

KOREA ELECTRIC POWER CORP

Form 20-F

April 30, 2018

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As filed with the Securities and Exchange Commission on April 30, 2018

UNITED STATES

SECURITIES AND EXCHANGE COMMISSION

Washington, D.C. 20549

Form 20-F

(Mark One)

REGISTRATION STATEMENT PURSUANT TO SECTION 12(b) OR (g) OF THE SECURITIES  
EXCHANGE ACT OF 1934

OR

ANNUAL REPORT PURSUANT TO SECTION 13 OR 15(d) OF THE SECURITIES EXCHANGE ACT  
OF 1934

For the fiscal year ended December 31, 2017

OR

TRANSITION REPORT PURSUANT TO SECTION 13 OR 15(d) OF THE SECURITIES EXCHANGE  
ACT OF 1934

OR

**SHELL COMPANY REPORT PURSUANT TO SECTION 13 OR 15(d) OF THE SECURITIES  
EXCHANGE ACT OF 1934**

**Date of event requiring this shell company report**

**For the transition period from            to**

**Commission File Number: 001-13372**

**KOREA ELECTRIC POWER CORPORATION**

*(Exact name of registrant as specified in its charter)*

**N/A**

*(Translation of registrant's name into English)*

**The Republic of Korea**

*(Jurisdiction of incorporation or organization)*

**55 Jeollyeok-ro, Naju-si, Jeollanam-do, 58217, Korea**

*(Address of principal executive offices)*

**Yoon Hye Cho, +82 61 345 4213, yoonhye.cho@kepcoco.kr, +82 61 345 4299**

**55 Jeollyeok-ro, Naju-si, Jeollanam-do, 58217, Korea**

*(Name, telephone, e-mail and/or facsimile number and address of company contact person)*

**Securities registered or to be registered pursuant to Section 12(b) of the Act:**

**Title of each class:**

**Common stock, par value Won 5,000 per share**

**Name of each exchange on which registered:**

**New York Stock Exchange\***

**New York Stock Exchange**

**American depositary shares, each representing  
one-half of share of common stock**

\* Not for trading, but only in connection with the listing of American depositary shares on the New York Stock Exchange, pursuant to the requirements of the Securities and Exchange Commission.

**Securities registered or to be registered pursuant to Section 12(g) of the Act:**

None

**Securities for which there is a reporting obligation pursuant to Section 15(d) of the Act:**

**One Hundred Year 7.95% Zero-to-Full Debentures, due April 1, 2096**

**6% Debentures due December 1, 2026**

**7% Debentures due February 1, 2027**

**6 <sup>3</sup>/<sub>4</sub>% Debentures due August 1, 2027**

Indicate the number of outstanding shares of each of the issuer's classes of capital or common stock as of the close of the last full fiscal year covered by the annual report:

641,964,077 shares of common stock, par value of Won 5,000 per share

Indicate by check mark if the registrant is a well-known seasoned issuer, as defined in Rule 405 of the Securities Act. Yes No

If this report is an annual or transition report, indicate by check mark if the registrant is not required to file reports pursuant to Section 13 or 15(d) of the Securities Exchange Act of 1934. Yes No

Note Checking the box above will not relieve any registrant required to file reports pursuant to Section 13 or 15(d) of the Securities Exchange Act of 1934 from their obligations under those Sections.

Indicate by check mark whether the registrant (1) has filed all reports required to be filed by Section 13 or 15(d) of the Securities Exchange Act of 1934 during the preceding 12 months (or for such shorter period that the registrant was required to file such reports) and (2) has been subject to such filing requirements for the past 90 days: Yes No

Indicate by check mark whether the registrant has submitted electronically and posted on its corporate Web site, if any, every Interactive Data File required to be submitted and posted pursuant to Rule 405 of Regulation S-T during the preceding 12 months (or for such shorter period that the registrant was required to submit and post such files): Yes No

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Indicate by check mark whether the registrant is a large accelerated filer, an accelerated filer, or a non-accelerated filer. See definition of accelerated filer and large accelerated filer in Rule 12b-2 of the Exchange Act. (Check one):

Large accelerated filer

Accelerated filer  
Growth Company

Non-accelerated filer

Emerging

If an emerging growth company that prepares its financial statements in accordance with U.S. GAAP, indicate by check mark if the registrant has elected not to use the extended transition period for complying with any new or revised financial accounting standards provided pursuant to Section 13(a) of the Exchange Act.

The term new or revised financial accounting standard refers to any update issued by the Financial Accounting Standards Board to its Accounting Standards Codification after April 5, 2012.

Indicate by check mark which basis of accounting the registrant has used to prepare the financial statements included in this filing:

U.S. GAAP

International Financial Reporting Standards as issued by the International Accounting  
Standards Board

Other

If Other has been checked in response to the previous question, indicate by check mark which financial statement item the registrant has elected to follow. Item 17 Item 18

If this is an annual report, indicate by check mark whether the registrant is a shell company (as defined in Rule 12b-2 of the Exchange Act). Yes No

(APPLICABLE ONLY TO ISSUERS INVOLVED IN BANKRUPTCY PROCEEDINGS DURING THE PAST FIVE YEARS)

Indicate by check mark whether the registrant has filed all documents and reports required to be filed by Sections 12, 13 or 15(d) of the Securities Exchange Act of 1934 subsequent to the distribution of securities under a plan confirmed by a court. Yes No

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**CERTAIN DEFINED TERMS AND CONVENTIONS**

All references to Korea or the Republic in this annual report on Form 20-F, or this annual report, are references to the Republic of Korea. All references to the Government in this annual report are references to the government of the Republic. All references to we, us, our, ours, the Company or KEPCO in this annual report are references to the Electric Power Corporation and, as the context may require, its subsidiaries, and the possessive thereof, as applicable. All references to the Ministry of Trade, Industry and Energy and the Ministry of Strategy and Finance include the respective predecessors thereof. All references to tons are to metric tons, equal to 1,000 kilograms, or 2,204.6 pounds. Any discrepancies in any table between totals and the sums of the amounts listed are due to rounding. All references to IFRS in this annual report are references to the International Financial Reporting Standards as issued by the International Accounting Standard Board. Unless otherwise stated, all of our financial information presented in this annual report has been prepared on a consolidated basis and in accordance with IFRS.

In addition, in this annual report, all references to:

EWP are to Korea East-West Power Co., Ltd.,

KHNP are to Korea Hydro & Nuclear Power Co., Ltd.,

KOMIPO are to Korea Midland Power Co., Ltd.,

KOSEP are to Korea South-East Power Co., Ltd.,

KOSPO are to Korea Southern Power Co., Ltd., and

KOWEPO are to Korea Western Power Co., Ltd.,  
each of which is our wholly-owned generation subsidiary.

**FORWARD-LOOKING STATEMENTS**

This annual report includes forward-looking statements (as defined in Section 27A of the Securities Act of 1933 and Section 21E of the Securities Exchange Act of 1934), including statements regarding our expectations and projections for future operating performance and business prospects. The words believe, expect, anticipate, estimate, project similar words used in connection with any discussion of our future operation or financial performance identify forward-looking statements. In addition, all statements other than statements of historical facts included in this annual report are forward-looking statements. Although we believe that the expectations reflected in such forward-looking statements are reasonable, we can give no assurance that such expectations will prove to be correct. We caution you not to place undue reliance on the forward-looking statements, which speak only as of the date of this annual report.

This annual report discloses, under the caption Item 3.D. Risk Factors and elsewhere, important factors that could cause actual results to differ materially from our expectations ( Cautionary Statements ). All subsequent written and



oral forward-looking statements attributable to us or persons acting on our behalf are expressly qualified in their entirety by the Cautionary Statements.

**Table of Contents****PART I****ITEM 1. IDENTITY OF DIRECTORS, SENIOR MANAGEMENT AND ADVISERS**

Not applicable.

**ITEM 2. OFFER STATISTICS AND EXPECTED TIMETABLE**

Not applicable.

**ITEM 3. KEY INFORMATION****Item 3.A. Selected Financial Data**

The selected consolidated financial data set forth below as of and for the years ended December 31, 2013, 2014, 2015, 2016 and 2017 have been derived from our audited consolidated financial statements which have been prepared in accordance with IFRS.

You should read the following data with the more detailed information contained in Item 5. Operating and Financial Review and Prospects and our consolidated financial statements included in Item 18. Financial Statements. Historical results do not necessarily predict future results.

**Consolidated Statement of Comprehensive Income (Loss) Data**

	2013	2014	2015	2016	2017	2017
	(in billions of Won and millions of US\$, except per share data) <sup>(1)</sup>					
Sales	53,713	57,123	58,582	59,763	59,336	\$ 55,589
Cost of sales	50,596	49,763	45,458	45,550	52,099	48,809
Gross profit	3,117	7,360	13,124	14,213	7,237	6,780
Selling and administrative expenses	1,923	1,924	2,153	2,639	2,763	2,588
Other income	625	666	699	652	689	645
Other gains	129	107	8,611	70	157	147
Operating profit	1,948	6,209	20,281	12,296	5,320	4,984
Finance expense, net	(2,302)	(2,255)	(1,832)	(1,646)	(1,596)	(1,496)
Income (loss) before income taxes	(396)	4,229	18,656	10,513	3,614	3,386
Income tax (expense) benefit	571	(1,430)	(5,239)	(3,365)	(2,173)	(2,036)
Profit for the period	174	2,799	13,416	7,148	1,441	1,350
Other comprehensive income (loss)	186	(358)	34	(2)	(95)	(89)
Total comprehensive income	360	2,441	13,450	7,146	1,346	1,261
Profit attributable to:						
Owners of the Company	60	2,687	13,289	7,048	1,299	1,217
Non-controlling interests	114	112	127	100	142	133

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Total comprehensive income attributable to:						
Owners of the Company	245	2,336	13,308	7,042	1,230	1,152
Non-controlling interests	115	105	142	104	116	109
Earnings per share						
Basic <sup>(2)</sup>	96	4,290	20,701	10,980	2,023	1.90
Earnings per ADS						
Basic <sup>(2)</sup>	48	2,145	10,351	5,490	1,012	0.95
Dividends per share	90	500	3,100	1,980	790	0.74

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	2013	2014	As of December 31,		2017	2017
			2015	2016		
	(in billions of Won and millions of US\$, except share and per share data) <sup>(1)</sup>					
Net working capital deficit <sup>(3)</sup>	(4,945)	(4,780)	(686)	(5,031)	(4,283)	\$ (4,013)
Property, plant and equipment, net	129,638	135,812	141,361	145,743	150,882	141,355
Total assets	155,527	163,708	175,257	177,837	181,789	170,310
Total shareholders equity	51,451	54,825	67,942	73,051	72,965	68,358
Equity attributable to owners of the Company	50,260	53,601	66,634	71,724	71,682	67,156
Non-controlling interests	1,191	1,224	1,308	1,327	1,283	1,202
Share capital	3,210	3,210	3,210	3,210	3,210	3,007
Number of common shares as adjusted to reflect any changes in capital stock	641,964,077	641,964,077	641,964,077	641,964,077	641,964,077	641,964,077
Long-term debt (excluding current portion)	52,801	55,720	50,907	44,700	45,624	42,743
Other long term liabilities	31,062	31,563	33,697	35,347	39,776	37,264

*Notes:*

- (1) The financial information denominated in Won as of and for the year ended December 31, 2017 has been translated into U.S. dollars at the exchange rate of Won 1,067.4 to US\$1.00, which was the Noon Buying Rate as of December 29, 2017.
- (2) Basic earnings (loss) per share are calculated by dividing net income available to holders of our common shares by the weighted average number of common shares issued and outstanding for the relevant period. Basic earnings (loss) per ADS have been computed as if all of our issued and outstanding common shares are represented by ADSs during each of the years presented. Each ADS represents two common shares. Dilutive earnings (loss) per share were the same as basic earnings (loss) per share for the years ended December 31, 2013 through 2017 since

there were no potential dilutive instruments.

- (3) Net working capital is defined as current assets minus current liabilities. For the periods indicated, current liabilities exceeded current assets, which resulted in working capital deficit for such periods.

### **Currency Translations and Exchange Rates**

In this annual report, unless otherwise indicated, all references to Won, KRW or ₩ are to the currency of Korea, all references to U.S. dollars, Dollars, \$ or US\$ are to the currency of the United States of America; all references to € are references to the currency of the European Union; all references to Yen or ¥ are references to the currency of Japan; all references to A\$ are to the currency of Australia; and all references to RMB are to the currency of the People's Republic of China. Unless otherwise indicated, all translations from Won to U.S. dollars were made at Won 1,067.4 to US\$1.00, which was the noon buying rate of the Federal Reserve Board (the Noon Buying Rate) in effect as of December 29, 2017, which rates are available on the H.10 statistical release of the Federal Reserve Board. On April 16, 2018, the Noon Buying Rate was Won 1,071.6 to US\$1.00. The exchange rate between the U.S. dollar and Korean Won may be highly volatile from time to time and the U.S. dollar amounts referred to in this annual report should not be relied upon as an accurate reflection of our results of operations. No representation is made that the Won or U.S. dollar amounts referred to in this annual report could have been or could be converted into U.S. dollars or Won, as the case may be, at any particular rate or at all.

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The following table sets forth, for the periods and dates indicated, certain information concerning the Noon Buying Rate in Won per US\$1.00.

<b>Year Ended December 31,</b>	<b>At End of Period</b>	<b>Average<sup>(1)</sup> (Won per US\$1.00)</b>	<b>High</b>	<b>Low</b>
2013	1,055.3	1,094.6	1,161.3	1,050.1
2014	1,090.9	1,054.0	1,117.7	1,008.9
2015	1,169.3	1,133.7	1,196.4	1,063.0
2016	1,203.7	1,160.5	1,242.6	1,090.0
2017	1,067.4	1,141.6	1,207.2	1,067.4
October	1,115.7	1,130.9	1,146.5	1,115.7
November	1,084.8	1,099.8	1,120.0	1,079.3
December	1,067.4	1,082.9	1,094.6	1,067.4
2018 (through April 16)	1,071.6	1,070.1	1,093.0	1,054.6
January	1,068.3	1,065.6	1,073.6	1,057.6
February	1,082.1	1,078.5	1,093.0	1,065.3
March	1,061.0	1,069.9	1,081.3	1,060.3
April (through April 16)	1,071.6	1,064.6	1,071.6	1,054.6

*Source: Federal Reserve Board*

*Note:*

- (1) The average rates for annual and interim periods were calculated by taking the simple average of the Noon Buying Rates on the last day of each month during the relevant period. The average rates for the monthly periods (or a portion thereof) were calculated by taking the simple average of the daily Noon Buying Rates during the relevant month (or a portion thereof).

**Item 3.B. Capitalization and Indebtedness**

Not Applicable

**Item 3.C. Reasons for the Offer and Use of Proceeds**

Not Applicable

**Item 3.D. Risk Factors**

*Our business and operations are subject to various risks, many of which are beyond our control. If any of the risks described below actually occurs, our business, financial condition or results of operations could be seriously harmed.*

**Risks Relating to KEPCO**

***Increases in fuel prices will adversely affect our results of operations and profitability as we may not be able to pass on the increased cost to customers at a sufficient level or on a timely basis.***

In 2017, fuel costs constituted 31.7% of our cost of sales, and the ratio of fuel costs to our sales was 27.8%. Our generation subsidiaries purchase substantially all of the fuel that they use (except for anthracite coal) from suppliers outside Korea at prices determined in part by prevailing market prices in currencies other than Won. For example, most of the bituminous coal requirements (which accounted for approximately 52.2% of our fuel requirements in 2017 in terms of electricity output) are imported principally from Indonesia, Australia, Russia and, to a lesser extent, South Africa and others, which accounted for approximately 38%, 31%, 11%, 9% and

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11%, respectively, of the annual bituminous coal requirements of our generation subsidiaries in 2017. Approximately 82% of the bituminous coal requirements of our generation subsidiaries in 2017 were purchased under long-term contracts and the remaining 18% from the spot market. Pursuant to the terms of our long-term supply contracts, prices are adjusted periodically based on prevailing market conditions. In addition, our generation subsidiaries purchase a significant portion of their fuel requirements under contracts with limited duration. See Item 4.B. Business Overview Fuel.

The prices of our main fuel types, namely, bituminous coal, oil and liquefied natural gas, or LNG, fluctuate, sometimes significantly, in tandem with their international market prices. For example, the average daily spot price of free on board Newcastle coal 6300 GAR published by Platts increased from US\$66.8 per ton in 2016 to US\$88.3 per ton in 2017 and to US\$93.4 per ton as of April 16, 2018. The prices of oil and LNG are substantially dependent on the price of crude oil, and according to Bloomberg (Bloomberg Ticker: PGCRDUBA), the average daily spot price of Dubai crude oil increased from US\$41.4 per barrel in 2016 to US\$53.1 per barrel in 2017 and to US\$68.4 per barrel as of April 16, 2018. We cannot assure you that fuel prices will remain stable or will not significantly increase in the remainder of 2018 or thereafter. If fuel prices increase substantially in the future within a short span of time, our generation subsidiaries may be unable to secure requisite fuel supplies at prices commercially acceptable to them. In addition, any significant interruption or delay in the supply of fuel, bituminous coal in particular, from any of their suppliers may cause our generation subsidiaries to purchase fuel on the spot market at prices higher than the prices available under existing supply contracts, which would result in an increase in fuel costs.

Because the Government regulates the rates we charge for the electricity we sell to our customers (see Item 4.B. Business Overview Sales and Customers Electricity Rates ), our ability to pass on fuel and other cost increases to our customers is limited. If fuel prices increase rapidly and substantially and the Government, out of concern for inflation or for other reasons, maintains the current level of electricity tariff or does not increase it to a level to sufficiently offset the impact of high fuel prices, the fuel price increases will negatively affect our profit margins or even cause us to suffer operating and/or net losses, and our business, financial condition, results of operations and cash flows would suffer.

The Government may also set or adjust electricity tariff rates to serve particular policy goals that may not be necessarily responsive to fuel price movements. For example, effective January 1, 2017, the Government made several adjustments to the existing rate structure in order to ease the burden of electricity tariff on residential consumers as well as promote the use of renewable energy. First, the progressive rate structure applicable to the residential sector, which applies a gradient of increasing tariff rates for heavier electricity usage, was changed from a six-tiered structure with the highest rate being no more than 11.7 times the lowest rate (which gradient system has been in place since 2005) into a three-tiered structure with the highest rate being no more than three times the lowest rate, in order to reflect the changes in the pattern of electricity consumption and reduce the electricity charges payable by consumers. Second, a new tariff structure was implemented to encourage energy saving by offering rate discounts to residential consumers that voluntarily reduce electricity consumption while charging special high rates to residential consumers with heavy electricity consumption during peak usage periods in the summer and the winter. Third, a temporary rate discount will apply during 2017 to 2019 to investments in environmentally friendly facilities such as energy storage systems, renewable energy and electric cars. The temporary rate discount to investments in energy storage systems and renewable energy was extended until 2020. Such adjustments may lower our revenues from the sale of electricity and accordingly have a material adverse effect on our results of operation, financial condition and cash flows.

In addition, partly because the Government may have to undergo a lengthy deliberative process to approve an increase in electricity tariff, which represents a key component of the consumer price index, the electricity tariff may not be adjusted to a level sufficient to ensure a fair rate of return to us in a timely manner or at all, and we cannot assure that any future tariff increase by the Government will be sufficient to fully offset the adverse impact on our results of



operations from current or potential rises in fuel costs. On the other hand, if fuel prices decrease, the public may demand a corresponding decrease in electricity tariff rates, and as a result the

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Government may decrease electricity tariff rates; however, we cannot assure you that the resulting tariff rate reduction will not be excessive and thus have a detrimental effect on our profit margins, results of operations or cash flows or that, if the fuel prices were to rise again subsequent to the tariff reduction, the tariff rates would be further adjusted upwards in a timely manner, in sufficient amounts or at all so as to fully offset the adverse impact from the increase in fuel prices.

***The Government may adopt policy measures to substantially restructure the Korean electric power industry or our operational structure, which may have a material adverse effect on our business, operations and profitability.***

From time to time, the Government considers various policy initiatives to foster efficiency in the Korean electric power industry, and at times have adopted policy measures that have substantially modified our business and operations. For example, in January 1999, with the aim of introducing greater competition in the Korean electric power industry and thereby improving its efficiency, the Government announced a restructuring plan for the Korean electric power industry, or the Restructuring Plan. For a detailed description of the Restructuring Plan, see Item 4.B.

**Business Overview Restructuring of the Electric Power Industry in Korea.** As part of this initiative, in April 2001 the Government established the Korea Power Exchange to enable the sale and purchase of electricity through a competitive bidding process, established the Korea Electricity Commission to ensure fair competition in the Korean electric power industry, and, in order to promote competition in electricity generation, split off our electricity generation business to form one nuclear generation company and five non-nuclear generation companies, in each case, to be wholly owned by us. In 2002, the Government introduced a plan to privatize one of our five non-nuclear generation subsidiaries, but this plan was suspended indefinitely in 2004 due to prevailing market conditions and other policy considerations.

In August 2010, the Ministry of Trade, Industry and Energy announced the Proposal for the Improvement in the Structure of the Electric Power Industry, which was designed to promote responsible management by and improve operational efficiency of government-affiliated electricity companies by fostering competition among them. Pursuant to this proposal, while our six generation subsidiaries continued to be our wholly-owned subsidiaries, in January 2011 the six generation subsidiaries were officially designated as market-oriented public enterprises (same as us) under the Act on the Management of Public Institutions, whereupon the President of Korea appoints the president and the standing director who is to become a member of the audit committee of each such subsidiary; the selection of non-standing directors of each such subsidiary is subject to approval by the minister of the Ministry of Strategy and Finance; the president of each such subsidiary is required to enter into a management contract directly with the minister of the Ministry of Trade, Industry and Energy; and the Public Agencies Operating Committee (which is comprised largely of Government officials and those recommended by Government officials) conducts performance evaluation of such subsidiaries. Previously, our president appointed the president and the statutory auditor of each such subsidiary; the selection of non-standing directors of each such subsidiary was subject to approval by our president; the president of each such subsidiary entered into a management contract with our president; and our evaluation committee conducted performance evaluation of such subsidiaries. As a result of these changes, our six generation subsidiaries took on additional operational responsibilities and management autonomy with respect to construction and management of generation units and procurement of fuel, while we as the parent company continued to oversee and coordinate, among others, finances, corporate governance, overseas businesses, including nuclear export technology and overseas resource development, that jointly affect us and our generation subsidiaries. See also Item 16G. **Corporate Governance The Act on the Management of Public Institutions Applications of the Act on Our Generation Subsidiaries,**

In June 2016, the Government announced the Proposal for Adjustment of Functions of Public Institutions (Energy Sector) for the purpose of streamlining the operations of government-affiliated energy companies by discouraging them from engaging in overlapping or similar businesses with each other, reducing non-core assets and activities and

improving management and operational efficiency. The initiatives contemplated in this proposal that would affect us and our generation subsidiaries include the following: (i) the generation companies

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should take on greater responsibilities in overseas resource exploration and production projects as these involve procurement of fuels necessary for electricity generation while fostering cooperation among each other through closer coordination, (ii) KHNP should take a greater role in export of nuclear technology, and (iii) the current system of retail sale of electricity to end-users should be liberalized to encourage more competition. In accordance therewith, we transferred a substantial portion of our assets and liabilities in our overseas resource business to our generation subsidiaries as of December 31, 2016. In addition, pursuant to this Proposal, we considered a sale in the public market of a minority of our shares in our five non-nuclear generation subsidiaries, KEPCO KDN and KHNP. However, the planned sales have been put on hold, primarily due to prevailing market conditions. In any event, we plan to maintain a controlling stake in each of these subsidiaries.

Other than as set forth above, we are not aware of any specific plans by the Government to resume the implementation of the Restructuring Plan or otherwise change the current structure of the electric power industry or the operations of us or our generation subsidiaries materially in the near future. However, for reasons relating to changes in policy considerations, socio-political, economic and market conditions and/or other factors, the Government may resume the implementation of the Restructuring Plan or initiate other steps that may change the structure of the Korean electric power industry or the operations of us or our generation subsidiaries materially. Any such measures may have a negative effect on our business, results of operations and financial condition. In addition, the Government, which beneficially owns a majority of our shares and exercises significant control over our business and operations, may from time to time pursue policy initiatives that could directly or indirectly impact our business and operations, and such initiatives may vary from the interest and objectives of our other shareholders.

***Our capacity expansion plans, which are principally based on projections on long-term supply and demand of electricity in Korea, may prove to be inadequate.***

We and our generation subsidiaries make plans for expanding or upgrading our generation capacity and transmission infrastructure based on the Basic Plan Relating to the Long-Term Supply and Demand of Electricity, or the Basic Plan, which is generally revised and announced every two years by the Government. In July 2015, the Government announced the Seventh Basic Plan relating to the future supply and demand of electricity, focusing on stable supply of electricity and increasing the portion of low carbon electricity supply sources, among others. In December 2017, the Government announced the Eighth Basic Plan to revise the Seventh Basic Plan, for the former to be effective for the period from 2017 to 2031. The Eighth Basic Plan focuses on, among other things, (i) decreasing the reliance on nuclear and coal-based supply sources, (ii) increasing utilization of renewable energy sources and (iii) balancing the existing cost-based pool system of purchase of electricity with an environmentally-focused pool system, in order to increase utilization of LNG energy sources, which are cleaner but more expensive than nuclear or coal energy sources. Furthermore, the Eighth Basic Plan includes the following implementing measures: (i) six new nuclear generation units in a planning stage would not be constructed, (ii) extension of life of 10 decrepit nuclear generation units would not be granted, (iii) Wolsong #1 unit is not counted as part of domestic energy generation capacity, (iv) seven decrepit coal-fired generation plants will be retired by 2022, (v) six other coal-fired generation plants shall be converted to LNG fuel use and (vi) domestic renewable energy generation capacity shall be expanded to 58.5 gigawatts by 2030.

In January 2014, prior to the announcement of the Seventh Basic Plan, the Ministry of Trade, Industry and Energy adopted the Second Basic National Energy Plan following consultations with representatives from civic groups, the power industry and academia. The Second Basic National Energy Plan, which is a comprehensive plan that covers the entire spectrum of energy industries in Korea, covers the period from 2014 to 2035 and focuses on the following six key tasks: (i) shifting the focus of energy policy to demand management with a goal of reducing the growth of electricity demand by 15% by 2035 through efficiency enhancement programs compared to the projected growth in the absence of such efficiency enhancement programs, (ii) establishing a geographically decentralized electricity generation system so as to reduce transmission losses with a goal of supplying at least 15% of total electricity through

such system by 2035, (iii) applying latest greenhouse gas

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emission reduction technologies to newly constructed generation units in order to further promote safety and security, (iv) strengthening resource exploration and fuel procurement capabilities to enhance Korea's energy security, (v) ensuring stable supply of energy and increasing the portion of electricity supplied from renewable sources to 11% by 2035, (vi) reinforcing the system for stable supply of conventional energy, such as oil and gas, and (vii) introducing in 2015 an energy voucher system in lieu of a tariff discount system for the benefit of consumers in the low income group. In addition, the Second Basic National Energy Plan revised the target level of electricity generated by nuclear sources as a percentage of total electricity generated to 29%, compared to 41% under the First Basic National Energy Plan announced in 2008, which covered the period from 2008 to 2030. In March 2018, the Government announced its plan to establish the Third Basic National Energy Plan by the end of 2018.

We cannot assure that the Eighth Basic Plan, the Second Basic National Energy Plan, or their respective successor plans will successfully achieve their intended goals, the foremost of which is to ensure, through carefully calibrated capacity expansion and other means, balanced overall electricity supply and demand in Korea at affordable costs to end users while promoting efficiency and environmental friendliness in the consumption and production of electricity. If there is significant variance between the projected electricity supply and demand considered in planning our capacity expansions and the actual electricity supply and demand, or if these plans otherwise fail to meet their intended goals or have other unintended consequences, this may result in inefficient use of our capital, mispricing of electricity and undue financing costs on the part of us and our generation subsidiaries, among others, which may have a material adverse effect on our results of operations, financial condition and cash flows.

From time to time, we may experience temporary power shortages or circumstances bordering on power shortages due to factors beyond our control, such as extreme weather conditions. Such circumstances may lead to increased end-user complaints and greater public scrutiny, which may in turn require us to modify our capacity expansion plans, and if we were to substantially modify our capacity plans, this might result in additional capital expenditures and, as a result, have a material adverse effect on our results of operations, financial condition and cash flows.

Although the Government makes significant efforts to encourage conservation of electricity, including through public education campaigns, there is no assurance that such efforts will have the desired effect of substantially reducing the demand for electricity or improving efficient use thereof.

***We are subject to various environmental regulations and related government initiatives, including in relation to climate change, which could cause significant compliance costs and operational liabilities.***

We are subject to national, local and overseas environmental laws and regulations, including increasing pressure to reduce emission of carbon dioxide from our electricity generation activities as well as our natural resource development endeavors overseas. Our operations could expose us to the risk of substantial liability relating to environmental, health and safety issues, such as those resulting from the discharge of pollutants and carbon dioxide into the environment and the handling, storage and disposal of hazardous materials. We may be responsible for the investigation and remediation of environmental conditions at current or former operational sites. We may also be subject to related liabilities (including liabilities for environmental damage, third party property damage or personal injury) resulting from lawsuits brought by governments or private litigants. In the course of our operations, hazardous wastes may be generated, disposed of or treated at third party-owned or -operated sites. If those sites become contaminated, we could also be held responsible for the cost of investigation and remediation of such sites for any related liabilities, as well as for civil or criminal fines or penalties.

We intend to fully comply with our environmental obligations. However, our environmental measures, including the use of, or replacement with, environmentally friendly but more expensive parts and equipment and budgeting capital expenditures for the installation or modification of such facilities, may result in increased



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operating costs and liquidity requirement. The actual cost of installation, replacement, modification and/or operation of such equipment and related liquidity requirement may depend on a variety of factors that are beyond our control. There is no assurance that we will continue to be in material compliance with legal or regulatory requirements or satisfy social norms and expectations in the future in relation to the environment, including in respect of climate change.

In recent years, partly driven by growing public awareness and sensitivity toward climate change and other environmental issues as well as in an effort to capture the economic and social potential associated with renewable energy and new energy -related industries (such as smart grids, energy storage systems and electrical vehicles, among others), the Government has introduced and implemented a number of new measures designed to reduce carbon emission, minimize environmental damage and spur related business opportunities. Some key examples of such Government initiatives pertinent to our and our generation subsidiaries' operations are as follows:

*Carbon Emission Trading System, Related Emission Reduction Targets and the Greenhouse Gas Reduction Roadmap.* In accordance with the Act on Allocation and Trading of Greenhouse Gas Emission Allowances, enacted in March 2013, the Government is currently in the process of implementing a carbon emission trading system under which the Government will allocate the amount of permitted carbon emission to companies by industry and a company whose business emits more carbon than the permitted amount may purchase the right to emit more carbon through the carbon emission trading exchange. This system is expected to be implemented in three stages. During the first phase (2015 to 2017), the Government set up and made a test run of the trading system to ensure its smooth operation; during this phase, the carbon emission rights were allocated without charge. During the second phase (2018 to 2020), the system will be applied to a limited scope of industries and companies, where the carbon emission right will be allocated at a relatively low price, but not freely. The amount of required reduction for the second phase of 2018 to 2020 is expected to be determined by June 2018. During the third phase (2021 to 2025), the Government plans to run the system on an expanded scale with aggressive carbon emission reduction targets. In December 2016, the Government announced the Climate Change Response Initiatives and 2030 National Greenhouse Gas Reduction Roadmap, which set forth the carbon emission trading system as one of the primary means to reach the emission and greenhouse gas reduction targets of the policies. The 2030 National Greenhouse Gas Reduction Roadmap sets forth a national reduction target of greenhouse gas by 219 million tons in the aggregate, amounting to a 25.7% reduction by 2030. The roadmap also set forth reduction targets for eight domestic sectors and the first three sectors with the largest reduction targets are electricity generation, industry and buildings. Our business is classified as part of the electricity generation sector, for which greenhouse gas reduction of 64.5 million tons is requested by year 2030. We are aiming to contribute to 80% of such reduction target for the sector, while such reduction target may change pursuant to an amendment to the 2030 National Greenhouse Gas Reduction Roadmap which the Government is expected to announce in 2018. Adhering to such emission and greenhouse gas reduction requirement is expected to result in our incurring significant compliance costs.

*Regulation of Decrepit Coal-Fired Generation Units.* As a measure to address the high level of particulate matter pollution, the Government temporarily suspended the operations of eight coal-fired generation units that are 30 years or older throughout the month of June 2017. Subsequently, in July 2017, two of these units were shut down completely and one unit switched fuel from coal to wood pallets. As part of the Comprehensive Measures against Particulate Matter and the Eighth Basic Plan, announced by the Government in September 2017 and December 2017, respectively, the Government set forth the following



policy directions relating to coal-fired generation units: (i) two coal-fired generation units scheduled for construction and four existing coal-fired generation units shall convert to LNG fuel use, (ii) in principle, construction of new coal-fired generation units shall not be planned, (iii) seven of the coal-fired generation units that are 30 years or older will be shut down on an accelerated schedule, (iv) coal-fired generation units that are 30 years or older shall temporarily cease operations from March through June of each year, (v) coal-fired generation units shall be put through comprehensive functional and environmental upgrades and (vi) coal-fired generation units shall be

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subject to emission standards that are twice as more rigorous than the current standards to be in effect by the first half of 2018. Although such plans may be subject to change, compliance with such measures is expected to result in our incurring significant costs, including in connection with adherence to more stringent particulate matter pollution regulations, retrofitting and overall replacement of environmental facilities.

*Coal Consumption Tax.* In January 2014, largely based on policy considerations of tax equity among different fuel types as well as environmental concerns, the Ministry of Strategy and Finance announced that, effective July 1, 2014, consumption tax will apply to bituminous coal, which previously was not subject to consumption tax unlike other fuel types such as LNG or bunker oil. Pursuant to the amended Individual Consumption Tax Act effective as of April 1, 2018, which involved an increase of the unit tax rate for coal by Won 6 across the board, the base tax rate (which is subject to certain adjustments) is Won 36 per kilogram for bituminous coal; however, due to concerns on the potential adverse effect on industrial activities, the applicable tax rate is applied differently based on the net heat generation amount. The currently applicable tax rate for bituminous coal is Won 33 per kilogram for net heat generation of less than 5,000 kilocalories, Won 36 per kilogram for net heat generation of 5,000 to 5,500 kilocalories and Won 39 per kilogram for net heat generation of 5,500 kilocalories or more. In contrast, the currently applicable tax rate for LNG is Won 60 per kilogram. Since bituminous coal currently represents the largest fuel type for our electricity generation, accounting for approximately 52.2% of our entire fuel requirements in 2017 in terms of electricity output, we expect the coal consumption tax thereon will result in an increase of our overall fuel costs.

*Renewable Portfolio Standard.* Under this program, each of our generation subsidiaries is required to generate a specified percentage of total electricity to be generated by such generation subsidiary in a given year in the form of renewable energy or, in case of a shortfall, purchase a corresponding amount of a Renewable Energy Certificate (a form of renewable energy credit) from other generation companies whose renewable energy generation surpass such percentage. The target percentage was 3.0% in 2015, 3.5% in 2016, 4.0% in 2017, 5.0% in 2018 and will incrementally increase to 10.0% by 2023. Fines are to be levied on any subsidiary that fails to do so in the prescribed timeline. In 2016, all six of our generation subsidiaries met the target through renewable energy generation and/or the purchase of a Renewable Energy Certificate. Compliance by our generation subsidiaries of the 2017 target is currently under evaluation, and if any generation subsidiary is found to have failed to meet the target for 2017 or for subsequent years, such generation subsidiary may become subject to fines. Additionally, as the target percentage is subject to change, changes to the target percentage may result in additional expenses for our generation subsidiaries.

*Renewable Energy 3020 Plan.* In December 2017, the Ministry of Trade, Industry and Energy announced the Renewable Energy 3020 Plan, an initiative to increase the generation and use of renewable energy on a nationwide basis. The Government plans to increase the required percentage of total electricity to be generated from renewable energy sources from 7% in 2016 to 10.5% and 20% by 2022 and 2030, respectively. Moreover, the Government plans to increase the domestic renewable energy generation capacity to 63.8 gigawatts by 2030 through the expansion of solar and wind power generation capacities to 36.5 gigawatts and 17.7 gigawatts, respectively, by 2030.

*New Energy Industry Fund.* In January 2016, the Ministry of Trade, Industry and Energy announced an initiative to promote the new energy industry by creating the New Energy Industry Fund, which is made up

of funds sponsored by government-affiliated energy companies. We contributed Won 500 billion to the funds in 2016. The purpose of these funds is to invest in substantially all frontiers of the new energy industry, including renewable energy, energy storage systems, electric vehicles, small-sized self-sustaining electricity generation grids known as micro-grids , among others, as well as invest in start-up companies, ventures, small- to medium-sized enterprise and project businesses that engage in these businesses but have not previously attracted sufficient capital from the private sector.

*Environmental and safety considerations in electricity supply and demand planning.* In March 2017, the Electricity Business Act was amended to the effect that starting in June 2017, future national

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planning for electricity supply and demand in Korea should consider the environmental and safety impacts of such planning. However, to-date, no specific guidelines have been provided by the Government as to how to implement this provision, and it is therefore difficult to assess in advance what impact such provision will have on our business, results of operations or financial condition.

Complying with these Government initiatives and operating programs in furtherance thereof has involved and will likely involve significant costs and resources on our part. We and our generation subsidiaries could also become subject to substantial fines and other forms of penalties for non-compliance. We expect that the additional costs associated with implementing and operating these programs and otherwise complying with these programs will be covered by a corresponding increase in electricity tariff. However, there is no assurance that, particularly given the wide-ranging policy priorities for the Government, it will in fact raise the electricity tariff to a level sufficient to fully cover such additional costs, do so on a timely basis or at all. If the Government does not do so or provide us and our generation subsidiaries with other forms of assistance to offset the costs involved, our results of operation, financial condition and cash flows may be materially and adversely affected.

See Item 4.B. Business Overview Environmental Programs.

### ***We may require a substantial amount of additional indebtedness to refinance existing debt and for future capital expenditures.***

We anticipate that a substantial amount of additional indebtedness will be required in the coming years in order to refinance existing debt, make capital expenditures for construction of generation plants and other facilities and/or make acquisitions, invest in renewable energy and the new energy industry projects and fund our overseas businesses. In 2015, 2016 and 2017, our capital expenditures in relation to the foregoing amounted to Won 15,750 billion, Won 13,950 billion and Won 13,711 billion, respectively, and our budgeted capital expenditures for 2018, 2019 and 2020 amount to Won 15,816 billion, Won 17,180 billion and Won 17,580 billion, respectively.

While we currently do not expect to face any material difficulties in procuring short-term borrowings to meet our liquidity and short-term capital requirements, there is no assurance that we will be able to do so. We expect that a portion of our long-term debt will need to be paid or refinanced through foreign currency-denominated borrowings and capital raising in international capital markets. Such financing may not be available on terms commercially acceptable to us or at all, especially if the global financial markets experience significant turbulence or a substantial reduction in liquidity or due to other factors beyond our control. If we are unable to obtain financing on commercially acceptable terms on a timely basis, or at all, we may be unable to meet our funding requirements for capital expenditures or debt repayment obligations, which could have a material adverse impact on our business, results of operations and financial condition.

In light of the general policy guideline of the Government for public institutions (including us and our generation subsidiaries) to reduce their respective overall debt levels, we and our generation subsidiaries have, in consultation with the Government and as approved by the Public Agencies Operating Committee, previously set for 2017 target debt-to-equity levels and undertaken various programs to reduce debt and improve the overall financial health. For further information, see Item 4.B. Business Overview Debt Reduction Program and Related Activities. Despite our best efforts, however, for reasons beyond our control, including macroeconomic environments, government regulations and market forces (such as international market prices for our fuels), we cannot assure whether we or our generation subsidiaries will be able to successfully reduce debt burdens or otherwise improve our financial health to a level contemplated by the Government or to a level that would be optimal for our capital structure. If we or our generation subsidiaries fail to do so or the measures taken by us or our generation subsidiaries to reduce debt levels or improve financial health have unintended adverse consequences, such developments may have an adverse effect on our business, results of operations and financial condition.



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***The movement of Won against the U.S. dollar and other currencies may have a material adverse effect on us.***

The Won has fluctuated significantly against major currencies from time to time. Even slight depreciation of Won against U.S. dollar and other foreign currencies may result in a material increase in the cost of fuel and equipment purchased by us from overseas since the prices for substantially all of the fuel materials and a significant portion of the equipment we purchase are denominated in currencies other than Won, generally in U.S. dollars. Changes in foreign exchange rates may also impact the cost of servicing our foreign currency-denominated debt. As of December 31, 2017, 19.4% of our long-term debt (including the current portion but excluding issue discounts and premium) without taking into consideration of swap transactions, was denominated in foreign currencies, principally U.S. dollars. In addition, even if we make payments in Won for certain fuel materials and equipment, some of these fuel materials may originate from other countries and their prices may be affected accordingly by the exchange rates between the Won and foreign currencies, especially the U.S. dollar. Since the substantial majority of our revenues are denominated in Won, we must generally obtain foreign currencies through foreign currency-denominated financings or from foreign currency exchange markets to make such purchases or service such debt. As a result, any significant depreciation of Won against the U.S. dollar or other major foreign currencies will have a material adverse effect on our profitability and results of operations.

***We may not be successful in implementing new business strategies.***

As part of our overall business strategy, we plan to (i) strengthen competitiveness in our core operations by enhancing efficiency of our generation, transmission and distribution networks and related facilities, (ii) expand and develop new businesses by diversifying our overseas business and actively addressing climate change, (iii) create a platform for future growth by developing an ecosystem focused on new energy technologies, and (iv) strengthen our management system for sustainable growth.

Due to their inherent uncertainties, such new and expanded strategic initiatives expose us to a number of risks and challenges, including the following:

new and expanded business activities may require unanticipated capital expenditures and involve additional compliance requirements;

new and expanded business activities may result in less growth or profit than we currently anticipate, and there can be no assurance that such business activities will become profitable at the level we desire or at all;

certain of our new and expanded businesses, particularly in the areas of renewable energy, require substantial government subsidies to become profitable, and such subsidies may be substantially reduced or entirely discontinued;

we may fail to identify and enter into new business opportunities in a timely fashion, putting us at a disadvantage vis-à-vis competitors, particularly in overseas markets; and

we may need to hire or retrain personnel to supervise and conduct the relevant business activities.

As part of our business strategy, we may also seek, evaluate or engage in potential acquisitions, joint ventures, strategic alliances, restructurings, combinations, rationalizations, divestments or other similar opportunities. The prospects of these initiatives are uncertain, and there can be no assurance that we will be able to successfully implement or grow new ventures, and these ventures may prove more difficult or costly than what we originally anticipated. In addition, we regularly review the profitability and growth potential of our existing and new businesses. As a result of such review, we may decide to exit from or to reduce the resources that we allocate to new or existing ventures in the future. There is a risk that these ventures may not achieve profitability or operational efficiencies to the extent originally anticipated, and we may fail to recover investments or expenditures that we have already made. Any of the foregoing may have a material adverse effect on our reputation, business, results of operations, financial condition and cash flows.

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*We plan to pursue overseas expansion opportunities that may subject us to different or greater risks than those associated with our domestic operations.*

While our operations have, to-date, been primarily based in Korea, we and our generation subsidiaries may expand, on a selective and opportunistic basis, overseas operations in the future. In particular, we and our generation subsidiaries may further expand our project portfolio to include the construction and operation of conventional thermal generation units, nuclear generation units and renewable energy power plants, transmission and distribution and (primarily through our generation subsidiaries) mining and development of fuel sources.

Overseas operations often involve risks that are different from those we face in our domestic operations, including the following:

challenges of complying with multiple foreign laws and regulatory requirements, including tax laws and laws regulating our operations and investments;

volatility of overseas economic conditions, including fluctuations in foreign currency exchange rates;

difficulties in enforcing creditors' rights in foreign jurisdictions;

risk of expropriation and exercise of sovereign immunity where the counterparty is a foreign government;

difficulties in establishing, staffing and managing foreign operations;

differing labor regulations;

political and economic instability, natural calamities, war and terrorism;

lack of familiarity with local markets and competitive conditions;

changes in applicable laws and regulations in Korea that affect foreign operations; and

obstacles to the repatriation of earnings and cash.

Any failure by us to recognize or respond to these differences may adversely affect the success of our operations in those markets, which in turn could materially and adversely affect our business and results of operations.

Furthermore, while we seek to enter into overseas business opportunities in a prudent manner, some of our new international business ventures carry inherent risks that are different from our traditional business of electricity power



generation, transmission and distribution. While the overseas businesses in the aggregate currently do not comprise a material portion of our overall business, as we are relatively inexperienced in these new types of overseas businesses, the actual revenues and profitability from, and investments and expenditures into, such ventures may be substantially different from what we plan or anticipate and may have a material adverse impact on our overall business, results of operations, financial condition and cash flows.

***An increase in electricity generated by and/or sourced from private power producers may erode our market position and hurt our business, growth prospects, revenues and profitability.***

As of December 31, 2017, we and our generation subsidiaries owned approximately 70.3% of the total electricity generation capacity in Korea (excluding plants generating electricity for private or emergency use). New entrants to the electricity business will erode our market share and create significant competition, which could have a material adverse impact on our financial condition and results of operations.

In particular, we compete with independent power producers with respect to electricity generation. The independent power producers accounted for 22.9% of total power generation in 2017 and 29.7% of total generation capacity as of December 31, 2017. As of December 31, 2017, there were 17 independent power

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producers in Korea, excluding renewable energy producers. Private enterprises became permitted to own and operate coal-fired power plants in Korea only after the Ministry of Trade, Industry and Energy approved plans for independent power producers to construct coal-fired power plants under the Sixth Basic Plan announced in February 2013. Under the Eighth Basic Plan announced in December 2017, (i) six coal-fired units under construction with aggregate generation capacity of 6,260 megawatts are scheduled to be completed between 2021 and 2022, and (ii) two coal-fired units scheduled for construction shall be converted to LNG fuel use. Currently there are no additional plans for construction of coal-fired power plants by independent power producers beyond 2022. While it remains to be seen whether construction of these generation units will be completed as scheduled, if these units were to be completed as scheduled and/or independent power producers are permitted to build additional generation capacity (whether coal-fired or not), our market share in Korea may decrease, which may have a material adverse effect on our results of operations and financial condition.

In addition, under the Community Energy System adopted by the Government in 2004, a minimal amount of electricity is supplied directly to consumers on a localized basis by independent power producers outside the cost-based pool system used by our generation subsidiaries and most independent power producers to distribute electricity nationwide. The purpose of this system is to geographically decentralize electricity supply and thereby reduce transmission losses and improve the efficiency of energy use. These entities do not supply electricity on a national level but are licensed to supply electricity on a limited basis to their respective districts under the Community Energy System. As of March 31, 2018, the aggregate generation capacity of suppliers participating in the Community Energy System amounted to less than 1% of that of our generation subsidiaries in the aggregate. We currently do not expect the Community Energy System to be widely adopted, especially in light of the significant level of capital expenditure required for such direct supply. However, if the Community Energy System is widely adopted, it may erode our currently dominant market position in the generation and distribution of electricity in Korea and may have a material adverse effect on our business, results of operations and financial condition.

Our market dominance in the electricity distribution in Korea also may face potential erosion in light of the recent Proposal for Adjustment of Functions of Public Institutions (Energy Sector) announced by the Government in June 2016. This proposal contemplates a gradual opening of the electricity trading market to the private sector although no detailed roadmap has been provided for such opening. It is currently premature to predict to what extent, or in what direction, the liberalization of the electricity trading market will happen. Nonetheless, any significant liberalization of the electricity trading market may result in substantial reduction of our market share in electricity distribution in Korea, which would have a material adverse effect on our business, results of operation and cash flows.

See also Item 4.B. Business Overview Competition.

***Labor unrest or increases in labor cost may adversely affect our operations.***

We and each of our generation subsidiaries have separate labor unions. As of December 31, 2017, approximately 69.0% of our and our generation subsidiaries employees in the aggregate were members of these labor unions. Since a six-week labor strike in 2002 by union members of our generation subsidiaries in response to a proposed privatization of one of our generation subsidiaries, there has been no material labor dispute. However, we cannot assure you that there will not be a major labor strike or other material disruptions of operations by the labor unions of us and our generation subsidiaries if the Government resumes privatization or other restructuring initiatives or for other reasons, which may adversely affect our business and results of operations.

Furthermore, the Government, as part of a response to low fertility amidst an aging population in Korea and to make the lives of workers more stable, has pledged to reduce the number of non-permanent workers and increase the employment of permanent workers, in part by transitioning from non-permanent to permanent many positions in the

public sector. According to guidelines announced by the Government in July 2017, we plan to

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finalize measures, by the end of 2018, to transition non-permanent positions to permanent positions, including types and number of non-permanent positions to be transitioned and conditions of transition. Although a majority of our and our generation subsidiaries' workforce are permanent employees, approximately 31.7% of the workforce consists of non-permanent positions that are part-time or outsourced. If we or our generation subsidiaries, as a result of these Government policies or otherwise, are required to or decide to transition non-permanent positions to permanent positions, this may result in increased labor costs for us or our generation subsidiaries and may have a material adverse impact on us or our generation subsidiaries' financial condition and results of operations.

***Operation of nuclear power generation facilities inherently involves numerous hazards and risks, any of which could result in a material loss of revenues or increased expenses.***

Through KHNP, we currently operate 24 nuclear-fuel generation units. Operation of nuclear power plants is subject to certain hazards, including environmental hazards such as leaks, ruptures and discharge of toxic and radioactive substances and materials. These hazards can cause personal injuries or loss of life, severe damage to or destruction of property and natural resources, pollution or other environmental damage, clean-up responsibilities, regulatory investigation and penalties and suspension of operations. Nuclear power has a stable and relatively inexpensive cost structure (which is least costly among the fuel types used by our generation subsidiaries) and is the second largest source of Korea's electricity supply, accounting for 26.8% of electricity generated in Korea in 2017. Due to significantly lower unit fuel costs compared to those for thermal power plants, our nuclear power plants are generally operated at full capacity with only routine shutdowns for fuel replacement and maintenance, with limited exceptions.

From time to time, our nuclear generation units may experience unexpected shutdowns or maintenance-related stoppage. For example, following an earthquake in the vicinity in September 2016, four nuclear generation units at the Wolsong site were shut down for approximately three months as part of a preventive and safety assurance program although these units were not directly affected by the earthquake. Furthermore, the utilization rates of our nuclear generation units fell in 2017 as our nuclear generation units stopped operation for safety and maintenance inspection more frequently in 2017 as compared to 2016, due to the Government's strengthening of safety enhancement measures. We expect the utilization of our nuclear generation units will be similarly affected in 2018. Any prolonged or substantial breakdown, failure or suspension of operation of a nuclear unit could result in a material loss of revenues, an increase in fuel costs related to the use of alternative power sources, additional repair and maintenance costs, greater risk of litigation and increased social and political hostility to the use of nuclear power, any of which could have a material adverse impact on our financial condition and results of operations.

In addition, heightened concerns regarding the safety of operating nuclear generation units could impede with our ability to operating them for an extended period of time or at all. For example, the nuclear power plant at Wolsong #1 unit began operations in 1982 and ended its operations in 2012 pursuant to its 30-year operating license. In February 2015, the Nuclear Safety and Security Commission (NSSC) evaluated the safety of operating Wolsong #1 unit and approved its extended operation until November 2022. However, a civic group filed a lawsuit to annul such decision, and in February 2017, the Seoul Administrative Court ruled against the NSSC. The NSSC appealed this decision, and the civic group filed an injunction to suspend the operation of the Wolsong #1 unit. The civic group's injunction was denied in July 2017. KHNP, which currently is operating the unit pursuant to the NSSC's initial decision, has joined this lawsuit. As of December 31, 2017, the book value of property, plant and equipment and provision for decommissioning costs of Wolsong #1 unit was Won 608 billion and Won 642 billion, respectively. We cannot assure you whether the courts will ultimately rule to grant the extension of life for Wolsong #1. In addition, it is reported that the Government will announce its decision by the first half of 2018 regarding the timing of the shutdown of Wolsong #1 unit. If Wolsong #1 unit is prohibited from operation, we may incur significant losses in connection with the property, plant and equipment of Wolsong #1 unit. In addition, the amount of provision may increase significantly, and the timing of actual cash outflows may be accelerated. There are seven other nuclear generation units whose life

under their initial operating license

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will expire in the next nine years, or by 2027. Thus, if the courts or the Government were to ultimately decide against the extension of life for Wolsong #1, we may find it more difficult to have the life of other nuclear units extended as well. The failure to extend the life of these units would result in a loss of revenues from such units and the increase in our overall fuel costs (as nuclear fuel is the cheapest compared to coal, LNG or oil), which could adversely affect our results of operation and financial condition. Furthermore, in September 2016, Greenpeace and 559 Korean nationals brought a lawsuit against the NSSC to revoke the permit the NSSC granted to KHNP in relation to the construction of Shin-Kori #5 and #6 nuclear generation units. This case is currently pending at the Seoul Administrative Court. If the construction of these new nuclear units is prohibited, we will experience a loss of revenues and an increase in fuel costs, which could adversely affect our results of operation and financial condition.

In order to prevent damages to the nuclear facilities such as a result of the tsunami and earthquake in March 2011 in Japan, KHNP prepared a comprehensive safety improvement plan including, but are not limited to, installing additional automatic shut-down systems for earthquakes, extending coastal barriers for seismic waves, procuring mobile power generators and storage batteries, installing passive hydrogen removers at nuclear facilities and improving the radiology emergency medical system. All follow-up measures were finalized in December 2015. KHNP also developed 10 additional supplementary safety measures by analysis of overseas plants and its current operations and implemented eight of such measures in 2017, with the two remaining measures to be implemented by 2020. However, there is no assurance that a similar or worse natural disaster may require the adoption and implementation of additional safety measures, which may be costly and have a material adverse impact on our financial condition and results of operations.

While releasing its five-year national governance plan in July 2017, the new Government led by President Moon Jae-in announced reforms indicating a shift away from previous energy policies. Subsequently, the Government unveiled its roadmap to denuclearization and shift in energy sources in October 2017 and announced the Eighth Basic Plan to implement such roadmap in December 2017. The Eighth Basic Plan focuses on, among other things, (i) decreasing the reliance on nuclear and coal-based supply sources, (ii) increasing utilization of renewable energy sources and (iii) balancing the existing cost-based pool system of purchase of electricity with an environmentally-focused pool system, in order to increase utilization of LNG energy sources, which are cleaner but more expensive than nuclear or coal energy sources. Accordingly, six new nuclear generation units in a planning stage (Shinhanwool #3 and #4, Chunji #1 and #2 and Singyu #1 and #2) would not be constructed, while five new nuclear plants under construction (Shin-Kori #4, #5, #6, Shin-Hanul #1 and #2) shall begin operation by 2023 upon completion of the construction. Future extensions of life of decrepit nuclear generation units would not be granted and the proportion of renewable energy sources would be increased. Such Government policies or any changes thereto may affect existing plans of our or our generation subsidiaries and have a material adverse impact on our or our generation subsidiaries financial condition and results of operations.

***The construction and operation of our generation, transmission and distribution facilities involve difficulties, such as opposition from civic groups, which may have an adverse effect on us.***

From time to time, we encounter social and political opposition against construction and operation of our generation facilities (particularly nuclear units) and, to a lesser extent, our transmission and distribution facilities. For example, we recently faced intense opposition from local residents and civic groups to the construction of transmission lines in the Milyang area, which we resolved through various compensatory and other support programs. Such opposition delayed the schedule for completion of this project. Although we and the Government have undertaken various community programs to address concerns of residents in areas near our facilities, civic and community opposition could result in delayed construction or relocation of our planned facilities, which could have a material adverse impact on our business and results of operations.



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**Table of Contents*****Our risk management policies and procedures may not be fully effective at all times.***

In the course of our operations, we must manage a number of risks, such as regulatory risks, market risks and operational risks. Although we devote significant resources to developing and improving our risk management policies and procedures and expect to continue to do so in the future, our risk management practices may not be fully effective at all times in eliminating or mitigating risk exposures in all market environments or against all types of risk, including risks that are unidentified or unanticipated, such as natural disasters or employee misconduct. For example, in May 2013, the Nuclear Safety and Security Commission ( NSSC ) of Korea discovered that certain parts used in several of our then-operating nuclear generation units had been supplied based on forged testing results. This discovery led to full internal investigation and investigation by the Prosecutor's Office, which in turn led to prosecutions and convictions of several current and former employees of KHNP on related and separate bribery charges, as well as termination of the then-president of KHNP as part of a broad disciplinary action. The incident also led to suspended operation of the related nuclear generation units for several months pending safety inspection. A similar incident involving forged testing results and bribery occurred also in November 2012. We and KHNP have fully cooperated with the authorities in terms of investigations as well as remedial and preventive measures, including enhanced internal compliance policies and procedures. We also believe we and our subsidiaries are in compliance in all material respects with internal compliance policies and procedures and all other additional safety measures initiated internally or required by regulatory and governmental agencies. However, we cannot assure you that, despite all precautionary and reform measures undertaken by us, these measures will prove to be fully effective at all times against all the risks we face or that an incident that that could cause harm to our reputation and operation will not happen in the future, including due to factors beyond our control.

***Our risk management procedures may not prevent losses in debt and foreign currency positions.***

We manage interest rate exposure for our debt instruments by limiting our variable rate debt exposure as a percentage of our total debt and closely monitoring the movements in market interest rates. We also actively manage currency exchange rate exposure for our foreign currency-denominated liabilities by measuring the potential loss therefrom using risk analysis software and entering into derivative contracts to hedge such exposure when the possible loss reaches a certain risk limit. To the extent we have unhedged positions or our hedging and other risk management procedures do not work as planned, our results of operations and financial condition may be adversely affected.

***The amount and scope of coverage of our insurance are limited.***

Substantial liability may result from the operations of our nuclear generation units, the use and handling of nuclear fuel and possible radioactive emissions associated with such nuclear fuel. KHNP carries insurance for its generation units and nuclear fuel transportation, and we believe that the level of insurance is generally adequate and is in compliance with relevant laws and regulations. In addition, KHNP is the beneficiary of Government indemnity which covers a portion of liability in excess of the insurance. However, such insurance is limited in terms of amount and scope of coverage and does not cover all types or amounts of losses which could arise in connection with the ownership and operation of nuclear plants. Accordingly, material adverse financial consequences could result from a serious accident or a natural disaster to the extent it is neither insured nor covered by the government indemnity.

In addition, our non-nuclear generation subsidiaries carry insurance covering certain risks, including fire, in respect of their key assets, including buildings and equipment located at their respective power plants, construction-in-progress and imported fuel and procurement in transit. Such insurance and indemnity, however, cover only a portion of the assets that these generation subsidiaries own and operate and do not cover all types or amounts of loss that could arise in connection with the ownership and operation of these power plants. In addition, unlike us, our generation subsidiaries are not permitted to self-insure, and accordingly have not self-insured, against risks of their uninsured



assets or business. Accordingly, material adverse financial consequences could result from a serious accident to the extent it is uninsured.

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In addition, because neither we nor our non-nuclear generation subsidiaries carry any insurance against terrorist attacks, an act of terrorism would result in significant financial losses. See Item 4.B. Business Overview Insurance.

***We may not be able to raise equity capital in the future without the participation of the Government.***

Under applicable laws, the Government is required to directly or indirectly own at least 51% of our issued capital stock. As of March 15, 2018, the last day on which our shareholders' registry was closed, the Government, directly and through Korea Development Bank (a statutory banking institution wholly owned by the Government), owned 51.1% of our issued capital stock. Accordingly, without changes in the existing Korean law, it may be difficult or impossible for us to undertake, without the participation of the Government, any equity financing in the future.

***We may be exposed to potential claims made by current or previous employees for unpaid wages for the past three years under the expanded scope of ordinary wages and become subject to additional labor costs arising from the broader interpretation of ordinary wages under such decision.***

Under the Labor Standards Act, an employee is legally entitled to ordinary wages. Under the guidelines previously issued by the Ministry of Employment and Labor, ordinary wages include base salary and certain fixed monthly allowances for work performed overtime during night shifts and holidays. Prior to the Supreme Court decision described below, many companies in Korea had typically interpreted these guidelines as excluding from the scope of ordinary wages fixed bonuses that are paid other than on a monthly basis, namely on a bi-monthly, quarterly or semi-annual basis, although such interpretation had been a subject of controversy and had been overruled in a few court cases.

In December 2013, the Supreme Court of Korea ruled that regular bonuses fall under the category of ordinary wages on the condition that those bonuses are paid regularly and uniformly, and that any agreement which excludes such regular bonuses from ordinary wage is invalid. One of the key rulings provides that bonuses that are given to employees (i) on a regular and continuous basis and (ii) calculated according to the actual number of days worked (iii) that are not incentive-based must be included in the calculation of ordinary wages. The Supreme Court further ruled that in spite of invalidity of such agreements, employees shall not retroactively claim additional wages incurred due to such court decision, in case that such claims bring to employees unexpected benefits which substantially exceeds the wage level agreed by employers and employees and cause an unpredicted increase in expenditures for their company, which would lead the company to material managerial difficulty or would be a threat to the existence of the company. In that case, the claim is not acceptable since it is unjust and is in breach of the principle of good faith.

As a result of such ruling by the Supreme Court of Korea, we and our subsidiaries became subject to a number of lawsuits filed by various industry-wide and company-specific labor unions based on claims that ordinary wage had been paid without including certain items that should have been included as ordinary wage. In July 2016, the court ruled against us, and in accordance with the court's ruling, in August 2016 we paid Won 55.1 billion to the employees for three years of back pay plus interest. As of December 31, 2017, 49 lawsuits were pending against our subsidiaries for an aggregate claim amount of Won 170 billion, for which our subsidiaries set aside an aggregate amount of Won 56 billion to cover any potential future payments of additional ordinary wage in relation to the related lawsuits. We cannot presently assure you that the court will not rule against our subsidiaries in these lawsuits, or that the foregoing reserve amount will be sufficient to cover the amounts payable under the court rulings.

Additionally, since the issue of determining which labor costs should be additionally included as part of ordinary wages has not been fully resolved by the courts reviewing the lawsuits to which our subsidiaries are a party and other ordinary wage lawsuits filed against other companies, we cannot presently assure you that there will not be additional

lawsuits in relation to ordinary wages and that we or our subsidiaries may not become

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liable for greater amount of damages as a result of these lawsuits. Furthermore, court decisions or labor legislations expanding the definition of ordinary wages may prospectively increase the labor costs of us and our subsidiaries. As a result, there can be no assurance that the above-described lawsuits and circumstances will not have a material adverse effect on our results of operations. See Item 8.A. Consolidated Statements and Other Financial Information Legal Proceedings.

***We are subject to cyber security risk.***

Recently, our activities have been subject to an increasing risk of cyber-attacks, the nature of which is continually evolving. For example, in December 2014, KHNP became subject to a cyber terror incident. According to the findings of the Prosecutor's Office announced in March 2015, hackers suspected to be affiliated with North Korean authorities stole and distributed a mock blueprint for a hypothetical nuclear unit that had been devised for educational purposes, hacked into the computer network of former KHNP employees and threatened to shut down certain of KHNP's nuclear plants. The hacking incident did not jeopardize our nuclear operation in any material respect and none of the stolen information was material to our nuclear operation or the national nuclear policy. In response to such incident, we and our subsidiaries have further bolstered anti-hacking and other preventive and remedial measures in relation to potential cyber terror. However, there is no assurance that a similar or more serious hacking or other forms of cyber terror will not happen with respect to us and our generation subsidiaries, which could have a material adverse impact on our business, financial condition and results of operations.

***We engage in limited activities relating to Iran and may become subject to sanctions under relevant laws and regulations of the United States and other jurisdictions as a result of such activities, which may adversely affect our business and reputation.***

The U.S. Department of the Treasury's Office of Foreign Assets Control, or OFAC, administers and enforces certain laws and regulations (which we refer to as the OFAC sanctions) that impose restrictions upon activities or transactions within U.S. jurisdiction with certain countries, governments, entities and individuals that are the subject of OFAC sanctions, including Iran. Even though non-U.S. persons generally are not directly bound by OFAC sanctions, in recent years OFAC has asserted that such non-U.S. persons can be held liable on various legal theories if they engage in transactions completed in part in the United States or by U.S. persons (such as, for example, wiring an international payment that clears through a bank branch in New York). The European Union also enforces certain laws and regulations that impose restrictions upon nationals and entities of, and business conducted in, member states with respect to activities or transactions with certain countries, governments, entities and individuals that are the subject of such laws and regulations, including Iran. The United Nations Security Council and other governmental entities also impose similar sanctions.

In addition to the OFAC sanctions described above, the United States also maintains indirect sanctions under authority of, among others, the Iran Sanctions Act, the Comprehensive Iran Sanctions, Accountability and Divestment Act of 2010, or CISADA, the National Defense Authorization Act for Fiscal Year 2012, or the NDAA, the Iran Threat Reduction and Syria Human Rights Act of 2012, or ITRA, various Executive Orders, the Iran Freedom and Counter-Proliferation Act of 2012, or IFCA, and the Countering America's Adversaries Through Sanctions Act, or CAATSA. These indirect sanctions, which we refer to collectively as U.S. secondary sanctions, provide authority for the imposition of U.S. sanctions on foreign parties that provide services in support of certain Iranian activities in the energy, shipping and military sectors, among others.

On July 14, 2015, the so-called P5+1 powers (consisting of the United States, the United Kingdom, Germany, France, Russia, and China) and the European Union, or the EU, entered into an agreement with Iran known as the Joint Comprehensive Plan of Action Regarding the Islamic Republic of Iran's Nuclear Program, or the JCPOA. The JCPOA

is intended to significantly restrict Iran's ability to develop and produce nuclear weapons. Upon implementation of the JCPOA on January 16, 2016 the United States, the EU, and the UN suspended certain nuclear-related sanctions against Iran following an announcement by the International Atomic Energy Agency that Iran had fulfilled its initial obligations under the JCPOA.

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The U.S. secondary sanctions that were suspended on January 16, 2016 have not been repealed. Rather, certain waivers of statutory provisions were put into place, certain Presidential Executive Orders were revoked, and certain persons were removed from the relevant U.S. sanctions lists. Under the JCPOA, sanctions may be re-imposed if the United States or any other member of the P5+1 or the EU invokes provisions of the JCPOA for the re-imposition of sanctions. Additionally, the United States, the EU, or the UN may impose new sanctions against Iran or against persons conducting business in Iran even while the JCPOA remains in force.

Violations of OFAC sanctions via transactions with a U.S. jurisdictional nexus can result in substantial civil or criminal penalties. A range of sanctions may be imposed on companies that engage in sanctionable activities within the scope of U.S. secondary sanctions, including, among other things, the blocking of any property subject to U.S. jurisdiction in which the sanctioned company has an interest, which could include a prohibition on transactions or dealings involving securities of the sanctioned company or the sanctioned company effectively losing access to the U.S. financial system.

In Iran, we are currently engaged in limited business activities, none of which has progressed beyond the development stage. Our activities in Iran are coordinated by a representative office located in Tehran, Iran. None of our activities in Iran involve U.S. persons or our U.S. affiliates. Our counterparties in the projects described below are mostly Iranian governmental entities or Iranian state-owned enterprises.

We have not realized any revenue or profit from our activities in Iran. We also have not to-date made any investments in Iran, other than fees paid to our service providers in Iran for us to carry out certain of the projects listed below and expenses to run our representative office in Tehran in the ordinary course of business.

A summary of our current projects in Iran follows.

We have entered into cooperation agreements with Tavanir, an Iranian state-owned electricity provider, under which we will carry out (i) a pilot advanced metering infrastructure ( AMI ) project, (ii) a project for modeling the installation of energy storage systems in Iran and (iii) a project for temporarily leasing our thermo auto analysis diagnosis system for free of charge. AMI enables checking the electricity usage amount remotely. The project is being conducted in Pak Dasht City and Hormuz Island, Iran. This pilot project involves installing approximately 2,500 smart meters. The development and production of AMI equipment and materials are complete, and we have obtained permission from the Ministry of Trade, Industry and Energy of Korea to export the equipment. We shipped the AMI equipment and materials to Iran in September 2017 and completed the installation in December 2017. We completed the trial run of the AMI system in March 2018 and we plan to hand over the operation of the system to Tavanir by May 2018. As for the project for the energy storage systems in Iran, we are currently in the process of collecting requisite data for the project, having selected the parties to participate in the installation of the energy storage systems. We plan to lease our thermo auto analysis diagnosis system to Tavanir for free of charge, for approximately two months ending in May 2018, after which we will retrieve the equipment to Korea.

We are in the process of negotiating various agreements with Tavanir under which we would provide consulting services relating to (i) installation of a distribution management system in Iran and (ii) development of a clean development mechanism (CDM) for the recovery and recycling of the sulfur hexafluoride gas in Iran for purposes of carbon emission reduction.

We are in the process of negotiating an agreement with Niroo Research Institute, a research organization affiliated with the Ministry of Energy of Iran, under which we would provide consulting services relating to improvement of Iran's electricity demand through load management, efficiency improvement and tariff system improvement.

We have participated in a feasibility study of the proposed adoption by Tavanir of a 765 kV electricity transmission network. Our task involved reviewing Tavanir's feasibility report. A final report summarizing our review of the feasibility report and a technical review of the transmission network was submitted in February 2017.

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We engaged Mehr Renewable Energy Company for project design documentation services to register with United Nations Framework Convention on Climate Change our CDM business to be conducted in Iran.

We are in the process of negotiating a contract with Thermal Power Plant Holding Company of Iran under which we would build and operate combined cycle power plants at Zanjan and Neyzar, Iran.

We have submitted a draft proposal to the Ministry of Energy of Iran under which we would provide consulting services in relation to establishment of information and communication technology infrastructure in Iran.

We have submitted a draft proposal to the Iran Energy Efficiency Organization under which we would provide consulting services in relation to AMI security in Iran in December 2016.

We are in the process of conducting a feasibility study for a solar power project in Iran.

We are in the process of reviewing the feasibility of the rehabilitation of an old power plant in Iran.

KOWEPO is currently pursuing a build, operate and transfer project relating to a 500 megawatts combined cycle power plant in Sirjan, Kerman in Iran, through a consortium with Daewoo E&C, a Korean construction company, and Gohar Energy, an Iranian energy company. The consortium is currently in the process of preparing an application to Thermal Power Plant Holdings, a holding company for a state-run Iranian thermoelectric power plant, for the project.

Korea Electric Power Research Institute, which is operated by us, has entered into cooperation agreements with Iran's Niroo Research Institute regarding various joint research and development efforts relating to power plants, renewable energy, smart grids and other energy-related technologies.

To the extent any of our subsidiaries have dealings in or relating to Iran, we have internal policies and procedures, as well as a monitoring system, which are designed to prevent and detect violations of applicable laws, including applicable sanctions laws. We do not believe that our current activities relating to Iran violate OFAC sanctions or are sanctionable under U.S. secondary sanctions, and in any event, we believe we are in compliance with applicable sanctions laws. We believe we are not in violation of any laws concerning re-exports of U.S.-origin goods to Iran. Moreover, to the extent our activities were sanctionable under those U.S. secondary sanctions programs that were lifted pursuant to the JCPOA, we may face U.S. secondary sanctions if such sanctions are re-imposed.

There can be no assurances that the relevant relief pursuant to the JCPOA will continue to be available in the future, and even if it does, there is no guarantee that our activities relating to Iran will not be found to violate the OFAC sanctions or involve sanctionable activities under U.S. secondary sanctions, or that any other government will not determine that our activities violate applicable sanctions of other countries. Laws related to Iran sanctions are complex, dynamic, and subject to evolving interpretations by the regulatory authorities. The re-imposition or snap-back of U.S. sanctions pursuant to the JCPOA could also occur, and the scope of re-imposed sanctions would be determined at that time.



Certain institutional investors, including state and municipal governments in the United States and universities, as well as financial institutions, have proposed or adopted initiatives regarding investments in companies that do business with countries that are the target of OFAC sanctions, including Iran. Accordingly, as a result of our activities related to Iran, certain investors may not wish to invest in our shares or ADSs or do business with us. In September 2016, the New Jersey Department of the Treasury's Division of Investment notified of its preliminary determination of divestment pursuant to the New Jersey divestment laws. Such preliminary determination was reversed in February 2017 after we explained such determination was based on incorrect information about our business in Iran. As of February 2018, we were listed on the Iowa Public Employees' Retirement System's (IPERS) Iran Prohibited Companies List. Such divestment initiatives and the decision not to invest in, or to divest from our shares or ADSs may have a material negative impact our reputation and the value of our shares or ADSs.

Violations of sanctions can result in penalties or other consequences adverse to us. Certain of our counterparties may be subjected to sanctions. If we violate sanctions, we may ourselves be subjected to sanctions or penalties. Our business and results of operations may be adversely affected or we may suffer reputational

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damage. In addition, such sanctions may prevent us from consummating or continuing any of the projects we are currently pursuing in Iran, which could adversely affect our results of operations. Also, at any time, certain investors may divest their interests in our shares if we are found to have violated or are suspected of violating applicable sanctions law arising from our operation in a sanctioned country such as Iran.

***We purchase goods and services from Russia and those activities may be adversely impacted in a material manner by economic sanctions concerning Russia imposed by the United States and other jurisdictions.***

The United States and the European Union have imposed economic sanctions concerning Russia. OFAC sanctions concerning Russia, *inter alia*, block the property of certain designated individuals and entities, target certain sectors of the Russian economy and prohibit certain transactions with certain targeted persons in targeted sectors of the Russian economy, and restrict investment in and trade with the Crimea region of Ukraine. Additionally, non-U.S. persons that engage in certain prohibited transactions concerning Russia or with certain sanctioned Russian persons or entities may be subject to secondary sanctions. In August 2017, the United States Congress passed CAATSA, which introduced a host of new U.S. secondary sanctions concerning Russia including, *inter alia*, for certain dealings with the Russian energy sector, support for Russia's energy export pipelines and engaging in a significant transaction with a person that is part of, or operates for or on behalf of, Russia's defense or intelligence sectors. Additionally, a non-U.S. person that knowingly facilitates a significant transaction or transactions for or on behalf of any person subject to sanctions imposed by the U.S. with respect to the Russian Federation or any child, spouse, parent, or sibling of such a sanctioned person may also be subject to secondary sanctions.

In 2017, we purchased 11% of our bituminous coal requirements from Russia. Additionally, we also purchase uranium and uranium separation services from a Russian supplier. In 2017, the total value of all goods and services purchased from Russia was approximately US\$1 billion.

## **Risks Relating to Korea and the Global Economy**

***Unfavorable financial and economic conditions in Korea and globally may have a material adverse impact on us.***

We are incorporated in Korea, where most of our assets are located and most of our income is generated. As a result, we are subject to political, economic, legal and regulatory risks specific to Korea, and our business, results of operations and financial condition are substantially dependent on the Korean consumers' demand for electricity, which are in turn largely dependent on developments relating to the Korean economy.

The Korean economy is closely integrated with, and is significantly affected by, developments in the global economy and financial markets. In recent years, adverse conditions and volatility in the worldwide financial markets, fluctuations in oil and commodity prices and the general weakness of the global economy have contributed to the uncertainty of global economic prospects in general and have adversely affected, and may continue to adversely affect, the Korean economy, which in turn could adversely affect our business, financial condition and results of operations. As the Korean economy is highly dependent on the health and direction of the global economy, the prices of our securities may be adversely affected by investors' reactions to developments in other countries. In addition, due to the ongoing volatility in the global financial markets, the value of the Won relative to the U.S. dollar has also fluctuated significantly in recent years, which in turn also may adversely affect our financial condition and results of operations.

Factors that determine economic and business cycles in the Korean or global economy are for the most part beyond our control and inherently uncertain. In light of the high level of interdependence of the global economy, any of the foregoing developments could have a material adverse effect on the Korean economy and financial markets, and in

turn on our business and profitability.

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More specifically, factors that could have an adverse impact on Korea's economy in the future include, among others:

increases in inflation levels, volatility in foreign currency reserve levels, commodity prices (including oil prices), exchange rates (particularly against the U.S. dollar), interest rates, stock market prices and inflows and outflows of foreign capital, either directly, into the stock markets, through derivatives or otherwise, including as a result of increased uncertainty in the wake of a referendum in the United Kingdom in June 2016 that voted in favor of exiting from the European Union, commonly known as "Brexit";

difficulties in the financial sectors in Europe, China and elsewhere and increased sovereign default risks in select countries and the resulting adverse effects on the global financial markets;

adverse developments in the economies of countries and regions to which Korea exports goods and services (such as the United States, Europe, China and Japan), or in emerging market economies in Asia or elsewhere that could result in a loss of confidence in the Korean economy, including potentially as a result of the Brexit;

social and labor unrest or declining consumer confidence or spending resulting from lay-offs, increasing unemployment and lower levels of income;

uncertainty and volatility and further decreases in the market prices of Korean real estate;

a decrease in tax revenues and a substantial increase in the Government's expenditures for unemployment compensation and other social programs that together could lead to an increased Government budget deficit;

political uncertainty, including as a result of increasing strife among or within political parties in Korea, and political gridlock within the government or in the legislature, which prevents or disrupts timely and effective policy making to the detriment of Korean economy, as well as the impeachment and indictment of the former president following a series of scandals and social unrest, which also involved the investigation of several leading Korean conglomerates and arrest of their leaders on charges of bribery and other possible misconduct;

deterioration in economic or diplomatic relations between Korea and its trading partners or allies, including deterioration resulting from territorial or trade disputes or disagreements in foreign policy, including as a result of any potential renegotiation of free trade agreements, or the ongoing tension between Korea and China in relation to the decision to allow deployment by the United States of the Terminal High Altitude Defense system known as "THAAD" in Korea;

increases in social expenditures to support the aging population in Korea or decreases in economic productivity due to the declining population size in Korea;

any other development that has a material adverse effect in the global economy, such as an act of war, the spread of terrorism or a breakout of an epidemic such as SARS, avian flu, swine flu, Middle East Respiratory Syndrome, ebola or Zika virus, or natural disasters, earthquakes and tsunamis and the related disruptions in the relevant economies with global repercussions;

hostilities involving oil-producing countries in the Middle East and elsewhere and any material disruption in the supply of oil or a material increase in the price of oil resulting from such hostilities; and

an increase in the level of tensions or an outbreak of hostilities in the Korean peninsula or between North Korea and the United States.

Any future deterioration of the Korean economy could have an adverse effect on our business, financial condition and results of operations.

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***Tensions with North Korea could have an adverse effect on us and the market value of our shares.***

Relations between Korea and North Korea have been tense throughout Korea's modern history. The level of tension between the two Koreas has fluctuated and may increase abruptly as a result of current and future events. In particular, there continues to be uncertainty regarding the long-term stability of North Korea's political leadership since the succession of Kim Jong-un to power following the death of his father in December 2011, which has raised concerns with respect to the political and economic future of the region. In February 2017, Kim Jong-un's half-brother, Kim Jong-nam, was reported to have been assassinated in an international airport in Malaysia.

In addition, there continues to be heightened security tension in the region stemming from North Korea's hostile military and diplomatic actions, including in respect of its nuclear weapons and long-range missile programs. Some examples from recent years include the following:

In November 2017, North Korea conducted a test launch of another intercontinental ballistic missile, which, due to its improved size, power and range of distance, may potentially enable North Korea to target the United States mainland.

Recently, on September 3, 2017, North Korea conducted its sixth nuclear test, claiming it had tested a hydrogen bomb that could be mounted on an intercontinental ballistic missile. In response, on September 12, 2017, the United Nations Security Council unanimously adopted a resolution imposing additional sanctions on North Korea including new limits on gas, petrol and oil imports, a ban on textile exports and measures to limit North Korean laborers from working abroad.

On August 29, 2017, North Korea tested an intermediate-range ballistic missile which flew directly over northern Japan before landing in the Pacific Ocean. In response, the United Nations Security Council unanimously adopted a statement condemning such launch, reiterating demands that North Korea halt its ballistic missile and nuclear weapons programs.

On July 4, 2017, North Korea tested its first intercontinental ballistic missile. In response, the U.S. government and the Government of Japan both issued statements condemning North Korea and conducted a joint military exercise on July 5, 2017. On July 28, 2017, North Korea tested a second intercontinental ballistic missile which landed in the Sea of Japan, inside Japan's Economic Exclusion Zone. In response, on August 5, 2017, the United Nations Security Council unanimously adopted a resolution that strengthened sanctions on North Korea. The resolution includes a total ban on all exports of coal, iron, iron ore, lead, lead ore and seafood, which is expected to reduce North Korea's export revenue by a third each year.

In March 2017, North Korea launched four mid-range missiles, which landed off the east coast of the Korean peninsula.

On September 9, 2016, North Korea conducted its fifth nuclear test, which has been the largest in scale among North Korea's nuclear tests thus far. According to North Korean announcements, the test was

successful in detonating a nuclear missile. The test created a sizable earthquake in South Korea. In response, in February 2017 the U.N. Security Council adopted Resolution 2321 (2016) against North Korea, the purpose of which is to strengthen its sanctions regime against North Korea and to condemn North Korea's September 9, 2016 nuclear test in the strongest terms.

On February 10, 2016, in retaliation of North Korea's recent launch of a long-range rocket, South Korea announced that it would halt its operations of the Kaesong Industrial Complex to impede North Korea's utilization of funds from the industrial complex to finance its nuclear and missile programs. In response, North Korea announced on February 11, 2016 that it would expel all South Korean employees from the industrial complex and freeze all South Korean assets there.

On February 7, 2016, North Korea launched a rocket, claimed by them to be carrying a satellite intended for scientific observation. The launch was widely suspected by the international community to

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be a cover for testing a long-range missile capable of carrying a nuclear warhead. On February 18, 2016, the President of the United States signed into law mandatory sanctions on North Korea to punish it for its recent nuclear and missile tests, human rights violations and cybercrimes. The bill, which marks the first measure by the United States to exclusively target North Korea, is intended to seize the assets of anyone engaging in business related to North Korea's weapons program, and authorizes US\$50 million over five years to transmit radio broadcasts into the country and support humanitarian assistance projects. On March 2, 2016, the United Nations Security Council voted unanimously to adopt a resolution to impose sanctions against North Korea, which include inspection of all cargo going to and from North Korea, a ban on all weapons trade and the expulsion of North Korean diplomats who engage in illicit activities. Also, on March 4, 2016, the European Union announced that it would expand its sanctions on North Korea, adding additional companies and individuals to its list of sanction targets. On April 1, 2016, North Korea fired a short-range surface-to-air missile in apparent protest of these sanctions adopted by the United States and the United Nations Security Council.

On January 6, 2016, North Korea announced that it had successfully conducted its first hydrogen bomb test, hours after international monitors detected a 5.1 magnitude earthquake near a known nuclear testing site in the country. The claims have not been verified independently. The alleged test followed a statement made in the previous month by Kim Jong-un, who claimed that North Korea had developed a hydrogen bomb.

In August 2015, two Korean soldiers were injured in a landmine explosion near the South Korean demilitarized zone. Claiming the landmines were set by North Koreans, the South Korean army re-initiated its propaganda program toward North Korea utilizing loudspeakers near the demilitarized zone. In retaliation, the North Korean army fired artillery rounds on the loudspeakers, resulting in the highest level of military readiness for both Koreas. High-ranking officials from North and South Korea subsequently met for discussions and entered into an agreement on August 25, 2015 intending to deflate military tensions.

From time to time, North Korea has fired short- to medium-range missiles from the coast of the Korean peninsula into the sea. In March 2015, North Korea fired seven surface-to-air missiles into waters off its east coast in apparent protest of annual joint military exercises being held by Korea and the United States.

North Korea renounced its obligations under the Nuclear Non-Proliferation Treaty in January 2003 and conducted three rounds of nuclear tests between October 2006 to February 2013, which increased tensions in the region and elicited strong objections worldwide. In response, the United Nations Security Council unanimously passed resolutions that condemned North Korea for the nuclear tests and expanded sanctions against North Korea.

North Korea's economy also faces severe challenges, including severe inflation and food shortages, which may further aggravate social and political tensions within North Korea. In addition, reunification of Korea and North Korea could occur in the future, which would entail significant economic commitment and expenditure by Korea that may outweigh any resulting economic benefits of reunification. On April 27, 2018, North Korea's Kim Jong-un and the President of South Korea attended a summit held in the Demilitarized Zone of the Korean peninsula.



There can be no assurance that the level of tension on the Korean peninsula will not escalate in the future or that the political regime in North Korea may not suddenly collapse. Any further increase in tension or uncertainty relating to the military, political or economic stability in the Korean peninsula, including a breakdown of diplomatic negotiations over the North Korean nuclear program, occurrence of military hostilities, heightened concerns about the stability of North Korea's political leadership or its actual collapse, a leadership crisis, a breakdown of high-level contacts or accelerated reunification could have a material adverse effect on our business, financial condition and results of operations, as well as the price of our common shares and our American depositary shares.

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***We are generally subject to Korean corporate governance and disclosure standards, which differ in significant respects from those in other countries.***

Companies in Korea, including us, are subject to corporate governance standards applicable to Korean public companies which differ in many respects from standards applicable in other countries, including the United States. As a reporting company registered with the Securities and Exchange Commission and listed on the New York Stock Exchange, we are, and will continue to be, subject to certain corporate governance standards as mandated by the Sarbanes-Oxley Act of 2002, as amended. However, foreign private issuers, including us, are exempt from certain corporate governance standards required under the Sarbanes-Oxley Act or the rules of the New York Stock Exchange. We and our generation subsidiaries are also subject to a number of special laws and regulations to Government-controlled entities, including the Act on the Management of Public Institutions. For a description of significant differences in corporate governance standards, see Item 16G. Corporate Governance. There may also be less publicly available information about Korean companies, such as us, than is regularly made available by public or non-public companies in other countries. Such differences in corporate governance standards and less public information could result in less than satisfactory corporate governance practices or disclosure to investors in certain countries.

***You may not be able to enforce a judgment of a foreign court against us.***

We are a corporation with limited liability organized under the laws of Korea. Substantially all of our directors and officers and other persons named in this annual report reside in Korea, and all or a significant portion of the assets of our directors and officers and other persons named in this annual report and substantially all of our assets are located in Korea. As a result, it may not be possible for holders of the American depository shares to affect service of process within the United States, or to enforce against them or us in the United States judgments obtained in United States courts based on the civil liability provisions of the federal securities laws of the United States. There is doubt as to the enforceability in Korea, either in original actions or in actions for enforcement of judgments of United States courts, of civil liabilities predicated on the United States federal securities laws.

## **Risks Relating to Our American Depository Shares**

***There are restrictions on withdrawal and deposit of common shares under the depository facility.***

Under the deposit agreement, holders of shares of our common stock may deposit those shares with the depository bank's custodian in Korea and obtain American depository shares, and holders of American depository shares may surrender American depository shares to the depository bank and receive shares of our common stock. However, under current Korean laws and regulations, the depository bank is required to obtain our prior consent for the number of shares to be deposited in any given proposed deposit which exceeds the difference between (i) the aggregate number of shares deposited by us for the issuance of American depository shares (including deposits in connection with the initial and all subsequent offerings of American depository shares and stock dividends or other distributions related to these American depository shares) and (ii) the number of shares on deposit with the depository bank at the time of such proposed deposit. We have consented to the deposit of outstanding shares of common stock as long as the number of American depository shares outstanding at any time does not exceed 80,153,810 shares. As a result, if you surrender American depository shares and withdraw shares of common stock, you may not be able to deposit the shares again to obtain American depository shares.

***Ownership of our shares is restricted under Korean law.***

Under the Financial Investment Services and Capital Markets Act, with certain exceptions, a foreign investor may acquire shares of a Korean company without being subject to any single or aggregate foreign investment ceiling. As one such exception, certain designated public corporations, such as us, are subject to a 40% ceiling on acquisitions of shares by foreigners in the aggregate. The Financial Services Commission may

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impose other restrictions as it deems necessary for the protection of investors and the stabilization of the Korean securities and derivatives market.

In addition to the aggregate foreign investment ceiling, the Financial Investment Services and Capital Markets Act and our Articles of Incorporation set a 3% ceiling on acquisition by a single investor (whether domestic or foreign) of the shares of our common stock. Any person (with certain exceptions) who holds our issued and outstanding shares in excess of such 3% ceiling cannot exercise voting rights with respect to our shares exceeding such limit.

The ceiling on aggregate investment by foreigners applicable to us may be exceeded in certain limited circumstances, including as a result of acquisition of:

shares by a depositary issuing depositary receipts representing such shares (whether newly issued shares or outstanding shares);

shares by exercise of warrant, conversion right under convertible bonds, exchange right under exchangeable bonds or withdrawal right under depositary receipts issued outside of Korea;

shares from the exercise of shareholders' rights; or

shares by gift, inheritance or bequest.

A foreigner who has acquired our shares in excess of any ceiling described above may not exercise his voting rights with respect to our shares exceeding such limit and the Financial Services Commission may take necessary corrective action against him.

***Holders of our ADSs will not have preemptive rights in certain circumstances.***

The Korean Commercial Code and our Articles of Incorporation require us, with some exceptions, to offer shareholders the right to subscribe for new shares in proportion to their existing ownership percentage whenever new shares are issued. If we offer any rights to subscribe for additional shares of our common stock or any rights of any other nature, the depositary bank, after consultation with us, may make the rights available to you or use reasonable efforts to dispose of the rights on your behalf and make the net proceeds available to you. The depositary bank, however, is not required to make available to you any rights to purchase any additional shares unless it deems that doing so is lawful and feasible and:

a registration statement filed by us under the U.S. Securities Act of 1933, as amended, is in effect with respect to those shares; or

the offering and sale of those shares is exempt from or is not subject to the registration requirements of the U.S. Securities Act.

We are under no obligation to file any registration statement with the U.S. Securities and Exchange Commission in relation to the registration rights. If a registration statement is required for you to exercise preemptive rights but is not filed by us, you will not be able to exercise your preemptive rights for additional shares and you will suffer dilution of your equity interest in us.

***The market value of your investment in our ADSs may fluctuate due to the volatility of the Korean securities market.***

Our common stock is listed on the KRX KOSPI Division of the Korea Exchange, which has a smaller market capitalization and is more volatile than the securities markets in the United States and many European countries. The market value of ADSs may fluctuate in response to the fluctuation of the trading price of shares of our common stock on the Stock Market Division of the Korea Exchange. The Stock Market Division of the Korea Exchange has experienced substantial fluctuations in the prices and volumes of sales of listed securities

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and the Stock Market Division of the Korea Exchange has prescribed a fixed range in which share prices are permitted to move on a daily basis. Like other securities markets, including those in developed markets, the Korean securities market has experienced problems including market manipulation, insider trading and settlement failures. The recurrence of these or similar problems could have a material adverse effect on the market price and liquidity of the securities of Korean companies, including our common stock and ADSs, in both the domestic and the international markets.

The Korean government has the ability to exert substantial influence over many aspects of the private sector business community, and in the past has exerted that influence from time to time. For example, the Korean government has promoted mergers to reduce what it considers excess capacity in a particular industry and has also encouraged private companies to publicly offer their securities. Similar actions in the future could have the effect of depressing or boosting the Korean securities market, whether or not intended to do so. Accordingly, actual or perceived actions or inactions by the Korean government may cause sudden movements in the market prices of the securities of Korean companies in the future, which may affect the market price and liquidity of our common stock and ADSs.

***Your dividend payments and the amount you may realize in connection with a sale of your ADSs will be affected by fluctuations in the exchange rate between the U.S. dollar and the Won.***

Investors who purchase the American depositary shares will be required to pay for them in U.S. dollars. Our outstanding shares are listed on the Korea Exchange and are quoted and traded in Won. Cash dividends, if any, in respect of the shares represented by the American depositary shares will be paid to the depositary bank in Won and then converted by the depositary bank into U.S. dollars, subject to certain conditions. Accordingly, fluctuations in the exchange rate between the Won and the U.S. dollar will affect, among other things, the amounts a registered holder or beneficial owner of the American depositary shares will receive from the depositary bank in respect of dividends, the U.S. dollar value of the proceeds which a holder or owner would receive upon sale in Korea of the shares obtained upon surrender of American depositary shares and the secondary market price of the American depositary shares.

***If the Government deems that certain emergency circumstances are likely to occur, it may restrict the depositary bank from converting and remitting dividends in U.S. dollars.***

If the Government deems that certain emergency circumstances are likely to occur, it may impose restrictions such as requiring foreign investors to obtain prior Government approval for the acquisition of Korean securities or for the repatriation of interest or dividends arising from Korean securities or sales proceeds from disposition of such securities. These emergency circumstances include any or all of the following:

sudden fluctuations in interest rates or exchange rates;

extreme difficulty in stabilizing the balance of payments; and

a substantial disturbance in the Korean financial and capital markets.

The depositary bank may not be able to secure such prior approval from the Government for the payment of dividends to foreign investors when the Government deems that there are emergency circumstances in the Korean financial markets.

**ITEM 4. *INFORMATION ON THE COMPANY***

**Item 4.A. History and Development of the Company**

**General Information**

Our legal and corporate name is Korea Electric Power Corporation. We were established by the Government on December 31, 1981 as a statutory juridical corporation in Korea under the Korea Electric Power Corporation

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( KEPCO ) Act as the successor to Korea Electric Company. Our registered office is located at 55 Jeollyeok-ro, Naju-si, Jeollanam-do, 58217, Korea, and our telephone number is 82-61-345-4213. Our website address is www.kepco.co.kr.

Our agent in the United States is Korea Electric Power Corporation, North America Office, located at 7th Floor, Parker Plaza, 400 Kelby Street, Fort Lee, NJ 07024.

The Korean electric utility industry traces its origin to the establishment of the first electric utility company in Korea in 1898. On July 1, 1961, the industry was reorganized by the merger of Korea Electric Power Company, Seoul Electric Company and South Korea Electric Company, which resulted in the formation of Korea Electric Company. From 1976 to 1981, the Government acquired the private minority shareholdings in Korea Electric Company. After the Government acquired all the remaining shares of Korea Electric Company, Korea Electric Company was dissolved, and we were incorporated in 1981 and assumed the assets and liabilities of Korea Electric Company. We ceased to be wholly owned by the Government in 1989 when the Government sold 21% of our common stock. As of March 15, 2018, the last day on which our shareholders registry was closed, the Government maintained 51.1% ownership in aggregate of our common shares by direct holdings by the Government and indirect holdings through Korea Development Bank, a statutory banking institution wholly owned by the Government.

Under relevant laws of Korea, the Government is required to own, directly or indirectly, at least 51% of our capital. Direct or indirect ownership of more than 50% of our outstanding common stock enables the Government to control the approval of certain corporate matters relating to us that require a shareholders' resolution, including approval of dividends. The rights of the Government and Korea Development Bank as holders of our common stock are exercised by the Ministry of Trade, Industry and Energy, based on the Government's ownership of our common stock and a proxy received from Korea Development Bank, in consultation with the Ministry of Strategy and Finance.

We operate under the general supervision of the Ministry of Trade, Industry and Energy. The Ministry of Trade, Industry and Energy, in consultation with the Ministry of Strategy and Finance, is responsible for approving, subject to review by the Korea Electricity Commission, the electricity rates we charge our customers. See Item 4.B. Business Overview Sales and Customers Electricity Rates. We furnish reports to officials of the Ministry of Trade, Industry and Energy, the Ministry of Strategy and Finance and other Government agencies and regularly consult with such officials on matters relating to our business and affairs. See Item 4.B. Business Overview Regulation. Our non-standing directors, who comprise a majority of our board of directors, must be appointed by the Ministry of Strategy and Finance following the review and resolution of the Public Agencies Operating Committee (which is established by law and chaired by the minister of the Ministry of Strategy and Finance and whose members consist of Government officials and others appointed by the President of the Republic based on recommendation by the minister of the Ministry of Strategy and Finance) from a pool of candidates recommended by the director nomination committee. Our president and standing directors who concurrently serve as members of our audit committee must be appointed by the President of the Republic upon the motion of the minister of the Ministry of Trade, Industry and Energy (in the case of our president) and the minister of the Ministry of Strategy and Finance (in the case of our standing directors who concurrently serve as members of the audit committee) and following the nomination by our director nomination committee, the review and resolution of the Public Agencies Operating Committee and an approval at the general meeting of shareholders. See Item 6.A. Directors and Senior Management Board of Directors and Item 16G. Corporate Governance The Act on the Management of Public Institutions ).

## **Item 4.B. Business Overview**

### **Introduction**



We are an integrated electric utility company engaged in the transmission and distribution of substantially all of the electricity in Korea. Through our six wholly-owned generation subsidiaries, we also generate the

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substantial majority of electricity produced in Korea. As of December 31, 2017, we and our generation subsidiaries owned approximately 70.1% of the total electricity generation capacity in Korea (excluding plants generating electricity primarily for private or emergency use). In 2017, we sold to our customers 507,746 gigawatt-hours of electricity. We purchase electricity principally from our generation subsidiaries and, to a lesser extent, from independent power producers. Of the 520,230 gigawatt-hours of electricity we purchased in 2017, 28.1% was generated by KHNP, our wholly-owned nuclear and hydroelectric power generation subsidiary, 49.7% was generated by our wholly-owned five non-nuclear generation subsidiaries and 22.2% was generated by independent power producers that trade electricity to us through the cost-based pool system of power trading (excluding independent power producers that supply electricity under power purchase agreements with us). Our five non-nuclear generation subsidiaries are KOSEP, KOMIPO, KOWEPO, KOSPO and EWP, each of which is wholly owned by us and is incorporated in Korea. We derive substantially all of our revenues and profit from Korea, and substantially all of our assets are located in Korea.

In 2017, we had sales of Won 59,336 billion and net profit of Won 1,441 billion, compared to sales of Won 59,763 billion and net profit of Won 7,148 billion in 2016.

Our revenues are closely tied to demand for electricity in Korea. Demand for electricity in Korea increased at a compounded average growth rate of 1.7% per annum from 2013 to 2017, compared to the real gross domestic product, or GDP, which increased at a compounded average growth rate of 3.0% during the same period, according to the Bank of Korea. During 2017, the GDP growth rate was 3.1%, which was in tandem with the growth in demand for electricity in Korea during the same year, which also grew by 2.2%.

**Strategy**

As our overall strategy, we seek to become a leading global energy enterprise by enhancing our global competitiveness and strengthening our contribution to the global environmental campaigns through continued development of green and smart power-related technologies. We also aim to adapt to the growing uncertainties in the global economy by selectively pursuing new business opportunities and through development of innovative technologies. We evaluate and renew our mid- to long-term strategy every five years, and in 2015 established the Vision 2025 Mid- to Long-Term Strategy. Under this vision, we will aim for balanced growth among our domestic operations, overseas business and new energy industry initiatives.

*Strengthen competitiveness in our core operations.* We plan to enhance efficiency of our electricity generation, transmission and distribution networks and operation of related facilities. We will strategically focus on ensuring stable supply of electricity, making our electricity networks smarter and more intelligent through the use of advanced technology utilizing big data and the Internet of Things technology and creating new energy services related to our core operations in order to address changes in the business environment.

*Expand and develop new businesses.* In connection with our overseas business, we plan to selectively explore opportunities to develop renewable energy, smart transmission and distribution facilities and nuclear energy projects to diversify our businesses and provide suitable solutions meeting the different needs of various countries. Additionally, we plan to actively address climate change through the development of new energy related technologies such as smart grids and energy storage systems.

*Create a platform for future growth.* We plan to develop an ecosystem focused on new energy technologies. We have established Bitgaram Energy Valley in Gwangju and Jeollanamdo with the goal of facilitating the growth of the new energy industry and creating a global energy hub. In addition, we have selected ten core electricity-related technologies (including energy storage systems and smart grid -related technologies), and we plan to focus on the development of high value-added technologies.

*Strengthen our management system for sustainable growth.* We will continue to develop an innovative working culture and management system to promote efficiency. We will also focus on creating a low-carbon clean energy business environment, fostering a common set of shared values with local communities and developing a sustainable energy business model.

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### **Government Ownership and Our Interactions with the Government**

The KEPCO Act requires that the Government own at least 51% of our capital stock. Direct or indirect ownership of more than 50% of our outstanding common stock enables the Government to control the approval of certain corporate matters which require a shareholders' resolution, including approval of dividends. The rights of the Government and Korea Development Bank as holders of our common stock are exercised by the Ministry of Trade, Industry and Energy in consultation with the Ministry of Strategy and Finance. We are currently not aware of any plans of the Government to cease to own, directly or indirectly, at least 51% of our outstanding common stock.

We play an important role in the implementation of the Government's national energy policy, which is established in consultation with us, among other parties. As an entity formed to serve public policy goals of the Government, we seek to maintain a fair level of profitability and strengthen our capital base in order to support the growth of our business in the long term.

The Government, through its various policy initiatives for the Korean energy industry as well as direct and indirect supervision of us and our industry, plays an important role in our business and operations. Most importantly, the electricity tariff rates we charge to our customers are regulated by the Government taking into account, among others, our needs to recover the costs of operations, make capital investments and recoup a fair return on capital invested by us, as well as the Government's overall policy considerations, such as inflation. See Item 4.B. Business Overview Sales and Customers Electricity Rates.

In addition, pursuant to the Basic Plan determined by the Government, we and our generation subsidiaries have made, and plan to make, substantial expenditures for the construction of generation plants and other facilities to meet demand for electric power. See Item 5.B. Liquidity and Capital Resources Capital Requirements.

### **Restructuring of the Electric Power Industry in Korea**

On January 21, 1999, the Ministry of Trade, Industry and Energy published the Restructuring Plan. The overall objectives of the Restructuring Plan consisted of: (i) introducing competition and thereby increasing efficiency in the Korean electric power industry, (ii) ensuring a long-term, inexpensive and stable electricity supply, and (iii) promoting consumer convenience through the expansion of consumer choice.

The following provides further details relating to the Restructuring Plan.

#### ***Phase I***

During Phase I, which served as a preparatory stage for Phase II and lasted from the announcement of the Restructuring Plan in January 1999 until April 2001, we undertook steps to split our generation business units off into one wholly-owned nuclear generation subsidiary (namely, KHNP) and five wholly-owned non-nuclear generation subsidiaries (namely, KOSEP, KOMIPO, KOWEPO, KOSPO and EWP), each with its own management structure, assets and liabilities. These steps were completed upon approval at our shareholders' meeting in April 2001.

The Government's principal objectives in the split-off of the generation units into separate subsidiaries were to: (i) introduce competition and thereby increase efficiency in the electricity generation industry in Korea, and (ii) ensure a stable supply of electricity in Korea.

Following the implementation of Phase I, we have substantial monopoly with respect to the transmission and distribution of electricity in Korea.



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While our ownership percentage of our generation subsidiaries will depend on further adjustments to the Restructuring Plan to be adopted by the Government, we plan to retain 100% ownership of our transmission and distribution business.

### ***Phase II***

At the outset of Phase II in April 2001, the Government introduced a cost-based competitive bidding pool system under which we purchase power from our generation subsidiaries and other independent power producers for transmission and distribution to customers. For a further description of this system, see [Purchase of Electricity Cost-based Pool System](#) below.

Pursuant to the Electricity Business Act amended in December 2000, the Government established the Korea Power Exchange in April 2001. The primary function of the Korea Power Exchange is to deal with the sale of electricity and implement regulations governing the electricity market to allow for electricity distribution through a competitive bidding process. The Government also established the Korea Electricity Commission in April 2001 to regulate the Korean electric power industry and ensure fair competition among industry participants. To facilitate this goal, the Korea Power Exchange established the Electricity Market Rules relating to the operation of the bidding pool system. To amend the Electricity Market Rules, the Korea Power Exchange must have the proposed amendment reviewed by the Korea Electricity Commission and then obtain the approval of the Ministry of Trade, Industry and Energy.

The Korea Electricity Commission's main functions include implementation of standards and measures necessary for electricity market operation and review of matters relating to licensing participants in the Korean electric power industry. The Korea Electricity Commission also acts as an arbitrator in tariff-related disputes among participants in the Korean electric power industry and investigates illegal or deceptive activities of the industry participants.

### ***Privatization of Generation Subsidiaries***

In April 2002, the Ministry of Trade, Industry and Energy released the basic privatization plan for five of our generation subsidiaries other than KHNP. Pursuant to this plan, we commenced the process of selling our equity interest in KOSEP in 2002. According to the original plan, this process was, in principle, to take the form of a sale of management control, potentially supplemented by an initial public offering as a way of broadening the investor base. In November 2003, KOSEP submitted its application to the Korea Exchange for a preliminary screening review, which was approved in December 2003. However, in June 2004, KOSEP made a request to the Korea Exchange to delay its stock listing due to unfavorable stock market conditions at that time.

In accordance with the Proposal for Adjustment of Functions of Public Institutions (Energy Sector) announced by the Government in June 2016, we considered a sale in the public market of a minority of our shares in our five non-nuclear generation subsidiaries, KEPCO KDN and KHNP gradually. However, the planned sales have been put on hold, primarily due to prevailing market conditions. In any event, we plan to maintain a controlling stake in each of these subsidiaries.

### ***Suspension of the Plan to Form and Privatize Distribution Subsidiaries***

In 2003, the Government established a Tripartite Commission consisting of representatives of the Government, leading businesses and labor unions in Korea to deliberate on ways to introduce competition in electricity distribution, such as by forming and privatizing new distribution subsidiaries. In 2004, the Tripartite Commission recommended not pursuing such privatization initiatives but instead creating independent business divisions within us to improve operational efficiency through internal competition. Following the adoption of such recommendation by the

Government in 2004 and further studies by Korea Development Institute, in 2006 we created nine strategic business units (which, together with our other business units, were subsequently

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restructured into 14 such units in February 2012) that have a greater degree of autonomy with respect to management, financial accounting and performance evaluation while having a common focus on increasing profitability.

***Initiatives to Improve the Structure of Electricity Generation***

In August 2010, the Ministry of Trade, Industry and Energy announced the Proposal for Improvement in the Structure of the Electric Power Industry in order to resolve uncertainty related to restructuring plans for the electric power industry and maintain competitiveness of the electric power industry. Key initiatives of the proposal included the following: (i) maintain the current structure of having six generation subsidiaries and designate the six generation subsidiaries as market-oriented public enterprises under the Act on the Management of Public Institutions in order to foster competition among the generation subsidiaries and promote efficiency in their operations, (ii) clarify the scope of the business of us and the six generation subsidiaries (namely, that we shall manage the financial structure and governance of the six generation subsidiaries and nuclear power plant and overseas resources development projects, while the six generation subsidiaries will have greater autonomy with respect to construction and management of generation units and procurement of fuel), (iii) create a nuclear power export business unit to systematically enhance our capabilities to win projects involving the construction and operation of nuclear power plants overseas, (iv) further rationalize the electricity tariff by adopting a fuel-cost based tariff system in 2011 and a voltage-based tariff system in a subsequent year, and (v) create separate accounting systems for electricity generation, transmission, distribution and sales with the aim of introducing competition in electricity sales in the intermediate future.

In January 2011, the Ministry of Strategy and Finance created a joint cooperation unit consisting of officers and employees selected from the five thermal power generation subsidiaries in order to reduce inefficiencies in areas such as fuel transportation, inventories, materials and equipment and construction, etc. and allow the thermal power generation subsidiaries to continue utilizing the benefits of economy of scale after split off of our generation business units into separate subsidiaries. The purpose of the joint cooperation unit was to give greater autonomy to the generation subsidiaries with regard to power plant construction and management and fuel procurements, and thereby enhance efficiency in operating power plants. The main functions of the joint cooperation unit are as follows: (i) maintain inventories of bituminous coal through volume exchanges and joint purchases, (ii) reduce shipping and demurrage expenses through joint operation and distribution of dedicated vessels, (iii) reduce costs by sharing information on generation material inventories and (iv) sharing human resources among the five thermal power generation subsidiaries for construction projects, among other things.

Furthermore, in January 2011 the six generation subsidiaries were officially designated as market-oriented public enterprises, whereupon the President of Korea appoints the president and the statutory auditor of each such subsidiary; the selection of non-standing directors of each such subsidiary is subject to approval by the minister of the Ministry of Strategy and Finance; the president of each such subsidiary is required to enter into a management contract directly with the minister of the Ministry of Trade, Industry and Energy; and the Public Enterprise Management Evaluation Team which is established by the Public Agencies Operating Committee conducts performance evaluation of such subsidiaries. Previously, our president appointed the president and the statutory auditor of each such subsidiary; the selection of non-standing directors of each such subsidiary was subject to approval by our president; the president of each such subsidiary entered into a management contract with our president; and our evaluation committee conducted performance evaluation of such subsidiaries. For further details of the impact of the designation of our generation subsidiaries as market-oriented public enterprises, see Item 16G. Corporate Governance The Act on the Management of Public Institutions.

***Proposal for Adjustment of Functions of Public Institutions (Energy Sector)***



In June 2016, the Government announced the Proposal for Adjustment of Functions of Public Institutions (Energy Sector) for the purpose of streamlining the operations of government-affiliated energy companies by discouraging them from engaging in overlapping or similar businesses with each other, reducing non-core assets

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and activities and improving management and operational efficiency. The initiatives contemplated in this proposal that would affect us and our generation subsidiaries include the following: (i) the generation companies should take on greater responsibilities in overseas resource exploration and production projects as these involve procurement of fuels necessary for electricity generation while fostering cooperation among each other through closer coordination, (ii) KHNP should take a greater role in export of nuclear technology, and (iii) the current system of retail sale of electricity to end-users should be liberalized to encourage more competition. In accordance therewith, we transferred a substantial portion of our assets and liabilities in our overseas resource business to our generation subsidiaries as of December 31, 2016. In addition, this Proposal contemplated selling a minority stake in our generation subsidiaries and KEPCO KDN, but the planned sales have been put on hold, as discussed above in Privatization of Generation Subsidiaries.

**Purchase of Electricity***Cost-based Pool System*

Since April 2001, the purchase and sale of electricity in Korea is required to be made through the Korea Power Exchange, which is a statutory not-for-profit organization established under the Electricity Business Act with responsibilities for setting the price of electricity, handling the trading and collecting relevant data for the electricity market in Korea. The suppliers of electricity in Korea consist of our six generation subsidiaries, which were split-off from us in April 2001, and independent power producers, which numbered 17 (excluding renewable energy producers) as of December 31, 2017. We distribute electricity purchased through the Korea Power Exchange to end users.

*Our Relationship with the Korea Power Exchange*

The key features of our relationships with the Korea Power Exchange include the following: (i) we and our six generation subsidiaries are member corporations of the Korea Power Exchange and collectively own 100% of its share capital, (ii) three of the 11 members of the board of directors of the Korea Power Exchange are currently our or our subsidiaries employees, and (iii) one of our employees is currently a member in three of the key committees of the Korea Power Exchange that are responsible for evaluating the costs of producing electricity, making rules for the Korea Power Exchange and gathering and disclosing information relating to the Korean electricity market.

Notwithstanding the foregoing relationships, however, we do not have control over the Korea Power Exchange or its policies since, among others, (i) the Korea Power Exchange, its personnel, policies, operations and finances are closely supervised and controlled by the Government, namely through the Ministry of Trade, Industry and Energy, and are subject to a host of laws and regulations, including, among others, the Electricity Business Act and the Act on the Management of Public Institutions, as well as the Articles of Incorporation of the Korea Power Exchange, (ii) we are entitled to elect no more than one-third of the Korea Power Exchange directors and our representatives represent only a minority of its board of directors and committees (with the other members being comprised of representatives of the Ministry of Trade, Industry and Energy, employees of the Korea Power Exchange, businesspersons and/or scholars), and (iii) the role of our representatives in the policy making process for the Korea Power Exchange is primarily advisory based on their technical expertise derived from their employment at us or our generation subsidiaries. Consistent with this view, the Finance Supervisory Service issued a ruling in 2005 that stated that we are not deemed to have significant influence or control over the decision-making process of the Korea Power Exchange relating to its business or financial affairs.

*Pricing Factors*

The price of electricity in the Korean electricity market is determined principally based on the cost of generating electricity using a system known as the cost-based pool system. Under the cost-based pool system,

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the price of electricity has two principal components, namely the marginal price (representing in principle the variable cost of generating electricity) and the capacity price (representing in principle the fixed cost of generating electricity).

Under the merit order system, the electricity purchase allocation, the system marginal price (as described below) and the final allocation adjustment are automatically determined based on an objective formula. The variable cost (including the adjusted coefficient as described below) and the capacity price are determined in advance of trading by the Cost Evaluation Committee, which is comprised of representatives from the Ministry of Trade, Industry and Energy, the Korea Power Exchange, us, generation companies, scholars and researchers. Accordingly, a supplier of electricity cannot exercise control over the merit order system or its operations to such supplier's strategic advantage.

*Marginal Price*

The primary purpose of the marginal price is to compensate the generation companies for fuel costs, which represents the principal component of the variable costs of generating electricity. We currently refer such marginal price as the system marginal price.

The system marginal price represents, in effect, the marginal price of electricity at a given hour at which the projected demand for electricity and the projected supply of electricity for such hour intersect, as determined by the merit order system, which is a system used by the Korea Power Exchange to allocate which generation units will supply electricity for which hour and at what price. To elaborate, the projected demand for electricity for a given hour is determined by the Korea Power Exchange based on a forecast made one day prior to trading, and such forecast takes into account, among others, historical statistics relating to demand for electricity nationwide by day and by hour, seasonality and on-peak-hour versus off-peak hour demand analysis. The projected supply of electricity at a given hour is determined as the aggregate of the available capacity of all generation units that have submitted bids to supply electricity for such hour. These bids are submitted to the Korea Power Exchange one day prior to trading.

Under the merit order system, the generation unit with the lowest variable cost of producing electricity among all the generation units that have submitted a bid for a given hour is first awarded a purchase order for electricity up to the available capacity of such unit as indicated in its bid. The generation unit with the next lowest variable cost is then awarded a purchase order up to its available capacity in its bid, and so forth, until the projected demand for electricity for such hour is met. We refer to the variable cost of the generation unit that is the last to receive the purchase order for such hour as the system marginal price, which also represents the highest price at which electricity can be supplied at a given hour based on the demand and supply for such hour. Generation units whose variable costs exceed the system marginal price for a given hour do not receive purchase orders to supply electricity for such hour. The variable cost of each generation unit is determined by the Cost Evaluation Committee on a monthly basis and reflected in the following month based on the fuel costs two months prior to such determination. The purpose of the merit order system is to encourage generation units to reduce its electricity generation costs by making its generation process more efficient, sourcing fuels from most cost-effective sources or adopting other cost savings programs.

The final allocation of electricity supply is further adjusted on the basis of other factors, including the proximity of a generation unit to the geographical area to which power is being supplied, network and fuel constraints and the amount of power loss. This adjustment mechanism is designed to adjust for transmission losses in order to improve overall cost-efficiency in the transmission of electricity to end-users.

The price of electricity at which our generation subsidiaries sell electricity to us is determined using the following formula:

Variable cost + [System marginal price - Variable cost] \* Adjusted coefficient



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An adjusted coefficient applies in principle to all generation units operated by our generation subsidiaries and the coal-fired generation units operated by independent power producers. The adjusted coefficient applicable to the generation units operated by our generation subsidiaries is determined based on considerations of, among others, electricity tariff rates, the differential generation costs for different fuel types and the relative fair returns on investment in respect of us compared to our generation subsidiaries. The purpose of the adjusted coefficient here is to prevent electricity trading from resulting in undue imbalances as to the relative financial results among generation subsidiaries as well as between us (as the purchaser of electricity) and our generation subsidiaries (as sellers of electricity). Such imbalances may arise from excessive profit taking by base load generators (on account of their inherently cheaper fuel cost structure compared to non-base load generators) as well as from fluctuations in fuel prices (it being the case that during times of rapid and substantial rises in fuel costs which are not offset by corresponding rises in electricity tariff rates charged by us to end-users, on a non-consolidated basis our profitability will decline compared to that of our generation subsidiaries since our generation subsidiaries are entitled to sell electricity to us at cost plus a guaranteed margin). In comparison, the adjusted coefficient applicable to the coal-fired generation units operated by independent power producers is determined to enable such independent power producers to recover the total costs of building and operating such units.

The adjusted coefficient applicable to our generation subsidiaries is currently set at the highest level for the marginal price of electricity generated using nuclear fuel, followed by coal and (depending on the prevailing relative market prices) oil and/or LNG. The differentiated adjusted coefficients reflect the Government's prevailing energy policy objectives and have the effect of setting priorities in the fuel types to be used in electricity generation.

The adjusted coefficient is determined by the Cost Evaluation Committee in principle on an annual basis, although in exceptional cases driven by external or structural factors such as rapid and substantial changes in fuel costs, adjustments to electricity tariff rates or changes in the electricity pricing structure, the adjusted coefficient may be adjusted on a quarterly basis.

Previously, it was contemplated that the vesting contract system would gradually replace the application of the adjusted coefficient. However, since the implementation of the vesting contract system has been suspended indefinitely, it is unlikely to impact the application of the adjusted coefficient in the foreseeable future.

*Capacity Price*

In addition to payment in respect of the variable cost of generating electricity, generation units receive payment in the form of capacity price, the purpose of which is to compensate them for the fixed costs of constructing generation facilities, provide incentives for construction of new generation units and maintain reliability of the nationwide electricity transmission network.

The capacity price is determined by the Cost Evaluation Committee as a function of the following factors: (i) reference capacity price, (ii) reserve capacity factor, (iii) time-of-the-day capacity coefficient and (iv) since October 2016, fuel switching factor. The reference capacity price and the time-of-the-day capacity coefficient are determined annually before the end of December for the subsequent 12-months period. The reserve capacity factor and the fuel switching factor are determined annually before the end of June for the subsequent 12-months period.

The reference capacity price refers to the Won amount per kilowatt-hour payable annually for annualized available capacity indicated in the bids submitted the day before trading (provided that such capacity is actually available on the relevant day of trading), and is determined based on the construction costs and maintenance costs of a standard generation unit and related transmission access facilities, and a base rate for loading electricity. Prior to October 2016, the same reference capacity price applied uniformly to all generation units. Since October 2016, the reference capacity

price applies differentially to each generation unit depending on the start year of its commercial operation. Accordingly, the reference capacity price currently ranges from Won 9.15 to 10.07 per kilowatt hour.

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The reserve capacity factor relates to the requirement to maintain a standard capacity reserve margin in the range of 15% in order to prevent excessive capacity build-up as well as induce optimal capacity investment at the regional level. The capacity reserve margin is the ratio of peak demand to the total available capacity. Under this system, generation units in a region where available capacity is insufficient to meet demand for electricity as evidenced by failing to meet the standard capacity reserve margin receive increased capacity price. Conversely, generation units in a region where available capacity exceeds demand for electricity as evidenced by exceeding the standard capacity reserve margin receive reduced capacity price. Since October 2016, the reserve capacity factor also factors in the transmission loss per generation unit in order to favor transmission of electricity from a nearby generation unit.

The time-of-the-day capacity coefficient allows hourly and seasonal adjustments in order to incentivize our generation subsidiaries to operate their generation facilities at full capacity during periods of highest demand. For example, the capacity price paid differs depending on whether the relevant hour is an on-peak hour, a mid-peak hour or an off-peak hour (the capacity price being highest for the on-peak hours and lowest for the off-peak hours) and the capacity price paid is highest during the months of January, July and August when electricity usage is highest due to weather conditions.

The fuel switching factor, which was introduced in October 2016 to promote environmental sensitivities to climate change, seeks to encourage reduced carbon emission by penalizing generation units (mostly coal-fired units) for excessive carbon emission.

Other than subject to the aforementioned variations, the same capacity pricing mechanism applies to all generation units regardless of fuel types used.

### *Vesting Contract System*

In May 2014, the Electricity Business Act was amended to introduce a vesting contract system in determining the price and quantity of electricity to be sold and purchased between the purchaser of electricity (namely, us) and the sellers of electricity (namely, our generation subsidiaries and independent power producers). Under the vesting contract system, electricity generators using base load fuels (such as nuclear, coal, hydro and by-product gas) at a particular generation unit were to be required to enter into a contract with the purchaser of electricity (namely, us), which specifies, among other things, the quantity of electricity to be generated and sold at a particular generation unit and the price at which such electricity is sold, subject to certain adjustments.

The vesting contract system was introduced principally to prevent excessive profit-taking by low-cost producers of electricity using base load fuels (such as nuclear, coal, hydro and by-product gas) by replacing the adjusted coefficient as the basis for determining the guaranteed return to generation companies, as well as to enhance the stability of electricity supply by requiring long-term contractual arrangements for the purchase and sale of electricity and promote cost savings, productivity enhancements and operational efficiency by providing incentives and penalties depending on the degree to which the generation companies could supply electricity at costs below the contracted electricity prices.

In order to minimize undue shock to the electricity trading market in Korea, the vesting contract system was to be implemented in phases starting with by-product gas-based electricity in 2015, which accounted for 1.8% of electricity purchased by us during such year. The rollout of the vesting contract system was further studied by a task force consisting of representatives from the Government, the Korea Power Exchange and generation companies.

Following such study, the Government announced in June 2016 that, due to changes in the electricity business environment (including an increase in generation capacity relative to peak usage, reduced fuel costs following a



decline in oil prices and greater environmental concerns related to coal-fired electricity generation), it will indefinitely suspend any further rollout of the vesting contract system beyond by-product gas-based electricity, and revert to the adjusted coefficient-based electricity pricing adjustment mechanism.

**Table of Contents****Power Trading Results**

The results of power trading, as effected through the Korea Power Exchange, for our generation subsidiaries and independent power producers in 2017 are as follows:

	Items	Volume (Gigawatt hours)	Percentage of Total Volume (%)	Sales to KEPCO (in billions of Won)	Percentage of Total Sales (%)	Unit Price (Won/kWh)
Generation Companies	KHNP	146,221	28.1	9,113	21.0	62.33
	KOSEP	66,640	12.8	5,183	12.0	77.77
	KOMIPO	50,254	9.7	4,410	10.2	87.75
	KOWEPO	45,464	8.7	4,176	9.6	91.85
	KOSPO	47,659	9.2	4,347	10.0	91.22
	EWP	48,307	9.3	4,452	10.3	92.15
	Others <sup>(1)</sup>	115,685	22.2	11,662	26.9	100.81
	Total	520,230	100.0	43,343	100.0	83.31
Energy Sources	Nuclear	141,098	27.1	8,573	19.8	60.76
	Bituminous coal	224,834	43.2	17,755	41.0	78.97
	Anthracite coal	4,014	0.8	385	0.9	95.89
	Oil	5,735	1.1	949	2.2	165.40
	LNG	1,429	0.3	151	0.3	105.33
	Combined-cycle	116,111	22.3	13,012	30.0	112.07
	Hydro	2,255	0.4	219	0.5	96.95
	Pumped-storage	4,171	0.8	450	1.0	107.96
	Others	20,583	4.0	1,849	4.3	89.82
Total	520,230	100.0	43,343	100.0	83.31	
Load	Base load	360,356	69.3	25,938	59.8	71.98
	Non-base load	159,874	30.7	17,405	40.2	108.86
	Total	520,230	100.0	43,343	100.0	83.31

Note:

- (1) Others represent independent power producers that trade electricity through the cost-based pool system of power trading (excluding independent power producers that supply electricity under power purchase agreements with us).

**Power Purchased from Independent Power Producers Under Power Purchase Agreements**

In 2017, we purchased an aggregate of 10,702 gigawatt hours of electricity generated by independent power producers under existing power purchase agreements. These independent power producers had an aggregate generation capacity of 6,257 megawatts as of December 31, 2017.

### **Power Generation**

As of December 31, 2017, we and our generation subsidiaries had a total of 679 generation units, including nuclear, thermal, hydroelectric and internal combustion units, representing total installed generation capacity of 82,132 megawatts. Our thermal units produce electricity using steam turbine generators fired by coal, oil and LNG. Our internal combustion units use oil or diesel-fired gas turbines and our combined-cycle units are primarily LNG-fired. We also purchase power from several generation plants not owned by our generation subsidiaries.

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The table below sets forth as of and for the year ended December 31, 2017 the number of units, installed capacity and the average capacity factor for each type of generating facilities owned by our generation subsidiaries.

	Number of Units	Installed Capacity <sup>(1)</sup> (Megawatts)	Average Capacity Factor <sup>(2)</sup> (Percent)
Nuclear	24	22,529	71.2
Thermal:			
Coal	59	34,125	78.7
Oil	11	2,950	20.3
LNG	0	0	40.8
Total thermal	70	37,075	71.2
Internal combustion	214	339	16.7
Combined-cycle <sup>(3)</sup>	111	16,018	26.3
Integrated gasification combined cycle <sup>(4)</sup>	2	346	42.4
Hydro	79	5,351	11.2
Wind	56	137	17.3
Solar	102	120	13.6
Fuel cell	17	47	67.1
Biogas	3	160	53.1
Others <sup>(5)</sup>	1	10	44.9
Total	679	82,132	58.5

*Notes:*

- (1) Installed capacity represents the level of output that may be sustained continuously without significant risk of damage to plant and equipment.
- (2) Average capacity factor represents the total number of kilowatt hours of electricity generated in the indicated period divided by the total number of kilowatt hours that would have been generated if the generation units were continuously operated at installed capacity, expressed as a percentage. Average capacity factor of the nuclear and coal-fired generation units represents the mean value of applicable average capacity factor for each fiscal quarter, as there were numerous shutdown and construction of units.
- (3) Involves generation through gas and oil.
- (4) Involves generation through coal and gasified coal.
- (5) Includes waste-to-energy.

The expected useful life of a unit, assuming no substantial renovation, is approximately as follows: nuclear, over 40 years; thermal, over 30 years; internal combustion, over 25 years; and hydroelectric, over 55 years. Substantial renovation can extend the useful life of thermal units by up to 20 years.

We seek to achieve efficient use of fuels and diversification of generation capacity by fuel type. In the past, we relied principally upon oil-fired thermal generation units for electricity generation. Since the oil shock in 1974, however, Korea's power development plans have emphasized the construction of nuclear generation units. While nuclear units are more expensive to construct than thermal generation units of comparable capacity, nuclear fuel is less expensive than fossil fuels in terms of electricity output per unit cost. However, efficient operation of nuclear units requires that such plants be run continuously at relatively constant energy output levels. As it is impractical to store large quantities of electrical energy, we seek to maintain nuclear power production capacity at approximately the level at which demand for electricity is continuously stable. During those times when actual demand exceeds the usual level of electricity supply from nuclear power, we rely on units fired by fossil fuels and hydroelectric units, which can be started and shut down more quickly and efficiently than nuclear units, to meet the excess demand. Bituminous coal is currently the least expensive thermal fuel per kilowatt-hour of electricity produced, and therefore we seek to maximize the use of bituminous

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coal for generation needs in excess of the stable demand level, except for meeting short-term surges in demand which require rapid start-up and shutdown. Thermal units fired by LNG, hydroelectric units and internal combustion units are the most efficient types of units for rapid start-ups and shutdowns, and therefore we use such units principally to meet short-term surges in demand. Anthracite coal is a less efficient fuel source than bituminous coal in terms of electricity output per unit cost.

Our generation subsidiaries have constructed and operated thermal and internal combustion units in order to help meet power demand. Subject to market conditions, our generation subsidiaries plan to continue to add additional thermal and internal combustion units. These units generally take less time to complete construction than nuclear units.

The high average age of our oil-fired thermal units is attributable to our reliance on oil-fired thermal units as the primary means of electricity generation until mid-1970s. Since then, we have diversified our fuel sources and constructed relatively few oil-fired thermal units compared to units of other fuel types.

The table below sets forth, for the periods indicated, the amount of electricity generated by facilities linked to our grid system and the amount of power used or lost in connection with transmission and distribution.

	2013	2014	2015	2016	2017	% of 2017 Gross Generation <sup>(1)</sup>
	(in gigawatt hours, except percentages)					
<b>Electricity generated by us and our generation subsidiaries:</b>						
Nuclear	138,784	156,407	164,762	161,995	148,426	26.8
Coal	201,119	203,765	207,533	207,912	227,186	41.0
Oil	13,941	6,838	8,822	13,055	5,242	0.9
LNG	3,526	568	222	369	220	0.04
Internal combustion	741	656	633	573	496	0.1
Combined-cycle	84,561	68,134	45,923	46,477	36,957	6.7
Hydro	5,679	5,976	4,424	4,835	5,263	1.0
Wind	155	148	181	186	209	0.04
Solar and fuel cells	251	422	420	908	2,485	0.4
<b>Total generation by us and our generation subsidiaries</b>	<b>448,757</b>	<b>442,914</b>	<b>432,920</b>	<b>436,310</b>	<b>426,484</b>	<b>77.1</b>
<b>Electricity generated by IPPs:</b>						
Thermal	55,923	63,088	72,316	83,789	103,745	18.7
Hydro and other renewable	12,468	15,968	17,106	20,342	23,238	4.2
<b>Total generation by IPPs</b>	<b>68,391</b>	<b>79,056</b>	<b>89,422</b>	<b>104,131</b>	<b>126,983</b>	<b>22.9</b>
Gross generation	517,148	521,970	522,343	540,441	553,467	100
Auxiliary use <sup>(2)</sup>	20,463	20,610	21,293	21,605	22,279	4.0
Pumped-storage <sup>(3)</sup>	5,408	6,644	4,824	4,716	5,477	1.0

Total net generation <sup>(4)</sup>	491,277	494,716	496,226	514,120	525,711	95.0
Transmission and distribution losses <sup>(5)</sup>	18,019	18,270	18,063	18,475	18,790	3.6

*IPPs = Independent power producers*

*Notes:*

- (1) Unless otherwise indicated, percentages are based on gross generation.
- (2) Auxiliary use represents electricity consumed by generation units in the course of generation.

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- (3) Pumped storage represents electricity consumed during low demand periods in order to store water which is utilized to generate hydroelectric power during peak demand periods.
- (4) Total net generation represents gross generation minus auxiliary and pumped-storage use.
- (5) Transmission and distribution losses represents total transmission and distribution losses divided by total net generation.

The table below sets forth our total capacity at the end of, and peak and average loads during, the indicated periods.

	2013	2014	2015	2016	2017
	(Megawatts)				
Total capacity	82,296	93,216	94,102	100,180	116,657
Peak load	76,522	80,154	78,790	85,183	85,133
Average load	59,035	59,586	60,284	61,694	63,181

***Korea Hydro & Nuclear Power Co., Ltd.***

We commenced nuclear power generation activities in 1978 when our first nuclear generation unit, Kori #1, began commercial operation. On April 2, 2001, all of our nuclear and hydroelectric power generation assets and liabilities were transferred to KHNP.

KHNP owns and operates 24 nuclear generation units at four power plant complexes in Korea, located in Kori, Wolsong, Yonggwang (Hanbit) and Ulchin (Hanul), 51 hydroelectric generation units including 16 pumped storage hydro generation units as well as six solar generation units and one wind generation unit as of December 31, 2017.

The table below sets forth the number of units and installed capacity as of December 31, 2017 and the average capacity factor by types of generation units in 2017.

	Number of Units	Installed Capacity <sup>(1)</sup> (Megawatts)	Average Capacity Factor <sup>(2)</sup> (Percent)
Nuclear	24	22,529	71.2
Hydroelectric	51	5,306	11.0
Solar	6	21	16.1
Wind	1	1	4.5
Total	82	27,858	

**Notes:**

- (1) Installed capacity represents the level of output that may be sustained continuously without significant risk of damage to plant and equipment.
- (2) Average capacity factor represents the total number of kilowatt hours of electricity generated in the indicated period divided by the total number of kilowatt hours that would have been generated if the generation units were continuously operated at installed capacity, expressed as a percentage.



KHNP commenced commercial operation of Shin-Kori #3, with a 1,400 megawatt capacity, in December 2016. KHNP is currently building five additional nuclear generation units, three at the Shin-Kori and two at Shin-Hanul sites, each with a 1,400 megawatt capacity. KHNP expects to complete these units between 2018 and 2023. The initial phase of the decommissioning of Kori #1, which primarily involves safety inspections and the removal of spent fuels, has begun after its permanent shutdown in June 2017.

**Table of Contents***Nuclear*

The table below sets forth certain information with respect to the nuclear generation units of KHNP as of December 31, 2017.

<b>Unit</b>	<b>Reactor Type<sup>(1)</sup> (Megawatts)</b>	<b>Reactor Design<sup>(2)</sup></b>	<b>Turbine and Generation<sup>(3)</sup></b>	<b>Commencement of Operations</b>	<b>Installed Capacity</b>
Kori-2	PWR	W	GEC	1983	650
Kori-3	PWR	W	GEC, Hitachi	1985	950
Kori-4	PWR	W	GEC, Hitachi	1986	950
Shin-Kori-1	PWR	D, KEPCO E&C, W	D, GE	2011	1,000
Shin-Kori-2	PWR	D, KEPCO E&C, W	D, GE	2012	1,000
Shin-Kori-3	PWR	D, KEPCO E&C, W	D, GE	2016	1,400
Wolsong-1	PHWR	AECL	P	1983	679
Wolsong-2	PHWR	AECL, H, K	H, GE	1997	700
Wolsong-3	PHWR	AECL, H	H, GE	1998	700
Wolsong-4	PHWR	AECL, H	H, GE	1999	700
Shin-Wolsong-1	PWR	D, KEPCO E&C, W	D, GE	2012	1,000
Shin-Wolsong-2	PWR	D, KEPCO E&C, W	D, GE	2015	1,000
Hanbit-1	PWR	W	W, D	1986	950
Hanbit-2	PWR	W	W, D	1987	950
Hanbit-3	PWR	H, CE, K	H, GE	1995	1,000
Hanbit-4	PWR	H, CE, K	H, GE	1996	1,000
Hanbit-5	PWR	D, CE, W, KEPCO E&C	D, GE	2002	1,000
Hanbit-6	PWR	D, CE, W, KEPCO E&C	D, GE	2002	1,000
Hanul-1	PWR	F	A	1988	950
Hanul-2	PWR	F	A	1989	950
Hanul-3	PWR	H, CE, K	H, GE	1998	1,000
Hanul-4	PWR	H, CE, K	H, GE	1999	1,000
Hanul-5	PWR	D, KEPCO E&C, W	D, GE	2004	1,000
Hanul-6	PWR	D, KEPCO E&C, W	D, GE	2005	1,000
<b>Total nuclear</b>					<b>22,529</b>

*Notes:*

- (1) PWR means pressurized light water reactor; PHWR means pressurized heavy water reactor.  
(2) W means Westinghouse Electric Company (U.S.A.); AECL means Atomic Energy Canada Limited (Canada); F means Framatome (France); H means Hanjung; CE means Combustion Engineering (U.S.A.); D means Doosan Heavy Industries; K means Korea Atomic Energy Research Institute; KEPCO E&C means KEPCO

Engineering & Construction.

- (3) GEC means General Electric Company (U.K.); P means Parsons (Canada and U.K.); W means Westinghouse Electric Company (U.S.A.); A means Alstom (France); H means Hanjung; GE means General Electric (U.S.A.); D means Doosan Heavy Industries; Hitachi means Hitachi Ltd. (Japan).

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The table below sets forth the average capacity factor and average fuel cost per kilowatt for 2017 with respect to each nuclear generation unit of KHNP.

<b>Unit</b>	<b>Average Capacity Factor (Percent)</b>	<b>Average Fuel Cost Per kWh (Won)</b>
Kori-1 <sup>(1)</sup>	99.7	15.21
Kori-2	100.2	7.39
Kori-3	4.9	35.01
Kori-4	23.6	12.96
Shin-Kori-1	5.8	25.93
Shin-Kori-2	100.1	6.17
Shin-Kori-3	102.0	6.20
Wolsong-1	40.6	10.72
Wolsong-2	90.6	9.19
Wolsong-3	32.8	16.78
Wolsong-4	99.3	9.49
Shin-Wolsong-1	98.5	6.69
Shin-Wolsong-2	71.7	7.05
Hanbit-1	73.3	8.47
Hanbit -2	77.1	6.66
Hanbit -3	99.8	6.74
Hanbit -4	37.5	10.64
Hanbit -5	76.6	7.38
Hanbit -6	52.7	8.19
Hanul-1	75.3	7.23
Hanul-2	89.0	6.77
Hanul-3	92.4	6.89
Hanul-4	93.8	6.39
Hanul-5	76.3	6.73
Hanul-6	78.2	7.88
Total nuclear	71.2	10.29

*Note:*

(1) Kori-1 was permanently shutdown on June 18, 2017.

Under extended-cycle operations, nuclear units can be run continuously for periods longer than the conventional 12-month period between scheduled shutdowns for refueling and maintenance. Since 1987, we have adopted the mode of extended-cycle operations for all of our pressurized light water reactor units and plan to use it for our newly constructed units. The duration of shutdown for fuel replacement, maintenance and the evaluation period for approval to start after maintenance was 199.7 days per unit in 2017. In addition, KHNP's nuclear units experienced an average

of 0.13 unplanned shutdowns per unit in 2017. In the ordinary course of operations, KHNP's nuclear units routinely experience damage and wear and tear, which are repaired during routine shutdown periods or during unplanned temporary suspensions of operations. No significant damage has occurred in any of KHNP's nuclear reactors, and no significant nuclear exposure or release incidents have occurred at any of KHNP's nuclear facilities since the first nuclear plant commenced operation in 1978.

**Table of Contents***Hydroelectric*

The table below sets forth certain information relating to KHNP's pumped-storage and hydroelectric business units, including the installed capacity as of December 31, 2017 and the average capacity factor in 2017.

Location of Unit	Number of Units	Classification	Year Built	Installed Capacity (Megawatts)	Average Capacity
					Factor (%)
Hwacheon	4	Dam waterway	1944	108.0	17.62
Chuncheon	2	Dam	1965	62.3	18.46
Euiam	2	Dam	1967	48.0	28.47
Cheongpyung	4	Dam	1943	140.1	19.37
Paldang	4	Dam	1973	120.0	22.65
Chilbo (Seomjingang)	3	Basin deviation	1945	34.8	18.00
Boseonggang	2	Basin deviation	1937	4.5	46.28
Kwoesan	2	Dam	1957	2.6	17.70
Anheung	3	Dam waterway	1978	0.4	20.17
Kangreung	2	Basin deviation	1991	82.0	0
Topyeong	1	Dam	2011	0.04	4.39
Muju	1	Dam	2003	0.4	14.62
Sancheong	2	Dam	2001	1.0	18.80
Yangyang	2	Dam	2005	1.4	11.61
Yecheon	1	Dam	2011	0.9	15.15
Cheongpeoung	2	Pumped Storage	1980	400.0	7.62
Samrangjin	2	Pumped Storage	1985	600.0	9.20
Muju	2	Pumped Storage	1995	600.0	11.83
Sancheong	2	Pumped Storage	2001	700.0	9.54
Yangyang	4	Pumped Storage	2006	1,000.0	8.85
Cheongsong	2	Pumped Storage	2006	600.0	9.63
Yecheon	2	Pumped Storage	2011	800.0	13.53
<b>Total</b>	<b>51</b>			<b>5,306.0</b>	<b>11.00</b>

*Solar/Wind*

The table below sets forth certain information, including the installed capacity as of December 31, 2017 and the average capacity factor in 2017, of the solar and wind power units of KHNP.

Location of Unit	Classification	Year Built	Installed Capacity (Megawatts)	Average Capacity
				Factor (Percent)
Yonggwang	Solar	2008	13.9	16.3
Yecheon	Solar	2012	2.0	15.7
Kori	Wind	2008	0.8	4.5

Kori	Solar	2017	5.1	16.3
Total			21.8	

Korea Water Resources Corporation, which is a Government-owned entity, assumes full control of multi-purpose dams, while KHNP maintains the dams used for power generation. Existing hydroelectric power units have exploited most of the water resources in Korea available for commercially viable hydroelectric power generation. Consequently, we expect that no new major hydroelectric power plants will be built in the foreseeable future. Due to the ease of its start-up and shut-down mechanism, hydroelectric power generation is reserved for peak demand periods.

**Table of Contents*****Korea South-East Power Co., Ltd.***

The table below sets forth, by fuel type, the weighted average age and installed capacity as of December 31, 2017 and the average capacity factor and average fuel cost per kilowatt in 2017 based upon the net amount of electricity generated, of KOSEP.

	<b>Weighted Average Age of Units (Years)</b>	<b>Installed Capacity (Megawatts)</b>	<b>Average Capacity Factor (Percent)</b>	<b>Average Fuel Cost per kWh (Won)</b>
<b>Bituminous:</b>				
Samcheonpo #1, 2, 3, 4, 5, 6	26.2	3,240	80.5	53.63
Yeongheung #1, 2, 3, 4, 5, 6	8.7	5,080	88.5	49.31
Yeosu # 2	3.8	668	77.7	65.51
<b>Anthracite:</b>				
Yeongdong #1, 2	38.2	200	38.4	101.38
<b>Combined cycle and internal Combustion:</b>				
Bundang gas turbine #1,2,3,4,5,6,7,8; steam turbine #1, 2	23.4	922	28.0	123.43
Hydro, Solar and other renewable energy		234		
<b>Total</b>	<b>15.6</b>	<b>10,344</b>	<b>78.0</b>	<b>55.27</b>



**Table of Contents*****Korea Midland Power Co., Ltd.***

The table below sets forth, by fuel type, the weighted average age and installed capacity as of December 31, 2017 and the average capacity factor and average fuel cost per kilowatt in 2017 based upon the net amount of electricity generated, of KOMIPO.

	<b>Weighted Average Age of Units (Years)</b>	<b>Installed Capacity (Megawatts)</b>	<b>Average Capacity Factor (Percent)</b>	<b>Average Fuel Cost per kWh (Won)</b>
Bituminous:				
Boryeong #1, 2, 3, 4, 5, 6, 7, 8	22.9	4,000	85.50	48.46
Shin Boryeong #1, 2	0.39	1,852	78.22	50.37
Anthracite:				
Seocheon #1, 2 <sup>(1)</sup>	33.5	400	68.69	72.38
Oil-fired:				
Jeju #2, 3	17.4	150	61.21	144.77
LNG-fired:				
Seoul #5 <sup>(1)</sup>	47.8	250	40.77	188.79
Combined-cycle and internal combustion:				
Boryeong gas turbine #1, 2, 3, 4, 5, 6 ; steam turbine #1, 2, 3,	18.8	1,350	6.23	105.04
Incheon gas turbine #1, 2, 3, 4,5,6 ; steam turbine #1, 2,3	12.8	1,462.4	46.80	90.77
Sejong gas turbine #1,2 ; steam turbine #1	4.1	530.4	64.59	84.72
Jeju Gas Turbine #3	23	55	0.5	689.41
Jeju Internal Combustion Engine #1,2	10.6	80	34.64	97.15
Wind:				
Yangyang #1, 2	11.6	3.0	14.29	
Sejong Maebongsan Wind		6.8	7.56	
Jeju Sangmyung Wind	0.47	21	19.71	
Combined heat and power:				
Wonju#1	2.7	10	44.82	38.17
Hydroelectric:				
Boryeong	8.9	7.5	29.00	
Shin Boryeong	0.2	5	27.69	
Photovoltaic ( PV ) power and fuel cell generation:				40.60
Boryeong (PV) site	9.7	1.7	13.14	
Shin Boryeong (PV) site	0.2	2.9	15.93	
Seocheon (PV) site	9.1	1.2	14.95	
Jeju (PV) site	6.5	2.3	12.62	
Seoul (PV) site	6.4	1.3	15.76	
Sejong (PV) site	0.1	0.3	10.65	
Yeosu (PV) site	5.9	2.2	16.55	
Incheon (PV) site	6.1	0.3	15.50	

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Boryeong (fuel cell) site	9.4	0.3	82.43	173.35
Shin Boryeong (fuel cell) site	0.2	7.5	57.37	92.01
Total	15.0	10,203.2	62.13	60.28

*Note:*

(1) Seocheon #1 and Seocheon #2 were shut down in July 2017 and Seoul #5 was shut down in April 2017.

**Table of Contents*****Korea Western Power Co., Ltd.***

The table below sets forth, by fuel type, the weighted average age and installed capacity as of December 31, 2017 and the average capacity factor and average fuel cost per kilowatt in 2017 based upon the net amount of electricity generated, of KOWEPO.

	<b>Weighted Average Age of Units (Years)</b>	<b>Installed Capacity (Megawatts)</b>	<b>Average Capacity Factor (Percent)</b>	<b>Average Fuel Cost per kWh (Won)</b>
<b>Bituminous:</b>				
Taeon #1, 2, 3, 4, 5, 6, 7, 8, 9, 10	11.7	6,100	76.1	53.43
<b>Oil-fired:</b>				
Pyeongtaek #1, 2, 3, 4	36.1	1,400	8.8	110.61
<b>Combined cycle:</b>				
Pyeongtaek #1, 2	11.2	1,348.5	24.9	92.56
Gunsan	7.6	718.4	18.1	107.46
West Incheon	25.5	1,800	16.3	99.88
<b>Hydroelectric:</b>				
Taeon	9.3	2.2	17.9	
<b>Solar:</b>				
Taeon	0.6	14.5	14.0	
Pyeongtaek	1.0	2.9	13.3	
West Incheon	0.5	1.19	13.6	
Gunsan	2.2	0.95	13.3	
Samryangjin	10.1	3.0	14.5	
Sejong City	5.5	5.0	15.1	
Gyeonggi-do	4.7	2.5	15.2	
Yeongam	4.8	13.3	16.5	
<b>Fuel Cell:</b>				
West Incheon 1	2.8	16.2	74.7	
West Incheon 2				
<b>Wind Power:</b>				
Hwasun	2.1	16	19.1	
<b>Integrated gasification combined cycle:</b>				
Taeon	1.4	346.3	42.4	77.69
<b>Total</b>	<b>15.9</b>	<b>11,791.0</b>	<b>48.6</b>	<b>61.93</b>

**Table of Contents*****Korea Southern Power Co., Ltd.***

The table below sets forth, by fuel type, the weighted average age and installed capacity as of December 31, 2017 and the average capacity factor and average fuel cost per kilowatt in 2017 based upon the net amount of electricity generated, of KOSPO.

	<b>Weighted Average Age of Units (Years)</b>	<b>Installed Capacity (Megawatts)</b>	<b>Average Capacity Factor (Percent)</b>	<b>Average Fuel Cost per kWh (Won)</b>
<b>Bituminous:</b>				
Hadong #1, 2, 3, 4, 5, 6, 7, 8	16.3	4,000	88.1	50.4
Samcheok #1	0.8	2,044	43.3	58.7
<b>Oil-fired:</b>				
Nam Jeju #3, 4	11.0	200	71.5	152.5
<b>Combined cycle:</b>				
Shin Incheon #1, 2, 3, 4	21.2	1,800	21.2	97.6
Busan #1, 2, 3, 4	14.2	1,800	33.9	93.1
Yeongwol #1	7.2	848	7.7	103.6
Hallim	21.5	105	11.2	163.5
Andong #1	3.8	362	39.4	88.9
<b>Wind power:</b>				
Hankyung	11.2	21	19.9	1.24
Seongsan	8.2	20	27.4	0.72
Solar	6.2	7	13.8	0.11
Small Hydropower	0.4	3	28.9	
<b>Total</b>	<b>12.7</b>	<b>11,210</b>	<b>51.8</b>	<b>63.9</b>

**Table of Contents*****Korea East-West Power Co., Ltd.***

The table below sets forth, by fuel type, the weighted average age and installed capacity as of December 31, 2017 and the average capacity factor and average fuel cost per kilowatt in 2017 based upon the net amount of electricity generated, of EWP.

	<b>Weighted Average Age of Units (Years)</b>	<b>Installed Capacity (Megawatts)</b>	<b>Average Capacity Factor (Percent)</b>	<b>Average Fuel Cost per kWh (Won)</b>
<b>Bituminous:</b>				
Dangjin #1, 2, 3, 4, 5, 6, 7, 8, 9, 10	10.3	6,040	66.7	80.97
Honam #1, 2	44.7	500	78.5	93.77
<b>Anthracite:</b>				
Donghae #1, 2	18.8	400	72.5	99.65
<b>Oil-fired:</b>				
Ulsan #4, 5, 6	37.5	1,200	19.9	176.75
<b>Combined cycle:</b>				
Ulsan gas turbine #1, 2, 3, 4, 5, 6, 7, 8; steam turbine #1, 2, 3, 4	14.1	2,072	35.6	117.93
Ilsan gas turbine #1, 2, 3, 4, 5, 6; steam turbine #1, 2	23.9	900	13.6	197.02
<b>Mini hydro:</b>				
Dangjin	6.3	8.1	32.7	174.44
<b>Photovoltaic:</b>				
Dangjin	6.6	1.0	14.0	395.60
Ulsan	6.1	0.6	14.0	367.43
Kwangyang	5.3	2.3	12.0	764.13
Dangjin Storage Facility	5.1	0.7	14.9	106.23
Dangjin Waste Treatment Facility	5.3	1.3	11.4	427.26
Dangjin Intake Channel Facility	4.5	1.0	13.5	104.18
Dangjin Coal Depot Roof Facility	0.6	3.4	11.3	141.49
Donghae	11.4	1.0	11.0	783.14
Donghae Sewage Disposal Plant Facility	0.1	4.4	0.1	933.36
Soowon Environment Center Facility	3.9	1.5	16.4	189.85
Kwangyang Port Warehouse Facility	3.6	1.1	16.1	196.29
<b>Fuel cell:</b>				
Ilsan # 1	8.3	2.4	69.8	296.41
Ilsan # 2	6.8	2.8	82.9	295.71
Ilsan # 3	4.8	2.8	82.7	283.85
Ulsan	4.3	2.8	75.9	207.66
<b>Wind Power:</b>				
YeongGwang Jisan	5.3	3.0	11.6	55.13
<b>Biomass:</b>				
Donghae	4.5	30.0	76.1	255.18

Capital Landfill Cogeneration Facility	3.8	5.0	0.0	
<b>Total</b>	<b>16.9</b>	<b>11,187</b>	<b>52.2</b>	<b>94.91</b>

***Power Plant Remodeling and Recommissioning***

Our generation subsidiaries supplement power generation capacity through remodeling or recommissioning of thermal units. Recommissioning includes installation of anti-pollution devices, modification of control

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systems and overall rehabilitation of existing equipment. The following table shows recent remodeling and recommissioning initiatives by our generation subsidiaries.

<b>Power Plant</b>	<b>Capacity</b>	<b>Completed (Year)</b>	<b>Extension</b>	<b>Company</b>
Taeon #1-10	5,050 MW (500 MW×8, 1,050 MW×2)	EP <sup>(1)</sup> upgrade (#2, 2016) EP <sup>(1)</sup> upgrade (#1, 3, 2017) SCR <sup>(2)</sup> upgrade (#2, 4, 7, 2016) SCR <sup>(2)</sup> upgrade (#1, 3, 8, 9, 10, 2017) FGD <sup>(5)</sup> upgrade, (#1, 3, 2017)	Anti-pollution	KOWEPO
Pyeongtaek #1-4	1,400 MW (350 MW×4)	Steam turbine upgrade (#2, 3, 2014)	10-year performance- improvement	KOWEPO
Boryeong #1-2	1,000 MW (500 MW×2)	FGD upgrade (#1, 2, 2014)	Performance- improvement	KOMIPO
Boryeong #3-6	2,000 MW (500 MW×8)	Retrofit(#3, 2019) Retrofit(#5, 6, 2021) Retrofit(#4, 2023) FGD, EP, SCR upgrade (#3, 2019) FGD, EP, SCR upgrade (#5, 6, 2021) FGD, EP, SCR upgrade (#4, 2023)	Lifetime extension & Performance- improvement  Performance- improvement	KOMIPO
Boryeong #7, 8	1,000 MW (500 MW×2)	FGD,EP upgrade (#7, 2025) FGD,EP upgrade (#8, 2026)	Performance- improvement	KOMIPO
Seocheon #1-2	400 MW (200 MW×2)	SCR <sup>(2)</sup> : 2012	Anti-pollution	KOMIPO
Yeosu #1, 2	668.6MW (#1:340, #2:328.6MW)	Boiler Type Change (CFBC <sup>(3)</sup> ):#1:2016, #2:2011)	30 years	KOSEP
Samcheonpo #1-2	1,120 MW (560 MW ×2)	Boiler, EP, Draft System Upgrade (#1, 2: 2012)	10 years  Refurbishing- modernization	KOSEP
Yeongdong#1	125 MW	Boiler, Hybrid SCR & EP, Draft System Retrofit (Biomass <sup>(4)</sup> #1: 2017)	Renewable energy	KOSEP

*Notes:*

- (1) EP means an electrostatic precipitation system.
- (2) SCR means a selective catalytic reduction system.
- (3) CFBC means a circulating fluidized bed combustion system.
- (4) Biomass means wood pallet powered plant.
- (5) FGD means flue-gas desulfurization designed to remove sulfur oxides.

**Transmission and Distribution**

We currently transmit and distribute substantially all of the electricity in Korea.

As of December 31, 2017, our transmission system consisted of 33,955 circuit kilometers of lines of 765 kilovolts and others including high-voltage direct current lines, and we had 839 substations with aggregate installed transformer capacity of 311,869 megavolt-amperes.

As of December 31, 2017, our distribution system consisted of 115,945 megavolt-amperes of transformer capacity and 9,287,199 units of support with a total line length of 483,467 circuit kilometers.



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We make substantial investments in our transmission and distribution systems to minimize power interruptions and improve efficiency. Our current projects principally focus on increasing capabilities of the existing power networks and reducing our transmission and distribution loss, which was 3.57% of our gross generation in 2017. To cope with increasing damages to large-scale transmission and distribution facilities, we plan to reinforce stability of our transmission and distribution facilities through stricter design and material specifications. In addition, we also plan to expand underground transmission and distribution facilities to meet customer demand for more environment-friendly facilities. In order to reduce the interruption time in power distribution, which is an indicator of the quality of electricity transmission, we are also continuing to invest in automation of electricity transmission and development of new transmission technologies, among others.

Some of the facilities we own and use in our distribution system use rights of way and other concessions granted by municipal and local authorities in areas where our facilities are located. These concessions are generally renewed upon expiration.

**New Energy Industry Projects**

Certain of our new energy industry projects are described below.

*Advanced Metering Infrastructure*

In July 2012, the Government implemented a master plan to build out a smart grid, which includes the Advanced Metering Infrastructure (AMI) roadmap. In accordance with such plan, we are in the process of installing smart meters and related communication networks and operating systems for 22 million households for target completion by 2020 as part of the smart grid initiative in an effort to enhance efficiency in the power electricity industry and alleviate growing energy shortage concerns. Smart meters refer to digital meters that record, on a real-time basis, electricity consumption within a household so that consumers will have a price-based incentive to enhance efficiency in their electricity usage. As of December 31, 2017, we have installed 5.2 million smart meter units, and plan to install an additional 17 million units by 2020. The AMI project is expected to cost Won 1.6 trillion through 2020.

*Smart Grids*

Smart grids refer to next-generation networks for electricity distribution that integrate information technology into existing power grids with the aim of enabling two-way real time exchange of information between electricity suppliers and consumers for optimal efficiency in electricity use. As part of our overall business strategy, we are currently developing and implementing smart grids based on advanced information technology, in order to promote more efficient allocation and use of electricity by consumers. We expect that such technology will improve efficiency and reduce electricity loss over the course of electricity transmission and distribution. We also expect that the smart grid initiative will significantly increase efficient energy consumption by providing real-time data to customers, which would in turn help to reduce greenhouse gas emission and decrease Korea's reliance on foreign energy sources.

Leveraging our experience gained through high-tech intelligent power transmission and distribution network, or smart grid test beds in Jeju Island from 2009 to 2013, we plan to expand our smart grid project. In 2014, we successfully implemented the KEPCO Building Energy Management System (K-BEMS), our smart grid technology, at our Guri-Namyangju branch. In recognition of our achievement, we were awarded an honorable mention from the International Smart Grid Action Network and a special prize from the Global Smart Grid Federation in 2015. By the end of 2017, we implemented smart grid technology in 120 of our branches, and we plan to expand implementation of smart grid technology to residential and industrial buildings.

*Energy Storage Systems*

In October 2013, as part of an endeavor to create new markets for energy demand management applications using information and communication technology, we established a business plan to roll out energy storage

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systems for frequency regulation nationwide. These systems involve the establishment and operation of batteries and transformers with large-sized charge and discharge capabilities adjacent to substations to transmit electricity stably with regulated frequencies and optimize the efficiency of the substation operation. This system allows full conversion of reserve capacity for frequency regulation at existing low-cost generators into electricity storage and, if operated in sizable scale, offers opportunities for substantial cost savings in purchase of electricity.

In December 2014, we conducted a pilot project for this initiative by installing a 52 megawatts energy storage system at the Seo-Anseong substation and the Shin-Yongin substation. In July 2015, these substations began to commercially operate energy storage systems, and we expanded the energy storage capacity nationwide by an additional 184 megawatts in 2016 and an additional 140 megawatts in 2017, with a total capacity of 376 megawatts as of December 31, 2017. In addition, we completed construction of one of the world's largest indoor energy storage systems for frequency regulation in Gimje substation with a 48 megawatts capacity.

### *Electric Vehicle Charging Infrastructure*

In order to promote the use of environment friendly electric vehicles, we plan to install 3,000 high-speed electric vehicle charging stations primarily in public space by 2022. We also plan to establish approximately 4,000 electric vehicle charging infrastructures in residential building complexes by the end of 2018.

### *Other New Energy Initiatives*

In addition to the above, we are currently taking various initiatives in the new energy field, including conducting feasibility studies for diagnostic and/or preventive systems for our transmission networks using unmanned drone applications and smart sensors based on the Internet of Things (IoT) technology.

In January 2016, the Ministry of Trade, Industry and Energy announced an initiative to promote the new energy industry by creating the New Energy Industry Fund. For further details, see Capital Investment Program.

### *Fuel Sources and Requirements*

#### *Nuclear*

Uranium, the principal fuel source for nuclear power, accounted for 38.1%, 37.1% and 34.8% of our fuel requirements for electricity generation in 2015, 2016 and 2017, respectively.

All uranium ore concentrates used by KHNP are imported from, and conversion and enrichment of such concentrates are provided by, sources outside Korea and are paid for with currencies other than Won, primarily U.S. dollars.

In order to ensure stable supply, KHNP enters into long-term and medium-term contracts with various suppliers and supplements such supplies with purchases in spot markets. In 2017, KHNP purchased 100%, or approximately 4,000 tons, of its uranium concentrate requirement under both long-term and spot supply contracts with suppliers in Canada, the United Kingdom, Kazakhstan, Germany, Niger, Australia and the United States. Under the long-term supply contracts, the purchase prices of uranium concentrates are adjusted annually based on base prices and spot market prices prevailing at the time of actual delivery. The conversion and enrichment services of uranium concentrates are provided by suppliers in Canada, France, Germany, Japan, China, Russia, the United Kingdom and the United States. A Korean supplier typically provides fabrication of fuel assemblies. Except for certain fixed contract prices, contract prices for processing of uranium are adjusted annually in accordance with the general rate of inflation. KHNP intends to obtain its uranium requirements in the future, in part, through purchases under medium- to long-term contracts and,

in part, through spot market purchases.

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### *Coal*

Bituminous coal accounted for 46.2%, 45.9% and 52.2% of our fuel requirements for electricity generation in 2015, 2016 and 2017, respectively, and anthracite coal accounted for 1.7%, 1.8% and 1.0% of our fuel requirements for electricity generation in 2015, 2016 and 2017, respectively.

In 2017, our generation subsidiaries purchased approximately 92.8 million tons of bituminous coal, of which approximately 38%, 31%, 11%, 9% and 11% were imported from Indonesia, Australia, Russia, South Africa and others, respectively. Approximately 82% of the bituminous coal requirements of our generation subsidiaries in 2017 were purchased under long-term contracts with the remaining 18% purchased in the spot market. Some of our long-term contracts relate to specific generating plants and extend through the end of the projected useful lives of such plants, subject in some cases to periodic renewal. Pursuant to the terms of our long-term supply contracts, prices are adjusted periodically based on market conditions. The average cost of bituminous coal per ton purchased under such contracts amounted to Won 90,902, Won 89,118 and Won 98,891 in 2015, 2016 and 2017, respectively.

In 2017, our generation subsidiaries purchased approximately 0.9 million tons of anthracite coal. The prices for anthracite coal under such contracts are set by the Government. The average cost of anthracite coal per ton purchased under such contracts was Won 108,346, Won 96,121 and Won 124,036 in 2015, 2016 and 2017, respectively.

### *Oil*

Oil accounted for 2.2%, 3.0% and 1.2% of our fuel requirements for electricity generation in 2015, 2016 and 2017, respectively.

In 2017, our generation subsidiaries purchased approximately 7.1 million barrels of fuel oil, substantial portion of which was purchased from domestic refiners through competitive open bidding. Purchase prices are based on the spot market price in Singapore. The average cost per barrel was Won 67,517, Won 53,842 and Won 77,188 in 2015, 2016 and 2017, respectively.

### *LNG*

LNG accounted for 10.7%, 10.7% and 8.7% of our fuel requirements for electricity generation in 2015, 2016 and 2017, respectively. In 2017, for use in electricity generation we purchased approximately 4.8 million tons of LNG from Korea Gas Corporation, a Government-controlled entity in which we currently own a 21.57 equity interest (excluding treasury shares). In 2017, we purchased a substantial portion of our LNG requirements for use in power generation from Korea Gas Corporation. Under the terms of the LNG contract with Korea Gas Corporation, all of our five non-nuclear generation subsidiaries jointly and severally agreed to purchase a total of 5.05 million tons of LNG in 2017, subject to an automatic price adjustment annually based on a pre-determined formula if the actual purchased amount exceeds or falls short of the contracted amount. We believe the quantities of LNG provided under such contract will be adequate to meet the needs of our generation subsidiaries for LNG for the next several years. The LNG supply contracts between our generation subsidiaries and Korea Gas Corporation generally have a term of 20 years and provide for minimum purchase requirements for our generation subsidiaries, the specific terms of which are subject to negotiation between Korea Gas Corporation and our generation subsidiaries and approval by the Government. The average cost per ton of LNG under our contract with Korea Gas Corporation was Won 775,663, Won 594,662 and Won 655,127, in 2015, 2016 and 2017, respectively.

### *Hydroelectric*

Hydroelectric power generation accounted for 1.0%, 1.1% and 1.2%, of our fuel requirements for electricity generation in 2015, 2016 and 2017, respectively. The availability of water for hydroelectric power depends on

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rainfall and competing uses for available water supplies, including residential, commercial, industrial and agricultural consumption. Pumped storage enables us to increase the available supply of water for use during periods of peak electricity demand.

**Sales and Customers**

Our sales depend principally on the level of demand for electricity in Korea and the rates we charge for the electricity we sell to the end-users.

Demand for electricity in Korea grew at a compounded average rate of 1.7% per annum for the five years ended December 31, 2017. According to the Bank of Korea, the compounded growth rate for GDP was approximately 3.0% for the same period. The GDP growth rate was approximately 2.8%, 2.9% and 3.1% during 2015, 2016 and 2017, respectively.

The table below sets forth, for the periods indicated, the annual rate of growth in Korea's GDP and the annual rate of growth in electricity demand (measured by total annual electricity consumption) on a year-on-year basis.

	2013	2014	2015	2016	2017
Growth in GDP	2.9%	3.3%	2.8%	2.9%	3.1%
Growth in electricity consumption	1.8%	0.6%	1.3%	2.8%	2.2%

Electricity demand in Korea varies within each year for a variety of reasons other than the general growth in GDP demand. Electricity demand tends to be higher during daylight hours due to heightened commercial and industrial activities and electronic appliance use. Due to the use of air conditioning during the summer and heating during the winter, electricity demand is higher during these two seasons than the spring or the fall. Variation in weather conditions may also cause significant variation in electricity demand.

We do not use any marketing channels, including any special sales methods, to sell electricity to our customers, other than to install electricity meters on-site and take monthly readings of such meters, based upon which invoices are sent to our customers.

***Demand by the Type of Usage***

The table below sets forth consumption of electric power, and growth of such consumption on a year-on-year basis, by the type of usage (in gigawatt hours) for the periods indicated.

	2013	YoY	2014	YoY	2015	YoY	2016	YoY	2017	YoY	% of
	(GWh)	growth	(GWh)	growth	(GWh)	growth	(GWh)	growth	(GWh)	growth	Total
		(%)		(%)		(%)		(%)		(%)	2017
Residential	65,815	0.5	64,457	(2.1)	65,619	1.8	68,057	3.7	68,544	0.7	13.5
Commercial	102,196	0.6	100,761	(1.4)	103,679	2.9	108,617	4.8	111,298	2.5	21.9
Educational	7,947	1.1	7,438	(6.4)	7,691	3.4	8,079	5.1	8,316	2.9	1.6
Industrial	265,373	2.8	272,552	2.7	273,548	0.4	278,828	1.9	285,969	2.6	56.3
Agricultural	13,866	8.5	14,505	4.6	15,702	8.3	16,580	5.6	17,251	4.0	3.4
Street lighting	3,156	(0.1)	3,221	2.1	3,341	3.7	3,462	3.6	3,557	2.7	0.7

Overnight Power	16,496	(6.4)	14,658	(11.1)	14,075	(4.0)	13,416	(4.7)	12,811	(4.5)	2.5
Total	474,849	1.8	477,592	0.6	483,655	1.3	497,039	2.8	507,746	2.2	100.0

The industrial sector represents the largest segment of electricity consumption in Korea. Demand for electricity from the industrial sector was 285,969 gigawatt hours in 2017, representing a 2.6% increase from 2016, largely due to the continued export-based growth of the Korean economy, which resulted in increased



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industrial output and greater utilization of industrial plants. Demand for electricity from the commercial sector depends largely on the level and scope of commercial activities in Korea, which in recent years have resulted in increased office building construction, office automation and use of air conditioners and heaters. Demand for electricity from the commercial sector increased to 111,298 gigawatt hours in 2017, representing a 2.5% increase from 2016 largely due to the recovery of market demand as a result of various Government policies to boost the economy. Demand for electricity from the residential sector is largely dependent on population growth and use of heaters, air conditioners and other electronic appliances. Demand for electricity from the residential sector increased to 68,544 gigawatt hours in 2017, representing a 0.7% increase compared to 2016, largely due to an increase in household electricity usage for air conditioning and heating.

***Demand Management***

Our ability to provide adequate supply of electricity is principally measured by the facility reserve margin and the supply reserve margin. The facility reserve margin represents the difference between the peak usage during a year and the installed capacity at the time of such peak usage, expressed as a percentage of such installed capacity. The supply reserve margin represents the difference between the peak usage in a year and the average available capacity at the time of such peak usage, expressed as a percentage of such peak usage. The following table sets forth our facility reserve margin and supply reserve margin for the periods indicated.

	2013	2014	2015	2016	2017
Facility reserve margin	7.5%	16.3%	19.4%	17.6%	34.0%
Supply reserve margin	5.5%	11.5%	11.6%	8.5%	12.3%

While we seek to meet the growing demand for electricity in Korea primarily by continuing to expand our generation capacity, we have also implemented several measures to curtail electricity consumption, especially during peak periods. We apply time-of-use and seasonality tariff, which are structured so that higher tariffs are charged at the time and months of peak demand to select types of customers, and we also apply a progressive rate structure for the residential use of electricity. We have several demand management programs to control demand and induce power conservation during peak hours and peak seasons such as providing incentives for reducing power consumption during peak hours.

***Electricity Rates***

The Electricity Business Act and the Price Stabilization Act of 1975, each as amended from time to time, prescribe the procedures for the approval and establishment of rates charged for the electricity we sell. We submit our proposals for revisions of rates or changes in the rate structure to the Ministry of Trade, Industry and Energy. The Ministry of Trade, Industry and Energy then reviews these proposals and, following consultation with the Ministry of Strategy and Finance and review by the Korea Electricity Commission, makes the final decision.

Under the Electricity Business Act and the Price Stabilization Act, electricity rates are established at levels that would enable us to recover our operating costs attributable to our basic electricity generation, transmission and distribution operations as well as receive a fair investment return on capital used in those operations.

In May 2014, in order to make conforming changes to the standards for determining the public utility rates and to further bolster the reasonableness of cost determination, the Ministry of Trade, Industry and Energy amended the standards for determining the electricity tariff rates. The main amendments include (i) recording as our cost of electricity (which forms part of our operating costs) the pretax income of our six generation subsidiaries (which was

previously deducted from our operating costs), (ii) excluding from our rate base our equity interests in our six generation subsidiaries (which were previously included in the rate base discussed below), and (iii) when determining working capital, considering the actual time of our cost recovery (namely, the accounts receivable collection period and the accounts payable payment period).

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For the purposes of rate approval, operating costs are defined as the sum of our operating expenses (which principally consists of cost of sales and selling and administrative expenses) and our adjusted income taxes.

Fair investment return represents an amount equal to the rate base multiplied by the rate of return.

Following the amendments to its computation methods in May 2014 as described above, the rate base is currently equal to the sum of:

net utility plant in service (which is equal to utility plant minus accumulated depreciation minus revaluation reserve);

the portion of working capital which is equal to the appropriate level of operating costs minus depreciation and other non-cash charges while taking into account the actual time of cost recovery; and

the portion of construction-in-progress which is charged from our retained earnings.

The amounts used for the variables in the rates are those projected by us for the periods to be covered by the rate approval.

For the purpose of determining the fair rate of return, the rate base is divided into two components in proportion to our total shareholders' equity and our total debt. The rate of return permitted in relation to the debt component of the rate base is set at a level designed to approximate the weighted average interest cost on all types of borrowing for the periods covered by the rate approval. The rate of return permitted in relation to the equity component of the rate base is set by applying the capital asset pricing model which takes account of the risk-free rate, the return on the Korea Stock Price Index, KOSPI, a Korean equity market index, and the correlation of the stock price of our company with KOSPI. In 2016, the approved rate of return on the debt component of the rate base was 0.9% while the approved rate of return on the equity component of the rate base was 3.34%. As a result of such approved rates of returns, the fair rate of return in 2016 was determined to be 4.24%. The fair rates of return for 2017 and 2018 have not yet been determined.

The Electricity Business Act and the Price Stabilization Act do not specify a basis for determining the reasonableness of our operating expenses or any other items (other than the level of the fair investment return) for the purposes of the rate calculation. However, the Government exercises substantial control over our budgeting and other financial and operating decisions.

In addition to the calculations described above, a variety of other factors are considered in setting overall tariff levels. These other factors include consumer welfare, our projected capital requirements, the effect of electricity tariff on inflation in Korea and the effect of tariff on demand for electricity.

From time to time, our actual rate of return on invested capital may differ significantly from the fair rate of return on invested capital assumed for the purposes of electricity tariff approvals, for reasons, among others, related to movements in fuel prices, exchange rates and demand for electricity that differ from what is assumed for determining our fair rate of return. For example, between 1987 and 1990, the actual rate of return was above the fair rate of return due to declining fuel costs and rising demand for electricity at a rate not anticipated for purposes of determining our fair rate of return. Similarly, depreciation of the Won against the U.S. dollar accounted for our actual rates of return

being lower than the fair rate of return for the period from 1996 to 2000. For the period between 2006 and 2013, our actual rates of return were lower than the fair rate of return largely due to a general increase in fuel costs and additional facility investment costs incurred, the effects of which were not offset by timely increases in our tariff rates. Between 2014 and 2016, however, largely due to a decrease in fuel costs reflective of the drop in oil prices, our actual rate of return has surpassed the fair rate of return; however, substantially all of the resulting excess has been used to fund capital expenditure and repair and maintenance, as well as to offer tariff discounts to economically or otherwise disadvantaged households, and make investments in renewable energy and other environmental programs.

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Partly in response to the variance between our actual rates of return and the fair rates of return, the Government from time to time increases the electricity tariff rates, but there typically is a significant time lag for the tariff increases as such increases requires a series of deliberative processes and administrative procedures and the Government also has to consider other policy considerations, such as the inflationary effect of overall tariff increases and the efficiency of energy use from sector-specific tariff increases.

Prior to November 2013, the Government from time to time effected tariff increases that typically covered all sectors, namely, residential, commercial and industrial, mainly in response to sustained increases in fuel prices. No cross-sector tariff increase has been implemented since November 2013 largely due to a general decline in fuel prices and relatively stable exchange rates. However, effective January 1, 2017, the Government made several adjustments to the existing rate structure in order to ease the burden of electricity tariff on residential consumers as well as promote the use of renewable energy. First, the progressive rate structure applicable to the residential sector, which applies a gradient of increasing tariff rates for heavier electricity usage, was changed from a six-tiered structure with the highest rate being no more than 11.7 times the lowest rate (which gradient system has been in place since 2005) into a three-tiered structure with the highest rate being no more than three times the lowest rate in order to reflect the changes in the pattern of electricity consumption and reduce the electricity charges payable by consumers. Second, the new tariff structure encourages energy saving by offering rate discounts to residential consumers that voluntarily reduce electricity consumption while charging special high rates to residential consumers with heavy electricity consumption during peak usage periods during the summer and the winter. Third, a temporary rate discount will apply during 2017 to 2019 to investments in environmentally friendly facilities such as energy storage systems, renewable energy and electric cars. Such adjustments may lower our revenues from the sale of electricity and accordingly have a material adverse effect on our results of operation and cash flows.

The tariff rates we charge for electricity vary among the different classes of consumers, which principally consist of industrial, commercial, residential, educational and agricultural consumers. The tariff also varies depending upon the voltage used, the season, the time of usage, the rate option selected by the user and, in the residential sector, the amount of electricity used per household, as well as other factors. For example, we adjust for seasonal tariff variations by applying higher rates when demand tends to rise such as during the months of June, July and August (when the demand tends to rise due to increased use of air conditioning) and November, December, January and February (when demand tends to rise due to increased use of heating), which reflects the policy of the Korean government to cope with the rise in electricity demand during peak seasons by encouraging a more efficient use of electricity by customers. In addition, we provide discounts on tariff rates to certain users such as low income households.

Our current tariff schedule, which became effective as of January 1, 2017 reflecting the adjustments outlined above, is summarized below by the type of usage:

*Industrial.* The monthly basic charge varies from Won 5,550 per kilowatt to Won 9,810 per kilowatt depending on the type of contract, the voltage used and the rate option. The energy usage charge varies from Won 53.7 per kilowatt-hour to Won 196.6 per kilowatt-hour depending on the type of contract, the voltage used, the season, the time of day and the rate option.

*Commercial.* The monthly basic charge varies from Won 6,160 per kilowatt to Won 9,810 per kilowatt depending on the type of contract, the voltage used and the rate option. The energy usage charge varies from Won 53.7 per kilowatt-hour to Won 196.6 per kilowatt-hour depending on the type of contract, the voltage used, the season, the time of day and the rate option.

*Residential.* The monthly basic charge varies from Won 910 for electricity usage of less than 200 kilowatt hours to Won 7,300 for electricity usage in excess of 400 kilowatt hours. Residential tariff also includes an energy usage charge ranging from Won 93.3 to Won 280.6 per kilowatt-hour for electricity usage depending on the amount of usage and voltage. During the peak usage periods during the summer and the winter, namely the months of July and August and December to February, a higher

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energy usage charge of Won 709.5 per kilowatt-hour applies to residential consumers whose monthly electricity consumption exceeds 1,000 kilowatts hour.

*Educational.* The monthly basic charge varies from Won 5,230 per kilowatt to Won 6,980 per kilowatt depending on the voltage used and the rate option. The energy usage charge varies from Won 43.8 per kilowatt-hour to Won 160.4 per kilowatt-hour depending on the voltage used, the season and the rate option.

*Agricultural.* The monthly basic charge varies from Won 360 per kilowatt to Won 1,210 per kilowatt depending on the type of usage. The energy usage charge varies from Won 21.6 per kilowatt-hour to Won 41.9 per kilowatt-hour depending on the type of contract, the voltage used and the season.

*Street-lighting.* The monthly basic charge is Won 6,290 per kilowatt and the energy usage charge is Won 85.9 per kilowatt-hour. For electricity capacity of less than 1 kilowatt or for places where the installation of the electricity meter is difficult, a fixed rate of Won 37.5 per watt applies, with the minimum monthly charge of Won 1,220.

In 2001, as part of implementing the Restructuring Plan, the Ministry of Trade, Industry and Energy established the Electric Power Industry Basis Fund to enable the Government to take over certain public services previously performed by us. In 2017, 3.7% of the tariff we collected from our customers was transferred to this fund prior to recognizing our sales revenue.

**Power Development Strategy**

We and our generation subsidiaries make plans for expanding or upgrading our generation capacity based on the Basic Plan, which is generally revised and announced every two years by the Government. In July 2015, the Government announced the Seventh Basic Plan relating to the future supply and demand of electricity, focusing on stable supply of electricity and increasing the portion of low carbon electricity supply sources, among others. To revise the Seventh Basic Plan, in December 2017, the Government announced the Eighth Basic Plan which are more environmentally focused than the Seventh Basic Plan and to be effective for the period from 2017 to 2031. The Eighth Basic Plan focuses on, among other things, (i) decreasing the reliance on nuclear and coal-based supply sources, (ii) increasing utilization of renewable energy sources and (iii) balancing the existing cost-based pool system of purchase of electricity with an environmentally-focused pool system, in order to increase utilization of LNG energy sources, which are cleaner but more expensive than nuclear or coal energy sources. Furthermore, the Eighth Basic Plan includes the following implementing measures: (i) six new nuclear generation units in a planning stage would not be constructed, (ii) extension of life of 10 decrepit nuclear generation units would not be granted, (iii) Wolsong #1 unit is not counted as part of domestic energy generation capacity, (iv) seven decrepit coal-fired generation plants will be retired by 2022, (v) six other coal-fired generation plants shall be converted to LNG fuel use and (vi) domestic renewable energy generation capacity shall be expanded to 58.5 gigawatts by 2030.

In January 2014, prior to the announcement of the Seventh Basic Plan, the Ministry of Trade, Industry and Energy adopted the Second Basic National Energy Plan following consultations with representatives from civic groups, the power industry and academia. The Second Basic National Energy Plan, which is a comprehensive plan that covers the entire spectrum of energy industries in Korea, covers the period from 2014 to 2035 and focuses on the following six key tasks: (i) shifting the focus of energy policy to demand management with a goal of reducing the growth of electricity demand by 15% by 2035 through efficiency enhancement programs compared to the projected growth in the absence of such efficiency enhancement programs, (ii) establishing a geographically decentralized electricity

generation system so as to reduce transmission losses with a goal of supplying at least 15% of total electricity through such system by 2035, (iii) applying latest greenhouse gas emission reduction technologies to newly constructed generation units in order to further promote safety and environmental friendliness, (iv) strengthening resource exploration and fuel procurement capabilities to enhance Korea's energy security, (v) ensuring stable supply of energy and increasing the portion of electricity supplied



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from renewable sources to 11% by 2035, (vi) reinforcing the system for stable supply of conventional energy, such as oil and gas, and (vii) introducing in 2015 an energy voucher system in lieu of a tariff discount system for the benefit of low-income consumers. In addition, the Second Basic National Energy Plan has revised the target level of electricity generated by nuclear sources as a percentage of total electricity generated to 29%, compared to 41% under the First Basic National Energy Plan announced in 2008, which covered the period from 2008 to 2030. In March 2018, the Government announced its plan to establish the Third Basic National Energy Plan by the end of 2018.

We cannot assure that the Eighth Basic Plan, the Second Basic National Energy Plan or the respective plans to be subsequently adopted will successfully achieve their intended goals, the foremost of which is to ensure, through carefully calibrated capacity expansion and other means, balanced overall electricity supply and demand in Korea at affordable costs to end users while promoting efficiency and environmental friendliness in the consumption and production of electricity. If there is significant variance between the projected electricity supply and demand considered in planning our capacity expansions and the actual electricity supply and demand or if these plans otherwise fail to meet their intended goals or have other unintended consequences, this may result in inefficient use of our capital, mispricing of electricity and undue financing costs on the part of us and our generation subsidiaries, among others, which may have a material adverse effect on our results of operations, financial condition and cash flows.

**Capital Investment Program**

The table below sets forth, for each of the years ended December 31, 2015, 2016 and 2017, the amounts of capital expenditures for the construction of generation, transmission and distribution facilities.

2015	2016	2017
(In billions of Won)		
15,750	13,950	13,711

The table below sets forth the currently estimated installed capacity for new or expanded generation units to be completed by our generation subsidiaries in each year from 2018 to 2021 based on the Eighth Basic Plan, as amended.

Year	Number of Units	Type of Units	Total Installed Capacity (Megawatts)
2018	2	Nuclear power	2,800
	2	LNG-combined	240
2019	1	Nuclear power	1,400
	3	LNG-combined	1,315
2020	1	Coal fired	1,000
	1	LNG-combined	125
2021	None		

For the period from 2022 to 2023, our generation subsidiaries currently plan to complete two additional nuclear units with an aggregate installed capacity of 2,800 megawatts.

As part of our capital investment program, we also intend to add new transmission lines and substations, continue to replace overhead lines with underground cables and improve the existing transmission and distribution systems.

The actual number and capacity of generation units and transmission and distribution facilities we construct and the timing of such construction are subject to change depending upon a variety of factors, including, among others, changes in the Basic Plan, demand growth projections, availability and cost of financing, changes in fuel prices and availability of fuel, ability to acquire necessary plant sites, environmental considerations and community opposition.

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The table below sets forth, for the period from 2018 to 2020, the budgeted amounts of capital expenditures pursuant to our capital investment program, which primarily consist of budgets for the construction of generation, transmission and distribution facilities and, to a lesser extent, renewable energy generation and new energy industry projects. The budgeted amounts may vary from the actual amounts of capital expenditures for a variety of reasons, including, among others, the implementation of the Eighth Basic Plan, changes in the number of units to be constructed, the actual timing of such construction, changes in rates of exchange between the Won and foreign currencies and changes in interest rates.

	<b>2018</b>	<b>2019</b>	<b>2020</b>	<b>Total</b>
	<b>(in billions of Won)</b>			
<b>Generation<sup>(1)</sup>:</b>				
Nuclear	4,076	4,243	3,491	11,810
Thermal	3,362	3,123	4,120	10,605
Renewables and others	891	1,789	1,857	4,537
<b>Sub-total</b>	<b>8,329</b>	<b>9,155</b>	<b>9,468</b>	<b>26,952</b>
<b>Transmission and Distribution:</b>				
Transmission	2,938	3,529	3,433	9,900
Distribution	2,881	2,587	2,603	8,071
<b>Sub-total</b>	<b>5,819</b>	<b>6,116</b>	<b>6,036</b>	<b>17,971</b>
Others <sup>(2)</sup>	1,668	1,909	2,076	5,653
<b>Total</b>	<b>15,816</b>	<b>17,180</b>	<b>17,580</b>	<b>50,576</b>

*Notes:*

(1) The budgeted amounts for our generation facilities are based on the Eighth Basic Plan.

(2) Principally consists of investments in telecommunications and new energy industry projects, among others. In January 2016, the Ministry of Trade, Industry and Energy announced an initiative to promote the new energy industry by creating the New Energy Industry Fund, which is made up of funds sponsored by government-affiliated energy companies. We contributed Won 500 billion to the funds in 2016. The purpose of these funds is to invest in substantially all frontiers of the new energy industry, including renewable energy, energy storage systems, electric vehicles, small-sized self-sustaining electricity generation grids known as micro-grids, among others, as well as invest in start-up companies, ventures, small- to medium-sized enterprise and project businesses that engage in these businesses but have not previously attracted sufficient capital from the private sector.

Furthermore, as part of the Comprehensive Measures against Particulate Matter and the Eighth Basic Plan, announced by the Government in September 2017 and December 2017, respectively, the Government set forth the following policy directions relating to coal-fired generation units: (i) two coal-fired generation units scheduled for construction

and four existing coal-fired generation units shall convert to LNG fuel use, (ii) in principle, construction of new coal-fired generation units shall not be planned, (iii) seven of the coal-fired generation units that are 30 years or older will be shut down on an accelerated schedule, (iv) coal-fired generation units that are 30 years or older shall temporarily cease operations from March through June of each year, (v) coal-fired generation units shall be put through comprehensive functional and environmental upgrades and (vi) coal-fired generation units shall be subject to emission standards that are twice as more rigorous than the current standards to be in effect by the first half of 2018. Compliance with such measures is expected to result in our incurring significant costs.

We have financed, and plan to finance in the future, our capital investment programs primarily through net cash provided by our operating activities and financing in the form of debt securities and loans from domestic financial institutions, and to a lesser extent, borrowings from overseas financial institutions. In addition, in order

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to prepare for potential liquidity shortage, we and our generation subsidiaries maintain several credit facilities with domestic financial institutions in the aggregate amounts of Won 3,831 billion and US\$383 million, the full amount of which was available as of December 31, 2017. We, KHNP, KOMIPO and KOWEPO also maintain global medium-term note programs in the aggregate amount of US\$13.0 billion, of which approximately US\$8.9 billion remains currently available for future drawdown. KOSEP also maintains an A\$2 billion Australian dollar medium-term note program, of which approximately A\$1.7 billion remains current available for future drawdown. See also Item 5.B. Liquidity and Capital Resources Capital Resources.

**Environmental Programs**

The Environmental Policy Basic Act, the Air Quality Preservation Act, the Water Quality Preservation Act, the Marine Pollution Prevention Act and the Waste Management Act, collectively referred in this annual report as the Environmental Acts, are the major laws of Korea that regulate atmospheric emissions, waste water, noise and other emissions from our facilities, including power generators and transmission and distribution units. Our existing facilities are currently in material compliance with the requirements of these environmental laws and international agreements, such as the United Nations Framework Convention on Climate Change, the Montreal Protocol on Substances that Deplete the Ozone Layer, the Stockholm Convention on Persistent Organic Pollutants and the Basel Convention on the Control of Transboundary Movements of Hazardous Wastes and Their Disposal. In order to foster coordination among us and our generation subsidiaries in respect of climate change, we and 11 of our electricity-related subsidiaries formed the CEO Coordination Committee in June 2016.

We continuously endeavor to contribute to sustainable growth (whether as an economy, a society or an ecosystem) by actively taking actions that befit our social responsibility as a corporate citizen in the energy industry. For example, in 2005, we became the first public company in Korea to join the United Nations Global Compact, an international voluntary initiative designed to hold a forum for corporations, United Nations agencies, labor and civic groups to promote reforms in economic, environmental and social policies. As part of our involvement with such initiative, we issue an annual report named the Sustainability Report to disclose our activities from the perspectives of economy, environment and society, in accordance with the reporting guidelines of the Global Reporting Initiative, the official collaborating center of the United Nations Environment Program that works in cooperation with United Nations Secretary General. In recognition of our efforts and achievements to reduce carbon emissions in response to global climate change, in May 2013, we obtained the Carbon Trust Standard certification issued by Carbon Trust, a British nonprofit organization with the goal of establishing a sustainable, low carbon economy. In 2015, we obtained recertification from Carbon Trust by satisfying even more rigorous evaluation criteria. We are also a participant of the Carbon Disclosure Project, an international organization that promotes transparency in informational disclosure of carbon management process, and in 2016 and 2017 we were recognized by the Carbon Disclosure Project and received honors in energy and utility sector. In 2015, 2016 and 2017, pursuant to the Dow Jones Sustainability Indices, which measures management performance in terms of contribution to sustainability, we were selected as one of the notable companies in the Asia Pacific in the global electricity utility sector. We aim to become a global leader in carbon management and reduction.

The table below sets forth the number of emission control equipment installed at thermal power plants by our generation subsidiaries as of December 31, 2017.

	<b>KOSEP</b>	<b>KOMIPO</b>	<b>KOWEPO</b>	<b>KOSPO</b>	<b>EWP</b>
Flue Gas Desulphurization System	14	12	14	14	18
Selective Non-catalytic Reduction System	1				6

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Selective Catalytic Reduction System	14	20	15	14	18
Electrostatic Precipitation System	16	14	14	14	18
Low NO2 Combustion System	20	26	30	30	27
Total	65	72	73	72	87

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In accordance with the Act on Allocation and Trading of Greenhouse Gas Emission Allowances, enacted in March 2013, the Government is currently in the process of implementing a carbon emission trading system under which the Government will allocate the amount of permitted carbon emission to companies by industry and a company whose business emits more carbon than the permitted amount may purchase the right to emit more carbon through the carbon emission trading exchange. This system is expected to be implemented in three stages. During the first phase (2015 to 2017), the Government set up and made a test run of the trading system to ensure its smooth operation; during this phase, the carbon emission rights were allocated without charge. During the second phase (2018 to 2020), the system will be applied to a limited scope of industries and companies, where the carbon emission right will be allocated at a relatively low price, but not freely. During the third phase (2021 to 2025), the Government plans to run the system on an expanded scale with aggressive carbon emission reduction targets. The amount of required reduction for the second phase of 2018 to 2020 is expected to be determined by June 2018. During the third phase (2021 to 2025), the Government plans to run the system on an expanded scale with aggressive carbon emission reduction targets. In December 2016, the Government announced the Climate Change Response Initiatives and 2030 National Greenhouse Gas Reduction Roadmap, which set forth the carbon emission trading system as one of the primary means to reach the emission and greenhouse gas reduction targets of the policies. The 2030 National Greenhouse Gas Reduction Roadmap sets forth a national reduction target of greenhouse gas by 219 million tons in the aggregate, amounting to a 25.7% reduction by 2030. The roadmap also set forth reduction targets for eight domestic sectors and the first three sectors with the largest reduction targets are electricity generation, industry and buildings. Our business is classified as part of the electricity generation sector, for which greenhouse gas reduction of 64.5 million tons is requested by year 2030. We are aiming to contribute to 80% of such reduction target for the sector, while such reduction target may change pursuant to an amendment to the 2030 National Greenhouse Gas Reduction Roadmap which the Government is expected to announce in 2018. Adhering to such emission and greenhouse gas reduction requirement is expected to result in our incurring significant compliance costs.

The table below sets forth the amount of annual emission from all generating facilities of our generation subsidiaries for the periods indicated. The amount of CO<sub>2</sub> emissions may increase in the near future due to the construction of additional coal thermal power plants but is expected to decrease in the long-term, principally due to an increased use of nuclear power and renewable energy and the implementation of the carbon emission trading system.

<b>Year<sup>(1)</sup></b>	<b>SO<sub>x</sub> (g/MWh)</b>	<b>NO<sub>x</sub> (g/MWh)</b>	<b>TSP<sup>(2)</sup> (g/MWh)</b>	<b>CO<sub>2</sub> (kg/MWh)</b>
2015	165	266	8	464
2016	156	246	7	477

*Notes:*

(1) The amounts of annual emission for 2017 are expected to be determined in June 2018.

(2) TSP means Total Suspended Particles.

In order to comply with the current and expected environmental standards and address related legal and social concerns, we intend to continue to install additional equipment, make related capital expenditures and undertake several environment-friendly measures to foster community goodwill. For example, under the Persistent Organic Pollutants Management Act enacted in 2007, we are required to remove polychlorinated biphenyl, or PCB, a toxin, from the insulating oil of our transformers by 2025. In addition, when constructing certain large new transmission and

distribution facilities, we assess and disclose their environmental impact at the planning stage of such construction, as well as consult with local residents, environmental groups and technical experts to generate community support for such projects. We exercise additional caution in cases where such facilities are constructed near ecologically sensitive areas such as wetlands or preservation areas. We also make reasonable efforts to minimize any negative environmental impact, for example, by using more environment-friendly technology and hardware. In addition, we also undertake measures to minimize losses during the transmission and distribution process by making our power distribution network more energy-efficient in terms



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of loss of power, as well as to lower consumption of energy, water and other natural resources. In addition, we and our subsidiaries acquired the ISO 14000 certification, an environmental management system widely adopted internationally, in 2007 and have made it a high priority to make our electricity generation and distribution more environmentally friendly. In addition to the ISO 14000 certification, we further reinforced our environmental management system by acquiring the ISO 14001 certification as well as a domestic GMS (Green Management System), KS I 7001/7002 certification, which relates to the management of resources, energy, green house effects and social responsibilities, in 2013. In 2014, we were awarded the presidential award for environmental contributions as a corporate citizen, after scoring the highest among 102 corporations that competed for the award. In order to encourage the implementation of environment-friendly measures by other corporations and enhance environmental awareness at a social level, we have been disclosing our environment-related activities and achievements to the public through the Environment Information System managed by the Ministry of Environment since 2012.

Our environmental measures, including the use of environment-friendly but more expensive parts and equipment and allocation of capital expenditures for the installation of such facilities, may result in increased operating costs and liquidity requirement. The actual cost of installation and operation of such equipment and related liquidity requirement will depend on a variety of factors which may be beyond our control. There is no assurance that we will continue to be in material compliance with legal or social standards or requirements in the future in relation to the environment.

As part of our long-term strategic initiatives, we plan to take other measures designed to promote the generation and use of environmentally friendly, or green, energy. See Item 4.B. Business Overview Strategy.

Some of our generation facilities are powered by renewable energy sources, such as solar energy, wind power and hydraulic power. While such facilities are currently insignificant as a proportion of our total generation capacity or generation volume of our generation subsidiaries, we expect that the portion will increase in the future, especially since we are required to comply with the Renewable Portfolio Standard program as described below.

The following table sets forth the generation capacity and generation volume in 2017 of our generation facilities that are powered by renewable energy sources.

	<b>Generation Capacity (megawatts)</b>	<b>Generation Volume (gigawatt-hours)</b>
Hydraulic Power <sup>(1)</sup>	651	1,076
Wind Power	138	209
Solar Energy, Fuel Cells and Biogas	682	2,485
Subtotal	1,471	3,770
As percentage of total <sup>(2)</sup>	1.8%	0.9%

*Notes:*

(1) Excluding generation capacity and volume of pumped storage, which is generally not classified as renewable energy.

- (2) As a percentage of the total generation capacity or total generation volume, as applicable, of us and our generation subsidiaries.

In order to deal with shortage of fuel and other resources and also to comply with various environmental standards, in 2012 the Government adopted the Renewable Portfolio Standard program, which replaced the Renewable Portfolio Agreement which had been in effect from 2006 to 2011. Under this program, each of our generation subsidiaries is required to generate a specified percentage of total electricity to be generated by such generation subsidiary in a given year in the form of renewable energy or, in case of a shortfall, purchase a corresponding amount of a Renewable Energy Certificate (a form of renewable energy credit) from other

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generation companies whose renewable energy generation surpass such percentage. The target percentage was 3.5% in 2016, 4.0% in 2017 and 5.0% in 2018 and will incrementally increase to 10.0% by 2023. Fines are to be levied on any subsidiary that fails to do so in the prescribed timeline. In 2016, all six of our generation subsidiaries met the target through renewable energy generation and/or the purchase of a Renewable Energy Certificate. Compliance by our generation subsidiaries of the 2017 target is currently under evaluation, and if any generation subsidiary is found to have failed to meet the target for 2017 or for subsequent years, such generation subsidiary may become subject to fines. We expect that any additional costs required for implementation of the Renewable Portfolio Standard program will be covered by a corresponding increase in electricity tariff. However, there is no assurance that the Government will in fact raise the electricity tariff to a level sufficient to fully cover such additional costs or at all.

As to how we plan to finance our capital expenditures related to our environmental programs, see [Capital Investment Program](#).

In March 2017, the Electricity Business Act was amended to the effect that starting in June 2017, future national planning for electricity supply and demand in Korea should consider the environmental and safety impacts of such planning. However, to-date, no specific guidelines have been provided by the Government as to how to implement this provision, and it is therefore difficult to assess in advance what impact such provision will have on our business, results of operations or financial condition. However, the amendment will likely lead to the expansion of our environmental programs.

Furthermore, under the new electricity rate structure effected by the Government effective January 1, 2017, a temporary rate discount will apply in the case of investments in environmentally friendly facilities such as energy storage systems, renewable energy and electric cars during 2018 to 2020.

**Community Programs**

Building goodwill with local communities is important to us in light of concerns among the local residents and civic groups in Korea regarding construction and operation of generation units, particularly nuclear generation units. The Act for Supporting the Communities Surrounding Power Plants and the Act on the Compensation and Support for Areas Adjacent to Transmission and Substation Facilities require that the generation companies and the affected local governments carry out various activities up to a certain amount annually to address neighboring community concerns. Pursuant to these Acts, we and our generation subsidiaries, in conjunction with the affected local and municipal governments, undertake various programs, including scholarships and financial assistance to low-income residents.

Under the Act for Supporting the Communities Surrounding Power Plants, activities required to be undertaken under the Act are funded partly by the Electric Power Industry Basis Fund (see [Sales and Customers Electricity Rates](#) ) and partly by KHNP as part of its budget. KHNP is required to make annual contributions to the affected local communities in an amount equal to Won 0.25 per kilowatt-hour of electricity generated by its nuclear generation units during the one-year period before the immediately preceding fiscal year, Won 5 million per thousand kilowatts of hydroelectric generation capacity and Won 0.5 million per thousand kilowatts of pumped-storage generation capacity. In addition, under Korean tax law, KHNP is required to pay local tax levied on its nuclear generation units in an amount equal to Won 1 (effective January 1, 2015, which reflects an increase from the previous Won 0.5 per kilowatt-hour of their generation volume in the affected areas) and Won 2 per 10 cubic meters of water used for hydroelectric generation.

The Act on the Compensation and Support for Areas Adjacent to Transmission and Substation Facilities, enacted in January 2014 with effect from July 2014, prescribes measures to be taken by power generation or transmission companies with respect to the communities adjacent to transmission and substation facilities. Under this Act, those

who own land or houses in the vicinity of transmission lines and substation may claim compensation for damages or compel purchase of such properties by the power generation or transmission

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companies which are legally obligated in principle to pay for such damages or purchase such properties. In addition, under this Act, residents of communities adjacent to transmission and substation facilities are entitled to subsidies on electricity tariff as well as support for a variety of welfare projects and collective business ventures.

Prior to the construction of a generation unit, our generation subsidiaries perform an environmental impact assessment which is designed to evaluate public hazards, damage to the environment and concerns of local residents. A report reflecting this evaluation and proposing measures to address the problems identified must be submitted to and approved by the Ministry of Trade, Industry and Energy following agreement with related administrative bodies, including the Ministry of Environment prior to the construction of the unit. Our generation subsidiaries are then required to implement the measures reflected in the approved report. Despite these activities, civic community groups may still oppose the construction and operation of generation units (including nuclear units), and such opposition could adversely impact our construction plans for generation units (including nuclear units) and have a material adverse effect on our business, results of operations and cash flow.

Upon relocation of our corporate headquarters in November 2014, we developed and established Bitgaram Energy Valley as a smart energy hub city in Gwangju and Jeollanamdo, to attract and facilitate the growth of start-ups and research institutions related to new energy industries while contributing to the local economy, balanced regional development and job creation. To achieve this goal, we provide funding, business networks and research and development assistance to companies which entered into investment contracts with us. As of March 31, 2018, we had signed agreements with 280 companies relating to investments in the Bitgaram Energy Valley, and we currently aim to increase the total number of companies investing in the Bitgaram Energy Valley to 350 companies by the end of 2018 and 500 companies by the end of 2020.

## **Nuclear Safety**

KHNP takes nuclear safety as its top priority and continues to focus on ensuring the safe and reliable operation of nuclear power plants. KHNP also focuses on enhancing corporate ethics and transparency in the operation of its plants.

KHNP has a corporate code of ethics and is firmly committed to enhancing nuclear safety, developing new technologies and improving transparency. KHNP has also established the Statement of Safety Policy for Nuclear Power Plants to ensure the highest level of nuclear safety. Furthermore, KHNP invests approximately 5% of its total annual sales into research and development for the enhancement of nuclear safety and operational performance.

KHNP implements comprehensive programs to monitor, ensure and improve safety of nuclear power plants. In order to enhance nuclear safety through risk-informed assessment, KHNP conducts probabilistic safety assessments, including for low power-shutdown states, for all its nuclear power plants. In order to systematically verify nuclear safety and identify the potential areas for safety improvements, KHNP performs periodic safety reviews on a 10-year frequency basis for all its operating units. These reviews have been completed for Kori #1, Hanbit #5 and #6, Hanul #1, #2, #3 and #4 and Wolsong #1, #3 and #4. Reviews for Kori #2, #3 and #4, Hanbit #1, #2, #3 and #4, Hanul #5 and #6 and Wolsong #2 are in progress. In order to enhance nuclear safety and plant performance, KHNP has established a maintenance effectiveness monitoring program based on the maintenance rules issued by the United States Nuclear Regulatory Commission, which covers all of KHNP's nuclear power plants in commercial operation.

KHNP has developed the Risk Monitoring System for operating nuclear power plants, which it implements in all of its nuclear power plants. The Risk Monitoring System is intended to help ensure nuclear plant safety. In addition, KHNP has developed and implemented the Severe Accident Management Guidelines and is developing the Severe Accident Management Guidelines for Low Power-Shutdown States in order to manage severe accidents for all of its nuclear

power plants.

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KHNP conducts various activities to enhance nuclear safety such as quality assurance audits and reviews by the KHNP Nuclear Review. KHNP maintains a close relationship with international nuclear organizations in order to enhance nuclear safety. In particular, KHNP invites international safety review teams such as the World Association of Nuclear Operators ( WANO ) Peer Review Team and the Expert Mission Team to its nuclear plants for purposes of meeting international standards for independent review of its facilities. KHNP actively exchanges relevant operational information and technical expertise with its peers in other countries. For example, KHNP conducted seven WANO Peer Reviews for Wolsong #3 and #4 in 2017. KHNP also invited WANO Follow-up Peer Review Team at Hanbit #1, #2, #3, #4, #5 and #6, Kori #1, #2, #3 and #4, Shin-Wolsong #1 and #2 in 2017. The recommendations and findings from this event were shared with KHNP's other nuclear plants to implement improvements at such plants.

The average level of radiation dose per unit amounted to a relatively low level of 0.30 man-Sv in 2017, which was substantially lower than the global average of 0.63 man-Sv/year in 2017 as reported in the WANO performance indicator report.

In response to the damage to the nuclear facilities in Japan as a result of the tsunami and earthquake in March 2011, the Government conducted additional safety inspections on nuclear power plants by a group of experts from governmental authorities, civic groups and academia. As a result of such inspections, the Government required KHNP to perform 50 comprehensive safety improvement measures. The Government also established the Nuclear Safety & Security Commission in October 2011 for neutral and independent safety appraisals. KHNP developed ten additional measures through benchmarking of overseas cases and internal analysis of current operations. As of December 31, 2017, KHNP has completed implementation of all such measures.

From time to time, our nuclear generation units may experience unexpected shutdowns. For example, on September 12, 2016, multiple earthquakes including a magnitude 5.8 earthquake hit the city of Gyeongju, a home to KHNP's headquarters and Wolsong Nuclear Power Plant. Although there was no material safety issues, KHNP had manually stopped the operations of Wolsong Nuclear Power Plant units #1, 2, 3, and 4 according to the safety guidelines. All units have resumed their operations on December 5, 2016, with the approval by the Nuclear Power Safety Commission. KHNP continues to implement measures to improve the safety by reinforcing seismic capability of its core facilities and performing stress tests across all its nuclear power plants. In 2017, KHNP finished the implementation of such measures for 21 units and enhanced seismic design of the core facilities to withstand a magnitude 7.0 earthquake (6.5 before implementation). Implementation of such measures for the remaining 3 units are expected to be finished in 2018. As for the units under construction (Shin-Kori#5 and #6), the core facilities will be able to withstand a magnitude 7.4 earthquake.

Low and intermediate level waste, or LILW, and spent fuels are stored in temporary storage facilities at each nuclear site of KHNP. The temporary LILW storage facilities at the nuclear sites had been sufficient to accommodate all LILWs produced up to 2015. Korea Radioactive Waste Agency ( KORAD ) completed the construction of a LILW disposal facility in the city of Gyeongju, and government approval for its operations was obtained in December 2014.

In order to increase the storage capacity of temporary storage facilities for spent fuels, KHNP has been pursuing various projects, such as installing high-density racks in spent fuel pools and building dry storage facilities. Through these activities, we expect that the storage capacity for spent fuels in all nuclear sites will be sufficient to accommodate all the spent fuels produced by 2018. The policy for spent fuel management options is currently under development.

In 2009, the Radioactive Waste Management Act ( RWMA ) was enacted in order to centralize management of the disposal of spent fuel and LILW and enhance the security and efficiency of related management processes. The RWMA designates KORAD to manage the disposal of spent fuels and LILW. Pursuant to the RWMA, the

Government has established the Radioactive Waste Management Fund. The



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management expense for LILW is paid when LILW is transferred to KORAD, and the charge for spent fuel is paid based on the quantity generated every quarter. LILW-related management costs and charges for spent fuel are reviewed by the Ministry of Trade, Industry and Energy every two years. In December 2017, after the review by the committee composed of Government officials, KHNP, Korea Radioactive Waste Management Corporation and experts in finance and accounting, LILW-related management costs were increased while charges for spent-fuel remained the same. The change in LILW-related management costs caused an increase in KHNP's expenses relating to radioactive waste.

All of KHNP's nuclear plants are currently in compliance with Korean law and regulations and the safety standards of the IAEA in all material respects. For a description of certain past incidents relating to quality assurance in respect of KHNP, see Item 3.D. Risk Factors. Our risk management policies and procedures may not be fully effective at all times.

**Decommissioning**

Decommissioning of a nuclear power unit is the process whereby the unit is shut down at the end of its life, the fuel is removed and the unit is eventually dismantled. KHNP implements a dismantling policy under which dismantling would take place five to ten years after the unit's closure. KHNP renewed the operating license of Kori #1, the first nuclear power plant constructed in Korea, which commenced operation in 1978, for an additional ten years in 2007. At the recommendation of the Ministry of Trade, Industry and Energy, KHNP has decided not to renew the operating license of Kori #1 and the initial phase of decommissioning (namely, safety inspection and removal of spent fuels) of Kori #1 has begun after its permanent shutdown in June 2017. In February 2015, KHNP also renewed the operation license of Wolsong #1 (which originally expired in November 2012) for an additional ten years until 2022. In June 2015, reactivation of Wolsong #1 was approved by the NSSC after periodic inspection. However, a civic group has since then brought a lawsuit to reverse such approval, and in February 2017, a lower court ruled to annul the NSSC's approval, which ruling has since been appealed. At present, the outcome of this litigation remains uncertain. It is also reported that by the first half of 2018, the Government will announce the timing for the shutdown of the Wolsong #1 unit. As of December 31, 2017, the book value of property, plant and equipment and provision for decommissioning costs of Wolsong #1 unit is Won 608 billion and Won 642 billion, respectively. If Wolsong #1 unit is prohibited from operation, we may incur significant losses in connection with the property, plant and equipment of Wolsong #1 unit. In addition, the amount of provision for decommissioning expenses may increase significantly, and the timing of actual cash outflows may be accelerated. KHNP retains full financial and operational responsibility for decommissioning its units.

KHNP has accumulated decommissioning costs as a liability since 1983. The decommissioning costs of nuclear facilities are defined by the Radioactive-Waste Management Act, which requires KHNP to credit annual appropriations separately. These costs are estimated based on studies conducted by the relevant committees, and are reviewed by the Ministry of Trade, Industry and Energy every two years. In 2017, due to decreased actual discount rates and the increased decommissioning cost per unit, the total amount of allowances increased as of December 31, 2017, and, as a result, KHNP was required to accrue Won 15,864 billion for the costs of dismantling and decontaminating existing nuclear power plants as of December 31, 2017, which consisted of dismantling costs of nuclear plants of Won 13,007 billion and dismantling costs of spent fuel and radioactive waste of Won 2,856 billion. For accounting treatment of decommissioning costs, see Item 5.A. Operating Results Critical Accounting Policies Decommissioning Costs.

**Overseas Activities**

We are engaged in a number of overseas activities. We believe that such activities help us diversify our revenue streams by leveraging the operational experience of us and our subsidiaries gathered from providing a full range of services, such as power plant construction and specialized engineering and maintenance services in Korea, as well as establishing strategic relationships with countries that are or may become providers of fuels.

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Throughout the years, we have sought to expand our project portfolio to include the construction and operation of conventional thermal generation units, nuclear generation units and renewable energy power plants, transmission and distribution and mining and development of fuel sources. While strategically important, we believe that our overseas activities, as currently being conducted, are not in the aggregate significant in terms of scope or amount compared to our domestic activities. In addition, a number of the overseas contracts currently being pursued are based on non-binding memoranda of understanding and the details of such projects may significantly change during the course of negotiating the definitive agreements.

Below is a description of our major overseas projects.

***Generation projects******Nuclear Generation Project***

In December 2009, following an international open bidding process, we entered into a prime contract for the original contract amount of US\$18.6 billion with the Emirates Nuclear Energy Corporation (the "ENEC"), a state-owned nuclear energy provider of the United Arab Emirates ("UAE"), to design and construct four civil nuclear power generation units to be located in Barakah, a region approximately 270 kilometers from Abu Dhabi, for the UAE's peaceful nuclear energy program. Under the contract, we and our subcontractors, some of which are our subsidiaries, are to perform various duties including, among others, designing and constructing four nuclear power generation units each with a capacity of 1,400 megawatts, supplying nuclear fuel for three fuel cycles including initial loading, with each cycle currently projected to last for approximately 18 months, and providing technical support, training and education related to plant operation. In connection with the parties' execution of an amendment to the prime contract, the target completion dates for the four units were amended to range between December 2018 and December 2020.

On October 20, 2016, in order to foster a long-term strategic partnership and stable management of the units post-construction we entered into an investment agreement with ENEC to jointly establish Barakah One PJSC, a special purpose company which will oversee the operation and management of the nuclear power plant currently being constructed in Barakah, United Arab Emirates. Barakah One PJSC will be capitalized with loans in the amount of US\$19.6 billion and equity of US\$4.7 billion. We have a 18% equity interest in Barakah One PJSC, which will oversee the project. We also have a 18% equity interest in Nawah Energy, a subsidiary of ENEC, which will also be responsible for the operation and maintenance of the Barakah nuclear power plant.

***Non-nuclear Generation Projects***

We are currently engaged in three major power projects in the Philippines: (i) a build, operate and transfer of a 1,200-megawatt combined-cycle power plant project in Ilijan, construction of which began in November 1997 and was completed in June 2002 and which is being operated by us until 2022 (the project cost of the Ilijan project was US\$721 million, for which project finance on a limited recourse basis was provided), (ii) ownership of a 39.6% equity interest in SPC Power Corporation, an independent power producer which owns a 107.8-megawatt diesel power plant and a 39.6% equity interest in two distribution companies in the Philippines, and (iii) a build, operate and own of a 200-megawatt CFBC coal power plant in Cebu for which construction began in February 2008 and was completed in May 2011, followed by operation thereof until 2036. The project cost of the Cebu project was US\$451 million, for which project financing on a limited recourse basis was provided.

In April 2007, we formed a limited partnership with Shanxi International Electricity Group and Deutsche Bank in China to develop and operate power projects and coal mines in Shanxi province, China, which was approved by the Chinese government. The total capital investment in these projects amounted to US\$1.33 billion, of which our capital

investment was US\$450 million. We are expected to participate in the operation of the project for a period of 50 years ending 2057. The total installed capacity of these projects is 6,532 megawatts and capacity under construction was 2,603 megawatts, and our equity interest in the partnership was 34%.

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In October 2007, we invested US\$9.1 million in KEPCO Energy Resource Nigeria Ltd. ( KERNL ), a joint venture with Energy Resource Ltd., a Nigerian company. In May 2007, KERNL entered into a share purchase agreement with the Nigerian government for the purchase of 70% of the equity capital of Egbin Power Plc in Nigeria, which owns and operates the Egbin power plant, a 1,320-megawatt gas-fired power plant in Lagos, Nigeria for a consideration of approximately US\$407 million. The acquisition was completed in October 2013, and in June 2013, we entered into a contract with Egbin Power Plc for the operation and maintenance of the Egbin power plant. The contract price was US\$315 million and we provided operation and maintenance services to Egbin Power Plc between November 2013 and February 2016. The contract with Egbin Power Plc was terminated in December 2017 due to a force majeure event.

In July 2008, a consortium consisting of us and Xenel of Saudi Arabia won the bid to build, own and operate a gas-fired power plant with installed capacity of 373 megawatts in Al Qatrana, near Amman, and we entered into definitive agreements in October 2009. Construction of this project was completed in December 2011, and the plant is currently in operation and will be operated until 2035. The total project cost was US\$461 million, of which the consortium made an equity contribution of US\$143 million and the remainder was funded with debt financing. We and Xenel own 80:20 equity interests in the project, respectively.

In December 2008, we formed a consortium with ACWA Power International of Saudi Arabia and submitted a bid for the 1,204 megawatt oil-fired power project in Rabigh, Saudi Arabia. In March 2009, we were selected as the preferred bidder, and in July 2009, we entered into a power purchase agreement with Saudi Electricity Company. Construction of the project was completed in April 2013, and we will participate in the operation of the plant for 20 years. The total project cost was approximately US\$2.5 billion. We currently hold a 40.0% equity interest in the joint venture entity, Rabigh Electricity Company, which operates the project.

In August 2010, a consortium led by us was selected as the preferred bidder in an international auction for the construction and operation of the Norte II gas-fueled combined-cycle electricity generation facility in Chihuahua, Mexico, as ordered by the Commission Federal de Electricidad ( CFE ) of Mexico. The consortium established a special purpose vehicle, KST Electric Power Company ( KST ), to act as the operating entity, and in September 2010, KST entered into a power purchase agreement with CFE in relation to the construction and operation of a 433-megawatt combined-cycle power plant at Chihuahua in Mexico. In October 2010, KST was licensed by the Mexican government as an independent power producer, which allows it to produce and sell electricity to CFE during the specified contract period. The project will be undertaken on a build, own and operate basis. The total cost of the project is approximately US\$430 million. We hold a 56% equity interest in the consortium, with the remaining equity interests held by Samsung C&T (with a 34% equity interest) and Techint, a Mexico company (with a 10% equity interest). Approximately 22.5% of the total project costs is being financed through equity investments by the consortium and the remaining 77.5% through project financing. Commercial operation commenced in December 2013, and the operation period will run for 25 years until 2038. Our wholly-owned subsidiary, KEPCO Energy Service Company, currently manages the operation of the project.

In October 2010, a consortium including us was selected by Abu Dhabi Water & Electricity Authority ( ADWEA ), a state-run utilities provider in the UAE, as the preferred bidder in an international bidding for the construction and operation of the combined-cycle natural gas-fired electricity generation facilities in Shuweihat, UAE with aggregate capacity of 1,600 megawatts. Construction was completed in July 2014 and we will participate in the operation of the plant until 2039. The total project cost was approximately US\$1.4 billion, of which 20% was financed through equity investments by the consortium members and the remaining 80% through debt financing. Equity interests in the consortium are owned by ADWEA (60.0%), Sumitomo (20.4%) and us (19.6%). The total amount of our equity investment in the project is approximately US\$56 million.

In January 2012, a consortium consisting of us, Mitsubishi Corporation and Wartsila Development & Financial Services of Finland was selected by National Electric Power Corporation, a state-run electricity

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provider in Jordan, to construct and operate a diesel engine power project in Almanakher with an expected total generation capacity of 573 megawatts. Construction of this project was completed in October 2014 and the plant is currently in operation and will be operated until 2039. The total project cost was approximately US\$760 million, of which the consortium made an equity contribution of approximately US\$190 million and the remainder was funded with debt financing. We, Mitsubishi Corporation and Wartsila Development & Financial Services own 60:35:5 equity interests in the project, respectively. Our equity investment in this project is US\$104 million.

In March 2013, a consortium consisting of us and Marubeni, a Japanese corporation, was selected by the Ministry of Industry and Trade of Vietnam for the construction and operation of a 1,200 megawatt coal-fired power plant in Thanh Hoa province, Vietnam. We plan to commence construction in June 2018 with target completion by June 2022, followed by operation for 25 years. The total project cost is expected to be US\$2.51 billion, of which 25% will be funded by equity contribution and the remaining 75% by debt financing. The share capital of the special purpose entity in charge of this project is US\$590 million, and we and Marubeni each hold 50% equity interest in such entity.

On October 6, 2016, a consortium comprised of us, Marubeni Corporation and four local entities, with equity interest in the consortium of 24.5%, 24.5% and 51.0%, respectively, was notified that it has been selected by the Republic of South Africa Department of Energy as the preferred bidder for the construction and operation project of a coal-fired power plant in the Republic of South Africa. Once negotiations and financing arrangements are completed, the construction of the coal-fired power plant is expected to commence. The plant is expected to have an aggregate capacity of 630 megawatts, and construction is expected to take 52 months beginning in November 2018. The consortium plans to participate in the operation of the plant for a period of 30 years ending 2053. The total cost of the project is estimated to be around US\$2.14 billion, of which our total capital investment is expected to be approximately US\$133 million. In connection with the project, we plan to establish a holding company and a project company in the Republic of South Africa.

On September 28, 2017, we entered into a joint development agreement with Tadmax Resources Bhd, a Malaysian corporation, in relation to a gas-fired power plant with capacity of 1,200 megawatts in Pulau Indah, Malaysia. We obtained approval for this project from Malaysian Energy Commission, the project sponsor. We will hold a 25% equity interest in this project, and Tadmax Resources Bhd will hold a 75% equity interest in it. The total project cost is expected to be approximately US\$1 billion, and we expect to invest approximately US\$50 million for the equity interest. Upon closing of the financing, the construction for this project will begin in the fourth quarter of 2019, following the approval of the applicable tariff rates by the Malaysian Energy Commission, which is currently expected to occur in the fourth quarter of 2018. This project marks our first entry into the Malaysian power generation market. We expect to enter into a power purchase agreement with Tenaga Nasional Berhad for a term of 21 years, with a goal of generating a stable revenue stream from this project.

***Exploration and Production Projects***

In order to secure a more reliable supply of fuel for power generation and hedge against fluctuations in fuel price, from 2007 to 2016, we pursued overseas exploration and production projects, including five bituminous coal projects and five uranium projects involving investments of approximately Won 1.6 trillion. However, pursuant to the Government's Proposal for Adjustment of Functions of Public Institutions (Energy Sector) announced in June 2016, as of December 31, 2016, except for the Bylong project described below, we transferred all our assets and liabilities for our overseas resource business to our six generation subsidiaries, which are the end-consumers of fuels and are therefore expected to more responsibly manage these projects. The amount of net assets that we transferred to our generation subsidiaries as of December 31, 2016 was Won 622 billion.

Some of the assets transferred include our equity interest in PT Adaro Energy TBK, which is one of the largest coal producers in Indonesia, as well as our 20% equity interest in PT. Bayan Resources Tbk pursuant to which we were entitled to an off-take of 7 million tons per year beginning in 2015.



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One exception to the transfers on such date was our 90% equity interest in KEPCO Bylong Pty Ltd., for which we are currently processing a development permit from the New South Wales government and commercial production is scheduled to commence in 2019. We transferred 10% of our equity interest in the Bylong project to our five non-nuclear generation subsidiaries as of December 31, 2016, and we plan to gradually transfer the remainder of our interest in the Bylong project to them subject to the progress of the regulatory approval process and resource development phase of the project.

Our nuclear generation subsidiary, KHNP, is also pursuing development projects for procurements of uranium in countries including Canada, the United States and Niger.

***Renewable Energy Projects***

Our overseas renewable energy projects include the generation of electricity through renewable energy sources.

Since 2005, joint ventures between us and China Datang Corporation of the People's Republic of China have built and operated a number of wind farms in Inner Mongolia, Liaoning and Gansu provinces. We own 40% of these joint ventures, whose equity in the aggregate amount is approximately US\$600 million. The projects are funded one-third by equity contributions and two-thirds by debt financing. As of December 31, 2017, the joint venture operated 22 wind farms with a total capacity of 1,017 megawatts and added 7-megawatt photovoltaic power station to the grid.

In December 2015, we entered into an agreement with the Ministry of Energy and Mineral Resources of Jordan to build, own and operate a wind farm with installed capacity of 89.1 megawatts in Fujeij, Ma'an, Jordan. Construction is currently underway with commercial operations expected to commence in October 2018. Total project cost is approximately US\$184 million, of which 40% will be financed through equity investments by us and the remaining 60% through debt financing. We believe that this project will help us to further diversify our business portfolio in the Middle East from the existing focus on nuclear and thermal power plants to expand to renewable energy facilities.

In June 2015, we entered into a memorandum of understanding with Energy Product, a Japanese local developer, to build, own and operate photovoltaic power station with a capacity of 28 megawatts, together with a 13.7 megawatts-hour energy storage system, in Chitose, Hokkaido prefecture in Japan. The parties subsequently signed the joint development agreement and other definitive agreements. The power station, in which we own 80.1% interest, started commercial operation in July 2017. Total project cost is approximately JPY 11.3 billion, of which 20% was financed through 80:20 equity investments by us and EP. The remaining 80% is funded through debt financing.

In August 2016, we entered into a Purchase and Sale Agreement with Cogentrix Solar Holdings to operate a photovoltaic power station in Colorado, United States, with a capacity of 30 megawatts for 25 years. Total project cost is approximately US\$85 million, of which 50.1% was financed through 50.1:49.9 equity investments by us and a private equity fund formed by us and National Pension Service. It was our first foray into the North American power market.

In June 2017, a consortium between us and LG CNS Co., Ltd. won a project to build, own and operate a photovoltaic power station in Guam, United States, with a capacity of 60 megawatts for 25 years, including 32 megawatts-hour energy storage system. The total project cost is approximately US\$200 million, of which 23% will be financed through equity investment by us and LG CNS Co., Ltd., each holding 70% and 30% of equity interests, respectively, and the remaining 77% will be funded through debt financing. The consortium is expected to enter into a definite agreement with Guam Power Authority in the first half of 2018 and the construction of the project is expected to start by the second half of 2018. It is expected the power station will begin commercial operation by April 2021.



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Although renewable energy projects are currently insignificant as a proportion of our total overseas activities and our generation activities, we expect the portion of renewable energy projects to increase in the future as we seek to penetrate the overseas renewable energy market, diversify our businesses and actively address climate change. We expect to further diversify our business in the renewable energy sector to also include smart transmission and distribution facilities, smart grids and utilization of new energy related technologies.

**North Korea***Kaesong Complex*

Since 2005, we have provided electricity to the industrial complex located in Kaesong, North Korea, which was established pursuant to an agreement made during the summit meeting of the two Koreas in June 2000. The Kaesong complex is the largest economic project between the two Koreas and is designed to combine the Republic's capital and entrepreneurial expertise with the availability of land and labor of North Korea. In March 2005, we built a 22.9 kilovolt distribution line from Munsan substation in Paju, Gyeonggi Province to the Kaesong complex and became the first to supply electricity to pilot zones such as ShinWon Ebenezer. In April 2006, we started to construct a 154 kilovolt, 16 kilometer transmission line connecting Munsan substation to the Kaesong complex as well as Pyunghwa substation in the complex and began operations in May 2007.

At the end of 2015, we supplied electricity to 254 units, including administrative agencies, support facilities and resident corporations, using a tariff structure identical to that of South Korea. However, we suspended power transmission to the Kaesong Industrial Complex since February 11, 2016 following the Government's decision to halt operations of the industrial complex to impede North Korea's utilization of funds from the industrial complex to finance its nuclear and missile programs. As of December 31, 2017, the book value of our facility located at the complex was Won 19 billion. For the year ended December 31, 2017, the amount of trade receivables from the companies residing in Kaesong complex was Won 3 billion. It is currently uncertain if we can exercise the property rights for our facility in the Kaesong complex. No assurance can be given that we will not experience any material losses as a result of the suspension of this project or failure of the project as a result of a breakdown or escalation of hostilities in the relationship between the Republic and North Korea. See Item 3.D. Risk Factors Risks Relating to Korea and the Global Economy Tensions with North Korea could have an adverse effect on us and the market value of our shares.

**Insurance**

We and our generation subsidiaries carry insurance covering against certain risks, including fire, in respect of key assets, including buildings, equipment, machinery, construction-in-progress and procurement in transit, as well as, in the case of us, directors' and officers' liability insurance. We and our generation subsidiaries maintain casualty and liability insurance against risks related to our business to the extent we consider appropriate. Other than KHNP, neither we nor our generation subsidiaries separately insure against terrorist attacks. These insurance and indemnity policies, however, cover only a portion of the assets that we own and operate and do not cover all types or amounts of loss that could arise in connection with the ownership and operation of these assets.

Substantial liability may result from the operations of our nuclear generation units, the use and handling of nuclear fuel and possible radioactive emissions associated with such nuclear fuel. KHNP maintains property and liability insurance against risks of its business to the extent required by the related law and regulations or considered as appropriate and otherwise self-insures against such risks. KHNP carries insurance for its generation units against certain risks, including property damage, nuclear fuel transportation and liability insurance for personal injury and property damage. KHNP carries property damage insurance covering up to US\$1 billion per accident for all properties

within its plant complexes, which includes property insurance coverage for acts of terrorism up to US\$300 million and for breakdown of machinery up to US\$300 million. In addition to the insurance on operating nuclear power generation units, KHNP has construction insurance for

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Shin-Kori #4, #5 and #6 and Shin-Hanul #1 and #2. KHNP maintains nuclear liability insurance for personal injury and third-party property damage for coverage of up to 300 million Special Drawing Rights, or SDRs, which amounts to approximately US\$435 million, at the rate of 1 SDR = US\$1.450660 as posted on the Internet homepage of the International Monetary Fund on April 9, 2018 per plant complex, for a total coverage of 1.5 billion SDRs. KHNP is also the beneficiary of a Government indemnity with respect to such risks for damage claims of up to Won 300 million SDRs per nuclear plant complex, for a total coverage of 1.5 billion SDRs. Under the Nuclear Damage Compensation Act of 1969, as amended, KHNP is liable only up to 300 million SDRs, per single accident per plant complex; provided that such limitation will not apply where KHNP intentionally causes harm or knowingly fails to prevent the harm from occurring. KHNP will receive the Government's support, subject to the approval of the National Assembly, if (i) the damages exceed the insurance coverage amount of 300 million SDRs and (ii) the Government deems such support to be necessary for the purposes of protecting damaged persons and supporting the development of nuclear energy business. KHNP carries insurance for its generation units and nuclear fuel transportation, and we believe that the level of insurance is generally adequate and is in compliance with relevant laws and regulations. In addition, KHNP is the beneficiary of Government indemnity which covers a portion of liability in excess of the insurance. However, such insurance is limited in terms of amount and scope of coverage and does not cover all types or amounts of losses which could arise in connection with the ownership and operation of nuclear plants. Accordingly, material adverse financial consequences could result from a serious accident or a natural disaster to the extent it is neither insured nor covered by the government indemnity. See Item 3.D. Risk Factors Risks Relating to KEPCO The amount and scope of coverage of our insurance are limited.

**Competition**

As of December 31, 2017, we and our generation subsidiaries owned approximately 70.3% of the total electricity generation capacity in Korea (excluding plants generating electricity for private or emergency use). New entrants to the electricity business will erode our market share and create significant competition, which could have a material adverse impact on our financial condition and results of operations.

In particular, we compete with independent power producers with respect to electricity generation. The independent power producers accounted for 22.9% of total power generation in 2017 and 29.7% of total generation capacity as of December 31, 2017. As of December 31, 2017, there were 17 independent power producers in Korea, excluding renewable energy producers. Private enterprises became permitted to own and operate coal-fired power plants in Korea only after the Ministry of Trade, Industry and Energy approved plans for independent power producers to construct coal-fired power plants under the Sixth Basic Plan announced in February 2013. Under the Eighth Basic Plan announced in December 2017, six coal-fired units under construction with aggregate generation capacity of 6,260 megawatts are scheduled to be completed between 2021 and 2022. While it remains to be seen whether construction of these generation units will be completed as scheduled, if these units were to be completed as scheduled and/or independent power producers are permitted to build additional generation capacity (whether coal-fired or not), our market share in Korea may decrease, which may have a material adverse effect on our results of operations and financial condition.

In addition, under the Community Energy System adopted by the Government in 2004, a minimal amount of electricity is supplied directly to consumers on a localized basis by independent power producers outside the cost-based pool system used by our generation subsidiaries and most independent power producers to distribute electricity nationwide. The purpose of this system is to geographically decentralize electricity supply and thereby reduce transmission losses and improve the efficiency of energy use. These entities do not supply electricity on a national level but are licensed to supply electricity on a limited basis to their respective districts under the Community Energy System. As of March 31, 2018, the aggregate generation capacity of suppliers participating in the Community Energy System amounted to less than 1% of that of our generation subsidiaries in the aggregate. We currently do not

expect the Community Energy System to be widely adopted, especially in light of the significant level of capital expenditure required for such direct supply. However, if the Community Energy System is widely adopted, it may erode our currently dominant market position in the generation and distribution

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of electricity in Korea and may have a material adverse effect on our business, results of operations and financial condition.

Our market dominance in the electricity distribution in Korea also may face potential erosion in light of the recent Proposal for Adjustment of Functions of Public Institutions (Energy Sector) announced by the Government in June 2016. This proposal contemplates a gradual opening of the electricity trading market to the private sector although no detailed roadmap has been provided for such opening. It is currently premature to predict to what extent, or in what direction, the liberalization of the electricity trading market will happen. Nonetheless, any significant liberalization of the electricity trading market may result in substantial reduction of our market share in electricity distribution in Korea, which would have a material adverse effect on our business, results of operation and cash flows.

The electric power industry, which began its liberalization process with the establishment of our power generation subsidiaries in April 2001, may become further liberalized in accordance with the Restructuring Plan. See Item 4.B. Business Overview Restructuring of the Electric Power Industry in Korea.

In the residential sector, consumers may use natural gas, oil and coal for space and water heating and cooking. However, currently there is no practical substitute for electricity for lighting and other household appliances, which is available on commercially affordable terms.

In the commercial sector, electricity is the dominant energy source for lighting, office equipment and air conditioning. For its other uses, such as space and water heating, natural gas and, to a lesser extent, oil, provide competitive alternatives to electricity.

In the industrial sector, electricity is the dominant energy source for a number of industrial applications, including lighting and power for many types of industrial machinery and processes that are available on commercially affordable terms. For other uses, such as heating, electricity competes with oil and natural gas and potentially with gas-fired combined heating and power plants.

## **Regulation**

We are a statutory juridical corporation established under the KEPCO Act for the purpose of ensuring a stable supply of electric power and further contributing toward the sound development of the national economy through facilitating development of electric power resources and carrying out proper and effective operation of the electricity business. The KEPCO Act (including the amendment thereto) prescribes that we engage in the following activities:

1. development of electric power resources;
2. generation, transmission, transformation and distribution of electricity and other related business activities;
3. research and development of technology related to the businesses mentioned in items 1 and 2;
4. overseas businesses related to the businesses mentioned in items 1 through 3;

5. investments or contributions related to the businesses mentioned in items 1 through 4;
6. businesses incidental to items 1 through 5;
7. Development and operation of certain real estate held by us to the extent that:
  - a. it is necessary to develop certain real estate held by us due to external factors, such as relocation, consolidation, conversion to indoor or underground facilities or deterioration of our substation or office; or



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- b. it is necessary to develop certain real estate held by us to accommodate development of relevant real estate due to such real estate being incorporated into or being adjacent to an area under planned urban development; and

- 8. other activities entrusted by the Government.

The KEPCO Act currently requires that our profits be applied in the following order of priority:

first, to make up any accumulated deficit;

second, to set aside 20.0% or more of profits as a legal reserve until the accumulated reserve reaches one-half of our capital;

third, to pay dividends to shareholders;

fourth, to set aside a reserve for expansion of our business;

fifth, to set aside a voluntary reserve for the equalization of dividends; and

sixth, to carry forward surplus profit.

As of December 31, 2017, the legal reserve was Won 1,605 billion and the voluntary reserve was Won 34,834 billion, which consisted of reserve for business expansion of Won 29,017 billion, reserve for investment in social overhead capital of Won 5,277 billion, reserve for research and human development of Won 330 billion and reserve for equalizing dividends of Won 210 billion.

We are under the supervision of the Ministry of Trade, Industry and Energy, which has principal supervisory responsibility (in consultation with other Government agencies, such as the Ministry of Strategy and Finance, as applicable) over us with respect to the appointments of our directors and our other senior management as well as approval of electricity tariff rate adjustments, among others.

Because the Government owns part of our capital stock, the Government's Board of Audit and Inspection may audit our books.

The Electricity Business Act requires that licenses be obtained in relation to generation, transmission, distribution and sales of electricity, with limited exceptions. We hold the license to generate, transmit, distribute and sell electricity. Each of our six generation subsidiaries holds an electricity generation license. The Electricity Business Act governs the formulation and approval of electricity rates in Korea. See Sales and Customers Electricity Rates above.

Our operations are subject to various laws and regulations relating to environmental protection and safety.

**Debt Reduction Program and Related Activities**

In 2014, in light of the general policy guideline of the Government for public institutions (including us and our generation subsidiaries) to reduce their respective overall debt levels, we and our generation subsidiaries have, in consultation with the Ministry of Trade, Industry and Energy and as approved by the Public Agencies Operating Committee in June 2014, previously set for 2017 target debt-to-equity levels and undertook various programs to reduce debt and improve the overall financial health, including through rationalizing and applying stricter review to (from a profitability and efficiency perspective) various aspects of our operations (both domestic and overseas), inviting private sector investments, disposing of non-core assets (such as non-core or loss-generating overseas operations and real property unrelated to operations), reducing costs, exploring alternative ways to generate additional revenue and developing contingency plans for further cost savings. Such debt-reduction initiatives ended at the end of 2017 as initially planned. However, we plan to continue carry out similar initiatives to manage our level of debt.

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The following table summarizes the debt-to-equity ratio targets for 2017 and some of the actions that we and our generation subsidiaries undertook as part of such debt reduction program.

<b>Entity</b>	<b>Target Debt-to-Equity Level<sup>(1)</sup></b>	<b>Actual Debt-to-Equity Level<sup>(1)</sup></b>	<b>Other Related Activities</b>
KEPCO	96% by 2017	89.9% as of December 31, 2016; 91.0% as of December 31, 2017	<ul style="list-style-type: none"> <li>- Sale of non-core assets (real property) unrelated to operations</li> <li>- Sale of its overseas resource development assets to its generation subsidiaries</li> </ul>
KHNP	117% by 2017	108% as of December 31, 2016; 114% as of December 31, 2017	<ul style="list-style-type: none"> <li>- Stricter review of new business projects</li> <li>- Rationalization of the procurement process and other budget reduction efforts</li> </ul>
EWP	99% by 2017	101% as of December 31, 2016; 92.8% as of December 31, 2017	<ul style="list-style-type: none"> <li>- Proposed sale of shares in GS Donghae Electric Power Co., Ltd. and six other domestic and overseas companies</li> </ul>
KOMIPO	167% by 2017	152% as of December 31, 2016; 168% as of December 31, 2017	<ul style="list-style-type: none"> <li>- Construction project coordination</li> <li>- Cost savings and other efficiency improvement efforts</li> </ul>
KOSEP	110% by 2017	101% as of December 31, 2016; 99.9% as of December 31, 2017	<ul style="list-style-type: none"> <li>- Cost savings and budget reduction efforts</li> <li>- Discovering new business profit models</li> </ul>
KOSPO	139% by 2017	139% as of December 31, 2016; 135% as of December 31, 2017	<ul style="list-style-type: none"> <li>- Proposed sale of shares in domestic business that yield no revenues</li> </ul>
KOWEPO	149% by 2017	150% as of December 31, 2016; 148% as of December 31, 2017	<ul style="list-style-type: none"> <li>- Proposed sale of equity interests in Dongducheon Dream Power</li> <li>- Obtaining private sector investment in Pyeongtaek combined cycle #3</li> <li>- Accelerated construction of generation units</li> </ul>

*Note:*

(1) Computed on a separate basis for KEPCO, EWP, and KOSPO.

Despite our best efforts, however, for reasons beyond our control, including macroeconomic environments, government regulations and market forces (such as international market prices for our fuels), we cannot assure whether we or our generation subsidiaries will be able to successfully reduce debt burdens or otherwise improve our financial health to a level contemplated by the Government or to a level that would be optimal for our capital structure. If we or our generation subsidiaries fail to do so or the measures taken by us or our generation subsidiaries to reduce debt levels or improve financial health have unintended adverse consequences, such developments may have an adverse effect on our business, results of operations and financial condition.

**Table of Contents****Proposed Sale of Certain Power Plants and Equity Interests**

The following table summarizes our current plans for sale of certain of our assets. These sales will be made pursuant to the Government's plans to reduce debt levels and improve management efficiency of public enterprises. The consummation of these plans, however, is subject to, among others, related Government policies and market conditions.

<b>Equity Holdings</b>	<b>Primary Business</b>	<b>Fair Value<sup>(1)</sup> as of December 31, 2017 (in billions of Won)</b>	<b>Ownership Percentage as of December 31, 2017</b>	<b>Ownership Percentage to be Sold</b>
KEPCO Engineering & Construction Co., Inc.	Architectural engineering for utility plants	598	65.77	14.77
Korea Electric Power Industrial Development Co., Ltd.	Electricity metering	39	29.00	29.00

*Note:*

(1) Fair value has been computed as the product of the closing share price on December 31, 2017 multiplied by the number of shares owned by KEPCO.

*KEPCO Engineering & Construction Co., Inc.*

Pursuant to the Third Phase of the Public Institution Reform Plan announced by the Government in August 2008, we conducted the initial public offering of Korea Engineering and Construction Co., Inc., or KEPCO E&C formerly known as Korea Power Engineering Co., Ltd., in December 2009 for gross proceeds to us of Won 165 billion, following which we owned 77.9% of KEPCO E&C's shares. In furtherance of the Public Institution Reform Plan and to improve our financial profile, we sold our equity interests representing 3.1%, 4.0%, 4.5% and 0.54% of KEPCO E&C shares in November 2011, December 2013, December 2014 and December 2016, respectively, in each case to third party investors. We currently hold a 65.77% equity interest in KEPCO E&C.

*Korea Electric Power Industrial Development Co., Ltd.*

In 2003, we privatized Korea Electric Power Industrial Development, or KEPID, formerly our wholly-owned subsidiary, by selling 51.0% of its equity interest to Korea Freedom Federation. Pursuant to the Fifth Phase of the Public Institution Reform Plan announced by the Government in 2009, we sold 20% of the KEPID shares through additional listing. We currently plan to sell the remaining 29.0% of KEPID's equity interest based on, among others, considerations of economic and market conditions.

**Item 4.C. Organizational Structure**

As of December 31, 2017, we had 100 subsidiaries, 56 associates and 45 joint ventures (not including any special purpose entities).

**Subsidiaries**

Our wholly-owned six generation subsidiaries are KHNP, KOSEP, KOMIPO, KOWEPO, KOSPO and EWP. Our non-generation subsidiaries include KEPCO E&C, KEPCO KPS, KEPCO NF, and KEPCO KDN. For a full list of our subsidiaries, including foreign subsidiaries, and their respective jurisdiction of incorporation, please see Exhibit 8.1 attached to this annual report.

**Associates and Joint Ventures**

An associate is an entity over which we have significant influence and that is neither a subsidiary nor a joint venture. Significant influence is the power to participate in the financial and operating policy decisions of the

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investee but does not have control or joint control over those policies. A joint venture is a joint arrangement whereby the parties that have joint control of the arrangement (i.e. joint ventures) have rights to the net assets of the arrangement.

The table below sets forth each of our associates and joint ventures as of December 31, 2017 by name, the percentage of our shareholdings and their principal activities.

	<b>Ownership (Percent)</b>	<b>Principal Activities</b>
<b>Associates:</b>		
Korea Gas Corporation <sup>(1)</sup>	20	Importing and wholesaling LNG
Korea Electric Power Industrial Development Co., Ltd.	29	Electricity metering and others
YTN Co., Ltd.	21	Broadcasting
Cheongna Energy Co., Ltd.	44	Generating and distributing vapor and hot/cold water
Gangwon Wind Power Co., Ltd. <sup>(2)</sup>	15	Power generation
Hyundai Green Power Co., Ltd.	29	Power generation
Korea Power Exchange <sup>(5)</sup>	100	Management of power market and others
AMEC Partners Korea Ltd. <sup>(3)</sup>	19	Resources development
Hyundai Energy Co., Ltd. <sup>(8)</sup>	31	Power generation
Ecollite Co., Ltd.	36	Artificial light-weight aggregate
Taebaek Wind Power Co., Ltd.	25	Power generation
Taebaek Guinemi Wind Power Co., Ltd.	25	Power generation
Pyeongchang Wind Power Co., Ltd.	25	Power generation
Daeryun Power Co., Ltd. <sup>(3, 9)</sup>	13	Power generation
Changjuk Wind Power Co., Ltd.	30	Power generation
KNH Solar Co., Ltd.	27	Power generation
SPC Power Corporation	38	Power generation
Gemeng International Energy Co., Ltd.	34	Power generation
PT. Cirebon Electric Power	28	Power generation
KNOC Nigerian East Oil Co., Ltd. <sup>(4)</sup>	15	Resources development
KNOC Nigerian West Oil Co., Ltd. <sup>(4)</sup>	15	Resources development
PT Wampu Electric Power	46	Power generation
PT. Bayan Resources TBK	20	Resources development
S-Power Co., Ltd.	49	Power generation
Pioneer Gas Power Limited <sup>(7)</sup>	39	Power generation
Eurasia Energy Holdings	40	Power generation and resources development
Xe-Pian Xe-Namnoy Power Co., Ltd.	25	Power generation
Hadong Mineral Fiber Co., Ltd. <sup>(3)</sup>	8	Recycling fly ashes
Green Biomass Co., Ltd. <sup>(11, 14)</sup>	9	Power generation
PT. Mutiara Jawa	29	Manufacturing and operating floating coal terminal
Samcheok Eco Materials Co., Ltd. <sup>(10)</sup>	2	Recycling fly ashes
Noeul Green Energy Co., Ltd.	29	Power generation
Naepo Green Energy Co., Ltd.	42	Power generation

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Goseong Green Energy Co., Ltd. <sup>(2)</sup>	1	Power generation
Gangneung Eco Power Co., Ltd. <sup>(2)</sup>	2	Power generation
Shin Pyeongtaek Power Co., Ltd.	40	Power generation
Heang Bok Do Si Photovoltaic Power Co., Ltd.	28	Power generation
Dongducheon Dream Power Co., Ltd.	34	Power generation
Jinhuvish Power Generation Pvt. Ltd. <sup>(2)</sup>	5	Power generation



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	<b>Ownership (Percent)</b>	<b>Principal Activities</b>
SE Green Energy Co., Ltd.	48	Power generation
Daegu Photovoltaic Co., Ltd.	29	Power generation
Jeongam Wind Power Co., Ltd.	40	Power generation
Korea Power Engineering Service Co., Ltd.	29	Construction and service
Busan Green Energy Co., Ltd.	29	Power generation
Gunsan Bio Energy Co., Ltd. (formerly, Jungbu Bio Energy Co., Ltd.) <sup>(2)</sup>	19	Power generation
Korea Electric Vehicle Charging Service	28	Electric vehicle charge service
Ulleungdo Natural Energy Co., Ltd.	30	Renewable power generation
Korea Nuclear Partners Co., Ltd.	29	Electric material agency
Tamra Offshore Wind Power Co., Ltd.	27	Power generation
Korea Electric Power Corporation Fund <sup>(12)</sup>	98	Developing electric enterprises
Energy Infra Asset Management Co., Ltd. <sup>(3)</sup>	10	Asset management
Daegu clean Energy Co., Ltd.	28	Renewable power generation
YaksuESS Co., Ltd	29	Installing ESS related equipment
Nepal Water & Energy Development Company Private Limited <sup>(15)</sup>	62	Construction and operation of utility plant
Gwangyang Green Energy Co., Ltd.	20	Power generation
PND solar., Ltd	29	Power generation
<b>Joint Ventures:</b>		
KEPCO-Uhde Inc. <sup>(6)</sup>	53	Power generation
Eco Biomass Energy Sdn. Bhd. <sup>(6)</sup>	62	Power generation
Datang Chaoyang Renewable Power Co., Ltd.	40	Power generation
Shuweihat Asia Power Investment B.V.	49	Holding company
Shuweihat Asia Operation & Maintenance Company <sup>(6)</sup>	55	Maintenance of utility plant
Waterbury Lake Uranium L.P.	36	Resources development
ASM-BG Investicii AD	50	Power generation
RES Technology AD	50	Power generation
KV Holdings, Inc.	40	Power generation
KEPCO SPC Power Corporation <sup>(6)</sup>	75	Construction and operation of utility plant
Gansu Datang Yumen Wind Power Co., Ltd.	40	Power generation
Datang Chifeng Renewable Power Co., Ltd.	40	Power generation
Datang KEPCO Chaoyang Renewable Power Co., Ltd.	40	Power generation
Rabigh Electricity Company	40	Power generation
Rabigh Operation & Maintenance Company Limited	40	Maintenance of utility plant
Jamaica Public Service Company Limited	40	Power generation
KW Nuclear Components Co., Ltd.	45	Manufacturing
Busan Shinho Solar Power Co., Ltd.	25	Power generation
GS Donghae Electric Power Co., Ltd.	34	Power generation
Global Trade Of Power System Co., Ltd.	29	Exporting products and technology of small or medium business by proxy
Expressway Solar-light Power Generation Co., Ltd.	29	Power generation
KODE NOVUS I LLC	50	Power generation

KODE NOVUS II LLC	50	Power generation
Daejung Offshore Wind Power Co., Ltd.	50	Power generation

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	<b>Ownership (Percent)</b>	<b>Principal Activities</b>
Amman Asia Electric Power Company <sup>(6)</sup>	60	Power generation
KAPES, Inc. <sup>(6)</sup>	51	R&D
Dangjin Eco Power Co., Ltd.	34	Power generation
Honam Wind Power Co., Ltd.	29	Power generation
Chun-cheon Energy Co., Ltd.	30	Power generation
Yeonggwangbaeksu Wind Power Co., Ltd. <sup>(3)</sup>	15	Power generation
Nghi Son 2 Power Ltd.	50	Power generation
Kelar S.A. <sup>(6)</sup>	65	Power generation
PT. Tanjung Power Indonesia	35	Power generation
Incheon New Power Co., Ltd.	29	Power generation
Seokmun Energy Co., Ltd.	29	Power generation
Daehan Wind Power PSC	50	Power generation
Barakah One Company <sup>(13)</sup>	18	Power generation
Nawah Energy Company <sup>(13)</sup>	18	Operation of utility plant
MOMENTUM	33	International thermonuclear experimental reactor construction management
Daegu Green Power Co., Ltd.	29	Power generation
Yeonggwang Wind Power Co., Ltd.	41	Power generation
Chester Solar IV SpA <sup>(6)</sup>	82	Power generation
Chester Solar V SpA <sup>(6)</sup>	82	Power generation
Diego de Almagro Solar SpA	82	Power generation
South Jamaica Power Company Limited	20	Power generation

*Notes:*

- (1) The effective percentage of ownership (excluding the treasury stocks) is 21.57%.
- (2) We can exercise significant influence by virtue of our contractual right to appoint directors to the board of directors of this entity, and by strict decision criteria of our financial and operating policy of the board of directors.
- (3) We can exercise significant influence by virtue of our contractual right to appoint a director to the board of directors of this entity.
- (4) We can exercise significant influence by virtue of our contractual right to appoint one out of four members of the steering committee of this entity. Moreover, we have significant financial transactions with this entity to the effect that we can exercise significant influence on this entity.
- (5) The Government regulates our ability to make operating and financial decisions over the entity, as the Government requires maintaining arms-length transactions between the Korea Power Exchange and our other subsidiaries. We can exercise significant influence by our right to nominate directors to the board of directors of this entity.
- (6) According to the shareholder agreement, all critical financial and operating decisions must be agreed to by all ownership parties. For these reasons, these entities are classified as joint ventures.
- (7) The reporting period of all associates and joint ventures ends in December 31, except for Pioneer Gas Power Limited whose reporting period ends on March 31.
- (8)

As of December 31, 2017, 15.64% of ownership of Hyundai Energy Co., Ltd. was held by NH Power II Co., Ltd. and NH Bank. According to the shareholders' agreement reached on March 2011, not only do we have a call option to acquire the investment in Hyundai Energy Co., Ltd. from NH Power II Co., Ltd. and NH Bank upon a certain rate of return, NH Power II Co., Ltd. and NH Bank also have put options to dispose of their investment to us. In connection with this agreement, we applied the equity method on our 46.30% equity investment in Hyundai Energy Co., Ltd.

- (9) Following the merger of Daeryun Energy Co., Ltd. into Daeryun Power Co., Ltd., its parent, our effective percentage of ownership decreased to 19.45% after accounting for stock purchase options.
- (10) Our effective percentage of ownership (excluding the redeemable convertible preferred shares) is 25.54%.

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- (11) Our effective percentage of ownership is less than 20%, but we can exercise significant influence by virtue of our contractual right to appoint a director to the board of directors of this entity and the fact that a dominant portion of the investee's sales transactions is generated from us.
- (12) Our effective percentage of ownership is more than 50% but we do not hold control over relevant business while we exercise significant influence by participating in the Investment Decision Committee. For this reason, this entity is classified as an associate.
- (13) Our effective percentage of ownership is less than 20%, but we have joint control over this entity as decisions on the major activities require the unanimous consent of the parties that collectively control the entity.
- (14) The percentage of ownership decreased since we did not participate in the capital increase of Green Biomass Co., Ltd. during the period.
- (15) Our effective percentage of ownership is more than 50%, but we do not control this entity according to the shareholders' agreement. For this reason, this entity is classified as an associate.

**Item 4.D. Property, Plant and Equipment**

Our property consists mainly of power generation, transmission and distribution equipment and facilities in Korea. See Item 4.B. Business Overview Power Generation, Transmission and Distribution and Capital Investment Program. In addition, we own our corporate headquarters building complex at 55 Jeollyeok-ro, Naju-si, Jeollanam-do, 58217, Korea. As of December 31, 2017, the net book value of our property, plant and equipment was Won 150,882 billion. As of December 31, 2017, investment property, which is accounted for separately from our property, plant and equipment, amounted to Won 285 billion. No significant amount of our properties is leased. There are no material encumbrances on our properties, including power generation, transmission and distribution equipment and facilities.

Pursuant to a Government plan announced in 2005, which mandated relocation of the headquarters of select government-invested enterprises from the Seoul metropolitan area to other provinces in Korea as part of an initiative to foster balanced economic growth in the provinces, we, our generation subsidiaries and our certain subsidiaries relocated our respective headquarters to the designated locations during 2014 and 2015. Our headquarters are currently located in Naju in Jeollanam-do Province while the headquarters of our six generation subsidiaries and other subsidiaries are various cities outside of Seoul across Korea.

In connection with the relocation of our headquarters, in September 2014 we entered into an agreement to sell the property housing our prior headquarters to a consortium consisting of members of the Hyundai Motor group for Won 10,550 billion through an open bidding. The sale was completed in September 2015.

During 2017, we completed the sales of 110 properties (including residential properties, storage spaces, and substation lots that are located in Korea) which are not directly related to our operations for an aggregate sale price of approximately Won 11.7 billion. The book value of such properties amounted to Won 7 billion, representing 0.09% of our total real properties as of December 31, 2017. The foregoing sales reflect our ongoing efforts to improve our financial soundness through debt reduction and enhance our management efficiency, selling noncore properties that have no direct relations to electricity facilities.

**ITEM 4A. UNRESOLVED STAFF COMMENTS**

We do not have any unresolved comments from the SEC staff regarding our periodic reports under the Securities Exchange Act of 1934, as amended (the Exchange Act).

**ITEM 5. OPERATING AND FINANCIAL REVIEW AND PROSPECTS**

*You should read the following discussion on our operating and financial review and prospects together with our consolidated financial statements and the related notes which appear elsewhere in this annual report. Our*

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*results of operations, financial condition and cash flows may materially change from time to time, for reasons including various policy initiatives (including changes to the Restructuring Plan) by the Government in relation to the Korean electric power industry, and accordingly our historical performance may not be indicative of our future performance. See Item 4.B. Business Overview Restructuring of the Electric Power Industry in Korea and Item 3D. Risk Factors The Government may adopt policy measures to substantially restructure the Korean electric power industry or our operational structure, which may have a material adverse effect on our business, operations and profitability.*

## **Item 5.A. Operating Results**

### **Overview**

We are a predominant market participant in the Korean electric power industry, and our business is heavily regulated by the Government, including with respect to the rates we charge to customers for the electricity we sell. In addition, our business requires a high level of capital expenditures for the construction of electricity generation, transmission and distribution facilities and is subject to a number of variable factors, including demand for electricity in Korea and fluctuations in fuel costs, which are in turn impacted by the movements in the exchange rates between the Won and other currencies.

Under the Electricity Business Act and the Price Stabilization Act, the Government generally establishes electricity rates at levels that are expected to permit us to recover our operating costs attributable to our basic electricity generation, transmission and distribution operations in addition to receiving a fair investment return on capital used in those operations. For a detailed description of the fair investment return, see Item 4.B. Business Overview Sales and Customers Electricity Rates. From 2014 to 2015, largely due to the general decline of fuel prices, relatively stable exchange rates, the sale of the properties in our previous headquarters and the greater use of coal relative to LNG (the former being a cheaper source of fuel) as a proportion of the fuels used to produce electricity, our gross profit, operating profit and net profit increased significantly.

If fuel prices were to rise substantially and rapidly in the future, such rise may have a material adverse effect on our results of operations and profitability. In part to address these concerns, the Government from time to time increases the electricity tariff rates. However, such increases may be insufficient to fully offset the adverse impact from the rise in fuel costs, and since such increases typically require lengthy public deliberations in order to be implemented, the tariff increases often occur with a significant time lag and as a result our results of operations and cash flows may suffer. On the other hand, if fuel prices decrease, substantial political pressure may lead the Government to lower the level of electricity tariff in a relatively shorter period of time due to the lack of public opposition, which could negatively affect our profit margins and in turn our financial condition and results of operations.

The results of our operations are largely affected by the following factors:

demand for electricity;

electricity rates we charge to our customers;

fuel costs; and

the exchange rates of Won against other foreign currencies, in particular the U.S. dollar.

***Demand for Electricity***

Our sales are largely dependent on the level of demand for electricity in Korea and the rates we charge for the electricity we sell.



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Demand for electricity in Korea grew at a compounded average rate of 1.7% per annum for the five years ended December 31, 2017. According to the Bank of Korea, the compounded growth rate for GDP was approximately 3.0% for the same period. The GDP growth rate was approximately 2.8%, 2.9% and 3.1% during 2015, 2016 and 2017, respectively.

The table below sets forth, for the periods indicated, the annual rate of growth in Korea's GDP and the annual rate of growth in electricity demand (measured by total annual electricity consumption) on a year-on-year basis.

	2013	2014	2015	2016	2017
Growth in GDP	2.9%	3.3%	2.8%	2.9%	3.1%
Growth in electricity consumption	1.8%	0.6%	1.3%	2.8%	2.2%

Demand for electricity may be categorized either by the type of its usage or by the type of customers. The following describes the demand for electricity by the type of its usage, namely, industrial, commercial and residential:

The industrial sector represents the largest segment of electricity consumption in Korea. Demand for electricity from the industrial sector was 285,969 gigawatt hours in 2017, representing a 2.6% increase from 2016, largely due to the continued export-based growth of the Korean economy, which resulted in increased industrial output and greater utilization of industrial plants.

Demand for electricity from the commercial sector depends largely on the level and scope of commercial activities in Korea, which in recent years have resulted in increased office building construction, office automation and use of air conditioners and heaters. Demand for electricity from the commercial sector increased to 111,298 gigawatt hours in 2017, representing a 2.5% increase from 2016 largely due to the recovery of market demand as a result of various Government policies to boost the economy.

Demand for electricity from the residential sector is largely dependent on population growth and use of heaters, air conditioners and other electronic appliances. Demand for electricity from the residential sector increased to 68,544 gigawatt hours in 2017, representing a 0.7% increase compared to 2016, largely due to an increase in household electricity usage for air conditioning and heating. For a discussion on demand by the type of customers, see Item 4.B. Business Overview Sales and Customers Demand by the Type of Usage.

Since our inception, we have had the predominant market share in terms of electricity generated in Korea. As for electricity we purchase from the market for transmission and distribution to our end-users, our generation subsidiaries accounted for 83.3%, 81.5% and 77.8% in 2015, 2016 and 2017, respectively, while the remainder was accounted for by independent power producers. As for transmission and distribution of electricity, we have historically handled, expect to continue to handle, substantially all of such activities in Korea.

We expect that we will continue to have a dominant market share in the generation, transmission and distribution of electricity in Korea for the foreseeable future, absent any substantial changes to the Restructuring Plan or other policy initiatives by the Government in relation to the Korean electric power industry, or an unexpected level of market penetration by independent power producers or localized electricity suppliers under the Community Energy System. However, our market dominance in the electricity distribution in Korea may face potential erosion in light of the recent Proposal for Adjustment of Functions of Public Institutions (Energy Sector) announced by the Government in

June 2016. This proposal contemplates a gradual opening of the electricity trading market to the private sector although no detailed roadmap has been provided for such opening. It is currently premature to predict to what extent, or in what direction, the liberalization of the electricity trading market will happen. Nonetheless, any significant liberalization of the electricity trading market may result in substantial reduction of our market share in electricity distribution in Korea, which would have a material adverse effect on our business, results of operation and cash flows. See Item 4.B. Business Overview Competition.

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**Table of Contents*****Electricity Rates***

Under the Electricity Business Act and the Price Stabilization Act, electricity rates are established at levels that will permit us to recover our operating costs attributable to our basic electricity generation, transmission and distribution operations in addition to receiving a fair investment return on capital used in those operations. For further discussion of fair investment return, see Item 4.B. Business Overview Sales and Customers Electricity Rates.

From time to time, our actual rate of return on invested capital may differ significantly from the fair rate of return on invested capital assumed for the purposes of electricity tariff approvals, for reasons, among others, related to movements in fuel prices, exchange rates and demand for electricity that differs from what is assumed for determining our fair rate of return. For example, between 1987 and 1990, the actual rate of return was above the fair rate of return due to declining fuel costs and rising demand for electricity. In contrast, depreciation of the Won against the U.S. dollar accounted for our actual rates of return being lower than the fair rate of return for the period from 1996 to 2000. Partly in response to the variance between our actual rates of return and the fair rate of return, the Government from time to time increases the electricity tariff rates, but there typically is a significant time lag for the tariff increase as such increase requires a series of deliberative processes and administrative procedures and the Government also has to consider other policy considerations, such as the inflationary effect of overall tariff increases and the efficiency of energy use through sector-specific tariff increases. For the period between 2006 and 2013, our actual rates of return were lower than the fair rate of return largely due to a general increase in fuel costs and additional facility investment costs incurred, the effects of which were not offset by timely increases in our tariff rates. Between 2014 and 2016, however, largely due to the decrease in fuel costs reflective of the drop in oil prices, our actual rate of return has surpassed the fair rate of return; however, substantially all of the resulting excess has been used to fund capital expenditure and repair and maintenance, as well as to offer tariff discounts to economically or otherwise disadvantaged households, and investments in renewable energy and other environmental programs.

Partly in response to the variance between our actual rates of return and the fair rates of return, the Government from time to time increases the electricity tariff rates, but there typically is a significant time lag for the tariff increases as such increases requires a series of deliberative processes and administrative procedures and the Government also has to consider other policy considerations, such as the inflationary effect of overall tariff increases and the efficiency of energy use from sector-specific tariff increases.

In the past, the Government effected tariff increases that typically covered all sectors, namely, residential, commercial and industrial. No cross-sector tariff increase has been implemented since November 2013, largely due to the downward trend in fuel costs. However, effective January 1, 2017, the Government made several adjustments to the existing rate structure in order to ease the burden of electricity tariff on residential consumers as well as promote the use of renewable energy. First, the progressive rate structure applicable to the residential sector, which applies a gradient of increasing tariff rates for heavier electricity usage, was changed from a six-tiered structure with the highest rate being no more than 11.7 times the lowest rate (which gradient system has been in place since 2005) into a three-tiered structure with the highest rate being no more than three times the lowest rate in order to reflect the changes in the pattern of electricity consumption and reduce the electricity charges payable by consumers. Second, the new tariff structure encourages energy saving by offering rate discounts to residential consumers that voluntarily reduce electricity consumption while charging special high rates to residential consumers with heavy electricity consumption during peak usage periods during the summer and the winter. Third, a temporary rate discount will apply during 2018 to 2020 to investments in environmentally friendly facilities such as energy storage systems, renewable energy and electric cars. Such adjustments may lower our revenues from the sale of electricity and accordingly have a material adverse effect on our results of operation, financial condition and cash flows.



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**Table of Contents*****Fuel Costs***

Our results of operations are also significantly affected by the cost of producing electricity, which is subject to a variety of factors, including, in particular, the cost of fuel.

Cost of fuel in any given year is a function of the volume of fuels consumed and the unit fuel cost for the various types of fuel used for generation of electricity which affects the cost structure for both our generation subsidiaries and independent power producers from whom we purchase electric power. A significant change in the unit fuel costs materially impacts the costs of electricity generated by our generation subsidiaries, which mainly comprise our fuel costs under the cost of sales, as well as, to our knowledge, the costs of electricity generated by the independent power producers that sell their electricity to us (see Item 4.A. Purchase of Electricity Cost-based Pool System ), which mainly comprise our purchased power costs under the cost of sales. We are however unable to provide a comparative analysis since the unit fuel cost information for independent power producers and their cost structures are proprietary information.

Fuel costs constituted 33.3%, 30.9% and 31.7% of our cost of sales, and the ratio of fuel costs to our sales was 25.9%, 23.4% and 27.8% in 2015, 2016 and 2017, respectively. Substantially all of the fuel (except for anthracite coal) used by our generation subsidiaries is imported from outside of Korea at prices determined in part by prevailing market prices in currencies other than Won. In addition, our generation subsidiaries purchase a significant portion of their fuel requirements under contracts with limited quantity and duration. Pursuant to the terms of our long-term supply contracts, prices are adjusted from time to time subject to prevailing market conditions. See Item 4.B. Business Overview Fuel.

Uranium accounted for 38.1%, 37.1% and 34.8% of our fuel requirements in 2015, 2016 and 2017, respectively. Coal accounted for 47.9%, 47.7% and 53.3% of our fuel requirements in 2015, 2016 and 2017, respectively. LNG accounted for 10.7%, 10.7% and 8.7% of our fuel requirements in 2015, 2016 and 2017, respectively. Oil accounted for 2.2%, 3.0% and 1.2% of our fuel requirements in 2015, 2016 and 2017, respectively. In each case, the fuel requirements are measured by the amount of electricity generated by us and our generation subsidiaries and do not include electricity purchased from independent power producers. In order to ensure stable supplies of fuel materials, our generation subsidiaries enter into long-term and medium-term contracts with various suppliers and supplement such supplies with fuel materials purchased on spot markets.

The price of bituminous coal, which represents our largest fuel requirement, fluctuates significantly from time to time. In 2017, approximately 82% of the bituminous coal requirements of our generation subsidiaries were purchased under long-term contracts and the remaining 18% purchased on the spot market. The average daily spot price of free on board Newcastle coal 6300 GAR published by Platts increased from US\$66.8 per ton in 2016 to US\$88.3 per ton in 2017 and to US\$93.4 per ton as of April 16, 2018. If the price of bituminous coal were to sharply rise, our generation subsidiaries may not be able to secure their respective bituminous coal supplies at prices commercially acceptable to them. In addition, any significant interruption or delay in the supply of fuel, bituminous coal in particular, from any of their suppliers could cause our generation subsidiaries to purchase fuel on the spot market at prices higher than contracted, resulting in an increase in fuel cost.

From 2015 to 2017, the prices of oil and LNG fluctuated significantly. The prices of oil and LNG are substantially dependent on the price of crude oil, and according to Bloomberg (Bloomberg Ticker: PGCRDUBA), the average daily spot price of Dubai crude oil increased from US\$41.4 per barrel in 2016 to US\$53.1 per barrel in 2017 and to US\$68.4 per barrel as of April 16, 2018.

Nuclear power has a stable and relatively low-cost structure and forms a significant portion of electricity supplied in Korea. Due to significantly lower unit fuel costs compared to those for thermal power plants, our nuclear power plants are generally operated at full capacity with only routine shutdowns for fuel replacement and maintenance, with limited exceptions. In case of shortage in electricity generation resulting from stoppages of the nuclear power plants, we seek to make up for such shortage with power generated by our thermal power plants.

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Because the Government heavily regulates the rates we charge for the electricity we sell (see Item 4.B. Business Overview Sales and Customers Electricity Rates ), our ability to pass on such cost increases to our customers is limited. For example, from 2008 to 2012 we had consecutive net losses and, from time to time, operating losses, largely due to sustained rises in fuel costs that were neither timely nor sufficiently offset by a corresponding rise in electricity tariff rates. If fuel prices substantially increase and the Government, out of concern for inflation or for other reasons, maintains the current level of electricity tariff and does not increase it to a level to sufficiently offset the impact of rising fuel prices, the price increases will negatively affect our profit margins or even cause us to suffer net losses and our business, financial condition, results of operations and cash flows would suffer.

***Movements of the Won against the U.S. Dollar and Other Foreign Currencies***

Korean Won has fluctuated significantly against major currencies from time to time. For fluctuations in exchange rates, see Item 3.A. Selected Financial Data Currency Translations and Exchange Rates. In particular, Korean Won underwent substantial fluctuations during the recent global financial crisis, and remains subject to significant volatility. The Noon Buying Rate per one U.S. dollar increased from Won 1,169.3 on December 31, 2015 to Won 1,203.7 on December 31, 2016, fell down to Won 1,067.4 on December 31, 2017 and to Won 1,071.6 on April 16, 2018. In 2016 and 2017, the Won generally appreciated against U.S. dollar and other foreign currencies, and such appreciation may result in a significant decrease in the cost of fuel materials and equipment purchased from overseas as well as the cost of servicing our foreign currency debt. As of December 31, 2017, 19.4% of our long-term debt (including the current portion but excluding issue discounts and premium) without taking into consideration of swap transactions was denominated in foreign currencies, principally U.S. dollars. The prices for substantially all of the fuel materials and a significant portion of the equipment we purchase are stated in currencies other than Won, generally in U.S. dollars. Since a substantial portion of our revenues is denominated in Won, we must generally obtain foreign currencies through foreign currency-denominated financings or from foreign currency exchange markets to make such purchases or service such debt, fulfill our obligations under existing overseas investments and make new overseas investments. As a result, any significant depreciation of Won against U.S. dollar or other foreign currencies will have a material adverse effect on our profitability and results of operations. See Item 3.D. Risk Factors Risks Relating to KEPCO The movement of Won against the U.S. dollar and other currencies may have a material adverse effect on us.

**Recent Accounting Changes*****New Amendments Adopted***

New amendments to IFRS and other accounting standards are set forth below. These amendments had no impact on our consolidated financial statements included in this annual report.

**Amendments to IAS 12 Income Taxes**

We have adopted amendments to IAS 12 Income Taxes since January 2017. The amendments clarify that unrealized losses on fixed-rate debt instruments measured at fair value and measured at cost for tax purposes give rise to a deductible temporary difference regardless of whether the holder expects to recover the carrying amount of the debt instrument by sale or by use and that the estimate of probable future taxable profit may include the recovery of some of assets for more than their carrying amount. When we assess whether there will be sufficient taxable profit, we should compare the deductible temporary differences with future taxable profit that excludes tax deductions resulting from the reversal of those deductible temporary differences. We believe that there is no significant impact on our consolidated financial statements and did not retroactively restate the comparative consolidated financial statements for the prior period.





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### Amendments to IAS 7 Statement of Cash Flows

We have adopted amendments to IAS Statement of Cash Flows since January 1, 2017. The amendments require changes in liabilities arising from financing activities to be disclosed. The amendments are not required to provide comparative information for prior periods when applying for the first time. Information about changes in liabilities arising from financing activities is included in Note 23 and Note 24 of the notes to our consolidated financial statements included in this annual report for further related information.

### *New Standards and Amendments Not Yet Adopted*

The following new standards and amendments to existing IFRS and other standards are effective for annual periods beginning on January 1, 2017; however, we have not adopted such amendments yet. We will apply IFRS 9 Financial Instruments and IFRS 15 Revenue from Contracts with Customers for annual periods beginning on January 1, 2018 and we have conducted a detailed assessment upon adoption of these standards and based on the circumstance and information available up to the filing date of this annual report.

### IFRS 9 Financial Instruments

IFRS 9 sets out the requirements for recognizing and measuring financial assets, financial liabilities and certain contracts to buy or sell non-financial items. It replaces existing guidance in IAS 39 Financial Instruments: Recognition and Measurement .

We will apply the exemption allowing it not to restate the comparative information for prior periods upon adoption of IFRS 9. We will retroactively apply the cumulative effect of the adoption of IFRS 9 in retained earnings as of the date of initial application (January 1, 2018).

Expected impacts on our consolidated financial statements are categorized as follows:

### Classification and measurement of financial assets

IFRS 9 includes a new classification and measurement of financial assets that reflects the business model in which assets are managed and their cash flow characteristics.

Under IFRS 9, financial assets are classified into three principal categories; measured at amortized cost, fair value through other comprehensive income (FVOCI) and fair value through profit or loss (FVTPL) based on the business model in which assets are managed and their cash flow characteristics. Under IFRS 9, derivatives embedded in hybrid contracts where the host is a financial asset are not bifurcated. Instead, the hybrid financial instrument as a whole is assessed for classification.

The criteria for classification and measurement of financial assets under IFRS 9 are as follows:

- A financial asset is measured at amortized cost if it meets both of the following conditions and is not designated as at FVTPL: 1) the asset is held within a business model whose objective is to hold assets to collect contractual cash flows; and 2) the contractual terms of the financial asset give rise on specified dates to cash flows that are solely payments of principal and interest on the principal amount

outstanding.

- A financial asset is measured at FVOCI if it meets both of the following conditions and is not designated as at FVTPL: 1) the asset is held within a business model whose objective is achieved by both collecting contractual cash flows and selling financial assets; and 2) the contractual terms of the financial asset give rise on specified dates to cash flow that are solely payments of principal and interest on the principal amount outstanding. On initial recognition of equity investment that is not held for trading, the company may irrevocably elect to present subsequent changes in fair value in other comprehensive income (OCI), and will not reclassify(recycle) the those items in OCI to profit or loss subsequently.
  
- A financial asset is measured at FVTPL if the contractual terms of the financial asset give rise to specified dates to cash flows that are not solely payments of principal and interest on the principal

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amount outstanding, the debt instrument is held within a business model whose objective is to sell the asset, or the equity instruments that are not elected to be designated as measured at FVOCI.

As of December 31, 2017, We have financial assets at fair value through profit or loss amounting to Won 133,532 million, available-for-sale financial assets amounting to Won 699,833 million, held-to-maturity investments amounting to Won 3,144 million and loans and receivables amounting to Won 15,203,663 million.

Based on the result of the detailed assessment to date, the expected impacts on our financial assets (excluding derivative instruments) on the date of initial application (January 1, 2018) are as follows:

Classification based on IAS 39	Classification based on IFRS 9	Amount based on IAS 39	Amount based on IFRS 9
		In millions of won	
Financial assets at FVTPL	FVTPL	111,512	111,512
Loans and receivables	Amortized cost	15,203,663	14,412,339
Loans and receivables	FVTPL		791,324
Available-for-sale financial assets	FVOCI	699,833	476,941
Available-for-sale financial assets	FVTPL		222,892
Held-to-maturity investments	Amortized cost	3,144	3,144
<b>Total financial assets (excluding derivative instruments)</b>		<b>16,018,152</b>	<b>16,018,152</b>

Upon adoption of IFRS 9, Won 791,324 million of loans and receivables and Won 222,892 million of available-for-sale financial assets will be measured at FVTPL. We have elected to measure Won 476,941 million of the equity securities classified as available-for-sale financial assets as FVOCI under IFRS 9. Accordingly, from January 1, 2018, gains and losses from changes of fair value of the equity securities are recognized in other comprehensive income, impairment losses are not recognized in profit or loss, and gains and losses are not reclassified at disposal.

#### Classification and measurement of financial liabilities

Under IFRS 9, the amount of change in the fair value attributable to the changes in the credit risk of the financial liabilities is presented in OCI, not recognized in profit or loss, and the OCI amount will not be reclassified (recycled) to profit or loss. However, if doing so creates or increase an accounting mismatch, the amount of change in the fair value is recognized in profit or loss.

We did not elect to designate financial liabilities as FVTPL and believes that there is no significant impact on our consolidated financial statements upon adoption of IFRS 9.

#### Impairment: Financial assets and contract assets

IFRS 9 replaces the incurred loss model in the existing standard with a forward-looking expected credit loss (ECL) model for debt instruments, lease receivables, contractual assets, loan commitments, financial guarantee contracts.

Under IFRS 9, impairment losses are likely to be recognized earlier than using the incurred loss model under the existing guidance in IAS 39 as loss allowances will be measured on either of the 12-month or lifetime ECL based on the extent of increase in credit risk since inception as shown in the below table.

	<b>Classification</b>	<b>Loss allowances</b>
Stage 1	Credit risk has not increased significantly since the initial recognition	12-month ECL: ECLs that resulted from possible default events within the 12 months after the reporting date
Stage 2	Credit risk has increased significantly since the initial recognition	Lifetime ECL: ECL that resulted from all possible default events over the expected life of a financial instrument
Stage 3	Credit-impaired	

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Under IFRS 9, an entity shall always measure the loss allowance at an amount equal to lifetime expected credit losses for trade receivables or contract assets that result from transactions that are within the scope of IFRS 15 and that do not contain a significant financing component in accordance with IFRS 15 and if the trade receivables or contract assets include a significant financing component, an entity may choose as its accounting policy to measure the loss allowance at an amount equal to lifetime expected credit losses.

As of December 31, 2017, we have debt instruments in financial assets measured at amortized cost amounting to Won 15,464,202 million (loans and receivables) and has recognized loss allowances of Won 260,539 million.

Under adoption of IFRS 9, we plan to elect to measure the loss allowance at an amount equal to lifetime expected credit losses for trade receivables, contract assets and lease receivables that include a significant financing component. Based on the result of the detailed assessment to date, the expected impacts on our loss allowances on the date of initial application (January 1, 2018) are as follows:

Type	Amount based on	Amount based on	Increase (decrease)
	IAS 39 (A)	IFRS 9 (B) In millions of won	(B-A)
Trade and other receivables	251,591	258,360	6,769
Other financial assets	8,948	8,948	
<b>Total</b>	<b>260,539</b>	<b>267,308</b>	<b>6,769</b>

**Hedge accounting**

When initially applying IFRS 9, an entity may elect as its accounting policy to continue to apply the hedge accounting requirements of IAS 39. We plan to elect to continue apply the hedge accounting requirements of IAS 39.

As of December 31, 2017, We have asset and liabilities designated as hedged items amounting to Won 10,606 million and Won 277,130 million, respectively.

**IFRS 15 Revenue from contract with customers**

IFRS 15 sets out a comprehensive framework for determining whether revenue is recognized, the extent of revenue recognized, and when revenue is recognized. It replaces existing revenue recognition guidance, including IAS 18

Revenue, IAS 11 Construction Contracts, SIC-31 Revenue-Barter transactions involving advertising services, IFRIC 13 Customer Loyalty Programs, IFRIC 15 Agreements for the construction of real estate, and IFRIC 18 Transfers of assets from customers.

We will retrospectively apply and recognize the cumulative effect of the adoption of IFRS 15 at the date of initial application (January 1, 2018) and has determined to retrospectively apply to only those contracts that were not completed as of the date of initial application (January 1, 2018). Accordingly, we will not restate the comparative periods.

Existing IFRS standards and interpretations including IAS 18 provide revenue recognition guidance by transaction types such as sales of goods, rendering of services, interest income, royalty income, dividend income and construction revenue; however, under the new standard, IFRS 15, the five-step approach (Step 1: Identify the contract(s) with a customer, Step 2: Identify the performance obligations in the contract, Step 3: Determine the transaction price, Step 4: Allocate the transaction price to the performance obligations in the contract, Step 5: Recognize revenue when the entity satisfied a performance obligation) is applied for all types of contracts or agreements.

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Expected impacts on the consolidated financial statements are categorized as follows:

### Identify the performance obligations in the contract

We are engaged in the generation, transmission and distribution of electricity and development of electric power resources, and electricity sales revenue accounts for 91.3% of consolidated revenue for the year ended December 31, 2017.

Under IFRS 15, supplying electricity is a series of distinct goods or services identified as a single performance obligation. We are also engaged in contracts with customers for transmission and distribution, provision of power generation byproducts, EPC business, O&M, etc. that are identified as different performance obligations for each contract.

Based on the result of the detailed assessment to date, we believe that the impact of identifying separate the performance obligations in the contract on our revenue is not significant.

### Variable consideration

We may be subject to a variation of consideration paid by the customer due to the progressive electricity billing system, discounts on electricity bills for policy purposes, penalties and delinquent payment, etc. In applying IFRS 15, we estimate an amount of variable consideration by using the expected value method that we expect to better predict the amount of consideration to which it will be entitled, and includes in the transaction price some or all of an amount of variable consideration only to the extent that it is highly probable that a significant reversal in the amount of cumulative revenue recognized will not occur when the uncertainty associated with the variable consideration is subsequently resolved.

Based on the result of the detailed assessment to date, we believe that the impact of variable consideration on our revenue is not significant.

### Performance obligations satisfied over time

We provide our customers with services such as EPC business, O&M, etc. over time. We recognize revenues based on the percentage-of-completion on a reasonable basis.

Under IFRS 15, an entity recognizes revenue over time if one of the following criteria is met:

- (a) the customer simultaneously receives and consumes the benefits provided by the entity's performance as the entity performs;
- (b) the entity's performance creates or enhances an asset that the customer controls as the asset is created or enhanced; or

- (c) the entity's performance does not create an asset with an alternative use to the entity and the entity has an enforceable right to payment for performance completed to date.

Based on the result of the detailed assessment to date, the impact of the revenue recognition over time based on the percentage-of-completion on our revenue is not significant.

#### IFRS 16 Leases

IFRS 16 replaces IAS 17 Leases, and IFRIC 4 Determining whether an Arrangement contains a Lease. This standard is effective for annual reporting periods beginning on or after January 1, 2019, with early adoption permitted if IFRS 15 Revenue from Contracts with Customers has also been applied.

Under IFRS 16, a lessee shall apply this standard to its leases either:

- (a) retrospectively to each prior reporting period presented applying IAS 8 Accounting Policies, Changes in Accounting Estimates and Errors; or



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- (b) retrospectively with the cumulative effect of initially applying the standard recognized at the date of initial application.

We have not yet determined the transition approach for IFRS 16.

IFRS 16 provides a single lessee accounting model in which the lessee recognizes lease related assets and liabilities in the statement of financial position. A lessee is required to recognize a right-of-use asset representing its right to use the underlying leased asset and a lease liability representing its obligation to make lease payments. Lease recognition may be exempted for short-term leases and leases for which the underlying asset is of low value. Accounting for a lessor is similar to the existing standard that classifies each of its leases as either an operating lease or a finance lease.

Upon adoption of IFRS 16, the nature of the costs associated with the lease will change as the operating lease payments recognized based on a straight-line basis will change to depreciation expense of a right-of-use asset and interest expense of the lease liability and no significant impact is expected on our finance lease.

We plan to conduct a detailed assessment of the potential impact from the application of IFRS 16 during the year ending December 31, 2018.

### **IFRIC 22 Foreign Currency Transactions and Advance Consideration**

IFRIC 22, published on December 8, 2016, clarifies the date of the transaction for the purpose of determining the exchange rate to use on initial recognition of the related asset, expense or income, when an entity has received or paid advance consideration in a foreign currency. IFRIC 22 is effective for annual reporting periods beginning on or after January 1, 2018, with earlier adoption permitted.

We are currently performing a detailed assessment of the impact resulting from the application of IFRIC 22 and plan to complete the assessment in advance of its effective date.

### **Amendments to IAS 40 Investment Property**

The amendments clarify when an entity should transfer a property asset to, or from, investment property. The amendments are effective for annual periods beginning on or after January 1, 2018, with earlier adoption permitted.

We are currently performing a detailed assessment of the impact resulting from the application of amendments to IAS 40 and plan to complete the assessment in advance of its effective date.

## **Critical Accounting Policies**

The following discussion and analysis are based on our consolidated financial statements included in this annual report. The fundamental objective of financial reporting is to provide useful information that allows a reader to comprehend our business activities. To aid in that understanding, our management has identified critical accounting policies.

We make a number of estimates and judgments in preparing our consolidated financial statements. These estimates may differ from actual results and have a significant impact on our recorded assets, liabilities, revenues and expenses and related disclosure of contingent assets and liabilities. We consider an estimate to be a critical accounting estimate if it requires a high level of subjectivity or judgment, and a significant change in the estimate would have a material

impact on our financial condition or results of operations. Further discussion of these critical accounting estimates and policies is included in the notes to our consolidated financial statements included in this annual report.

The accounting policies set out below have been applied consistently by us and our subsidiaries to all periods presented in the consolidated annual financial statements, unless otherwise indicated.

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### ***Sale and Purchase of Electricity***

The Government approves the rates we charge to customers. Our utility rates are designed to recover our reasonable costs plus a fair investment return. We purchase electricity principally from our generation subsidiaries based on a competitive bidding process through the Korea Power Exchange.

We recognize electricity sales revenue based on power sold (transferred to the customer) up to the reporting date. To determine the amount of power sold, we make reasonable estimates on daily power volumes for residential, commercial, industrial and other uses. The differences between the current month's estimated amounts and actual (meter-read) amounts are adjusted (trued-up) during the next month period.

### ***Construction Contracts***

When the outcome of a construction contract can be estimated reliably, revenue and costs are recognized based on the stage of completion of the contract activity at the end of the reporting period, measured based on the proportion of contract costs incurred for work performed to date relative to the estimated total contract costs except where this would not be representative of the stage of completion, utilizing the cost-based input method. In applying the cost-based input method, it is necessary to use estimates and assumptions related to the total estimated costs expected to be incurred in the future, costs incurred which are not related to construction progress, changes in costs due to change of contract or design, etc. Total contract revenue is measured based on an agreed contract price; however, it may fluctuate due to the variation of construction work. The measurement of contract revenue is affected by various uncertainties resulting from unexpected future events. Variations in contract work, claims and incentive payments are included to the extent that the amount can be measured reliably and its receipt is considered probable.

When the outcome of a construction contract cannot be estimated reliably, contract revenue is recognized to the extent of contract costs incurred when it is probable the revenue will be realized. Contract costs are recognized as expenses in the period in which they are incurred. When it is probable that total contract costs will exceed total contract revenue, the expected loss is recognized as an expense immediately. Total contract costs are estimated based on the estimates of future costs such as material costs, labor costs and construction period. The uncertainty of estimated total contract costs and changes in such estimates have an impact on the completion progress and contract revenue for each reporting period. Also, there is uncertainty in future estimates due to various internal and external factors such as fluctuation of market, the risk of business partner and the experience of project performance and others.

### ***Derivative Instruments***

We recognize rights and obligations arising from derivative instruments as assets and liabilities, which are stated at fair value. The gains and losses that result from the change in the fair value of derivative instruments are reported in current earnings. However, for derivative instruments designated as hedging the exposure of variable cash flows, the effective portions of the gains or losses on the hedging instruments are recorded as accumulated other comprehensive income (loss) and credited or charged to operations at the time the hedged transactions affect earnings, and the ineffective portions of the gains or losses are credited or charged immediately to operations.

Significant management judgment is involved in determining the fair value of estimated derivative instruments. The estimates and assumptions used by our management to determine fair value can be impacted by many factors, such as the estimated discount factor derived from observable market data, credit risk of the counterparty and the estimated cash flow based on settlement period, interest convention, and other contract information of the derivative instruments.

As of December 31, 2015 and 2016, we had Won 451 billion and Won 643 billion of net amounts as assets, respectively. As of December 31, 2017, we had Won 395 billion of net amounts as liabilities. Changes in the

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estimated discount factor or cash flow, or changes in the assumptions and judgments by management underlying these estimates, may cause material revisions to the estimated total gain or loss effect of derivative instruments, which could have a material effect on the recorded asset or liability.

***Decommissioning Costs***

We recognize the fair value of estimated decommissioning costs as a liability in the period in which we incur a legal obligation associated with retirement of long-lived assets that result from acquisition, construction, development and/or normal use of the assets. We also recognize a corresponding asset that is depreciated over the life of the asset. Accretion expense consists of period-to-period changes in the liability for decommissioning costs resulting from the passage of time and revisions to either the timing or the amount of the original estimate of undiscounted cash flows. Depreciation and accretion expenses are included in the cost of electric power in the accompanying consolidated statements of comprehensive income.

Significant management judgment is involved in determining the fair value of estimated decommissioning costs. The estimates and assumptions used by our management to determine fair value can be impacted by many factors, such as the estimated decommissioning costs based on engineering studies commissioned and approved by the Korean government, and changes in assumed dates of decommissioning, inflation rate, discount rate, decommissioning technology, regulation and the general economy.

As of December 31, 2015, 2016 and 2017, we had a liability for decommissioning costs in the amounts of Won 12,562 billion, Won 13,050 billion and Won 15,985 billion, respectively. Changes in the estimated costs or timing of decommissioning, or changes in the assumptions and judgments by management underlying these estimates, may cause material revisions to the estimated total cost to decommission these facilities, which could have a material effect on the recorded liability. We used discount rates of 3.55%, 3.55% and 2.94% and inflation rates of 1.40%, 1.40% and 1.21% when calculating the decommissioning cost liability of nuclear plants recorded as of December 31, 2015, 2016 and 2017, respectively, and discount rate of 4.49% and inflation rate of 2.93% when calculating the decommissioning cost liability of spent fuel recorded as of December 31, 2015, 2016 and 2017. In addition, the following is a sensitivity analysis of the potential impact on decommissioning costs from a 0.1% increase or decrease in each of the inflation rate and the discount rate, assuming that all other aforementioned assumptions remain constant:

	Sensitivity to inflation rate		Sensitivity to discount rate	
	+0.10%	-0.10%	+0.10%	-0.10%
	(in billions of Won)			
Increase (decrease) of liability for decommissioning costs	342	(332)	(314)	323

See Notes 26 and 45 of the notes to our consolidated financial statements included in this annual report for further related information.

***Provision for Decontamination of Transformer***

Under the Persistent Organic Pollutants Management Act which was enacted in 2007, we are required to remove PCB from our transformers insulating oil by 2025. We are also required to inspect the PCB levels in our transformers and dispose of any PCBs in excess of established safety standards.

As of December 31, 2015, 2016 and 2017, we had liabilities of Won 182 billion, Won 192 billion and Won 180 billion, respectively, for inspection and disposal costs related to the decontamination of existing transformers.

The estimates and assumptions used by our management to determine fair value can be affected by many factors, such as the estimated costs of inspection and disposal, inflation rate, discount rate, regulations and the general economy.

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Changes in the estimated costs or changes in the assumptions and judgments underlying these estimates may cause material revisions to the estimated total costs, which could have a material effect on our recorded liability. When calculating the provision for the decontamination of our transformers, we used a discount rate of 3.21% and an inflation rate of 2.65% as of December 31, 2015, a discount rate of 2.77% and an inflation rate of 1.29% as of December 31, 2016 and a discount rate of 2.55% and an inflation rate of 1.23% as of December 31, 2017.

### ***Deferred Tax Assets***

In assessing the realizability of the deferred tax assets, our management considers whether it is probable that a portion or all of the deferred tax assets will not be realized. The ultimate realization of our deferred tax assets is dependent on whether we are able to generate future taxable income in specific tax jurisdictions during the periods in which temporary differences become deductible. Our management has scheduled the expected future reversals of the temporary differences and projected future taxable income in making this assessment. Based on these factors, our management believes that it is probable that we will realize the benefits of these temporary differences as of December 31, 2017. However, the amount of deferred tax assets that is realized may be different if we do not realize estimated future taxable income during the carry forward periods as originally expected.

In relation to the deferred tax assets recognized for tax loss, future taxable income is estimated considering the following: (i) five-year mid-to long-term financial forecasts of earnings before tax approved by management and submitted to the Ministry of Strategy and Finance, and (ii) average amount of tax adjustments for the recent three years.

For tax credits carried forward, similar to deferred tax assets recognized for tax loss, our management estimates the probability timing of future taxable profits in determining the probability of utilization of tax credits carried forward. In addition, our management considers the possible carry forward period and available tax credit or deductible temporary differences within the tax laws of each country in which the tax credits originated.

Similarly, our management also estimates the probability of utilization of temporary differences considering the probability of generating future taxable profits in the periods that the deductible temporary differences reverse. We do not recognize deferred tax assets for certain temporary differences associated with investments in subsidiaries, associates, and interests in joint ventures considering future dividends or disposals.

We recognize deferred tax assets and liabilities based on the differences between the financial statement carrying amounts and the tax bases of assets and liabilities at each separate taxpaying entity. Under IFRS, a deferred tax asset is recognized for temporary differences that will result in deductible amounts in future years and for carry forwards. If, based on the weight of available evidence, it is more likely that some or the entire portion of the deferred tax asset will not be realized, that portion is deducted directly from the deferred tax asset.

We believe that the accounting estimate related to the realizability of deferred tax asset is a critical accounting estimate because: (i) it requires management to make assessments about the timing of future events, including the probability of expected future taxable income and available tax planning opportunities, and (ii) the difference between these assessments and the actual performance could have a material impact on the realization of tax benefits as reported in our results of operations. Management's assumptions require significant judgment because actual performance has fluctuated in the past and may continue to do so.

### ***Useful Lives of Property, Plant and Equipment***

Property, plant and equipment are initially measured at cost and after initial recognition, are carried at cost less accumulated depreciation and accumulated impairment losses. The cost of property, plant and equipment includes expenditures arising directly from the construction or acquisition of the asset, any costs directly attributable to bringing the asset to the location and condition necessary for it to be capable of operating in the manner intended by management and the initial estimate of the costs of dismantling and removing the item and restoring the site on which it is located.



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Economic useful life is the duration of time the asset is expected to be productively employed by us, which may be less than its physical life. Management's assumptions on the following factors, among others, affect the determination of estimated economic useful life: wear and tear, obsolescence, technical standards, changes in market demand and technological changes.

The estimated useful lives of our property, plant and equipment are as follows:

	<b>Useful lives (years)</b>
Buildings	8 ~ 40
Structures	8 ~ 50
Machinery	2 ~ 32
Vehicles	3 ~ 8
Loaded heavy water	30
Asset retirement costs	18, 30, 40, 60
Finance lease assets	6 ~ 32
Ships	9
Others	4~15

A component that is significant compared to the total cost of property, plant and equipment is depreciated over its separate useful life. Depreciation methods, residual values and useful lives of property, plant and equipment are reviewed at the end of each reporting period and if change is deemed appropriate, it is treated as a change in accounting estimate. As a result of such annual review, useful lives of certain machinery were changed during 2016 and as a result, depreciation expenses increased by Won 160,985 million and Won 130,514 million for the years ended December 31, 2016 and 2017, respectively. Depreciation expenses are expected to increase by Won 91,197 million for the year ending December 31, 2018, and to decrease by Won 382,696 million for the years after December 31, 2018.

***Impairment of Long-lived Assets***

At the end of each reporting period, we review the carrying amounts of tangible and intangible assets to determine whether there is any indication that those assets have suffered an impairment loss. If any such indication exists, the recoverable amount of the asset is estimated in order to determine the extent of the impairment loss (if any). Where it is not possible to estimate the recoverable amount of an individual asset, we estimate the recoverable amount of the cash-generating unit to which the asset belongs. Where a reasonable and consistent basis of allocation can be identified, corporate assets are also allocated to individual cash-generating units, or otherwise they are allocated to the smallest group of cash-generating units for which a reasonable and consistent allocation basis can be identified.

Intangible assets with indefinite useful lives and intangible assets not yet available for use are tested for impairment at least annually, and whenever there is an indication that the asset may be impaired. Recoverable amount is the higher of fair value less costs to sell or value in use. In assessing value in use, the estimated future cash flows are discounted to their present values using a pre-tax discount rate that reflects current market assessments of the time value of money and the risks specific to the asset for which the estimates of future cash flows have not been adjusted.

If the recoverable amount of an asset (or a cash-generating unit) is estimated to be less than its carrying amount, the carrying amount of the asset (or the cash-generating unit) is reduced to its recoverable amount. An impairment loss is recognized immediately in income or loss, unless the relevant asset is carried at a revalued amount, in which case the impairment loss is treated as a revaluation decrease.

In the event that an impairment loss subsequently reverses, the carrying amount of the asset (or a cash-generating unit) is increased to the revised estimate of its recoverable amount, ensuring that such carrying

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amount increase does not exceed the carrying amount that would have been determined had no impairment loss been recognized for the asset (or the cash-generating unit) in prior years. A reversal of an impairment loss is recognized immediately in income or loss, unless the relevant asset is carried at a revalued amount, in which case the reversal of the impairment loss is treated as a revaluation increase.

The assessment of impairment is a critical accounting estimate, because significant management judgment is required to determine: (i) whether an indicator of impairment has occurred, (ii) how assets should be grouped, and (iii) the recoverable amount of the asset or asset group in the case of impairment. If management's assumptions about these assets change as a result of events or circumstances, and management believes the assets may have declined in value, we may record impairment charges, resulting in lower profits. Our management uses its best estimate in making these evaluations and considers various factors, including the future prices of energy, fuel costs and other operating costs. However, actual market prices and operating costs could vary from those used in the impairment evaluations, and the impact of such variations could be material. We performed impairment tests on individual assets of KOSEP and EWP, both of which are wholly owned subsidiaries, for the year ended December 31, 2015 due to potential indicators of impairment. For the year ended December 31, 2016, there were no potential indicators of impairment, and we therefore did not perform an impairment test for such year. For the year ended December 31, 2017, we performed impairment tests on individual assets of KOMIPO and KOWEPO, both of which are wholly owned subsidiaries, due to potential indicators of impairment. Accordingly, we recognized the amount by which the carrying amount exceeds its recoverable amount as impairment loss on our consolidated statements of comprehensive income. See Note 18 of the notes to our consolidated financial statements included in this annual report for further information.

***Accrual for Loss Contingencies for Legal Claims***

We are involved in legal proceedings regarding matters arising in the ordinary course of business. In relation to these matters, as of December 31, 2017, we and our subsidiaries were engaged in 565 lawsuits as a defendant and 185 lawsuits as a plaintiff. The total amount claimed against us and our subsidiaries was Won 478 billion and the total amount claimed by us was Won 691 billion as of December 31, 2017. As of December 31, 2017, our provisions for these legal claims amounted to Won 74 billion. These provisions are adjusted when events or circumstances cause these judgments or estimates to change.

Actual amounts of our liabilities as determined upon settlement of legal claims or by final decisions of the courts in relation thereto may be substantially different from the amounts of provisions recognized or contingent liabilities disclosed. If the actual amounts are higher than the amounts of related provisions, the resulting additional liabilities would adversely impact our results of operations, financial condition and cash flows.

**Consolidated Results of Operations*****2017 Compared to 2016***

In 2017, our consolidated sales, which is principally derived from the sale of electric power, slightly decreased by 0.7% to Won 59,336 billion in 2017 from Won 59,763 billion in 2016, primarily reflecting a decrease in sales of construction services, which was partially offset by an increase in sales of electric power. Our sales of construction services decreased by 20.2% to Won 3,212 billion in 2017 from Won 4,027 billion in 2016, primarily due to a decrease in sales amount recorded from the ongoing construction of our nuclear complex construction projects in the United Arab Emirates as the construction projects progress over time. Our sale of electric power increased by 0.7% to Won 55,773 billion for 2017 from Won 55,379 billion for 2016, primarily due to an increase in the volume of electricity sold, which was partially offset by a decline in the average unit sales price. The volume of electricity sold increased by 2.2% to 507,746 gigawatt hours in 2017 from 497,039 gigawatt hours in 2016, primarily due to a 2.6%

increase in the volume of electricity sold to the industrial sector, which represents the largest segment of electricity consumption in Korea, to 285,969 gigawatt hours in 2017 from 278,828 gigawatt hours in 2016, a 2.5% increase in the volume of electricity sold to the commercial sector,

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which represents the second largest segment of electricity consumption in Korea, to 111,298 gigawatt hours in 2017 from 108,617 gigawatt hours in 2016, and a 0.7% increase in the volume of electricity sold to the residential sector to 68,544 gigawatt hours in 2017 from 68,057 gigawatt hours in 2016. The increase in the volume of electricity sold to the industrial sector was primarily due to the continued export-based growth of the Korean economy, which resulted in increased industrial output and greater utilization of industrial plants. The increase in the volume of electricity sold to the commercial sector was primarily due to the recovery of market demand as a result of various Government policies to boost the economy. The increase in the volume of electricity sold to the residential sector was primarily due to an increase in household electricity usage for air conditioning and heating. Average unit sales price decreased by 1.5% to Won 109.53 per kilowatt-hour in 2017 from Won 111.23 per kilowatt-hour in 2016, primarily due to the amendment to the progressive rate structure to ease the tariff burden on residential customers, effective as of January 1, 2017.

Our consolidated cost of sales, which is principally derived from the purchase of power from independent power producers and to a lesser extent, from raw materials used and depreciation, increased by 14.4%, to Won 52,099 billion in 2017 from Won 45,550 billion in 2016, primarily due to a 32.6% increase in power purchase, a 18.2% increase in raw materials used and a 8.7% increase in depreciation, which were offset by a 11.3% decrease in other cost of sales.

Power purchase, which accounted for 27.4% and 23.6% of our cost of sales in 2017 and 2016, respectively, increased by 32.6% to Won 14,264 billion in 2017 from Won 10,756 billion in 2016, primarily due to a 9.6% increase in the unit cost of power purchased from Won 95.2 per kilowatt-hour in 2016 to Won 104.3 per kilowatt-hour in 2017, largely resulting from a general increase in international market prices for the main fuel types, which led to an increase in the price of electricity generated by independent power producers.

Raw materials used, which accounted for 30.6% and 29.6% of our cost of sales in 2017 and 2016, respectively, increased by 18.2% to Won 15,925 billion in 2017 from Won 13,471 billion in 2016, largely due to a general increase in international market prices.

Depreciation expense, excluding amortization of nuclear fuel charged to fuel costs in the amounts of Won 1,069 billion and Won 1,085 billion in 2017 and 2016, respectively, increased by 10.1% to Won 8,393 billion in 2017 from Won 7,620 billion in 2016 primarily due to an increase of additional property, plant and equipment acquired in relation to new generation facilities pursuant to our capital investment program.

Other cost of sales decreased by 11.3% to Won 3,980 billion in 2017 from Won 4,488 billion in 2016 primarily due to a decrease in other cost of overseas sales.

As a cumulative result of the foregoing factors, our consolidated gross profit decreased by 49.1% to Won 7,237 billion in 2017 from Won 14,213 billion in 2016, and our consolidated gross profit margin decreased to 12.2% in 2017 from 23.8% in 2016. The decreases in our consolidated gross profit and consolidated gross profit margin were largely attributable to a 14.4% increase in our consolidated cost of sales (which was mainly due to a 32.6% increase in power purchase, a 18.2% increase in raw materials used and the 8.7% increase in depreciation, which were offset by a 11.3% decrease in other cost of sales and a 5.9% decrease in taxes and dues), which substantially outpaced the 0.7% decrease in our consolidated sales (which was primarily due to the 2.2% increase in the volume of electricity sold, as well as the 20.2% decrease in the sales of construction services).

Our consolidated selling and administrative expenses increased by 4.7% to Won 2,763 billion in 2017 from Won 2,639 billion in 2016, largely due to a 227.3% increase in bad debt expense to Won 127 billion in 2017 from Won 39 billion in 2016, which mainly related to KOSEP's accounts receivables with low possibility of collection from Hyundai Energy Co., Ltd. and a 230.4% increase in advertising expenses to Won 115 billion in 2017 from Won

35 billion in 2016, related to our sponsorships for the PyeongChang 2018 Winter Olympics and a 11.2% increase in commissions to Won 674 billion in 2017 from Won 606 billion in 2016, for electricity metering, which was offset by a 53.3% decrease in other expenses to Won 155 billion in 2017 from Won 332 billion in 2016, due to a decrease in costs for energy efficiency improvement project.

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Our consolidated other income, net of expenses, increased by 5.7% to Won 689 billion in 2017 from Won 652 billion in 2016, mainly as a result of an increase in income related to transfer of assets from customers.

Our consolidated net other gains increased significantly to Won 157 billion in 2017 from Won 70 billion in 2016, primarily due to an increase in net gain on foreign currency transaction, largely resulting from fluctuations in the value of Won against other foreign currencies in 2017.

As a cumulative result of the foregoing factors, our consolidated operating profit decreased by 56.7% to Won 5,320 billion in 2017 from Won 12,296 billion in 2016, and our consolidated operating income margin decreased to 9.0% in 2017 from 20.6% in 2016. These decreases were mainly due to a decrease in our consolidated sales and an increase in our cost of sales primarily as a result of increases in power purchase and raw materials due to increases in the fuel costs and the volume of electricity sold.

Our consolidated finance expenses, net, decreased by 3.0% to Won 1,597 billion in 2017 from Won 1,646 billion in 2016, primarily as a result of an increase in net losses on valuation of derivatives and an increase in net losses on transaction of derivatives, which were partially offset by an increase in net gains on foreign currency translation.

We recorded consolidated loss of associates or joint ventures using equity method of Won 108 billion in 2017 compared to a loss of Won 137 billion in 2016, primarily as a result of a decrease in profit of Korea Gas Corporation.

As a cumulative result of the foregoing factors, our consolidated income before income taxes decreased by 65.6% to Won 3,614 billion in 2017 from Won 10,513 billion in 2016.

Our income tax expense decreased by 35.4% to Won 2,173 billion in 2017 from Won 3,365 billion in 2016, largely as a result of the decrease in our profit before income taxes. Our effective tax expense rate, which represents tax expense as a percentage of profit before income taxes, increased from 32.0% in 2016 to 60.1% in 2017 primarily resulting from an adjustment for our recognition of deferred tax liabilities of Won 1,055 billion in 2017 due to 3.3% increase in tax rate, whereas we did not recognize such increase in 2016. Our recognition of deferred tax liabilities was mainly due to temporary differences regarding property, plant and equipment and investments in subsidiaries and associates. In 2017, the applicable statutory tax rate increased to 27.5% from the prior rate of 24.2% in 2016. See Note 41 to our financial statements included in this annual report.

As a cumulative result of the above factors, our consolidated profit decreased by 79.8% to Won 1,441 billion in 2017 from Won 7,148 billion in 2016. Our consolidated net profit margin also decreased to 2.4% in 2017 from 12.0% in 2016. Our profit attributable to the owners of the company was Won 1,299 billion in 2017 compared to Won 7,048 billion attributable to the owners of the company in 2016.

We reported consolidated other comprehensive loss of Won 95 billion in 2017 compared to consolidated other comprehensive loss of Won 2 billion in 2016, largely due to an increase in loss from equity method investments primarily in relation to Korea Gas Corporation, which was partially offset by our recognition of income from remeasurements of defined benefit liability (whereas we recognized loss from such remeasurements) in 2016.

As a cumulative result of the above factors, our consolidated total comprehensive income decreased by 81.2% to Won 1,346 billion in 2017 from Won 7,146 billion in 2016.

***2016 Compared to 2015***

In 2016, our consolidated sales, which is principally derived from the sale of electric power, increased by 2.0% to Won 59,763 billion from Won 58,582 billion in 2015, reflecting primarily a 2.8% increase in the volume



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of electricity sold from 483,655 gigawatt hours in 2015 to 497,039 gigawatt hours in 2016. The overall increase in the volume of electricity sold was primarily attributable to a 1.9% increase in the volume of electricity sold to the industrial sector, which represents the largest segment of electricity consumption in Korea, from 273,548 gigawatt hours in 2015 to 278,828 gigawatt hours in 2016, a 4.8% increase in the volume of electricity sold to the commercial sector, which represents the second largest segment of electricity consumption in Korea, from 103,679 gigawatt hours in 2015 to 108,617 gigawatt hours in 2016, and a 3.7% increase in the volume of electricity sold to the residential sector from 65,619 gigawatt hours in 2015 to 68,057 gigawatt hours in 2016. The increase in the volume of electricity sold to the industrial sector was primarily due to the general increase in demand for electricity as a result of the turnaround in industries such as semiconductors, chemicals and petrochemicals, which involved increased industrial output and greater capacity utilization of industrial plants. The increase in the volume of electricity sold to the commercial sector was primarily due to a rebound in the domestic economy and increased air conditioning use in commercial buildings during the summer. The increase in the volume of electricity sold to the residential sector was primarily due to the opening of new urban clusters with large-scale residential complexes as well as increased air conditioning use in residential buildings during the summer. Sales of construction services increased by 7.1% to Won 4,027 billion in 2016 from Won 3,761 billion in 2015 primarily due to an increase in sales recorded from the construction-in-progress of our nuclear complex construction projects in the United Arab Emirates.

Our consolidated cost of sales, which is principally derived from the costs related to the purchase of fuels for generation of electricity and to a lesser extent, from the purchase of power from independent power producers, depreciation and salaries, remained substantially flat, or increased by 0.2%, to Won 45,550 billion in 2016 from Won 45,458 billion in 2015, primarily due to a 15.6% increase in salaries, a 7.3% increase in depreciation and a 9.9% increase in other cost of sales, which were substantially offset by a 7.2% decrease in fuel costs and a 5.9% decrease in power purchase.

Fuel costs, which accounted for 30.9% and 33.3% of our consolidated cost of sales in 2016 and 2015, respectively, decreased by 7.2% to Won 14,067 billion in 2016 from Won 15,159 billion in 2015, largely due to a 24.3% decrease in unit fuel cost mainly resulting from the general decline in international market prices for our main fuel types, as well as an increased use of less expensive fuel sources such as coal and nuclear power, including due to the commencement of operation of one nuclear unit in 2016. Power purchase, which accounted for 23.6% and 25.1% of our cost of sales in 2016 and 2015, respectively, decreased by 5.9% to Won 10,756 billion in 2016 from Won 11,428 billion in 2015, primarily due to a 20.4% decrease in the unit cost of power purchased from Won 119.6 per kilowatt-hour in 2015 to Won 95.2 per kilowatt-hour in 2016, largely resulting from a general decline in international market prices for the main fuel types, which led to a decrease in the price of electricity generated by independent power producers. Depreciation expense, excluding amortization of nuclear fuel charged to fuel costs in the amounts of Won 1,085 billion and Won 1,057 billion in 2016 and in 2015, respectively, increased by 7.3% to Won 7,620 billion in 2016 from Won 7,102 billion in 2015 primarily due to an increase of additional property, plant and equipment acquired in relation to the construction of new generation facilities pursuant to our capital investment program.

Salaries recorded as cost of sales increased by 15.6% to Won 3,426 billion in 2016 from Won 2,962 billion in 2015 primarily due to an increase in base salary in tandem with the inflation rate and an increase in provision expenses related to the ordinary wage litigation for our generation subsidiaries as described in Item 8.A. Consolidated Statements and Other Financial Information Legal Proceedings. Other cost of sales increased by 9.9% to Won 4,488 billion in 2016 from Won 4,083 billion in 2015 primarily due to an increase in costs recorded from the construction-in-progress of our nuclear complex construction projects in the United Arab Emirates.

As a cumulative result of the foregoing factors, our consolidated gross profit increased by 8.3% to Won 14,213 billion in 2016 from Won 13,124 billion in 2015, and our consolidated gross profit margin increased to 23.8% in 2016 from 22.4% in 2015. The increases in our consolidated gross profit and consolidated gross profit margin were largely

attributable to the 2.0% increase in our consolidated sales (which was primarily due to the

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2.8% increase in the volume of electricity sold, as well as the 7.1% increase in the sales of construction services), which substantially outpaced the 0.2% increase in our consolidated cost of sales (which was mainly due to the 15.6% increase in salaries, the 7.3% increase in depreciation and the 9.9% increase in other cost of sales, which were substantially offset by the 7.2% decrease in fuel costs and the 5.9% decrease in power purchase).

Our consolidated selling and administrative expenses increased by 22.6% to Won 2,639 billion in 2016 from Won 2,153 billion in 2015, largely due to a 151.4% increase in other expenses, which mainly resulted from the commencement of a campaign to subsidize households for the use of electronic appliances with high energy efficiency and, to a lesser extent, an increase in salaries recorded as selling and administrative expenses.

Our consolidated other income, net of expenses, decreased by 6.7% to Won 652 billion in 2016 from Won 699 billion in 2015, mainly as a result of a decrease in compensation and reparations revenue, which relate to penalties collected from sub-contractors as a result of contractual breaches.

Our consolidated net other gains decreased significantly to Won 70 billion in 2016 from Won 8,611 billion in 2015, primarily as a result of a decrease in gains on disposal of property, plant and equipment. The decrease in gains on disposal of property, plant and equipment decreased largely due to the absence in 2016 of a disposal of property in magnitude comparable to the sale of our previous headquarters in 2015.

As a cumulative result of the foregoing factors, our consolidated operating profit decreased by 39.4% to Won 12,296 billion in 2016 from Won 20,281 billion in 2015, and our consolidated operating income margin decreased to 20.6% in 2016 from 34.6% in 2015. These decreases were mainly due to a significant decrease in our consolidated net other gains primarily as a result of a decrease in gains on disposal of property, plant and equipment due to the absence in 2016 of a disposal of property in magnitude comparable to the sale of our previous headquarters in 2015.

Our consolidated finance expenses, net, decreased by 10.2% to Won 1,646 billion in 2016 from Won 1,832 billion in 2015, primarily as a result of a decrease in interest expense and a decrease in net losses on foreign currency translation, which were partially offset by a decrease in net gains on valuation of derivatives.

We recorded consolidated loss of associates or joint ventures using equity method of Won 137 billion in 2016 compared to such gain of Won 207 billion in 2015, primarily as a result of a decrease in profit of Korea Gas Corporation.

As a cumulative result of the foregoing factors, our consolidated income before income taxes decreased by 43.6% to Won 10,513 billion in 2016 from Won 18,656 billion in 2015.

Our income tax expense decreased by 35.8% to Won 3,365 billion in 2016 from Won 5,239 billion in 2015, largely as a result of the decrease in our profit before income taxes. Our effective tax expense (benefit) rate, which represents tax expense (benefit) as a percentage of profit (loss) before income taxes, increased from 28.1% in 2015 to 32.0% in 2016 primarily due to an increase of adjustment in respect of prior years due to change in estimate. In 2016, the effective tax rate was higher than the statutory rate of 24.2%, primarily due to the recognition of deferred tax liabilities regarding our investments in subsidiaries, associates and joint ventures, primarily in connection with taxable temporary differences related to undistributed earnings. See Note 41 to our financial statements included in this annual report.

As a cumulative result of the above factors, our consolidated profit decreased by 46.7% to Won 7,148 billion in 2016 from Won 13,416 billion in 2015. Our consolidated net profit margin also decreased to 12.0% in 2016 from 22.9% in 2015. Our profit attributable to the owners of the company was Won 7,048 billion in 2016 compared to Won

13,289 billion attributable to the owners of the company in 2015.

We reported consolidated other comprehensive loss of Won 2 billion in 2016 compared to consolidated other comprehensive income of Won 34 billion in 2015, largely due to decrease in net change in other

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comprehensive income from equity method investments primarily in relation to Gemeng International Energy Co., Ltd., which was partially offset by an increase in net change in the realized fair value of available-for-sale securities primarily in relation to PT Adaro Energy Tbk.

As a cumulative result of the above factors, our consolidated total comprehensive income decreased by 46.9% to Won 7,146 billion in 2016 from Won 13,450 billion in 2015.

## **Inflation**

The effects of inflation in Korea on our financial condition and results of operations are reflected primarily in construction costs as well as in labor expenses. Inflation in Korea has not had a significant impact on our results of operations in recent years. It is possible that inflation in the future may have an adverse effect on our financial condition or results of operations.

## **Segment Results**

We operate the following business segments: transmission and distribution, nuclear power generation and thermal power generation and all others. The transmission and distribution segment, which is operated by us, the parent company, consists of operations related to the transmission, distribution and sale to end-users of electricity purchased from our generation subsidiaries as well as from independent power producers. The power generation segment, which is operated by our one nuclear generation subsidiary and five non-nuclear generation subsidiaries, consists of operations related to the generation of electricity sold to us through the Korea Power Exchange. The transmission and distribution segment and the power generation segment together represent our electricity business. The remainder of our operation is categorized as all others. The all other segment consists primarily of operations related to the plant maintenance and engineering service, information services, and sales of nuclear fuel, communication line leasing, overseas businesses and others. In 2015, 2016 and 2017, the unaffiliated revenues of the power generation segment (representing the six generation subsidiaries) and all our other revenues in the aggregate amounted to only 2.8%, 3.0% and 3.2% of our consolidated revenues, respectively, and the results of operations for our business segments substantially mirror our consolidated results of operations. For further information, see Note 4 of the notes to our consolidated financial statements included in this annual report.

## **Item 5.B. Liquidity and Capital Resources**

*We expect that our capital requirements, capital resources and liquidity position may change in the course of implementing the Restructuring Plan. See Item 4.B. Business Overview Restructuring of the Electric Power Industry in Korea and Item 3D. Risk Factors Risks Relating to KEPCO The Government may adopt policy measures to substantially restructure the Korean electric power industry or our operational structure, which may have a material adverse effect on our business, operations and profitability.*

## **Capital Requirements**

We anticipate that the following represent the major sources of our capital requirements in the short-term to intermediate future:

capital expenditures pursuant to our capital investment program;

working capital requirements, the largest component of which is fuel purchases;

payment of principal and interest on our existing debt; and

overseas investments.

In addition, if there were to occur unanticipated material changes to the Restructuring Plan, the Basic Plan or other major policy initiatives of the Government relating to the electric power industry, or natural disasters, such developments may require a significant amount of additional capital requirements.

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**Table of Contents*****Capital Expenditures***

We anticipate that capital expenditures will be the most significant use of our funds for the next several years. Our capital expenditures relate primarily to the construction of new generation units, maintenance of existing generation units and expansion of our transmission and distribution systems. Our capital expenditures generally follow budgets established under the Basic Plan, which contains projections relating to the supply and demand of electricity of Korea based on which we plan the construction of additional generation units and transmission systems.

Our total capital expenditures for the construction of generation, transmission and distribution facilities were Won 15,750 billion, Won 13,950 billion and Won 13,711 billion in 2015, 2016 and 2017, respectively, and under our current budgets, are estimated to be approximately Won 15,816 billion, Won 17,180 billion and Won 17,580 billion in 2018, 2019 and 2020, respectively. We plan to finance our capital expenditures primarily through issuance of securities in the capital markets, borrowings from financial institutions and construction grants.

In January 2016, the Ministry of Trade, Industry and Energy announced an initiative to promote the new energy industry by creating the New Energy Industry Fund, which is made up of funds sponsored by government-affiliated energy companies. We contributed Won 500 billion to the funds in 2016. The purpose of these funds is to invest in substantially all frontiers of the new energy industry, including renewable energy, energy storage systems, electric vehicles, small-sized self-sustaining electricity generation grids known as *micro-grids*, among others, as well as invest in start-up companies, ventures, small- to medium-sized enterprise and project businesses that engage in these businesses but have not previously attracted sufficient capital from the private sector.

Furthermore, as part of the Comprehensive Measures against Particulate Matter and the Eighth Basic Plan, announced by the Government in September 2017 and December 2017, respectively, the Government set forth the following policy directions relating to coal-fired generation units: (i) two coal-fired generation units scheduled for construction and four existing coal-fired generation units shall convert to LNG fuel use, (ii) in principle, construction of new coal-fired generation units shall not be planned, (iii) seven of the coal-fired generation units that are 30 years or older will be shut down on an accelerated schedule, (iv) coal-fired generation units that are 30 years or older shall temporarily cease operations from March through June of each year, (v) coal-fired generation units shall be put through comprehensive functional and environmental upgrades and (vi) coal-fired generation units shall be subject to emission standards that are twice as more rigorous than the current standards to be in effect by the first half of 2018. Compliance with such measures is expected to result in our incurring significant costs.

***Fuel Purchases***

We require significant funds to finance our operations, principally in relation to the purchase of fuels by our generation subsidiaries for generation of electricity. In 2015, 2016 and 2017, fuel costs constituted 33.3%, 30.9% and 31.7% of our cost of sales and the ratio of fuel costs to our sales was 25.9%, 23.4% and 27.8%, respectively. We plan to fund our fuel purchases primarily with net operating cash, although in cases of rapid increases in fuel prices as is the case from time to time, we may also rely on borrowings from financial institutions and issuance of debt securities in the capital markets.

***Repayment of Existing Debt***

Payments of principal and interest on indebtedness will require considerable resources. The table below sets forth the scheduled maturities of the outstanding interest-paying debt (excluding issue discounts and premium) without taking into consideration of swap transactions of us and our six wholly-owned generation subsidiaries as





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of December 31, 2017 for each year from 2018 to 2022 and thereafter. As of December 31, 2017, such debt represented 95.6% of our outstanding debt on a consolidated basis.

Year ended December 31	Local Currency	Foreign Currency	Domestic	Foreign	Total
	Borrowings	Borrowings	Debentures	Debentures	
	(in billions of Won)				
2018	761		5,200	2,761	8,722
2019	8		5,220	1,402	6,630
2020	8		5,850	1,129	6,987
2021	208	8	3,690	857	4,763
2022	208	1	5,560	1,339	7,108
Thereafter	31		16,450	1,771	18,252
Total	1,224	9	41,970	9,259	52,462

We and our six wholly-owned generation subsidiaries incurred interest charges (including capitalized interest) in relation to our interest-paying debt of Won 2,846 billion, Won 2,490 billion and Won 2,287 billion in 2015, 2016 and 2017, respectively. We anticipate that interest charges will increase in future years because of, among other factors, anticipated increases in our long-term debt. See **Capital Resources** below. The weighted average rates of interest on our and our six wholly-owned generation subsidiaries' debt were 3.87%, 3.69% and 3.20% in 2015, 2016 and 2017, respectively.

**Overseas Investments**

As part of our revenue diversification and fuel procurement strategy, we plan to continue to make overseas investments on a selective basis, which will be funded primarily through foreign currency-denominated borrowings and debt securities issuances as well as net operating cash from such projects.

**Capital Resources**

We have traditionally met our working capital and other capital requirements primarily from net cash provided by operating activities, issuance of debt securities and borrowings from financial institutions. Net cash provided by operating activities is primarily a function of electricity sales and fuel purchases and is also affected by increases and decreases in trade receivables, trade payables and inventory related to electricity sales and fuel purchases. Net cash provided by operating activities was Won 16,943 billion, Won 16,521 billion and Won 11,250 billion in 2015, 2016 and 2017, respectively.

As of December 31, 2015, 2016 and 2017, our long-term debt (excluding the current portion but including issue discounts and premium), without taking into consideration of swap transactions, amounted to Won 50,907 billion, Won 44,700 billion and Won 45,624 billion, respectively, representing 74.9%, 61.2% and 62.5% of shareholders equity, respectively, as of such dates. As of December 31, 2015, 2016 and 2017, the current portions of our long-term debt were Won 7,243 billion, Won 8,134 billion and Won 8,085 billion, respectively. As of December 31, 2015, 2016 and 2017, our short-term borrowings amounted to Won 604 billion, Won 806 billion and Won 1,038 billion, respectively. See Note 23 of the notes to our consolidated financial statements included in this annual report. Total long-term debt (including the current portion but excluding issue discounts and premium), without taking into consideration of swap transactions, as of December 31, 2017 was Won 53,816 billion, of which Won 43,353 billion was denominated in Won and an equivalent of Won 10,463 billion was denominated in foreign currencies, primarily U.S. dollars. We, KHNP, KOMIPO and KOWEPO also maintain global medium-term note programs in the aggregate

amount of US\$13.0 billion, of which approximately US\$8.9 billion remains currently available for future drawdown. KOSEP also maintains an A\$2 billion Australian dollar medium-term note program, of which approximately A\$1.7 billion remains current available for future drawdown.

Subject to the implementation of our capital expenditure plan and the sale of our interests in our generation subsidiaries and other subsidiaries, our long-term debt may increase or decrease in future years. Until recently, a

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significant portion of our long-term debt was raised through foreign currency-denominated borrowings. Our foreign currency-denominated long-term debt (including the current portion but excluding issue discounts and premium), without taking into consideration of swap transactions, amounted to Won 12,219 billion and Won 10,463 billion as of December 31, 2016 and 2017, respectively.

Our ability to incur long-term debt in the future is subject to a variety of factors, many of which are beyond our control, including, the implementation of the Restructuring Plan and the amount of capital that other Korean entities may seek to raise in capital markets. Economic, political and other conditions in Korea may also affect investor demand for our securities and those of other Korean entities. In addition, our ability to incur debt will also be affected by the Government's policies relating to foreign currency borrowings, the liquidity of the Korean capital markets and our operating results and financial condition. In case of adverse developments in Korea, the price at which such financing may be available may not be acceptable to us.

We incur our short-term borrowings primarily through commercial papers sold to domestic financial institutions. We have not had, and we do not expect to have, any material difficulties in obtaining short-term borrowings. In addition, in order to prepare for potential liquidity shortage, we maintain several credit facilities with financial institutions, with Won-denominated facilities amounting to Won 3,831 billion in aggregate and foreign currency-denominated facilities amounting to US\$1,911 million in aggregate. The full amount of these facilities was available as of December 31, 2017.

We may raise capital from time to time through the issuance of equity securities. However, there are certain restrictions on our ability to issue equity, including limitations on shareholdings by foreigners. In addition, without changes in the existing KEPCO Act which requires that the Government, directly or pursuant to the Korea Development Bank Act, through Korea Development Bank, own at least 51% of our capital stock, it may be difficult or impossible for us to undertake any equity financing other than sales of treasury stock without the participation of the Government. Even if we are able to conduct equity financing with the participation of the Government, prevailing market conditions may be such that we may not be able to conduct equity financing on terms that are commercially acceptable to us. See Item 3D. Risk Factors Risks Relating to Korea and the Global Economy.

Our total shareholders' equity decreased by 0.1% from Won 73,051 billion as of December 31, 2016 to Won 72,965 billion as of December 31, 2017, mainly as a result of an increase in total comprehensive income.

**Liquidity**

Our liquidity is substantially affected by our acquisition of property, plant and equipment, fuel purchases and schedule of repayment of debt. Our property, plant and equipment increased by 3.5% from Won 145,743 billion as of December 31, 2016 to Won 150,882 billion as of December 31, 2017. Although fuel costs increased by 17.5% from Won 14,067 billion in 2016 to Won 16,524 billion in 2017, our current trade and other payables which is closely related to fuel costs increased by 7.4% from Won 5,585 billion as of December 31, 2016 to Won 6,000 billion as of December 31, 2017. Our current financial liabilities increased by 2.8% from Won 8,942 billion as of December 31, 2016 to Won 9,195 billion as of December 31, 2017 according to our debt repayment schedule.

Our cash flows are also impacted by other factors. Our net cash provided by operating activities decreased by 31.9% from Won 16,521 billion in 2016 to Won 11,250 billion in 2017. The decrease in net cash provided by operating activities in 2017 compared to 2016 was mainly due to a decrease in profit for the period. Our cash flows from investing activities are affected by acquisition of and proceeds from disposals of financial assets. Our net cash used in investing activities increased by 30.7% from Won 9,646 billion in 2016 to Won 12,607 billion in 2017, mainly because our acquisition of financial assets outpaced disposals of financial assets. Our cash flows from financing

activities are mainly affected by borrowings and issuance of debt securities and repayment thereof, as well as dividends paid. Our net cash used in financing activities was Won 7,637 billion in 2016 and

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our net cash from financing activities was Won 746 billion in 2017, largely due to an increase in proceeds from long-term borrowings and debt securities.

Due to the capital-intensive nature of our business as well as significant volatility in fuel prices, from time to time we operate with working capital deficits, and we may have substantial working capital deficits in the future. As of December 31, 2015, 2016 and 2017, we had a working capital deficit of Won 686 billion, Won 5,031 billion and Won 4,283 billion, respectively. We have traditionally met our working capital and other capital requirements primarily with net cash provided by operating activities, issuance of debt securities, borrowings from financial institutions and construction grants. We also incur short-term borrowings primarily through commercial papers sold to domestic financial institutions. We have not had, and we do not expect to have, any material difficulties in obtaining short-term borrowings. See Capital Resources.

We may face liquidity concerns in the case of sudden and sharp depreciation of the Won against major foreign currencies or depreciation over a sustained period of time. While substantially all of our revenues and our cash and cash equivalents are denominated in Won, we pay for substantially all of our fuel purchases in foreign currencies and a substantial portion of our long-term debt is denominated in foreign currencies, and payment of principal and interest thereon is made in foreign currencies. In the past, we have incurred foreign currency debt principally due to the limited availability and the high cost of Won-denominated financing in Korea. However, in light of the increasing sophistication of the Korean capital markets and the recent increase in Won liquidity in the Korean financial markets, we plan to reduce the portion of our debt which is denominated in foreign currencies although we intend to continue to raise certain amounts of capital through long-term foreign currency debt for purposes of maintaining diversity in our funding sources as well as paying for overseas investments and fuel procurements in foreign currencies. As of December 31, 2017, 19.4% of our long-term debt (including the current portion but excluding issue discounts and premium) without taking into consideration of swap transactions was denominated in currencies other than Won.

We enter into currency swaps and other hedging arrangements with respect to our debt denominated in foreign currencies only to a limited extent due primarily to the limited size of the Korean market for such derivative arrangements. Such instruments include combined currency and interest rate swap agreements, interest rate swaps and foreign exchange agreements. We do not enter into derivative financial instruments in order to hedge market risk resulting from fluctuations in fuel costs. Our policy is to hold or issue derivative financial instruments for hedging purposes only. Our derivative financial instruments are entered into with major financial institutions, thereby minimizing the risk of credit loss. See Note 11 of the notes to our consolidated financial statements.

We paid dividends of Won 3,100 per share in respect of fiscal year 2015 and Won 1,980 per share in respect of fiscal year 2016. On April 20, 2018, we paid dividends of Won 790 per share in respect of fiscal year 2017.

**Other**

Our operations are materially affected by the policies and actions of the Government. See Item 4.B. Business Overview Regulation.

**Item 5.C. Research and Development, Patents and Licenses, etc.****Research and Development**

Our research and development program is focused on developing advanced electric power, renewable energy, smart grid and customer-friendly electricity service technologies that will enable us to become a global leader in the energy industry. In order to achieve our corporate vision of becoming a Smart Energy Creator in 2014, we adopted the

KEPCO Technology Strategy, which emphasizes enhanced technological convergence and customer service. As part of such strategy, we seek to develop (i) clean and smart energy technology, including

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in relation to low carbon emission in power generation, (ii) an efficient and intelligent power transmission and distribution grid system, (iii) technology that will enhance efficiency and responsiveness to consumer's electricity consumption patterns, and (iv) improvements in information, communication and technology, or ICT, for enhanced customer service.

In 2018, consistent with the Government guidelines, we plan to invest approximately 4.42% of our annual estimated net sales in the research and development of creative smart technologies, particularly with a focus on the following ten areas: carbon-related technology known as carbon capture, utilization and storage, offshore wind power, new power transmission technology, super conductor, smart grid, micro grid, new materials in electric power fields, ICT convergence, ICT integration and energy storage systems.

Our high-priority creative smart energy projects currently include the following:

acquiring integrated gasified process technology;

establishing high-tech smart grid and micro grid test beds in Jeju Island;

developing highly efficient absorbents for carbon capture;

commercializing offshore wind power plants;

obtaining high-voltage direct currents technology suitable for domestic operation; and

experimental testing of large-scale energy storage systems with capacities ranging from four to eight megawatts.

Our research and development activities also focus on the following:

in the thermal power generation sector, reducing the greenhouse effect, enhancing efficiency and reducing cost in power plant construction and operation as well as in our plant maintenance, including through improvements in damage analysis and environment-friendly inspections;

in the renewable energy sector, enhancing efficiency, lowering costs of power generation, identifying new energy sources and exploring new business opportunities;

in the electric power system sector, enhancing the stability and reliability in the operation of our electric power grid as well as enhancing efficiency in electricity distribution, including through build-out of large-sized electricity storage facilities and superconducting transmission cable grids, introducing preventive

maintenance measures for substations and developing technologies related to system automation, power utilization and power line communication;

in the customer service sector, developing technologies enabling a greater range of business opportunities and heightened customer service in anticipation of the upcoming rollout of the smart grid system; and

in the technological convergence sector, identifying new business opportunities through convergence among technologies and businesses and maximizing synergy from such convergence in tandem with the promotion of creative economy in Korea as well as globally.

In addition, we cooperate closely with several other electric utility companies and research institutes, both foreign and domestic, on various projects to diversify the scope and scale of our research and development activities.

We and our six generation subsidiaries invested Won 660 billion, Won 530 billion and Won 975 billion in 2015, 2016 and 2017, respectively, and currently plan to invest Won 1,209 billion in 2018, on research and development. Our current focus in research and development is primarily in the area of ICT-based smart energy technological development. We had 1,056 employees engaged in research and development activities as of December 31, 2017. As a result of our research, we had 2,135 registered patents and 1,578 patent applications outstanding in Korea and abroad as of December 31, 2017.



**Table of Contents****Item 5.D. Trend Information**

Trends, uncertainties and events which could have a material impact on our sales, liquidity and capital resources are discussed above in Item 5.A. Operating Results and Item 5.B. Liquidity and Capital Resources.

**Item 5.E. Off-Balance Sheet Arrangements**

We had no significant off-balance sheet arrangements as of December 31, 2017.

**Item 5.F. Tabular Disclosure of Contractual Obligations**

The following summarizes certain of the contractual obligations of us and our six wholly-owned generation subsidiaries as of December 31, 2017 and the effect such obligations are expected to have on liquidity and cash flow in future periods.

Contractual Obligations <sup>(1)</sup>	Total	Payments Due by Period			
		Less than 1 year	1 3 years	3 5 years	After 5 years
		(in billions of Won)			
Long-term debt <sup>(2)</sup>	51,733	7,994	13,617	11,871	18,251
Short-term borrowings	729	729			
Interest payments <sup>(3)</sup>	8,667	1,565	2,015	1,184	3,903
Total	61,129	10,288	15,632	13,055	22,154

*Notes:*

(1) Other than as set forth in this table, we have several other contractual obligations, including finance lease agreements and fuel purchase agreements. We believe the remaining annual payments under capital and operating lease agreements as of December 31, 2017 were immaterial. Contractual obligations related to payment of debt of us and our six wholly-owned generation subsidiaries represented 97.5% of our outstanding debt as of December 31, 2017 on a consolidated basis. As for fuel purchase agreements, our generation subsidiaries have entered into several contracts under which they are committed to purchasing minimum quantities of fuel, including approximately 80 million tons of bituminous coal annually. As for all uranium ore concentrates, in order to ensure stable supply, our subsidiary enters into long-term and medium-term contracts with various suppliers and supplements such supplies with purchases in spot markets. We negotiate annually with Korea Gas Corporation and other suppliers, to purchase LNG. The fuel purchase price is typically negotiated near or at time of purchase subject to prevailing market conditions. In 2017, we purchased fuel in the amount of Won 16.2 trillion.

(2) Includes the current portion.

(3)

A portion of our debt carried a variable rate of interest. We used the interest rate in effect as of December 31, 2017 for the variable rate of interest in calculating the interest payments on debt for the periods indicated. For a description of our commercial commitments and contingent liabilities, see Note 50 of the notes to our consolidated financial statements included in this annual report.

We entered into a power purchase agreement with GS EPS Co., Ltd. and three other non-renewable energy independent power producers that are not part of the Community Energy System, under which we are required to purchase all electricity generated by these companies to the extent such electricity is traded through the Korea Power Exchange. The purchase prices for such electricity are predetermined under the power purchase agreements, subject to annual adjustments. We purchased power from these companies in the amounts of Won 1,049 billion, Won 896 billion and Won 941 billion in 2015, 2016 and 2017, respectively.

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We meet our coal requirements primarily through purchases of bituminous coal and anthracite coal under long-term supply contracts with domestic and foreign suppliers to purchase. Under these long-term supply contracts, purchase prices are adjusted periodically based on prevailing market conditions. We also purchase a substantial portion of our LNG requirements from Korea Gas Corporation, a related party. We have also entered into long-term transportation contracts with Pan Ocean Co., Ltd. and others.

We import all uranium ore concentrates from sources outside Korea (including the United Kingdom, Kazakhstan, France, Germany, Niger, Canada and Japan) through medium- to long-term contracts and pay for such concentrates with currencies other than Won, primarily U.S. dollars. Contract prices for processing of uranium are generally based on market prices. See Note 49 of the notes to our consolidated financial statements for further details of these contracts.

Under the Long-term Transmission and Substation Plan approved by the Ministry of Trade, Industry and Energy, we are liable for the construction of all of our power transmission facilities and the maintenance and repair expenses for such facilities.

Payment guarantee and short-term credit facilities from financial institutions as of December 31, 2017 were as follows:

***Payment guarantee***

Description	Financial Institutions	Credit Lines (In millions of Won or thousands of USD, JPY, INR, CAD, SAR, NPR, ZAR and EUR)
Payment of import letter of credits	Woori Bank and others	USD 1,029,604
	Shinhan Bank	INR 47,489
Inclusive credits	KEB Hana Bank	KRW 258,000
	Shinhan Bank and others	USD 32,125
Performance guarantees on Contract	KEB Hana Bank	EUR 1,958
	KEB Hana Bank and others	INR 230,515
	Korea Development Bank and others	JPY 620,000
	Seoul Guarantee Insurance and others	KRW 104,248
	Bank of Kathmandu	NPR 32,633
	KEB Hana Bank	SAR 102,186
	Standard Chartered and others	USD 753,652
Guarantees for bid	KEB Hana Bank	CAD 168
	SMBC and others	USD 60,000
Warranty bond and others	ABSA and others	ZAR 55,730
	KEB Hana Bank	INR 157,830
Trade finance	Export-Import Bank of Korea and others	USD 3,850,534
	BNP Paribas and others	USD 800,000
Other guarantees	Nonghyup Bank and others	KRW 451,521
	KEB Hana Bank and others	USD 1,063,670



**Table of Contents****Overdraft and Others**

Description	Financial Institutions	Credit Lines (In millions of Won, thousands of USD or thousands of PHP)
Overdraft	Nonghyup Bank and others	KRW 1,835,000
Commercial paper	Shinhan Bank and others	KRW 1,100,000
Limit amount available for card	KEB Hana Bank and others	KRW 46,733
	Banco de Oro	PHP 5,000
Loan limit	Kookmin Bank and others	KRW 895,500
	BNP Paribas and others	USD 1,910,700

We provide a performance guarantee related to a construction contract to Kookmin Bank. Such guarantee is not recognized as a provision for financial guarantee because such performance guarantee does not meet the definition of a financial guarantee contract under IFRS.

In order to secure our status as a shareholder of Navanakom Electric Co., Ltd., we have signed a fund supplement contract. According to the contract, in case Navanakom Electric Co., Ltd. does not have sufficient funds for its operation or repayment of borrowings, we bear a payment obligation in proportion to our ownership.

We have outstanding borrowings with a limit of US\$275,600 thousand from creditors such as International Finance Corporation. Regarding the borrowing contract, we have guaranteed capital contribution of US\$69,808 thousand and additional contribution up to US\$19 million for contingencies, if any. For one of the electricity purchasers, Central Power Purchasing Agency Guarantee Ltd., we have provided payment guarantee up to US\$2,777 thousand, in case of a construction delay or insufficient contract volume after commencement of the construction.

We have provided PT. Perusahaan Listrik Negara performance guarantee up to US\$2,293 thousand and Mizuho Bank and others investment guarantee up to US\$43,500 thousand in proportion to our ownership in the electricity purchase contract with PT. Cirebon Energi Prasarana in relation to the second electric power generation business in Cirebon, Indonesia. In addition, we have provided the Bank of Tokyo Mitsubishi UFJ (BTMU) borrowing guarantee up to US\$41,258 thousand in proportion to our ownership in the equity bridge loan guarantee with PT. Cirebon Energi Prasarana.

We have provided the Export-Import Bank of Korea and SMBC guarantee of mutual investment of US\$401 thousand, which is equivalent to the ownership interest of PT Mega Power Mandiri, in order to guarantee the expenses related to hydroelectric power business of PT Wampu Electric Power, our associate.

We have provided the Export-Import Bank of Korea, BNP Paribas and ING Bank guarantee of mutual investment of US\$2,440 thousand, which is equivalent to the ownership interest of PT BS Energy and PT Nusantara Hydro Alam, in order to guarantee the expenses related to hydroelectric power business of Tanggamus, Indonesia.

We have provided Samsung C&T Corporation bidding guarantee up to US\$793 thousand to participate in the bidding of the Sri Lanka combined cycle project.

Existing guarantees provided by us to our associates and joint ventures as of December 31, 2017 are as follows.

<b>Primary Guarantor (Providing Company)</b>	<b>Principal Obligor</b>	<b>Type of Guarantees</b>	<b>Currency</b>	<b>Credit Limit</b>	<b>Guarantee (Final Provided Company)</b>
KEPCO	Shuweihat Asia O&M Co., Ltd.	Performance guarantees	USD	11,000	SAPCO

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<b>Primary Guarantor (Providing Company)</b>	<b>Principal Obligor</b>	<b>Type of Guarantees</b>	<b>Currency</b>	<b>Credit Limit</b>	<b>Guarantee (Final Provided Company)</b>
KEPCO	KNOC Nigerian East Oil Co., Ltd. and KNOC Nigerian West Oil Co., Ltd.	Performance guarantees	USD	34,650	Korea National Oil Corporation (Nigerian government)
KEPCO	Rabigh Operation & Maintenance Company Limited	Performance guarantees and others	USD	1,387	RABEC
KEPCO	Nghi Son 2 Power Ltd.	Bidding guarantees	USD	10,000	SMBC Ho Chi Minh
KEPCO	Barakah One Company	Debt guarantees	USD	900,000	Export-Import Bank of Korea and others
		Performance guarantees and others	USD	3,404,275	
KOWEPO	Cheongna Energy Co., Ltd.	Collateralized money invested	KRW	27,211	KEB Hana Bank and others
		Guarantees for supplemental funding <sup>(1)</sup>			
KOWEPO	Xe-Pian Xe-Namnoy Power Co., Ltd.	Payment guarantees for business reserve	USD	2,500	Krung Thai Bank
		Collateralized money invested	USD	62,253	Krung Thai Bank
		Impounding bonus guarantees	USD	5,000	SK E&C
KOWEPO	Rabigh O&M Co., Ltd.	Performance guarantees and others	SAR	5,600	Saudi Arabia British Bank
KOWEPO	Deagu Photovoltaic Co., Ltd.	Collateralized money invested	KRW	1,230	Korea Development Bank
KOWEPO	Dongducheon Dream Power Co., Ltd.	Collateralized money invested	KRW	53,233	Kookmin Bank and others
KOWEPO	PT. Mutiara Jawa	Collateralized money invested	USD	2,610	Woori Bank
KOWEPO	Heangbok Do Si Photovoltaic Power Co., Ltd.	Collateralized money invested	KRW	194	Nonghyup Bank
KOWEPO	Shin Pyeongtaek Power Co., Ltd.	Collateralized money invested	KRW	43,920	Kookmin Bank
EWP	Busan Shinho Solar Power Co., Ltd.	Collateralized money invested	KRW	2,100	Korea Development Bank and others
EWP	Seokmun Energy Co., Ltd.	Collateralized money invested	KRW	15,370	KEB Hana Bank and others
EWP	Chun-cheon Energy Co., Ltd.	Collateralized money invested	KRW	52,700	Kookmin Bank and others
		Guarantees for supplemental	KRW	60,270	Kookmin Bank and others

EWP	Honam Wind Power Co., Ltd.	collateralized money invested	funding <sup>(1)</sup>	KRW	3,480	Shinhan Bank and others
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<b>Primary Guarantor (Providing Company)</b>	<b>Principal Obligor</b>	<b>Type of Guarantees</b>	<b>Currency</b>	<b>Credit Limit</b>	<b>Guarantee (Final Provided Company)</b>
EWP	GS-Donghae Electric Power Co., Ltd.	Collateralized money invested	KRW	204,000	Korea Development Bank and others
EWP	Yeonggwangbaeksu Wind Power Co., Ltd.	Collateralized money invested	KRW	3,000	Kookmin Bank and others
EWP	Yeonggwang Wind Power Co., Ltd.	Collateralized money invested	KRW	15,375	KEB Hana Bank and others
EWP	PT. Tanjung Power Indonesia	Debt guarantees	USD	46,983	The Bank of Tokyo-Mitsubishi and others
		Other guarantees	USD	3,150	PT Adaro Indonesia
EWP Barbados 1 SRL	Jamaica Public Service Company Limited	Performance guarantees	USD	14,400	Societe Generale
		Guarantees for supplemental funding and others <sup>(1)(3)</sup>	USD	60,000	JCSD Trustee Services Limited and others
KOSPO	KNH Solar Co., Ltd.	Collateralized money invested	KRW	1,296	Shinhan Bank and Kyobo Life Insurance Co., Ltd.
		Performance guarantees and guarantees for supplemental funding and others <sup>(1)</sup>			
KOSPO	Daeryun Power Co., Ltd.	Collateralized money invested	KRW	25,477	Korea Development Bank and others
		Guarantees for supplemental funding and others <sup>(1)</sup>			
KOSPO	Changjuk Wind Power Co., Ltd.	Collateralized money invested	KRW	3,801	Shinhan Bank
		Guarantees for supplemental funding <sup>(1)</sup>			
KOSPO	Daegu Green Power Co., Ltd.	Collateralized money invested	KRW	46,226	Shinhan Bank
KOSPO	Kelar S.A.	Performance guarantees	USD	63,707	KEB Hana Bank, SMBC, Mizuho Bank and others
KOSPO	DS Power Co., Ltd.	Collateralized money invested	KRW	2,900	Korea Development Bank and others
		Guarantees for supplemental funding and others <sup>(1)</sup>			
KOSPO			KRW	3,875	

Pyeongchang Wind  
Power Co., Ltd.

Collateralized  
money invested

Woori Bank and  
Shinhan Bank

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<b>Primary Guarantor (Providing Company)</b>	<b>Principal Obligor</b>	<b>Type of Guarantees</b>	<b>Currency</b>	<b>Credit Limit</b>	<b>Guarantee (Final Provided Company)</b>
		Performance guarantees and guarantees for supplemental funding and others <sup>(1)</sup>			
KOSPO	Taebaek Wind Power Co., Ltd.	Guarantees for supplemental funding and others <sup>(1)</sup>			Shinhan Bank
KOSPO	Jeongam Wind Power Co., Ltd.	Collateralized money invested	KRW	5,580	SK Securities Co., Ltd.
		Guarantees for supplemental funding and others <sup>(1)</sup>			
KOSPO	Naepo Green Energy Co., Ltd.	Collateralized money invested	KRW	29,200	Hana Financial Investment Co., Ltd. and others
		Guarantees for supplemental funding and others <sup>(1)</sup>			
KEPCO E&C	DS Power Co., Ltd.	Collateralized money invested	KRW	15,000	Korea Development Bank and others
KOMIPO	Hyundai Green Power Co., Ltd.	Collateralized money invested	KRW	87,003	Korea Development Bank and others
		Guarantees for supplemental funding and others <sup>(1)</sup>			
KOMIPO	PT. Cirebon Electric Power	Debt guarantees	USD	11,550	Mizuho Bank
KOMIPO	PT. Wampu Electric Power	Debt guarantees	USD	5,068	SMBC
KOMIPO	Gangwon Wind Power Co., Ltd.	Collateralized money invested	KRW	7,409	IBK and others
KOMIPO	YaksuESS Co., Ltd.	Collateralized money invested	KRW	210	Hanwha Life Insurance Co., Ltd.
		Guarantees for supplemental funding and others <sup>(1)</sup>			
KOSEP	Hyundai Energy Co., Ltd.	Collateralized money invested	KRW	47,067	Korea Development Bank and others
		Performance guarantees and guarantees for supplemental funding and others <sup>(1)</sup>	KRW	78,600	
KOSEP	RES Technology AD		KRW	15,595	

Collateralized money  
invested

UniCredit Bulbank  
and others

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<b>Primary Guarantor (Providing Company)</b>	<b>Principal Obligor</b>	<b>Type of Guarantees</b>	<b>Currency</b>	<b>Credit Limit</b>	<b>Guarantee (Final Provided Company)</b>
KOSEP	ASM-BG Investicii AD	Collateralized money invested	KRW	16,101	UniCredit Bulbank and others
KOSEP	Express Solar-light Power Generation Co., Ltd.	Guarantees for supplemental funding and others <sup>(1)(2)</sup>	KRW	2,500	Woori Bank
KOSEP	S-Power Co., Ltd.	Collateralized money invested	KRW	132,300	Korea Development Bank and others
KOSEP USA, INC.	KODE NOVUS II LLC	Guarantees for supplemental funding and others <sup>(1)</sup>			Korea Development Bank
KOSEP USA, INC.	KODE NOVUS I LLC	Guarantees for supplemental funding and others <sup>(1)</sup>			The Export-Import Bank of Korea and others
KHNP	Yeongwol Energy Station Co., Ltd.	Collateralized money invested	KRW	1,400	Meritz Fire & Marine Insurance Co., Ltd.
KHNP	Noeul Green Energy Co., Ltd.	Collateralized money invested	KRW	1,740	KEB Hana Bank and others
KHNP	Busan Green Energy Co., Ltd.	Collateralized money invested	KRW	5,243	Shinhan Bank and others
KEPCO KPS	Incheon New Power Co., Ltd.	Collateralized money invested Guarantees for supplemental funding and others <sup>(1)</sup>	KRW	8,160	Shinhan Bank

*Note:*

- (1) We guarantee to provide supplemental funding for businesses with respect to excessive business expenses or insufficient repayment of borrowings.
- (2) We have granted the right to Hana Financial Investment Co., Ltd., as an agent for the creditors to Express Solar-light Power Generation Co., Ltd. (ESPG), to the effect that in the event of acceleration of ESPG's payment obligations under certain borrowings to such creditors, Hana Financial may demand us to dispose of shares in ESPG held by us and apply the resulting proceeds to repayment of ESPG's obligations.
- (3) This includes a guarantee for the shareholder's capital payment in connection with the business of 190MW has complex thermal power plant in Jamaica. EWP (Barbados) 1 SRL's capital contribution amount is USD 6,400 thousand and the total amount of guarantees is USD 27,000 thousand which consists of USD 12,000 thousand of EWP (Barbados) 1 SRL's contribution obligation and USD 15,000 thousand of SJEH's portion (50%) of contribution obligation.

Other than as described in this annual report and also in Notes 47 and 50 of the notes to our consolidated financial statements included in this annual report, we did not have any other material credit lines and guarantee commitments provided to any third parties as of December 31, 2017.



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**ITEM 6. DIRECTORS, SENIOR MANAGEMENT AND EMPLOYEES**

**Item 6.A. Directors and Senior Management**

**Board of Directors**

Under the KEPCO Act, the Act on the Management of Public Institutions and our Articles of Incorporation, our board of directors, which is required to consist of not more than 15 directors, including the president, is vested with the authority over our management.

Pursuant to our Articles of Incorporation and the Act on the Management of Public Institutions, we have two types of directors: standing directors (*sangim-isa* in Korean) and non-standing directors (*bisangim-isa* in Korean). The standing directors refer to our directors who serve their directorship positions in full-time capacity. Many of our standing directors concurrently hold executive positions with us or our subsidiaries. The non-standing directors refer to our directors who do not serve their directorship positions in full-time capacity. The non-standing directors currently do not hold any executive positions with us or our subsidiaries.

Under our Articles of Incorporation, there may not be more than seven standing directors, including our president, and more than eight non-standing directors. The number of non-standing directors must exceed the number of standing directors, including our president. A senior non-standing director appointed by the Ministry of Strategy and Finance becomes our chairman of the board following the review and resolution of the Public Agencies Operating Committee.

Our president serves as our chief executive officer and represents us and administers our day-to-day business in all matters and bears the responsibility for the management's performance. Our president is appointed by the President of the Republic upon the motion of the Ministry of Trade, Industry and Energy following the nomination by our director nomination committee, the review and resolution of the Public Agencies Operating Committee pursuant to the Act on the Management of Public Institutions and an approval at the general meeting of our shareholders.

Our standing director who concurrently serve as members of the audit committee are appointed through the same appointment process applicable to our president, except that the motion for appointment is made by the Ministry of Strategy and Finance instead of the Ministry of Trade, Industry and Energy. Standing directors other than our president or those who concurrently serve as members of the audit committee are appointed by our president with the approval at the general meeting of our shareholders.

Our non-standing directors must be appointed by the minister of the Ministry of Strategy and Finance following the review and resolution of the Public Agencies Operating Committee from a pool of candidates recommended by the director nomination committee and must have ample knowledge and experience in business management. Appointment of non-standing directors to become part of the audit committee is subject to approval at the general meeting of our shareholders. Government officials that are not part of the teaching staff in national and public schools are ineligible to become our non-standing directors.

The term of our president is three years, while that of our directors (standing or non-standing, but not the president) is two years. According to the Act on the Management of Public Institutions, our president's term cannot be terminated unless done so by the President of the Republic pursuant to the Act on the Management of Public Institutions or upon an event as specified in our Articles of Incorporation.

Attendance by a majority of the board members constitutes a voting quorum for our board meetings, and resolutions can be passed by a majority of the board members. In the event the president acts in violation of law or the Articles of Incorporation, is negligent in his duties, or otherwise is deemed to be significantly impeded in performing his official

duties as president, the board of directors may by resolution request the minister of the Ministry of Trade, Industry and Energy to dismiss or recommend the dismissal of the president.



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Our non-standing directors may request any information necessary to fulfill their duties from our president, and except in special circumstances, our president must comply with such request.

The names, titles and outside occupations, if any, of the directors as of April 16, 2018 and the respective years in which they took office are set forth below.

<b>Name</b>	<b>Age</b>	<b>Title</b>	<b>Outside Occupation</b>	<b>Position Held Since</b>
JongKap KIM	(67)	President, Chief Executive Officer and Standing Director	None	April 13, 2018
Lee, Sung-Han	(61)	Standing Director and Member of the Audit Committee	Chaired Professor of College of Social Sciences, Dongguk University	May 2, 2016
Kim, Si-Ho	(60)	Standing Director and Executive Vice President of Domestic Operations	None	August 27, 2015
Hyun, Sang-Kwon	(60)	Standing Director and Executive Vice President, Chief Financial Officer and Strategy Officer	None	August 27, 2015
Moon, Bong-Soo	(60)	Standing Director and Executive Vice President & Chief Power System Officer	None	January 10, 2017
Sung, Tae-Hyun	(60)	Non-Standing Director	Professor of Electrical Engineering, Hanyang University	August 12, 2014
Choi, Ki-Ryun	(72)	Non-Standing Director	Professor of Energy Systems Research, Ajou University	August 12, 2014
Kim, Ji-Hong	(63)	Non-Standing Director	None	May 16, 2016
Kim, Ju-Suen	(58)	Non-Standing Director and Member of the Audit Committee	Representative of Kim, Ju-Suen Law Office	August 6, 2015
Kim, Chang-Joon	(75)	Non-Standing Director	Chairman of the Sport for All subcommittee, Korean Sport and Olympic Committee	March 19, 2018
Yang, Bong-Ryull	(67)	Non-Standing Director	None	April 4, 2018
Kim, Jwa-Kwan	(59)	Non-Standing Director	Professor of Environmental Engineering, Catholic University of Pusan	April 4, 2018
Jung, Yeon-Gil	(53)	Non-Standing Director	Professor of New Materials Engineering, Changwon University	April 4, 2018

*JongKap KIM* has been our President and CEO since April 13, 2018. Prior to his current position, he served as the Chief Executive Officer of Siemens Korea, the Chief Executive Officer of SK Hynix, a Commissioner of Korean Intellectual Property Office, and a Vice Minister of Ministry of Trade, Industry and Energy. Mr. Kim received a Ph. D. in public administration from Sungkyunkwan University, M.A in Economics from Indiana University and M.B.A. from New York University.

*Lee, Sung-Han* has been our Standing Director since May 2, 2016. Mr. Lee also currently serves as the Chaired Professor of College of Social Sciences at Dongguk University. Mr. Lee previously served as the

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Commissioner General of the Korean National Police Agency, Director General of the Korean National Policy Agency's Office of Audit and Inspection, and Consular at the Embassy of the Republic of Korea in the United States. Mr. Lee received a Ph.D in police administration from Dongguk University.

*Kim, Si-Ho* has been our Standing Director since August 27, 2015. Mr. Kim also currently serves as our Executive Vice President of Domestic Operations and previously served as Executive Vice President and Chief Operating Officer. Mr. Kim received a B.A. in law from Yeungnam University.

*Hyun, Sang-Kwon* has been our Standing Director since August 27, 2015. Mr. Hyun also currently serves as our Executive Vice President, Chief Financial Officer and Chief Strategy Officer, and previously served as our Vice President of Project Strategy & Planning. Mr. Hyun received an M.A. in public administration from Yonsei University Graduate School.

*Moon, Bong-Soo* has been our Standing Director since January 10, 2017. Mr. Moon also currently serves as our Executive Vice President and Chief Power System Officer and previously served as our Director General of Project Strategy & Planning Office. Mr. Moon received a B.A. in electrical engineering from Seoul National University.

*Sung, Tae-Hyun* has been our Non-Standing Director since August 12, 2014. Mr. Sung is currently Professor of Electrical Engineering at Hanyang University and previously served as senior researcher at KEPCO Research Institute. Mr. Sung received a B.S. in material engineering from Hanyang University and a Ph.D in material science and engineering from Tokyo Institute of Technology.

*Choi, Ki-Ryun* has been our Non-Standing Director since August 12, 2014. Mr. Choi is currently Professor of Energy Systems Research at Ajou University and previously served as head of New & Renewable Energy Center of Korea Energy Management Corporation. Mr. Choi received a B.S. in mining and minerals engineering from Seoul National University and a Ph.D in energy economics from University of Grenoble.

*Kim, Ji-Hong* has been our Non-Standing Director since May 16, 2016. Mr. Kim previously served as a member of the Banking Subcommittee of the Financial Development Council, Professor at Korea Development Institute and a non-standing director at KB Kookmin Bank. Mr. Kim received a B.A in economics from Seoul National University and a Ph.D. in economics from the University of California, Berkeley.

*Kim, Ju-Suen* has been our Non-Standing Director since August 6, 2015. Mr. Kim is currently an attorney-at-law at Kim, Ju-Suen Law Firm. Mr. Kim previously served as Chief Public Prosecutor at the Daejeon Prosecutor's Office Cheonan branch. Mr. Kim received a B.A. and M.A. in law from Dankook University.

*Kim, Chang-Joon* has been our Non-Standing Director since March 19, 2018. Mr. Kim is currently chairman of the Sport for All subcommittee of the Korean Sport and Olympic Committee. Mr. Kim previously served as a member of the Electricity Regulatory Commission (KOREC). Mr. Kim received a B.S. in veterinary science at Chonnam National University.

*Yang, Bong-Ryull* has been our Non-Standing Director since April 4, 2018. Mr. Yang previously served as the Ambassador of the Republic of Korea to Malaysia. Mr. Yang received a B.A. in politics at Seoul National University and a Ph.D. in business administration from Gwangju University.

*Kim, Jwa-Kwan* has been our Non-Standing Director since April 4, 2018. Mr. Kim is currently Professor of Environmental Engineering at Catholic University of Pusan. Mr. Kim previously served as a visiting professor at the Seoul National University Graduate School of Environmental Studies. Mr. Kim received a B.S. in environmental

engineering from Pukyong National University and a Ph.D. in public administration from Seoul National University.

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*Jung, Yeon-Gil* has been our Non-Standing Director since April 4, 2018. Mr. Jung is currently Professor of New Materials Engineering at Changwon University. Mr. Jung previously served as vice-chairman of the Korean Ceramic Society. Mr. Jung received a B.S. and a Ph.D in material engineering from Hanyang University

The business address of our directors is 55 Jeollyeok-ro, Naju-si, Jeollanam-do, 58217, Korea.

## **Audit Committee**

Under the Act on the Management of Public Institutions, which took effect as of April 1, 2007, we are designated as a market-oriented public enterprise and, as such, are required to establish an audit committee in lieu of the pre-existing board of auditors upon expiration of the term of the last remaining member of the board of auditors. In September 2007, we amended our Articles of Incorporation to establish, in lieu of the pre-existing board of auditors, an audit committee meeting the requirements under the Sarbanes-Oxley Act. Under the Act on the Management of Public Institutions, the Korean Commercial Code and the amended Articles of Incorporation, we are required to maintain an audit committee consisting of three members, of which not less than two members are required to be non-standing directors. The roles and responsibilities of our audit committee members are to perform the functions of an audit committee meeting the requirements under the Sarbanes-Oxley Act. Our audit committee was established on December 8, 2008.

Lee, Sung-Han, a standing director, and Kim, Ju-Seun, a non-standing director, are currently members of our audit committee. Cho, Jeon-Hyeok's term as a non-standing director and a member of the audit committee expired on March 24, 2017. Under Korean law, Cho, Jeon-Hyeok retains the rights and is subject to obligations as a member of the audit committee and a non-standing director, to the extent such rights and obligations are connected to performance of his duties as a member of the audit committee, until his successor to take his place at our audit committee is approved and appointed at a general meeting of the shareholders. Subject to approval and appointment at the next general meeting of the shareholders, which is expected to take place in June 2018, our audit committee will consist of Lee, Sung-Han, Kim, Ju-Seun (or his successor who will be approved and appointed at such meeting, if Kim, Ju-Seun's term as a Non-Standing Director is not renewed) and the newly appointed non-standing director and member of the audit committee. All such members of the audit committee are independent within the meaning of the Korea Stock Exchange listing standards, the regulations promulgated under the Korean Commercial Code and the New York Stock Exchange listing standards.

## **Item 6.B. Compensation**

The aggregate amount of remuneration paid to our standing and non-standing directors in the aggregate consist of (i) salaries and wages paid to standing and non-standing directors, which amounted to Won 1,271 million in aggregate in 2017, and (ii) accrued retirement and severance benefits for standing directors, which amounted to Won 54 million in 2017. Under the Act on the Management of Public Institution, our executive officers consist of the president and the standing and non-standing directors. Standing directors take executive positions with our company while non-standing directors do not. We do not have any other officer who is in charge of a principal business unit, division or function, any other officer who performs a policy making function or any other person who performs similar policy making functions for us.

## **Item 6.C. Board Practices**

Under the Act on the Management of Public Institutions and our Articles of Incorporation, for appoints made after April 1, 2007, the term of office for our president is three years and the term of our office for our directors (whether standing or non-standing but not the president) is two years. Our president and directors may be reappointed for one or

more additional terms of one year. In order to be reappointed, the president must be evaluated on the basis of his management performance; a standing director, on the basis of the performance of the duties for which he was elected to perform, or if the standing director has executed an incentive bonus contract, on the basis of his performance under the contract; and a non-standing director, on the basis of his performance of the duties for which he was elected to perform.

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Our board currently does not maintain a compensation committee. See Item 16G. Corporate Governance. However, we currently maintain an audit committee meeting the requirements of the Sarbanes-Oxley Act to perform the roles and responsibilities of the compensation committee. Prior to the establishment of the audit committee on December 8, 2008 pursuant to the Act on the Management of Public Institutions, we maintained a board of auditors, which performed the roles and responsibilities required of an audit committee under the Sarbanes-Oxley Act, including the supervision of the financial and accounting audit by the independent registered public accountants.

Our president's management contract includes benefits upon termination of his employment. The amount for termination benefits payable equals the average value of compensation for one month times the number of years the president is employed by us, provided that the president is only eligible for termination benefits after more than one year of continuous service.

The termination benefits for our standing directors are determined in accordance with our internal regulations for executive compensation. Standing directors are eligible for benefits only upon termination of employment or death following one year of continuous service.

See also Item 16G. Corporate Governance for a further description of our board practices.

**Item 6.D. Employees**

As of December 31, 2017, we and our generation subsidiaries had a total of 45,232 regular employees, almost all of whom are employed within Korea. Approximately 10.4% of our regular employees (including employees of our generation subsidiaries) are located at our head office.

The following table sets forth the number of and other information relating to our regular employees, not including directors or senior management, as of December 31, 2017.

	<b>KEPCO</b>	<b>KHNP</b>	<b>KOSEP</b>	<b>KOMIPO</b>	<b>KOWEPO</b>	<b>KOSPO</b>	<b>EWP</b>	<b>Total</b>
<b>Regular Employees</b>								
Administrative	4,919	1,053	261	293	273	280	308	7,387
Engineers	11,096	9,355	1,890	2,105	1,848	1,644	2,087	30,025
Others	5,612	1,145	243	208	236	367	9	37,412
<b>Total</b>	<b>21,627</b>	<b>11,553</b>	<b>2,394</b>	<b>2,606</b>	<b>2,357</b>	<b>2,291</b>	<b>2,404</b>	<b>45,232</b>
<b>Head Office</b>								
Employees	1,745	1,259	331	343	374	329	333	4,714
% of total	8.1%	10.9%	13.8%	13.2%	15.9%	14.4%	13.9%	10.4%
<b>Members of Labor</b>								
Union	15,887	7,397	1,698	1,507	1,615	1,570	1,550	31,224
% of total	73.5%	64.0%	70.9%	57.8%	68.5%	68.5%	64.5%	69.0%

We and each of our generation subsidiaries have separate labor unions. Approximately 69.0% of our and our generation subsidiaries' employees in the aggregate are members of these labor unions, each of which negotiates a collective bargaining agreement for its members each year. Under applicable Korean law, an employee-employer cooperation committee comprised of an equal number of representatives of management and labor (which shall be no less than three and no more than ten representatives from each of management and labor) is required to be established.

Accordingly, an employee-employer cooperation committee composed of eight representatives of management and eight representatives of labor has been established at us and at each of our generation subsidiaries. The committee meets periodically to discuss various labor issues.

Since our formation in 1981, our businesses had not been interrupted by any work stoppages or strikes except in early 2002, when employees belonging to our five non-nuclear generation subsidiaries went on strike for six weeks to protest the Government's decision to privatize such non-nuclear generation subsidiaries



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according to the Restructuring Plan, which privatization plan has since been suspended indefinitely. See Item 3.D.

**Risk Factors Risks Relating to KEPCO** The Government may adopt policy measures to substantially restructure the Korean electric power industry or our operational structure, which may have a material adverse effect on our business, operations and profitability.

We believe our relations with our employees are generally good.

**Item 6.E. Share Ownership**

None of our directors and members of our administrative, supervisory or management bodies own more than 0.1% of our common stock.

**ITEM 7. MAJOR SHAREHOLDERS AND RELATED PARTY TRANSACTIONS****Item 7.A. Major Shareholders**

The following table sets forth certain information relating to certain owners of our capital stock as of March 15, 2018, the date we last closed our shareholders' registry:

<b>Title of Class</b>	<b>Identity of Person or Group</b>	<b>Shares Owned</b>	<b>Percentage of Class<sup>(1)</sup> (%)</b>
Common stock	Government	116,841,794	18.2
	Korea Development Bank <sup>(2)</sup>	211,235,264	32.9
	Subtotal	328,077,058	51.1
	National Pension Corporation	36,460,422	5.7
	Employee Stock Ownership Association		
	Directors and executive officers as a group		
	Public (non-Koreans)	192,639,015	30.0
	Common shares	156,960,303	24.4
	American depositary shares	35,678,712	5.6
	Public (Koreans)	84,787,582	13.2
	Total	641,964,077	100.0

*Notes:*

(1) Percentages are based on issued shares of common stock.

(2) Korea Development Bank is a Government-controlled entity.

All of our shareholders have equal voting rights. See Item 10.B. Memorandum and Articles of Incorporation Description of Capital Stock Voting Rights.

**Item 7.B. Related Party Transactions**

We are engaged in a variety of transactions with our affiliates. We have related party transactions with Government-controlled entities such as Korea Gas Corporation, our consolidated subsidiaries and our equity investees. In addition, we engage in related party transactions with Korea Development Bank, one of our major shareholders. See Note 47 of the Notes to our consolidated financial statements included in this annual report for a description of transaction and balances with our related parties.

In the past three years, our related party transactions principally consisted of purchases of LNG from Korea Gas Corporation, sales of electricity to Korea District Heating Co., Ltd., and long-term borrowings from Korea Development Bank. In 2015, 2016 and 2017, we and our generation subsidiaries purchased LNG from Korea Gas Corporation in the aggregate amount of Won 4,599 billion, Won 3,633 billion and Won 3,246 billion, respectively. As of December 31, 2017, we had long-term borrowings from Korea Development Bank in the aggregate amount of Won 176 billion.

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We also engage in extensive transactions with our consolidated generation subsidiaries, including the purchase of electricity from them through Korea Power Exchange, sales of electricity to them, payment and receipt of commissions for services and receivables and payables transactions. These are eliminated in the consolidation process. We also provide guarantees for certain of our affiliates. See Item 5.F. Tabular Disclosure of Contractual Obligations Overdraft and Others. We also have certain relationships with the Korea Power Exchange. See Item 4.B. Business Overview Purchase of Electricity Cost-based Pool System.

For a further description of our transactions with our affiliates, see Note 47 of the Notes to our consolidated financial statements included in this annual report.

### **Item 7.C. Interests of Experts and Counsel**

Not Applicable

## **ITEM 8. FINANCIAL INFORMATION**

### **Item 8.A. Consolidated Statements and Other Financial Information**

We prepare our consolidated financial statements in compliance with requirements under Item 18. Financial Statements.

### **Legal Proceedings**

As of December 31, 2017, we and our subsidiaries were engaged in 565 lawsuits as a defendant and 185 lawsuits as a plaintiff. As of the same date, the total amount of damages claimed against us and our subsidiaries was Won 478 billion, for which we have made a provision of Won 74 billion as of December 31, 2017, and the total amount claimed by us and our subsidiaries was Won 691 billion as of December 31, 2017. While the outcome of any of these lawsuits cannot presently be determined with certainty, our management currently believes that the final results from these lawsuits will not have a material adverse effect on our liquidity, financial position or results of operations.

The following are potentially significant claims pertaining to us and our subsidiaries.

In September 2013, Hyundai Engineering & Construction Co., Ltd. ( Hyundai E&C ), SK Engineering & Construction Co., Ltd. and GS Engineering & Construction Co., Ltd. filed a lawsuit against KHNP seeking from KHNP extra contractual payments in the total amount of Won 204 billion on grounds of design change under the construction contract relating to New Hanwool #1 and #2 units. In November 2016, the court ruled against KHNP, and KHNP has paid Won 217 billion of the claimed amounts in full and has subsequently appealed the ruling. The lawsuit is currently pending.

In December 2013, the Supreme Court of Korea ruled that regular bonuses fall under the category of ordinary wages on the condition that those bonuses are paid regularly and uniformly, and that any agreement which excludes such regular bonuses from ordinary wage is invalid. One of the key rulings provides that bonuses that are given to employees (i) on a regular and continuous basis and (ii) calculated according to the actual number of days worked (iii) that are not incentive-based must be included in the calculation of ordinary wages. The Supreme Court further ruled that in spite of invalidity of such agreements, employees shall not retroactively claim additional wages incurred due to such court decision, in case that such claims bring to employees unexpected benefits which substantially exceeds the wage level agreed by employers and employees and cause an unpredicted increase in expenditures for

their company, which would lead the company to material managerial difficulty or would be a threat to the existence of the company. In that case, the claim is not acceptable since it is unjust and is in breach of the principle of good faith. As a result of such ruling by the Supreme Court of Korea, we and our subsidiaries became subject to a number of lawsuits filed by various industry-wide and company-

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specific labor unions based on claims that ordinary wage had been paid without including certain items that should have been included as ordinary wage. In July 2016, the court ruled against us, and in accordance with the court's ruling, in August 2016 we paid Won 55.1 billion to the employees for three years of back pay plus interest. As of December 31, 2017, however, 49 lawsuits were pending against our subsidiaries for an aggregate claim amount of Won 170 billion, for which our subsidiaries set aside an aggregate amount of Won 56 billion to cover any potential future payments of additional ordinary wage in relation to the related lawsuits. While the plaintiffs partially won in over 20 cases for which we appealed, all cases are currently on-going at various stages of proceedings. We cannot presently assure you that the courts will not ultimately rule against our subsidiaries in these lawsuits, or that the amount of our reserves against these lawsuits will be sufficient to cover the amounts actually payable under court rulings. Any of these developments would adversely affect our results of operations.

During the period from 2014 to 2017, certain residential customers filed class action lawsuits against us based on the claim that electricity tariffs, determined under the progressive rate structure, were excessive. As of December 31, 2017, we were subject to 13 such lawsuits brought by approximately 10,000 plaintiffs with an aggregate claim amount of Won 5.2 billion. Of these 13 lawsuits, two cases are currently pending in the third round of proceedings (for which we won all of the first and second rounds of proceedings) and five cases are currently pending in the second round of proceedings (for which we won all of the first rounds of proceedings, except for one case). Six cases are currently pending in the first round of proceedings.

In addition, our generation subsidiaries, currently and from time to time, are involved in lawsuits incidental to the conduct of their business. A significant number of such lawsuits are based on the claim that the construction and operation of the electricity generation units owned by our generation subsidiaries have impaired neighboring fish farms. Our generation subsidiaries normally pay compensation to the members of fishery associations near our power plant complex for expected losses and damages arising from the construction and operation of their power plants in advance. Despite such compensation paid by us, a claim may still be filed against our generation subsidiaries challenging the compensation paid by us.

The nuclear power plant at Wolsong #1 unit began operations in 1982 and ended its operations in 2012 pursuant to its 30-year operating license. In February 2015, the Nuclear Safety and Security Commission (NSSC) evaluated the safety of operating Wolsong #1 unit and approved its extended operation until November 2022. However, a civic group filed a lawsuit to annul such decision, and in February 2017, the Seoul Administrative Court ruled against the NSSC. The NSSC appealed this decision, and the civic group has filed an injunction to suspend the operation of the Wolsong #1 unit. The civic group's injunction was denied in July 2017. KHNP, which currently is operating the unit pursuant to the NSSC's initial decision, has joined this lawsuit. As of December 31, 2017, the book value of property, plant and equipment and provision for decommissioning costs of Wolsong #1 unit was Won 608 billion and Won 642 billion, respectively. We cannot assure you whether the courts will ultimately rule to grant the extension of life for Wolsong #1. In addition, it is reported that the Government will announce its decision by the first half of 2018 regarding the timing of the shutdown of Wolsong #1 unit. If Wolsong #1 unit is prohibited from operation, we may incur significant losses in connection with the property, plant and equipment of Wolsong #1 unit. In addition, the amount of provision may increase significantly, and the timing of actual cash outflows may be accelerated. There are seven other nuclear generation units whose life under their initial operating license will expire in the next nine years, or by 2027. Thus, if the courts or the Government were to ultimately decide against the extension of life for Wolsong #1, we may find it more difficult to have the life of other nuclear units extended as well. Furthermore, in September 2016, Greenpeace and 559 Korean nationals brought a lawsuit against the NSSC to revoke the permit the NSSC granted to KHNP in relation to the construction of Shin-Kori #5 and #6 nuclear generation units. This case is currently pending at the Seoul Administrative Court. The failure to extend the life of the generation units or proceed with the construction of new nuclear units would result in a loss of revenues and an increase in our overall fuel costs (as nuclear fuel is the cheapest compared to coal, LNG or oil), which could adversely affect our results of operation

and financial condition.

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We and our subsidiaries are also involved in the following arbitrations, among others.

SAP Korea Ltd brought a breach of contract claim against us and KEPCO KDN Co., Ltd., one of our subsidiaries, in relation to the enterprise resource planning software serviced by SAP Korea. In that connection, arbitration was filed in the International Chamber of Commerce International Court of Arbitration. We have not recognized any losses because the probability of economic benefit outflow is remote and the related amount cannot be reasonably determined.

Hyundai Samsung Joint Venture, one of our subcontractors, filed arbitration against us at the London Court of International Arbitration in 2016 in relation to certain disagreements involving the United Arab Emirates nuclear power plant construction project, but we have not recognized any losses because the probability of economic benefit outflow is remote and the related amount cannot be reasonably determined.

Hyundai E&C, GS Engineering & Construction Corp., and Hansol SeenTec Co., Ltd. filed arbitration against us with the Korea Commercial Arbitration Board to request payment of additional construction costs. We have not recognized any losses because the probability of economic benefit outflow is remote and the related amount cannot be reasonably determined. We currently expect an arbitral decision would be made in April 2018.

Halla Corporation filed arbitration against us with the Korea Commercial Arbitration Board to request payment of additional construction costs. As of December 31, 2017, the Company recognized Won 4.9 billion of provision in connection with this arbitral proceeding.

We do not believe such claims or proceedings, individually or in the aggregate, have had or will have a material adverse effect on us and our generation subsidiaries. However, we cannot assure you that this will be the case in the future, given the possibility that we may become subject to more legal and arbitral proceedings arising from changes in the environmental laws and regulations as they become applicable to us and our generation subsidiaries, and the related growth in demand for more compensation by actual and potential affected parties.

## **Dividend Policy**

For our dividend policy, see Item 10.B. Memorandum and Articles of Incorporation Description of Capital Stock Dividend Rights. For a description of the tax consequences of dividends paid to our shareholders, see Item 10.E. Taxation Korean Taxes Shares or ADSs Dividends on the Shares of Common Stock or ADSs and Item 10.E. Taxation U.S. Federal Income Tax Consideration for U.S. Persons Tax Consequences with Respect to Common Stock and ADSs Distributions on Common Stock or ADSs.

## **Item 8.B. Significant Changes**

Not Applicable

## **ITEM 9. THE OFFER AND LISTING**

**Item 9.A. Offer and Listing Details**

**Notes**

We have issued the following registered notes and debentures, which are traded principally in the over-the-counter market:

7.95% Zero-To-Full Debentures, due April 1, 2096 (the 7.95% Debentures );

6% Debentures due December 1, 2026, (the 6% Debentures );

7% Debentures due February 1, 2027 (the 7% Debentures ); and



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6-3/4% Debentures due August 1, 2027 (the 6-3/4% Debentures, and together with the 7.95% Debentures, the 6% Debentures and the 7% Debentures, the Registered Debt Securities ).

Sales prices for the Registered Debt Securities are not regularly reported on any United States securities exchange or other United States securities quotation service.

***Share Capital***

The principal trading market for our common stock is the Korea Exchange. Our common stock is also listed on the New York Stock Exchange in the form of ADSs. The ADSs have been issued by Citibank, N.A. as depositary and are listed on the New York Stock Exchange under the symbol KEP. One ADS represents one-half of one share of our common stock. As of March 15, 2018, the date we last closed our shareholders registry, 35,678,712 ADSs representing 5.6% shares of our common stock were outstanding.

**Table of Contents****Common Stock**

Shares of our common stock are listed on the KRX KOSPI Market of the Korea Exchange. The table below shows the high and low closing prices on the KRX KOSPI Market of the Korea Exchange for our common stock since 2013.

Period	Price	
	High	Low
(In Won)		
2013		
First Quarter	34,850	29,000
Second Quarter	32,600	24,850
Third Quarter	30,700	26,350
Fourth Quarter	34,750	27,250
2014		
First Quarter	37,800	33,400
Second Quarter	41,900	37,050
Third Quarter	48,200	36,800
Fourth Quarter	49,450	40,350
2015		
First Quarter	46,000	39,150
Second Quarter	48,500	42,450
Third Quarter	52,200	46,300
Fourth Quarter	53,300	47,500
2016		
First Quarter	46,000	39,150
Second Quarter	63,000	57,400
Third Quarter	62,900	54,000
Fourth Quarter	54,500	43,200
2017		
First Quarter	48,750	40,350
Second Quarter	46,700	40,800
Third Quarter	45,500	38,200
Fourth Quarter	41,100	37,350
October	41,100	37,350
November	39,150	37,450
December	39,250	37,850
2018		
First Quarter	37,750	30,850
January	37,750	34,650
February	36,100	33,100
March	33,100	30,850
April (through April 16)	34,950	33,250

**Table of Contents****ADSs**

The table below shows the high and low closing prices on the New York Stock Exchange for the outstanding ADSs since 2013. Each ADS represents one-half of one share of our common stock.

<b>Period</b>	<b>Closing Price per ADS</b>	
	<b>High</b>	<b>Low</b>
	<b>(In US\$)</b>	
<b>2013</b>		
First Quarter	16.35	13.04
Second Quarter	14.70	10.70
Third Quarter	14.59	11.45
Fourth Quarter	16.61	12.77
<b>2014</b>		
First Quarter	17.75	15.51
Second Quarter	20.56	17.66
Third Quarter	22.44	18.17
Fourth Quarter	22.87	18.90
<b>2015</b>		
First Quarter	21.01	18.26
Second Quarter	22.53	19.29
Third Quarter	22.13	19.45
Fourth Quarter	23.31	20.28
<b>2016</b>		
First Quarter	21.01	18.26
Second Quarter	26.90	24.67
Third Quarter	28.31	24.38
Fourth Quarter	24.34	18.48
<b>2017</b>		
First Quarter	21.35	17.53
Second Quarter	20.80	17.82
Third Quarter	20.38	16.73
Fourth Quarter	18.22	16.60
October	18.22	16.60
November	17.79	16.93
December	18.22	17.45
<b>2018</b>		
First Quarter	17.83	14.28
January	17.83	16.24
February	16.58	14.88
March	15.46	14.28
April (through April 16)	16.59	15.54

**Item 9.B. Plan of Distribution**

Not Applicable

**Item 9.C. Markets**

**The Korea Exchange**

The Korea Exchange began its operations in 1956, originally under the name of the Korea Stock Exchange. On January 27, 2005, pursuant to the Korea Securities and Futures Exchange Act, the Korea Exchange was

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officially created through the consolidation of the Korea Stock Exchange, the Korea Futures Exchange, the KOSDAQ Stock Market, Inc., or KOSDAQ, and the KOSDAQ Committee within the Korea Securities Dealers Association, which was in charge of the management of the KOSDAQ. The KRX KOSPI Market of the Korea Exchange, formerly the Korea Stock Exchange, has a single trading floor located in Seoul. The Korea Exchange is a limited liability company, the shares of which are held by (i) securities companies and futures companies that were the members of the Korea Stock Exchange or the Korea Futures Exchange and (ii) the shareholders of the KOSDAQ.

As of March 30, 2018, the aggregate market value of equity securities listed on the KOSPI of the Korea Exchange was approximately Won 1,627,647 billion. The average daily trading volume of equity securities for the first quarter of 2018 was approximately 387 million shares with an average transaction value of Won 6,978 billion.

The Korea Exchange has the power in some circumstances to suspend trading of shares of a given company or to de-list a security. The Korea Exchange also restricts share price movements. All listed companies are required to file accounting reports annually, semi-annually and quarterly and to release immediately all information that may affect trading in a security.

The Government has in the past exerted, and continues to exert, substantial influence over many aspects of the private sector business community which can have the intention or effect of depressing or boosting the market. In the past, the Government has informally both encouraged and restricted the declaration and payment of dividends, induced mergers to reduce what it considers excess capacity in a particular industry and induced private companies to publicly offer their securities.

The Korea Exchange publishes the Korea Composite Stock Price Index, or KOSPI, every ten seconds, which is an index of all equity securities listed on the KRX KOSPI Market of the Korea Exchange. On January 1, 1983, the method of computing KOSPI was changed from the Dow Jones method to the aggregate value method. In the new method, the market capitalizations of all listed companies are aggregated, subject to certain adjustments, and this aggregate is expressed as a percentage of the aggregate market capitalization of all listed companies as of the base date, January 4, 1980.

Movements in KOSPI in the past five years are set out in the following table:

	<b>Opening</b>	<b>High</b>	<b>Low</b>	<b>Closing</b>
2013	2,031.1	2,059.6	1,780.6	2,011.3
2014	1,967.2	2,082.6	1,886.9	1,915.6
2015	1,926.4	2,173.4	1,829.8	1,961.3
2016	1,918.8	2,068.7	1,835.3	2,026.5
2017	2,026.2	2,558.0	2,026.2	2,467.5
2018 (through April 16)	2,479.7	2,598.2	2,363.8	2,457.5

*Source:* The Korea Exchange

Shares are quoted ex-dividend on the first trading day of the relevant company's accounting period; since the calendar year is the accounting period for the majority of listed companies, this may account for the drop in KOSPI between its closing level at the end of one calendar year and its opening level at the beginning of the following calendar year.

With certain exceptions, principally to take account of a share being quoted ex-dividend and ex-rights, upward and downward movements in share prices of any category of shares on any day are limited under the

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rules of the Korea Exchange to 30% of the previous day's closing price of the shares, rounded down as set out below:

<b>Previous Day's Closing Price (Won)</b>	<b>Rounded Down to (Won)</b>
less than 5,000	5
5,000 to less than 10,000	10
10,000 to less than 50,000	50
50,000 to less than 100,000	100
100,000 to less than 500,000	500
500,000 or more	1,000

As a consequence, if a particular closing price is the same as the price set by the fluctuation limit, the closing price may not reflect the price at which persons would have been prepared, or would be prepared to continue, if so permitted, to buy and sell shares. Orders are executed on an auction system with priority rules to deal with competing bids and offers.

Due to deregulation of restrictions on brokerage commission rates, the brokerage commission rate on equity securities transactions may be determined by the parties, subject to commission schedules being filed with the Korea Exchange by the securities companies. In addition, a securities transaction tax will generally be imposed on the transfer of shares or certain securities representing rights to subscribe for shares. A special agricultural and fishery tax of 0.15% of the sales prices will also be imposed on transfer of these shares and securities on the Korea Exchange. See Item 10.E.

**Taxation** Korean Taxes.

The number of companies listed on the KRX KOSPI Market of the Korea Exchange since 2012, the corresponding total market capitalization at the end of the periods indicated and the average daily trading volume for those periods are set forth in the following table:

<b>Year</b>	<b>Number of Listed Companies</b>	<b>Total Market Capitalization on the Last Day for Each Period</b>		<b>Average Daily Trading Volume, Value</b>		
		<b>(Millions of Won)</b>	<b>(Thousands of U.S. dollars)<sup>(1)</sup></b>	<b>(Thousands of Shares)</b>	<b>(Millions of Won)</b>	<b>(Thousands of U.S. dollars)<sup>(1)</sup></b>
2013	777	1,185,973,724	1,123,826,138	328,325	3,993,422	3,784,158
2014	773	1,192,252,867	1,084,655,082	278,082	3,983,580	3,624,072
2015	770	1,242,832,089	1,060,436,936	455,256	5,351,734	4,566,326
2016	779	1,308,440,373	1,082,697,868	376,772	4,523,043	3,742,692
2017	774	1,605,820,912	1,498,806,153	340,463	5,335,418	4,979,856
2018 (through April 16)	777	1,638,625,626	1,527,001,795	393,455	7,031,950	6,552,931

*Source:* The Korea Exchange

*Note:*

(1) Converted at the market average exchange rate as announced by Seoul Money Brokerage Services, Ltd. in Seoul at the end of the periods indicated.

The Korean securities markets are principally regulated by the Financial Services Commission and the Financial Investment Services and Capital Markets Act. The law imposes restrictions on insider trading and price manipulation, requires specified information to be made available by listed companies to investors and establishes rules regarding margin trading, proxy solicitation, takeover bids, acquisition of treasury shares and reporting requirements for shareholders holding substantial interests.

**Protection of Customer s Interest in Case of Insolvency of Financial Investment Companies with a Brokerage License**

Under Korean law, the relationship between a customer and a financial investment company with a brokerage license in connection with a securities sell or buy order is deemed to be consignment, and the



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securities acquired by a consignment agent (i.e., the financial investment company with a brokerage license) through such sell or buy order are regarded as belonging to the customer insofar as the customer and the consignment agent's creditors are concerned. Therefore, in the event of bankruptcy or reorganization procedures involving a financial investment company with a brokerage license, the customer of such financial investment company is entitled to the proceeds of the securities sold by such financial investment company.

When a customer places a sell order with a financial investment company with a brokerage license which is not a member of the Korea Exchange and this financial investment company places a sell order with another financial investment company with a brokerage license which is a member of the Korea Exchange, the customer is still entitled to the proceeds of the securities sold received by the non-member company from the member company regardless of the bankruptcy or reorganization of the non-member company.

Likewise, when a customer places a buy order with a non-member company and the non-member company places a buy order with a member company, the customer has the legal right to the securities received by the non-member company from the member company because the purchased securities are regarded as belonging to the customer insofar as the customer and the non-member company's creditors are concerned.

Under the Financial Investment Services and Capital Markets Act, the Korea Exchange is obliged to indemnify any loss or damage incurred by a counterparty as a result of a breach by its members. If a financial investment company with a brokerage license which is a member of the Korea Exchange breaches its obligation in connection with a buy order, the Korea Exchange is obliged to pay the purchase price on behalf of the breaching member.

As the cash deposited with a financial investment company with a brokerage license is regarded as belonging to such financial investment company, which is liable to return the same at the request of its customer, the customer cannot take back deposited cash from the financial investment company with a brokerage license if a bankruptcy or reorganization procedure is instituted against such financial investment company and, therefore, can suffer from loss or damage as a result. However, the Depositor Protection Act provides that Korean Deposit Insurance Corporation will, upon the request of the investors, pay investors up to Won 50 million per depositor per financial institution in case of the such financial investment company's bankruptcy, liquidation, cancellation of securities business license or other insolvency events (collectively, the Insolvency Events). Pursuant to the Financial Investment Services and Capital Markets Act, subject to certain exceptions, financial investment companies with a brokerage license are required to deposit the cash received from their customers with the Korea Securities Finance Corporation, a special entity established pursuant to the Financial Investment Services and Capital Markets Act. Set-off or attachment of cash deposits by financial investment companies with a brokerage license is prohibited. The premiums related to this insurance under the Depositor Protection Act are paid by financial investment companies with a brokerage license.

**Item 9.D. Selling Shareholders**

Not Applicable

**Item 9.E. Dilution**

Not Applicable

**Item 9.F. Expenses of the Issue**

Not Applicable

**ITEM 10. *ADDITIONAL INFORMATION***

**Item 10.A. Share Capital**

Not Applicable

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**Item 10.B. Memorandum and Articles of Incorporation**

Set forth below is information relating to our capital stock, including brief summaries of material provisions of our Articles of Incorporation, the KEPCO Act, the Financial Investment Services and Capital Markets Act, the Korean Commercial Code and certain related laws of Korea, all currently in effect. The following summaries are qualified in their entirety by reference to our Articles of Incorporation and the applicable provisions of the KEPCO Act, Financial Investment Services and Capital Markets Act, the Korean Commercial Code, the Act on the Management of Public Institutions and certain related laws of Korea. On November 11, 2016, we amended our Articles of Incorporation to strike references to executive directors (while keeping references to Standing Directors), as executive directors have not been appointed since 2003 and the system of executive directors was deemed obsolete.

**Objects and Purposes**

We are a statutory juridical corporation established under the KEPCO Act for the purpose of ensuring stabilization of the supply and demand of electric power, and further contributing toward the sound development of the national economy through expediting development of electric power resources and carrying out proper and effective operation of the electricity business. The KEPCO Act and our Articles of Incorporation contemplate that we engage in the following activities:

1. development of electric power resources;
2. generation, transmission, transformation and distribution of electricity and other related business activities;
3. research and development of technology related to the businesses mentioned in items 1 and 2;
4. overseas businesses related to the businesses mentioned in items 1 through 3;
5. investments or contributions related to the businesses mentioned in items 1 through 4;
6. businesses incidental to items 1 through 5;
7. Development and operation of certain real estate held by us to the extent that:
  - a. it is necessary to develop certain real estate held by us due to external factors, such as relocation, consolidation, conversion to indoor or underground facilities or deterioration of our substation or office; or
  - b.

it is necessary to develop certain real estate held by us to accommodate development of relevant real estate due to such real estate being incorporated into or being adjacent to an area under planned urban development; and

8. other activities entrusted by the Government.

Our registered name is Hankook Chollryuk Kongsae in Korean and Korea Electric Power Corporation in English. Our registration number in the commercial registry office is 114671-0001456.

### **Directors**

Under the KEPCO Act and our Articles of Incorporation, our board of directors consists of our president, standing directors and non-standing directors. A majority of the board members constitutes a voting quorum, and resolutions will be passed by a majority of the board members. Directors who have an interest in certain agenda proposed to the board may not vote on such issues.

The standards of remuneration for our officers, including directors, shall be determined by a resolution of the board of directors, provided that the maximum amount of remuneration to be paid to our officers shall be

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determined by shareholder resolution and provided that the remuneration standards for the president and standing directors shall be determined by board resolution in accordance with the guideline thereon established by the minister of the Ministry of Strategy and Finance through review and resolution of our management committee. Directors who have an interest may not participate in the meeting of the board of directors for determining the remuneration for officers.

Neither the KEPCO Act nor our Articles of Incorporation have provisions relating to (i) borrowing powers exercisable by the directors and how such borrowing powers can be varied, (ii) retirement or non-retirement of directors under an age limit requirement, or (iii) the number of shares required for a director's qualification.

## **Share Capital**

Currently, our authorized share capital is 1,200,000,000 shares, which consists of shares of common stock and shares of non-voting preferred stock, par value Won 5,000 per share. Under our Articles of Incorporation, we are authorized to issue up to 150,000,000 non-voting preferred shares. As of March 15, 2018, the last day on which our shareholders registry was closed for purposes of identifying shareholders of record, 641,964,077 common shares were issued and no non-voting preferred shares have been issued. All of the issued and outstanding common shares are fully-paid and non-assessable and are in registered form. Share certificates are issued in denominations of 1, 5, 10, 50, 100, 500, 1,000 and 10,000 shares.

## **Description of Capital Stock**

### ***Dividend Rights***

Under the KEPCO Act, we are authorized to pay preferential dividends on our shares held by public shareholders as opposed to those held by the Government. Dividends to public shareholders are distributed in proportion to the number of shares of the relevant class of capital stock owned by each public shareholder following approval by the shareholders at a general meeting of shareholders. Korea Development Bank may receive dividends in proportion to the numbers of our shares held by them. Under the Korean Commercial Code and our Articles of Incorporation, we will pay full annual dividends on newly issued shares.

Under our Articles of Incorporation, holders of non-voting preferred shares (of which there are currently none) are entitled to receive an amount not less than 8% of their par value as determined by a resolution of the board of directors at the time of their issuance. However, stock dividends shall be paid based on par value and may not exceed the amount equivalent to a half of the total amount of profit available for dividend payment.

We declare our dividend annually at the annual general meeting of shareholders which is held within three months after the end of the fiscal year. The annual dividend is paid to the shareholders on record as of the end of the fiscal year preceding the annual shareholders' meeting. Annual dividends may be distributed either in cash or in our shares. However, a dividend of shares must be distributed at par value, and dividends in shares may not exceed one-half of the annual dividend.

Under the Korean Commercial Code and our Articles of Incorporation, we do not have an obligation to pay any annual dividend unclaimed for five years from the payment date.

The KEPCO Act provides that we shall not pay an annual dividend unless we have made up any accumulated deficit and set aside as a legal reserve an amount equal to 20.0% or more of our net profit until our accumulated reserve reaches one-half of our stated capital.

*Distribution of Free Shares*

In addition to dividends in the form of shares to be paid out of retained or current earnings, the Korean Commercial Code permits us to distribute to our shareholders an amount transferred from our capital surplus or legal reserve to stated capital in the form of free shares.

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**Table of Contents*****Voting Rights***

Holders of our common shares are entitled to one vote for each common share, except that voting rights with respect to any common shares held by us or by a corporate shareholder, more than one-tenth of whose outstanding capital stock is directly or indirectly owned by us, may not be exercised. Any person (with certain exceptions) who holds more than 3% of our issued and outstanding shares cannot exercise voting rights with respect to the shares in excess of this 3% limit. See *Limitation on Shareholdings*. Pursuant to the Korean Commercial Code, cumulative voting is permissible in relation to the appointment of directors. Under the Korean Commercial Code, a cumulative vote can be requested by the shareholders of a corporation representing at least 1% of the total voting shares of such corporation if the relevant shareholders' meeting is intended to elect more than two seats of the board of directors and the request for cumulative voting is made to the management of the corporation in writing at least six weeks in advance of the shareholders' meeting. Under this new voting method, each shareholder will have multiple voting rights corresponding to the number of directors to be appointed in such voting and may exercise all such voting rights to elect one director. Shareholders are entitled to vote cumulatively unless the Articles of Incorporation expressly prohibit cumulative voting. Our current Articles of Incorporation do not prohibit cumulative voting. Except as otherwise provided by law or our Articles of Incorporation, a resolution can be adopted at a general meeting of shareholders by affirmative majority vote of the voting shares of the shareholders present or represented at a meeting, which must also represent at least one-fourth of the voting shares then issued and outstanding. The holders of our non-voting preferred shares (other than enfranchised preferred shares (as described below)) are not entitled to vote on any resolution or to receive notice of any general meeting of shareholders unless the agenda of the meeting includes consideration of a resolution on which such holders are entitled to vote. If we are unable to pay any dividend to holders of non-voting preferred shares as provided in our Articles of Incorporation, the holders of non-voting preferred shares will become enfranchised and will be entitled to exercise voting rights until such dividends are paid. The holders of these enfranchised preferred shares have the same rights as holders of our common shares to request, receive notice of, attend and vote at a general meeting of shareholders. Pursuant to the KEPCO Act and our Articles of Incorporation, the appointment of standing directors, the president and standing statutory auditor are subject to shareholder approval.

Under the Korean Commercial Code, for the purpose of electing our statutory auditor, a shareholder (together with certain related persons) holding more than 3% of the total shares having voting rights may not exercise voting rights with respect to shares in excess of such 3% limit.

The Korean Commercial Code provides that the approval by holders of at least two-thirds of those shares having voting rights present or represented at a meeting, where such shares also represent at least one-third of the total issued and outstanding shares having voting rights, is required in order to, among other things:

amend our Articles of Incorporation;

remove a director or statutory auditor;

effect any dissolution, merger, consolidation or spin-off of us;

transfer the whole or any significant part of our business;

effect the acquisition by us of all of the business of any other company;

effect the acquisition by us of the business of another company that may have a material effect on our business;

reduce capital; or

issue any new shares at a price lower than their par value.

Under our Articles of Incorporation, an approval by the Ministry of Trade, Industry and Energy is required in order to amend the Articles of Incorporation. Any change to our authorized share capital requires an amendment to our Articles of Incorporation.



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In addition, in the case of amendments to our Articles of Incorporation or any merger or consolidation of us or in certain other cases which affect the rights or interests of the non-voting preferred shares a resolution must be adopted by a meeting of the holders of non-voting preferred shares approving such event. This resolution may be adopted if approval is obtained from holders of at least two-thirds of those non-voting preferred shares present or represented at such meeting and such non-voting preferred shares also represent at least one-third of our total issued and outstanding non-voting preferred shares.

A shareholder may exercise his voting rights by proxy. The proxy shall present the power of attorney prior to the start of the general meeting of shareholders. Under the Financial Investment Services and Capital Markets Act and our Articles of Incorporation, no one other than us may solicit a proxy from shareholders.

Subject to the provisions of the deposit agreement, holders of our American Depositary Shares ( ADSs ) are entitled to instruct the depositary, whose agent is the record holder of the underlying common shares, how to exercise voting rights relating to those underlying common shares.

### ***Preemptive Rights and Issuance of Additional Shares***

Authorized but unissued shares may be issued at such times and, unless otherwise provided in the Korean Commercial Code, upon such terms as our board of directors may determine. The new shares must be offered on uniform terms to all our shareholders who have preemptive rights and who are listed on the shareholders register as of the record date. Subject to the limitations described under Limitation on Shareholdings below and with certain other exceptions, all our shareholders are entitled to subscribe for any newly issued shares in proportion to their existing shareholdings. Under the Korean Commercial Code, we may vary, without shareholder approval, the terms of such preemptive rights for different classes of shares. Public notice of the preemptive rights to new shares and their transferability must be given not less than two weeks (excluding the period during which the shareholders register is closed) prior to the record date. Our board of directors may determine how to distribute shares for which preemptive rights have not been exercised or where fractions of shares occur.

Our Articles of Incorporation provide that new shares that are (1) publicly offered pursuant to the Financial Investment Services and Capital Markets Act, (2) issued to members of our employee stock ownership association, (3) represented by depositary receipts, (4) issued through offering to public investors, or (5) issued to investors in kind under the State Property Act may be issued pursuant to a resolution of the board of directors to persons other than existing shareholders, who in such circumstances will not have preemptive rights.

Under our Articles of Incorporation, we may issue convertible bonds or bonds with warrants each up to an aggregate principal amount of Won 2,000 billion and Won 1,000 billion, respectively, to persons other than existing shareholders. However, the aggregate principal amount of convertible bonds and bonds with warrants so issued to persons other than existing shareholders may not exceed Won 2,000 billion.

Under the Financial Investment Services and Capital Markets Act and our Articles of Incorporation, members of our employee stock ownership association, whether or not they are our shareholders, have a preemptive right, subject to certain exceptions, to subscribe for up to 20.0% of any shares publicly offered pursuant to the Financial Investment Services and Capital Markets Act. This right is exercisable only to the extent that the total number of shares so acquired and held by members of our employee stock ownership association does not exceed 20.0% of the total number of shares then outstanding.

### ***Liquidation Rights***

In the event of our liquidation, the assets remaining after payment of all debts, liquidation expenses and taxes will be distributed among shareholders in proportion to the number of shares held. Holders of our non-voting preferred shares have no preference in liquidation.

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### ***Rights of Dissenting Shareholders***

In certain limited circumstances (including, without limitation, the transfer of the whole or any significant part of our business or the merger, or consolidation upon a split-off of us with another company), dissenting holders of shares have the right to require us to purchase their shares. To exercise such right, shareholders must submit a written notice of their intention to dissent to us prior to the general meeting of shareholders or the class meeting of holders of non-voting preferred shares, as the case may be. Within 20 days after the date on which the relevant resolution is passed at such meeting, such dissenting shareholders must request us in writing to purchase their shares. We are obligated to purchase the shares of dissenting shareholders within one month after the expiration of such 20-day period. The purchase price for such shares must be determined through negotiation between the dissenting shareholders and us. Under the Financial Investment Services and Capital Markets Act, if we cannot agree on a price through negotiation, the purchase price will be the average of (1) the weighted average of the daily share price on the Korea Exchange for a two-month period before the date of adoption of the relevant board resolution, (2) the weighted average of the daily share price on the Korea Exchange for the one month period before such date and (3) the weighted average of the daily share price on the Korea Exchange for the one week period before such date. However, if we or dissenting shareholders who requested us to purchase their shares oppose such purchase price, the determination of a purchase price may be filed with a court. Holders of ADSs will not be able to exercise dissenters' rights unless they have withdrawn the underlying Common Stock and become our direct shareholders.

### **Transfer of Shares**

Under the Korean Commercial Code, the transfer of shares is effected by delivery of share certificates, but in order to assert shareholders' rights against us, the transferee must have his name and address registered on our register of shareholders. For this purpose, shareholders are required to file one's name, address and seal with our transfer agent. Under our Articles of Incorporation, non-resident shareholders must appoint an agent authorized to receive notices on their behalf in Korea and file a mailing address in Korea. These requirements do not apply to the holders of ADSs. Under current Korean regulations, the Korea Securities Depository, foreign exchange banks (including domestic branches of foreign banks), financial investment companies with a dealing, brokerage or collective investment license and internationally recognized foreign custodians are authorized to act as agents and provide related services for foreign shareholders. Our transfer agent is Kookmin Bank, located at 9-1, Namdaemun-ro, 2-ga, Chung-ku, Seoul, Korea. Certain foreign exchange controls and securities regulations apply to the transfer of our shares by non-residents of Korea or non-Koreans. See Item 9. The Offer and Listing.

### **Acquisition of Our Own Shares**

Under the Korean Commercial Code, we may acquire our own shares through (1) purchases on a stock exchange or (2) purchase of the shares in proportion to the number of shares held by each shareholder on equal terms and conditions, by a resolution at a Shareholders' meeting. The aggregate amount of the acquisition price shall not exceed the excess of our net assets, on a non-consolidated basis, over the sum of (1) our stated capital, (2) the total amount of our capital surplus reserve and earned surplus reserve which have accumulated up to the end of the previous fiscal year, (3) our earned surplus required to be accumulated for the then current fiscal year and (4) our net assets stated in the balance sheet as being increased as a result of the evaluation of the assets and liabilities in accordance with our accounting principles without being set off against any unrealized losses. In addition, under the Korean Commercial Code, we may not acquire our own shares if our net assets may fall short of the aggregate amount of the item (1) to (4) above, on a non-consolidated basis, as of the conclusion of the relevant business year of us. In general, our subsidiaries 50% or more of whose shares are owned by us may not acquire our shares.

### **General Meeting of Shareholders**

The ordinary general meeting of our shareholders is held within three months after the end of each fiscal year, and subject to board resolution or court approval, an extraordinary general meeting of our shareholders may

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be held as necessary or at the request of shareholders holding an aggregate of 1.5% or more of our outstanding common shares for at least six consecutive months. Under the Korean Commercial Code, an extraordinary general meeting of shareholders may be convened at the request of our audit committee, subject to a board resolution or court approval. Holders of non-voting preferred shares may only request a general meeting of shareholders once the non-voting preferred shares have become enfranchised as described under Description of Capital Stock Voting Rights above. Written notices setting forth the date, place and agenda of the meeting must be given to shareholders at least two weeks prior to the date of the general meeting of shareholders. However, pursuant to the Korean Commercial Code and our Articles of Incorporation, with respect to holders of less than 1% of the total number of our issued and outstanding shares which are entitled to vote, notice may be given by placing at least two public notices at least two weeks in advance of the meeting in at least two daily newspapers published in Seoul or by placing a public notice in the electrical disclosure system of the Financial Supervisory Service or the Korea Exchange, at least two weeks in advance of the meeting. Currently, for giving such notice, we use an electronic disclosure system available for access at a website maintained by the Financial Supervisory Service (known as the Data Analysis, Retrieval and Transfer System, or DART). Shareholders not on the shareholders register as of the record date are not entitled to receive notice of the general meeting of shareholders or attend or vote at such meeting. Holders of the enfranchised preferred shares on the shareholders register as of the record date are entitled to receive notice of, and to attend and vote at, the general meetings. Otherwise, holders of non-voting preferred shares are not entitled to receive notice of general meetings of shareholders or vote at such meetings but may attend such meetings.

The general meeting of shareholders is held in Naju, Jeollanam-do.

## **Register of Shareholders and Record Dates**

Our transfer agent, Kookmin Bank, maintains the register of our shareholders at its office in Seoul, Korea. It registers transfers of our shares on the register of shareholders upon presentation of the share certificates.

The record date for annual dividends is December 31. For the purpose of determining the holders of shares entitled to annual dividends, the register of shareholders may be closed from January 1 to January 31 of each year. Further, the Korean Commercial Code and our Articles of Incorporation permit us at least two weeks public notice to set a record date and/or close the register of shareholders for not more than three months for the purpose of determining the shareholders entitled to certain rights pertaining to our shares. The trading of our shares and the delivery of certificates in respect of them may continue while the register of shareholders is closed.

## **Annual Report**

At least one week prior to the annual general meeting of shareholders, our annual report and audited consolidated financial statements must be made available for inspection at our principal office and at all branch offices. Copies of annual reports, the audited non-consolidated financial statements and any resolutions adopted at the general meeting of shareholders will be available to our shareholders.

Under the Financial Investment Services and Capital Markets Act, we must file with the Financial Services Commission and the Korea Exchange an annual report within 90 days after the end of our fiscal year, a half-year report within 45 days after the end of the first six months of our fiscal year and quarterly reports within 45 days after the end of the first three months and nine months of our fiscal year. Following our adoption of IFRS starting in January 1, 2011 pursuant to regulatory requirements for listed companies in Korea, we are required to file half-year and quarterly reports containing interim financial statements and notes thereto on a consolidated basis as well as on a separate basis.

**Limitation on Shareholdings**

No person other than the Government, our employee stock ownership association and persons who obtain an approval from the Financial Services Commission may hold for its account more than 3% of our total issued and

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outstanding shares. In calculating shareholdings for this purpose, shares held by your spouse and your certain relatives or by your certain affiliates (such spouses, relatives and affiliates are together referred to as **Affiliated Holders** ) are deemed to be held by you. If you hold our shares in violation of this 3% limit, you are not entitled to exercise the voting rights or preemptive rights of our shares in excess of such 3% limit and the Financial Services Commission may order you to take necessary corrective action. In addition, the KEPCO Act currently requires that the Government, directly or through Korea Development Bank, own not less than 51% of our capital. For other restrictions on shareholdings, see Item 9. **The Offer and Listing.**

## **Change of Control**

The KEPCO Act requires that the Government, directly or pursuant to the Korea Development Bank Act, through Korea Development Bank, own not less than 51% of our capital.

## **Disclosure of Share Ownership**

Under the Financial Investment Services and Capital Markets Act, any person whose direct or beneficial ownership of a listed company's shares with voting rights, equity-related debt securities including convertible bonds, bonds with warrants, exchangeable bonds, certificates representing the rights to subscribe for common shares, derivatives-linked securities and depository receipts of the aforementioned securities (collectively referred to as **Equity Securities** ), together with the Equity Securities directly or beneficially owned by certain related persons or by any person acting in concert with the person, accounts for 5% or more of our total outstanding Equity Securities is required to report the status and purpose (in terms of whether the purpose of shareholding is to participate in the management of the issuer) of the holdings and the material contents of the agreements relating to the Equity Securities and other matters prescribed by the Presidential Decree under the Financial Investment Services and Capital Markets Act to the Financial Services Commission of Korea and the Korea Exchange within five business days after reaching the 5% ownership interest threshold.

In addition, any change (i) in the purpose of the shareholding or in the ownership, (ii) the major terms and conditions of agreements relating to Equity Securities owned (such as trust agreements and collateral agreements) to the extent the number of relevant Equity Securities is 1% or more of the total outstanding Equity Securities, or (iii) the type of ownership (direct ownership or holding) to the extent the number of relevant Equity Securities is 1% or more of the total outstanding Equity Securities, must be reported to the Financial Services Commission of Korea and the Korea Exchange within five business days from the date of such change (or by the tenth day of the month following the month in which the change occurs, in the case of a person with no intent to seek management control). Notwithstanding the foregoing, certain professional investors designated by the Financial Services Commission may report such matters to the Financial Services Commission and the Korea Exchange by the tenth day of the month immediately following the end of the quarter in which such 5.0% ownership interest is reached or the change occurs.

When filing a report to the Financial Services Commission and the Korea Exchange in accordance with the reporting requirements described above, a copy of such report must be sent to the relevant listed company. Violation of these reporting requirements may subject a person to sanctions such as prohibition on the exercise of voting rights with respect to the Equity Securities for which the reporting requirement was violated or fines or imprisonment. Furthermore, the Financial Services Commission may order the disposal of the Equity Securities for which the reporting requirement was violated or may impose administrative fine.

A person reporting to the Financial Services Commission and the Korea Exchange that his purpose of holding the Equity Securities is to participate in the management of the listed company is prohibited from acquiring additional Equity Securities of the listed company and exercising voting rights during the period commencing from the date on

which the event triggering the reporting requirements occurs to the fifth day from the date on which the report is made.



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### **Item 10.C. Material Contracts**

None.

### **Item 10.D. Exchange Controls**

#### **General**

The Foreign Exchange Transaction Act and the Presidential Decree and regulations under that Act and Decree, or collectively the Foreign Exchange Transaction Laws, regulate investment in Korean securities by non-residents and issuance of securities outside Korea by Korean companies. Non-residents may invest in Korean securities pursuant to the Foreign Exchange Transaction Laws. The Financial Services Commission has also adopted, pursuant to its authority under the Financial Investment Services and Capital Markets Act, regulations that regulate investment by foreigners in Korean securities and issuance of securities outside Korea by Korean companies.

Subject to certain limitations, the Ministry of Strategy and Finance has the authority to take the following actions under the Foreign Exchange Transaction Laws: (i) if the Government deems it necessary on account of war, armed conflict, natural disaster or grave, sudden and significant changes in domestic or foreign economic circumstances or similar events or circumstances, the Ministry of Strategy and Finance may temporarily suspend performance under any or all foreign exchange transactions, in whole or in part, to which the Foreign Exchange Transaction Laws apply (including suspension of payment and receipt of foreign exchange) or impose an obligation to deposit, safe-keep or sell any instruments of payment to the Bank of Korea or certain other governmental agencies or financial institutions, or effective from July 18, 2017, impose an obligation on resident creditors to collect and recover debts owed by non-resident debtors, and (ii) if the Government concludes that the international balance of payments and international financial markets are experiencing or are likely to experience significant disruption or that the movement of capital between Korea and other countries are likely to adversely affect the Korean Won, exchange rates or other macroeconomic policies, the Ministry of Strategy and Finance may take action to require any person who intends to effect or effects a capital transaction to deposit all or a portion of the instruments of payment acquired in such transactions with the Bank of Korea or certain other governmental agencies or financial institutions.

#### **Government Review of Issuances of Debt Securities and ADSs and Report for Payments**

In order for us to issue debt securities of any series outside of the Republic, we are required to file a report with our designated foreign exchange bank or the Ministry of Strategy and Finance on the issuance of such debt securities, depending on the issuance amount. The Ministry of Strategy and Finance may at its discretion direct us to take measures as necessary to avoid undue exchange rate fluctuations before it accepts such report. Furthermore, in order for us to make payments of principal of or interest on the debt securities of any series and other amounts as provided in an indenture and such debt securities, we are required to present relevant documents to the designated foreign exchange bank at the time of each actual payment. The purpose of such presentation is to ensure that the actual remittance is consistent with the terms of the transaction reported to our designated foreign exchange bank or the Ministry of Strategy and Finance.

In order for us to offer for purchase shares of our common stock held in treasury in the form of ADSs or issue shares of our common stock represented by the ADSs, we are required to file a prior report of such offer or issuance with our designated foreign exchange bank or the Ministry of Strategy and Finance, depending on the offering amount. The Ministry of Strategy and Finance may at its discretion direct us to take measures as necessary to avoid undue exchange rate fluctuations before it accepts such report. No further Governmental approval is necessary for the initial offering and issuance of the ADSs.

In order for a depositary to acquire any existing shares of our common stock from holders of these shares of common stock (other than from us) for the purpose of issuance of depositary receipts representing these shares of

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common stock, the depositary would be required to obtain our consent for the number of shares to be deposited in any given proposed deposit which exceeds the difference between (1) the aggregate number of shares deposited by us or with our consent for the issuance of ADSs (including deposits in connection with the initial and all subsequent offerings of ADSs and stock dividends or other distributions related to these ADSs) and (2) the number of shares on deposit with the depositary at the time of such proposed deposit. We may not grant this consent for the deposit of shares of our common stock in the future, if our consent is required. Therefore, a holder of ADSs who surrenders ADSs and withdraws shares of our common stock may not be permitted subsequently to deposit such shares and obtain ADSs.

In addition, we are also required to notify the Ministry of Strategy and Finance upon receipt of the full proceeds from the offering of ADSs. No additional Governmental approval is necessary for the offering and issuance of ADSs.

## **Reporting Requirements for Holders of Substantial Interests**

Under the Financial Investment Services and Capital Markets Act, any person whose direct beneficial ownership of a listed company's Equity Securities, together with the Equity Securities beneficially owned by certain related persons or by any person acting in concert with such person, accounts for 5% or more of our total outstanding Equity Securities is required to report the status and purpose (namely, whether the purposes of the share ownership is to participate in the management of the issuer) of the holdings and the material contents of the agreements relating to the Equity Securities and other matters prescribed by the Presidential Decree under the Financial Investment Services and Capital Markets Act to the Financial Services Commission and the Korea Exchange within five business days after reaching the 5% ownership interest and any change in ownership interest subsequent to the report which equals or exceeds 1.0% of the total outstanding Equity Securities is required to be reported to the Financial Services Commission and the Korea Exchange within five business days from the date of the change.

In addition, any change (i) in the purpose of the shareholding or in the ownership, (ii) the major terms and conditions of agreements relating to Equity Securities owned (such as trust agreements and collateral agreements) to the extent the number of relevant Equity Securities is 1% or more of the total outstanding Equity Securities, or (iii) the type of ownership (direct ownership or holding) to the extent the number of relevant Equity Securities is 1% or more of the total outstanding Equity Securities, must be reported to the Financial Services Commission of Korea and the Korea Exchange within five business days from the date of such change (or by the tenth day of the month following the month in which the change occurs, in the case of a person with no intent to seek management control).

Notwithstanding the foregoing, certain professional investors designated by the Financial Services Commission may report such matters to the Financial Services Commission and the Korea Exchange by the tenth day of the month immediately following the end of the quarter in which such 5.0% ownership interest is reached or the change occurs.

When filing a report to the Financial Services Commission and the Korea Exchange in accordance with the reporting requirements described above, a copy of such report must be sent to the relevant listed company. Violation of these reporting requirements may subject a person to sanctions such as prohibition on the exercise of voting rights with respect to the Equity Securities for which the reporting requirement was violated or fines or imprisonment. Furthermore, the Financial Services Commission may order the disposal of the Equity Securities for which the reporting requirement was violated or may impose administrative fine.

A person reporting to the Financial Services Commission and the Korea Exchange that his purpose of holding the Equity Securities is to participate in the management of the listed company is prohibited from acquiring additional Equity Securities of the listed company and exercising voting rights during the period commencing from the date on which the event triggering the reporting requirements occurs to the fifth day from the date on which the report is made.



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In addition to the reporting requirements described above, any person whose direct or beneficial ownership of our voting stock and/or depository receipts for our voting stock accounts for 10.0% or more of the total issued and outstanding voting stock, whom we refer to as a major shareholder, must file a report to the Securities and Futures Commission and to the Korea Exchange within five business days after the date on which the person reached such shareholding limit. In addition, such person must file a report to the Securities and Futures Commission and to the Korea Exchange regarding any subsequent change in his/her shareholding. Such report on subsequent change in shareholding must be filed within five business days of the occurrence of any such change. Violation of these reporting requirements may subject a person to criminal sanctions such as fines and imprisonment.

## **Restrictions Applicable to ADSs**

No Governmental approval is necessary for the sale and purchase of ADSs in the secondary market outside Korea or for the withdrawal of shares of our common stock underlying ADSs and the delivery inside Korea of the withdrawn shares. However, a foreigner who intends to acquire shares must obtain an Investment Registration Card from the Financial Supervisory Service as described below. The acquisition of shares by a foreigner must be reported by the foreigner or his standing proxy in Korea immediately to the Governor of the Financial Supervisory Service.

## **Special Reporting Requirement for Companies Whose Securities Are Listed on Foreign Exchanges**

Under the regulations of the Financial Services Commission and the Korea Exchange, (i) if a company listed on the Korea Exchange has submitted a public disclosure of material matters to a foreign financial investment supervisory authority pursuant to the laws of the foreign jurisdiction, then it must submit a copy of the public disclosure and a Korean translation thereof to the Financial Services Commission of Korea and the Korea Exchange, and (ii) if a company listed on the Korea Exchange is approved for listing on a foreign stock market or determined to be de-listed from the foreign stock market or actually listed on, or de-listed from, a foreign stock market, then it must submit a copy of any document, which it submitted to or received from the relevant foreign government, foreign financial investment supervisory authority or the foreign stock market, and a Korean translation thereof to the Financial Services Commission of Korea and the Korea Exchange.

Persons who have acquired shares of our common stock as a result of the withdrawal of shares of common stock underlying ADSs may exercise their preemptive rights for new shares, participate in free distributions and receive dividends on shares of our common stock without any further governmental approval.

## **Restrictions Applicable to Common Stock**

Under the Foreign Exchange Transaction Laws and the Regulations on Financial Investment Business (together, the Investment Rules ), foreigners are permitted to invest, subject to certain exceptions and procedural requirements, in all shares of Korean companies unless prohibited by specific laws. Foreign investors may trade shares listed on the Korea Exchange only through the Korea Exchange except for certain limited circumstances. These circumstances include, among others, (1) odd-lot trading of shares, (2) acquisition of shares by a foreign company as a result of a merger, (3) acquisition or disposal of shares in connection with a tender offer, (4) acquisition of shares by exercise of warrant, conversion right under convertible bonds, exchange right under exchangeable bonds or withdrawal right under depository receipts issued outside of Korea by a Korean company, such shares being Converted Shares, (5) acquisition of shares through exercise of rights under securities issued outside of Korea, (6) acquisition of shares as a result of inheritance, donation, bequest or exercise of shareholders' rights (including preemptive rights or rights to participate in free distributions and receive dividends), (7) over-the-counter transactions between foreigners of a class of shares for which a ceiling on aggregate acquisition by foreigners (as explained below) exists and has been reached or exceeded, (8) acquisition of shares by direct investment under the Foreign Investment Promotion Law, (9) acquisition and

disposal of shares on an overseas stock exchange market, if such shares are simultaneously listed on the KRX

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KOSPI Market or the KRX KOSDAQ Market of the Korea Exchange and such overseas stock exchange, and (10) arm's length transactions between foreigners in the event all such foreigners belong to an investment group managed by the same person. For over-the-counter transactions of shares listed on the Korea Exchange outside the Korea Exchange between foreigners of a class of shares for which a ceiling on aggregate acquisition by foreigners exists and has been reached or exceeded, a financial investment company with a brokerage license in Korea must act as an intermediary. Odd-lot trading of shares listed on the Korea Exchange outside the Korea Exchange must involve a financial investment company with a dealing license in Korea as the other party. Foreign investors are prohibited from engaging in margin transactions with respect to shares subject to a ceiling on acquisition by foreigners.

The Investment Rules require a foreign investor who wishes to invest in or dispose of shares on the Korea Exchange (including Converted Shares) to register his/her identity with the Financial Supervisory Service prior to making any such investment or disposal unless he/she had previously registered. However, such registration requirement does not apply to foreign investors who acquire Converted Shares with the intention of selling them within three months from the date they were acquired. Upon registration, the Financial Supervisory Service will issue to the foreign investor an Investment Registration Card which must be presented each time the foreign investor opens a brokerage account with a financial investment company or financial institution in Korea. Foreigners eligible to obtain an Investment Registration Card include any foreign nationals who are individuals (with residence abroad for six months or more), foreign governments, foreign municipal authorities, foreign public institutions, international financial institutions or similar international organizations, corporations incorporated under foreign laws and any person in any additional category designated by the Decree of the Financial Services and Capital Markets Act. All Korean branches of a foreign corporation as a group are treated as a separate foreigner from the head office of the foreign corporation. However, a foreign branch of a Korean securities company, a foreign corporation or a depository issuing depository receipts may obtain one or more Investment Registration Cards in its name in certain circumstances as described in the relevant regulations.

Upon a foreign investor's purchase of shares through the Korea Exchange, no separate report by the investor is required because the Investment Registration Card system is designed to control and oversee foreign investment through a computer system. However, a foreign investor's acquisition or sale of shares outside the Korea Exchange (as discussed above) must be reported by the foreign investor or his standing proxy to the Governor of the Financial Supervisory Service at the time of each acquisition or sale. However, a foreign investor must ensure that any acquisition or sale by it of shares outside the Korea Exchange in the case of trades in connection with a tender offer, odd-lot trading of shares or trades of a class of shares for which the aggregate foreign ownership limit has been reached or exceeded, is reported to the Governor of the Financial Supervisory Service by the Korea Securities Depository, financial investment companies with a dealing or brokerage license or securities finance companies engaged to facilitate such transactions. In the event a foreign investor desires to acquire or sell shares outside the Korea Exchange and the circumstances in connection with such sale or acquisition do not fall within the exceptions made for certain limited circumstances described above, then the foreign investor must obtain the prior approval of the Governor. In addition, in the event a foreign investor acquires or sells shares outside the Korea Exchange, a prior report to the Governor of the Financial Supervisory Service may also be required in certain circumstances. A foreign investor may appoint one or more standing proxies from among the Korea Securities Depository, foreign exchange banks (including domestic branches of foreign banks), financial investment companies with a dealing, brokerage or collective investment license and certain eligible foreign custodians which will exercise shareholders' rights or perform any matters related to the foregoing activities if the foreign investor does not perform these activities himself. However, a foreign investor may be exempted from complying with these standing proxy rules with the approval of the Governor of the Financial Supervisory Service in cases deemed inevitable by reason of conflict between the laws of Korea and those of the home country of the foreign investor.

Certificates evidencing shares of Korean companies must be kept in custody with an eligible custodian in Korea, the Korea Securities Depository, foreign exchange banks (including domestic branches of foreign banks), financial investment companies with a dealing, brokerage or collective investment license and certain eligible



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foreign custodians are eligible to be a custodian of shares for a non-resident or foreign investor. A foreign investor must ensure that his custodian deposits his shares with the Korea Securities Depository. Generally, a foreign investor may not permit any person, other than his/her standing proxy, to exercise rights relating to his shares or perform any tasks related thereto on his behalf. However, a foreign investor may be exempted from complying with this deposit requirement with the approval of the Governor of the Financial Supervisory Service in circumstances where compliance is made impracticable, including cases where such compliance would contravene the laws of the home country of the foreign investor.

Under the Investment Rules, with certain exceptions, a foreign investor may acquire shares of a Korean company without being subject to any single or aggregate foreign investment ceiling. However, certain designated public corporations are subject to a 40.0% ceiling on acquisitions of shares by foreigners in the aggregate and a ceiling on acquisitions of shares by a single foreign investor provided in the Articles of Incorporation of such corporations. Of the Korean companies listed on the Korea Exchange, we are so designated. The Financial Services Commission may impose other restrictions as it deems necessary for the protection of investors and the stabilization of the Korean securities and derivatives market. Generally, the ownership of Converted Shares constitutes foreign ownership for purposes of such aggregate foreign ownership limit. However, the acquisition of Converted Shares is one of the exceptions under which foreign investors may acquire shares of designated corporations in excess of the 40.0% ceiling.

In addition to the aggregate foreign investment ceiling set by the Financial Services Commission under authority of the Financial Investment Services and Capital Markets Act, our Articles of Incorporation set a 3% ceiling on acquisition by a single investor (whether domestic or foreign) of the shares of our common stock. Any person (with certain exceptions) who holds more than 3% of our issued and outstanding shares cannot exercise voting rights with respect to our shares in excess of this 3% limit.

The ceiling on aggregate investment by foreigners applicable to us may be exceeded in certain limited circumstances, including as a result of acquisition of:

shares by a depository issuing depository receipts representing such shares (whether newly issued shares or outstanding shares);

Converted Shares;

shares from the exercise of shareholders' rights; or

shares by gift, inheritance or bequest.

A foreigner who has acquired shares in excess of any ceiling described above may not exercise his voting rights with respect to the shares exceeding such limit and the Financial Services Commission may take necessary corrective action against him.

Under the Foreign Exchange Transaction Laws, a foreign investor who intends to acquire shares must designate a foreign exchange bank at which he must open a foreign currency account and a Won account exclusively for stock investments. No approval is required for remittance into Korea and deposit of foreign currency funds in the foreign

currency account. Foreign currency funds may be transferred from the foreign currency account at the time required to place a deposit for, or settle the purchase price of, a stock purchase transaction to a Won account opened at a securities company. Funds in the foreign currency account may be remitted abroad without any governmental approval.

Dividends on shares of our common stock are paid in Won. No governmental approval is required for foreign investors to receive dividends on, or the Won proceeds of the sale of, any shares to be paid, received and retained in Korea. Dividends paid on, and the Won proceeds of the sale of, any shares held by a non-resident of Korea must be deposited either in a Won account with the investor's securities company or the investor's Won account. Funds in the investor's Won account may be transferred to his foreign currency account or withdrawn

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for local living expenses, provided that any withdrawal of local living expenses in excess of a certain amount should be reported to the Governor of the Financial Supervisory Service. Funds in the investor's Won account may also be used for future investment in shares or for payment of the subscription price of new shares obtained through the exercise of preemptive rights.

Financial investment companies with a securities dealing, brokerage or collective investment license are allowed to open foreign currency accounts with foreign exchange banks exclusively for accommodating foreign investors' stock investments in Korea. Through these accounts, these securities companies and asset management companies may enter into foreign exchange transactions on a limited basis, such as conversion of foreign currency funds and Won funds, either as a counterparty to or on behalf of foreign investors without the foreign investors having to open their own accounts with foreign exchange banks.

## **Item 10.E. Taxation**

### **Korean Taxes**

The following summary describes the material Korean tax consequences of ownership of the Registered Debt Securities and ADSs. Persons considering the purchase of the Registered Debt Securities or ADSs should consult their own tax advisors with regard to the application of the Korean income tax laws to their particular situations as well as any tax consequences arising under the laws of any other taxing jurisdiction. Reference is also made to a tax treaty between the Republic and the United States entitled "Convention Between the United States of America and the Republic of Korea for the Avoidance of Double Taxation and the Prevention of Fiscal Evasion with Respect to Taxes on Income and the Encouragement of International Trade and Investment," signed on June 4, 1976 and entered into force on October 20, 1979.

The following summary of Korean tax considerations applies to you so long as you are not:

a resident of Korea;

a corporation having its head office, principal place of business or place of effective management in Korea;  
or

engaged in a trade or business in Korea through a permanent establishment or a fixed base to which the relevant income is attributable or with which the relevant income is effectively connected.

### ***Registered Debt Securities***

#### ***Taxation of Interest***

Pursuant to the Special Tax Treatment Control Law ( STTCL ), when we make payments of interest to you on the Registered Debt Securities, no amount will be withheld from such payments for, or on account of, any income taxes of any kind imposed, levied, withheld or assessed by Korea or any political subdivision or taxing authority thereof or therein, provided that Registered Debt Securities are deemed to be foreign currency-denominated bonds issued outside of Korea for the purpose of the STTCL.

If the tax exemption under the STTCL referred to above were to cease to be in effect, the rate of income tax or corporation tax applicable to the interest on the Registered Debt Securities would be 14% of income for a non-resident without a permanent establishment in Korea. In addition, local income tax would be imposed at the rate of 10.0% of the income tax or corporation tax (which would increase the total tax rate to 15.4%), unless reduction is available under an applicable income tax treaty. If you are a qualified resident in a country that has entered into a tax treaty with Korea, you may qualify for an exemption or a reduced rate of Korean withholding tax. See the discussion under [Shares or ADSs Tax Treaties](#) below for an additional explanation on treaty benefits.

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In order to obtain the benefits of an exemption or a reduced withholding tax rate under a tax treaty, you must submit to us, prior to the interest payment date, such evidence of tax residence as may be required by the Korean tax authorities in order to establish your entitlement to the benefits of the applicable tax treaty.

Furthermore, Korean tax laws require the beneficial owner to submit an application for entitlement to a preferential tax rate together with evidence of tax residence (including a certificate of tax residence of the beneficial owner issued by a competent authority of the country of tax residence of the beneficial owner) to a withholding obligor paying Korean source income in order to benefit from the available reduced tax rate pursuant to the relevant tax treaty. Under Korean tax laws and subject to certain exceptions, an overseas investment vehicle (which is defined as an organization established in a foreign jurisdiction that manages funds collected through investment solicitation by acquiring, disposing or otherwise investing in proprietary targets and then distributes the proceeds thereof to investors) (the Overseas Investment Vehicle ) must obtain an application for a preferential tax rate from the beneficial owner and forward it to the withholding obligor along with an overseas investment vehicle report (prepared by the Overseas Investment Vehicle) which includes a detailed statement on the beneficial owner.

*Taxation of Capital Gains*

Korean tax laws currently exclude from Korean taxation gains made by a non-resident without a permanent establishment in Korea from the sale of a Registered Debt Security to another non-resident (except where a non-resident sells Registered Debt Securities to another non-resident who has a permanent establishment in Korea, if any). In addition, capital gains realized from the transfer of Registered Debt Securities outside Korea by non-residents with or without permanent establishments in Korea are currently exempt from taxation by virtue of the STTCL, provided that the issuance of such Registered Debt Securities is deemed to be an overseas issuance of foreign currency-denominated bonds under the STTCL. If you sell or otherwise dispose of a Registered Debt Security through other ways than those mentioned above, any gain realized on the transaction will be taxable at ordinary Korean withholding tax rates (which is the lesser of 22.0% (including local income tax) of the net gain or 11.0% (including local income tax) of the gross sale proceeds, subject to the production of satisfactory evidence of the acquisition cost of such Registered Debt Securities and certain direct transaction costs attributable to the disposal of such Registered Debt Securities), unless an exemption is available under an applicable income tax treaty. See the discussion under Shares or ADSs Tax Treaties below for an additional explanation on treaty benefits.

*Inheritance Tax and Gift Tax*

If you die while you are the holder of Registered Debt Securities, the subsequent transfer of the Registered Debt Securities by way of succession will be subject to Korean inheritance tax. Similarly, if you transfer Registered Debt Securities as a gift, the donee will be subject to Korean gift tax and you may be required to pay the gift tax if the donee fails to do so.

At present, Korea has not entered into any tax treaty relating to inheritance or gift taxes.

*Shares or ADSs**Dividends on the Shares of Common Stock or ADSs*

We will deduct Korean withholding tax from dividends (whether in cash or in shares) paid to you at a rate of 22% (inclusive of local income tax). If you are a qualified resident in a country that has entered into a tax treaty with Korea, you may qualify for a reduced rate of Korean withholding tax. See the discussion under Tax Treaties below for an additional explanation on treaty benefits.

In order to obtain the benefits of a reduced withholding tax rate under a tax treaty, you must submit to the Korea Securities Depository, prior to the dividend payment date, such evidence of tax residence as may be

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required by the Korean tax authorities in order to establish your entitlement to the benefits of the applicable tax treaty. Evidence of tax residence may be submitted to the Korea Securities Depository through the withholding tax agent. If we distribute to you free shares representing a transfer of certain capital reserves or asset revaluation reserves into paid-in capital, such distribution may be subject to Korean withholding tax.

Furthermore, Korean tax laws require the beneficial owner to submit an application for entitlement to a preferential tax rate together with evidence of tax residence (including a certificate of tax residence of the beneficial owner issued by a competent authority of the country of tax residence of the beneficial owner) to a withholding obligor paying Korean source income in order to benefit from the available reduced tax rate pursuant to the relevant tax treaty. Under Korean tax laws and subject to certain exceptions, the Overseas Investment Vehicle must obtain an application for entitlement to a preferential tax rate from the beneficial owner and forward it to the withholding obligor along with an overseas investment vehicle report (prepared by the Overseas Investment Vehicle) which includes a detailed statement on the beneficial owner.

If you hold common shares or ADSs and receive the dividend through an account at the Korea Securities Depository held by a foreign depository settlement institute, you are not required to submit the application for entitlement to a preferential tax rate. However, evidence of tax residence may need to be submitted to us through such foreign depository settlement institute.

*Taxation of Capital Gains*

As a general rule, capital gains earned by non-residents upon the transfer of the common shares or ADSs would be subject to Korean income tax at a rate equal to the lesser of (i) 11.0% (including local income tax) of the gross proceeds realized or (ii) 22.0% (including local income tax) of the net realized gain (subject to the production of satisfactory evidence of the acquisition costs and certain direct transaction costs arising out of the transfer of such common shares or ADSs), unless such non-resident is exempt from Korean income taxation under an applicable Korean tax treaty into which Korea has entered with the non-resident's country of tax residence. Please see the discussion under *Tax Treaties* below for an additional explanation on treaty benefits. Even if you do not qualify for any exemption under a tax treaty, you will not be subject to the foregoing income tax on capital gains if you qualify for the relevant Korean domestic tax law exemptions discussed in the following paragraphs.

You will not be subject to Korean income taxation on capital gains realized upon the transfer of our common stocks or ADSs through the Korea Exchange if you (i) have no permanent establishment in Korea and (ii) did not own or have not owned (together with any shares owned by any entity which you have a certain special relationship with and possibly including the shares represented by the ADSs) 25.0% or more of our total issued and outstanding shares at any time during the calendar year in which the sale occurs and during the five calendar years prior to the calendar year in which the sale occurs.

It should be noted that (i) capital gains earned by you (regardless of whether you have a permanent establishment in Korea) from the transfer of ADSs outside Korea will be exempted from Korean income taxation provided that ADSs are deemed to have been issued overseas under the STTCL, but (ii) if and when an owner of the underlying shares of stock transfers ADSs after conversion of the underlying shares into ADSs, the exemption described in (i) is not applicable.

If you are subject to tax on capital gains with respect to the sale of ADSs, or of shares of common stock which you acquired as a result of a withdrawal, the purchaser or, in the case of the sale of shares of common stock on the Korea Exchange or through an investment dealer or investment broker under the Financial Investment Services and Capital Markets Act, an investment dealer or investment broker is required to withhold Korean tax from the sales price in an

amount equal to 11.0% (including local income tax) of the gross realization proceeds and to make payment of these amounts to the Korean tax authority, unless you establish your entitlement to an exemption under an applicable tax treaty or domestic tax law or produce satisfactory evidence of your acquisition cost and transaction costs for the shares of common stock or the ADSs.



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However, if you transfer the ADSs following an exchange of the underlying shares of stock owned by you for ADSs to a purchaser who is a non-resident or a foreign company without a permanent establishment in Korea, you are obligated to file an income tax return and pay tax on gain realized from such transfer unless exempt under an applicable tax treaty or domestic law. Further, if you transfer the shares of common stock outside of Korea (excluding a transfer on a foreign exchange) to non-residents or foreign companies without permanent establishments in Korea, you are obligated to file an income tax return and pay income tax on capital gain realized from such transfer unless exempt under an applicable tax treaty or domestic law. If a purchaser or an investment dealer or investment broker, as the case may be, withholds and remits the tax on capital gains derived from transfer of shares of common stock or ADSs, your obligation to file an income tax return and pay income tax will not apply.

In order to obtain the benefit of an exemption from tax pursuant to a tax treaty, you must submit to the purchaser or the investment dealer or the investment broker, or through the ADS depository, as the case may be, prior to or at the time of payment, such evidence of your tax residence as the Korean tax authorities may require in support of your claim for treaty benefits. Please see the discussion under *Tax Treaties* below for an additional explanation on claiming treaty benefits. Furthermore, Korean tax laws require the beneficial owner to submit an application for tax exemption together with evidence of tax residence (including a certificate of tax residence of the beneficial owner issued by a competent authority of the country of tax residence of the beneficial owner) to a withholding obligor paying Korean source income in order to benefit from the available exemption pursuant to the relevant tax treaty. Under Korean tax laws and subject to certain exceptions, the Overseas Investment Vehicle must obtain an application for tax exemption from the beneficial owner and forward it to the withholding obligor along with an overseas investment vehicle report (prepared by the Overseas Investment Vehicle) which includes a detailed statement on the beneficial owner.

*Tax Treaties*

Korea has entered into a number of income tax treaties with other countries (including the United States), which would reduce or exempt Korean withholding tax on dividends on, and capital gains on transfer of, shares of our common stock or ADSs. For example, under the Korea-United States income tax treaty, reduced rates of Korean withholding tax of 16.5% or 11.0% (respectively, including local income tax, depending on your status and shareholding ratio) on dividends and an exemption from Korean withholding tax on capital gains are available to residents of the United States that are beneficial owners of the relevant dividend income or capital gains. However, under Article 17 (Investment of Holding Companies) of the Korea-United States income tax treaty, such reduced rates and exemption do not apply if (i) you are a United States corporation, (ii) by reason of any special measures, the tax imposed on you by the United States with respect to such dividends or capital gains is substantially less than the tax generally imposed by the United States on corporate profits, and (iii) 25.0% or more of your capital is held of record or is otherwise determined, after consultation between competent authorities of the United States and Korea, to be owned directly or indirectly by one or more persons who are not individual residents of the United States. Also, under Article 16 (Capital Gains) of the Korea-United States income tax treaty, the exemption on capital gains does not apply if you are an individual, and (a) you maintain a fixed base in Korea for a period or periods aggregating 183 days or more during the taxable year and your ADSs or shares of common stock giving rise to capital gains are effectively connected with such fixed base or (b) you are present in Korea for a period or periods of 183 days or more during the taxable year.

You should inquire for yourself whether you are entitled to the benefit of an income tax treaty with Korea. It is the responsibility of the party claiming the benefits of an income tax treaty in respect of dividend payments or capital gains to submit to us, the purchaser or the investment dealer or the investment broker, as applicable, a certificate as to his tax residence. In the absence of sufficient proof, we, the purchaser or the investment dealer or the investment broker, as applicable, must withhold tax at the normal rates. Further, in order for you to obtain the benefit of a tax exemption on certain Korean source income (e.g., interest, dividends and capital gains) under an applicable tax treaty,

Korean tax laws require you (or your agent) to submit an application for tax exemption (if there is no change in the content of such application, it is not required to submit such application again within a

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period of three years thereafter) along with a certificate of your tax residence issued by a competent authority of your country of tax residence. Under Korean tax laws and subject to certain exceptions, the Overseas Investment Vehicle must obtain an application for tax exemption from the beneficial owner and forward it to the withholding obligor along with an overseas investment vehicle report (prepared by the Overseas Investment Vehicle) which includes a detailed statement on the beneficial owner. The withholding obligor must submit the application and the report to the relevant tax office by the ninth day of the month following the date of the first payment of such income.

Furthermore, the Korean tax laws require the beneficial owner to submit an application for entitlement to a preferential tax rate (if there is no change in the content of such application, it is not required to submit such application again within a period of three years thereafter) together with evidence of tax residence (including a certificate of tax residence of the beneficial owner issued by a competent authority of the country of tax residence of the beneficial owner) to a withholding obligor paying Korean source income in order to benefit from the available reduced tax rate pursuant to the relevant tax treaty. If you hold the shares of common stock or ADSs and receive the dividend through an account at the Korea Securities Depository held by a foreign depository settlement institute, you are not required to submit the application for entitlement to a preferential tax rate. However, evidence of tax residence may need to be submitted to us through such foreign depository settlement institute.

Under Korean tax laws and subject to certain exceptions, the Overseas Investment Vehicle must obtain an application for a preferential tax rate from the beneficial owner and forward it to the withholding obligor along with an overseas investment vehicle report (prepared by the Overseas Investment Vehicle) which includes a detailed statement on the beneficial owner.

### *Inheritance Tax and Gift Tax*

If you die while holding an ADS or donate an ADS, it is unclear whether, for Korean inheritance and gift tax purposes, you will be treated as the owner of the shares of common stock underlying the ADSs. If the tax authority interprets depository receipts as the underlying share certificates, you may be treated as the owner of the shares of common stock and your heir or the donee (or in certain circumstances, you as the donor) will be subject to Korean inheritance or gift tax presently at the rate of 10.0% to 50.0%, depending on the value of the ADSs or shares of common stock.

If you die while holding a share of common stock or donate a share of common stock, your heir or donee (or in certain circumstances, you as the donor) will be subject to Korean inheritance or gift tax at the same rate as indicated above.

At present, Korea has not entered into any tax treaty relating to inheritance or gift taxes.

### *Securities Transaction Tax*

If you transfer shares of common stock on the Stock Market of the Korea Exchange, you will be subject to securities transaction tax at the rate of 0.15% and an agriculture and fishery special surtax at the rate of 0.15% of the sale price of the shares of common stock. If your transfer of the shares of common stock is not made on the Stock Market of the Korea Exchange, subject to certain exceptions you will be subject to securities transaction tax at the rate of 0.5% and will not be subject to an agriculture and fishery special surtax.

Under the Securities Transaction Tax Law, depository receipts (such as ADSs) constitute share certificates subject to the securities transaction tax. However, a transfer of depository receipts listed on the New York Stock Exchange, NASDAQ National Market or other qualified foreign exchanges will be exempt from the securities transaction tax although depository receipts, including ADSs, constitute share certificates subject to the securities transaction tax.



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In principle, the securities transaction tax, if applicable, must be paid by the transferor of the shares or rights. When the transfer is effected through the Korea Securities Depository, the Korea Securities Depository is generally required to withhold and pay the tax to the tax authorities. When such transfer is made through an investment dealer or investment broker under the Financial Investment Services and Capital Markets Act only, such investment dealer or investment broker is required to withhold and pay the tax. Where the transfer is effected by a non-resident without a permanent establishment in Korea, other than through the Korea Securities Depository or an investment dealer or investment broker, the transferee is required to withhold the securities transaction tax for payment to the Korean tax authority.

**U.S. Federal Income Tax Considerations for U.S. Persons**

The following is a summary of certain U.S. federal income tax consequences for beneficial owners of the Registered Debt Securities, common stock and ADSs that are U.S. Persons (as defined below). For purposes of this summary, you are a U.S. Person if you are any of the following for U.S. federal income tax purposes:

an individual citizen or resident of the United States;

a corporation, or other entity treated as a corporation for U.S. federal income tax purposes, created or organized in or under the laws of the United States, any state thereof or the District of Columbia;

an estate the income of which is subject to U.S. federal income taxation regardless of its source; or

a trust if (1) it is subject to the primary supervision of a court within the United States and one or more United States persons have the authority to control all substantial decisions of the trust or (2) it has a valid election in effect under applicable United States Treasury regulations to be treated as a United States person.

This summary is based on current law, which is subject to change (perhaps retroactively), is for general purposes only and should not be considered tax advice. This summary does not represent a detailed description of the U.S. federal income tax consequences and does not address the effects of the Medicare contribution tax on net investment income or foreign, state, local or other tax considerations that may be relevant to you in light of your particular circumstances. The discussion set forth below is applicable to you if (i) you are a resident of the United States for purposes of the current income tax treaty between the United States and Korea (the Treaty), (ii) your Registered Debt Securities, common stock or ADSs are not, for purposes of the Treaty, effectively connected with a permanent establishment in Korea and (iii) you otherwise qualify for the full benefits of the Treaty. Except where noted, this summary deals only with Registered Debt Securities, common stock or ADSs held as capital assets, and it does not represent a detailed description of the U.S. federal income tax consequences applicable to you if you are subject to special treatment under the U.S. federal income tax laws (including if you are a dealer in securities or currencies, a financial institution, a regulated investment company, a real estate investment trust, an insurance company, a tax-exempt organization, a person holding the Registered Debt Securities, common stock or ADSs as part of a hedging, integrated or conversion transaction, constructive sale or straddle, a person owning 10.0% or more of our stock (by vote or value), a trader in securities that elects to use a mark-to-market method of accounting for your securities holdings, a person liable for the alternative minimum tax, a person required to accelerate the recognition of any item of gross income with respect to the Registered Debt Securities, common stock or ADSs as a result of such income being recognized on an applicable financial statement, a partnership or other pass-through entity (or an investor therein), or a U.S. Person whose

functional currency is not the U.S. dollar). We cannot assure you that a change in law will not alter significantly the tax considerations that we describe in this summary.

If a partnership (or other entity treated as a partnership for U.S. federal income tax purposes) holds the Registered Debt Securities, common stock or ADSs, the tax treatment of a partner will generally depend upon the status of the partner and the activities of the partnership. If you are a partner of a partnership holding our Registered Debt Securities, common stock, or ADSs, you should consult your tax advisor.

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Because of the 100-year maturity of the One Hundred Year 7.95% Zero-to-Full Debentures, due April 1, 2096 (the ZTF Debentures ), it is not certain whether the ZTF Debentures will be treated as debt for U.S. federal income tax purposes. The discussion below assumes that the ZTF Debentures (as well as the other Registered Debt Securities) will be treated as debt, except that a summary of the consequences to you if the ZTF Debentures were not treated as debt is provided under Tax Consequences with Respect to Registered Debt Securities Generally ZTF Debentures Treated as Equity below.

The discussion of the tax consequences of ownership of common stock and ADSs below, is based, in part, upon representations made by the depository to us and assumes that the deposit agreement, and all other related agreements, will be performed in accordance with their terms.

**You should consult your own tax advisor concerning the particular U.S. federal income tax consequences to you of the ownership of the Registered Debt Securities, common stock and ADSs, as well as the consequences to you arising under the laws of any other taxing jurisdiction.**

### ***Tax Consequences with Respect to Registered Debt Securities Generally***

#### *Payments*

Except as provided below with regard to original issue discount (as defined below) on the ZTF Debentures, interest on a Registered Debt Security will generally be taxable to you as ordinary income at the time it is paid or accrued in accordance with your method of accounting for tax purposes. Principal payments on an amortizing Registered Debt Security generally will constitute a tax-free return of capital to you.

Although interest payments to you are currently exempt from Korean taxation provided that Registered Debt Securities are deemed to be foreign currency-denominated bonds issued outside of Korea for the purpose of the STTCL (see Korean Taxes Registered Debt Securities Taxation of Interest, above), if the Korean law providing for the exemption is repealed, then, in addition to interest payments on the Registered Debt Securities and original issue discount on the ZTF Debentures, you will be required to include in income any additional amounts paid and any Korean tax withheld from interest payments notwithstanding that you in fact did not receive such withheld tax. You may be entitled to deduct or credit such Korean tax (up to the Treaty rate), subject to applicable limitations in the Internal Revenue Code of 1986, as amended (the Code ). Your election to deduct or credit foreign taxes will apply to all of your foreign taxes for a particular taxable year. Interest income on a Registered Debt Security (including additional amounts and any Korean taxes withheld in respect thereof) and original issue discount on a ZTF Debenture generally will constitute foreign source income and generally will be considered passive category income for purposes of computing the foreign tax credit. You will generally be denied a foreign tax credit for Korean taxes imposed with respect to the Registered Debt Securities where you do not meet a minimum holding period requirement during which you are not protected from risk of loss. The rules governing the foreign tax credit are complex. Investors are urged to consult their tax advisors regarding the availability of the foreign tax credit under their particular circumstances.

#### *Original Issue Discount*

The ZTF Debentures were issued with original issue discount ( OID ) for U.S. federal income tax purposes equal to the difference between (i) the sum of all scheduled amounts payable on the ZTF Debentures (including the interest payable on such ZTF Debentures) and (ii) the issue price of the ZTF Debentures. The issue price of each ZTF Debenture is the first price at which a substantial amount of the ZTF Debentures was sold to the public (other than to an underwriter, broker, placement agent or wholesaler). If you hold ZTF Debentures, then (subject to the discussion in Bond Premium below) you generally must include OID in gross income (as ordinary income) in advance of the receipt

of cash attributable to that income, regardless of your method of accounting. However, you generally will not be required to include separately in income cash payments received on the ZTF Debentures, even if denominated as interest.



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The amount of OID includible in income by the holder of a ZTF Debenture is the sum of the daily portions of OID with respect to the ZTF Debenture for each day during the taxable year or portion of the taxable year in which such holder held such ZTF Debenture, or accrued OID (for a discussion relevant to subsequent purchasers, see Market Discount and Bond Premium, below). The daily portion is determined by allocating to each day in any accrual period a pro rata portion of the OID allocable to that accrual period. The accrual period for a ZTF Debenture may be of any length and may vary in length over the term of the ZTF Debenture, provided that each accrual period is no longer than one year and each scheduled payment of principal or interest occurs on the first day or the final day of an accrual period. The amount of OID allocable to any accrual period other than the final accrual period is an amount equal to the product of the ZTF Debenture's adjusted issue price at the beginning of such accrual period and its yield to maturity (determined on the basis of compounding at the close of each accrual period and properly adjusted for the length of the accrual period). OID allocable to a final accrual period is the difference between the amount payable at maturity and the adjusted issue price at the beginning of the final accrual period. The adjusted issue price of a ZTF Debenture at the beginning of any accrual period is equal to its issue price increased by the accrued OID for each prior accrual period (for subsequent purchasers, determined without regard to the amortization of any acquisition or bond premium, as described below) and reduced by any payments previously made on such ZTF Debenture. Under these rules, you will have to include in income increasingly greater amounts of OID in successive accrual periods. We are required to provide information returns stating the amount of OID accrued on ZTF Debentures held of record by persons other than corporations and other exempt holders.

As discussed above, although interest payments to you are currently exempt from Korean taxation provided that Registered Debt Securities are deemed to be foreign currency-denominated bonds issued outside of Korea for the purpose of the STTCL (see Korean Taxes Registered Debt Securities Taxation of Interest, above), if the Korean law providing for the exemption is repealed, then Korean withholding tax may be imposed at times that differ from the times at which you are required to include interest or OID in income for U.S. federal income tax purposes and this disparity may limit the amount of foreign tax credit available.

*Market Discount*

If you purchased a Registered Debt Security other than a ZTF Debenture for an amount that is less than its stated redemption price at maturity, or, in the case of a ZTF Debenture, its adjusted issue price, the amount of the difference will be treated as market discount for U.S. federal income tax purposes, unless that difference is less than a specified de minimis amount. Under the market discount rules, you will be required to treat any payment, other than qualified stated interest (as defined in the Code), on, or any gain on the sale, exchange, retirement or other disposition of, a Registered Debt Security as ordinary income to the extent of the market discount that you have not previously included in income and are treated as having accrued on the Registered Debt Security at the time of its payment or disposition. In addition, you may be required to defer, until the maturity of the Registered Debt Security or its earlier disposition in a taxable transaction, the deduction of all or a portion of the interest expense on any indebtedness attributable to the Registered Debt Security.

Any market discount will be considered to accrue ratably during the period from the date of acquisition to the maturity date of the Registered Debt Security, unless you elect to accrue on a constant interest method. Your election to accrue market discount on a constant interest method is to be made for the taxable year in which you acquired the Registered Debt Security, applies only to that Registered Debt Security and cannot be revoked. You may elect to include market discount in income currently as it accrues, on either a ratable or constant interest method, in which case the rule described above regarding deferral of interest deductions will not apply. Your election to include market discount in income currently, once made, applies to all market discount obligations acquired by you on or after the first taxable year to which your election applies and may not be revoked without the consent of the Internal Revenue Service (the IRS). You should consult your own tax advisor before making this election.



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**Table of Contents***Bond Premium*

If you purchased a ZTF Debenture for an amount that is greater than its adjusted issue price but equal to or less than the sum of all amounts payable on the ZTF Debenture after the purchase date, you will be considered to have purchased that ZTF Debenture at an acquisition premium. Under the acquisition premium rules, the amount of OID that you must include in gross income with respect to a ZTF Debenture for any taxable year will be reduced by the portion of the acquisition premium properly allocable to that year.

If you purchased a Registered Debt Security for an amount in excess of the sum of all amounts payable on the Registered Debt Security after the purchase date other than qualified stated interest, you will be considered to have purchased the Registered Debt Security at a premium and, if such Registered Debt Security is a ZTF Debenture, you will not be required to include any OID in income. You generally may elect to amortize the premium over the remaining term of the Registered Debt Security on a constant yield method as an offset to interest when includible in income under your regular accounting method. In the case of instruments that provide for alternative payment schedules, bond premium is calculated by assuming that (a) you will exercise or not exercise options in a manner that maximizes your yield, and (b) we will exercise or not exercise options in a manner that minimizes your yield (except that we will be assumed to exercise call options in a manner that maximizes your yield). If you do not elect to amortize bond premium, that premium will decrease the gain or increase the loss you would otherwise recognize on disposition of a Registered Debt Security. Your election to amortize premium on a constant yield method will also apply to all debt obligations held or subsequently acquired by you on or after the first day of the first taxable year to which the election applies. You may not revoke the election without the consent of the IRS. You should consult your own tax advisor before making this election.

*Sale, Exchange and Retirement of Registered Debt Securities*

When you sell, exchange or retire a Registered Debt Security, you will recognize gain or loss equal to the difference between the amount you receive (not including an amount equal to any accrued qualified stated interest, which will be taxable as ordinary income to the extent not previously included in income) and your adjusted tax basis in the Registered Debt Security. Your tax basis in a Registered Debt Security other than a ZTF Debenture will generally be your cost of obtaining the Registered Debt Security increased by any market discount included in income and reduced by payments of principal you receive and any bond premium that you elect to amortize. Your adjusted tax basis in a ZTF Debenture will, in general, be your cost therefor, increased by any market discount and OID previously included in income and reduced by any cash payments on the ZTF Debenture and any bond premium that you elect to amortize. Your gain or loss realized on selling, exchanging or retiring a Registered Debt Security will generally be treated as United States source income. Consequently, you may not be able to use the foreign tax credit arising from any Korean tax imposed on the disposition of Registered Debt Securities unless such credit can be applied (subject to applicable limitations) against tax due on other income treated as derived from foreign sources. Except as described above with respect to market discount, your gain or loss will be capital gain or loss and will generally be long-term capital gain or loss if, at the time of the sale, exchange or retirement of a Registered Debt Security, you have held the Registered Debt Security for more than one year. If you are an individual and the Registered Debt Security being sold, exchanged or retired is a capital asset that you held for more than one year, you may be eligible for reduced rates of taxation on any capital gain recognized. Your ability to deduct capital losses is subject to limitations.

*ZTF Debentures Treated as Equity*

If the ZTF Debentures were treated as equity for U.S. federal income tax purposes, amounts actually or deemed paid with respect to the ZTF Debentures would be deemed dividends for U.S. federal income tax purposes to the extent paid out of our current or accumulated earnings and profits (as determined for U.S. federal income tax purposes).

You would include the amounts actually or deemed paid by us on the ZTF Debentures (before reduction for Korean withholding tax, if any) as dividend income when actually or constructively paid by us. Section 305 of

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the Code, which would apply to the ZTF Debentures if they were treated as equity for U.S. federal income tax purposes, requires current accrual of dividends under principles similar to the accrual of OID. Amounts treated as dividends will not be eligible for the dividends received deduction generally allowed to U.S. corporations.

***Tax Consequences with Respect to Common Stock and ADSs***

In general, for U.S. federal income tax purposes, holders of ADSs will be treated as the owners of the underlying common stock that is represented by such ADSs. Accordingly, deposits or withdrawals of common stock by holders of ADSs will not be subject to U.S. federal income tax.

***Distributions on Common Stock or ADSs***

The gross amount of distributions (other than certain distributions of common stock or rights to subscribe for common stock) to holders of common stock or ADSs (including amounts withheld in respect of Korean withholding taxes) will be taxable dividends to such holders, to the extent paid out of our current or accumulated earnings and profits, as determined under U.S. federal income tax principles. Such income (including withheld taxes) will be includable in the gross income of a holder as ordinary income on the day actually or constructively received by the holder, in the case of common stock, or by the depositary, in the case of ADSs. Such dividends will not be eligible for the dividends received deduction allowed to corporations under the Code.

With respect to non-corporate U.S. Persons, certain dividends paid by a qualified foreign corporation and received by such holders may be subject to reduced rates of taxation. A qualified foreign corporation includes a foreign corporation that is eligible for the benefits of an income tax treaty with the United States, if such treaty contains an exchange of information provision and the United States Treasury Department had determined that the treaty is satisfactory for purposes of the legislation. The United States Treasury Department has determined that the Treaty, which contains an exchange of information provision, is (in the absence of additional guidance) satisfactory for these purposes. In addition, we believe we are eligible for the benefits of the Treaty. However, a foreign corporation is also treated as a qualified foreign corporation with respect to dividends paid by that corporation on shares (or ADSs backed by such shares) that are readily tradable on an established securities market in the United States. Shares of our common stock will generally not be considered readily tradable for these purposes. However, United States Treasury Department guidance indicates that our ADSs, which are listed on the New York Stock Exchange, are readily tradable on an established securities market in the United States. There can be no assurance that our ADSs will be considered readily tradable on an established securities market in later years. Non-corporate U.S. Persons that do not meet a minimum holding period requirement during which they are not protected from a risk of loss or that elect to treat the dividend income as investment income pursuant to Section 163(d)(4) of the Code will not be eligible for the reduced rates of taxation regardless of our status as a qualified foreign corporation. In addition, the rate reduction will not apply to dividends if the recipient of a dividend is obligated to make related payments with respect to positions in substantially similar or related property. This disallowance applies even if the minimum holding period has been met. Holders should consult their own tax advisors regarding the application of the foregoing rules to their particular circumstances.

The amount of any dividend paid in Won will equal the United States dollar value of the Won received calculated by reference to the exchange rate in effect on the date the dividend is received by the holder, in the case of common stock, or by the depositary, in the case of ADSs, regardless of whether the Won are converted into U.S. dollars. If the Won received as a dividend are not converted into U.S. dollars on the date of receipt, a holder will have a basis in the Won equal to their U.S. dollar value on the date of receipt. Any gain or loss realized on a subsequent conversion or other disposition of the Won will be treated as United States source ordinary income or loss. The amount of any distribution of property other than cash will be the fair market value of such property on the date of distribution.

The maximum rate of withholding tax on dividends paid to you pursuant to the Treaty is 16.5%. You will be required to properly demonstrate your entitlement to the reduced rate of withholding under the Treaty (see

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Korean Taxes Shares or ADSs Tax Treaties ). Subject to certain conditions and limitations, Korean withholding taxes (up to the Treaty rate) will be treated as foreign taxes eligible for credit against your U.S. federal income tax liability. For purposes of calculating the foreign tax credit, dividends paid on the common stock or ADSs will be treated as foreign source income and will generally constitute passive category income. Further, in certain circumstances, if you have held common stock or ADSs for less than a specified minimum period during which you are not protected from risk of loss, or are obligated to make payments related to the dividends, you will not be allowed a foreign tax credit for foreign taxes imposed on dividends paid on common stock or ADSs. The rules governing the foreign tax credit are complex. Investors are urged to consult their tax advisors regarding the availability of the foreign tax credit under their particular circumstances including the possible adverse impact on creditability to the extent you are entitled to a refund of any Korean tax withheld or a reduced rate of withholding.

To the extent that the amount of any distribution exceeds our current and accumulated earnings and profits for a taxable year, as determined under U.S. federal income tax principles, the distribution will first be treated as a tax-free return of capital, causing a reduction in the adjusted basis of the common stock or ADSs (thereby increasing the amount of gain, or decreasing the amount of loss, to be recognized by the investor on a subsequent disposition of the common stock or ADSs), and the balance in excess of adjusted basis will be taxed as capital gain recognized on a sale or exchange of property. Consequently, such distributions in excess of our current and accumulated earnings and profits would not give rise to foreign source income and you generally would not be able to use the foreign tax credit arising from any Korean withholding tax imposed on such distributions unless such credit can be applied (subject to applicable limitations) against U.S. tax due on other foreign source income in the appropriate category for foreign tax credit purposes. However, we do not expect to keep earnings and profits in accordance with U.S. federal income tax principles. Therefore, you should expect that a distribution will generally be treated as a dividend (as discussed above).

Distributions of common stock or rights to subscribe for common stock that are received as part of a pro rata distribution to all of our shareholders generally will not be subject to U.S. federal income tax. Consequently such distributions will not give rise to foreign source income and you generally will not be able to use the foreign tax credit arising from any Korean withholding tax unless such credit can be applied (subject to applicable limitations) against U.S. tax due on other income derived from foreign sources. The basis of the new common stock or rights so received will be determined by allocating your basis in the old common stock between the old common stock and the new common stock or rights received, based on their relative fair market value on the date of distribution. However, the basis of the rights will be zero if (i) the fair market value of the rights is less than 15% of the fair market value of the old common stock at the time of distribution, unless the taxpayer timely elects to determine the basis of the old common stock and of the rights by allocating between the old common stock and the rights the adjusted basis of the old common stock or (ii) the rights are not exercised and thus expire.

*Sale, Exchange or Other Disposition of ADSs or Common Stock*

Upon the sale, exchange or other disposition of ADSs or common stock, you generally will recognize capital gain or loss equal to the difference between the amount realized upon the sale, exchange or other disposition and your adjusted tax basis in the ADSs or common stock. The capital gain or loss will be long-term capital gain or loss if at the time of sale, exchange or other disposition, the ADSs or common stock have been held by you for more than one year. Under current law, long-term capital gains of individuals are, under certain circumstances, taxed at lower rates than items of ordinary income. The deductibility of capital losses is subject to limitations. Any gain or loss recognized by you will generally be treated as U.S. source gain or loss. Consequently, you may not be able to use the foreign tax credit arising from any Korean tax imposed on the disposition of ADSs or common stock unless such credit can be applied (subject to applicable limitations) against tax due on other income treated as derived from foreign sources.

You should note that any Korean securities transaction tax will not be treated as a creditable foreign tax for U.S. federal income tax purposes, although you may be entitled to deduct such taxes, subject to applicable limitations under the Code.



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### *Passive Foreign Investment Company Rules*

Based upon the past and projected composition of our income and assets and the valuation of our assets, we do not believe that we were a passive foreign investment company (a PFIC ) for 2017, and we do not expect to be a PFIC in 2018 or to become one in the foreseeable future, although there can be no assurance in this regard. If, however, we become a PFIC, such characterization could result in adverse U.S. tax consequences to you if you are a U.S. investor. For example, if we become a PFIC, our U.S. investors may become subject to increased tax liabilities under U.S. tax laws and regulations and will become subject to burdensome reporting requirements. Our PFIC status is determined on an annual basis and depends on the composition of our income and assets. Specifically, we will be classified as a PFIC for U.S. tax purposes if either: (i) 75% or more of our gross income in a taxable year is passive income, or (ii) the average percentage of our assets by value in a taxable year which produce or are held for the production of passive income (which generally includes cash) is at least 50%. We cannot assure you that we will not be a PFIC for 2018 or any future taxable year.

### *Information Reporting and Backup Withholding*

In general, information reporting requirements will apply to principal, interest, OID and premium payments on Registered Debt Securities and dividend payments in respect of the common stock or ADSs or the proceeds received on the sale, exchange or redemption of the Registered Debt Securities, common stock or ADSs paid within the United States (and in certain cases, outside of the United States) to holders other than certain exempt recipients, and a backup withholding tax may apply to such amounts if you fail to provide an accurate taxpayer identification number or certification of exempt status or fail to report interest and dividends required to be shown on your U.S. federal income tax returns. The amount of any backup withholding from a payment to you will be allowed as a refund or a credit against your U.S. federal income tax liability, provided the required information is timely furnished to the IRS.

### **Item 10.F. Dividends and Paying Agents**

Not Applicable

### **Item 10.G. Statements by Experts**

Not Applicable

### **Item 10.H. Documents on Display**

We are subject to the information requirements of the Exchange Act, and, in accordance therewith, are required to file reports, including annual reports on Form 20-F, and other information with the U.S. Securities and Exchange Commission. You may inspect and copy these materials, including this annual report and the exhibits thereto, at SEC's Public Reference Room 100 Fifth Street, N.E., Washington, D.C. 20549. Please call the Commission at 1-800-SEC-0330 for further information on the public reference rooms. As a foreign private issuer, we are also required to make filings with the Commission by electronic means. Any filings we make electronically will be available to the public over the Internet at the Commission's web site at <http://www.sec.gov>.

### **Item 10.I. Subsidiary Information**

Not Applicable

**ITEM 11. *QUANTITATIVE AND QUALITATIVE DISCLOSURES ABOUT MARKET RISK***

Our primary market risk exposures are to fluctuations in exchange rates, interest rates and fuel prices. We are exposed to foreign exchange risk related to foreign currency-denominated liabilities. As of December 31,

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2017, 19.4% of our long-term debt (including the current portion but excluding issue discounts and premium), without taking into consideration of swap transactions, was denominated in foreign currencies, principally U.S. dollars. However, a substantial portion of our revenues is denominated in Won. As a result, changes in exchange rates, particularly between the Won and the U.S. dollar, significantly affect us due to our significant amounts of foreign currency-denominated debt and the effect of such changes on the amount of funds required by us to make interest and principal payments on such debt. In order to reduce the impact of foreign exchange rate fluctuations on our results of operations, we have recently been reducing and plan to continue to reduce the proportion of our debt which is denominated in foreign currencies.

We are also exposed to foreign exchange risk related to our purchases of fuel since we obtain substantially all of our fuel materials (other than anthracite coal) directly or indirectly from sources outside Korea. Prices for such fuel materials are quoted based on prices stated in, and in many cases are paid for in, currencies other than Won. In 2017, fuel costs represented 27.8% of our sales.

We are exposed to interest rate risk due to significant amounts of debt. Upward fluctuations in interest rates increase the cost of additional debt and the interest cost of outstanding floating rate borrowings. We are also exposed to fluctuations in prices of fuel materials. In 2017, for electricity generation, uranium accounted for 34.8% of our fuel requirements, coal accounted for 53.3%, LNG accounted for 8.7%, oil accounted for 1.2%, and others accounted for 2.0%, measured in each case by the amount of electricity we generated. In 2016, for electricity generation, uranium accounted for 37.1% of our fuel requirements, coal accounted for 47.7%, LNG accounted for 10.7%, oil accounted for 3.0% and others accounted for 1.5%, measured in each case by the amount of electricity we generated.

For additional discussions of our market risks, see Item 3.D. Risk Factors and Item 5.B. Liquidity and Capital Resources Liquidity.

We have entered into various swap contracts to hedge exchange rate risks arising from foreign currency-denominated debts. Details of currency swap contracts outstanding as of December 31, 2017 are as follows:

Type	Counterparty	Contract Settlement		Contract amounts		Contract interest rate		Contract Exchange Rate
		Year	Year	Pay	Receive	Pay	Receive	
Trading				(KRW in millions, USD in thousands)				
	Deutsche Bank	2013	2018	110,412	KRW	6.21%	4.19%	11.04
	IBK	2013	2018	111,800	KRW	3.16%	2.79%	1,118.00
	Bank of America	2013	2018	103,580	JPY 10,000,000	7.05%	4.19%	10.36
	Credit Suisse	2014	2019	118,632	KRW	2.98%	1.50%	1,186.32
	Standard Chartered	2014	2019	114,903	CHF 100,000	4.00%	1.50%	1,149.03
	Standard Chartered	2014	2029	102,470	KRW	3.14%	3.57%	1,024.70
	Societe Generale	2014	2024		USD 100,000	4.92%	5.13%	1,050.17

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			KRW					
			105,017					
			KRW					
KEB Hana Bank	2015	2024	107,970	USD 100,000	4.75%	5.13%		1,079.70
Credit Agricole	2015		KRW					
		2024	94,219	USD 86,920	4.85%	5.13%		1,083.97
Citibank	2012		KRW					
		2022	112,930	USD 100,000	2.79%	3.00%		1,129.30
			KRW					
JP Morgan	2012	2022	112,930	USD 100,000	2.79%	3.00%		1,129.30
			KRW					
Bank of America	2012	2022	112,930	USD 100,000	2.79%	3.00%		1,129.30
			KRW					
Shinhan Bank	2016	2022	112,930	USD 100,000	2.79%	3.00%		1,129.30
			KRW					
HSBC	2012	2022	111,770	USD 100,000	2.89%	3.00%		1,117.70
			KRW					
KEB Hana Bank	2012	2022	111,770	USD 100,000	2.87%	3.00%		1,117.70
			KRW					
Standard Chartered	2012	2022	111,770	USD 100,000	2.89%	3.00%		1,117.70
			KRW					
Deutsche Bank	2012	2022	55,885	USD 50,000	2.79%	3.00%		1,117.70
			KRW				3M Libor+	
DBS	2013	2018	108,140	USD 100,000	2.63%	0.84%		1,081.40
			KRW				3M Libor+	
DBS	2013	2018	108,140	USD 100,000	2.57%	0.84%		1,081.40
			KRW				3M Libor+	
DBS	2013	2018	108,140	USD 100,000	2.57%	0.84%		1,081.40
			KRW					
HSBC	2013	2018	107,450	USD 100,000	3.41%	2.88%		1,074.50

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Type	Counterparty	Contract Settlement		Contract amounts		Contract interest rate		Contract Exchange Rate
		Year	Year	Pay	Receive	Pay	Receive	
				(KRW in millions, USD in thousands)				
	Standard Chartered	2013	2018	KRW 107,450	USD 100,000	3.44%	2.88%	1,074.50
	JP Morgan	2013	2018	KRW 107,450	USD 100,000	3.48%	2.88%	1,074.50
	Bank of America	2014	2018	KRW 107,450	USD 100,000	3.09%	2.88%	1,074.50
	Citibank	2014	2018	KRW 107,450	USD 100,000	3.09%	2.88%	1,074.50
	HSBC	2014	2019	KRW 105,260	USD 100,000	2.48%	2.38%	1,052.60
	Standard Chartered	2014	2019	KRW 105,260	USD 100,000	2.48%	2.38%	1,052.60
	Korea Development Bank							
	Bank	2016	2019	KRW 105,260	USD 100,000	2.48%	2.38%	1,052.60
	Nomura	2015	2025	KRW 111,190	USD 100,000	2.60%	3.25%	1,111.90
	Korea Development Bank							
	Bank	2015	2025	KRW 111,190	USD 100,000	2.62%	3.25%	1,111.90
	Woori Bank	2015	2025	KRW 55,595	USD 50,000	2.62%	3.25%	1,111.90
	KEB Hana Bank	2015	2025	KRW 55,595	USD 50,000	2.62%	3.25%	1,111.90
	Woori Bank	2017	2027	KRW 111,610	USD 100,000	2.25%	3.13%	1,116.10
	KEB Hana Bank	2017	2027	KRW 111,610	USD 100,000	2.31%	3.13%	1,116.10
	Korea Development Bank							
	Bank	2017	2027	KRW 111,610	USD 100,000	2.31%	3.13%	1,116.10
Cash flow hedge	Citibank	2013	2018	KRW 54,570.00	USD 50,000	2.90%	3M Libor+ 1.01%	1,091.40
	Standard Chartered	2013	2018	KRW 54,570.00	USD 50,000	2.90%	3M Libor+ 1.01%	1,091.40
	Credit Suisse	2013	2018	KRW 111,410.00	USD 100,000	3.22%	3M Libor+ 1.50%	1,114.10
	HSBC	2014	2020	KRW 99,901.00	AUD 100,000	3.52%	5.75%	999.01
	HSBC	2014	2020	KRW 100,482.00	AUD 100,000	3.48%	5.75%	1,004.82
	Standard Chartered	2013	2020	USD 117,250	AUD 125,000	3M Libor+ 1.25%	5.75%	0.94
	Standard Chartered	2014	2020	KRW 126,032.00	USD 117,250	3.55%	3M Libor+ 1.25%	1,074.90
	Korea Development Bank							
	Bank	2017	2020	KRW 114,580.00	USD 100,000	1.75%	2.38%	1,145.80
	KEB Hana Bank	2017	2020	KRW 114,580.00	USD 100,000	1.75%	2.38%	1,145.80
	Export-Import Bank of Korea							
	Bank of Korea	2017	2020	KRW 114,580.00	USD 100,000	1.75%	2.38%	1,145.80
	JP Morgan	2014	2019	KRW 107,190.00	USD 100,000	3.25%	3M Libor+ 2.75%	1,071.90
	Morgan Stanley	2014	2019	KRW 107,190.00	USD 100,000	3.25%	3M Libor+ 2.75%	1,071.90
	Deutsche Bank	2014	2019	KRW 107,190.00	USD 100,000		2.75%	1,071.90

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					3M Libor+		
					3.25%		
Korea Development Bank	2016	2021	KRW 121,000.00	USD 100,000	2.15%	2.50%	1,210.00
Morgan Stanley	2016	2021	KRW 121,000.00	USD 100,000	2.10%	2.50%	1,210.00
BNP Paribas	2016	2021	KRW 121,000.00	USD 100,000	2.10%	2.50%	1,210.00
Nomura	2017	2037	KRW 52,457.00	EUR 40,000	2.60%	1.70%	1,311.42
Nomura	2017	2037	KRW 59,423.00	SEK 450,000	2.62%	2.36%	132.05
Credit Agricole	2013	2019	KRW 118,343.00	CHF 100,000	3.47%	1.63%	1,183.43
Morgan Stanley	2013	2019	KRW 59,172.00	CHF 50,000	3.40%	1.63%	1,183.43
Nomura	2013	2019	KRW 59,172.00	CHF 50,000	3.47%	1.63%	1,183.43
Morgan Stanley	2013	2018	KRW 107,360.00	USD 100,000	3.27%	2.88%	1,073.60
Credit Agricole	2013	2018	KRW 107,360.00	USD 100,000	3.34%	2.88%	1,073.60
JP Morgan	2013	2018	KRW 161,040.00	USD 150,000	3.34%	2.88%	1,073.60
Standard Chartered	2013	2018	KRW 161,040.00	USD 150,000	3.34%	2.88%	1,073.60
Standard Chartered	2014	2019	KRW 104,490.00	USD 100,000	2.77%	2.63%	1,044.90
Credit Agricole	2014	2019	KRW 104,490.00	USD 100,000	2.77%	2.63%	1,044.90
Morgan Stanley	2014	2019	KRW 104,490.00	USD 100,000	2.70%	2.63%	1,044.90

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Type	Counterparty	Contract Settlement		Contract amounts		Contract interest rate		Contract Exchange Rate
		Year	Year	Pay	Receive	Pay	Receive	
				(KRW in millions, USD in thousands)				
	Standard Chartered	2013	2018	KRW 81,188.00	USD 75,000	2.65%	1.88%	1,082.50
	Credit Agricole	2013	2018	KRW 81,188.00	USD 75,000	2.65%	1.88%	1,082.50
	Deutsche Bank	2013	2018	KRW 81,188.00	USD 75,000	2.65%	1.88%	1,082.50
	Citibank	2013	2018	KRW 81,188.00	USD 75,000	2.65%	1.88%	1,082.50
	Societe Generale	2013	2018	KRW 106,190.00	USD 100,000	3.48%	2.63%	1,061.90
	BNP Paribas	2013	2018	KRW 53,095.00	USD 50,000	3.48%	2.63%	1,061.90
	KEB Hana Bank	2013	2018	KRW 53,095.00	USD 50,000	3.48%	2.63%	1,061.90
	Standard Chartered	2013	2018	KRW 106,030.00	USD 100,000	3.48%	2.63%	1,060.30
	BNP Paribas	2013	2018	KRW 53,015.00	USD 50,000	3.48%	2.63%	1,060.30
	KEB Hana Bank	2013	2018	KRW 31,809.00	USD 30,000	3.48%	2.63%	1,060.30
	Societe Generale	2013	2018	KRW 21,206.00	USD 20,000	3.48%	2.63%	1,060.30
	HSBC	2013	2018	KRW 53,015.00	USD 50,000	3.47%	2.63%	1,060.30
	Nomura	2013	2018	KRW 53,015.00	USD 50,000	3.47%	2.63%	1,060.30
	Credit Agricole	2014	2020	KRW 110,680.00	USD 100,000	2.29%	2.50%	1,106.80
	Societe Generale	2014	2020	KRW 55,340.00	USD 50,000	2.16%	2.50%	1,106.80
	KEB Hana Bank	2014	2020	KRW 55,340.00	USD 50,000	2.16%	2.50%	1,106.80
	KEB Hana Bank	2014	2020	KRW 55,340.00	USD 50,000	2.21%	2.50%	1,106.80
	Standard Chartered	2014	2020	KRW 55,340.00	USD 50,000	2.21%	2.50%	1,106.80
	HSBC	2014	2020	KRW 55,340.00	USD 50,000	2.21%	2.50%	1,106.80
	Nomura	2014	2020	KRW 55,340.00	USD 50,000	2.21%	2.50%	1,106.80
	BNP Paribas	2014	2020	KRW 55,340.00	USD 50,000	2.21%	2.50%	1,106.80

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HSBC			KRW	USD			
	2014	2020	55,340.00	50,000	2.21%	2.50%	1,106.80
KEB Hana Bank			KRW	USD			
	2017	2022	226,600.00	200,000	1.94%	2.63%	1,133.00
Korea Development Bank			KRW	USD			
	2017	2022	113,300.00	100,000	1.94%	2.63%	1,133.00
Nomura			KRW	USD			
	2017	2022	113,300.00	100,000	1.95%	2.63%	1,133.00
Woori Bank			KRW	USD			
	2017	2022	56,650.00	50,000	1.95%	2.63%	1,133.00
Kookmin Bank			KRW	USD			
	2017	2022	56,650.00	50,000	1.95%	2.63%	1,133.00

Under these currency swap contracts, we recognized net valuation loss of Won 844 billion in 2017.

Details of interest rate contracts outstanding as of December 31, 2017 are as follows:

Type	Counterparty	Contract Settlement		Notional Amount (KRW in millions, USD in thousands)	Contract Interest Rate Per Annum	
		Year	Year		Pay	Receive
Trading	JP Morgan	2013	2018	KRW 150,000	3.58%	3M CD+0.31%
	Credit Suisse	2014	2018	KRW 25,000	2.98%	1Y CMT+0.31%
	KEB Hana Bank	2017	2022	KRW 100,000	2.01%	3M CD+0.24%
	KEB Hana Bank	2017	2022	KRW 100,000	2.06%	3M CD+0.27%
	Nomura <sup>(1)</sup>	2017	2037	KRW 30,000	2.05%	3.08%
	KEB Hana Bank	2017	2021	KRW 200,000	2.45%	3M CD+0.32%
	Export-Import Bank of Korea	2015	2031	USD 15,893	2.67%	6M USD Libor
	ING Bank	2015	2031	USD 7,861	2.67%	6M USD Libor
	BNP Paribas	2015	2031	USD 7,861	2.67%	6M USD Libor
	Cash flow hedge	BNP Paribas	2009	2027	USD 92,120	4.16%
KFW		2009	2027	USD 92,120	4.16%	6M USD Libor
Credit Agricole		2016	2033	USD 96,297	3.98% ~ 4.10%	6M USD Libor
SMBC		2016	2033	USD 125,927	4.05% ~ 4.18%	6M USD Libor
Mizuho Bank		2016	2019	USD 36,890	1.56%	1.35%
SMBC		2016	2019	USD 36,890	1.56%	1.35%



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*Note:*

(1) 2.05% of the contract interest rate for paying is applied for five years from the date of issuance, and 3M CD + 0.10% is applied thereafter.

Under these interest rate swap contracts, we recognized net valuation gain of Won 6,909 million in 2017.

We engage in transactions denominated in foreign currencies and consequently become exposed to fluctuations in exchange rates. The carrying amounts of our foreign currency-denominated monetary assets and monetary liabilities as of December 31, 2016 and 2017 were as follows:

Type	Assets		Liabilities	
	2016	2017	2016	2017
	(In thousands of USD, EUR, GBP and other foreign currencies)			
AED	7,479	5,693	1,534	2,049
AUD	187	145	632,613	652,259
BDT	49,110	60,208	833	1,001
BWP	4,296	797	3,222	
CAD		82		171
CHF			400,308	400,004
CNY		13,007		26,140
EUR	17,585	5,708	14,111	68,003
GBP	3	3	110	2,327
IDR	52,568	167,775		
INR	1,059,092	1,228,259	161,631	227,078
JOD	1,746	1,624	5	5
JPY	520,746	799,501	20,442,504	21,624,128
KZT	12,157	359		
MGA	3,408,579	2,762,572	150,430	319,581
NOK				482
PHP	415,818	189,261	136,700	125,431
PKR	274,090	251,190	5,051	4,676
SAR	1,149	1,191		44
SEK				449,002
USD	1,319,524	1,653,858	9,445,567	8,321,335
UYU	1,307	12,955	586	10,586
ZAR	386	361	75	4

The following analysis sets forth the sensitivity of our consolidated net income before income taxes (our pre-tax income) to changes in exchange rates, interest rates, electricity rates and fuel costs. For purposes of this section, we and our related parties are deemed one entity. The range of changes in such risk categories represents our view of the changes that are reasonably possible over a one-year period, although it is difficult to predict such changes as a result of adverse economic developments in Korea. See Item 3.D. Risk Factors Risks Relating to Korea and the Global

Economy Unfavorable financial and economic conditions in Korea and globally may have a material adverse impact on us. The following discussion only addresses material market risks faced by us and does not discuss other risks which we face in the normal course of business, including country risk, credit risk and legal risk. Unless otherwise specified, all calculations are made under IFRS.

If Won depreciates against U.S. dollar and all other foreign currencies held by us by 10% and all other variables are held constant from their levels as of December 31, 2017, we estimate that our unrealized foreign exchange translation losses will increase by Won 844 billion in 2018. Such sensitivity analysis is conducted for

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monetary assets and liabilities denominated in foreign currencies other than functional currency as of December 31, 2016 and 2017, without taking into consideration of swap transactions. To manage our foreign currency risk related to foreign currency-denominated receivables and payables, we have a policy of entering into currency forward agreements. In addition, to manage our foreign currency risk related to foreign currency-denominated expected sales transactions and purchase transactions, we enter into cross-currency swap agreements.

We are exposed to interest rate risk due to our borrowings with floating interest rates. If interest rates increase by 1% on all of our borrowings and debentures bearing variable interest and all other variables are held constant as of December 31, 2017, we estimate that our income before income taxes will decrease by Won 27 billion (not reflecting the fact that a portion of such interest may be capitalized under IFRS) in 2018. Such sensitivity analysis does not take into consideration interest rate swap transactions. To manage our interest rate risks, we, in addition to maintaining an appropriate mix of fixed and floating rate loans, have entered into certain interest rate swap agreements.

We are exposed to electricity rates risk due to the rate regulation by the Government, which considers the effect of electricity rate changes on the national economy. If the electricity rate rises by 1% and all other variables are held constant as of December 31, 2017, we estimate that our income before income taxes will increase by Won 546 billion in 2018.

We are exposed to fuel price risks due to the heavy influence of fuel costs on our sales and cost of sales. If the fuel prices of anthracite and bituminous coal, oil, LNG and others used for generation by us and our generation subsidiaries rise by 1% and all other variables are held constant as of December 31, 2017, we estimate that our income before income taxes will decrease by Won 165 billion in 2018.

The above discussion and the estimated amounts generated from the sensitivity analyzes referred to above include forward-looking statements, which assume for analytical purposes that certain market conditions may occur. Accordingly, such forward-looking statements should not be considered projections by us of future events or losses.

See Note 45 of the notes to our consolidated financial statements included in this annual report for further related information.

## **ITEM 12. DESCRIPTION OF SECURITIES OTHER THAN EQUITY SECURITIES**

### **Item 12.A. Debt Securities**

Of the four debt securities issued by us that are registered under the Exchange Act as set forth in the cover page of this annual report, the One Hundred Year 7.95% Zero-to-Full Debentures due April 1, 2096, were guaranteed by Korea Development Bank. However, such guarantee expired on April 1, 2016 by reason of the expiration of a put option period applicable to such debentures in accordance with the terms of such debentures.

Korea Development Bank, a statutory bank for the Korean government, is 100% beneficially owned by the Korean government. The voting rights in our equity interest held by Korea Development Bank are effectively exercised by the Korean government.

The guarantee by Korea Development Bank of our above-mentioned registered debt securities was itself a security registered under the Securities Act. Korea Development Bank is a Schedule B issuer and periodically files registration statements with the Commission. These registration statements typically include financial statements prepared in accordance with the applicable generally accepted accounting principles, currently the Korean International Financial

Reporting Standards, and audited in accordance with generally accepted auditing standards in the Republic of Korea.

**Table of Contents****Item 12.B. Warrants and Rights**

Not applicable.

**Item 12.C. Other Securities**

Not applicable.

**Item 12.D. American Depositary Shares**

Under the terms of the Deposit Agreement in respect of our ADSs, the holder and beneficiary owners of ADSs, any party depositing or withdrawing or surrendering ADSs or ADRs, whichever applicable, may be required to pay the following fees and charges to Citibank, N.A. acting as depository for our ADSs:

<b>Item</b>	<b>Services</b>	<b>Fees</b>
1	Taxes and other governmental charges	As applicable
2	Registration of transfer of common shares generally on our shareholders' register, any institution authorized under the applicable law to effect book-entry transfers of securities (including Korea Securities Depository), or any entity that presently carries out the duties of registrar for the common shares, and applicable to transfers of common shares to the name of the Depository or its nominee on the making of deposits or withdrawals	A fee of US\$1.50 or less per ADS
3	Cable, telex and facsimile transmission expenses	As applicable
4	Expenses incurred by the Depository in the conversion of foreign currency	As applicable
5	Execution and delivery of ADRs and the surrender of ADRs	Fee of US\$0.05 or less per ADS
6	Cash distribution made by the Depository or its agent	Fee of US\$0.02 or less per ADS
7	Fee for the distribution of proceeds of sales of securities or rights for distribution other than cash, common shares or rights to subscribe for shares, distribution in shares or distribution in rights to subscribe for shares	Lesser of (i) the fee for the execution and delivery of ADRs referred to above which would have been charged as a result of the deposit by the holders of securities or common shares received in exercise of rights distributed to them, but which securities or rights are instead sold by the Depository and the net proceeds distributed and (ii) the amount of such proceeds
8	Depository services performed in administering the ADRs (which fee shall be assessed against holders of ADSs as of the record date or dates and shall be	Fee of US\$0.02 or less per ADS per calendar year

payable at the sole discretion of the Depositary by  
billing such holders or by deducting such charge  
from one or more cash dividends or other cash  
distributions)

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Depository fees payable upon the issuance and cancelation of ADSs are typically paid to the depository by the brokers (on behalf of their clients) receiving the newly-issued ADSs from the depository and by the brokers (on behalf of their clients) delivering the ADSs to the depository for cancelation. The brokers in turn charge these transaction fees to their clients.

Depository fees payable in connection with distributions of cash or securities to ADS holders and the depository services fee are charged by the depository to the holders of record of ADSs as of the applicable ADS record date. The depository fees payable for cash distributions are generally deducted from the cash being distributed. In the case of distributions other than cash (i.e., stock dividends, rights offerings), the depository charges the applicable fee to the ADS record date holders concurrent with the distribution. In the case of ADSs registered in the name of the investor (whether certificated or un-certificated in direct registration), the depository sends invoices to the applicable record date ADS holders. In the case of ADSs held in brokerage and custodian accounts via the central clearing and settlement system, the Depository Trust Company ( DTC ), the depository generally collects its fees through the systems provided by DTC (whose nominee is the registered holder of the ADSs held in DTC) from the brokers and custodians holding ADSs in their DTC accounts. The brokers and custodians who hold their clients' ADSs in DTC accounts in turn charge their clients' accounts the amount of the fees paid to the depository.

In the event of refusal to pay the depository fees, the depository may, under the terms of the Deposit Agreement, refuse the requested service until payment is received or may set-off the amount of the depository fees from any distribution to be made to the ADS holder.

The fees and charges the ADS holders may be required to pay may vary over time and may be changed by us and by the depository. The ADS holders will receive prior notice of such changes.

***Depository Payments for the Fiscal Year 2017***

The following table sets forth our expenses incurred in 2017, which were reimbursed by Citibank, N.A. in the aggregate:

	<b>(In thousands of U.S. dollars)</b>	
Reimbursement of legal fees	US\$	184
Reimbursement of accounting fees		146
Contributions towards our investor relations and other financing efforts (including investor conferences, non-deal roadshows and market information services)		896
Other		158
<b>Total</b>	<b>US\$</b>	<b>1,384</b>

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**PART II**

**ITEM 13. *DEFAULTS, DIVIDEND ARREARAGES AND DELINQUENCIES***

Not applicable.

**ITEM 14. *MATERIAL MODIFICATIONS TO THE RIGHTS OF SECURITY HOLDERS AND USE OF PROCEEDS***

Not applicable.

**ITEM 15. *CONTROLS AND PROCEDURES***

**Disclosure Control**

Under the supervision and with the participation of our management, including our chief executive officer and chief financial officer, we have evaluated the effectiveness of the design and operation of our disclosure controls and procedures (as defined in Rule 13a-15(e) under the Exchange Act) as of December 31, 2017. There are inherent limitations to the effectiveness of any system of disclosure controls and procedures, including the possibility of human error and the circumvention or overriding of the controls and procedures. Accordingly, even effective disclosure controls and procedures can provide only reasonable assurance of achieving their control objectives. Based upon our evaluation, our chief executive officer and chief financial officer concluded that the design and operation of our disclosure controls and procedures as of December 31, 2017 were effective to provide reasonable assurance that information required to be disclosed by us in the reports we file and submit under the Exchange Act is recorded, processed, summarized and reported, within the time periods specified in the applicable rules and forms, and that it is accumulated and communicated to our management, including our chief executive officer and chief financial officer, as appropriate to allow timely decision regarding required disclosure.

**Management's Annual Report on Internal Control Over Financial Reporting**

Our management is responsible for establishing and maintaining adequate internal control over financial reporting, as such term is defined in Rules 13a-15(f) and 15d-15(f) under the Exchange Act, for our company. Under the supervision and with the participation of our management, including our chief executive officer and chief financial officer, we have evaluated the effectiveness of our internal control over financial reporting as of December 31, 2017 based on the framework established in Internal Control-Integrated Framework issued by the Committee of Sponsoring Organizations of the Treadway Commission (2013). Our internal control over financial reporting is a process designed to provide reasonable assurance regarding the reliability of financial reporting and the preparation of consolidated financial statements in accordance with generally accepted accounting principles and includes those policies and procedures that (1) pertain to the maintenance of records that, in reasonable detail, accurately and fairly reflect the transactions and dispositions of a company's assets, (2) provide reasonable assurance that transactions are recorded as necessary to permit preparation of consolidated financial statements in accordance with generally accepted accounting principles, and that a company's receipts and expenditures are being made only in accordance with authorizations of a company's management and directors, and (3) provide reasonable assurance regarding prevention or timely detection of unauthorized acquisition, use or disposition of a company's assets that could have a material effect on the consolidated financial statements.



Because of its inherent limitations, a system of internal control over financial reporting can provide only reasonable assurance with respect to consolidated financial statement preparation and presentation and may not prevent or detect misstatements. Also, projections of any evaluation of effectiveness to future periods are subject to the risk that controls may become inadequate because of changes in conditions, or that the degree of compliance with the policies or procedures may deteriorate.

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Following the overhaul in May 2013 by the Committee of Sponsoring Organization of the Treadway ( COSO ) of the COSO Framework relating to internal controls and adoption of the 2013 Integrated Framework of the Committee of Sponsoring Organizations of the Treadway Commission (the COSO Framework (2013) ), we have, effective January 1, 2014, adopted the COSO Framework (2013) and incorporated it into our internal control system for us and our subsidiaries in order to comply with the Sarbanes Oxley Act and to standardize our internal control system. As required by Section 404 of the Sarbanes-Oxley Act of 2002 and related rules as promulgated by the Securities and Exchange Commission, management assessed the effectiveness of our internal control over financial reporting as of December 31, 2016 using criteria established by the COSO Framework (2013). Based on this evaluation, our management concluded that our internal control over financial reporting was effective as of December 31, 2017 based on the criteria established by the COSO Framework (2013).

### **Audit Report of the Independent Registered Public Accounting Firm**

KPMG Samjong Accounting Corp. has issued an audit report on the effectiveness of our internal control over financial reporting as of December 31, 2017, which is included elsewhere in this annual report.

### **Changes in Internal Controls**

There were no changes in our internal control over financial reporting that occurred during the year ended December 31, 2017 that have materially affected, or are reasonably likely to materially affect, our internal control over financial reporting. Our adoption of the COSO Framework (2013) did not have, and is not reasonably likely to have, any material effect on our internal control over financial reporting.

We operate an integrated ERP system for a transparent and efficient management of the core ERP components, including personnel, accounting, procurement, construction and facilities maintenance. In addition, we also operate a strategic enterprise management system that includes business warehouse, management information and business planning and simulation systems. We continue to upgrade and improve the ERP system, which is being used as our core information infrastructure.

### **ITEM 16.[RESERVED]**

#### **ITEM 16A.AUDIT COMMITTEE FINANCIAL EXPERT**

Our board of directors has determined that we have at least one audit committee financial expert as such term is defined by the regulations of the Securities and Exchange Commission issued pursuant to Section 407 of the Sarbanes-Oxley Act of 2002. Our audit committee financial expert is Cho, Jeon-Hyeok. Such member is independent within the meaning of the Korea Stock Exchange listing standards, the regulations promulgated under the Enforcement Decree of the Korean Commercial Code and the New York Stock Exchange listing standards.

#### **ITEM 16B.CODE OF ETHICS**

We have adopted a code of ethics for our principal executive officer, principal financial officer, principal accounting officer or controller, or persons performing similar functions as required under Section 406 of the Sarbanes-Oxley Act of 2002, together with an insider reporting system in compliance with Section 301 of the Sarbanes-Oxley Act. The code of ethics is available on our website [www.kepcoco.kr](http://www.kepcoco.kr). We have not granted any waiver, including an implicit

waiver, from a provision of the code of ethics to any of the above-mentioned officers during our most recently completed fiscal year.

**Table of Contents****ITEM 16C. PRINCIPAL AUDITOR FEES AND SERVICES**

The following table sets forth the aggregate fees billed for each of the years ended December 31, 2016 and 2017 for professional services rendered by our principal auditors for such year, for various types of services and a brief description of the nature of such services. KPMG Samjong Accounting Corp., a Korean independent registered public accounting firm, was our principal auditors for the year ended December 31, 2017 and we currently expect KPMG Samjong Accounting Corp. to serve as our principal auditors for the year ended December 31, 2018.

Type of Services	Aggregate Fees Billed During		Nature of Services
	2016	2017	
	(In millions of Won)		
Audit Fees	3,296	3,051	Audit service for KEPCO and its subsidiaries.
Audit-Related Fees		410	Comfort letter services.
Tax Fees	176	67	Tax return and consulting advisory service.
All Other Fees		2	All other services which do not meet the three categories above.
<b>Total</b>	<b>3,472</b>	<b>3,530</b>	

United States law and regulations in effect since May 6, 2003 generally require all service of the principal auditors to be pre-approved by an independent audit committee or, if no such committee exists with respect to an issuer, by the entire board of directors. We have adopted the following policies and procedures for consideration and approval of requests to engage our principal auditors to perform audit and non-audit services. If the request relates to services that would impair the independence of our principal auditors, the request must be rejected. If the service request relates to audit and permitted non-audit services for us and our subsidiaries, it must be forwarded to our audit committee and receive pre-approval.

In addition, United States law and regulations permit the pre-approval requirement to be waived with respect to engagements for non-audit services aggregating no more than five percent of the total amount of revenues we paid to our principal auditors, if such engagements were not recognized by us at the time of engagement and were promptly brought to the attention of our audit committee or a designated member thereof and approved prior to the completion of the audit.

**ITEM 16D. EXEMPTIONS FROM THE LISTING STANDARDS FOR AUDIT COMMITTEE**

Not applicable.

**ITEM 16E. PURCHASES OF EQUITY SECURITIES BY THE ISSUER AND AFFILIATED PURCHASERS**

Neither we nor any affiliated purchaser, as defined in Rule 10b-18(a)(3) of the Exchange Act, purchased any of our equity securities during the period covered by this annual report.

**ITEM 16F. CHANGE IN REGISTRANT'S CERTIFYING ACCOUNTANT**

Not applicable.

**ITEM 16G. CORPORATE GOVERNANCE**

We are committed to high standards of corporate governance. We are in compliance with the corporate governance provisions of the KEPCO Act, the Act on the Management of Public Institutions, the Korean

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Commercial Code, the Financial Investment Services and Capital Markets Act of Korea and the Listing Rules of the Korea Exchange. We, like all other companies in Korea, must comply with the corporate governance provisions under the Korean Commercial Code, except to the extent the KEPCO Act and the Act on the Management of Public Institutions otherwise require. Our corporate governance is also affected by various regulatory guidelines, including those promulgated by the Ministry of Strategy and Finance. In addition, as a company listed on the Korea Exchange, we are subject to the Financial Investment Services and Capital Markets Act of Korea, unless the Financial Investment Services and Capital Markets Act of Korea otherwise provides.

## **The Act on the Management of Public Institutions**

### ***General Provisions***

On April 1, 2007, the Act on the Management of Public Institutions took effect by abolishing and replacing the Government-invested Enterprise Management Basic Act, which was enacted in 1984. Unless stated otherwise therein, the Act on the Management of Public Institutions takes precedence over any other laws and regulations in the event of inconsistency. On April 2, 2007, pursuant to this Act the minister of the Ministry of Strategy and Finance designated us as a market-oriented public enterprise as defined under this Act, and we became subject to this Act accordingly. We incorporated the applicable provisions of this Act into our Articles of Incorporation by amendment thereto in September 2007.

The Act on the Management of Public Institutions sets out the rules for corporate governance for entities that are subject to this Act, including the appointment of their respective president and directors. Under this Act as it applies to us as a market-oriented public enterprise, (i) a senior non-standing director as appointed by the minister of the Ministry of Strategy and Finance becomes the chairman of our board of directors following the review and resolution of the Public Agencies Operating Committee; (ii) our president and our standing directors who concurrently serve as members of our audit committee are appointed by the President of the Republic upon the motion of the Ministry of Trade, Industry and Energy (in the case of our president) or of the Ministry of Strategy and Finance (in the case of standing directors who concurrently serve as members of our audit committee), following the nomination by such enterprise's director nomination committee, the review and resolution of the Public Agencies Operating Committee pursuant to the Act on the Management of Public Institutions and an approval at the general meeting of our shareholders; (iii) our standing directors other than the president and those who also serve as audit committee members must be appointed by our president with the approval at the general meeting of our shareholders from a pool of candidates recommended by our director nomination committee; and (iv) our non-standing directors must be appointed by the minister of the Ministry of Strategy and Finance following the review and resolution of the Public Agencies Operating Committee from a pool of candidates recommended by the director nomination committee, and must have ample knowledge and experience in business management.

The Public Agencies Operating Committee is established pursuant to the Act on the Management of Public Institutions and is comprised of one chairperson who is the Minister of the Ministry of Strategy and Finance and the following members: (i) one Vice Minister-level public official from the Office for Government Policy Coordination as nominated by the minister of the Office for Government Policy Coordination; (ii) one Vice Minister, Deputy Administrator or an equivalent public official of the related administrative agency as prescribed by Presidential Decree; (iii) one Vice Minister, Deputy Administrator, or an equivalent public official of the competent agency who does not fall under subclause (ii); and (iv) 11 or fewer persons commissioned by the President based on the recommendation of the Minister of the Ministry of Strategy and Finance from among persons in various fields including law, economy, press, academia, labor, who have good knowledge and experience in the operation and business administration of public institutions as well as good reputation for impartiality.

Our director nomination committee, which is also known as the Committee for Recommendation of Executive Officers, is comprised of non-standing directors and members appointed by the board of directors. The

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number of members ranges from five to 15 persons and must be decided by a resolution of the board of directors; provided that, the number of members appointed by the board of directors must be less than half of the total number of members of our director nomination committee.

Under the Act on the Management of Public Institutions and our Articles of Incorporation, the term of office is three years for our president and two years for our directors (standing and non-standing) other than our president. Our directors (including the president) may be reappointed for one or more additional terms of one year. In order to be reappointed, the president must be evaluated on the basis of his management performance; a standing director, on the basis of the performance of the duties for which he was elected to perform, or if the standing director has executed an incentive bonus contract, on the basis of his performance under the contract; and a non-standing director, on the basis of his performance of the duties for which he was elected to perform.

Under the Act on the Management of Public Institutions and our Articles of Incorporation, a recommendation from the director nomination committee is required for the appointment of our executive officers, except in the case of reappointments. The director nomination committee consists of five to fifteen members, including private-sector members appointed by the board of directors. Non-standing directors must comprise at least a majority of the director nomination committee. One of the private-sector members must be able to represent our opinion and must not be currently employed by us. As required under the Act on the Management of Public Institutions, we established an audit committee. At least two-thirds of the audit committee members must be non-standing directors, and at least one committee member must be an expert in finance or accounting. According to the Act on the Management of Public Institutions, our president's term cannot be terminated unless done so by the President of the Republic pursuant to the Act on the Management of Public Institutions or upon an event as specified in our Articles of Incorporation.

As required under Act on the Management of Public Institutions, we submit to the Government by October 31 every year a report on our medium- to long-term management goals. Under the Act on the Management of Public Institutions, we are also required to give separate public notice of important management matters, such as our budget and financial statements, status of directors and annual reports. In addition, for purposes of providing a comparison of the management performances of government agencies, we are required to post on a designated website a notice on a standard form detailing our management performance. Following consultation with the minister of the Ministry of Trade, Industry and Energy and the review and resolution of the operating committee, the Ministry of Strategy and Finance must examine the adequacy and competency of government agencies and establish plans on merger, abolishment, restructuring and privatization of public agencies. In such case, the minister of the Ministry of Trade, Industry and Energy must execute these plans and submit a performance report to the Ministry of Strategy and Finance.

### ***Application of the Act to Our Generation Subsidiaries***

On January 24, 2011, the Ministry of Strategy and Finance changed the designation of our six generation subsidiaries from other public institutions to market-oriented public enterprises, each as defined in the Act on the Management of Public Institutions, and all of our generation subsidiaries accordingly amended their respective articles of incorporation in 2011 to be in compliance with this Act. As other public institutions, our generation subsidiaries previously were not subject to the same regulations under the Act on the Management of Public Institutions applicable to us with regards to corporate governance matters such as the appointment and dismissal of directors and the composition of the boards of directors. However, as market-oriented public enterprises, our generation subsidiaries are currently subject to the same such regulations that are applicable to us.

Specifically, prior to such designation, (i) our president appointed the presidents and the statutory auditors of our generation subsidiaries; (ii) the selection of non-standing directors of each such subsidiary was subject to approval by



our president; (iii) the president of each such subsidiary entered into a management contract with our president; and (iv) our evaluation committee conducted performance evaluation of such subsidiaries. However,

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following such designation, akin to the appointment process applicable to us, (i) the President of the Republic appoints the presidents and standing directors of our generation subsidiaries that concurrently serve as members of the audit committees; (ii) the selection of non-standing directors of these subsidiaries is subject to approval by the minister of the Ministry of Strategy and Finance; (iii) the president of each such generation subsidiary is required to enter into a management contract directly with the minister of the Ministry of Trade, Industry and Energy; and the Public Agencies Operating Committee conducts performance evaluation of such subsidiaries.

***Our Control over the Generation Subsidiaries***

Designation of our generation subsidiaries as market-oriented public enterprises was intended to promote responsible management by and improve operational efficiency of government-affiliated electricity companies by fostering competition among them so as to provide improved service to the general public. Such designation also has had the effect of the Government exercising greater direct control over the appointment of the governing body of our generation subsidiaries (in ways that are similar how the Government exercises such control over us as our majority shareholder as well as our regulator).

In addition, the Government has imposed a number of regulations that further affect the respective operational boundaries between us and our generation subsidiaries, including as follows:

In August 2010, in furtherance of the Act on the Management of Public Institutions, the Ministry of Strategy and Finance announced the Proposal for the Improvement in the Structure of the Electric Power Industry, which was designed to promote responsible management by and improve operational efficiency of government-affiliated electricity companies by fostering competition among them. Key initiatives of the proposal included the following: (i) maintain the current structure of having six generation subsidiaries and designate the six generation subsidiaries as market-oriented public enterprises under the Act on the Management of Public Institutions in order to foster competition among the generation subsidiaries and promote efficiency in their operations, and (ii) clarify the scope of the business of us and the six generation subsidiaries (namely, that we shall manage the financial structure and governance of the six generation subsidiaries and nuclear power plant and overseas resources development projects, while the six generation subsidiaries will have greater autonomy with respect to construction and management of generation units and procurement of fuel, among others).

In January 2011, the Ministry of Strategy and Finance created a joint cooperation unit consisting of officers and employees selected from the five thermal power generation subsidiaries in order to reduce inefficiencies in areas such as fuel transportation, inventories, materials and equipment and construction, etc. and allow the thermal power generation subsidiaries to continue utilizing the benefits of economy of scale after split off of our generation business units into separate subsidiaries. The purpose of the joint cooperation unit was to give greater autonomy to the generation subsidiaries with regard to power plant construction and management and fuel procurements, and thereby enhance efficiency in operating power plants. The main functions of the joint cooperation unit are as follows: (i) maintain inventories of bituminous coal through volume exchanges and joint purchases, (ii) reduce shipping and demurrage expenses through joint operation and distribution of dedicated vessels, (iii) reduce costs by sharing information on generation material inventories and (iv) sharing human resources among the five thermal power generation subsidiaries for construction projects, among other things.

In June 2016, the Government announced the Proposal for Adjustment of Functions of Public Institutions (Energy Sector) for the purpose of streamlining the operations of government-affiliated energy companies by discouraging them from engaging in overlapping or similar businesses with each other, reducing non-core assets and activities and improving management and operational efficiency. The initiatives contemplated in this proposal that would affect us and our generation subsidiaries include the following: (i) the generation companies should take on greater responsibilities in overseas

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resource exploration and production projects as these involve procurement of fuels necessary for electricity generation while fostering cooperation among each other through closer coordination, (ii) KHNP should take a greater role in export of nuclear technology, and (iii) the current system of retail sale of electricity to end-users should be liberalized to encourage more competition.

However, notwithstanding these developments, we, also a government-controlled entity, remain as the sole shareholder of our generation subsidiaries and continue to exercise significant control over them in such capacity as the sole shareholder well as through other practical means as further described below.

First, as the sole shareholder, we continue to have the right, under the Act on the Management of Public Institutions, to approve or disapprove the appointment of key members of the governing body of our generation subsidiaries (namely, the president and the standing and non-standing directors) by way of a vote at the general shareholders meeting before such appointments are ultimately approved and made by the President of the Republic (in the case of the presidents and standing directors concurrently serving as audit committee members of the generation subsidiaries) or by the president of each generation subsidiary (in the case of other standing directors of such generation subsidiary). Our right to exercise such voting right as a shareholder is also protected by the Commercial Code of Korea.

Second, in practice we retain significant control over our generation subsidiaries through the following means:

We are the sole purchaser of electricity produced by the generation subsidiaries and continue to have near monopoly in terms of transmitting and distributing electricity in Korea. Accordingly, we continue to have significant influence over our generation subsidiaries in the electricity industry.

Pursuant to the Electricity Business Act, the adjusted coefficient must be determined so that the price of electricity sold by our generation subsidiaries to us shall have the effect of ensuring a fair rate of return to us as a standalone entity, which means any imbalance caused by excess profits taken by our generation subsidiaries to our loss must be corrected. Since we and the generation subsidiaries participate in the determination of the adjusted coefficient, such determination process can be used as a way for us to exert indirect influence on our generation subsidiaries.

Our president holds regular meetings (known as CEO Meetings ) with the presidents of our generation subsidiaries for which our president determines whether and when to convene such meetings, sets the agenda for such meetings and chairs such meetings. Since significant issues that jointly affect us and our generation subsidiaries are often discussed and decided at these meetings, the leadership role exercised by our president in such meetings is significant in setting the policies and direction for us and our generation subsidiaries as a whole.

We maintain and operate the Affiliated Company Management Team within the parent company organizational structure. The purpose of this team is to support and coordinate the management of the generation subsidiaries. Activities of the Affiliated Company Management Team include preparation of the CEO meetings, deliberation on major issues to be discussed at CEO Meetings, convening a general meeting of shareholders of the generation subsidiaries and coordination on the decision-making process for the general meeting of shareholders of the generation subsidiaries.

Ultimately, our control over our generation subsidiaries is derived from the fact that the Government owns the majority of our shares and effectively controls us as the supervisor and regulator in a heavily regulated industry, and in effect also exercises the same degree of control over our generation subsidiaries through our sole share ownership over our generation subsidiaries as well as its statutory power of direct appointment of the governing bodies of our generation subsidiaries. In effect, we are acting as an intermediate holding company in a vertical control structure involving the Government, us and our generation subsidiaries, where the Government holds the ultimate control over both us and our generation subsidiaries and exercises its such control over our generation subsidiaries in part through us acting as the sole shareholder and the parent company.

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**Table of Contents****Differences in Korean/New York Stock Exchange Corporate Governance Practices**

We are a foreign private issuer (as such term is defined in Rule 3b-4 under the Exchange Act), and our ADSs are listed on the New York Stock Exchange, or NYSE. Under Section 303A of the NYSE Listed Company Manual, NYSE-listed companies that are foreign private issuers are permitted to follow home country practice in lieu of the corporate governance provisions specified by the NYSE with limited exceptions. Under the NYSE Listed Company Manual, we as a foreign private issuer are required to disclose significant differences between NYSE's corporate governance standards and those we follow under Korean law. The following summarizes some significant ways in which our corporate governance practices differ from those followed by U.S. companies listed on the NYSE under the listing rules of the NYSE.

***Majority of Independent Directors on the Board***

Under the NYSE listing rules, U.S. companies listed on the NYSE must have a board, the majority of which is comprised of independent directors satisfying the requirements of independence as set forth in Rule 10A-3 under the Exchange Act. No director qualifies as independent unless the board of directors affirmatively determines that the director has no material relationship with the listed company (either directly or as a partner, shareholder or officer of an organization that has a relationship with us). The NYSE rules include detailed tests for determining director independence. As a foreign private issuer, we are exempt from this requirement. Under the Act on the Management of Public Institutions, more than one-half of our directors must be non-standing directors. For a discussion on qualifications of non-standing directors, see Item 6.A. **Directors and Senior Management Board of Directors.** The Financial Investment Services and Capital Markets Act of Korea deems a non-standing director nominated pursuant to other applicable laws (such as the Act on the Management of Public Institutions) as an outside or non-executive director. Under the Act on the Management of Public Institutions, a non-standing director is appointed by the Ministry of Strategy and Finance following the review and resolution of the Public Agencies Operating Committee from a pool of candidates recommended by the director nomination committee and an approval at our general meeting shareholders, and must have ample knowledge and experience in business management. Government officials that are not part of the teaching staff in national and public schools are ineligible to become our non-standing directors.

***Executive Session***

Under the NYSE listing rules, non-management directors of U.S. companies listed on the NYSE are required to meet on a regular basis without management present and independent directors must meet separately at least once per year. While no such requirement currently exists under applicable Korean law, listing standards or our Articles of Incorporation, executive sessions were held from time to time in 2017 in order to promote the exchange of diverse opinions by non-standing directors.

***Audit Committee***

Under the NYSE listing rules, listed companies must have an audit committee that has a minimum of three members, and all audit committee members must satisfy the requirements of independence set forth in Section 303A.02 of the NYSE Listed Company Manual and Rule 10A-3 under the Exchange Act. Our audit committee members meet the requirements of independence set forth in Section 303A.02 of the NYSE Listed Company Manual and Rule 10A-3 under the Exchange Act. The audit committee must be directly responsible for the appointment, compensation, retention and oversight of the work of the independent registered public accountants. Our audit committee performs the roles and responsibilities required of an audit committee under the Sarbanes-Oxley Act, including the supervision of the audit by the independent registered public accountants. Under the Korea Exchange listing rules and the Korean

Commercial Code, a large listed company must also establish an audit committee of which at least two-thirds of its members must be non-standing directors and whose chairman must be a non-standing director. Under the Act on the Management of Public Institutions, the Korean Commercial Code, the amended Articles of Incorporation and the Korea Exchange listing rules, we are required to maintain an audit committee consisting of three members, of which not less than two members are

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required to be non-standing directors. Our audit committee is in compliance with the foregoing requirements under the Act on the Management of Public Institutions, the Korean Commercial Code, the amended Articles of Incorporation and the Korea Exchange listing rules.

### ***Nomination/Corporate Governance Committee***

Under the NYSE listing rules, U.S. companies listed on the NYSE must have a nomination/corporate governance committee composed entirely of independent directors. In addition to identifying individuals qualified to become board members, this committee must develop and recommend to the board a set of corporate governance principles. Under the Act on the Management of Public Institutions, we are required to have a director nomination committee which consists of non-standing directors and ad hoc members appointed by our Board of Directors. Our standing directors and executives as well as governmental officials that are not part of the teaching staff in national and public schools are ineligible to become a member of our director nomination committee. There is no requirement to establish a corporate governance committee under applicable Korean law.

Pursuant to the NYSE listing standards, non-management directors must meet on a regular basis without management present and independent directors must meet separately at least once per year. No such requirement currently exists under applicable Korean law.

### ***Compensation Committee***

Under the NYSE listing rules, U.S. companies listed on the NYSE are required to have a compensation committee which is composed entirely of independent directors. In January 2013, the SEC approved amendments to the listing rules of NYSE and NASDAQ regarding the independence of compensation committee members and the appointment, payment and oversight of compensation consultants. The listing rules were adopted as required by Section 952 of the Dodd-Frank Act and rule 10C-1 of the Exchange Act, which direct the national securities exchanges to prohibit the listing of any equity security of a company that is not in compliance with the rules' compensation committee director and advisor independence requirements. Certain elements of the listing rules became effective on July 1, 2013 and companies listed on the NYSE must comply with such listing rules by the earlier of the company's first annual meeting after January 15 or October 31, 2014.

No such requirement currently exists under applicable Korean law or listing standards, and we currently do not have a compensation committee.

### ***Corporate Governance Guidelines and Code of Business Conduct and Ethics***

Under the NYSE listing rules, U.S. companies listed on the NYSE are required to establish corporate governance guidelines and to adopt a code of business conduct and ethics for directors, officers and employees, and promptly disclose any waivers of the code for directors or executive officers. As a foreign private issuer, we are exempt from this requirement. Pursuant to the requirements of the Sarbanes-Oxley Act, we have adopted a code of ethics applicable to our President & Chief Executive Officer and all other directors and executive officers including the Chief Financial Officer and the Chief Accounting Officer, as well as all financial, accounting and other officers that are involved in the preparation and disclosure of our consolidated financial statements and internal control of financial reporting pursuant to Section 404 of the Sarbanes-Oxley Act. We have also adopted an insider reporting system in compliance with Section 301 of the Sarbanes-Oxley Act. The code of ethics applicable to our executive officers and financial officers are available on [www.kepco.co.kr](http://www.kepco.co.kr).

### ***Shareholder Approval of Equity Compensation Plans***



Under the NYSE listing rules, shareholders of U.S. companies listed on the NYSE are required to approve all equity compensation plans. Under Korean law and regulations, stock options can be granted to employees to

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the extent expressly permitted by the articles of incorporation. We currently do not have any equity compensation plans.

***Annual Certification of Compliance***

Under the NYSE listing rules, a chief executive officer of a U.S. company listed on the NYSE must annually certify that he or she is not aware of any violation by the company of NYSE corporate governance standards. As a foreign private issuer, we are not subject to this requirement. However, in accordance with rules applicable to both U.S. companies and foreign private issuers, we are required to promptly notify the NYSE in writing if any executive officer becomes aware of any material noncompliance with the NYSE corporate governance standards applicable to us. In addition, foreign private issuers, including us, are required to submit to the NYSE an annual written affirmation relating to compliance with Sections 303A.06 and 303A.11 of the NYSE listed company manual, which are the NYSE corporate governance standards applicable to foreign private issuers. All written affirmations must be executed in the form provided by the NYSE, without modification. An annual written affirmation is required to be submitted to the NYSE within 30 days of filing with the SEC our annual report on Form 20-F. We have been in compliance with this requirement in all material respects and plan to submit such affirmation within the prescribed time line.

***Whistle Blower Protection***

On May 25, 2011, the SEC adopted final rules to implement whistleblower provisions of the Dodd-Frank Act, which are applicable to foreign private issuers with securities registered under the U.S. securities laws. The final rules provide that any eligible whistleblower who voluntarily provides the SEC with original information that leads to the successful enforcement of an action brought by the SEC under U.S. securities laws must receive an award of between 10 and 30 percent of the total monetary sanctions collected if the sanctions exceed US\$1,000,000. An eligible whistleblower is defined as someone who provides information about a possible violation of the securities laws that he or she reasonably believes has occurred, is ongoing, or is about to occur. The possible violation does not need to be material, probably or even likely, but the information must have a facially plausible relationship to some securities law violation ; frivolous submissions would not qualify. The final rules also prohibit retaliation against the whistleblower. While the final rules do not require employees to first report allegations of wrongdoing through a company s corporate compliance system, they do seek to incentivize whistleblowers to utilize internal corporate compliance first by, among other things, (i) giving employees who first report information internally the benefit of the internal reporting date for purposes of the SEC program so long as the whistleblower submits the same information to the SEC within 120 days of the initial disclosure; (ii) clarifying that the SEC will consider, as part of the criteria for determining the amount of a whistleblower s award, whether the whistleblower effectively utilized the company s corporate compliance program or hindered the function of the program; and (iii) crediting a whistleblower who reports internally first and whose company passes the information along to the SEC, which would mean the whistleblower could receive a potentially higher award for information gathered in an internal investigation initiated as a result of the whistleblower s internal report.

In addition, the final rules address concerns that the whistleblower rules incentivize officers, directors and those with legal, audit, compliance or similar responsibilities to abuse these positions by making whistleblower complaints to the SEC with respect to information they obtained in these roles by generally providing that information obtained through a communication subject to attorney-client privilege or as a result of legal representation would not be eligible for a whistleblower award unless disclosure would be permitted by attorney conduct rules. Accordingly, officers and directors, auditors and compliance personnel and other persons in similar roles would not be eligible to receive awards for information received in these positions unless (x) they have a reasonable basis to believe that (1) disclosure of the information is necessary to prevent the entity from engaging in conduct that is likely to cause substantial injury to the financial interests of the entity or investors; or (2) the entity is engaging in conduct that will impede an investigation

of the misconduct, for example, destroying documents or improperly influencing witnesses; or (y) 120 days have passed since the whistleblower provided

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the information to senior responsible persons at the entity or 120 days have passed since the whistleblower received the information at a time when these people were already aware of the information.

In Korea, under the Financial Investment Services and Capital Markets Act, anyone may provide or furnish the Financial Services Commission or the Securities and Futures Commission with information on unfair trading or any other violation of the Financial Investment Services and Capital Markets Act. The Financial Services Commission shall keep the identity of the whistleblower confidential, and any institution, organization or company to which the whistleblower belongs may not treat the whistleblower unfavorably, directly or indirectly. In addition, the Financial Services Commission may also reward the whistleblower within the limit of the budget of the Financial Services Commission.

**ITEM 16H. MINE SAFETY DISCLOSURE**

Not applicable.

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**PART III**

**ITEM 17. *FINANCIAL STATEMENTS***

Not applicable.

**ITEM 18. *FINANCIAL STATEMENTS***

Reference is made to Item 19. Exhibits for a list of all financial statements filed as part of this annual report.

**ITEM 19. *EXHIBITS***

**(a) Financial Statements filed as part of this Annual Report**

See Index to Financial Statements on page F-1 of this annual report.

**(b) Exhibits filed as part of this Annual Report**

See Index of Exhibits beginning on page E-1 of this annual report.

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**INDEX OF EXHIBITS**

- 1.1 Articles of Incorporation, as last amended on November 11, 2016 (in English)\*
- 2.1 Form of Deposit Agreement\*\*
- 8.1 List of Subsidiaries
- 12.1 Certifications of our Chief Executive Officer required by Rule 13a-14(a) of the Exchange Act (Certifications under Section 302 of the Sarbanes-Oxley Act of 2002)
- 12.2 Certifications of our Chief Financial Officer required by Rule 13a-14(a) of the Exchange Act (Certifications under Section 302 of the Sarbanes-Oxley Act of 2002)
- 13.1 Certifications of our Chief Executive Officer required by Rule 13a-14(b) and Section 1350 of Chapter 63 of the United States Code (18 U.S.C. 1350) (Certifications under Section 906 of the Sarbanes-Oxley Act of 2002)
- 13.2 Certifications of our Chief Financial Officer required by Rule 13a-14(b) and Section 1350 of Chapter 63 of the United States Code (18 U.S.C. 1350) (Certifications under Section 906 of the Sarbanes-Oxley Act of 2002)
- 15.1 The Korea Electric Power Corporation Act, as amended on March 21, 2017 (in English)
- 15.2 Enforcement Decree of the Korea Electric Power Corporation Act, as amended on August 31, 2016 (in English)\*\*
- 15.3 The Act on the Management of Public Institutions, as amended on Dec 27, 2016 (in English)
- 15.4 Enforcement Decree of the Act on the Management of Public Institutions, as amended on August 9, 2017 (in English)
- 101.1 Interactive Data Files (XBRL-Related Documents)

\* Incorporated by reference to the Registrant's annual report on Form 20-F (No. 001-13372) previously filed on April 28, 2017.

\*\* Incorporated by reference to the Registrant's Registration Statement on Form F-6 with respect to the ADSs, registered under Registration No. 333-196703.

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**SIGNATURES**

The registrant hereby certifies that it meets all of the requirements for filing on Form 20-F and that it has duly caused and authorized the undersigned to sign this Annual Report on its behalf.

KOREA ELECTRIC POWER CORPORATION

By: /s/ JongKap KIM  
Name: JongKap KIM  
Title: President and Chief Executive Officer  
Date: April 30, 2018

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<u>Consolidated Statements of Comprehensive Income for the Years Ended December 31, 2015, 2016 and 2017</u>	F-7
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**REPORT OF INDEPENDENT REGISTERED PUBLIC  
ACCOUNTING FIRM ON CONSOLIDATED FINANCIAL STATEMENTS**

To the Shareholders and Board of Directors of

Korea Electric Power Corporation:

**Opinion on the Consolidated Financial Statements**

We have audited the accompanying consolidated statements of financial position of Korea Electric Power Corporation and subsidiaries (the Company) as of December 31, 2016 and 2017, the related consolidated statements of comprehensive income, changes in equity and cash flows for each of the years in the three-year period ended December 31, 2017, and the related notes (collectively, the consolidated financial statements). In our opinion, the consolidated financial statements present fairly, in all material respects, the financial position of the Company as of December 31, 2016 and 2017, and the results of its operations and its cash flows for each of the years in the three-year period ended December 31, 2017, in conformity with International Financial Reporting Standards as issued by the International Accounting Standards Board.

We also have audited, in accordance with the standards of the Public Company Accounting Oversight Board (United States) (PCAOB), the Company's internal control over financial reporting as of December 31, 2017, based on criteria established in Internal Control-Integrated Framework (2013) issued by the Committee of Sponsoring Organizations of the Treadway Commission, and our report dated April 26, 2018 expressed an unqualified opinion on the effectiveness of the Company's internal control over financial reporting.

**Basis for Opinion**

These consolidated financial statements are the responsibility of the Company's management. Our responsibility is to express an opinion on the Company's consolidated financial statements based on our audits. We are a public accounting firm registered with the PCAOB and are required to be independent with respect to the Company in accordance with the U.S. federal securities laws and the applicable rules and regulations of the Securities and Exchange Commission and the PCAOB.

We conducted our audits in accordance with the standards of the PCAOB. Those standards require that we plan and perform the audit to obtain reasonable assurance about whether the consolidated financial statements are free of material misstatement, whether due to error or fraud. Our audits included performing procedures to assess the risks of material misstatement of the consolidated financial statements, whether due to error or fraud, and performing procedures that respond to those risks. Such procedures included examining, on a test basis, evidence regarding the amounts and disclosures in the consolidated financial statements. Our audits also included evaluating the accounting principles used and significant estimates made by management, as well as evaluating the overall presentation of the consolidated financial statements. We believe that our audits provide a reasonable basis for our opinion.

/s/ KPMG Samjong Accounting Corp.

We have served as the Company's auditor since 2013.

Seoul, Korea

April 26, 2018

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**REPORT OF INDEPENDENT REGISTERED PUBLIC ACCOUNTING FIRM ON  
INTERNAL CONTROL OVER FINANCIAL REPORTING**

To the Shareholders and Board of Directors of

Korea Electric Power Corporation:

**Opinion on Internal Control Over Financial Reporting**

We have audited Korea Electric Power Corporation and subsidiaries (the Company) internal control over financial reporting as of December 31, 2017, based on criteria established in Internal Control Integrated Framework (2013) issued by the Committee of Sponsoring Organizations of the Treadway Commission. In our opinion, the Company maintained, in all material respects, effective internal control over financial reporting as of December 31, 2017, based on the criteria established in Internal Control Integrated Framework (2013) issued by the Committee of Sponsoring Organizations of the Treadway Commission.

We also have audited, in accordance with the standards of the Public Company Accounting Oversight Board (United States) (PCAOB), the consolidated statements of financial position of the company as of December 31, 2016 and 2017, the related consolidated statements of comprehensive income, changes in equity and cash flows for each of the years in the three-year period ended December 31, 2017, and the related notes (collectively, the consolidated financial statements), and our report dated April 26, 2018 expressed an unqualified opinion on those consolidated financial statements.

**Basis for Opinion**

The Company's management is responsible for maintaining effective internal control over financial reporting, and for its assessment of the effectiveness of internal control over financial reporting, included in the accompanying Management's Annual Report on Internal Control Over Financial Reporting. Our responsibility is to express an opinion on the Company's internal control over financial reporting based on our audit. We are a public accounting firm registered with the PCAOB and are required to be independent with respect to the Company in accordance with the U.S. federal securities laws and the applicable rules and regulations of the Securities and Exchange Commission and the PCAOB.

We conducted our audit in accordance with the standards of the PCAOB. Those standards require that we plan and perform the audit to obtain reasonable assurance about whether effective internal control over financial reporting was maintained in all material respects. Our audit of internal control over financial reporting included obtaining an understanding of internal control over financial reporting, assessing the risk that a material weakness exists, and testing and evaluating the design and operating effectiveness of internal control based on the assessed risk. Our audit also included performing such other procedures as we considered necessary in the circumstances. We believe that our audit provides a reasonable basis for our opinion.

**Definition and Limitations of Internal Control Over Financial Reporting**

A company's internal control over financial reporting is a process designed to provide reasonable assurance regarding the reliability of financial reporting and the preparation of financial statements for external purposes in accordance with generally accepted accounting principles. A company's internal control over financial reporting includes those policies and procedures that (1) pertain to the maintenance of records that, in reasonable detail, accurately and fairly

reflect the transactions and dispositions of the assets of the company; (2) provide reasonable assurance that transactions are recorded as necessary to permit preparation of financial statements in accordance with generally accepted accounting principles, and that receipts and expenditures of the company are being made only in accordance with authorizations of management and directors of the company; and (3) provide reasonable assurance regarding prevention or timely detection of unauthorized acquisition, use, or disposition of the company's assets that could have a material effect on the financial statements.

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Because of its inherent limitations, internal control over financial reporting may not prevent or detect misstatements. Also, projections of any evaluation of effectiveness to future periods are subject to the risk that controls may become inadequate because of changes in conditions, or that the degree of compliance with the policies or procedures may deteriorate.

/s/ KPMG Samjong Accounting Corp.

Seoul, Korea

April 26, 2018

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Table of Contents**KOREA ELECTRIC POWER CORPORATION AND SUBSIDIARIES****Consolidated Statements of Financial Position****As of December 31, 2016 and 2017**

	Note	2016	2017
		In millions of won	
<b>Assets</b>			
Current assets			
Cash and cash equivalents	5,6,7,45	3,051,353	2,369,739
Current financial assets, net	5,10,11,12,45	2,671,989	1,958,357
Trade and other receivables, net	5,8,14,20,45,46,47	7,788,876	7,928,972
Inventories, net	13	5,479,443	6,002,086
Income tax refund receivables	41	19,163	100,590
Current non-financial assets	15	631,860	753,992
Assets held-for-sale	42	65,842	27,971
<b>Total current assets</b>		<b>19,708,526</b>	<b>19,141,707</b>
Non-current assets			
Non-current financial assets, net	5,6,9,10,11,12,45	2,657,494	2,038,913
Non-current trade and other receivables, net	5,8,14,45,46,47	1,903,515	1,754,797
Property, plant and equipment, net	18,27,49	145,743,056	150,882,414
Investment properties, net	19,27	353,680	284,714
Goodwill	16	2,582	2,582
Intangible assets other than goodwill, net	21,27,46	980,821	1,187,121
Investments in associates	4,17	4,092,252	3,837,421
Investments in joint ventures	4,17	1,418,196	1,493,275
Deferred tax assets	41	795,131	919,153
Non-current non-financial assets	15	181,789	246,818
<b>Total non-current assets</b>		<b>158,128,516</b>	<b>162,647,208</b>
<b>Total Assets</b>	<b>4</b>	<b>177,837,042</b>	<b>181,788,915</b>

(Continued)

Table of Contents**KOREA ELECTRIC POWER CORPORATION AND SUBSIDIARIES****Consolidated Statements of Financial Position, Continued****As of December 31, 2016 and 2017**

	Note	2016	2017
		In millions of won	
<b>Liabilities</b>			
Current liabilities			
Trade and other payables, net	5,22,24,45,47	5,585,411	5,999,521
Current financial liabilities, net	5,11,23,45,47	8,942,329	9,194,552
Income tax payables	41	1,843,288	508,402
Current non-financial liabilities	20,28,29	6,368,210	5,584,308
Current provisions	26,45	1,999,988	2,137,498
<b>Total current liabilities</b>		24,739,226	23,424,281
Non-current liabilities			
Non-current trade and other payables, net	5,22,24,45,47	3,558,175	3,223,480
Non-current financial liabilities, net	5,11,23,45,47	44,835,562	45,980,899
Non-current non-financial liabilities	28,29	7,591,605	8,072,434
Employee benefits liabilities, net	25,45	1,686,258	1,483,069
Deferred tax liabilities	41	8,948,520	10,415,397
Non-current provisions	26,45	13,427,151	16,224,714
<b>Total non-current liabilities</b>		80,047,271	85,399,993
<b>Total Liabilities</b>	4	104,786,497	108,824,274
<b>Equity</b>			
Contributed capital	1,30,45		
Share capital		3,209,820	3,209,820
Share premium		843,758	843,758
		4,053,578	4,053,578
Retained earnings	31		
Legal reserves		1,604,910	1,604,910
Voluntary reserves		31,847,275	34,833,844
Unappropriated retained earnings		19,721,686	16,931,804
		53,173,871	53,370,558
Other components of equity	34		
Other capital surplus		1,235,146	1,233,793
Accumulated other comprehensive loss		(33,875)	(271,457)

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Other equity		13,294,973	13,294,973
		14,496,244	14,257,309
Equity attributable to owners of the controlling company		71,723,693	71,681,445
Non-controlling interests	16, 33	1,326,852	1,283,196
<b>Total Equity</b>		<b>73,050,545</b>	<b>72,964,641</b>
<b>Total Liabilities and Equity</b>		<b>177,837,042</b>	<b>181,788,915</b>

See accompanying notes to the consolidated financial statements.

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Table of Contents**KOREA ELECTRIC POWER CORPORATION AND SUBSIDIARIES****Consolidated Statements of Comprehensive Income****For the years ended December 31, 2015, 2016 and 2017**

	Note	2015	2016	2017
		In millions of won, except per share		
		information		
<b>Sales</b>	4,35,45,47			
Sales of goods		54,367,036	55,379,487	55,772,548
Sales of construction services	20	3,761,204	4,026,857	3,212,184
Sales of services		453,487	356,743	351,157
		58,581,727	59,763,087	59,335,889
<b>Cost of sales</b>	13,25,43,47			
Cost of sales of goods		(41,348,917)	(41,237,372)	(48,454,036)
Cost of sales of construction services		(3,563,120)	(3,755,144)	(3,047,396)
Cost of sales of services		(545,692)	(557,037)	(597,423)
		(45,457,729)	(45,549,553)	(52,098,855)
<b>Gross profit</b>		13,123,998	14,213,534	7,237,034
<b>Selling and administrative expenses</b>	25,36,43,47	(2,153,261)	(2,639,232)	(2,762,855)
<b>Other income</b>	37	808,214	840,184	869,118
<b>Other expenses</b>	37	(108,848)	(188,624)	(180,055)
<b>Other gains, net</b>	38	8,610,773	70,498	156,627
<b>Operating profit</b>	4	20,280,876	12,296,360	5,319,869
<b>Finance income</b>	5,11,39	1,182,988	791,543	1,530,618
<b>Finance expenses</b>	5,11,40	(3,015,457)	(2,437,087)	(3,127,952)
<b>Profit (loss) related to associates, joint ventures and subsidiaries</b>	4,17			
Share in profit of associates and joint ventures		280,794	224,435	241,537
Gain on disposal of investments in associates and joint ventures		4,731	52	609
Gain on disposal of investments in subsidiaries	16	8,376		
Share in loss of associates and joint ventures		(86,522)	(243,361)	(323,225)
Loss on disposal of investments in associates and joint ventures			(2,935)	
Impairment loss on investments in associates and joint ventures	17		(115,539)	(27,238)
		207,379	(137,348)	(108,317)

<b>Profit before income tax</b>		18,655,786	10,513,468	3,614,218
<b>Income tax expense</b>	41	(5,239,413)	(3,365,141)	(2,172,824)
<b>Profit for the period</b>		13,416,373	7,148,327	1,441,394

(Continued)

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Table of Contents**KOREA ELECTRIC POWER CORPORATION AND SUBSIDIARIES****Consolidated Statements of Comprehensive Income, Continued****For the years ended December 31, 2015, 2016 and 2017**

	Note	2015	2016	2017
		In millions of won, except per share		
		information		
<b>Other comprehensive income (loss)</b>	5,11,25,31,34			
Items that will not be reclassified subsequently to profit or loss:				
Remeasurements of defined benefit liability, net of tax	25,31	(87,861)	(75,926)	170,337
Share in other comprehensive loss of associates and joint ventures, net of tax	31	(283)	(2,515)	10,067
Items that are or may be reclassified subsequently to profit or loss:				
Net change in the unrealized fair value of available-for-sale financial assets, net of tax	34	9,648	61,279	(7,098)
Net change in the unrealized fair value of derivatives using cash flow hedge accounting, net of tax	5,11,34	4,409	28,414	20,868
Foreign currency translation of foreign operations, net of tax	34	18,535	41,360	(134,196)
Share in other comprehensive income (loss) of associates and joint ventures, net of tax	34	89,558	(54,914)	(154,694)
<b>Other comprehensive income (loss), net of tax</b>		34,006	(2,302)	(94,716)
<b>Total comprehensive income for the period</b>		13,450,379	7,146,025	1,346,678
<b>Profit or loss attributable to:</b>				
Owners of the controlling company	44	13,289,127	7,048,581	1,298,720
Non-controlling interests		127,246	99,746	142,674
		13,416,373	7,148,327	1,441,394
<b>Total comprehensive income attributable to:</b>				
Owners of the controlling company		13,308,132	7,041,557	1,230,194
Non-controlling interests		142,247	104,468	116,484
		13,450,379	7,146,025	1,346,678
<b>Earnings per share (in won)</b>	44			
Basic and diluted earnings per share		20,701	10,980	2,023

See accompanying notes to the consolidated financial statements.



Table of Contents**KOREA ELECTRIC POWER CORPORATION AND SUBSIDIARIES****Consolidated Statements of Changes in Equity****For the years ended December 31, 2015, 2016 and 2017**

	Equity attributable to owners of the controlling company			Subtotal	Non-controlling Interests	Total equity
	Contributed capital	Retained earnings	Other components of equity			
	In millions of won					
<b>Balance at January 1, 2015</b>	4,053,578	35,303,647	14,244,106	53,601,331	1,223,679	54,825,010
<b>Total comprehensive income (loss) for the period</b>						
Profit for the period		13,289,127		13,289,127	127,246	13,416,373
Items that will not be reclassified subsequently to profit or loss:						
Remeasurements of defined benefit liability, net of tax		(84,271)		(84,271)	(3,590)	(87,861)
Share in other comprehensive loss of associates and joint ventures, net of tax		(280)		(280)	(3)	(283)
Items that are or may be reclassified subsequently to profit or loss:						
Net change in the unrealized fair value of available-for-sale financial assets, net of tax			9,744	9,744	(96)	9,648
Net change in the unrealized fair value of derivatives using cash flow hedge accounting, net of tax			3,157	3,157	1,252	4,409
Foreign currency translation of foreign operations, net of tax			1,179	1,179	17,356	18,535
Share in other comprehensive income of associates and joint ventures, net of tax			89,476	89,476	82	89,558

**Transactions with owners  
of the Company,  
recognized directly in  
equity**

Dividends paid	(320,982)		(320,982)	(86,071)	(407,053)	
Issuance of share capital by subsidiaries		2,536	2,536	12,329	14,865	
Equity transaction within consolidation scope other than issuance of share capital		44,166	44,166	9,046	53,212	
Disposal of treasury stocks		(716)	(716)	23,229	22,513	
Changes in consolidation scope				(16,455)	(16,455)	
Dividends paid (hybrid bond)				4	4	
<b>Balance at December 31, 2015</b>	4,053,578	48,187,241	14,393,648	66,634,467	1,308,008	67,942,475

(Continued)

Table of Contents**KOREA ELECTRIC POWER CORPORATION AND SUBSIDIARIES****Consolidated Statements of Changes in Equity, Continued****For the years ended December 31, 2015, 2016 and 2017**

	Equity attributable to owners of the controlling company			Subtotal	Non-controlling Interests	Total equity
	Contributed capital	Retained earnings	Other components of equity			
	In millions of won					
<b>Balance at January 1, 2016</b>	4,053,578	48,187,241	14,393,648	66,634,467	1,308,008	67,942,475
<b>Total comprehensive income (loss) for the period</b>						
Profit for the period		7,048,581		7,048,581	99,746	7,148,327
Items that will not be reclassified subsequently to profit or loss:						
Remeasurements of defined benefit liability, net of tax		(69,330)		(69,330)	(6,596)	(75,926)
Share in other comprehensive income (loss) of associates and joint ventures, net of tax		(2,532)		(2,532)	17	(2,515)
Items that are or may be reclassified subsequently to profit or loss:						
Net change in the unrealized fair value of available-for-sale financial assets, net of tax			61,275	61,275	4	61,279
Net change in the unrealized fair value of derivatives using cash flow hedge accounting, net of tax			27,075	27,075	1,339	28,414
Foreign currency translation of foreign operations, net of tax			31,406	31,406	9,954	41,360
Share in other comprehensive income (loss) of associates and joint ventures, net of tax			(54,918)	(54,918)	4	(54,914)

**Transactions with owners  
of the Company,  
recognized directly in  
equity**

Dividends paid	(1,990,089)		(1,990,089)	(99,982)	(2,090,071)	
Issuance of shares of capital by subsidiaries and others		1,750	1,750	14,809	16,559	
Equity transaction within consolidation scope other than issuance of share capital		36,008	36,008	12,299	48,307	
Changes in consolidation scope				3,705	3,705	
Dividends paid (hybrid bond)				(16,455)	(16,455)	
<b>Balance at December 31, 2016</b>	4,053,578	53,173,871	14,496,244	71,723,693	1,326,852	73,050,545

(Continued)



Table of Contents**KOREA ELECTRIC POWER CORPORATION AND SUBSIDIARIES****Consolidated Statements of Changes in Equity, Continued****For the years ended December 31, 2015, 2016 and 2017**

	Equity attributable to owners of the controlling company			Subtotal	Non-controlling Interests	Total equity
	Contributed capital	Retained earnings	Other components of equity			
	<b>In millions of won</b>					
<b>Balance at January 1, 2017</b>	4,053,578	53,173,871	14,496,244	71,723,693	1,326,852	73,050,545
<b>Total comprehensive income (loss) for the period</b>						
Profit for the period		1,298,720		1,298,720	142,674	1,441,394
Items that will not be reclassified subsequently to profit or loss:						
Remeasurements of defined benefit liability, net of tax		158,991		158,991	11,346	170,337
Share in other comprehensive income of associates and joint ventures, net of tax		10,065		10,065	2	10,067
Items that are or may be reclassified subsequently to profit or loss:						
Net change in the unrealized fair value of available-for-sale financial assets, net of tax			(7,102)	(7,102)	4	(7,098)
Net change in the unrealized fair value of derivatives using cash flow hedge accounting, net of tax			19,614	19,614	1,254	20,868
Foreign currency translation of foreign operations, net of tax			(95,103)	(95,103)	(39,093)	(134,196)
Share in other comprehensive income (loss) of associates and joint			(154,991)	(154,991)	297	(154,694)

ventures, net of tax

**Transactions with owners  
of the Company,  
recognized directly in  
equity**

Dividends paid	(1,271,089)		(1,271,089)	(70,252)	(1,341,341)	
Issuance of shares of capital by subsidiaries and others		(1,378)	(1,378)	18,381	17,003	
Changes in consolidation scope				7,337	7,337	
Dividends paid (hybrid bond)				(15,856)	(15,856)	
Repayment of hybrid bond				(99,750)	(99,750)	
Others		25	25		25	
<b>Balance at December 31, 2017</b>	4,053,578	53,370,558	14,257,309	71,681,445	1,283,196	72,964,641

See accompanying notes to the consolidated financial statements.

**Table of Contents****KOREA ELECTRIC POWER CORPORATION AND SUBSIDIARIES****Consolidated Statements of Cash Flows****For the years ended December 31, 2015, 2016 and 2017**

	2015	2016	2017
	In millions of won		
<b>Cash flows from operating activities</b>			
Profit for the period	13,416,373	7,148,327	1,441,394
Adjustments for:			
Income tax expense	5,239,413	3,365,141	2,172,824
Depreciation	8,269,118	8,881,273	9,660,039
Amortization	72,266	79,715	113,672
Employee benefit expense	314,692	373,753	391,360
Bad debt expense	18,350	37,815	126,326
Interest expense	2,015,684	1,752,868	1,789,552
Loss on sale of financial assets	3,008	9	2,343
Loss on disposal of property, plant and equipment	1,933	4,996	70,514
Loss on abandonment of property, plant, and equipment	365,056	426,519	424,091
Impairment loss on property, plant and equipment	30,344		51,067
Impairment loss on intangible assets	22	3,945	20
Loss on disposal of intangible assets	16	158	183
Increase to provisions	1,602,724	1,782,732	1,690,120
Loss (gain) on foreign currency translation, net	617,224	253,468	(902,878)
Valuation and transaction loss (gain) on derivative instruments, net	(708,120)	(231,630)	1,043,628
Share in loss (income) of associates and joint ventures, net	(194,272)	18,926	81,688
Gain on disposal of financial assets	(4)	(1,482)	(1,130)
Gain on disposal of property, plant and equipment	(8,637,508)	(74,035)	(48,316)
Gain on disposal of intangible assets	(32)		(564)
Gain on disposal of investments in associates and joint ventures	(4,731)	(52)	(609)
Loss on disposal of investments in associates and joint ventures		2,935	
Gain on disposal of investments in subsidiaries	(8,376)		
Impairment loss on investments in associates and joint ventures		115,539	27,238
Interest income	(241,585)	(241,778)	(206,143)
Dividend income	(14,069)	(9,446)	(11,477)
Impairment loss on available-for-sale financial assets	84,370	86,703	2,713
Others, net	(35,107)	66,260	16,679
	8,790,416	16,694,332	16,492,940
Changes in:			
Trade receivables	715,498	200,529	(218,328)
Non-trade receivables	(17,102)	(68,322)	(31,807)
Accrued income	17,051	69,151	577,838
Other receivables	(9,441)	10,093	(1,271)

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Other current assets	67,520	(259,492)	37,576
Inventories	(1,190,188)	(1,439,545)	(1,373,438)
Other non-current assets	(31,465)	(2,792)	(46,079)
Trade payables	(1,577,551)	141,994	342,126
Non-trade payables	38,223	(8,379)	(214,704)
Accrued expenses	(410,744)	(153,172)	(715,305)
Other payables	964		292
Other current liabilities	870,945	284,417	(126,323)
Other non-current liabilities	377,617	809,699	763,958
Investments in associates and joint ventures (dividends received)	114,708	75,407	106,983
Provisions	(1,033,502)	(1,527,129)	(1,390,606)
Payments of employee benefit obligations	(43,100)	(53,477)	(69,489)
Plan assets	(214,449)	(312,125)	(325,080)
	(2,325,016)	(2,233,143)	(2,683,657)

(Continued)

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**Table of Contents****KOREA ELECTRIC POWER CORPORATION AND SUBSIDIARIES****Consolidated Statements of Cash Flows, Continued****For the years ended December 31, 2015, 2016 and 2017**

	<b>2015</b>	<b>2016</b>	<b>2017</b>
	<b>In millions of won</b>		
Cash generated from operating activities	19,881,773	21,609,516	15,250,677
Dividends received (available-for-sale financial assets)	38,565	10,294	10,590
Interest paid	(2,176,040)	(2,041,379)	(1,886,303)
Interest received	133,875	240,878	173,226
Income taxes paid	(935,068)	(3,298,757)	(2,298,296)
<b>Net cash from operating activities</b>	<b>16,943,105</b>	<b>16,520,552</b>	<b>11,249,894</b>
<b>Cash flows from investing activities</b>			
Proceeds from disposals of associates and joint ventures	22,058	46,644	10,542
Acquisition of associates and joint ventures	(116,114)	(113,222)	(206,753)
Proceeds from disposals of property, plant and equipment	9,843,796	207,960	85,801
Acquisition of property, plant and equipment	(14,049,887)	(12,028,789)	(12,535,958)
Proceeds from disposals of intangible assets	467	430	1,072
Acquisition of intangible assets	(87,946)	(124,422)	(143,887)
Proceeds from disposals of financial assets	242,856	10,876,017	5,296,680
Acquisition of financial assets	(5,326,151)	(8,130,621)	(4,786,717)
Increase in loans	(153,570)	(206,092)	(218,698)
Collection of loans	111,714	117,561	120,967
Increase in deposits	(352,669)	(468,734)	(397,078)
Decrease in deposits	185,154	161,166	110,383
Receipt of government grants	52,696	32,878	55,533
Net cash inflow (outflow) from changes in consolidation scope	(968)	3,754	
Other cash inflow (outflow) from investing activities, net	(145,406)	(20,400)	1,414
<b>Net cash used in investing activities</b>	<b>(9,773,970)</b>	<b>(9,645,870)</b>	<b>(12,606,699)</b>
<b>Cash flows from financing activities</b>			
Proceeds from (Repayment of) short-term borrowings, Net	(65,355)	(49,604)	370,328
Proceeds from long-term borrowings and debt securities	4,178,454	2,302,060	10,098,067
Repayment of long-term borrowings and debt securities	(8,960,706)	(7,750,047)	(8,198,882)
Payment of finance lease liabilities	(110,040)	(118,215)	(122,919)
Settlement of derivative instruments, net	73,348	73,246	33,434
Proceeds on disposal of partial interest in a subsidiary that does not involve loss of control	67,914		
Change in non-controlling interest	36,105	10,538	23,582
Repayment of hybrid bond			(99,750)
Dividends paid (hybrid bond)	(16,455)	(16,455)	(15,856)

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Dividends paid	(409,884)	(2,088,429)	(1,340,387)
Other cash outflow from financing activities, net		(570)	(2,023)
<b>Net cash from (used in) financing activities</b>	<b>(5,206,619)</b>	<b>(7,637,476)</b>	<b>745,594</b>
<b>Net increase (decrease) in cash and cash equivalents before effect of exchange rate fluctuations</b>	<b>1,962,516</b>	<b>(762,794)</b>	<b>(611,211)</b>
<b>Effect of exchange rate fluctuations on cash held</b>	<b>24,249</b>	<b>31,082</b>	<b>(70,403)</b>
<b>Net increase (decrease) in cash and cash equivalents</b>	<b>1,986,765</b>	<b>(731,712)</b>	<b>(681,614)</b>
<b>Cash and cash equivalents at January 1</b>	<b>1,796,300</b>	<b>3,783,065</b>	<b>3,051,353</b>
<b>Cash and cash equivalents at December 31</b>	<b>3,783,065</b>	<b>3,051,353</b>	<b>2,369,739</b>

See accompanying notes to the consolidated financial statements.

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**Table of Contents****KOREA ELECTRIC POWER CORPORATION AND SUBSIDIARIES****Notes to the Consolidated Financial Statements****December 31, 2017****1. Reporting Entity (Description of the controlling company)**

Korea Electric Power Corporation ( KEPCO ) was incorporated on January 1, 1982 in accordance with the Korea Electric Power Corporation Act (the KEPCO Act ) to engage in the generation, transmission and distribution of electricity and development of electric power resources in the Republic of Korea. KEPCO also provides power plant construction services. KEPCO s stock was listed on the Korea Stock Exchange on August 10, 1989 and KEPCO listed its Depository Receipts (DR) on the New York Stock Exchange on October 27, 1994. KEPCO s head office is located in Naju, Jeollanam-do.

As of December 31, 2017, KEPCO s share capital amounts to 3,209,820 million and KEPCO s shareholders are as follows:

	Number of shares	Percentage of ownership
Government of the Republic of Korea	116,841,794	18.20%
Korea Development Bank	211,235,264	32.90%
Foreign investors	194,050,746	30.23%
Other	119,836,273	18.67%
	641,964,077	100.00%

In accordance with the Restructuring Plan enacted on January 21, 1999 by the Ministry of Trade, Industry and Energy, KEPCO spun off its power generation divisions on April 2, 2001, resulting in the establishment of six power generation subsidiaries.

**2. Basis of Preparation**

The consolidated financial statements of Korea Electric Power Corporation and subsidiaries (the Company ) were authorized for issuance by the Board of Directors on February 23, 2018.

**(1) Statement of compliance**

These consolidated financial statements have been prepared in accordance with International Financial Reporting Standards ( IFRS ) as issued by the International Accounting Standards Board ( IASB ).

**(2) Basis of measurement**

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

derivative financial instruments are measured at fair value

available-for-sale financial assets are measured at fair value

liabilities for defined benefit plans are recognized at the net of the total present value of defined benefit obligations less the fair value of plan assets

**(3) Functional and presentation currency**

These consolidated financial statements are presented in Korean won ( Won ), which is KEPCO's functional and presentation currency.



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**(4) Use of estimates and judgments**

The preparation of the consolidated financial statements in conformity with IFRS requires management to make judgments, estimates and assumptions that affect the application of accounting policies and the reported amounts of assets, liabilities, income and expenses. Actual results may differ from these estimates.

Estimates and underlying assumptions are reviewed on an ongoing basis. Revisions to accounting estimates are recognized in the period in which the estimates are revised and in any future periods affected.

The following are the key assumptions concerning the future, and other key sources of estimation uncertainty at the end of the reporting period, that have a significant risk of causing a material adjustment to the carrying amounts of assets and liabilities within the next financial year.

(i) Unbilled revenue

Energy delivered but not metered nor billed are calculated at the reporting date and is estimated based on consumption statistics and selling price estimates. Determination of the unbilled revenues at the end of the reporting period is sensitive to the estimated consumptions and prices based on statistics. Unbilled revenue recognized for the years ended December 31, 2016 and 2017 are 1,615,322 million and 1,672,385 million, respectively.

(ii) Continuing operation of Wolsong Unit 1 nuclear power plant

Wolsong Unit 1 nuclear power plant of the Company commenced operations on November 21, 1982 and its 30-year of designed life was expired on November 20, 2012. On February 27, 2015, the Nuclear Safety and Security Commission (NSSC) evaluated the safety of operation on the Wolsong Unit 1 nuclear power plant and approved to continue its operation until November 20, 2022. As described in note 50, the lawsuit related to the validity of the approval of NSSC is currently ongoing.

According to the Eighth Basic Plan for Electricity Supply and Demand by the Ministry of Trade, Industry and Energy, Wolsong Unit 1 nuclear power plant is expected to go through a comprehensive evaluation for the feasibility of continuous operation including economic efficiency and acceptability of household and community in 2018.

The Korean government plans to refund to the Company for reasonable expenditures incurred in relation to the phase-out of nuclear power plants in accordance with the energy transformation policy established by Korean government. In doing so, after discussions with relevant government agencies and upon approval by the Congress, the Korean government is considering to use available resource including utilizing relevant fund to make the refund. Also, Korean government plans to establish relevant legal basis of providing refund including utilizing available resource, if necessary.

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

Note 17 Investments in Associates and Joint Ventures

Note 18 Property, Plant and Equipment

Note 20 Construction Services Contracts

Note 45 Risk Management

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

Note 41 Income Taxes

Note 25 Employment Benefits

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**(5) Changes in accounting policies**

(i) Amendments to IAS 7 Statement of Cash Flows

The Company has adopted amendments to IAS Statement of Cash Flows since January 1, 2017. The amendments require changes in liabilities arising from financing activities to be disclosed. The amendments are not required to provide comparative information for prior periods when applying for the first time. Information about changes in liabilities arising from financing activities is included in note 23 and note 24.

(ii) Amendments to IAS 12 Income Taxes

The Company has adopted amendments to IAS 12 Income Taxes since January 2017. The amendments clarify that unrealized losses on fixed-rate debt instruments measured at fair value and measured at cost for tax purposes give rise to a deductible temporary difference regardless of whether the holder expects to recover the carrying amount of the debt instrument by sale or by use and that the estimate of probable future taxable profit may include the recovery of some of assets for more than their carrying amount. When the Company assesses whether there will be sufficient taxable profit, the Company should compare the deductible temporary differences with future taxable profit that excludes tax deductions resulting from the reversal of those deductible temporary differences. The Company believes that there is no significant impact on the Company's consolidated financial statements and did not retroactively restate the comparative consolidated financial statements for the prior period.

**(6) New standards and amendments not yet adopted**

The following new standards, including IFRS 9 Financial Instruments and IFRS 15 Revenue from Contracts with Customers, interpretations and amendments to existing standards have been published but are not mandatory for the Company for annual periods beginning on January 1, 2017, and the Company has not early adopted them.

The Company will apply IFRS 9 Financial Instruments and IFRS 15 Revenue from Contracts with Customers for annual periods beginning on January 1, 2018. The Company has conducted a detailed assessment on adoption of these standards and based on the circumstance and information available when these financial statements were authorized for issuance.

(i) IFRS 9 Financial Instruments

IFRS 9 sets out the requirements for recognizing and measuring financial assets, financial liabilities and certain contracts to buy or sell non-financial items. It replaces existing guidance in IAS 39 Financial Instruments: Recognition and Measurement.

The Company will apply the exemption allowing it not to restate the comparative information for prior periods upon adoption of IFRS 9. The Company will retroactively apply the cumulative effect of the adoption of IFRS 9 in retained earnings as of the date of initial application (January 1, 2018).

Expected impacts on the consolidated financial statements are categorized as follows:

Classification and measurement of financial assets

IFRS 9 includes a new classification and measurement of financial assets that reflects the business model in which assets are managed and their cash flow characteristics.

Under IFRS 9, financial assets are classified into three principal categories; measured at amortized cost, fair value through other comprehensive income (FVOCI) and fair value through profit or loss (FVTPL) based on the business model in which assets are managed and their cash flow characteristics. Under IFRS 9, derivatives embedded in hybrid contracts where the host is a financial asset are not bifurcated. Instead, the hybrid financial instrument as a whole is assessed for classification.

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The criteria for classification and measurement of financial assets under IFRS 9 are as follows:

A financial asset is measured at amortized cost if it meets both of the following conditions and is not designated as at FVTPL: 1) the asset is held within a business model whose objective is to hold assets to collect contractual cash flows; and 2) the contractual terms of the financial asset give rise on specified dates to cash flows that are solely payments of principal and interest on the principal amount outstanding.

A financial asset is measured at FVOCI if it meets both of the following conditions and is not designated as at FVTPL: 1) the asset is held within a business model whose objective is achieved by both collecting contractual cash flows and selling financial assets; and 2) the contractual terms of the financial asset give rise on specified dates to cash flow that are solely payments of principal and interest on the principal amount outstanding. On initial recognition of equity investment that is not held for trading, the Company may irrevocably elect to present subsequent changes in fair value in OCI, and will not reclassify(recycle) the those items in OCI to profit or loss subsequently.

A financial asset is measured at FVTPL if the contractual terms of the financial asset give rise to specified dates to cash flows that are not solely payments of principal and interest on the principal amount outstanding, the debt instrument is held within a business model whose objective is to sell the asset, or the equity instruments that are not elected to be designated as measured at FVOCI.

As of December 31, 2017, the Company has financial assets at fair value through profit or loss amounting to 133,532 million, available-for-sale financial assets amounting to 699,833 million, held-to-maturity investments amounting to 3,144 million and loans and receivables amounting to 15,203,663 million.

Based on the result of the detailed assessment to date, the expected impacts on the Company's financial assets (excluding derivative instruments) on the date of initial application (January 1, 2018) are as follows:

<b>Classification based on IAS 39</b>	<b>Classification based on IFRS 9</b>	<b>Amount based on IAS 39</b>	<b>Amount based on IFRS 9</b>
<b>In millions of won</b>			
Financial assets at FVTPL	FVTPL	111,512	111,512
Loans and receivables	Amortized cost	15,203,663	14,412,339
Loans and receivables	FVTPL		791,324
Available-for-sale financial assets	FVOCI	699,833	476,941
Available-for-sale financial assets	FVTPL		222,892
Held-to-maturity investments	Amortized cost	3,144	3,144
<b>Total financial assets (excluding derivative instruments)</b>		<b>16,018,152</b>	<b>16,018,152</b>

Upon adoption of IFRS 9, 791,324 million of loans and receivables and 222,892 million of available-for-sale financial assets will be measured at FVTPL. The Company has elected to measure 476,941 million of the equity securities classified as available-for-sale financial assets as FVOCI under IFRS 9. Accordingly, from January 1, 2018, gains and

losses from changes of fair value of the equity securities are recognized in other comprehensive income, impairment losses are not recognized in profit or loss, and gains and losses are not reclassified at disposal.

Classification and measurement of financial liabilities

Under IFRS 9, the amount of change in the fair value attributable to the changes in the credit risk of the financial liabilities is presented in OCI, not recognized in profit or loss, and the OCI amount will not be reclassified (recycled) to profit or loss. However, if doing so creates or increase an accounting mismatch, the amount of change in the fair value is recognized in profit or loss.

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The Company did not elect to designate financial liabilities as FVTPL and believes that there is no significant impact on the Company's consolidated financial statements upon adoption of IFRS 9.

**Impairment: Financial assets and contract assets**

IFRS 9 replaces the incurred loss model in the existing standard with a forward-looking expected credit loss (ECL) model for debt instruments, lease receivables, contractual assets, loan commitments, financial guarantee contracts.

Under IFRS 9, impairment losses are likely to be recognized earlier than using the incurred loss model under the existing guidance in IAS 39 as loss allowances will be measured on either of the 12-month or lifetime ECL based on the extent of increase in credit risk since inception as shown in the below table.

	<b>Classification</b>		<b>Loss allowances</b>
Stage 1	Credit risk has not increased significantly since the initial recognition	12-month ECL:	ECLs that resulted from possible default events within the 12 months after the reporting date
Stage 2	Credit risk has increased significantly since the initial recognition	Lifetime ECL:	ECL that resulted from all possible default events over the expected life of a financial instrument
Stage 3	Credit-impaired		

Under IFRS 9, an entity shall always measure the loss allowance at an amount equal to lifetime expected credit losses for trade receivables or contract assets that result from transactions that are within the scope of IFRS 15 and that do not contain a significant financing component in accordance with IFRS 15 and if the trade receivables or contract assets include a significant financing component, an entity may choose as its accounting policy to measure the loss allowance at an amount equal to lifetime expected credit losses.

As of December 31, 2017, the Company has debt instruments in financial assets measured at amortized cost amounting to 15,464,202 million (loans and receivables) and has recognized loss allowances of 260,539 million.

Under adoption of IFRS 9, the Company plans to elect to measure the loss allowance at an amount equal to lifetime expected credit losses for trade receivables, contract assets and lease receivables that include a significant financing component. Based on the result of the detailed assessment to date, the expected impacts on the Company's loss allowances on the date of initial application (January 1, 2018) are as follows:

<b>Type</b>	<b>Amount based on</b>		<b>Increase (decrease) (B-A)</b>
	<b>IAS 39 (A)</b>	<b>Amount based on IFRS 9 (B)</b>	
	<b>In millions of won</b>		
Trade and other receivables	251,591	258,360	6,769
Other financial assets	8,948	8,948	
<b>Total</b>	<b>260,539</b>	<b>267,308</b>	<b>6,769</b>

Hedge accounting

When initially applying IFRS 9, an entity may elect as its accounting policy to continue to apply the hedge accounting requirements of IAS 39. The Company plans to elect to continue apply the hedge accounting requirements of IAS 39.

As of December 31, 2017, the Company has asset and liabilities designated as hedged items amounting to 10,606 million and 277,130 million, respectively.



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### (ii) IFRS 15 Revenue from Contracts with Customers

IFRS 15 sets out a comprehensive framework for determining whether revenue is recognized, the extent of revenue recognized, and when revenue is recognized. It replaces existing revenue recognition guidance, including IAS 18 Revenue, IAS 11 Construction Contracts, SIC-31 Revenue-Barter transactions involving advertising services, IFRIC 13 Customer Loyalty Programs, IFRIC 15 Agreements for the construction of real estate, and IFRIC 18 Transfers of assets from customers.

The Company will retrospectively apply and recognize the cumulative effect of the adoption of IFRS 15 at the date of initial application (January 1, 2018) and has determined to retrospectively apply to only those contracts that were not completed as of the date of initial application (January 1, 2018). Accordingly, the Company will not restate the comparative periods.

Existing IFRS standards and interpretations including IAS 18 provide revenue recognition guidance by transaction types such as sales of goods, rendering of services, interest income, royalty income, dividend income and construction revenue; however, under the new standard, IFRS 15, the five-step approach (Step 1: Identify the contract(s) with a customer, Step 2: Identify the performance obligations in the contract, Step 3: Determine the transaction price, Step 4: Allocate the transaction price to the performance obligations in the contract, Step 5: Recognize revenue when the entity satisfied a performance obligation) is applied for all types of contracts or agreements.

Expected impacts on the consolidated financial statements are categorized as follows:

#### Identify the performance obligations in the contract

The Company is engaged in the generation, transmission and distribution of electricity and development of electric power resources, and electricity sales revenue accounts for 91.3% of consolidated revenue for the year ended December 31, 2017.

Under IFRS 15, supplying electricity is a series of distinct goods or services identified as a single performance obligation. The Company is also engaged in contracts with customers for transmission and distribution, provision of power generation byproducts, EPC business, O&M, etc. that are identified as different performance obligations for each contract.

Based on the result of the detailed assessment to date, the Company believes that the impact of identifying separate the performance obligations in the contract on the Company's revenue is not significant.

#### Variable consideration

The Company may be subject to a variation of consideration paid by the customer due to the progressive electricity billing system, discounts on electricity bills for policy purposes, penalties and delinquent payment, etc. In applying IFRS 15, the Company estimates an amount of variable consideration by using the expected value method that the Company expects to better predict the amount of consideration to which it will be entitled, and includes in the transaction price some or all of an amount of variable consideration only to the extent that it is highly probable that a significant reversal in the amount of cumulative revenue recognized will not occur when the uncertainty associated with the variable consideration is subsequently resolved.

Based on the result of the detailed assessment to date, the Company believes that the impact of variable consideration on the Company's revenue is not significant.

Performance obligations satisfied over time

The Company provides its customers with services such as EPC business, O&M, etc. over time. The Company recognizes revenues based on the percentage-of-completion on a reasonable basis.

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Under IFRS 15, an entity recognizes revenue over time if one of the following criteria is met:

- (a) the customer simultaneously receives and consumes the benefits provided by the entity's performance as the entity performs;
- (b) the entity's performance creates or enhances an asset that the customer controls as the asset is created or enhanced; or
- (c) the entity's performance does not create an asset with an alternative use to the entity and the entity has an enforceable right to payment for performance completed to date.

Based on the result of the detailed assessment to date, the impact of the revenue recognition over time based on the percentage-of-completion on the Company's revenue is not significant.

(iii) IFRS 16 Leases

IFRS 16 replaces IAS 17 Leases, and IFRIC 4 Determining whether an Arrangement contains a Lease. This standard is effective for annual reporting periods beginning on or after January 1, 2019, with early adoption permitted if IFRS 15 Revenue from Contracts with Customers has also been applied.

Under IFRS 16, a lessee shall apply this standard to its leases either:

- (a) retrospectively to each prior reporting period presented applying IAS 8 Accounting Policies, Changes in Accounting Estimates and Errors; or
- (b) retrospectively with the cumulative effect of initially applying the standard recognized at the date of initial application.

The Company has not yet determined the transition approach for IFRS 16.

IFRS 16 provides a single lessee accounting model in which the lessee recognizes lease related assets and liabilities in the statement of financial position. A lessee is required to recognize a right-of-use asset representing its right to use the underlying leased asset and a lease liability representing its obligation to make lease payments. Lease recognition may be exempted for short-term leases and leases for which the underlying asset is of low value. Accounting for a lessor is similar to the existing standard that classifies each of its leases as either an operating lease or a finance lease.

Upon adoption of IFRS 16, the nature of the costs associated with the lease will change as the operating lease payments recognized based on a straight-line basis will change to depreciation expense of a right-of-use asset and interest expense of the lease liability and no significant impact is expected on the Company's finance lease.

The Company plans to conduct a detailed assessment of the potential impact from the application of IFRS 16 during the year ending December 31, 2018.

(iv) IFRIC 22 Foreign Currency Transactions and Advance Consideration

IFRIC 22, published on December 8, 2016, clarifies the date of the transaction for the purpose of determining the exchange rate to use on initial recognition of the related asset, expense or income, when an entity has received or paid advance consideration in a foreign currency. IFRIC 22 is effective for annual reporting periods beginning on or after January 1, 2018, with earlier adoption permitted.

The Company is currently performing a detailed assessment of the impact resulting from the application of IFRIC 22 and plans to complete the assessment in advance of its effective date.

(v) Amendments to IAS 40 Investment Property

The amendments clarify when an entity should transfer a property asset to, or from, investment property. The amendments are effective for annual periods beginning on or after January 1, 2018, with earlier adoption permitted.

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The Company is currently performing a detailed assessment of the impact resulting from the application of amendments to IAS 40 and plans to complete the assessment in advance of its effective date.

### **3. Significant Accounting Policies**

Except as described in note 2.(5), the Company applied the following significant accounting policies consistently for all periods presented.

#### **(1) Basis of consolidation**

The consolidated financial statements are the financial statements of a group in which the assets, liabilities, equity, income, expenses and cash flows of the parent and its subsidiaries are presented as those of a single economic entity. Subsidiaries are controlled by the Company. The Company controls an entity when it is exposed to, or has rights to, variable returns from its involvement with the entity and has the ability to affect those returns through its power over the entity.

Income and expense of a subsidiary acquired or disposed of during the year are included in the consolidated statement of comprehensive income from the effective date of acquisition and up to the effective date of disposal, as appropriate. Total comprehensive income of subsidiaries is attributed to the owners of the Company and to the non-controlling interests even if this results in the non-controlling interests having a deficit balance.

When necessary, adjustments are made to the financial statements of subsidiaries to bring their accounting policies into line with those of the Company.

Transactions within the Company are eliminated during the consolidation.

Changes in the Company's ownership interests in a subsidiary that do not result in the Company losing control over the subsidiary are accounted for as equity transactions. The carrying amounts of the Company's interests and the non-controlling interests are adjusted to reflect the changes in their relative interests in the subsidiary. Any difference between the amount by which the non-controlling interests are adjusted and the fair value of the consideration paid or received is recognized directly in equity and attributed to owners of the Company.

When the Company loses control of a subsidiary, the income or loss on disposal is calculated as the difference between (i) the aggregate of the fair value of the consideration received and the fair value of any retained interest and (ii) the previous carrying amount of the assets (including goodwill), and liabilities of the subsidiary and any non-controlling interests. When assets of the subsidiary are carried at revalued amounts or fair values and the related cumulative gain or loss has been recognized in other comprehensive income and accumulated in equity, the amounts previously recognized in other comprehensive income and accumulated in equity are accounted for as if the Company had directly disposed of the relevant assets (i.e. reclassified to income or loss or transferred directly to retained earnings). The fair value of any investment retained in the former subsidiary at the date when control is lost is recognized as the fair value on initial recognition for subsequent accounting under IAS 39 Financial Instruments : Recognition and Measurement or, when applicable, the cost on initial recognition of an investment in an associate or a jointly controlled entity.

**(2) Business combinations**

A business combination is accounted for by applying the acquisition method, unless it is a combination involving entities or businesses under common control.

The consideration transferred in a business combination is measured at fair value, which is calculated as the sum of the acquisition-date fair values of the assets transferred by the Company, liabilities incurred by the Company to the former owners of the acquiree and the equity interests issued by the Company in exchange for control of the acquiree. Acquisition-related costs are generally recognized in income or loss as incurred.

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At the acquisition date, the identifiable assets acquired and the liabilities assumed are recognized at their fair value at the acquisition date, except that:

deferred tax assets or liabilities and liabilities or assets related to employee benefit arrangements are recognized and measured in accordance with IAS 12 *Income Taxes* and IAS 19 *Employee Benefits* respectively;

assets (or disposal groups) that are classified as held for sale in accordance with IFRS 5

*Non-current Assets Held for Sale* are measured in accordance with that standard.

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

Non-controlling interest that is present on acquisition day and entitles the holder to a proportionate share of the entity's net assets in an event of liquidation, may be initially measured either at fair value or at the non-controlling interest's proportionate share of the recognized amounts of the acquiree's identifiable net assets. The choice of measurement can be elected on a transaction-by-transaction basis. Other types of non-controlling interests are measured at fair value or, when applicable, on the basis specified in other IFRSs. When the consideration transferred by the Company in a business combination includes assets or liabilities resulting from a contingent consideration arrangement, the contingent consideration is measured at its acquisition-date fair value and included as part of the consideration transferred in a business combination. Changes in the fair value of the contingent consideration that qualify as measurement period adjustments are adjusted retrospectively, with corresponding adjustments against goodwill. Measurement period adjustments are adjustments that arise from additional information obtained during the measurement period (which cannot exceed one year from the acquisition date) about facts and circumstances that existed at the acquisition date.

The subsequent accounting for changes in the fair value of the contingent consideration that do not qualify as measurement period adjustments depends on how the contingent consideration is classified. Contingent consideration that is classified as equity is not re-measured at subsequent reporting dates and its subsequent settlement is accounted for within equity. Contingent consideration that is classified as an asset or a liability is re-measured at subsequent reporting dates in accordance with IAS 39 *Financial Instruments: Recognition and Measurement*, or with IAS 37 *Provisions, Contingent Liabilities and Contingent Assets*, as appropriate, with the corresponding gain or loss being recognized in income or loss.

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

If the initial accounting for a business combination is incomplete by the end of the reporting period in which the combination occurs, the Company reports provisional amounts for the items for which the accounting is incomplete. Those provisional amounts are adjusted during the measurement period (see above), or additional assets or liabilities are recognized, to reflect new information obtained about facts and circumstances that existed at the acquisition date that, if known, would have affected the amounts recognized at that date.

The assets and liabilities acquired under business combinations under common control are recognized at the carrying amounts recognized previously in the consolidated financial statements of the ultimate parent. The



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difference between consideration transferred and carrying amounts of net assets acquired is recognized as part of share premium.

**(3) Investments in associates**

An associate is an entity over which the Company has significant influence and that is neither a subsidiary nor an interest in a joint venture. Significant influence is the power to participate in the financial and operating policy decisions of the investee but does not control or joint control over those policies.

The results and assets and liabilities of associates are incorporated in these consolidated financial statements using the equity method of accounting. If the investment is classified as held for sale, in which case it is accounted for in accordance with IFRS 5 Non-current Assets Held for Sale, any retained portion of an investment in associates that has not been classified as held for sale shall be accounted for using the equity method until disposal of the portion that is classified as held for sale takes place. If the Company holds 20% ~ 50% of the voting power of the investee, it is presumed that the Company has significant influence.

After the disposal takes place, the Company shall account for any retained interest in associates in accordance with IAS 39 Financial Instruments: Recognition and Measurement unless the retained interest continues to be an associates, in which case the entity uses the equity method.

Under the equity method, an investment in an associate is initially recognized in the consolidated statement of financial position at cost and adjusted thereafter to recognize the Company's share of the income or loss and other comprehensive income of the associate. When the Company's share of losses of an associate exceeds the Company's interest in that associate (which includes any long-term interests that, in substance, form part of the Company's net investment in the associate), the Company discontinues recognizing its share of further losses. Additional losses are recognized only to the extent that the Company has incurred legal or constructive obligations or made payments on behalf of the associate.

Any excess of the cost of acquisition over the Company's share of the net fair value of the identifiable assets, liabilities and contingent liabilities of an associate recognized at the date of acquisition is recognized as goodwill, which is included within the carrying amount of the investment. Any excess of the Company's share of the net fair value of the identifiable assets, liabilities and contingent liabilities over the cost of acquisition, after reassessment, is recognized immediately in income or loss. The requirements of IAS 39 Financial Instruments: Recognition and Measurement, are applied to determine whether it is necessary to recognize any impairment loss with respect to the Company's investment in an associate. When necessary, the entire carrying amount of the investment (including goodwill) is tested for impairment in accordance with IAS 36 Impairment of Assets as a single asset by comparing its recoverable amount (higher of value in use and fair value less costs to sell) with its carrying amount, any impairment loss recognized forms part of the carrying amount of the investment. Any reversal of that impairment loss is recognized in accordance with IAS 36 to the extent that the recoverable amount of the investment subsequently increases.

Upon disposal of an associate that results in the Company losing significant influence over that associate, any retained investment is measured at fair value at that date and the fair value is regarded as its fair value on initial recognition as a financial asset in accordance with IAS 39. The difference between the previous carrying amount of the associate attributable to the retained interest and its fair value is included in the determination of the gain or loss on disposal of the associate. In addition, the Company accounts for all amounts previously recognized in other comprehensive income in relation to that associate on the same basis as would be required if that associate had directly disposed of the related assets or liabilities. Therefore, if a gain or loss previously recognized in other comprehensive income by

that associate would be reclassified to income or loss on the disposal of the related assets or liabilities, the Company reclassifies the gain or loss from equity to income or loss (as a reclassification adjustment) when it loses significant influence over that associate.

When the Company transacts with its associate, incomes and losses resulting from the transactions with the associate are recognized in the Company's consolidated financial statements only to the extent of interests in the associate that are not related to the Company.

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### **(4) Joint arrangements**

A joint arrangement is an arrangement of which two or more parties have joint control. Joint control is the contractually agreed sharing of control of an arrangement, which exists only when decisions about the relevant activities require the unanimous consent of the parties sharing control. Joint arrangements are classified into two types: joint operations and joint ventures. A joint operation is a joint arrangement whereby the parties that have joint control of the arrangement (i.e. joint operators) have rights to the assets, and obligations for the liabilities, relating to the arrangement. A joint venture is a joint arrangement whereby the parties that have joint control of the arrangement (i.e. joint ventures) have rights to the net assets of the arrangement.

If the Company is a joint operator, the Company is to recognize and measure the assets and liabilities (and recognize the related revenues and expenses) in relation to its interest in the arrangement in accordance with relevant IFRSs applicable to the particular assets, liabilities, revenues and expenses. If the joint arrangement is a joint venture, the Company is to account for that investment using the equity method accounting in accordance with IAS 28 Investment in Associates and Joint Ventures (refer to note 3.(3)), except when the Company is applicable to the IFRS 5

Non-current Assets Held for Sale .

### **(5) Non-current assets held for sale**

Non-current assets and disposal groups are classified as held for sale if their carrying amount will be recovered principally through a sale transaction rather than through continuing use. This condition is regarded as met only when the sale is highly probable and the non-current asset (or disposal group) is available for immediate sale in its present condition. Management must be committed to the sale, which should be expected to qualify for recognition as a completed sale within one year from the date of classification.

When the Company is committed to a sale plan involving loss of control of a subsidiary, all of the assets and liabilities of that subsidiary are classified as held for sale when the criteria described above are met, regardless of whether the Company will retain a non-controlling interest in its former subsidiary after the sale.

Non-current assets (and disposal groups) classified as held for sale are measured at the lower of their previous carrying amount and fair value less costs to sell.

### **(6) Goodwill**

The Company measures goodwill which acquired in a business combination at the amount recognized at the date on which it obtains control of the acquiree (acquisition date) less any accumulated impairment losses. Goodwill acquired in a business combination is allocated to each CGU that is expected to benefit from the synergies arising from the business acquired.

The Company assesses at the end of each reporting period and whenever there is an indication that the asset may be impaired. An impairment loss is recognized if the carrying amount of an asset or a CGU exceeds its recoverable amount. Impairment losses are recognized in profit or loss.

Any impairment identified at the CGU level will first reduce the carrying value of goodwill and then be used to reduce the carrying amount of the other assets in the CGU on a pro rata basis. Except for impairment losses in respect of goodwill which are never reversed, an impairment loss is reversed if there has been a change in the estimates used to determine the recoverable amount. An impairment loss is reversed only to the extent that the asset's carrying amount

does not exceed the carrying amount that would have been determined, net of depreciation or amortization, if no impairment loss had been recognized.

**(7) Revenue recognition**

Revenue from the sale of goods, rendering of services or use of the Company assets is measured at the fair value of the consideration received or receivable, net of returns, trade discounts and volume rebates, which

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are recognized as a reduction of revenue. Revenue is recognized when the amount of revenue can be measured reliably and it is probable that the economic benefits associated with the transaction will flow to the Company.

(i) Sales of goods

The Korean government approves the utility rates charged to customers by the Company's power transmission and distribution division. The Company's utility rates are designed to recover the Company's reasonable costs plus a fair investment return.

The Company recognizes revenue from electricity sales revenue based on power sold (transferred to the customer) up to the reporting date and the corresponding utility rate charged to customers. To determine the amount of power sold, the Company estimates daily power volumes of electricity for residential, commercial, general, etc. The differences between the current month's estimated amount and actual (meter-read) amount, is adjusted for (true-up) during the subsequent month.

(ii) Sales of services

Revenue from services rendered is recognized in profit or loss in proportion to the stage of completion of the transaction at the reporting date. The stage of completion is assessed by reference to surveys of work performed or services performed to date as a percentage of total services to be performed or the proportion that costs incurred to date bear to the estimated total costs of the transaction or other methods that reliably measure the services performed.

(iii) Dividend income and interest income

Dividend income is recognized in profit or loss on the date that the Company's right to receive payment is established, which in the case of quoted securities is the ex-dividend date.

Interest income is recognized as it accrues in profit or loss, using the effective interest method. Interest income is accrued on a time basis, by reference to the principal outstanding and at the effective interest rate applicable, which is the rate that exactly discounts estimated future cash receipts through the expected life of the financial asset to that asset's net carrying amount on initial recognition.

(iv) Rental income

The Company's policy for recognition of revenue from operating leases is described in note 3.(9) below.

**(8) Construction services revenue**

The Company provides services related to the construction of power plants related to facilities of its customers, mostly in foreign countries.

When the outcome of a construction contract can be estimated reliably, revenue and costs are recognized based on the stage of completion of the contract activity at the end of the reporting period, measured based on the proportion of

contract costs incurred for work performed to date relative to the estimated total contract costs, except where this would not be representative of the stage of completion. Variations in contract work, claims and incentive payments are included to the extent that the amount can be measured reliably and its receipt is considered probable.

When the outcome of a construction contract cannot be estimated reliably, contract revenue is recognized to the extent of contract costs incurred when it is probable the revenue will be realized. Contract costs are recognized as expenses in the period in which they are incurred. When it is probable that total contract costs will exceed total contract revenue, the expected loss is recognized as an expense immediately.

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When contract costs incurred to date plus recognized income less recognized losses exceed progress billings, the surplus is presented as amounts due from customers for contract work. For contracts where progress billings exceed contract costs incurred to date plus recognized income less recognized losses, the surplus is presented as the amounts due to customers for contract work. Amounts received before the related work is performed are included in the consolidated statements of financial position, as a liability, as advance received. Amounts billed for work performed but not yet paid by the customer are included in the consolidated statements of financial position as accounts and other receivables.

### **(9) Leases**

The Company classifies and accounts for leases as either a finance or operating lease, depending on the terms. Leases where the Company assumes substantially all of the risks and rewards of ownership are classified as finance leases. All other leases are classified as operating leases.

#### **(i) The Company as lessor**

Amounts due from lessees under finance leases are recognized as receivables at the amount of the Company's net investment in the leases. Finance lease income is allocated to accounting periods so as to reflect a constant periodic rate of return on the Company's net investment outstanding in respect of the leases.

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

#### **(ii) The Company as lessee**

Leases are classified as finance leases whenever the terms of the lease transfer substantially all the risks and rewards of ownership to the lessee. All other leases are classified as operating leases.

Assets held under finance leases are initially recognized as assets of the Company at their fair value at the inception of the lease or, if lower, at the present value of the minimum lease payments. The corresponding liability to the lessor is included in the statement of financial position as a finance lease obligation.

Lease payments are apportioned between finance expenses and reduction of the lease obligation so as to achieve a constant rate of interest on the remaining balance of the liability. Finance expenses are recognized immediately in income or loss, unless they are directly attributable to qualifying assets, in which case they are capitalized in accordance with the Company's general policy on borrowing costs. Contingent rentals are recognized as expenses in the periods in which they are incurred.

Operating lease payments are recognized as an expense on a straight-line basis over the lease term, except where another systematic basis is more representative of the time pattern in which economic benefits from the leased asset are consumed. Contingent rentals arising under operating leases are recognized as an expense in the period in which they are incurred.

In the event that lease incentives are received to enter into operating leases, such incentives are recognized as a liability. The aggregate benefit of incentives is recognized as a reduction of rental expense on a straight-line basis, except where another systematic basis is more representative of the time pattern in which economic benefits from the leased asset are consumed.

(iii) Determining whether an arrangement contains a lease

At inception of an arrangement, the Company determines whether the arrangement is or contains a lease.



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At inception or on reassessment of an arrangement that contains a lease, the Company separates payments and other consideration required by the arrangement into those for the lease and those for other elements on the basis of their relative fair values. If the Company concludes for a finance lease that it is impracticable to separate the payments reliably, then an asset and a liability are recognized at an amount equal to the fair value of the underlying asset.

### **(10) Foreign currencies**

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

Exchange differences are recognized in profit or loss in the period in which they arise except for:

Exchange differences on foreign currency borrowings relating to assets under construction for future productive use, which are included in the cost of those assets when they are regarded as an adjustment to interest costs on those foreign currency borrowings;

Exchange differences on transactions entered into in order to hedge certain foreign currency risks (refer to note 3.(25)

Derivative financial instruments, including hedge accounting); and

Exchange differences on monetary items receivable from or payable to a foreign operation for which settlement is neither planned nor likely to occur (therefore forming part of the net investment in the foreign operation), which are recognized initially in other comprehensive income and reclassified from equity to income or loss on disposal or partial disposal of the net investment.

For the purpose of presenting financial statements, the assets and liabilities of the Company's foreign operations are expressed in Korean won using exchange rates prevailing at the end of the reporting period. Income and expense items are translated at the average exchange rates for the period, unless exchange rates fluctuated significantly during that period, in which case the exchange rates at the dates of the transactions are used. Exchange differences arising, if any, are recognized in other comprehensive income and accumulated in equity.

When a foreign operation is disposed of, the relevant amount in the translation is transferred to profit or loss as part of the gain or loss on disposal.

### **(11) Borrowing costs**

The Company capitalizes borrowing costs directly attributable to the acquisition, construction or production of a qualifying asset as part of the cost of that asset. Other borrowing costs are recognized in expense as incurred. A qualifying asset is an asset that requires a substantial period of time to get ready for its intended use or sale.

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.

All other borrowing costs are recognized in income or loss in the period in which they are incurred.

**(12) Government grants and income related to transfer of assets from customers**

Government grants are not recognized unless there is reasonable assurance that the Company will comply with the grant's conditions and that the grant will be received.

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Benefit from a government loan at a below-market interest rate is treated as a government grant, measured as the difference between proceeds received and the fair value of the loan based on prevailing market interest rates.

(i) If the Company received grants related to assets

Government grants whose primary condition is that the Company purchase, construct or otherwise acquire long-term assets are deducted in calculating the carrying amount of the asset. The grant is recognized in profit or loss over the life of a depreciable asset as a reduced depreciation expense.

(ii) If the Company received grants related to income

Government grants which are intended to compensate the Company for expenses incurred are recognized as other income (government grants) in profit or loss over the periods in which the Company recognizes the related costs as expenses.

The Company recovers a substantial amount of the cost related to its electric power distribution facilities from customers through the transfer of assets, while the remaining portion is recovered through electricity sales from such customers in the future. As such, the Company believes there exists a continued service obligation to the customers in accordance with IFRIC 18 *Transfer of Assets from Customers* when the Company receives an item of property, equipment, or cash for constructing or acquiring an item of property or equipment, in exchange for supplying electricity to customers. The Company defers the amounts received, which are subsequently recognized as other income on a straight-line basis over the estimated service period which does not exceed the transferred asset's useful life.

### **(13) Employee benefits**

When an employee has rendered service to the Company during a period, the Company recognizes the contribution payable to a defined contribution plan in exchange for that service as a liability (accrued expense).

For defined benefit pension plans and other post-employment benefits, the net periodic pension expense is actuarially determined by *Pension Actuarial System* developed 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 to maturity approximating the terms of the related pension liability. However, if there is not a deep market, market yields on government bonds are used.

Net defined benefit liability's measurement is composed of actuarial gains and losses, return on plan assets excluding net interest on net defined benefit liability, and any change in the effect of the asset ceiling, excluding net interest, which are immediately recognized in other comprehensive income. The actuarial gains or losses recognized in other comprehensive income which will not be reclassified into net profit or loss for later periods are immediately recognized in retained earnings. Past service cost will be recognized as expenses upon the earlier of the date of change or reduction to the plan, or the date of recognizing termination benefits.

The retirement benefit obligation recognized in the statement of financial position represents the present value of the defined benefit obligation as adjusted for unrecognized actuarial gains and losses and unrecognized past service cost,

and as reduced by the fair value of plan assets. Any asset resulting from this calculation is limited to unrecognized actuarial losses and past service cost, plus the present value of available refunds and reductions in future contributions to the plan.

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### **(14) Income taxes**

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

#### **(i) Current tax**

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

#### **(ii) Deferred tax**

Deferred tax is recognized, using the asset-liability method, in respect of temporary differences between the carrying amounts of assets and liabilities for financial reporting purposes and the amounts used for taxation purposes. A deferred tax liability is recognized for all taxable temporary differences. A deferred tax asset is recognized for all deductible temporary differences to the extent that it is probable that taxable profit will be available against which they can be utilized. However, deferred tax is not recognized for the following temporary differences: taxable temporary differences arising on the initial recognition of goodwill, or the initial recognition of assets or liabilities in a transaction that is not a business combination and that affects neither accounting profit or loss nor taxable income.

The measurement of deferred tax liabilities and deferred tax assets reflects the tax consequences that would follow from the manner in which the Company expects, at the end of the reporting period, to recover or settle the carrying amount of its assets and liabilities. Deferred tax assets or deferred tax liabilities on investment properties measured at fair value, unless any contrary evidence exists, are measured using the assumption that the carrying amount of the property will be recovered entirely through sale.

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

The carrying amount of a deferred tax asset is reviewed at the end of each reporting period and reduces the carrying amount to the extent that it is no longer probable that sufficient taxable profit will be available to allow the benefit of part or all of that deferred tax asset to be utilized.

Deferred tax assets and liabilities are measured at the tax rates that are expected to apply to the period when the asset is realized or the liability is settled, based on tax rates (and tax laws) that have been enacted or substantively enacted by the end of the reporting period. The measurement of deferred tax liabilities and deferred tax assets reflects the tax consequences that would follow from the manner in which the Company expects, at the end of the reporting period to recover or settle the carrying amount of its assets and liabilities.

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

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## (iii) Current and deferred tax for the year

Current and deferred tax are recognized in income or loss, except when they relate to items that are recognized in other comprehensive income or directly in equity, in which case, the current and deferred tax are also recognized in other comprehensive income or directly in equity respectively. Where current tax or deferred tax arises from the initial accounting for a business combination, the tax effect is included in the accounting for the business combination.

**(15) Property, plant and equipment**

Property, plant and equipment are initially measured at cost and after initial recognition, are carried at cost less accumulated depreciation and accumulated impairment losses. The cost of property, plant and equipment includes expenditures arising directly from the construction or acquisition of the asset, any costs directly attributable to bringing the asset to the location and condition necessary for it to be capable of operating in the manner intended by management and the initial estimate of the costs of dismantling and removing the item and restoring the site on which it is located.

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

Property, plant and equipment, except for land, are depreciated on a straight-line basis over estimated useful lives that appropriately reflect the pattern in which the asset's future economic benefits are expected to be consumed. For loaded nuclear fuel related to long-term raw materials and spent nuclear fuels related to asset retirement costs, the Company uses the production method to measure and recognizes as expense the economic benefits of the assets.

The estimated useful lives of the Company's property, plant and equipment are as follows:

	Useful lives (years)
Buildings	8 ~ 40
Structures	8 ~ 50
Machinery	2 ~ 32
Vehicles	3 ~ 8
Loaded heavy water	30
Asset retirement costs	18, 30, 40, 60
Finance lease assets	6 ~ 32
Ships	9
Others	4 ~ 15

A component that is significant compared to the total cost of property, plant and equipment is depreciated over its separate useful life.

Depreciation methods, residual values and useful lives of property, plant and equipment are reviewed at the end of each reporting period and if change is deemed appropriate, it is treated as a change in accounting estimate. As a result of such annual review, useful lives of certain machinery were changed during 2016. Depreciation expenses increased by 160,985 million for the year ended December 31, 2016. Depreciation expenses increased by 160,985 million and 130,514 million for the years ended December 31, 2016 and 2017, respectively. Depreciation expenses are expected to

increase by 91,197 million for the year ending December 31, 2018, and to decrease by 382,696 million for the years after December 31, 2018.

Property, plant and equipment are derecognized on disposal, or when no future economic benefits are expected from its use or disposal. Gains or losses arising from derecognition of a property, plant and equipment, measured as the difference between the net disposal proceeds and the carrying amount of the asset, are recognized in income or loss when the asset is derecognized.



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### **(16) Investment property**

Property held for the purpose of earning rentals or benefiting from capital appreciation is classified as investment property. Investment property is initially measured at its cost. Transaction costs are included in the initial measurement. Subsequently, investment property is carried at depreciated cost less any accumulated impairment losses.

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

Investment property except for land, are depreciated on a straight-line basis over 8 ~ 40 years as estimated useful lives.

The estimated useful lives, residual values and depreciation method are reviewed at the end of each reporting period, with the effect of any changes in estimate accounted for on a prospective basis.

An investment property is derecognized upon disposal or when the investment property is permanently withdrawn from use and no future economic benefits are expected from the disposal. Any gain or loss arising on derecognition of the property (calculated as the difference between the net disposal proceeds and the carrying amount of the asset) is included in income or loss in the period in which the property is derecognized.

### **(17) Intangible assets**

#### **(i) Intangible assets acquired separately**

Intangible assets with finite useful lives that are acquired separately are carried at cost less accumulated amortization and accumulated impairment losses. Amortization is recognized on a straight-line basis over their estimated useful lives. The estimated useful life and amortization method are reviewed at the end of each reporting period, with the effect of any changes in estimate being accounted for on a prospective basis. Intangible assets with indefinite useful lives that are acquired separately are carried at cost less accumulated impairment losses.

#### **(ii) Research and development**

Expenditure on research activities is recognized as an expense in the period in which it is incurred.

An internally-generated intangible asset arising from development (or from the development phase of an internal project) is recognized if, and only if, all of the following have been demonstrated:

The technical feasibility of completing the intangible asset so that it will be available for use or sale;

The intention to complete the intangible asset and use or sell it;

The ability to use or sell the intangible asset;

How the intangible asset will generate probable future economic benefits;

The availability of adequate technical, financial and other resources to complete the development and to use or sell the intangible asset; and

The ability to measure reliably the expenditure attributable to the intangible asset during its development.

The amount initially recognized for internally-generated intangible assets is the sum of the expenditure incurred from the date when the intangible asset first meets the recognition criteria listed above. When the development expenditure does not meet the criteria listed above, an internally-generated intangible asset cannot be recognized and the expenditure is recognized in income or loss in the period in which it is incurred.

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Internally-generated intangible assets are reported at cost less accumulated amortization and accumulated impairment losses.

The estimated useful lives and amortization methods of the Company's intangible assets with finite useful lives are as follows:

	Useful lives (years)	Amortization methods
Usage rights for donated assets	10 ~ 20	Straight line
Software	4, 5	Straight line
Industrial rights	5, 10	Straight line
Development expenses	5	Straight line
Leasehold rights	10	Straight line
Mining right		Unit of production
Others	3 ~ 50 or Indefinite	Straight line

**(iii) Intangible assets acquired in a business combination**

Intangible assets that are acquired in a business combination are recognized separately from goodwill and are initially recognized at their fair value at the acquisition date (which is regarded as their cost).

Subsequent to initial recognition, intangible assets acquired in a business combination are reported at cost less accumulated amortization and accumulated impairment losses, on the same basis as intangible assets that are acquired separately.

**(iv) Derecognition of intangible assets**

An intangible asset is derecognized on disposal, or when no future economic benefits are expected from its use or disposal. Gains or losses arising from derecognition of an intangible asset are measured as the difference between the net disposal proceeds and the carrying amount of the asset, and are recognized in income or loss when the asset is derecognized.

**(18) Greenhouse gas emissions rights (allowances) and obligations**

In connection with Enforcement of Allocation and Trading of Greenhouse Gas Emissions Allowances, the Company applies the following accounting policies for greenhouse gas emissions rights and obligations.

**(i) Greenhouse gas emissions rights**

Greenhouse gas emissions rights consist of the allowances received free of charge from the government and the ones purchased. The cost of the greenhouse gas emissions rights includes expenditures arising directly from the acquisition and any other costs incurred during normal course of the acquisition.

Greenhouse gas emissions rights are held by the Company to fulfill the legal obligation and recorded as intangible assets. To the extent that the portion to be submitted to the government within one year from the end of reporting period, the greenhouse gas emissions rights are classified as current assets. Greenhouse gas emissions rights recorded as intangible assets are initially measured at cost and substantially remeasured at cost less accumulated impairment losses.

Greenhouse gas emissions rights are derecognized on submission to the government or when no future economic benefits are expected from its use or disposal.

(ii) Greenhouse gas emissions obligations

Greenhouse gas emissions obligations are the Company's present legal obligation to submit the greenhouse gas emissions allowances to the government and recognized when an outflow of resources is probable and a reliable estimate can be made of the amount of the obligation. Greenhouse gas emissions obligations are measured as the sum of the carrying amount of the allocated rights that will be submitted to the government and the best estimate of expenditure required to settle the obligation at the end of the reporting period for any excess emission.

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### **(19) Impairment of non-financial assets other than goodwill**

At the end of each reporting period, the Company reviews the carrying amounts of its tangible and intangible assets with definite useful lives to determine whether there is any indication that those assets have suffered an impairment loss. If any such indication exists, the recoverable amount of the asset is estimated in order to determine the extent of the impairment loss (if any). Where it is not possible to estimate the recoverable amount of an individual asset, the Company estimates the recoverable amount of the cash-generating unit to which the asset belongs. Where a reasonable and consistent basis of allocation can be identified, corporate assets are also allocated to individual cash-generating units, or otherwise they are allocated to the smallest group of cash-generating units for which a reasonable and consistent allocation basis can be identified.

Intangible assets with indefinite useful lives and intangible assets not yet available for use are tested for impairment at least annually, and whenever there is an indication that the asset may be impaired.

Recoverable amount is the higher of fair value less costs to sell and value in use. In assessing value in use, the estimated future cash flows are discounted to their present value using a pre-tax discount rate that reflects current market assessments of the time value of money and the risks specific to the asset for which the estimates of future cash flows have not been adjusted.

If the recoverable amount of an asset (or a cash-generating unit) is estimated to be less than its carrying amount, the carrying amount of the asset (or the cash-generating unit) is reduced to its recoverable amount. An impairment loss is recognized immediately in profit or loss, unless the relevant asset is carried at a revalued amount, in which case the impairment loss is treated as a revaluation decrease.

When an impairment loss subsequently reverses, the carrying amount of the asset (or a cash-generating unit) is increased to the revised estimate of its recoverable amount, to the extent the increased carrying amount does not exceed the carrying amount that would have been determined had no impairment loss been recognized for the asset (or cash-generating unit) in prior years. A reversal of an impairment loss is recognized immediately in profit or loss, unless the relevant asset is carried at a revalued amount, in which case the reversal of the impairment loss is treated as a revaluation increase.

### **(20) Inventories**

Inventories are measured at the lower of cost and net realizable value. Cost of inventories for inventories in transit are measured by using specific identification method. Cost of inventories, except for those in transit, are measured under the weighted average method and consists of the purchase price, cost of conversion and other costs incurred in bringing the inventories to their present location and condition.

Net realizable value is the estimated selling price in the ordinary course of business, less the estimated costs of completion and selling expenses. The amount of any write-down of inventories to net realizable value and all losses of inventories are recognized as an expense in the period the write-down or loss occurs. The amount of any reversal of any write-down of inventories, arising from an increase in net realizable value, are recognized as a reduction in the amount of inventories recognized as an expense in the period in which the reversal occurs.

### **(21) Provisions**

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

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

Where some or all of the expenditures required to settle a provision are expected to be reimbursed by another party, the reimbursement shall be recognized when, and only when, it is virtually certain that

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reimbursement will be received if the entity settles the obligation. The reimbursement shall be treated as a separate asset.

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

(i) Provision for employment benefits

The Company determines the provision for employment benefits as the incentive payments based on the results of the individual performance evaluation or management assessment.

(ii) Provision for decommissioning costs of nuclear power plants

The Company records the fair value of estimated decommissioning costs as a liability in the period in which the Company incurs a legal obligation associated with retirement of long-lived assets that result from acquisition, construction, development and/or normal use of the assets. Accretion expense consists of period-to-period changes in the liability for decommissioning costs resulting from the passage of time and revisions to either the timing or the amount of the original estimate of undiscounted cash flows.

(iii) Provision for disposal of spent nuclear fuel

Under the Radioactive Waste Management Act, the Company is levied to pay the spent nuclear fuel fund for the management of spent nuclear fuel. The Company recognizes the provision of present value of the payments.

(iv) Provision for low and intermediate radioactive wastes

Under the Radioactive Waste Management Act, the Company recognizes the provision for the disposal of low and intermediate radioactive wastes in best estimate of the expenditure required to settle the present obligation.

(v) Provision for Polychlorinated Biphenyls ( PCBs )

Under the regulation of Persistent Organic Pollutants Management Act, enacted in 2007, the Company is required to remove PCBs, a toxin, from the insulating oil of its transformers by 2025. As a result of the enactments, the Company is required to inspect the PCBs contents of transformers and dispose of PCBs in excess of safety standards under the legally settled procedures. The Company's estimates and assumptions used to determine fair value can be affected by many factors, such as the estimated costs of inspection and disposal, inflation rate, discount rate, regulations and the general economy.

(vi) Provisions for power plant regional support program

Power plant regional support programs consist of scholarship programs to local students, local economy support programs, local culture support programs, environment development programs, and local welfare programs. The Company recognizes the provision in relation to power plant regional support program.

(vii) Provisions for transmission and transformation facilities-neighboring areas support program  
The Company has present obligation to conduct transmission and transformation facilities-neighboring areas support program under Act on assistance to transmission and transformation facilities-neighboring areas. The Company recognizes the provision of estimated amount to fulfill the obligation.



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(viii) Renewable Portfolio Standard ( RPS ) provisions

RPS program is required to generate a specified percentage of total electricity to be generated in the form of renewable energy and provisions are recognized for the governmental regulations to require the production of energies from renewable energy sources such as solar, wind and biomass.

### **(22) Non-derivative financial assets**

The Company recognizes and measures non-derivative financial assets by the following four categories: financial assets at fair value through profit or loss, held-to-maturity investments, loans and receivables and available-for-sale financial assets. The Company recognizes financial assets in the statement of financial position when the Company becomes a party to the contractual provisions of the instrument. Upon initial recognition, non-derivative financial assets are measured at their 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 asset's acquisition or issuance.

A regular way purchase or sale of financial assets shall be recognized and derecognized, as applicable, using trade date accounting or settlement date accounting. A regular way purchase or sale is a purchase or sale of a financial asset under a contract whose terms require delivery of the asset within the time frame established generally by regulation or convention in the marketplace concerned.

(i) Effective interest method

The effective interest method is a method of calculating the amortized cost of a debt instrument and of allocating interest income over the relevant period. The effective interest rate is the rate that exactly discounts estimated future cash receipts (including all fees and points paid or received that form an integral part of the effective interest rate, transaction costs and other premiums or discounts) through the expected life of the debt instrument, or, where appropriate, a shorter period, to the net carrying amount on initial recognition. Income is recognized on an effective interest basis for debt instruments other than those financial assets classified as financial assets at fair value through profit or loss.

(ii) Financial assets at fair value through profit or loss (FVTPL)

A financial asset is classified as financial assets are classified at fair value through profit or loss if it is held for trading or is designated as such upon initial recognition. Upon initial recognition, transaction costs are recognized in profit or loss when incurred. A financial assets its acquired principally for the purpose of selling it in the near term are classified as a short-term financial assets held for trading and also all the derivatives including an embedded derivate that is not designated and effective as a hedging instrument are classified at the short-term trading financial asset as well. Financial assets at fair value through profit or loss are measured at fair value, and changes therein are recognized in profit or loss.

A financial asset is classified as held for trading if:

It has been acquired principally for the purpose of selling it in the near term; or

On initial recognition it is part of a portfolio of identified financial instruments that the Company manages together and has a recent actual pattern of short term profit taking; or

It is derivative, including an embedded derivative that is not designated and effective as a hedging instrument.

A financial asset other than a financial asset held for trading may be designated as at financial assets at fair value through profit or loss upon initial recognition if:

Such designation eliminates or significantly reduces a measurement or recognition inconsistency that would otherwise arise; or

The financial asset forms part of a group of financial assets or financial liabilities or both, which is managed and its performance is evaluated on a fair value basis in accordance with the Company's

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documented risk management or investment strategy, and information about the grouping is provided internally on that basis; or

It forms a part of a contract containing one or more embedded derivatives, and with IAS No. 39, Financial Instruments; Recognition and Measurement permits the entire combined contract (asset or liability) to be designated as at financial assets at fair value through profit or loss.

Financial assets at fair value through profit or loss are stated at fair value, with any gains or losses arising on re-measurement recognized in income or loss. The net gain or loss recognized in income or loss incorporates any dividend or interest earned on the financial asset and is included in the finance income and finance expenses line item in the consolidated statement of comprehensive income.

(iii) Held-to-maturity investments

A non-derivative financial asset with a fixed or determinable payment and fixed maturity, for which the Company has the positive intention and ability to hold to maturity, are classified as held-to-maturity investments. Subsequent to initial recognition, held-to-maturity investments are measured at amortized cost using the effective interest method.

(iv) Available-for-sale financial assets

Available-for-sale financial assets are those non-derivative financial assets that are designated as available-for-sale or are not classified as financial assets at fair value through profit or loss, held-to-maturity investments or loans and receivables.

Gains and losses arising from changes in fair value are recognized in other comprehensive income and accumulated in the valuation reserve. However, impairment losses, interest calculated using the effective interest method, and foreign exchange gains and losses on monetary assets are recognized in income or loss. Unquoted equity investments which are not traded in an active market, whose fair value cannot be measured reliably are carried at cost.

When a financial asset is derecognized or impairment losses are recognized, the cumulative gain or loss previously recognized in other comprehensive income is reclassified from equity to profit or loss.

Dividends on an available-for-sale equity instrument are recognized in profit or loss when the Company's right to receive payment is established.

The fair value of available-for-sale monetary assets denominated in a foreign currency is determined in that foreign currency and translated at the spot rate at the end of the reporting period. The foreign exchange gains and losses that are recognized in income or loss are determined based on the amortized cost of the monetary asset. Other foreign exchange gains and losses are recognized in other comprehensive income.

(v) Loans and receivables

Loans and receivables are financial assets with fixed or determinable payments that are not quoted in an active market. Subsequent to initial recognition, loans and receivables are measured at amortized cost using the effective interest method except for loans and receivables of which the effect of discounting is immaterial.

(vi) Impairment of financial assets

Financial assets, other than those at financial assets at fair value through profit or loss, are assessed for indicators of impairment at the end of each reporting period. Financial assets are considered to be impaired when there is objective evidence that, as a result of one or more events that occurred after the initial recognition of the financial asset, the estimated future cash flows of the investment have been affected.

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For listed and unlisted equity investments classified as available-for-sale financial asset, a significant or prolonged decline in the fair value of the security below its cost is considered to be objective evidence of impairment in addition to the criteria mentioned below.

For all other financial assets, objective evidence of impairment could include:

Significant financial difficulty of the issuer or counterparty; or

Breach of contract, such as a default or delinquency in interest or principal payments, or

It becoming probable that the borrower will enter bankruptcy or financial re-organization; or

The disappearance of an active market for that financial asset because of financial difficulties.

For certain categories of financial asset, such as trade receivables, assets that are assessed not to be impaired individually are, in addition, assessed for impairment on a collective basis. Objective evidence of impairment for a portfolio of receivables could include the Company's past experience of collecting payments, an increase in the number of delayed payments in the portfolio past the average credit period and, as well as observable changes in national or local economic conditions that correlate with default on receivables.

For financial assets recorded at amortized cost, the amount of the impairment loss recognized is the difference between the asset's carrying amount and the present value of estimated future cash flows, discounted at the financial asset's original effective interest rate.

For financial assets carried at cost, the amount of the impairment loss is measured as the difference between the asset's carrying amount and the present value of the estimated future cash flows discounted at the current market rate of return for a similar financial asset. Such impairment loss will not be reversed in subsequent periods.

The carrying amount of the financial asset is reduced by the impairment loss directly for all financial assets with the exception of trade receivables, where the carrying amount is reduced through the use of an allowance account. When a trade receivable is considered uncollectible, it is written off against the allowance account. Subsequent recoveries of amounts previously written off are credited against the allowance account. Changes in the carrying amount of the allowance account are recognized in income or loss.

When an available-for-sale financial asset is considered to be impaired, cumulative gains or losses previously recognized in other comprehensive income are reclassified to income or loss in the period.

For financial assets measured at amortized cost, if, in a subsequent period, the amount of the impairment loss decreases and the decrease can be related objectively to an event occurring after the impairment was recognized, the previously recognized impairment loss is reversed through profit or loss to the extent that the carrying amount of the investment at the date the impairment is reversed does not exceed what the amortized cost would have been had the impairment not been recognized.

In respect of available-for-sale equity securities, impairment losses previously recognized in profit or loss are not reversed through profit or loss. Any increase in fair value subsequent to an impairment loss is recognized in other comprehensive income. In respect of available-for-sale debt securities, impairment losses are subsequently reversed through profit or loss if an increase in the fair value of the investment can be objectively related to an event occurring after the recognition of the impairment loss.

(vii) De-recognition of financial assets

The Company derecognizes a financial asset when the contractual rights to the cash flows from the asset expire, or it transfers the rights to receive the contractual cash flows on the financial asset in a transaction in which substantially all the risks and rewards of ownership of the financial asset are transferred. Any interest in transferred financial assets that is created or retained by the Company is

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recognized as a separate asset or liability. If the Company retains substantially all the risks and rewards of ownership of the transferred financial assets, the Company continues to recognize the transferred financial assets and recognizes financial liabilities for the consideration received.

On de-recognition of a financial asset in its entirety, the difference between the asset's carrying amount and the sum of the consideration received and receivable and the cumulative gain or loss that had been recognized in other comprehensive income and accumulated in equity is recognized in income or loss.

On de-recognition of a financial asset other than in its entirety (e.g. when the Company retains an option to repurchase part of a transferred asset), the Company allocates the previous carrying amount of the financial asset between the part it continues to recognize under continuing involvement, and the part it no longer recognizes on the basis of the relative fair values of those parts on the date of the transfer. The difference between the carrying amount allocated to the part that is no longer recognized and the sum of the consideration received for the part no longer recognized and any cumulative gain or loss allocated to it that had been recognized in other comprehensive income is recognized in income or loss. A cumulative gain or loss that had been recognized in other comprehensive income is allocated between the part that continues to be recognized and the part that is no longer recognized on the basis of the relative fair values of those parts.

### **(23) Non-derivative financial liabilities and equity instruments issued by the Company**

#### **(i) Classification as debt or equity**

Debt and equity instruments are classified as either financial liabilities or as equity in accordance with the substance of the contractual arrangement.

#### **(ii) Equity instruments**

An equity instrument is any contract that evidences a residual interest in the assets of an entity after deducting all of its liabilities. Equity instruments issued by the Company are recognized at the proceeds received, net of direct issue costs.

Repurchase of the Company's own equity instruments is recognized and deducted directly in equity. No gain or loss is recognized in income or loss on the purchase, sale, issue or cancellation of the Company's own equity instruments.

#### **(iii) Financial liabilities**

Financial liabilities are recognized when the Company becomes a party to the contractual provisions of the instruments. Financial liabilities are initially measured at fair value. Transaction cost that are directly attributable to the issue of financial liabilities are added to or deducted from the fair value of the financial liabilities, as appropriate, on initial recognition. Transaction cost directly attributable to acquisition of financial liabilities at fair value through profit or loss are recognized immediately in profit or loss.

Financial liabilities are classified as either financial liabilities at fair value through profit or loss or other financial liabilities.

(iv) Financial liabilities at fair value through profit or loss (FVTPL)

Financial liabilities are classified as at financial liabilities at fair value through profit or loss when the financial liability is either held for trading or it is designated as financial liabilities at fair value through profit or loss.

A financial liability is classified as held for trading if:

It has been acquired principally for the purpose of repurchasing it in the near term; or

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On initial recognition it is part of a portfolio of identified financial instruments that the Company manages together and has a recent actual pattern of short-term profit-taking; or

It is a derivative that is not designated and effective as a hedging instrument.

A financial liability other than a financial liability held for trading may be designated as at FVTPL upon initial recognition if:

Such designation eliminates or significantly reduces a measurement or recognition inconsistency that would otherwise arise; or

The financial liability forms part of a Company of financial assets or financial liabilities or both, which is managed and its performance is evaluated on a fair value basis, in accordance with the Company's documented risk management or investment strategy, and information about the grouping is provided internally on that basis; or

It forms part of a contract containing one or more embedded derivatives, and IAS 39 Financial Instruments: Recognition and Measurement, permits the entire combined contract (asset or liability) to be designated as at FVTPL.

Financial liabilities at fair value through profit or loss are stated at fair value, with any gains or losses arising on re-measurement recognized in income or loss. The net gain or loss recognized in income or loss incorporates any interest paid on the financial liability and is included in finance income and finance expenses.

(v) Other financial liabilities

Other financial liabilities, including borrowings, are initially measured at fair value, net of transaction costs.

Other financial liabilities are subsequently measured at amortized cost using the effective interest method, with interest expense recognized on an effective yield basis. The effective interest method is a method of calculating the amortized cost of a financial liability and of allocating interest expense over the relevant period. The effective interest rate is the rate that exactly discounts estimated future cash payments through the expected life of the financial liability, or (where appropriate) a shorter period, to the net carrying amount on initial recognition.

(vi) Financial guarantee contract liabilities

Financial guarantee contract liabilities are initially measured at their fair values and, if not designated as at FVTPL, are subsequently measured at the higher of: (a) the amount of the obligation under the contract, as determined in accordance with IAS 37 Provisions, Contingent Liabilities and Contingent Assets; or (b) the amount initially recognized less, cumulative amortization recognized in accordance with IAS 18 Revenue.

(vii) De-recognition of financial liabilities

The Company derecognizes financial liabilities when, and only when, the Company's obligations are discharged, canceled or they expire. The difference between the carrying amount of the financial liability derecognized and the consideration paid and payable is recognized in income or loss.

**(24) Service Concession Arrangements**

The Company recognizes revenues from construction services and operating services related to service concession arrangements in accordance with IAS 11 Construction Contracts and IAS 18 Revenue, respectively. If the Company performs more than one service under a single contract or arrangement, consideration received or receivable is allocated by reference to the relative fair values of the services delivered, when the amounts are separately identifiable.

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The Company recognizes a financial asset to the extent that it has an unconditional contractual right to receive cash or another financial asset for the construction services and an intangible asset to the extent that it receives a right (license) to charge users of the public service. Borrowing costs attributable to the arrangement are recognized as an expense in the period in which they are incurred unless the Company has a contractual right to receive an intangible asset (a right to charge users of the public service). In this case, borrowing costs attributable to the arrangement are capitalized during the construction phase of the arrangement.

### **(25) Derivative financial instruments, including hedge accounting**

The Company enters into a variety of derivative financial instruments to manage its exposure to interest rate and foreign exchange rate risk, including foreign exchange forward contracts, interest rate swaps and cross currency swaps and others.

Derivatives are initially recognized at fair value. Subsequent to initial recognition, derivatives are measured at fair value. The resulting gain or loss is recognized in income or loss immediately unless the derivative is designated and effective as a hedging instrument, in such case the timing of the recognition in income or loss depends on the nature of the hedge relationship.

A derivative with a positive fair value is recognized as a financial asset; a derivative with a negative fair value is recognized as a financial liability. A derivative is presented as a non-current asset or a non-current liability if the remaining maturity of the instrument is more than 12 months and it is not expected to be realized or settled within 12 months. Other derivatives are presented as current assets or current liabilities.

#### **(i) Separable embedded derivatives**

Derivatives embedded in other financial instruments or other host contracts are treated as separate derivatives when their risks and characteristics are not closely related to those of the host contracts and when the host contracts are not measured at FVTPL.

An embedded derivative is presented as a non-current asset or a non-current liability if the remaining maturity of the hybrid instrument to which the embedded derivative is part of, is more than 12 months and it is not expected to be realized or settled within 12 months. All other embedded derivatives are presented as current assets or current liabilities.

#### **(ii) Hedge accounting**

The Company designates certain hedging instruments, which include derivatives, embedded derivatives and non-derivatives in respect of foreign currency risk, as either fair value hedges or cash flow hedges. Hedges of foreign exchange risk on firm commitments are accounted for as cash flow hedges.

At the inception of the hedge relationship, the entity documents the relationship between the hedging instrument and the hedged item, along with its risk management objectives and its strategy for undertaking various hedge transactions. Furthermore, at the inception of the hedge and on an ongoing basis, the Company documents whether the hedging instrument is highly effective in offsetting changes in fair values or cash flows of the hedged item.

(iii) Fair value hedges

Changes in the fair value of derivatives that are designated and qualify as fair value hedges are recognized in income or loss immediately, together with any changes in the fair value of the hedged asset or liability that are attributable to the hedged risk. The changes in the fair value of the hedging instrument and the change in the hedged item attributable to the hedged risk relating to the hedged items are recognized in the consolidated statements of comprehensive income.

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Hedge accounting is discontinued when the Company revokes the hedging relationship, when the hedging instrument expires or is sold, terminated, or exercised, or when it no longer qualifies for hedge accounting. The fair value adjustment to the carrying amount of the hedged item arising from the hedged risk is amortized as income or loss as of that date.

**(iv) Cash flow hedges**

The effective portion of changes in the fair value of derivatives that are designated and qualify as cash flow hedges is recognized in other comprehensive income. The gain or loss relating to the ineffective portion is recognized immediately in income or loss, and is included in the finance income and expense .

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

Hedge accounting is discontinued when the Company revokes the hedging relationship, when the hedging instrument expires or is sold, terminated, or exercised, or it no longer qualifies for hedge accounting. Any gain or loss accumulated in equity at that time remains in equity and is recognized when the forecast transaction is ultimately recognized in income or loss. When a forecast transaction is no longer expected to occur, the gain or loss accumulated in equity is recognized immediately in income or loss.

**4. Segment, Geographic and Other Information****(1) Segment determination and explanation of the measurements**

The Company's operating segments are its business components that generate discrete financial information that is reported to and regularly reviewed by the Company's chief operating decision maker, the Chief Executive Officer, for the purpose of resource allocation and assessment of segment performance. The Company's reportable segments are Transmission and distribution , Electric power generation (Nuclear) , Electric power generation (Non-nuclear) , Plant maintenance & engineering service and Others ; others mainly represent the business unit that manages the Company's foreign operations.

Segment operating profit (loss) is determined the same way that consolidated operating profit is determined under IFRS without any adjustment for corporate allocations. The accounting policies used by each segment are consistent with the accounting policies used in the preparation of the consolidated financial statements. Segment assets and liabilities are determined based on separate financial statements of the entities instead of on a consolidated basis. There are various transactions between the reportable segments, including sales of property, plant and equipment and so on, that are conducted on an arms-length basis at market prices that would be applicable to an independent third-party. For subsidiaries which are in a different segment from that of its immediate parent company, their carrying amount in separate financial statements is eliminated in the consolidating adjustments in the tables below. In addition, consolidation adjustments in the table below include adjustments of the amount of investment in associates and joint ventures from the cost basis amount reflected in segment assets to that determined using equity method in

the consolidated financial statements.

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(2) Financial information of the segments for the years ended December 31, 2015, 2016 and 2017, respectively, are as follows:

Total segment revenue	Intersegment revenue	Revenue from external customers	Depreciation and amortization	Interest income	2015				
					Interest expense	Profit (loss) related to associates and joint ventures	Employee benefit expense	Loss on abandonment of property, plant and equipment	Increase in provisions, net
58,164,394	1,230,975	56,933,419	2,859,037	132,809	1,092,594	220,406	135,261	359,521	872,096
10,642,352	10,596,189	46,163	3,070,828	24,612	532,490	(595)	54,572		401,839
21,469,345	20,906,081	563,264	2,337,353	22,171	319,647	(10,686)	74,007	5,305	148,053
2,533,887	2,016,699	517,188	85,662	12,293	542	(1,746)	74,542		174,912
672,250	150,557	521,693	27,491	108,104	127,684		343	230	34
(34,900,501)	(34,900,501)		(38,987)	(58,404)	(57,273)		(24,033)		5,790
58,581,727		58,581,727	8,341,384	241,585	2,015,684	207,379	314,692	365,056	1,602,724

In millions of won

Total segment revenue	Intersegment revenue	Revenue from external customers	Depreciation and amortization	Interest income	2016				
					Interest expense	Profit (loss) related to associates and joint ventures	Employee benefit expense	Loss on abandonment of property, plant and equipment	Increase in provisions, net

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revenue		external customers	amortization			to associates and joint ventures	expense	property, plant, and equipment	
In millions of won									
59,862,284	1,890,489	57,971,795	3,226,700	80,882	844,200	(128,402)	162,326	424,356	711,430
11,168,579	11,129,385	39,194	3,130,820	33,111	474,590	(1,082)	70,582		576,223
21,394,223	20,561,044	833,179	2,523,306	24,171	359,607	(8,342)	79,846	2,133	276,619
2,618,388	2,190,207	428,181	98,843	10,672	2,156	478	86,268		221,301
567,836	77,098	490,738	26,817	115,928	97,926		1,050	30	168
(35,848,223)	(35,848,223)		(45,498)	(22,986)	(25,611)		(26,319)		(3,009)
59,763,087		59,763,087	8,960,988	241,778	1,752,868	(137,348)	373,753	426,519	1,782,732



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2017									
Total segment revenue	Intersegment revenue	Revenue from external customers	Depreciation and amortization	Interest income	Interest expense	Profit (loss) related to associates and joint ventures	Employee benefit expense	Loss on abandonment of property, plant, and equipment	Increase in provisions, net
In millions of won									
59,486,766	2,044,160	57,442,606	3,466,410	49,987	737,971	(105,166)	158,738	384,595	885,195
9,415,752	9,359,468	56,284	3,267,510	21,034	487,503	3,637	80,809		801,800
22,795,816	21,885,251	910,565	2,954,375	18,860	486,176	(6,718)	94,075	39,335	171,457
2,621,440	2,211,716	409,724	109,001	10,801	2,967	(70)	87,344	161	219,382
655,062	138,352	516,710	36,001	130,003	103,782		861		(967)
(35,638,947)	(35,638,947)		(59,586)	(24,542)	(28,847)		(30,467)		(386,747)
59,335,889		59,335,889	9,773,711	206,143	1,789,552	(108,317)	391,360	424,091	1,690,120

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- (3) Information related to segment assets and segment liabilities as of and for the years ended December 31, 2016 and 2017 are as follows:

Segment	Segment assets	2016		Segment liabilities
		Investments in associates and joint ventures	Acquisition of non-current assets	
		In millions of won		
Transmission and distribution	105,321,129	4,121,462	6,345,004	49,854,420
Electric power generation (Nuclear)	52,782,915	15,384	1,945,610	27,366,938
Electric power generation (Non-nuclear)	47,427,642	1,320,203	3,508,313	26,205,049
Plant maintenance & engineering service	3,106,909	53,399	180,715	1,218,047
Others	7,423,132		365,470	2,761,262
Segment totals	216,061,727	5,510,448	12,345,112	107,405,716
Consolidation adjustments:				
Elimination of inter-segment amounts	(39,114,371)		(191,901)	(5,811,800)
Equity method adjustment	906,239			
Deferred taxes	(5,830)			4,301,404
Others	(10,723)			(1,108,823)
	(38,224,685)		(191,901)	(2,619,219)
Consolidated totals	177,837,042	5,510,448	12,153,211	104,786,497

Segment	Segment assets	2017		Segment liabilities
		Investments in associates and joint ventures	Acquisition of non-current assets	
		In millions of won		
Transmission and distribution	106,540,154	3,366,309	6,606,512	50,757,798
Electric power generation (Nuclear)	55,011,096	11,843	2,083,967	29,252,816
Electric power generation (Non-nuclear)	47,938,084	1,904,224	3,250,524	26,337,295
Plant maintenance & engineering service	3,273,959	48,320	145,779	1,176,627
Others	7,798,400		569,447	3,013,743
Segment totals	220,561,693	5,330,696	12,656,229	110,538,279
Consolidation adjustments:				
Elimination of inter-segment amounts	(39,517,829)		23,616	(5,239,156)

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Equity method adjustment	754,314			
Deferred taxes	2,215			5,339,450
Others	(11,478)			(1,814,299)
	(38,772,778)		23,616	(1,714,005)
Consolidated totals	181,788,915	5,330,696	12,679,845	108,824,274

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**Table of Contents****(4) Geographic information**

Electric sales, the main operations of the Company, are conducted in the Republic of Korea where the controlling company is located. The following information on revenue from external customers and non-current assets is determined by the location of the customers and of the assets:

Geographical unit	Revenue from external customers			Non-current assets(*2)		
	2015	2016	2017	2015	2016	2017
	In millions of won					
Domestic	54,351,076	55,310,011	55,652,807	143,788,043	148,297,677	153,436,810
Overseas(*1)	4,230,651	4,453,076	3,683,082	4,526,395	4,474,699	4,497,535
	58,581,727	59,763,087	59,335,889	148,314,438	152,772,376	157,934,345

(\*1) Middle East and other Asian countries make up the majority of overseas revenue and non-current assets.

(\*2) Amount excludes financial assets and deferred tax assets.

**(5) Information on significant customers**

There is no individual customer comprising more than 10% of the Company's revenue for the years ended December 31, 2015, 2016 and 2017.

**Table of Contents****5. Classification of Financial Instruments**

(1) Classification of financial assets as of December 31, 2016 and 2017 are as follows:

	2016					Total
	Financial assets at fair value through profit or loss	Loans and receivables	Available-for-sale financial assets	Held-to-maturity investments	Derivative assets (using hedge accounting)	
	In millions of won					
<b>Current assets</b>						
Cash and cash equivalents		3,051,353				3,051,353
<b>Current financial assets</b>						
Held-to-maturity investments				114		114
Derivative assets	79,709				113,574	193,283
Other financial assets		2,478,592				2,478,592
Trade and other receivables		7,788,876				7,788,876
	79,709	13,318,821		114	113,574	13,512,218
<b>Non-current assets</b>						
<b>Non-current financial assets</b>						
Available-for-sale financial assets			1,014,732			1,014,732
Held-to-maturity investments				3,130		3,130
Derivative assets	287,768				300,323	588,091
Other financial assets		1,051,541				1,051,541
Trade and other receivables		1,903,515				1,903,515
	287,768	2,955,056	1,014,732	3,130	300,323	4,561,009
	367,477	16,273,877	1,014,732	3,244	413,897	18,073,227

	2017					Total
	Financial assets at fair value through profit or loss	Loans and receivables	Available-for-sale financial assets	Held-to-maturity investments	Derivative assets (using hedge accounting)	
	In millions of won					
<b>Current assets</b>						

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Cash and cash equivalents		2,369,739				2,369,739
<b>Current financial assets</b>						
Held-to-maturity investments				5		5
Derivative assets	12,923				12	12,935
Other financial assets		1,945,417				1,945,417
Trade and other receivables		7,928,972				7,928,972
	12,923	12,244,128		5	12	12,257,068
<b>Non-current assets</b>						
<b>Non-current financial assets</b>						
Available-for-sale financial assets			699,833			699,833
Held-to-maturity investments				3,139		3,139
Derivative assets	9,097				10,594	19,691
Other financial assets	111,512	1,204,738				1,316,250
Trade and other receivables		1,754,797				1,754,797
	120,609	2,959,535	699,833	3,139	10,594	3,793,710
	133,532	15,203,663	699,833	3,144	10,606	16,050,778

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(2) Classification of financial liabilities as of December 31, 2016 and 2017 are as follows:

	2016			Total
	Financial liabilities at fair value through profit or loss	Financial liabilities recognized at amortized cost	Derivative liabilities (using hedge accounting)	
	In millions of won			
<b>Current liabilities</b>				
Borrowings		1,115,521		1,115,521
Debt securities		7,823,557		7,823,557
Derivative liabilities	3,251			3,251
Trade and other payables		5,585,411		5,585,411
	3,251	14,524,489		14,527,740
<b>Non-current liabilities</b>				
Borrowings		1,773,891		1,773,891
Debt securities		42,926,236		42,926,236
Derivative liabilities	18,278		117,157	135,435
Trade and other payables		3,558,175		3,558,175
	18,278	48,258,302	117,157	48,393,737
	21,529	62,782,791	117,157	62,921,477

	2017			Total
	Financial liabilities at fair value through profit or loss	Financial liabilities recognized at amortized cost	Derivative liabilities (using hedge accounting)	
	In millions of won			
<b>Current liabilities</b>				
Borrowings		1,165,985		1,165,985
Debt securities		7,957,300		7,957,300
Derivative liabilities	51,090		20,177	71,267
Trade and other payables		5,999,521		5,999,521
	51,090	15,122,806	20,177	15,194,073
<b>Non-current liabilities</b>				
Borrowings		2,434,624		2,434,624
Debt securities		43,189,483		43,189,483
Derivative liabilities	99,839		256,953	356,792
Trade and other payables		3,223,480		3,223,480

99,839	48,847,587	256,953	49,204,379
150,929	63,970,393	277,130	64,398,452

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**Table of Contents****(3) Classification of comprehensive income (loss) from financial instruments for the years ended December 31, 2015, 2016 and 2017 are as follows:**

		2015	2016	2017
		In millions of won		
Cash and cash equivalents	Interest income	54,687	61,380	35,474
Available-for-sale financial assets	Dividends income	14,069	9,446	11,477
	Impairment loss on available-for-sale financial assets	(84,370)	(86,703)	(2,713)
	Gain (loss) on disposal of available-for-sale financial assets	(3,004)	1,473	(1,213)
	Interest income	29		
Held-to-maturity investments	Interest income	99	97	82
Loans and receivables	Interest income	28,586	25,106	30,014
Trade and other receivables	Interest income	100,771	102,237	102,727
Short-term financial instruments	Interest income	46,921	45,763	29,412
Long-term financial instruments	Interest income	10,492	7,195	8,144
Financial assets at fair value through profit or loss	Interest income			290
	Gain (loss) on valuation of derivatives	220,285	113,671	(214,100)
	Gain (loss) on transaction of derivatives	8,605	(8,039)	(37,266)
	Gain on valuation of financial assets			12
Derivative assets (using hedge accounting)	Gain (loss) on valuation of derivatives (profit or loss)	244,020	145,458	(41,129)
	Gain (loss) on valuation of derivatives (equity, before tax)(*)	(12,572)	50,047	2,453
	Gain (loss) on transaction of derivatives	2,818	(13,994)	(58,299)
Financial liabilities carried at amortized cost	Interest expense of borrowings and debt securities	(1,392,477)	(1,202,065)	(1,240,727)
	Loss on retirement of financial liabilities	(33)	(23,000)	(5)
	Interest expense of trade and other payables	(84,527)	(68,375)	(57,160)
	Interest expense of others	(538,680)	(482,428)	(491,665)
	Gain (loss) on foreign currency transactions and translations	(708,178)	(290,485)	1,075,215
Financial liabilities at fair value through profit or loss	Gain (loss) on valuation of derivatives	35,312	23,225	(179,879)

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	Gain (loss) on transaction of derivatives	107,454	17,045	(27,175)
Derivative liabilities (using hedge accounting)	Gain (loss) on valuation of derivatives (profit or loss)	93,914	5,714	(439,559)
	Gain (loss) on valuation of derivatives (equity, before tax)(*)	9,728	(3,297)	29,431
	Loss on transaction of derivatives	(4,288)	(51,450)	(46,221)

(\*) Items are included in other comprehensive income or loss. All other income and gain amounts listed above are included in finance income, and all expense and losses listed above are included in finance expenses in the consolidated statements of comprehensive income or loss.

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**Table of Contents****6. Restricted Deposits**

Restricted deposits as of December 31, 2016 and 2017 are as follows:

		<b>2016</b>	<b>2017</b>
		<b>In millions of won</b>	
Cash and cash equivalents	Escrow accounts	91	53
	Deposits for government project	16,457	15,365
	Collateral provided for borrowings	80,327	79,569
	Collateral provided for lawsuit	241	2
	Deposits for transmission regional support program	2,137	2,320
Short-term financial instruments	Bidding guarantees	118	119
	Restriction on withdrawal related to win-win growth program for small and medium enterprises	33,000	34,000
	Other current receivables	16,000	
	Financial assets at fair value through profit or loss		108,512
Non-current available-for-sale financial asset	Decommissioning costs of nuclear power plants	437,015	214,156
Long-term financial instruments	Guarantee deposits for checking account	2	2
	Guarantee deposits for banking accounts at overseas branches	342	302
	Decommissioning costs of nuclear power plants	214,121	337,234
	Funds for developing small and medium enterprises(*)	200,000	200,000
		<b>999,851</b>	<b>991,634</b>

(\*1) Deposits for small and medium enterprise at IBK and others for construction of Bitgaram Energy Valley and support for the high potential businesses as of December 31, 2017 and 2016.

**7. Cash and Cash Equivalents**

Cash and cash equivalents as of December 31, 2016 and 2017 are as follows:

**2016**      **2017**  
**In millions of won**

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Cash	119	132
Other demand deposits	1,725,785	968,966
Short-term deposits classified as cash equivalents	120,594	559,239
Short-term investments classified as cash equivalents	1,204,855	841,402
	3,051,353	2,369,739

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**Table of Contents****8. Trade and Other Receivables****(1) Trade and other receivables as of December 31, 2016 and 2017 are as follows:**

	<b>Gross amount</b>	<b>Allowance for doubtful accounts</b>	<b>Present value discount</b>	<b>Book value</b>
	<b>2016</b>			
	<b>In millions of won</b>			
<b>Current assets</b>				
Trade receivables	7,260,227	(71,985)		7,188,242
Other receivables	652,782	(50,071)	(2,077)	600,634
	7,913,009	(122,056)	(2,077)	7,788,876
<b>Non-current assets</b>				
Trade receivables	491,509			491,509
Other receivables	1,455,860	(37,590)	(6,264)	1,412,006
	1,947,369	(37,590)	(6,264)	1,903,515
	9,860,378	(159,646)	(8,341)	9,692,391
	<b>Gross amount</b>	<b>Allowance for doubtful accounts</b>	<b>Present value discount</b>	<b>Book value</b>
	<b>2017</b>			
	<b>In millions of won</b>			
<b>Current assets</b>				
Trade receivables	7,499,285	(173,583)		7,325,702
Other receivables	614,212	(9,199)	(1,743)	603,270
	8,113,497	(182,782)	(1,743)	7,928,972
<b>Non-current assets</b>				
Trade receivables	449,191		(414)	448,777
Other receivables	1,380,983	(68,809)	(6,154)	1,306,020
	1,830,174	(68,809)	(6,568)	1,754,797
	9,943,671	(251,591)	(8,311)	9,683,769

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(2) Other receivables as of December 31, 2016 and 2017 are as follows:

	Gross amount	2016 Allowance for doubtful accounts	Present value discount	Book value
In millions of won				
<b>Current assets</b>				
Non-trade receivables	360,021	(50,071)		309,950
Accrued income	62,063			62,063
Deposits	193,720		(2,077)	191,643
Finance lease receivables	12,225			12,225
Others	24,753			24,753
	652,782	(50,071)	(2,077)	600,634
<b>Non-current assets</b>				
Non-trade receivables	80,393	(26,942)		53,451
Accrued income	174			174
Deposits	320,935		(6,264)	314,671
Finance lease receivables	960,649			960,649
Others	93,709	(10,648)		83,061
	1,455,860	(37,590)	(6,264)	1,412,006
	2,108,642	(87,661)	(8,341)	2,012,640
<b>2017</b>				
	Gross amount	Allowance for doubtful accounts	Present value discount	Book value
In millions of won				
<b>Current assets</b>				
Non-trade receivables	314,256	(9,199)		305,057
Accrued income	54,002			54,002
Deposits	228,317		(1,743)	226,574
Finance lease receivables	13,067			13,067
Others	4,570			4,570
	614,212	(9,199)	(1,743)	603,270
<b>Non-current assets</b>				
Non-trade receivables	112,983	(59,117)		53,866
Accrued income	182			182
Deposits	331,071		(6,154)	324,917
Finance lease receivables	849,554			849,554
Others	87,193	(9,692)		77,501

	1,380,983	(68,809)	(6,154)	1,306,020
	1,995,195	(78,008)	(7,897)	1,909,290

- (3) Trade and other receivables are classified as loans and receivables, and are measured using the effective interest method. No interest is accrued for trade receivables related to electricity for the duration between the billing date and the payment due dates. But once trade receivables are overdue, the Company imposes a monthly interest rate of 1.5% on the overdue trade receivables. The Company holds deposits of three months' expected electricity usage for customers requesting temporary usage and customers with past defaulted payments.

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**Table of Contents****(4) Aging analysis of trade receivables as of December 31, 2016 and 2017 are as follows:**

	<b>2016</b>	<b>2017</b>
	<b>In millions of won</b>	
Trade receivables: (not overdue, not impaired)	7,592,363	7,698,604
Trade receivables: (overdue, not impaired)	820	7,117
Less than 60 days	820	7,117
Trade receivables: (impairment reviewed)	158,553	242,755
60 ~ 90 days	44,277	39,070
90 ~ 120 days	18,917	17,502
120 days ~ 1year	42,534	55,242
Over 1 year	52,825	130,941
	7,751,736	7,948,476
Less: allowance for doubtful accounts	(71,985)	(173,583)
Less: present value discount		(414)
	7,679,751	7,774,479

The Company assesses at the end of each reporting period whether there is any objective evidence that trade receivables are impaired, and provides allowances for doubtful accounts which includes impairment for trade receivables that are individually significant. The Company considers receivables as overdue if the receivables are outstanding 60 days after the maturity and sets an allowance based on past experience of collection.

**(5) Aging analysis of other receivables as of December 31, 2016 and 2017 are as follows:**

	<b>2016</b>	<b>2017</b>
	<b>In millions of won</b>	
Other receivables: (not overdue, not impaired)	1,887,620	1,810,075
Other receivables: (overdue, not impaired)	46,887	47,532
Less than 60 days	46,887	47,532
Other receivables: (impairment reviewed)	174,135	137,588
60 ~ 90 days	7,352	44
90 ~ 120 days	2,160	1,017
120 days ~ 1year	17,613	11,042
Over 1 year	147,010	125,485



	2,108,642	1,995,195
Less: allowance for doubtful accounts	(87,661)	(78,008)
Less: present value discount	(8,341)	(7,897)
	2,012,640	1,909,290

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- (6) Changes in the allowance for doubtful accounts for the years ended December 31, 2015, 2016 and 2017 are as follows:

	2015		2016		2017	
	Trade receivables	Other receivables	Trade receivables	Other receivables	Trade receivables	Other receivables
	In millions of won					
<b>Beginning balance</b>	80,644	67,932	51,956	91,746	71,985	87,661
Bad debt expense	1,308	18,473	38,719	233	126,714	1,778
Write-off	(28,978)	(888)	(18,939)	(928)	(32,995)	(3,129)
Reversal	(1,018)	(413)		(5,489)		(2,166)
Others		6,642	249	2,099	7,879	(6,136)
<b>Ending balance</b>	51,956	91,746	71,985	87,661	173,583	78,008

## 9. Available-for-sale Financial Assets

- (1) Changes in available-for-sale financial assets for the years ended December 31, 2016 and 2017 are as follows:

	Beginning balance	2016					Ending balance
		Acquisition	Disposal(*1)	Valuation	Impairment	Others	
	In millions of won						
<b>Listed</b>	196,579		(3,398)	74,139	(9,122)	9,973	268,171
<b>Unlisted</b>	387,900	449,484	(1,828)	(12,346)	(77,581)	932	746,561
	584,479	449,484	(5,226)	61,793	(86,703)	10,905	1,014,732
Short-term available-for-sale financial assets							
Long-term available-for-sale financial assets	584,479	449,484	(5,226)	61,793	(86,703)	10,905	1,014,732

(\*1) The Company recognized gain and loss on disposal of available-for-sale financial assets amounted to 1,482 million and 9 million, respectively, from the sales of shares of Kwanglim Co., Ltd., TONGYANG Inc., TONGYANG networks Inc., Nexolon Co., Ltd. and SsangYong E&C Co., Ltd. and from the partial sales of IBK-AUCTUS Green Growth Private Equity Firm, Hanwha-KOSEP New Renewable Energy Private Special Assets Investment Trust 1 and Korea investment Hanwha KT Master Lease Private Special Investment Trust for the year ended December 31, 2016.

	2017						Ending
	Beginning	Acquisition	Disposal(*1)	Valuation	Impairment	Others	balance
	balance						
	In millions of won						
<b>Listed</b>	268,171	106		8,156	(97)	(1,883)	274,453
<b>Unlisted</b>	746,561	233,179	(461,423)	(2,908)	(2,616)	(87,413)	425,380
	1,014,732	233,285	(461,423)	5,248	(2,713)	(89,296)	699,833
Short-term available-for-sale financial assets							
Long-term available-for-sale financial assets	1,014,732	233,285	(461,423)	5,248	(2,713)	(89,296)	699,833

(\*1) The Company recognized gain and loss on disposal of available-for-sale financial assets amounted to 1,130 million and 2,343 million, respectively, from the partial sales of Hanwha-KOSEP New Renewable Energy Private Special Assets Investment Trust 1 and others for the year ended December 31, 2017.

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	Shares	Ownership	2016 Acquisition cost	Book value	Fair value
				In millions of won	
<b>Listed</b>					
Korea District Heating Corp.	2,264,068	19.55%	173,201	154,183	154,183
Ssangyong Motor Co., Ltd.	38,568	0.03%	428	304	304
Sungjee Construction. Co., Ltd.	10,530	0.01%	49	21	21
Korea Line Corp.	18	0.00%	1		
Namkwang Engineering & Construction Co., Ltd.	46	0.00%	15		
Pumyang Construction Co., Ltd.	7	0.00%	2		
ELCOMTEC Co., Ltd.	32,875	0.04%	217	74	74
PAN ocean Co., Ltd.	1,492	0.00%	14	7	7
Borneo International Furniture Co., Ltd.	64,037	0.28%	97	103	103
Dongbu Corporation	1,229	0.02%	12	12	12
PT Adaro Energy Tbk	480,000,000	1.50%	71,554	73,061	73,061
Energy Fuels Inc.	1,711,814	2.59%	16,819	3,385	3,385
Baralaba Coal Company Limited(*6)	99,763	0.07%	18,445	42	42
Denison Mines Corp.	58,284,000	10.93%	84,134	36,504	36,504
Fission 3.0	300,000	0.17%		16	16
Fission Uranium Corp.	800,000	0.17%	785	459	459
			365,773	268,171	268,171
<b>Unlisted(*1)</b>					
K&C Gyeongnam youth job creation Investment Fund	24	10.00%	1,207	1,207	
Korea investment Korea EXIM Bank CERs Private Special Assets Investment Trust I	1,758,731,002	14.18%	1,752	571	
Troika Overseas Resource Development Private Equity Firm	13,340,012,100	3.66%	13,340	1,553	
IBK-AUCTUS Green Growth Private Equity firm	152	6.29%	41	41	
Global Dynasty Overseas Resource Development Private Equity Firm	2,233,407,439	7.46%	2,233	2,233	
Intellectual Discovery, Ltd.	1,000,000	8.81%	5,000	1,375	
Hanwha-KOSEP New Renewable Energy Private Special Assets Investment Trust I	4,256,096,329	5.00%	4,389	4,389	
Construction Guarantee(*2)	571	0.02%	601	819	819
Plant & Mechanical Contractors Financial Cooperative of Korea	50	0.01%	36	36	
Fire Guarantee	40	0.02%	20	20	
Korea Software Financial Cooperative	5,186	1.39%	3,301	3,301	

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Engineering Financial Cooperative	486	0.05%	60	60
Electric Contractors Financial Cooperative	800	0.03%	152	152
Korea Specialty Contractor Financial Cooperative	476	0.01%	417	417
Information & Communication Financial Cooperative	70	0.01%	10	10
Korea Electric Engineers Association	400	0.24%	40	40
Korea investment Investment Pool for Public funds 10(*5)			142,470	141,315
				141,315

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	Shares	Ownership	2016 Acquisition cost	Book value	Fair value
			In millions of won		
Samsung investment Investment Pool for Public funds 2(*5)			213,710	211,920	211,920
Samsung investment Investment Pool for Public funds 1(*5)			53,220	53,212	53,212
Korea investment Hanwha KT Master Lease Private Special Investment Trust(*5)			30,560	30,568	30,568
Hwan Young Steel Co., Ltd.	10,916	0.14%	1,092	97	
SAMBO AUTO. Co., Ltd.	15,066	0.02%	38	38	
Mobo Co., Ltd.	504	0.00%	14	14	
HANKOOK Silicon Co., Ltd.	3,005,208	10.44%	7,513	1,495	
Dae Kwang Semiconductor Co., Ltd.	589	0.07%	6	6	
Sanbon Department Store	828	0.01%	124	3	
Miju Steel Mfg. Co., Ltd.	99,804	0.23%	51	51	
BnB Sungwon Co., Ltd.	589	0.07%	15	15	
Hana Civil Engineering Co., Ltd.	23	0.00%	1	1	
KC Development Co., Ltd.	839	0.02%	6	6	
IMHWA Corp.	329	0.11%	5	5	
DALIM Special Vehicle Co., Ltd.	58	0.08%	10	10	
ASA JEONJU Co., Ltd.	34,846	1.34%	697	69	
Moonkyung Silica Co., Ltd.	42	0.56%			
Sungkwang Timber Co., Ltd.	9	0.34%	4	4	
Yongbo Co., Ltd.	61	0.20%	3	3	
HJ Steel Co., Ltd.	218	0.07%	2	2	
KS Remicon Co., Ltd.	12	0.04%	3	3	
SIN-E Steel Co., Ltd.	109	0.08%	33	33	
Joongang Platec Co., Ltd.	3,591	0.75%	72	35	
Pyungsan SI Ltd.	434	0.01%	9	9	
Samgong Development Co., Ltd.	12	0.01%	7	7	
Joongang Development Co., Ltd.	540	0.12%	8	8	
AJS Co., Ltd.	12,906	0.23%	32	32	
SHIN-E B&P Co., Ltd.	119	0.13%	10	10	
MSE Co., Ltd.	429	0.13%	9	9	
Ilrim Nano Tec Co., Ltd.	1,520	0.07%	15	15	
Youngjin Hi-Tech Co., Ltd.	2,512	0.25%	126	21	
Dong Woo International Co., Ltd.	90	0.37%	18	18	
Buyoung Co., Ltd.	270	0.00%	3	3	
Ilsuk Co., Ltd.	152	0.17%	10	10	
Dongyang Telecom Co., Ltd.	1,760	0.01%	11	11	
Han Young Construction Co., Ltd.	35	0.03%	3	3	
Jongwon Remicon Co., Ltd.	31	0.18%	13	13	
Ace Heat Treating Co., Ltd.	477	1.43%	72	72	
Zyle Daewoo Motor Sales Co., Ltd.	22	0.00%			
Daewoo Development Co., Ltd.	8	0.00%			

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Seyang Inc.	537	0.05%	27	27
Seungri Enterprise Co., Ltd.	93	0.05%	3	3
Onggane Food Co., Ltd	5	0.07%	1	1
Shin-E P&C Co., Ltd.	12	0.00%	1	1
Ejung Ad Co., Ltd.	132	0.09%	3	3
Solvus Co., Ltd.	1,056	0.04%	3	3
Myung Co., Ltd.	89	0.05%	2	2
Emotion Co., Ltd.	167	0.61%	8	8
Youngdong Concrete Co., Ltd.	32	0.32%	7	7

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	<b>Shares</b>	<b>Ownership</b>	<b>2016 Acquisition cost</b>	<b>Book value</b>	<b>Fair value</b>
				<b>In millions of won</b>	
Shinil Engineering Co., Ltd.	887	0.06%	3	3	
Biwang Industry Co., Ltd	406	0.04%	2	2	
Huimun Co., Ltd.	263	0.26%	4	4	
Young Sung Co., Ltd.	89	0.40%	27	27	
Yuil Industrial Electronics Co., Ltd.	804	0.32%	16	16	
DN TEK Inc.	12,401	0.29%			