of Credit		354,000,000
	KB Investment & Securities	CP		100,000,000
	Korea Exim Bank	Line of Credit	USD	200,000
Gangwon City Gas Co., Ltd.	Korea Development Bank and others	Derivative contract	USD	95,149
	NH Bank and others	Bank overdrafts	₩	11,500,000
	Kookmin Bank and others	Line of Credit		20,000,000
Ko-one Energy Service Co., Ltd.	Woori Bank	Consumer loans		50,000,000
	NH Bank	Bank overdrafts		10,000,000
Busan City Gas Co., Ltd.	Kookmin Bank	Line of Credit		5,000,000
Yeongnam Energy Service Co., Ltd.	NH Bank and others	Bank overdrafts		21,000,000
	Kookmin Bank and others	Consumer loans		30,000,000
Chungcheong Energy Service Co., Ltd.	Citibank Korea and others	Bank overdrafts		22,300,000
	Woori Bank and others	Line of Credit		35,000,000
Jeonnam City Gas Co., Ltd.	NH Bank and others	Bank overdrafts		20,000,000
Jeonbuk Energy Service Co., Ltd.	NH Bank	Bank overdrafts		10,000,000
	Kookmin Bank	Line of Credit		5,000,000
Wirye Energy Service Co., Ltd.	Korea Development Bank and others	PF contract		310,000,000
Paju Energy Service Co., Ltd. (formerly, PMP Co., Ltd.)	Korea Development Bank and others	PF contract		700,000,000
Narae Energy Service Co., Ltd.	Korea Development Bank and others	Line of Credit		400,000,000
		Consumer loans		3,000,000
		Derivative contract		400,000,000
SK LNG Trading Pte., Ltd.	Citibank Singapore	Letter of Credit	USD	145,000
	J.ARON&COMPANY(SINGAPORE)	Derivative contract	USD	69,000
	PTE			
SK E&S Australia Pty Ltd.	Bank of America	Line of Credit	USD	50,000
	DBS Bank	Line of Credit	USD	90,000
SK E&S Americas, Inc.	Korea Exim Bank	Line of Credit	USD	160,000
CAILIP Gas Marketing, LLC	Barclays Bank PLC and others	Derivative contract	USD	181,000
			₩	2,578,800,000
			USD	990,149

SK E&S Co., Ltd. and Subsidiaries
Notes to the Consolidated Financial Statements
December 31, 2016 and 2015

Details of payment guarantees provided by and to the Group as of December 31, 2016, are as follows:

<i>(in thousands of Korean won)</i>	Provided by	Beneficiary	Guaranteed by	Details	Amounts
Payment guarantees	Seoul Guarantee Insurance Co., Ltd.	Yeongnam Energy Service Co., Ltd.	-	Maintenance performance guarantee and license guarantee	₩ 1,052,205
		Chungcheong Energy Service Co. Ltd.	-	Maintenance performance guarantee and execution of construction	809,240
		Ko-one Energy Service Co., Ltd.	-	Performance guarantee	508,121
		Busan City Gas Co., Ltd.	-	Management and operation of group energy facilities and others	1,108,825
		Jeonnam City Gas Co., Ltd.	-	Gas rate guarantee and maintenance performance guarantee	4,949,598
		Jeonbuk Energy Service Co., Ltd.	-	Maintenance performance guarantee and performance guarantee	30,699
		Paju Energy Service Co., Ltd. (formerly, PMP Co., Ltd.)	-	Deposit guarantee for management of construction safety and others	557,540
		Wirye Energy Service Co., Ltd.	-	Management of group safety and others	1,072,726
		Narae Energy Service Co., Ltd	-	Performance guarantee	66,516
		Boryeong LNG Terminal Co., Ltd			
Fund supplement	SK E&S Co., Ltd.		Holders of public offering bonds PF syndicate	Principle and related interest on borrowing PF contract	360,000,000 Excess costs
Performance guarantee	SK Holdings Co., Ltd.	SK E&S Co., Ltd.	FLNG Liquefaction 3, LLC	Usage of liquefaction	Service fee
	SK LNG Trading Pte., Ltd.	SK Shipping Co., Ltd.	HHIENS1 Shipholding S.A. HHIENS2 Shipholding S.A.	BBCHP	Charterage

SK E&S Co., Ltd. and Subsidiaries

Notes to the Consolidated Financial Statements

December 31, 2016 and 2015

Details of significant pending litigations as of December 31, 2016, are as follows:

(in thousands of Korean won)

	Defendant	Details	Amounts	Progress
The Group as a plaintiff				
SK E&S Co., Ltd.	Head of Jongno tax office	Cancellation of corporate tax imposition	₩ 220,746	Third trial
SK E&S Co., Ltd.	Head of Seoul customs office	Cancellation of tariff imposition	2,251,754	First trial
Ko-one Energy Service Co., Ltd.	Industrial Bank of Korea	Compensation for non-performance and damages	10,000,000	Second trial
The Group as a defendant				
	Plaintiff	Details	Amounts	Progress
Lee Hyeong-gu and others	Paju Energy Service Co., Ltd.	Compensation for damages	340,000	First trial
Korea Land & Housing Corporation and Seongnam city	Ko-one Energy Service Co., Ltd.	Claim for the constituent of payment of pipe shifting construction costs	337,395	First trial
Korea Veterans Health Service	Busan City Gas Co., Ltd.	Claim for return of payment on over-measuring	3,248,236	First trial

The outcome of these pending litigations and the effects on the financial statements cannot be reasonably determined as of December 31, 2016.

Blank notes and checks provided by the Group as collaterals as of December 31, 2016, are as follows:

	Provided to	Type	Quantity	Purpose
SK E&S Co., Ltd.	Korea National Oil Corporation	Blank notes	3	Collateral for long-term borrowings
SK E&S Co., Ltd.	Korea National Oil Corporation	Blank check	6	Collateral for long-term borrowings
Gangwon City Gas Co., Ltd.	Korea Gas Corporation	Blank check	1	Collateral for natural gas supply agreement

SK E&S Co., Ltd. and Subsidiaries
Notes to the Consolidated Financial Statements
December 31, 2016 and 2015

The details of commitments as of December 31, 2016, are as follows:

Commitment	Company	Counterparty	Contract period
Long-term natural gas supply agreement ¹	Gangwon City Gas Co., Ltd. and seven other subsidiaries	Korea Gas Corporation	-
Agreement to purchase LNG	SK E&S Co., Ltd.	Tangguh PSC Contractor Parties	2006.1~2025.12
Gas turbine maintenance and repair agreement	SK E&S Co., Ltd.	GE International Inc.	2004.6~2026.12 (estimate)
Natural gas storage and vaporization service agreement	SK E&S Co., Ltd.	Posco Co., Ltd.	2005.6~2025.12
Lease agreement on the power generator and pylon site	SK E&S Co., Ltd.	Posco Co., Ltd.	2003.8~2028.12
Heat supply contract	Wirye Energy Service Co., Ltd.	Korea District Heating Corporation	Until completion date of Peak Load Boiler
Owner's Engineering Service	Paju Energy Service Co., Ltd. (formerly, PMP Co., Ltd.)	Black&Veatch Corporation	2014.7~2017.5
Long-term Maintenance Program	Paju Energy Service Co., Ltd. (formerly, PMP Co., Ltd.)	Siemens AG and others	2014.6~2031.6 (estimate)
Long-term Maintenance Program	Wirye Energy Service Co., Ltd.	Siemens AG and others	2015.1~2032.1 (estimate)
Long-term Maintenance Program	Narae Energy Service Co., Ltd.	Doosan Heavy Industries & Construction Co., Ltd	12 years from 2012
Natural gas storage and liquefaction service agreement	SK E&S LNG, LLC	FLNG Liquefaction 3, LLC	20 years from 2019
Natural gas storage and vaporization service agreement	Wirye Energy Service Co., Ltd., Paju Energy Service Co., Ltd. (formerly, PMP Co., Ltd.)	Boryeong LNG Terminal Co., Ltd.	20 years from 2017
Use of pipelines	SK E&S LNG, LLC	Kinder Morgan, Inc.	20 years from 2019
Agreement to purchase LNG	SK LNG Trading Pte. Ltd.	Chevron Australia Pty Ltd and others	2017.1~2022.3
Long-term ship chartering agreement	SK LNG Trading Pte. Ltd.	SK Shipping Co., Ltd.	20 years from delivery date

¹ The supply quantities are determined annually, and the supply price of natural gas is approved by the Minister of Trade, Industry and Energy

SK E&S Co., Ltd. and Subsidiaries

Notes to the Consolidated Financial Statements

December 31, 2016 and 2015

The details of construction contracts as of December 31, 2016, are as follows:

(in thousands of Korean won)

Contract	Company	Counterparty	Contract period	Contract amount
Construction of mass energy facilities	Wirye Energy Service Co., Ltd.	SK Engineering & Construction Co., Ltd.	2015.2 ~ 2017.3	₩ 432,728,000
Construction supervision service	Wirye Energy Service Co., Ltd.	OSUN Engineering Co., Ltd.	2014.12 ~ 2017.3	2,840,952
Heat pipe construction	Wirye Energy Service Co., Ltd.	Dkeyyoung Enertech Co., Ltd and others	2016.3 ~ 2017.3	2,263,650
Construction of facilities of accessing power transmission	Wirye Energy Service Co., Ltd.	Korea Electric Power Corporation	2015.8 ~ 2018.4	8,472,000
Construction of LNG pipelines	Wirye Energy Service Co., Ltd.	Hanyang ENG Co., Ltd.	2015.7 ~ 2017.6	20,760,000
EPC contract	Paju Energy Service Co., Ltd. (formerly, PMP Co., Ltd.)	SK Engineering & Construction Co., Ltd.	2014.6 ~ 2017.5	1,232,194,000
Construction management service	Paju Energy Service Co., Ltd. (formerly, PMP Co., Ltd.)	Human & Technologies Corp.	2014.10 ~ 2017.4	4,415,860

The details of resource development contracts as of December 31, 2016, are as follows:

(in thousands of US dollars)

Contact	Company	Counterparty	Percentage of ownership	Contract amount	Executing amount
Australian Barossa-Caldita Gas field	SK E&S Australia Pty Ltd.	ConocoPhillips Company and others	37.5%	USD 310,000	USD 280,000
USA Woodford field	DewBlaine Energy, LLC	Continental Resources, Inc.	49.9%	USD 360,000	USD 209,032

Apart from the above contract amount, the Group has the obligation to pay the development costs corresponding to the percentage of ownership.

SK E&S Co., Ltd. and Subsidiaries
Notes to the Consolidated Financial Statements
December 31, 2016 and 2015

33. Information on Non-Controlling Interests

Profit or loss allocated to non-controlling interests and accumulated non-controlling interests of subsidiaries that are material to the Group for the years ended December 31, 2016 and 2015, are as follows:

(in thousands of Korean won)

(in thousands of Korean won)	2016												
	Ratio of Non-controlling Interests	Beginning book amount		Gain (loss)		Dividends received		Capital transaction		Others	Ending book amount		
Busan City Gas Co., Ltd.	32.68%	₩	158,548,370	₩	8,458,214	₩	(1,634,071)	₩	-	₩	(1,235,259)	₩	164,137,254
Paju Energy Service Co., Ltd. (formerly, PMP Co., Ltd.)	-		170,579,598		10,348,090		(10,348,090)		77,413,698		-		247,993,296
Wirye Energy Service Co., Ltd.	4.83%		11,121,848		(356,344)		-		-		1,190		10,766,694
SK E&S Hong Kong Co., Ltd.	16.34%		4,860,539		7,779,960		-		-		1,050,795		13,691,294
		₩	345,110,355	₩	26,229,920	₩	(11,982,161)	₩	77,413,698	₩	(183,274)	₩	436,588,538

(in thousands of Korean won)

(in thousands of Korean won)

		2015										
	Ratio of Non-controlling Interests	Beginning book amount		Gain (loss)		Dividends received		Capital transaction		Others	Ending book amount	
Busan City Gas Co., Ltd.	32.68%	₩	149,256,695	₩	9,832,882	₩	(1,297,799)	₩	-	₩	756,592	₩ 158,548,370
Gimcheon Energy Service Co., Ltd.	-		18,888,840		-		-		-		(18,888,840)	-
Paju Energy Service Co., Ltd. (formerly, PMP Co., Ltd.)	-		-		-		-		170,579,598		-	170,579,598
Wirye Energy Service Co., Ltd.	4.83%		11,042,212		(182,221)		-		262,681		(824)	11,121,848
SK E&S Hong Kong Co., Ltd.	16.34%		623,796		4,082,100		-		-		154,643	4,860,539
		₩	179,811,543	₩	13,732,761	₩	(1,297,799)	₩	170,842,279	₩	(17,978,429)	₩ 345,110,355

SK E&S Co., Ltd. and Subsidiaries
Notes to the Consolidated Financial Statements
December 31, 2016 and 2015

Hybrid bond classified as non-controlling interests as of December 31, 2016, are as follows:

<i>(in thousands of Korean won)</i>	Issuance date	Maturity date	Interest rate	2016	2015
Subordinated debt	2015.11.30	2022.11.01	4.80%	₩ 250,000,000	₩ 172,400,000
Discount of bond				(2,006,704)	(1,820,402)
				<u>₩ 247,993,296</u>	<u>₩ 170,579,598</u>

Details of conditions of hybrid bond classified as non-controlling interests as of December 31, 2016, are as follows:

	Interest payment	Conversion	Redemption Option
Term	Quarterly	2022.11.01	From the date 5 years after the initial issuance to 2022.10.31
Amount	Principal	Principal including deferred interest payments	Full or Partial
Note	Same priority as preferred stock upon liquidation	7/25 and 18/25 of amounts are converted to common and preferred stock, respectively with par value (₩5,000 per share).	Commission for redemption option : 0.5% of redemption amount

Summarized statements of financial position for each subsidiary with non-controlling interests as of December 31, 2016 and 2015, are as follows:

<i>(in thousands of Korean won)</i>	2016				
	Current assets	Non- current assets	Current liabilities	Non-current liabilities	Equity
Busan City Gas Co., Ltd.	₩ 268,595,379	₩ 572,045,651	₩ 216,732,598	₩ 79,487,998	₩ 544,420,434
Paju Energy Service Co., Ltd. (formerly, PMP Co., Ltd.)	84,461,981	1,355,619,673	22,619,942	640,087,627	777,374,085
Wirye Energy Service Co., Ltd.	26,893,752	674,288,393	9,766,761	468,497,360	222,918,024
SK E&S Hong Kong Co., Ltd.	78,715,076	5,464,597	-	-	84,179,673

<i>(in thousands of Korean won)</i>	2015				
	Current assets	Non- current assets	Current liabilities	Non-current liabilities	Equity
Busan City Gas Co., Ltd.	₩ 277,941,640	₩ 526,218,272	₩ 229,413,880	₩ 74,644,253	₩ 500,101,779
Paju Energy Service Co., Ltd. (formerly, PMP Co., Ltd.)	101,827,331	1,159,427,911	46,766,273	498,023,901	716,465,069
Wirye Energy Service Co., Ltd.	24,687,218	514,147,246	28,684,872	279,883,578	230,266,014
SK E&S Hong Kong Co., Ltd.	25,963,903	6,178,342	2,394,307	-	29,747,938

SK E&S Co., Ltd. and Subsidiaries

Notes to the Consolidated Financial Statements

December 31, 2016 and 2015

Summarized statements of comprehensive income for each subsidiary with non-controlling interests for the years ended December 31, 2016 and 2015, are as follows:

(in thousands of Korean won)

	2016			
	Revenue	Profit (loss) for the year	Other comprehensive income	Total comprehensive income (loss)
Busan City Gas Co., Ltd.	₩ 886,881,771	₩ 49,691,196	₩ (372,041)	₩ 49,319,155
Paju Energy Service Co., Ltd. (formerly, PMP Co., Ltd.)	-	(6,110,920)	(45,672)	(6,156,592)
Wirye Energy Service Co., Ltd.	8,619,953	(7,372,633)	24,643	(7,347,990)
SK E&S Hong Kong Co., Ltd.	-	47,615,662	6,816,072	54,431,734

(in thousands of Korean won)

	2015			
	Revenue	Profit (loss) for the year	Other comprehensive income	Total comprehensive income (loss)
Busan City Gas Co., Ltd.	₩ 1,054,182,319	₩ 41,555,904	₩ 3,925,077	₩ 45,480,981
Paju Energy Service Co., Ltd. (formerly, PMP Co., Ltd.)	-	(1,485,069)	564	(1,484,505)
Wirye Energy Service Co., Ltd.	3,109,859	(3,793,397)	(17,058)	(3,810,455)
SK E&S Hong Kong Co., Ltd.	-	24,983,662	946,461	25,930,123

Summarized statements of cash flows for each subsidiary with non-controlling interests for the years ended December 31, 2016 and 2015, are as follows:

(in thousands of Korean won)

	2016				
	Operating activities	Investing activities	Financing activities	Cash at the beginning of year	Cash at the end of year
Busan City Gas Co., Ltd.	₩ 46,158,621	₩ (36,125,482)	₩ (5,000,500)	₩ 127,976,629	₩ 133,009,268
Paju Energy Service Co., Ltd. (formerly, PMP Co., Ltd.)	(38,553,777)	(201,206,483)	209,483,353	88,129,735	57,852,828
Wirye Energy Service Co., Ltd.	(17,811,216)	(157,201,915)	180,000,000	13,467,142	18,454,011
SK E&S Hong Kong Co., Ltd.	12,088,993	46,682,923	-	293,550	59,065,466

(in thousands of Korean won)

	2015				
	Operating activities	Investing activities	Financing activities	Cash at the beginning of year	Cash at the end of year
Busan City Gas Co., Ltd.	₩ 116,648,395	₩ (37,734,451)	₩ (6,850,750)	₩ 55,913,435	₩ 127,976,629
Paju Energy Service Co., Ltd. (formerly, PMP Co., Ltd.)	(12,234,803)	(738,996,102)	814,387,230	24,973,410	88,129,735
Wirye Energy Service Co., Ltd.	(15,558,182)	(258,356,315)	129,365,839	158,015,800	13,467,142
SK E&S Hong Kong Co., Ltd.	(3,145,694)	3,741,136	(409,849)	107,957	293,550

SK E&S Co., Ltd. and Subsidiaries

Notes to the Consolidated Financial Statements

December 31, 2016 and 2015

34. Related Party Transactions

The parent company and subsidiaries as of December 31, 2016 and 2015, are as follows:

		Percentage of ownership	
		2016	2015
Parent Company	SK Holdings Co., Ltd.	100.0%	100.0%
Subsidiaries	Gangwon City Gas Co., Ltd.	100.0%	100.0%
	Yeongnam Energy Service Co., Ltd.	100.0%	100.0%
	Ko-one Energy Service Co., Ltd.	100.0%	100.0%
	Busan City Gas Co., Ltd.	67.3%	67.3%
	Jeonbuk Energy Service Co., Ltd.	100.0%	100.0%
	Jeonnam City Gas Co., Ltd.	100.0%	100.0%
	Chungcheong Energy Service Co., Ltd.	100.0%	100.0%
	Paju Energy Service Co., Ltd. (formerly, PMP Co., Ltd.) ¹	100.0%	100.0%
	Wirye Energy Service Co., Ltd.	95.2%	95.2%
	Narae Energy Service Co., Ltd.	100.0%	100.0%
	SK E&S Hong Kong Co., Ltd.	83.7%	83.7%
	SK LNG Trading Pte., Ltd.	100.0%	100.0%
	SK E&S Australia Pty Ltd.	100.0%	100.0%
	SK E&S Americas, Inc.	100.0%	100.0%
	PT SK E&S Nusantara	100.0%	100.0%
	SK E&S LNG, LLC	100.0%	100.0%
	DewBlaine Energy, LLC	100.0%	100.0%
	CAILIP Gas Marketing, LLC	100.0%	100.0%
	Fajar Energy International Pte., Ltd. ²	100.0%	-

¹ PMP Co., Ltd. changed its name to Paju Energy Service Co., Ltd. in 2016

² SK LNG Trading Pte., Ltd., a subsidiary, has 100% ownership.

SK E&S Co., Ltd. and Subsidiaries

Notes to the Consolidated Financial Statements

December 31, 2016 and 2015

Details of joint ventures, associates and other related parties that have sales and other transactions with the Group or have receivables and payables balances as of December 31, 2016 and 2015, are as follows:

	Related Parties		Relationship
	2016	2015	
Joint ventures	Boryeong LNG Terminal Co., Ltd. China Gas-SK E&S LNG Trading Ltd.	Boryeong LNG Terminal Co., Ltd. China Gas-SK E&S LNG Trading Ltd.	
Associates	China Gas Holdings Ltd. Shinan Green Energy Gemini Partners Pte., Ltd. Busan Green Energy	China Gas Holdings Ltd. Shinan Green Energy Gemini Partners Pte., Ltd. Busan Green Energy	
Other related parties	SK Innovation Co., Ltd. SK TELECOM CO., LTD. SK Broadband Co., Ltd. SK Networks Company Limited SK Telink, Corp. SK USA, Inc. SK Pinx Co., Ltd. M&SERVICE Co., Ltd. SK Engineering & Construction Co., Ltd. SK SECURITIES CO., LTD. Infosec Co., Ltd. SK Forest Co., Ltd. HAPPYNARAE Co., Ltd. SK Networks Internet, Inc. SK Ship Management Co., Ltd. KONAN TECHNOLOGY. SK Energy Co. Ltd. SK Planet Co., Ltd. BiZEN Co., Ltd. SKC LTD. SK SHIPPING CO., LTD. SK Hynix Inc. SK Lubricants Co., Ltd. SK Biopharmaceuticals Co., Ltd. SK CHEMICALS CO., LTD. F&U Credit Information. SKC-Kolon PI. Daehan Oil Pipeline Corporation SK D&D. Netruck Corporation SK GAS Co., Ltd. SK Networks Service -	SK Innovation Co., Ltd. SK TELECOM CO., LTD. SK Broadband Co., Ltd. SK Networks Company Limited SK Telink, Corp. SK USA, Inc. SK Pinx Co., Ltd. M&SERVICE Co., Ltd. SK Engineering & Construction Co., Ltd. SK SECURITIES CO., LTD. Infosec Co., Ltd. SK Forest Co., Ltd. HAPPYNARAE Co., Ltd. SK Networks Internet, Inc. SK Ship Management Co., Ltd. KONAN TECHNOLOGY. SK Energy Co. Ltd. SK Planet Co., Ltd. BiZEN Co., Ltd. SKC LTD. SK SHIPPING CO., LTD. SK Hynix Inc. SK Lubricants Co., Ltd. SK Biopharmaceuticals Co., Ltd. SK CHEMICALS CO., LTD. F&U Credit Information. SKC-Kolon PI. Daehan Oil Pipeline Corporation SK D&D. Netruck Corporation SK GAS Co., Ltd. SK Networks Service UBCARE CO., LTD.	SK Holdings Co., Ltd.'s subsidiary SK Holdings Co., Ltd.'s subsidiary SK TELECOM CO., LTD.'s subsidiary SK Holdings Co., Ltd.'s subsidiary SK TELECOM CO., LTD.'s subsidiary SK Innovation Co., Ltd.'s subsidiary SK Networks Company Limited. 's subsidiary SK Planet Co., Ltd.'s subsidiary SK Holdings Co., Ltd.'s subsidiary SK Holdings Co., Ltd. is the largest shareholder SK Holdings Co., Ltd.'s subsidiary SK Holdings Co., Ltd.'s subsidiary SK Holdings Co., Ltd.'s subsidiary SK Networks Company Limited.'s subsidiary SK Shipping Co., LTD. 's subsidiary SK Communications Co., Ltd.'s associate SK Innovation Co., Ltd.'s subsidiary SK TELECOM CO., LTD.'s subsidiary SK Holdings Co., Ltd.'s subsidiary SK Holdings Co., Ltd.'s subsidiary SK TELECOM CO., LTD.'s associate SK Innovation Co., Ltd.'s subsidiary SK Holdings Co., Ltd.'s subsidiary The largest shareholder is a relative of SK's key management personnel SK TELECOM CO., LTD.'s subsidiary SKC LTD. 's subsidiary SK Innovation Co., Ltd.'s subsidiary SK Engineering & Construction co., ltd. is associate SK Energy Co. Ltd.'s subsidiary SK CHEMICALS CO., LTD.'s subsidiary SK Networks Company Limited.'s subsidiary

SK E&S Co., Ltd. and Subsidiaries
Notes to the Consolidated Financial Statements
December 31, 2016 and 2015

Sales and purchases with related parties for the year ended December 31, 2016 and 2015, are as follows:

	2016			
	Sales and others	Purchase and others	Acquisition of tangible and intangible assets	Equity contributions in cash
<i>(in thousands of Korean won)</i>				
Parent company				
SK Holdings Co., Ltd.	₩ 101,193	₩ 20,431,586	₩ 1,237,259	₩ -
Joint venture				
Boryeong LNG Terminal Co., Ltd.	760,461	-	-	10,000,000
Associates				
Shinan Green Energy	-	-	-	2,142,344
Other related parties				
SK Innovation Co., Ltd.	7,893,092	5,733,608	-	-
SK Networks Company Limited	148,160	4,991,786	56,659	-
SK Engineering & Construction Co., Ltd.	403,491	140,000	269,803,569	-
SK hynix Inc.	16,381,600	10,000	-	-
SKC LTD.	6,474,415	-	-	-
M&Service Co., Ltd.	-	6,231,168	-	-
SK GAS Co., Ltd.	-	-	-	-
SK Energy Co., Ltd.	30,218,298	192,635	-	-
SK Telecom Co., Ltd. and others	2,824,894	7,564,283	614,118	-
	<u>₩ 65,205,604</u>	<u>₩ 45,295,066</u>	<u>₩ 271,711,605</u>	<u>₩ 12,142,344</u>

The Group sold its entire shares and preemptive right of Wuhan Zhongran – SK E&S Gas Group Co., Ltd. and China gas-SK E&S HK Co., Ltd., associates of subsidiary of China Gas Holdings Ltd., an associate, at price of CNY 280 million and CNY 54 million, respectively, for the year ended December 31, 2016. As a result of this transaction, the Group recognized share of profit of ₩ 37,490 million and other income of ₩ 9,426 million, respectively.

For the year ended December 31, 2016, SK SECURITIES CO., LTD. acquired total bond issued by the Group for ₩120,000,000 thousand.

SK E&S Co., Ltd. and Subsidiaries
Notes to the Consolidated Financial Statements
December 31, 2016 and 2015

	2015			
	Sales and others	Purchase and others	Acquisition of tangible and intangible assets	Equity contributions in cash
<i>(in thousands of Korean won)</i>				
Parent company				
SK Holdings Co., Ltd. ¹	₩ 98,614	₩ 23,660,073	₩ 3,950,092	₩ -
Joint venture				
Boryeong LNG Terminal Co., Ltd.	865,555	-	-	-
China Gas -SK E&S LNG Trading Ltd.	-			1,189,110
Associates				
Gemini Partners Pte., Ltd.	-			7,889,084
Busan Green Energy	-	-	-	14,312,700
Other related parties				
SK Innovation Co., Ltd.	12,423,231	5,640,928	-	-
SK Networks Company Limited	170,751	4,592,098	1,000	-
SK Engineering & Construction Co., Ltd.	852,921	200,000	1,031,437,668	-
SK hynix Inc.	25,428,614	-	-	-
SKC LTD.	8,483,510	-	-	-
M&Service Co., Ltd.	-	5,819,113	-	-
SK GAS Co., Ltd.	-	-	-	-
SK Energy Co., Ltd.	31,122,091	201,956	-	-
SK Telecom Co., Ltd. and others	3,684,258	12,816,331	2,119,294	-
	<u>₩ 83,129,545</u>	<u>₩ 52,930,499</u>	<u>₩ 1,037,508,054</u>	<u>₩ 23,390,894</u>

¹ As SKC&C Co., Ltd. acquired SK Holdings Co., Ltd., the transactions are aggregated.

The Group entered short-term beneficiary certificate amounts to ₩43,000,000 thousand with SK SECURITIES CO., LTD. and SK SECURITIES CO., LTD. acquired total bond issued by the Group for ₩90,000,000 thousand.

SK E&S Co., Ltd. and Subsidiaries
Notes to the Consolidated Financial Statements
December 31, 2016 and 2015

Details of receivables and payables with related parties as of December 31, 2016 and 2015, are as follows:

(in thousands of
Korean won)

	2016				2015			
	Trade receivables	Other receivables	Trade payables	Other liabilities	Trade receivables	Other receivables	Trade payables	Other liabilities
Parent company								
SK Holdings Co., Ltd.	₩ 4,253	₩ 126	₩ -	₩ 2,189,566	₩ 4,037	₩ 96	₩ -	₩ 2,127,730
Joint venture								
Boryeong LNG Terminal Co., Ltd.	-	134,113	-	-	-	181,566	-	-
Other related parties								
SK Innovation Co., Ltd.	793,439	-	-	206,583	956,401	567,636	-	389,608
SK Networks Company Limited	11,102	160,117	-	1,045,133	12,867	160,000	-	1,200,456
SK Engineering & Construction Co., Ltd.	37,403	14,557	-	9,485,394	17,530	-	-	66,089,938
M&SERVICE Co., Ltd.	-	-	-	579,285	-	-	-	631,654
SK hynix Inc.	2,137,532	855	-	-	3,121,986	-	-	-
SKC LTD.	278,196	-	-	-	463,375	-	-	422,725
SK Energy Co. Ltd.	4,309,730	685	-	386	4,412,608	-	-	-
SK Shipping Co., Ltd.	-	21,615,847	-	-	-	-	-	-
SK TELECOM CO., LTD. and other companies	2,201	24,425	215	1,102,549	290,046	434,019	199,810	2,866,711
	<u>₩ 7,573,856</u>	<u>₩ 21,950,725</u>	<u>₩ 215</u>	<u>₩ 14,608,896</u>	<u>₩ 9,278,850</u>	<u>₩ 1,343,317</u>	<u>₩ 199,810</u>	<u>₩ 73,728,822</u>

SK E&S Co., Ltd. and Subsidiaries

Notes to the Consolidated Financial Statements

December 31, 2016 and 2015

Details of payment and performance guarantees provided by the Group to the related parties and payment, and performance guarantees provided by the related parties to the Group as of December 31, 2016, are as follows:

(in thousands of Korean won, thousands of Chinese yuan, thousands of US dollars)

	Provided by	Beneficiary	Guaranteed by	Remark
Fund raising contract	Controlling company	Boryeong LNG Terminal Co., Ltd.	Holders of public offering bonds	Borrowings
			PF Syndicate	Excess working cost
Performance guarantee	SK Holdings Co., Ltd.	Controlling company	FLNG Liquefaction 3, LLC	Liquefaction Tolling Agreement
	Controlling company	Subsidiary	Boryeong LNG Terminal Co., Ltd.	Vaporization Tolling Agreement

Details of collateral provided by the Group for the financial supports to the related parties as of December 31, 2016, are as follows:

(in thousands of Korean won)

	Beneficiary	Secured assets	Amount	Provided to
Subsidiaries	Paju Energy Service Co., Ltd. (formerly, PMP Co., Ltd.)	Equity securities of Paju Energy Service Co., Ltd. (formerly, PMP Co., Ltd.)	₩ 550,000,000	Korea Development Bank and others, the Project Financing syndicate
	Wirye Energy Service Co., Ltd.	Equity securities of Wirye Energy Service Co., Ltd.	228,481,660	Korea Development Bank and others, the Project Financing syndicate
	Narae Energy Service Co., Ltd.	Equity securities of Narae Energy Service Co., Ltd.	192,348,308	Korea Development Bank and Woori Bank
Joint venture	Boryeong LNG Terminal Co., Ltd.	Equity securities of Boryeong LNG Terminal Co., Ltd.	110,000,000	Woori Bank and others, the Project Financing syndicate
Associates	Busan Green Energy	Equity securities of Busan Green Energy	13,564,868	Shinhan Bank and others, the Project Financing syndicate

The Group's main commitments with related parties as of December 31, 2016, are as follows:

(in thousands of Korean won)

Entity	Related party	Commitment	Amount
Paju Energy Service Co., Ltd.	SK Engineering & Construction Co., Ltd.	EPC contract	₩1,232,194,000
Wirye Energy Service Co., Ltd.	SK Engineering & Construction Co., Ltd.	Construction contract	432,728,000
Wirye Energy Service Co., Ltd., Paju Energy Service Co., Ltd., SK E&S Co., Ltd.	Boryeong LNG Terminal Co., Ltd.	Natural gas storage and vaporization tolling agreement	Service fee

Compensation for key management of the Controlling Company for the years ended December 31, 2016 and 2015, consists of:

(In thousands of Korean won)

	2016	2015
Salaries	₩ 2,866,947	₩ 3,026,829
Post-employment benefits	752,979	665,570
	₩ 3,619,926	₩ 3,692,399

Key management includes executive directors, members of the Executive Committee.

SK E&S Co., Ltd. and Subsidiaries
Notes to the Consolidated Financial Statements
December 31, 2016 and 2015

35. Segment Information

The Group has determined the operating segments based on the information reviewed by the Group's chief operating decision maker. For the purposes of allocating resources and assessing performance, chief operating decision maker reviews the information based on segment profit before income tax.

The Group's operating segments consist of the power generation, LNG, city gas and other segments as of December 31, 2016.

The segment information for the years ended December 31, 2016 and 2015, is presented after considering the distribution of intra-company transactions, adjustments of depreciation cost, interest income, interest expense and profit before tax. Assets and liabilities of each operating segment are excluded as such information is not provided regularly to the chief operating decision maker.

The following table presents segment profit (loss) for the years ended December 31, 2016 and 2015:

(in thousands of Korean won)

		2016					
		Power generation	LNG	City gas	Other segments	Adjustment for consolidation	Total
Total segment revenue	₩	748,319,513	₩ 476,505,804	₩ 3,245,190,586	₩ -	₩ (425,252,932)	₩ 4,044,762,971
Inter-segment revenue		-	(425,419,726)	-	-	425,419,726	-
Net-segment revenue		748,319,513	51,086,078	3,245,190,586	-	166,794	4,044,762,971
Segment profit(loss) before income tax		(36,493,915)	117,805,861	132,375,103	(62,179,003)	102,227,864	253,735,910

(in thousands of Korean won)

		2015					
		Power generation	LNG	City gas	Other segments	Adjustment for consolidation	Total
Total segment revenue	₩	724,555,025	₩ 602,106,770	₩ 3,912,878,200	₩ -	₩ (585,331,721)	₩ 4,654,208,274
Inter-segment revenue		-	(587,122,882)	-	-	587,122,882	-
Net-segment revenue		724,555,025	14,983,888	3,912,878,200	-	1,791,161	4,654,208,274
Segment profit(loss) before income tax		(4,450,673)	249,821,737	116,403,781	424,048,316	(392,749,233)	393,073,928

Breakdown of the Group's revenue from all services for the years ended December 31, 2016 and 2015, follows:

(In thousands of Korean won)

	2016	2015
Finished Goods	₩ 777,985,956	₩ 731,803,171
Trading	3,241,914,649	3,889,950,292
Others	17,802,151	25,391,628
Rental	7,060,215	7,063,183
	₩ 4,044,762,971	₩ 4,654,208,274

Revenues of ₩ 724,246,577 thousand (2015: ₩ 727,644,916 thousand), which are more than 10% of the Group revenue in 2016, are derived from Korea Power Exchange, and these revenues are attributable to the power generation segments.

SK E&S Co., Ltd. and Subsidiaries
Notes to the Consolidated Financial Statements
December 31, 2016 and 2015

36. Discontinued operations

The Company sold its shares in Pyeongtaek Energy Service Co., Ltd., Gimcheon Energy Service Co., Ltd. and Jeonbuk Mass Energy Co., Ltd. on January 13, 2015, at the price of ₩495,082,000 thousand.

Profit and loss from discontinued operations for the year ended December 31, 2015, are as follows:

<i>(in thousands of Korean won)</i>	2015
Revenue	₩ -
Expense	-
Profit before tax of discontinued operations	-
Tax expense	-
Profit after tax of discontinued operations	-
Pre-tax gains on disposal of discontinued operations	113,856,657
Tax expense	23,581,261
After tax gains on disposal of discontinued operations after tax	90,275,396
Profit for the period from discontinued operations	₩ 90,275,396

Cash flows from discontinued operations for the year December 31, 2015, are as follows:

<i>(in thousands of Korean won)</i>	2015
Cash flows from operating activities	₩ -
Cash flows from investing activities	495,082,000
Cash flows from financing activities	-
Net cash flows	₩ 495,082,000