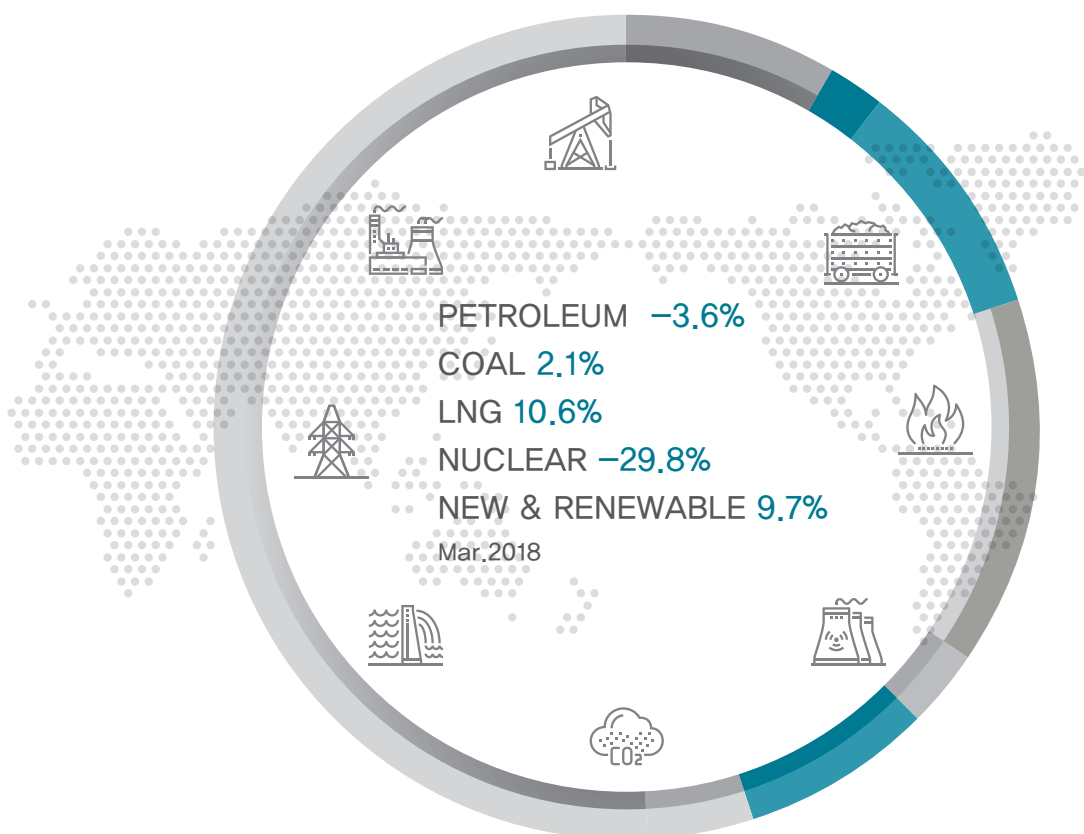


# KEEI

## MONTHLY KOREA ENERGY TRENDS



# Table of Contents

1. The Economy and the Industry .....	4
2. Energy Prices .....	6
3. Energy Supply .....	10
4. Energy Consumption .....	11
5. Coal .....	13
6. Petroleum .....	14
7. Gas .....	15
8. Electricity .....	16
9. Nuclear energy .....	17
10. Heat and Renewable energy .....	18
11. Industry .....	19
12. Transport .....	20
13. Buildings .....	21
14. Transformation .....	22
<Appendix> Major Indicators & Statistics of Energy Supply and Demand .....	23

# 1. The Economy and the Industry

- ☐ **Gross Domestic Product(“GDP”) rose by 3.0% in Q1 2018 on the back of increased private spending, although the investment has been slowing down.**
  - The private spending posted a year-on-year growth of 3.4% in Q1, affected by positive consumer sentiment and a steady growth in net consumption abroad due to the stronger Korean Won, while on a quarter-on-quarter basis it remained stagnant.
  - The construction investment grew at slower pace, especially in residential construction, and the facility investment also slowed down due to the base effect of the previous year’s fast growth in the semiconductor facility investment.
- ☐ **The total export value increased by 6.0% year-on-year in March, despite sluggish results in the shipbuilding and automobile industries, as the semiconductor export hit an all-time high.**
  - The export value of semiconductors was up 44.2% in March to a record high of \$10.8 billion, taking up 21% of the total export, on the back of continuously strong demand for server Dram (memory semiconductor) and increased export of system semiconductors with the growth of new technologies such as internet of things (IoT) and autonomous vehicles. It was also the first time that the export of a single item posted a monthly record of over \$10 billion.
  - The export value of petrochemical and petroleum products rose by 0.6% and 1.6% respectively, despite smaller export volume (-8.5%, -15.1%), as increased oil prices drove up the unit export price of those products. The export growth rate, however, declined from the previous month.
  - The export value of iron & steel products made a year-on-year growth of 6.2%, propelled by higher prices and growing demand from China, ASEAN, India.
  - The export value of automobiles fell by 8.7% owing to the sluggish export to the U.S., and that of marine vessels, a high value-added product, was down 31.0% because of falling export orders and a base effect.
- ☐ **The production index of mining and manufacturing industries declined by 4.0% due to reduced production of cement and automobiles, while that of the service industry rose by 2.3%.**
  - The production index of mining and manufacturing industries fell by 4.0%, despite increased ICT production (2.2%), as the production started to decline in the basic chemical materials sector (-1.2%) and was steadily weak in the cement and automobile sectors (-15.8%, -12.5%).
  - The production index of the service industry rose by 2.3%, helped by slower decline in the restaurant & accommodations business (-0.6%) and faster growth in the wholesale & retail business (3.3%).

► **Trend in major economic and industrial indicators**

	2016	2017p	2018p			2018p		
			M1	M2	M3	M1	M2	M3
GDP (trillion won)	1 508.3 (2.8)	1 554.8 (3.1)	- -	- -	365.8 (2.9)	- -	- -	376.7 (3.0)
Total export (\$billion, customs clearance basis)	495.4 (-5.9)	573.7 (15.8)	40.3 (11.0)	43.2 (20.2)	48.6 (13.1)	49.2 (22.3)	44.6 (3.3)	51.6 (6.0)
Semi-conductors	62.9 (0.4)	62.2 (-1.1)	5.6 (2.5)	5.7 (-2.6)	5.6 (1.7)	8.8 (56.7)	9.7 (69.9)	9.5 (69.6)
Petroleum products	26.5 (-17.3)	35.0 (32.3)	2.8 (68.1)	2.9 (73.3)	3.0 (59.3)	3.6 (31.1)	3.3 (14.2)	3.1 (1.6)
Mining and manufacturing production index (2015=100)	102.3 (2.3)	104.2 (1.8)	100.3 (1.5)	98.6 (7.6)	110.6 (5.0)	104.5 (4.2)	91.9 (-6.8)	106.3 (-3.9)
Service industry performance index (2015=100)	102.6 (2.6)	104.5 (1.8)	99.6 (2.3)	97.5 (2.3)	105.6 (2.1)	103.0 (3.4)	99.3 (1.8)	108.1 (2.4)

Note: Figures are based on the real price of 2010, P means provisional, ( ) is year-on-year growth rates (%)

Source: Korea International Trade Association, Korea Statistical Information Service

## 2. Energy Prices

### Global energy prices

- **Global oil price went up by 7.3% in May from the previous month, following the withdrawal of the U.S. from the nuclear agreement with Iran and the announcement of the resumed economic sanctions.**
  - The U.S. president Donald Trump pulled the U.S. from the nuclear agreement with Iran and decided to reimpose economic sanctions against Iran on May 8<sup>th</sup>.
  - Meanwhile, such increase in global oil price was partially offset, as Saudi Arabia and Russia, OPEC and non-OPEC oil majors, negotiated an easing of oil output reduction.
- **Global coal price soared to over \$100/ton in May, while natural gas price has been stagnant at around \$9/MMBTU.**
  - Global coal price went up by 11.9% from the previous month, as China's coal import increased to meet growing coal demand for power generation during extremely hot weather.

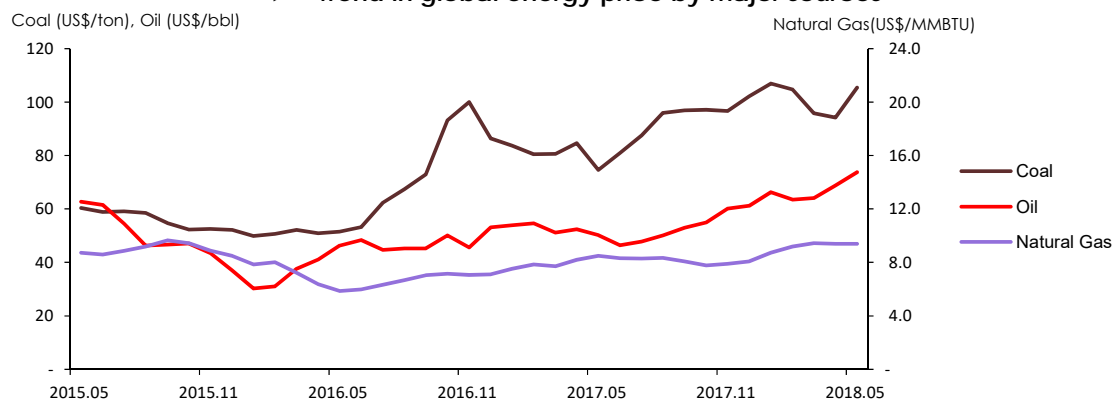
#### ► Trend in global energy prices

	2016	2017				2018			
			M3	M4	M5		M3	M4	M5
Crude oil (US\$/bbl)	43.3	53.0	51.1	52.4	50.2	64.1	68.8	73.8	
	(-15.2)	(22.4)	(35.8)	(27.4)	(8.6)	(25.3)	(31.2)	(47.0)	
Natural gas (US\$/MMBTU)	6.9	8.0	7.7	8.2	8.5	9.5	9.4	9.4	
	(-32.6)	(16.9)	(6.5)	(28.5)	(45.1)	(22.7)	(14.6)	(10.6)	
Coal (US\$/ton)	65.9	88.4	80.6	84.6	74.5	95.9	94.2	105.5	
	(14.7)	(34.1)	(54.3)	(66.3)	(44.8)	(19.0)	(11.3)	(41.5)	

Note: Global oil price is the average of the three benchmarks; Brent, Dubai, WTI. Natural gas and coal prices are based on Japan's LNG importing price from Indonesia (CIF) and the price of Australian coal. ( ) is year-on-year growth rates (%)

Source: www.petronet.co.kr, World Bank(Commodity Markets)

#### ► Trend in global energy price by major sources



## Domestic energy prices

- The prices of gasoline and diesel increased by 1.9% and 2.3% respectively in May than a month earlier amid soaring global oil price.
  - The global oil price rapidly increased in May as did in April, and accordingly, gasoline and diesel prices posted the highest growth rates since Sep and Jan, 2017 respectively.
- The prices of propane and butane maintained the level of the previous month in May in line with stagnant global prices.
  - The global prices of propane and butane (Saudi Aramco's supply price) are the basis for the domestic prices in the following month, and they were almost flat in May compared to the previous month, down just 1.0% to \$475/ton and up 1.1% to \$470/ton respectively.

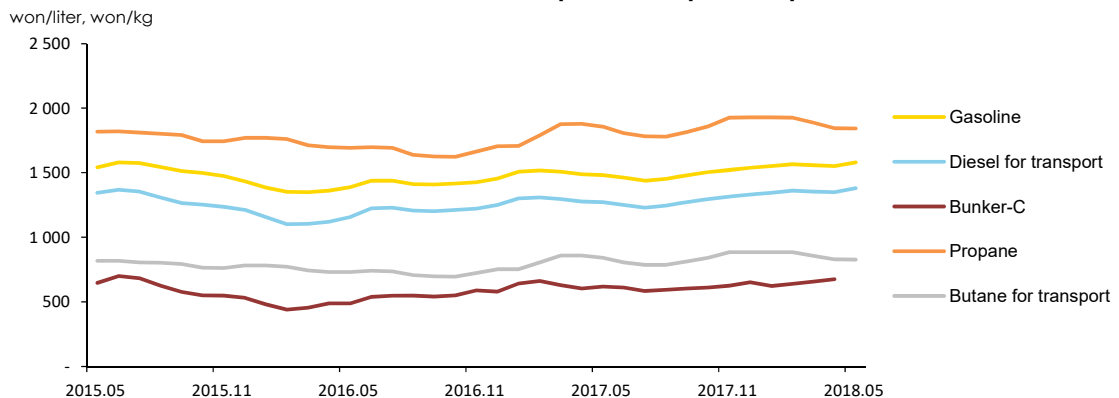
### ► Trend in domestic energy prices

	2016	2017				2018			
			M3	M4	M5		M3	M4	M5
Gasoline (won/liter)	1 402.9 (-7.1)	1 491.4 (6.3)	1 506.8 (11.6)	1 487.5 (9.2)	1 481.2 (6.7)	1 557.9 (3.4)	1 551.3 (4.3)	1 580.3 (6.7)	
Diesel for transport (won/liter)	1 182.9 (-9.0)	1 282.6 (8.4)	1 297.3 (17.6)	1 277.8 (14.0)	1 271.4 (9.8)	1 354.6 (4.4)	1 349.1 (5.6)	1 380.2 (8.6)	
Bunker-C (won/liter)	521.1 (-14.9)	619.4 (18.9)	630.0 (38.3)	603.7 (23.8)	617.6 (26.3)	656.5 (4.2)	674.6 (11.7)	-	-
Propane (won/kg)	1 689.7 (-6.2)	1 833.7 (8.5)	1 875.9 (9.6)	1 878.7 (10.6)	1 857.1 (9.7)	1 886.8 (0.6)	1 845.1 (-1.8)	1 842.2 (-0.8)	
Butane for transport (won/liter)	733.9 (-9.0)	826.4 (12.6)	858.5 (15.7)	858.1 (17.4)	842.3 (15.2)	857.2 (-0.2)	828.7 (-3.4)	826.9 (-1.8)	

Note: Gasoline, diesel and butane prices are based on charging station prices, Bunker-C oil price is based on dealership price, propane price is based on sales shop price. ( ) is year-on-year growth rates (%)

Source: [www.opinet.co.kr](http://www.opinet.co.kr)

### ► Trend in domestic petroleum product prices



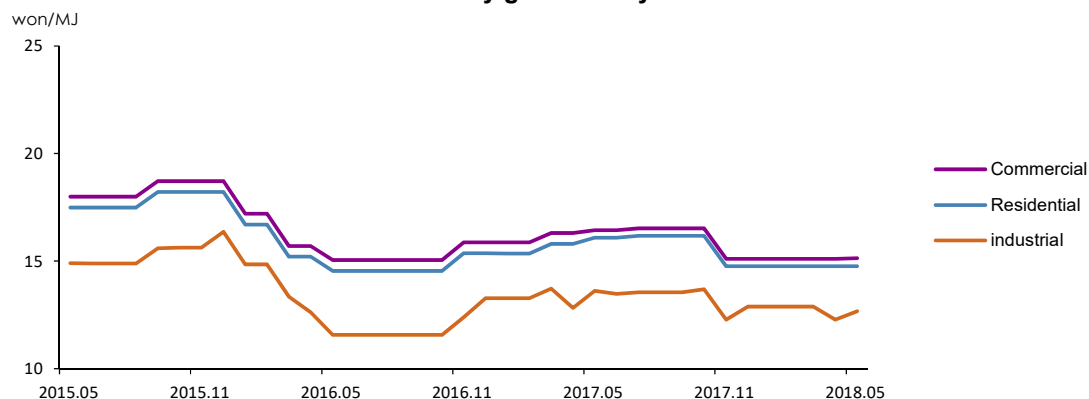
□ **City gas price for industrial use slightly increased in May, while the prices for residential and commercial use were almost unchanged from the prior month.**

- City gas price fell by 9.3% in Seoul after Korea Gas Corporation(“KOGAS”) had completed the collection of receivables in Nov, 2017.

□ **Heat energy price, which is linked to city gas price, has been flat for seven months since Nov, 2017.**

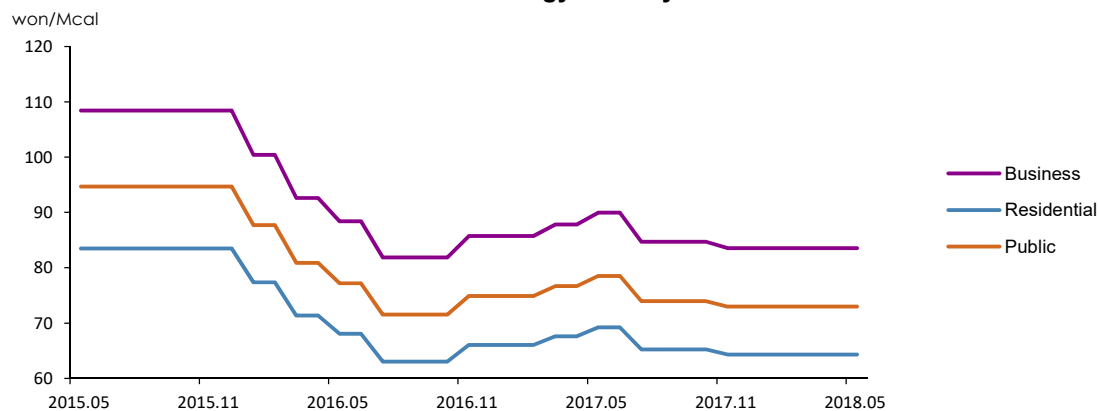
- Korea District Heating Corporation’s heat energy price is linked to city gas price according to the fuel cost pass-through scheme, and the actual fuel cost is reflected in the heat energy price once a year (LNG for over 100MW, city gas for under 100MW).

### ► Trend in city gas rates by end-use sectors



Note: Instead of volume(M<sup>3</sup>), calorie(MJ) has been used as the unit of measurement in the city gas price system since July 2012. Figures before that are converted based on standard calorie(additional tax, base charge excluded)

### ► Trend in heat energy rates by end-use sectors



Note: The rates are based on flat rate for heating (additional tax, base charge excluded)

Source: Korea District Heating Corporation.

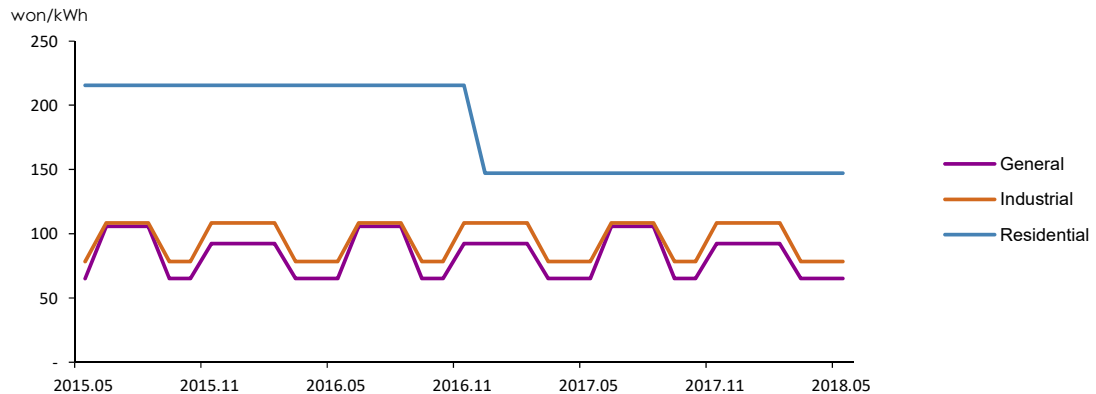
□ **Electricity price<sup>1</sup> plunged in March with the seasonal price change for industrial and general use (winter to spring/autumn), and since then, the price has been stagnant.**

- Electricity prices for industrial and general use plunged in March (27.7%, 29.4%), after the seasonal price adjustment from winter (Nov-Feb) to spring/autumn (Mar-May, Sep-Oct).
- The residential electricity price, which does not change by season, fell sharply (-31.7%) after abnormally hot summer led to the reform of the progressive electricity pricing scheme in Dec, 2016, and since then, the price has been flat.

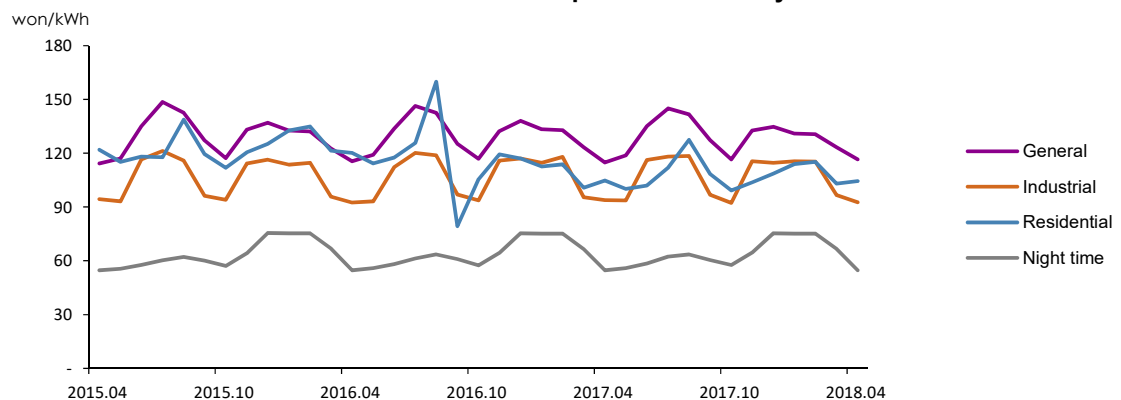
□ **The unit price of electricity for general and industrial use declined in April, while that of the residential use increased slightly.**

- The unit price of electricity for general and industrial use fell by 5.5% and 4.1% from the previous month, but that of the residential electricity, which is progressively priced, rose by 1.4% from the prior month, as 2.3% more electricity was sold.

► **Trend in electricity prices by end-use sectors**



► **Trend in unit price of electricity**



<sup>1</sup> The electricity prices by end-use sectors refer to the rates for residential use ([high voltage], the 2<sup>nd</sup> stage electricity rates), general use ([A], low voltage) and Industrial use ([B], high voltage B middle load).



### 3. Energy Supply

- **The total energy import value increased in March, led by petroleum products, bituminous coal and LNG, although the crude oil import declined.**
  - The crude oil import declined by 13.6%, as crude input to refineries decreased due to regular maintenance, and the dependency on crude oil imported from the Middle East fell by 11.5%p (77.1%) according to the oil output reduction policy of oil producers in the region.
  - The import of petroleum products increased by 2.4%, with bunker-C taking the lead. Meanwhile, their supply decreased by 3.7% due to decreased production (-7.5%) during the regular maintenance work at some refineries.
  - The LNG import has been up for two months in a row, owing to the growing import from the U.S. and increased gas consumption. The bituminous coal import started upward movement, led by the power generation sector.
  - The foreign energy dependence, including nuclear energy, was down 0.5%p due to a drop in nuclear generation, and the energy share of the total import value was up 1.1%p on a year-on-year basis, as a result of energy price increase.

#### ► Trend in energy trade and domestic production

	2016	2017p	2018p				
			M1~3	M1~3	M1	M2	M3
<b>Import volume</b>							
Crude oil (Mbbbl)	1 078.1 (5.1)	1 118.2 (3.7)	278.2 (4.9)	277.1 (-0.4)	99.8 (6.6)	94.4 (6.6)	82.8 (-13.6)
Petroleum product (Mbbbl)	334.6 (8.7)	314.0 (-6.2)	78.7 (-3.6)	85.0 (8.0)	27.5 (4.1)	29.3 (18.3)	28.1 (2.4)
Bituminous coal (Mton)	118.5 (-0.8)	131.5 (11.0)	33.9 (16.5)	33.5 (-1.2)	11.7 (-2.8)	10.4 (-5.7)	11.5 (5.1)
Anthracite (Mton)	9.4 (5.4)	7.0 (-25.7)	2.1 (10.3)	1.8 (-14.0)	0.6 (-19.8)	0.6 (18.3)	0.6 (-27.9)
LNG (Mton)	33.5 (0.3)	37.6 (12.3)	11.4 (16.3)	13.0 (14.0)	4.1 (-3.5)	4.5 (26.9)	4.3 (22.0)
Import volume (Mtoe)	323.1 (2.7)	338.8 (4.9)	88.1 (7.1)	90.1 (2.2)	31.1 (-0.1)	29.6 (5.8)	29.3 (1.1)
Import value (billion US\$, CIF)	80.9 (-21.2)	109.5 (35.2)	28.7 (62.2)	34.5 (20.4)	11.7 (22.7)	12.1 (28.5)	10.8 (10.4)
<b>Domestic production</b>							
Hydropower (TWh)	6.6 (14.5)	7.0 (5.2)	1.5 (10.4)	1.4 (-10.2)	0.5 (-8.9)	0.4 (-13.7)	0.5 (-8.0)
Anthracite (Mton)	1.7 (-2.2)	1.5 (-13.9)	0.4 (-3.6)	0.3 (-15.4)	0.1 (-1.6)	0.1 (-25.8)	0.1 (-18.1)
Natural gas (Mton)	0.1 (-18.0)	0.3 (120.5)	0.1 (147.0)	0.1 (-7.7)	0.0 (-6.3)	0.0 (-6.4)	0.0 (-10.2)
Renewable energy (Mtoe)	13.6 (5.7)	15.0 (10.2)	3.7 (9.2)	4.2 (11.6)	1.4 (15.1)	1.3 (10.0)	1.4 (9.7)

Note: p means provisional, ( ) is year-on-year growth rates (%)  
Source: Monthly Energy Statistics

## 4. Energy Consumption

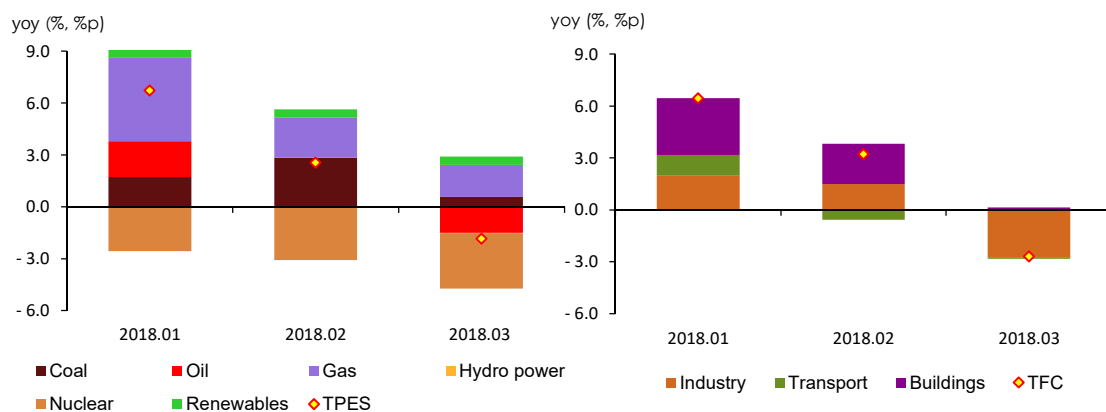
- **Total Primary Energy Supply (“TPES”) declined by 1.8% year-on-year in March due to less use of petroleum and nuclear energy, although coal and gas were used more.**
  - Gas consumption increased by 10.6%, led by the power generation sector influenced by a drop in nuclear generation (25.9%), although gas consumption for city gas production fell by 1.0% partly due to decreased output in the restaurant & accommodations business.
  - Coal consumption rose by 2.1% especially for power generation with additional installations (4.0GW, 12.2%). The consumption growth rate, however, declined because of increased daily preventive maintenance at coal-fired power plants and less use of bituminous coal for cement production and anthracite for industrial use.
  - The total nuclear generation fell by 29.8%, as the average capacity factor declined by 21.5%p year-on-year due to much increased preventive maintenance (4.5GW, 74.4%) with delayed power plant restart and the closure of Wolsong unit1.
  - Petroleum consumption showed downward trend (-3.6%), despite a surge in industrial LPG consumption, as increased maintenance at naphtha cracking centers (NCC) and a power failure at LG Chemical’s Yeosu factory resulted in decreased naphtha consumption.
- **Total Final Consumption (“TFC”) started to decline by 2.7% year-on-year (in March), as the industrial and transport sectors consumed less energy, though the buildings sector consumed more.**
  - Industrial energy consumption fell by 4.5%, largely affected by decreased naphtha consumption due to increased maintenance at NCCs.
  - Transport energy use has been down for two consecutive months, as the road transport and navigation sectors consumed less energy because of higher fuel prices and lower freight demand.
  - Energy consumption in buildings has been up for 12 months in a row, despite decreased heating degree days, partly because of lower city gas price.
  - Electricity consumption has increased for five straight months, led by the buildings sector with vigorous production in the service industry, although the industrial sector consumed less power amid falling production of basic distillates and automobiles.

### ► Energy consumption trend

	2016	2017p		2018p			
			M1~3	M1~3	M1	M2	M3
<b>Total energy (Mtoe)</b>	<b>294.6</b> (2.4)	<b>301.1</b> (2.2)	<b>79.2</b> (1.6)	<b>81.2</b> (2.6)	<b>29.6</b> (6.7)	<b>25.9</b> (2.5)	<b>25.7</b> (-1.8)
<b>Final energy (Mtoe)</b>	<b>225.5</b> (3.3)	<b>232.5</b> (3.1)	<b>61.8</b> (3.3)	<b>63.2</b> (2.4)	<b>22.6</b> (6.5)	<b>20.6</b> (3.2)	<b>20.0</b> (-2.7)

Note: p means provisional, ( ) is year-on-year growth rates  
Source: Monthly Energy Statistics (KEEI)

► The growth rates of TPES & TFC, energy consumption trend by energy source and end-use sectors



## 5. Coal

□ **Coal consumption made a year-on-year growth of 2.1%, despite a drop in TFC, as the transformation sector consumed more.**

- The transformation sector's coal use increased following the commissioning of a new coal-fired power plant (4.0GW, 12.2%), however, the consumption growth slowed down due to increased preventive maintenance on daily average (1.9GW).
- The industrial coal consumption declined by over 5% on a year-on-year basis, owing to less use of anthracite and coal for cement production (-24.9%, -20.8%).

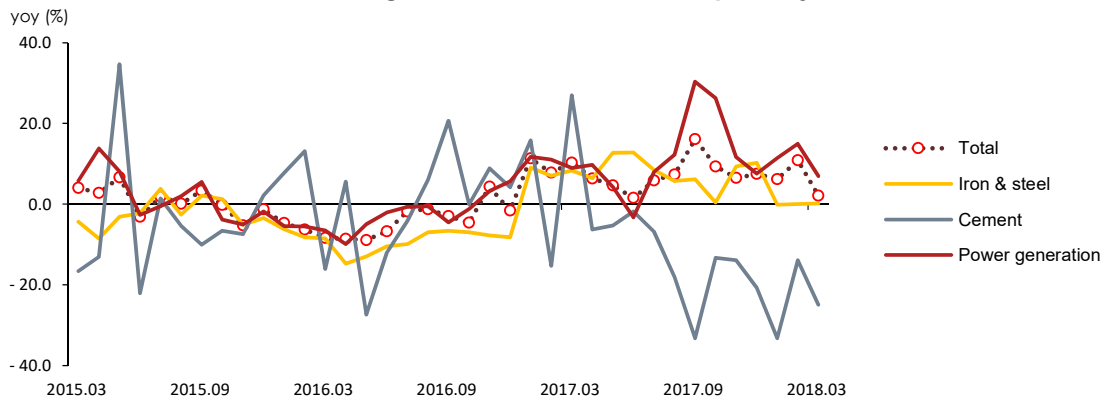
### ► Coal consumption trend

	2016	2017p	2018p				
			M1~3	M1~3	M1	M2	M3
<b>Coal (Mton)</b>	<b>129.4</b>	<b>139.7</b>	<b>35.2</b>	<b>37.4</b>	<b>13.5</b>	<b>12.1</b>	<b>11.8</b>
	(-4.3)	(7.9)	(9.9)	(6.3)	(6.2)	(10.8)	(2.1)
Industry	47.9	49.2	12.4	12.2	4.3	3.8	4.1
	(-6.6)	(2.7)	(9.5)	(-2.0)	(-3.2)	(3.6)	(-5.6)
Buildings	1.3	1.1	0.3	0.3	0.1	0.1	0.1
	(-14.8)	(-14.1)	(-17.9)	(-12.6)	(-6.3)	(-12.5)	(-23.1)
Power generation	80.3	89.4	22.5	25.0	9.1	8.2	7.7
	(-2.7)	(11.3)	(10.6)	(11.1)	(11.4)	(14.9)	(7.0)

Note: p means provisional, ( ) is year-on-year growth rates (%)

Source: Monthly Energy Statistics

### ► The growth rate of coal consumption by use



## 6. Petroleum

□ Petroleum consumption started to decline (-3.6%) in March, which is attributed to less use of naphtha, although LPG, bunker-C and jet oil consumption all increased.

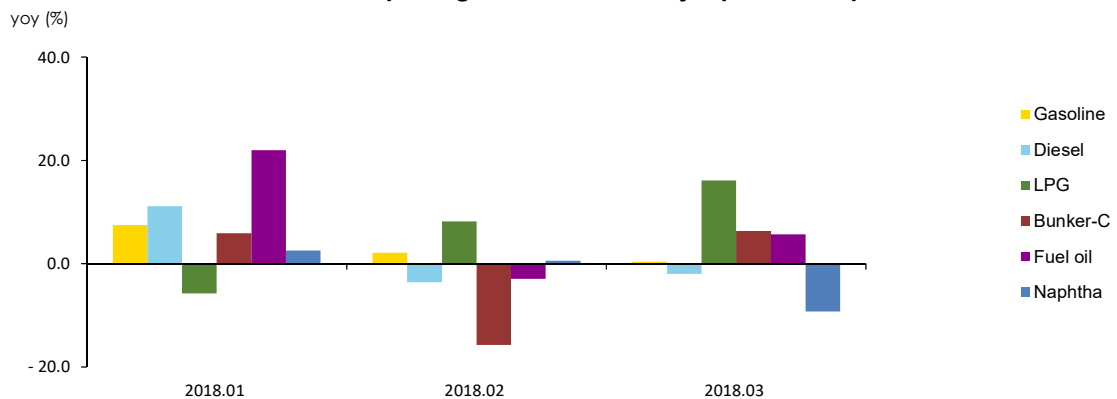
- The industrial petroleum consumption went down by 7.3%, especially naphtha and energy oil (except LPG), even though LPG consumption sharply increased.
- Petroleum consumption in the transport sector fell for two months in a row, despite more use of jet oil (9.5%), as diesel, bunker-C and LPG consumption all declined.
- Petroleum consumption in the buildings sector started to decline due to higher prices of petroleum products and lower heating degree days. Meanwhile, the petroleum consumption in the transformation sector has increased for three consecutive months, driven by increased bunker-C use (153.4%) for power generation (171.0%).

### ► Trend in petroleum product consumption by end-use sectors

	2016	2017p	2018p				
			M1~3	M1~3	M1	M2	M3
<b>Petroleum (Mbbbl)</b>	<b>924.2</b>	<b>938.2</b>	<b>235.2</b>	<b>236.6</b>	<b>84.0</b>	<b>74.9</b>	<b>77.7</b>
	(7.9)	(1.5)	(1.4)	(0.6)	(5.1)	(0.5)	(-3.6)
Industry	542.6	566.8	141.3	139.5	49.4	44.4	45.6
	(8.3)	(4.5)	(6.8)	(-1.3)	(2.4)	(1.5)	(-7.3)
Transport	303.6	304.4	72.2	72.9	25.0	22.4	25.4
	(5.7)	(0.3)	(-0.9)	(1.0)	(7.3)	(-3.8)	(-0.4)
Buildings	56.3	56.9	17.5	18.9	7.6	6.2	5.1
	(5.2)	(1.1)	(-6.0)	(8.1)	(16.3)	(6.5)	(-0.7)
Power generation	21.8	10.1	4.1	5.3	2.0	1.8	1.5
	(48.7)	(-53.6)	(-48.7)	(28.2)	(8.4)	(12.1)	(115.1)

Note: p means provisional, ( ) is year-on-year growth rates (%)  
Source: Monthly Energy Statistics

### ► The consumption growth rates of major petroleum products



## 7. Gas

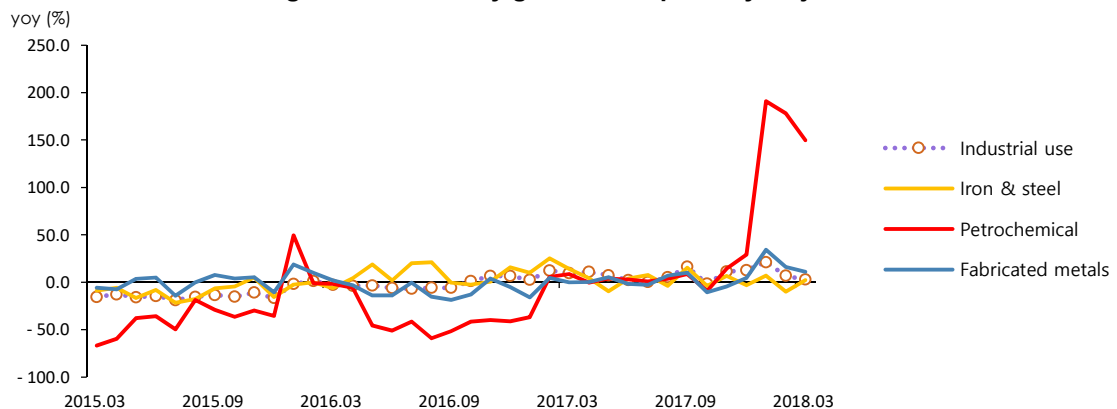
- **Gas consumption maintained double digit growth rates in March despite decreased gas consumption for city gas production, as the consumption soared in the power generation sector.**
  - Gas use for power generation rose by over 20% year-on-year to replace near 30% decline in nuclear generation, although power demand was flat with the growth rate of less than 1%.
- **City gas consumption was flat on a year-on-year basis, as an increase in the industrial sector was offset by a decrease in the buildings sector.**
  - The industrial city gas consumption was driven up by the petrochemical industry where the consumption has dramatically increased for the last three months (149.8% in March) with enhanced price competitiveness.
  - City gas consumption in buildings showed downward trend, as the consumption plunged (-25.0%) in commercial building with reduced production in the restaurant & accommodations business, although the consumption posted a decent growth (4.8%) in residential building that accounts for a large proportion of the total city gas consumption in buildings.

► **Trend in natural gas and city gas consumption**

	2016	2017p		2018p			
			M1~3	M1~3	M1	M2	M3
<b>LNG (Mton)</b>	<b>34.9</b>	<b>36.1</b>	<b>11.7</b>	<b>13.5</b>	<b>5.3</b>	<b>4.3</b>	<b>3.9</b>
	(4.4)	(3.5)	(2.4)	(15.7)	(23.8)	(11.5)	(10.6)
Power generation	15.5	15.6	4.1	5.0	1.9	1.4	1.7
	(6.4)	(0.4)	(2.9)	(22.1)	(31.5)	(8.1)	(25.9)
City gas production	17.4	18.4	6.8	7.5	3.0	2.5	1.9
	(2.7)	(5.8)	(1.8)	(10.6)	(18.4)	(11.6)	(-1.0)
<b>City gas (bm<sup>3</sup>)</b>	<b>21.3</b>	<b>22.6</b>	<b>8.5</b>	<b>9.2</b>	<b>3.5</b>	<b>3.2</b>	<b>2.5</b>
	(2.3)	(6.2)	(3.7)	(8.3)	(14.9)	(8.5)	(0.2)
Industry	7.2	7.8	2.2	2.4	0.9	0.8	0.8
	(-1.4)	(7.6)	(8.1)	(10.5)	(21.2)	(7.0)	(2.9)
Buildings	12.8	13.6	6.0	6.5	2.5	2.3	1.7
	(5.0)	(5.9)	(2.4)	(8.0)	(13.2)	(9.5)	(-0.9)

Note: p means provisional, ( ) is year-on-year growth rates (%)  
Source: Monthly Energy Statistics

► **The growth rate of city gas consumption by major industries**



## 8. Electricity

□ Electricity consumption rose by mere 0.9% year-on-year in March, as the consumption growth in the buildings sector was offset by a decline in the industrial sector.

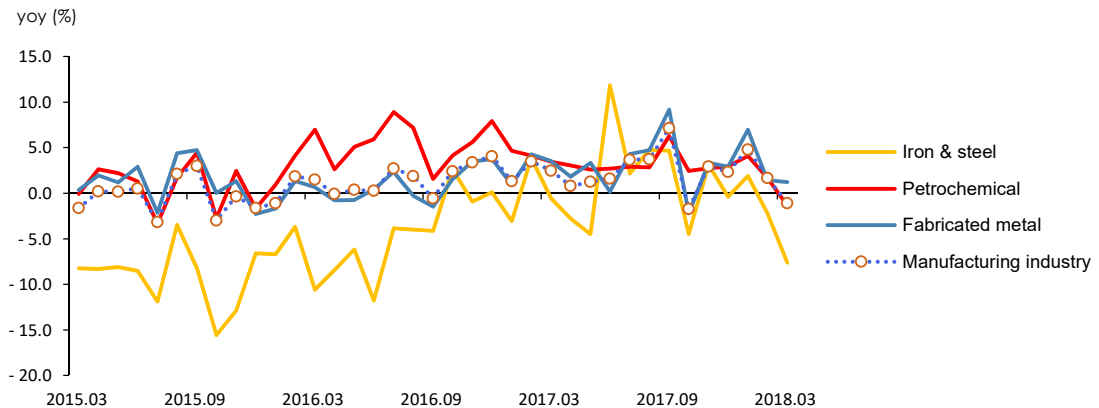
- Industrial electricity consumption declined for the first time in five months, owing to less power demand in the petrochemical and primary metals industries.
- Electricity consumption in buildings increased partly due to bigger service sector production, though its growth rate declined because of temperature effect.

### ► Trend in electricity consumption by end-use sectors

	2016	2017p	2018p				
			M1~3	M1~3	M1	M2	M3
<b>Electricity (TWh)</b>	<b>497.0</b>	<b>507.7</b>	<b>132.2</b>	<b>138.0</b>	<b>48.4</b>	<b>46.7</b>	<b>42.9</b>
	(2.8)	(2.2)	(1.3)	(4.4)	(7.0)	(5.2)	(0.9)
Industry	270.0	276.7	69.5	70.9	24.7	22.9	23.3
	(1.6)	(2.5)	(2.4)	(2.1)	(5.1)	(2.2)	(-0.9)
Transport	2.7	2.8	0.7	0.8	0.3	0.3	0.2
	(21.3)	(4.9)	(-0.1)	(10.6)	(12.2)	(9.7)	(9.9)
Buildings	224.4	228.3	62.0	66.4	23.4	23.6	19.4
	(4.0)	(1.7)	(0.1)	(7.0)	(9.0)	(8.4)	(3.0)

Notes: p means provisional, ( ) is year-on-year growth rates (%)  
Source: Monthly Energy Statistics

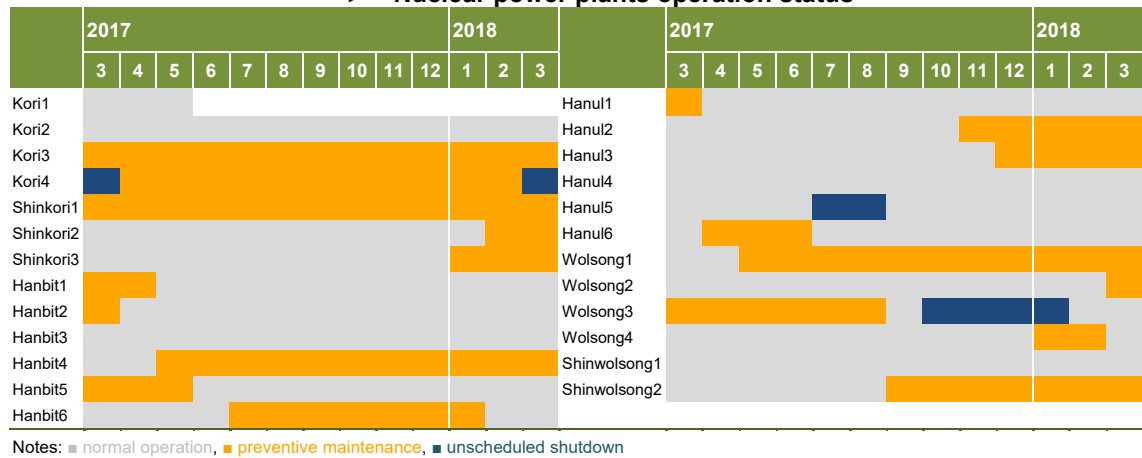
### ► The growth rate of electricity consumption in manufacturing industry



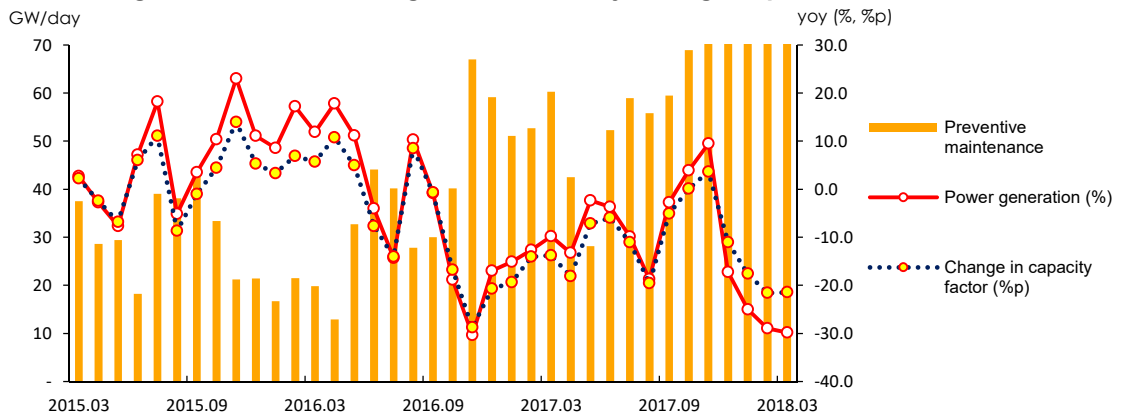
## 9. Nuclear energy

- The total nuclear generation dropped by 29.8% in March on a year-on-year basis, because 13 out of 24 nuclear reactors were shut down for maintenance or other reasons.
  - The average capacity factors at nuclear power plants decreased by 21.5%p to 55.1% as the restart of nuclear reactors was delayed with stronger safety inspections, and as Wolsong unit1 was closed according to the 8<sup>th</sup> Electricity Supply & Demand Plan.
  - The daily average of preventive maintenance at nuclear power plants surged (4.5GW, 74.4%) compared to the same month last year, and accordingly, nuclear share of the total generation was down 8.4%p year-on-year to 19.6%.

► Nuclear power plants operation status



► The growth rate of nuclear generation & daily average of preventive maintenance

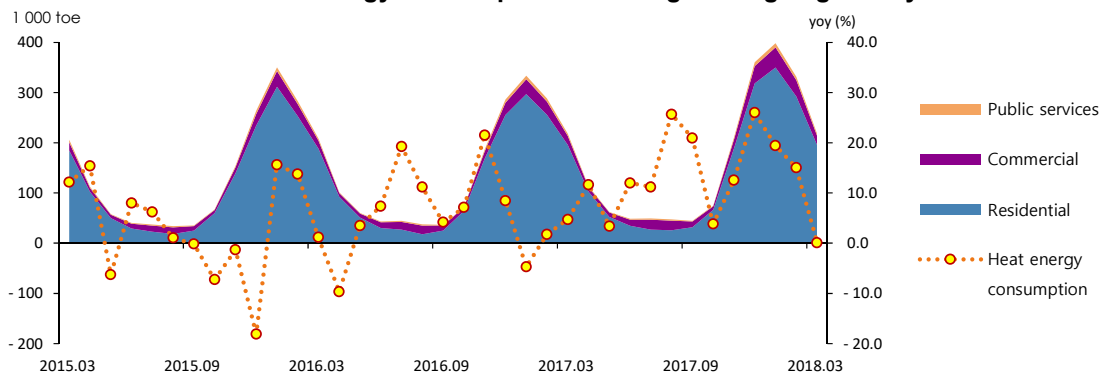




## 10. Heat and Renewable energy

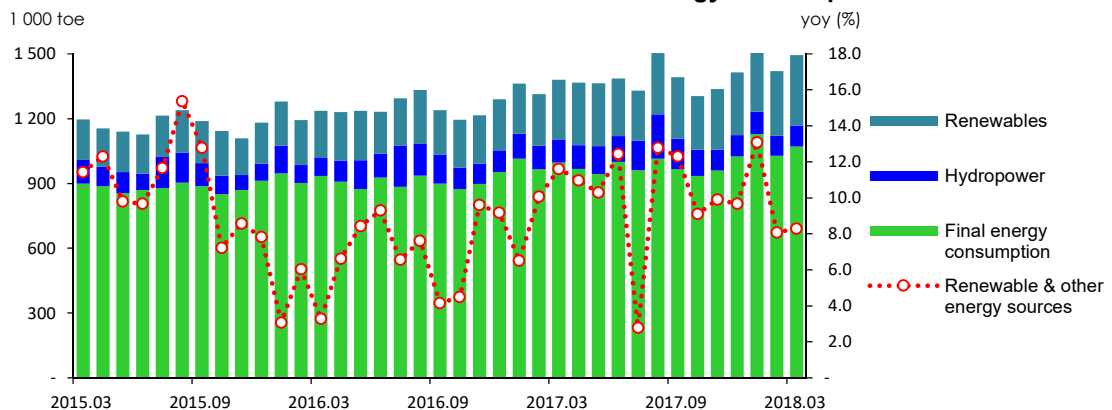
- **Heat energy consumption posted a year-on-year growth of 0.1% in March, affected by the commissioning of a new combined heat & power("CHP") plant.**
  - Heat energy consumption was almost flat despite lower heating degree days (-54.4degree days, -15.0%), partly due to the operation of a new CHP plant.
- **Renewable & other energy consumption went up by 13.1%, as renewable generation and its share of TFC increased, although hydropower generation decreased.**
  - Renewable generation (except hydro) jumped by 18.0% with much increased use of solar PV, wind and bioenergy, and renewable's share of TFC also rose by 7.3%.
  - Hydropower generation (461.2GWh) dropped by 8.0% due to the base effect of a surge (28.2%) during the same month last year, even though the amount of rainfall was bigger than the average(110.7mm).

### ► Heat energy consumption & heating/cooling degree days



Note: The heat energy consumption is based on the supply of KDHC, GS Power, SH Corp. In accordance with the heating/cooling degree days of the meteorological agency, base temperature of heating degree days is set at 18°C and that of cooling degree days was revised from 18°C to 24°C.

### ► Trend in renewable and other energy consumption



## 11. Industry

- The industrial energy consumption declined by 4.5% year-on-year in March, which is attributed to the plunged naphtha consumption in the petrochemical industry.
  - The industrial energy consumption declined for the first time since April 2016, influenced by fewer work days (-0.5) and the base effect of a surge during the same period of last year.

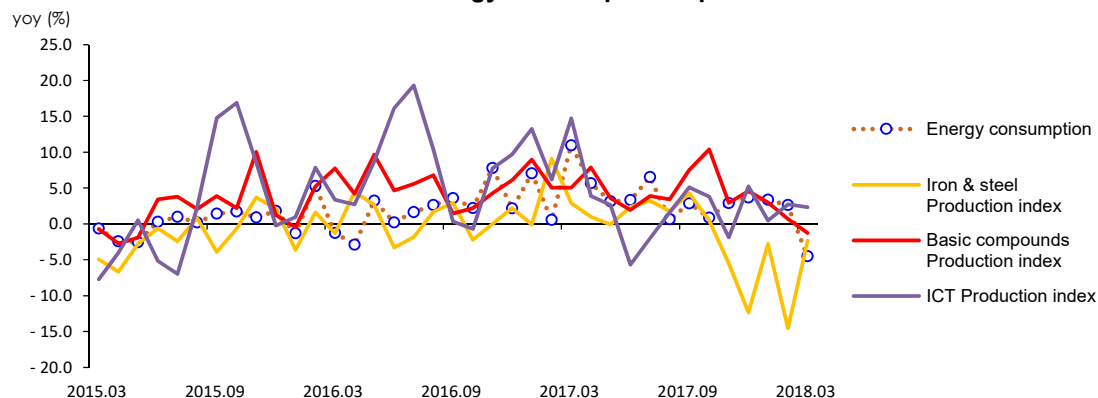
### ► Trend in the industrial energy consumption

	2016	2017p	2018p				
			M1~3	M1~3	M1	M2	M3
<b>Industry (Mtoe)</b>	<b>138.3</b>	<b>143.8</b>	<b>36.2</b>	<b>36.4</b>	<b>12.9</b>	<b>11.6</b>	<b>11.9</b>
	(1.9)	(4.0)	(6.2)	(0.4)	(3.4)	(2.6)	(-4.5)
Petrochemical	65.9	68.6	17.4	17.7	6.2	5.7	5.7
	(6.8)	(4.1)	(6.6)	(1.6)	(5.2)	(4.7)	(-4.7)
- Naphtha	52.7	56.2	14.3	14.0	4.9	4.5	4.5
	(4.7)	(6.6)	(7.0)	(-2.2)	(2.6)	(0.5)	(-9.3)
Iron & Steel	28.1	30.0	7.5	7.4	2.6	2.3	2.5
	(-8.0)	(6.7)	(6.9)	(-0.3)	(0.3)	(-0.5)	(-0.7)
Fabricated metal	10.6	10.9	2.9	3.0	1.1	1.0	1.0
	(0.4)	(3.0)	(2.1)	(5.4)	(11.9)	(2.5)	(1.6)
Share of feedstock (%)	58.7	59.9	59.3	58.1	58.0	58.2	58.2

Note: p means provisional, ( ) is year-on-year growth rates (%)

Source: Monthly Energy Statistics

### ► Industrial energy consumption & production index



## 12. Transport

□ Transport energy consumption has decreased for two consecutive months until March as a result of less energy use in the road transport and navigation sectors, although the aviation sector consumed more energy.

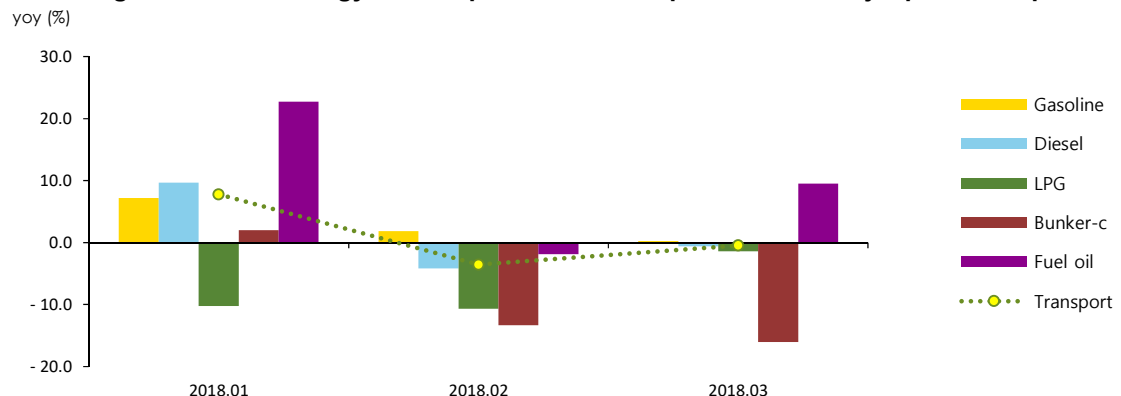
- Energy consumption in the road transport sector has been down for two months in a row with less use of diesel and LPG.
- Energy consumption in the navigation sector has decreased for two straight months due to higher bunker-C price and decreased coastal transport (-19.0%) & export (-13.4%), driving down the transport energy consumption.
- Energy consumption in the aviation sector rebounded, partially offsetting the decline in transport energy use, even though the number of domestic flights declined, as the number of international flights, domestic passengers and travelers visiting China and Jeju island all increased.

### ► The growth rate of petroleum consumption in the transport sector

	2016	2017p	2018p				
			M1~3	M3	M1	M2	M3
<b>Transport (Mtoe)</b>	<b>42.7</b>	<b>43.0</b>	<b>10.2</b>	<b>3.6</b>	<b>3.5</b>	<b>3.2</b>	<b>3.6</b>
	(6.0)	(0.7)	(-0.5)	(-0.5)	(7.8)	(-3.5)	(-0.5)
Road	34.4	34.4	8.1	2.9	2.8	2.5	2.9
	(4.9)	(0.2)	(-1.2)	(-0.2)	(6.2)	(-2.9)	(-0.2)
Navigation	3.4	3.4	0.9	0.3	0.3	0.3	0.3
	(13.8)	(2.0)	(9.7)	(-15.1)	(2.7)	(-12.3)	(-15.1)
Aviation	4.7	4.8	1.1	0.4	0.4	0.4	0.4
	(9.1)	(3.2)	(-2.5)	(9.5)	(22.7)	(-1.8)	(9.5)
Rail	0.3	0.3	0.1	0.0	0.0	0.0	0.0
	(8.3)	(2.5)	(-5.0)	(4.9)	(12.3)	(5.2)	(4.9)

Note: p means provisional, ( ) is year-on-year growth rates (%)  
Source: Monthly Energy Statistics

### ► The growth rate of energy consumption in the transport sector & major petroleum products



## 13. Buildings

□ Energy consumption in buildings increased by no more than 0.6% even though energy prices were lower, because the number of heating degree days decreased.

- As for the energy consumption in residential buildings by energy sources, coal and kerosene use fell by 23.1% and 19.0% due to higher temperature, while city gas, diesel, LPG and electricity consumption went up by 4.8%, 20.1%, 9.8% and 4.1% respectively. Heat energy use showed no year-on-year changes.
- In terms of the energy consumption in commercial buildings, kerosene and city gas use dropped by 18.9% and 25.0% respectively because of lower heating degree days and decreased production in the restaurant & accommodations business (-0.6%). Meanwhile, LPG and electricity consumption rose by 14.9% and 2.6% on the back of increased production in the service industry at large.

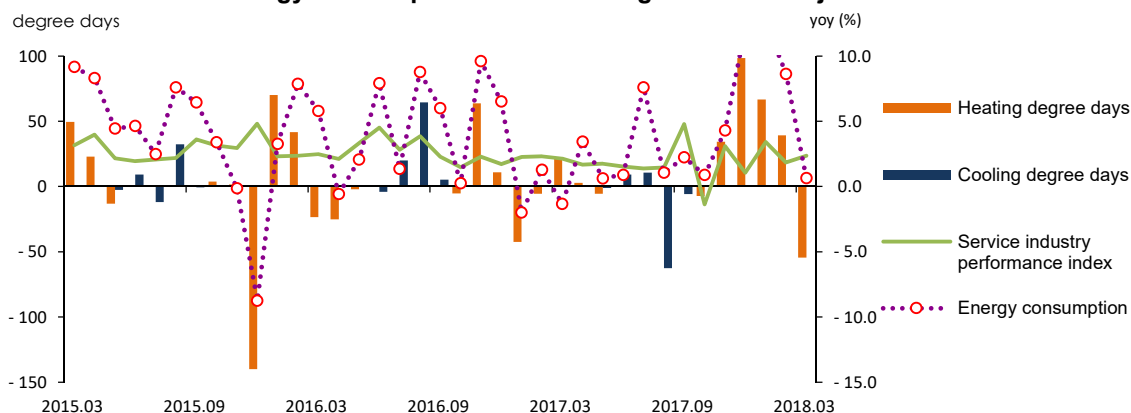
### ► Energy consumption trend in the buildings sector

	2016	2017p	2018p				
			M1~3	M1~3	M1	M2	M3
<b>Buildings (Mtoe)</b>	<b>44.5</b>	<b>45.7</b>	<b>15.4</b>	<b>16.6</b>	<b>6.2</b>	<b>5.8</b>	<b>4.5</b>
	(5.1)	(2.6)	(-0.7)	(7.7)	(12.6)	(8.6)	(0.6)
Residential	21.3	21.9	8.4	9.3	3.6	3.3	2.4
	(5.6)	(3.0)	(-1.2)	(10.4)	(15.2)	(11.3)	(2.8)
Commercial	17.0	17.4	5.2	5.4	2.0	1.9	1.5
	(3.3)	(2.4)	(-0.1)	(3.8)	(8.1)	(5.3)	(-3.2)
Public others	6.2	6.4	1.8	1.9	0.7	0.6	0.6
	(8.4)	(1.9)	(0.0)	(6.8)	(13.2)	(5.2)	(1.8)

Note: p means provisional, ( ) is year-on-year growth rates (%)

Source: Monthly Energy Statistics

### ► Energy consumption in the buildings sector & major indicators



## 14. Transformation

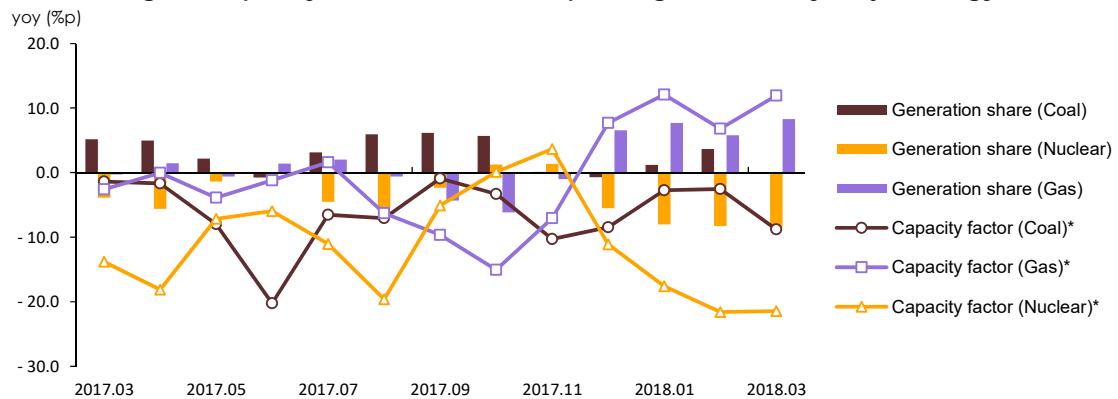
- The total energy input for power generation made a year-on-year growth of 0.6% in March, with coal and gas accounting for the majority of the growth.
  - More energy was consumed for power generation, especially coal and gas, following the commissioning of a new bituminous coal power plant and to meet growing power demand.
  - The average capacity factors have been continuously falling at nuclear power plants while stayed at high levels at gas-fired power plants, as the lost nuclear generation was replaced by gas-fired generation.

► Energy consumption in the power generation sector

	2016	2017p	2018p				
			M1~3	M1~3	M1	M2	M3
<b>Input (Mtoe)</b>	<b>110.9</b>	<b>111.1</b>	<b>28.5</b>	<b>29.1</b>	<b>10.6</b>	<b>9.2</b>	<b>9.3</b>
	(0.8)	(0.1)	(-1.9)	(2.2)	(5.5)	(0.2)	(0.6)
Coal	49.2	52.8	13.3	14.8	5.4	4.8	4.6
	(-2.8)	(7.4)	(6.5)	(11.4)	(11.7)	(15.2)	(7.2)
Oil	3.0	1.2	0.5	0.6	0.3	0.2	0.2
	(50.1)	(-59.7)	(-55.1)	(13.9)	(12.3)	(-23.8)	(123.1)
Gas	20.5	20.7	5.4	6.6	2.5	1.9	2.2
	(6.3)	(0.9)	(3.4)	(22.0)	(31.2)	(8.4)	(25.7)
Nuclear	34.2	31.6	8.2	5.9	2.1	1.9	2.0
	(-1.7)	(-7.5)	(-11.7)	(-27.9)	(-25.0)	(-29.0)	(-29.8)
Hydro/other renewables	4.0	4.7	1.1	1.2	0.4	0.4	0.4
	(17.4)	(16.4)	(16.5)	(13.8)	(18.6)	(12.4)	(10.8)

Notes: p means provisional, ( ) is year-on-year growth rates (%)  
Source: Monthly Energy Statistics

► Change in capacity factor and share of power generation by major energy sources



\*Capacity factor is the ratio of actual energy produced to the amount of energy produced from continuous operation at full rated power

## <Appendix> Major Indicators & Statistics of Energy Supply and Demand

### Major Statistics & Indicators of the Economy

	2015	2016			2017				2018
			3Q	4Q	1Q		3Q	4Q	1Q
GDP (trillion won)	1 466.8 (2.8)	1 508.3 (2.8)	378.2 (2.6)	395.9 (2.4)	365.8 (2.9)	1 554.8 (3.1)	392.4 (3.8)	407.8 (3.0)	376.7 (3.0)
Private consumption	707.5 (2.2)	725.4 (2.5)	182.1 (2.8)	184.5 (1.4)	185.8 (2.1)	744.3 (2.6)	186.8 (2.6)	190.7 (3.4)	192.1 (3.4)
Facilities investment	140.3 (4.7)	138.8 (-1.0)	33.6 (-2.5)	37.4 (3.3)	37.3 (16.1)	159.1 (14.6)	39.1 (16.3)	40.6 (8.6)	40.1 (7.3)
Construction investment	211.5 (6.6)	233.4 (10.3)	62.0 (11.0)	65.1 (11.9)	49.5 (11.3)	251.1 (7.6)	67.0 (8.0)	67.6 (3.8)	50.4 (1.8)
Consumer price index (2015=100)	100.0	101.0	101.0	101.5	102.7	102.9	103.3	103.1	104.0
USD to KRW exchange rate (won)	1 131.0	1 160.8	1 121.1	1 156.4	1 154.9	1 131.0	1 132.3	1 107.5	1 072.7
Benchmark rate (%)	1.6	1.4	1.3	1.3	1.3	1.3	1.3	1.4	1.5
Coincident composite index (2015=100)	100.0	103.3	103.9	104.5	105.9	107.0	107.4	107.9	108.5
Mining & manufacturing production index (2015=100)	100.0	102.3	100.2	108.4	103.2	104.2	104.8	104.3	100.9
Manufacturing operation ratio index (2015=100)	100.0	98.2	95.5	101.4	95.9	97.1	98.1	96.0	92.7
Average temperature	13.6	13.6	25.8	8.0	1.4	13.0	25.0	6.7	0.8
- year-on-year difference	0.2	- 0.0	0.9	- 0.6	0.1	- 0.6	- 0.8	- 1.3	- 0.6
Heating degree days	2 459.1 (-1.7)	2 589.7 (5.3)	0.3 n.a	935.3 (8.0)	1 487.5 (-1.7)	2 687.6 (3.8)	0.6 (100.0)	1 060.9 (13.4)	1 538.9 (3.5)
Cooling degree days	151.8 (21.1)	238.1 (56.9)	227.9 (64.8)	- n.a	- n.a	188.1 (-21.0)	169.9 (-25.5)	- n.a	- n.a
Energy intensity	0.20 (-1.1)	0.20 (-0.4)	0.19 (0.6)	0.19 (-0.0)	0.22 (-1.2)	0.19 (-0.9)	0.19 (-1.5)	0.19 (0.3)	0.22 (-0.4)
Per capita consumption									
oil (bbl)	16.8 (3.7)	18.0 (7.4)	4.5 (7.8)	4.8 (6.7)	4.6 (1.1)	18.2 (1.2)	4.6 (1.9)	4.8 (0.4)	4.6 (0.3)
Electricity (MWh)	9.5 (0.7)	9.7 (2.3)	2.5 (3.7)	2.4 (3.0)	2.6 (1.0)	9.9 (1.8)	2.5 (3.4)	2.4 (2.2)	2.7 (4.1)
City gas (1 000 m <sup>3</sup> )	0.4 (-6.4)	0.4 (1.8)	0.1 (-2.6)	0.1 (7.2)	0.2 (3.4)	0.4 (5.8)	0.1 (4.7)	0.1 (10.4)	0.2 (7.9)
Total energy (toe)	5.6 (1.1)	5.7 (1.9)	1.4 (2.7)	1.5 (1.9)	1.5 (1.3)	5.9 (1.8)	1.4 (1.9)	1.5 (2.9)	1.6 (2.2)

Note: Figures are based on the real price of 2010, p means provisional, ( ) is year-on-year growth rates (%)  
Source: BOA Economic statistics system, Monthly Energy Statistics

## The Index of Production & Operating Ratio by Sectors

(2015=100)

2015=100

	2016	2017					2018			
			M1~3	M1	M2	M3	M1~3	M1	M2	M3
Industrial production index										
All industry	103.1 (3.2)	105.5 (2.3)	102.4 (3.9)	99.3 (2.4)	98.4 (5.0)	109.4 (4.2)	103.1 (0.7)	103.5 (4.2)	97.2 (-1.2)	108.7 (-0.6)
Mining & manufacturing	102.3 (2.3)	104.2 (1.8)	103.2 (4.7)	100.3 (1.5)	98.6 (7.6)	110.6 (5.0)	100.9 (-2.2)	104.5 (4.2)	91.9 (-6.8)	106.3 (-3.9)
Iron & steel	100.2 (0.2)	100.7 (0.4)	99.2 (3.8)	98.1 (-0.1)	97.0 (9.1)	102.5 (2.9)	92.8 (-6.5)	95.4 (-2.8)	82.9 (-14.5)	100.1 (-2.3)
Cement	108.3 (8.3)	109.9 (1.4)	102.5 (16.9)	86.7 (9.9)	92.5 (30.5)	128.2 (13.4)	86.4 (-15.7)	77.6 (-10.5)	73.6 (-20.4)	108.0 (-15.8)
Basic compound	104.8 (4.8)	110.4 (5.4)	109.8 (6.4)	113.2 (9.0)	103.8 (5.1)	112.4 (5.0)	110.7 (0.8)	116.6 (3.0)	104.5 (0.7)	111.0 (-1.2)
Transport equipment	97.7 (-2.3)	94.9 (-2.9)	97.9 (-0.5)	87.3 (-9.5)	95.3 (10.3)	111.1 (-1.1)	87.6 (-10.6)	88.9 (1.8)	76.4 (-19.8)	97.4 (-12.3)
Electric & electronic	103.3 (3.3)	106.4 (3.0)	100.9 (1.1)	94.0 (-3.9)	98.2 (6.3)	110.4 (1.3)	99.5 (-1.4)	100.8 (7.2)	91.6 (-6.7)	106.0 (-4.0)
Service	102.6 (2.6)	104.5 (1.8)	100.9 (2.2)	99.6 (2.3)	97.5 (2.3)	105.6 (2.1)	103.5 (2.5)	103.0 (3.4)	99.3 (1.8)	108.1 (2.4)
Operating ratio index										
Manufacturing	98.2 (-1.8)	97.1 (-1.2)	95.9 (0.1)	92.7 (-3.2)	91.7 (3.1)	103.3 (0.7)	92.7 (-3.4)	95.0 (2.5)	84.1 (-8.3)	98.9 (-4.3)
Iron & steel	99.9 (-0.1)	101.0 (1.0)	98.9 (3.7)	97.8 (-0.3)	96.8 (8.9)	102.2 (2.9)	96.7 (-2.2)	102.2 (4.5)	89.1 (-8.0)	98.9 (-3.2)
Cement	107.0 (7.0)	107.6 (0.5)	100.4 (15.3)	85.1 (8.3)	90.7 (28.7)	125.5 (11.8)	89.5 (-10.9)	77.3 (-9.2)	73.8 (-18.6)	117.4 (-6.5)
Basic compound	103.6 (3.6)	107.2 (3.4)	107.4 (4.5)	110.8 (7.3)	101.5 (3.0)	109.8 (3.2)	106.3 (-1.0)	112.0 (1.1)	100.5 (-1.0)	106.4 (-3.1)
Transport equipment	94.2 (-5.8)	89.7 (-4.8)	92.9 (-2.8)	83.2 (-11.7)	90.8 (7.8)	104.8 (-3.4)	84.4 (-9.1)	85.1 (2.3)	72.9 (-19.7)	95.3 (-9.1)
Electric & electronic	102.2 (2.2)	102.8 (0.5)	99.4 (1.0)	93.3 (-3.2)	96.8 (5.7)	108.0 (0.7)	93.0 (-6.4)	94.9 (1.7)	85.3 (-11.9)	98.7 (-8.6)

Note: p means provisional  
Source: Monthly Energy Statistics

## International Energy Prices

	2016	2017					2018			
			M1~5	M3	M4	M5	M1~5	M3	M4	M5
Crude oil (USD/bbl)										
WTI	43.3 (-11.2)	51.0 (17.6)	51.1 (35.6)	49.7 (30.8)	51.1 (24.3)	48.5 (3.7)	65.0 (27.2)	62.8 (26.4)	66.3 (29.8)	70.0 (44.2)
Dubai	41.2 (-18.8)	53.2 (28.9)	52.5 (50.6)	51.2 (45.3)	52.3 (34.1)	50.7 (14.6)	66.9 (27.5)	62.7 (22.5)	68.3 (30.5)	74.4 (46.7)
Brent	45.0 (-16.0)	54.8 (21.7)	53.8 (37.2)	52.5 (32.0)	53.8 (24.2)	51.4 (7.8)	70.1 (30.1)	66.7 (27.0)	71.8 (33.3)	77.0 (49.9)
Unit value of import (C&F)	41.0 (-23.0)	53.3 (29.9)	53.4 (54.5)	54.2 (68.8)	52.7 (43.7)	52.4 (27.3)	66.8 (25.2)	64.8 (19.5)	66.2 (25.8)	71.2 -
LNG										
From Indonesia (USD/MMBTU)	6.9 (-32.6)	8.0 (16.8)	8.0 (12.6)	7.7 (6.5)	8.2 (28.5)	8.5 (45.1)	9.2 (16.1)	9.5 (22.7)	9.4 (14.6)	9.4 (10.6)
Unit value of import (USD/ton, CIF)	356.7 (-35.0)	416.3 (16.7)	416.0 (12.5)	407.6 (8.3)	408.9 (19.4)	432.5 (39.0)	490.3 (17.9)	488.5 (19.8)	484.3 (18.5)	509.0 (17.7)
Bituminous coal (USD/ton)										
From Australia	65.9 (14.5)	88.4 (34.2)	80.8 (58.3)	80.6 (54.3)	84.6 (66.3)	74.5 (44.8)	101.4 (25.6)	95.9 (19.0)	94.2 (11.3)	105.5 (41.5)
Unit value of import (CIF)	68.9 (-6.8)	104.3 (51.5)	107.2 (76.8)	110.4 (80.3)	102.3 (69.6)	112.8 (82.1)	113.5 (5.9)	119.5 (8.2)	113.7 (11.1)	114.7 (1.7)
Petroleum product (USD/bbl)										
Gasoline	56.2 (-19.1)	68.1 (21.2)	67.3 (28.3)	64.3 (21.6)	67.7 (24.2)	64.8 (9.6)	80.4 (19.5)	77.1 (20.0)	81.5 (20.3)	87.6 (35.2)
Kerosene	52.8 (-18.3)	65.3 (23.6)	63.7 (37.7)	61.9 (29.3)	63.9 (28.9)	61.1 (10.7)	83.0 (30.4)	79.0 (27.6)	85.2 (33.2)	89.9 (47.3)
Diesel	53.0 (-20.4)	66.4 (25.1)	64.7 (40.5)	63.1 (34.6)	65.0 (31.2)	62.0 (10.6)	82.6 (27.7)	78.4 (24.2)	84.3 (29.6)	90.5 (46.0)
Bunker-C	35.4 (-21.6)	49.7 (40.2)	48.4 (75.7)	46.2 (70.0)	48.0 (62.4)	47.3 (37.9)	60.4 (24.8)	57.0 (23.4)	61.0 (27.1)	68.1 (43.7)
Propane	323.3 (-22.3)	468.8 (45.0)	448.0 (43.1)	480.0 (65.5)	430.0 (34.4)	385.0 (18.5)	514.0 (14.7)	480.0 -	475.0 (10.5)	500.0 (29.9)
Butane	355.8 (-18.5)	500.8 (40.7)	515.0 (46.7)	600.0 (87.5)	490.0 (40.0)	390.0 (2.6)	503.0 (-2.3)	465.0 (-22.5)	470.0 (-4.1)	505.0 (29.5)
Naphtha	42.5 (-19.0)	53.8 (26.6)	52.6 (34.4)	50.7 (30.3)	52.2 (23.3)	48.6 (10.6)	66.3 (26.0)	62.9 (24.1)	66.9 (28.2)	74.5 (53.2)

Note: 1.( ) is year-on-year growth rates(%)

2.Gasoline type is 95RON, diesel is 0.001%, Bunker-C is high-sulfur oil(180cst/3.5%), for propane and butane, CP is reference value  
Source: www.petrinet.co.kr, IMF (primary commodity price), Monthly Energy Statistics



## Total Primary Energy Supply (TPES)

	2016	2017p					2018p			
			M1~3	M1	M2	M3	M1~3	M1	M2	M3
Coal (Mton)	129.4 (-4.3)	139.7 (7.9)	35.2 (9.9)	12.7 (11.3)	10.9 (7.8)	11.6 (10.3)	37.4 (6.3)	13.5 (6.2)	12.1 (10.8)	11.8 (2.1)
- Coking coal excluded	96.0 (-2.5)	103.5 (7.9)	26.3 (10.4)	9.5 (12.1)	8.1 (8.0)	8.6 (11.0)	28.5 (8.4)	10.3 (8.3)	9.3 (14.6)	8.9 (2.7)
Oil (Mbbbl)	924.2 (7.9)	938.2 (1.5)	235.2 (1.4)	79.9 (1.2)	74.6 (-2.4)	80.6 (5.5)	236.6 (0.6)	84.0 (5.1)	74.9 (0.5)	77.7 (-3.6)
- Non-energy oil excluded	458.0 (11.2)	446.3 (-2.5)	111.7 (-2.9)	38.4 (-2.6)	36.2 (-0.8)	37.2 (-5.1)	115.9 (3.7)	41.3 (7.6)	36.3 (0.4)	38.3 (3.1)
LNG (Mton)	34.9 (4.4)	36.1 (3.5)	11.7 (2.4)	4.3 (-2.8)	3.9 (5.3)	3.5 (6.2)	13.5 (15.7)	5.3 (23.8)	4.3 (11.5)	3.9 (10.6)
Hydro (TWh)	6.6 (14.5)	7.0 (5.2)	1.5 (10.4)	0.5 (-12.2)	0.5 (29.1)	0.5 (27.0)	1.4 (-10.2)	0.5 (-8.9)	0.4 (-13.7)	0.5 (-8.0)
Nuclear (TWh)	162.0 (-1.7)	148.4 (-8.4)	38.7 (-12.6)	13.1 (-15.1)	12.4 (-12.6)	13.2 (-9.8)	27.9 (-27.9)	9.8 (-25.0)	8.8 (-29.0)	9.2 (-29.8)
Others (Mtoe)	13.6 (5.7)	15.0 (10.2)	3.7 (9.2)	1.2 (8.5)	1.2 (8.6)	1.3 (10.4)	4.2 (11.6)	1.4 (15.1)	1.3 (10.0)	1.4 (9.7)
<b>TPES (Mtoe)</b>	<b>294.6</b> (2.4)	<b>301.1</b> (2.2)	<b>79.2</b> (1.6)	<b>27.7</b> (0.3)	<b>25.3</b> (0.3)	<b>26.2</b> (4.4)	<b>81.2</b> (2.6)	<b>29.6</b> (6.7)	<b>25.9</b> (2.5)	<b>25.7</b> (-1.8)
- Non-energy oil excluded	236.6 (1.8)	240.0 (1.4)	63.9 (0.7)	22.6 (-0.7)	20.5 (1.3)	20.8 (1.7)	66.3 (3.7)	24.3 (7.6)	21.1 (3.0)	20.8 (0.1)
- Non-energy oil & coal excluded	213.2 (3.2)	214.8 (0.7)	57.7 (0.0)	20.4 (-1.6)	18.5 (0.8)	18.7 (1.1)	60.0 (4.1)	22.1 (8.5)	19.2 (3.3)	18.8 (0.1)

Note: p means provisional, ( ) is year-on-year growth rates (%)  
Source: Monthly Energy Statistics

## Share of TPES by Sources

(unit: %)

	2016	2017p					2018p			
			M1~3	M1	M2	M3	M1~3	M1	M2	M3
Coal	27.8	28.7	27.4	28.2	26.7	27.4	28.4	28.0	28.8	28.5
- Coking coal excluded	19.8	20.3	19.6	20.3	18.9	19.4	20.7	20.6	21.2	20.4
Oil	40.1	39.7	37.8	36.6	37.6	39.2	37.1	36.2	36.7	38.4
- non-energy oil excluded	20.4	19.4	18.5	18.1	18.8	18.6	18.7	18.4	18.2	19.4
LNG	15.4	15.7	19.3	20.2	20.0	17.5	21.7	23.4	21.8	19.7
Hydro	0.5	0.5	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4
Nuclear	11.6	10.5	10.4	10.1	10.4	10.7	7.3	7.1	7.2	7.7
Others	4.6	5.0	4.7	4.5	4.8	4.9	5.1	4.9	5.1	5.4
<b>TPES</b>	<b>100.0</b>	<b>100.0</b>	<b>100.0</b>	<b>100.0</b>	<b>100.0</b>	<b>100.0</b>	<b>100.0</b>	<b>100.0</b>	<b>100.0</b>	<b>100.0</b>

Note: p means provisional  
Source: Monthly Energy Statistics

## Total Final Consumption (TFC)

(Unit: Mtoe)

	2016	2017p					2018p			
			M1~3	M1	M2	M3	M1~3	M1	M2	M3
Industry	138.3 (1.9)	143.8 (4.0)	36.2 (6.2)	12.4 (7.1)	11.3 (0.6)	12.5 (11.0)	36.4 (0.4)	12.9 (3.4)	11.6 (2.6)	11.9 (-4.5)
Transport	42.7 (6.0)	43.0 (0.7)	10.2 (-0.5)	3.3 (-5.6)	3.3 (2.1)	3.6 (2.2)	10.3 (1.2)	3.5 (7.8)	3.2 (-3.5)	3.6 (-0.5)
Residential-commercial	38.3 (4.5)	39.3 (2.7)	13.6 (-0.8)	4.9 (-2.3)	4.8 (1.2)	3.9 (-1.2)	14.7 (7.9)	5.6 (12.5)	5.2 (9.1)	3.9 (0.5)
Public	6.2 (8.4)	6.4 (1.9)	1.8 (0.0)	0.6 (0.2)	0.6 (2.0)	0.6 (-2.2)	1.9 (6.8)	0.7 (13.2)	0.6 (5.1)	0.6 (1.8)
<b>TFC</b>	<b>225.5</b> (3.3)	<b>232.5</b> (3.1)	<b>61.8</b> (3.3)	<b>21.3</b> (2.5)	<b>19.9</b> (1.0)	<b>20.6</b> (6.5)	<b>63.2</b> (2.4)	<b>22.6</b> (6.5)	<b>20.6</b> (3.2)	<b>20.0</b> (-2.7)
Coal (Mton)	49.1 (-6.8)	50.3 (2.3)	12.7 (8.6)	4.5 (10.7)	3.8 (2.2)	4.4 (12.5)	12.4 (-2.3)	4.4 (-3.3)	3.9 (3.2)	4.1 (-5.9)
Oil (Mbbbl)	902.4 (7.2)	928.1 (2.8)	231.0 (3.2)	78.1 (2.6)	73.0 (-1.3)	79.9 (8.5)	231.3 (0.1)	82.0 (5.0)	73.1 (0.2)	76.2 (-4.7)
Electricity (TWh)	497.0 (2.8)	507.7 (2.2)	132.2 (1.3)	45.2 (1.2)	44.4 (2.0)	42.6 (0.7)	138.0 (4.4)	48.4 (7.0)	46.7 (5.2)	42.9 (0.9)
City gas (Bm³)	21.3 (2.3)	22.6 (6.2)	8.5 (3.7)	3.0 (0.9)	2.9 (6.4)	2.5 (4.2)	9.2 (8.3)	3.5 (14.9)	3.2 (8.5)	2.5 (0.2)
Heat-others (1 000 toe)	12.6 (3.8)	13.6 (7.5)	3.8 (5.3)	1.3 (4.0)	1.3 (5.8)	1.2 (6.3)	4.2 (9.4)	1.5 (13.2)	1.4 (8.5)	1.3 (6.0)

Note: p means provisional, ( ) is year-on-year growth rates (%)  
Source: Monthly Energy Statistics

## Share of the Total Final Consumption by Sources

(unit: %)

	2016	2017p					2018p			
			M1~3	M1	M2	M3	M1~3	M1	M2	M3
Industry	61.3	61.9	58.6	58.5	56.5	60.8	57.5	56.8	56.2	59.6
Transport	18.9	18.5	16.5	15.4	16.5	17.6	16.3	15.6	15.4	18.0
Residential-commercial	17.0	16.9	22.0	23.3	23.9	18.9	23.2	24.6	25.3	19.5
Public	2.8	2.7	2.9	2.8	3.0	2.8	3.0	3.0	3.1	2.9
<b>Final energy</b>	<b>100.0</b>	<b>100.0</b>	<b>100.0</b>	<b>100.0</b>	<b>100.0</b>	<b>100.0</b>	<b>100.0</b>	<b>100.0</b>	<b>100.0</b>	<b>100.0</b>
Coal	14.5	14.4	13.7	14.1	12.8	14.2	13.1	12.8	12.7	13.8
Oil	50.9	50.8	47.4	46.4	46.4	49.4	46.4	46.0	45.0	48.2
Electricity	19.0	18.8	18.4	18.3	19.2	17.8	18.8	18.4	19.5	18.4
City gas	10.1	10.2	14.3	14.9	15.4	12.7	15.1	16.0	16.1	13.1
Heat-others	5.6	5.8	6.2	6.3	6.3	5.9	6.6	6.7	6.6	6.4

Note: p means provisional  
Source: Monthly Energy Statistics

## Statistics on Energy Production Facilities

	2015	2016	2017				2018p		
				M1	M2	M3	M1	M2	M3
Total capacity (GW)	97.6 (4.8)	105.9 (8.4)	116.9 (19.7)	106.2 (12.9)	107.1 (13.8)	109.5 (14.8)	116.4 (18.6)	116.4 (17.8)	116.7 (18.2)
Nuclear	21.7 (4.8)	23.1 (6.4)	22.5 (3.7)	23.1 (11.6)	23.1 (11.6)	23.1 (11.6)	22.5 (3.7)	22.5 (3.7)	22.5 (3.7)
Bituminous coal	26.2 (1.1)	30.9 (18.0)	36.1 (37.8)	31.0 (19.6)	31.0 (19.6)	31.6 (21.9)	36.1 (37.7)	36.1 (37.0)	36.1 (37.0)
Gas	32.2 (6.5)	32.6 (1.2)	37.9 (17.4)	32.6 (5.2)	33.5 (8.0)	35.2 (10.5)	37.4 (16.4)	37.4 (14.8)	37.4 (14.8)
Refinery capacity (mil BPSD)	3.1 (3.7)	3.1 -	3.1 -	3.1 -	3.1 -	3.1 -	3.1 (0.2)	3.1 (0.2)	3.1 (0.2)

Note: ( ) is year-on-year growth rates (%)  
Source: The monthly report on major electric power statistics

## Statistics on Energy Consumption

	2015	2016	2017				2018p		
				M1	M2	M3	M1	M2	M3
The number of household demanding city gas (mil)	17.4 (3.0)	18.0 (3.4)	18.6 (3.3)	18.0 (3.3)	18.1 (3.2)	18.2 (3.2)	18.7 (3.4)	18.7 (3.2)	18.7 (3.3)
Registered cars (mil)	21.0 (4.3)	21.8 (3.9)	22.5 (3.3)	21.9 (3.9)	21.9 (3.8)	22.0 (3.7)	22.6 (3.2)	22.6 (3.2)	22.7 (3.2)
- gasoline	9.8 (2.3)	10.1 (2.9)	10.4 (2.7)	10.1 (3.0)	10.2 (3.0)	10.2 (3.0)	10.4 (2.7)	10.4 (2.7)	10.4 (2.6)
- diesel	8.6 (8.6)	9.2 (6.4)	9.6 (4.4)	9.2 (6.1)	9.2 (5.9)	9.3 (5.5)	9.6 (4.3)	9.6 (4.2)	9.7 (4.2)
- LPG	2.3 (-3.4)	2.2 (-4.0)	2.1 (-2.9)	2.2 (-3.9)	2.2 (-3.9)	2.2 (-3.8)	2.1 (-3.0)	2.1 (-3.0)	2.1 (-3.0)
- hybrid	0.2 (31.3)	0.2 (37.6)	0.3 (37.6)	0.2 (37.8)	0.2 (37.5)	0.2 (37.6)	0.3 (37.5)	0.3 (37.7)	0.3 (38.0)

Note: ( ) is year-on-year growth rates (%)  
Source: Monthly Energy Statistics

# KEEI

MONTHLY **KOREA ENERGY TRENDS** (2018, NO.75)



---

KEEI Monthly Korea Energy Trends is designed to be used for energy policy and market strategy in the government and industrial sector by analyzing and providing energy economic indicators in Korea.

This report is written by the Energy Demand and Supply Division of the Center for Energy Information and Statistics in cooperation with the Energy Statistics Research Division of KEEI and other related research divisions.

The energy economic indicators included in this report will be constantly updated until further confirmation.

If you have any further inquiries, please send an email to [EnergyOutlook@keei.re.kr](mailto:EnergyOutlook@keei.re.kr) or call +82-52-714-2270.

---

405-11, Jongga-ro, Jung-gu, Ulsan, Korea, 44543

Phone: +82-52-714-2270

Fax: +82-52-714-2025

Email: [webmaster@keei.re.kr](mailto:webmaster@keei.re.kr)

Homepage: <http://www.keei.re.kr>