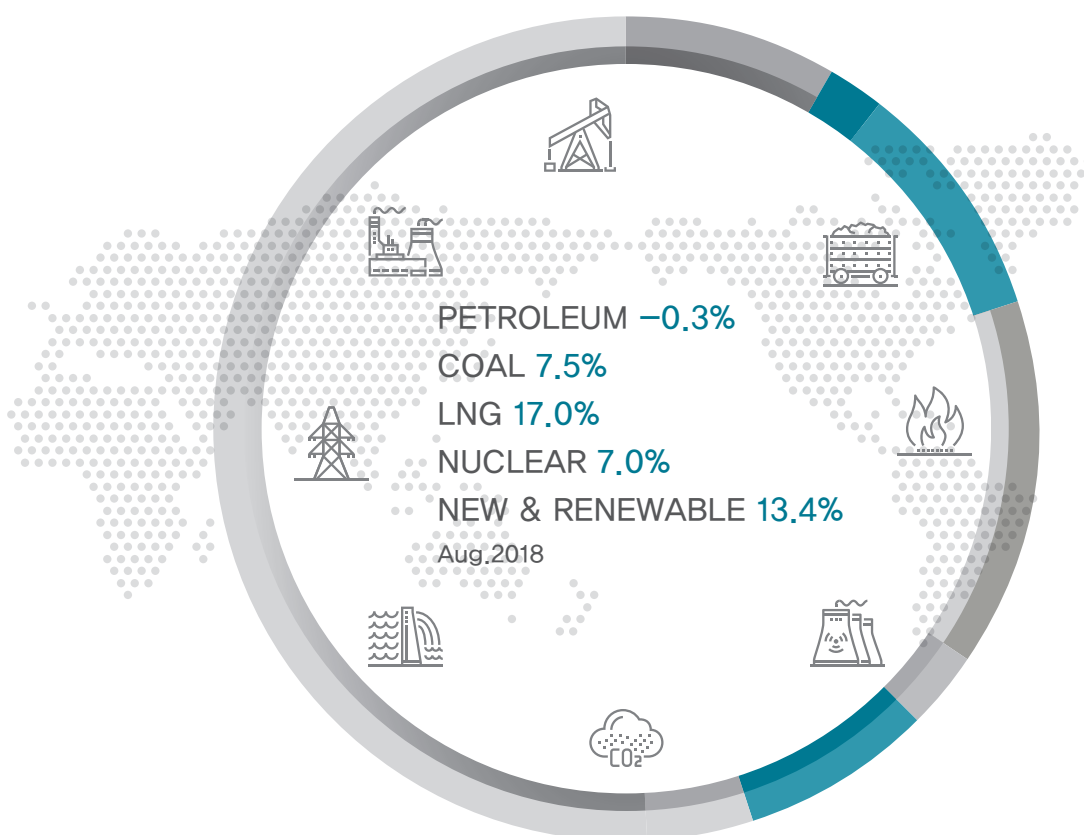


# KEEI

## MONTHLY KOREA ENERGY TRENDS



2018 / 11  
KOREA ENERGY ECONOMICS INSTITUTE



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# 1. The Economy and the Industry

- **The total export value went up by 8.7% year-on-year in August, as the semi-conductor & petroleum sectors continued to exhibit strong performance, and the export value of automobiles bounced back.**
  - The export value of semi-conductors reached an all-time high of \$11.5 billion backed by the launch of a new smart phone and increased memory capacity, passing the \$10 billion mark for four months in a row, even though the spot price kept a downward trend as the supply shortage eased.
  - The export value of petroleum and petrochemical products rose by 47.1% and 17.4% respectively, because the unit prices increased in line with the global oil price trend.
  - The export value of iron & steel products was up 20.7%, owing to the increased unit prices as a result of regulations in the global market and the export of offshore steel frame structures (\$300 million) in addition to the increased export to the Middle East (294.8%) and India (31.2%).
  - The export value of automobiles rebounded (0.4%) after the eight-month decline due to the launch of a new model in the U.S. market, and that of auto components has increased for five consecutive months (0.5%) thanks to the increased demand from the U.S. and emerging markets.
  - The export value of vessels continued its steep decline (-71.7%) due to the base effect of the export record in the same month last year and decreased backlog of orders.
  
- **The manufacturing production index recorded a year-on-year growth of 2.0% (in August), partly due to the recovery of the auto industry, and the service production index was up 1.7%.**
  - The manufacturing production index grew faster than the previous month, led by the ICT, basic chemical materials (0.2%) and automobile industries (9.6%), although the production declined in the iron & steel (-2.8%) and cement (-11.7%) industries.
  - The service production index has been up for ten months in a row, despite a steady decline in the restaurant & accommodation (-1.2%) and real estate & leasing (-5.4%) industries, as the wholesale & retail (2.1%) and health & social welfare (7.7%) industries continued to post strong results.

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

	2016	2017p	2018p			2018p		
			M6	M7	M8	M6	M7	M8
GDP (trillion won)	1 509.8 (2.9)	1 556.0 (3.1)	389.6 (2.8)	- -	- -	400.6 (2.8)	- -	- -
Total export (\$billion, customs clearance basis)	495.4 (-5.9)	573.7 (15.8)	51.3 (13.4)	48.8 (19.4)	47.1 (17.4)	51.1 (-0.3)	51.8 (6.1)	51.2 (8.7)
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)	2.4 (4.9)	2.7 (1.8)	2.9 (38.6)	4.1 (69.1)	3.9 (43.9)	4.2 (47.1)
steels	28.5 (-5.5)	34.2 (19.9)	2.9 (1.0)	2.6 (10.5)	2.6 (13.3)	2.8 (-2.2)	3.5 (33.7)	3.2 (20.7)
Cars	40.2 (-12.3)	41.7 (3.8)	3.8 (2.3)	3.6 (8.5)	2.8 (25.4)	3.5 (-9.9)	3.1 (-13.7)	2.8 (0.4)
Mining and manufacturing production index (2015=100)	102.3 (2.3)	104.2 (1.8)	105.4 (1.2)	104.8 (1.6)	100.8 (2.3)	105.1 (-0.3)	105.9 (1.1)	103.3 (2.5)
ICT	107.0 (7.0)	110.9 (3.6)	103.2 (-5.7)	109.0 (-2.0)	114.3 (1.6)	121.3 (17.5)	124.3 (14.0)	122.4 (7.1)
Service industry performance index (2015=100)	102.6 (2.6)	104.5 (1.8)	106.0 (1.5)	103.5 (1.4)	103.9 (1.5)	107.8 (1.7)	105.8 (2.2)	105.7 (1.7)

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

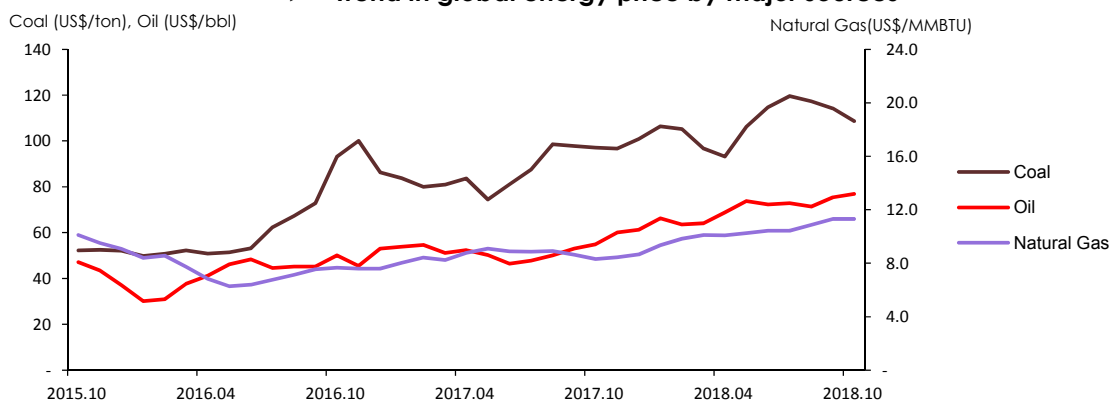
- ☐ Global oil price slightly increased in October from the previous month, affected by both upward and downward factors.
  - In early October, the oil price increased amid concerns over any disturbance on crude oil supply due to the U.S sanctions on Iranian oil exports. The price, however, started to decrease rapidly later in the month due to a possible exemption for those that import oil from Iran.
- ☐ Global coal price has declined for three consecutive months, while natural gas price has been flat at \$11/MMBTU.
  - Global coal price continued its downward slide according to the seasonal drop in coal demand for power generation and growing production in Indonesia.

#### ► Trend in global energy prices

	2016	2017	2018			2018		
			M8	M9	M10	M8	M9	M10
Crude oil (US\$/bbl)	43.3	53.0	50.1	53.0	54.9	71.4	75.5	76.9
	(-15.2)	(22.4)	(10.7)	(17.1)	(9.6)	(42.6)	(42.4)	(40.1)
Natural gas (US\$/MMBTU)	7.4	8.6	8.9	8.6	8.3	10.9	11.3	11.3
	(-32.5)	(16.8)	(24.9)	(14.6)	(8.6)	(22.0)	(30.8)	(36.0)
Coal (US\$/ton)	65.9	88.5	98.6	97.8	97.1	117.3	114.2	108.7
	(14.7)	(34.3)	(46.3)	(34.2)	(4.2)	(19.0)	(16.7)	(12.0)

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

- Gasoline and diesel prices went up by 2.7% and 3.2% in October from the previous month, reflecting the global oil price increase from September to October.
  - The domestic prices of gasoline and diesel grew fast, as the global oil price marched higher.
- Propane and butane prices were up 2.9% and 4.3% in October compared to the previous month in line with the global price trend.
  - The domestic LPG price reflects the global price (Saudi Aramco's supply price) of the previous month, and the global propane and butane prices grew by 3.4% and 6.7% in September than a month earlier.

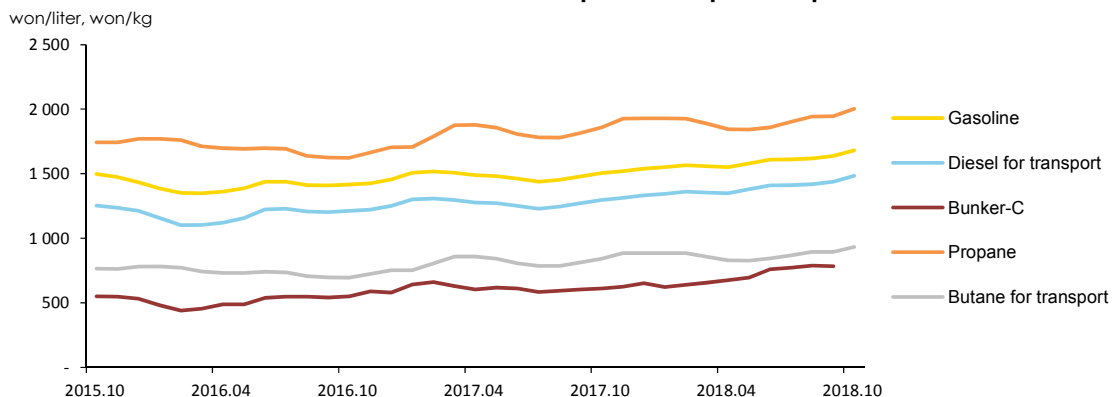
### ► Trend in domestic energy prices

	2016	2017				2018		
			M8	M9	M10	M8	M9	M10
Gasoline (won/liter)	1 402.9 (-7.1)	1 491.4 (6.3)	1 451.8 (2.8)	1 479.7 (5.1)	1 504.5 (6.2)	1 618.3 (11.5)	1 637.6 (10.7)	1 681.1 (11.7)
Diesel for transport (won/liter)	1 182.9 (-9.0)	1 282.6 (8.4)	1 244.9 (3.1)	1 271.0 (5.7)	1 295.6 (7.0)	1 419.1 (14.0)	1 438.9 (13.2)	1 485.0 (14.6)
Bunker-C (won/liter)	521.1 (-14.9)	619.4 (18.9)	594.1 (8.6)	603.1 (11.4)	610.5 (10.7)	788.6 (32.7)	784.4 (30.1)	-
Propane (won/kg)	1 689.7 (-6.2)	1 833.7 (8.5)	1 779.4 (8.6)	1 815.8 (11.7)	1 857.9 (14.4)	1 942.9 (9.2)	1 945.2 (7.1)	2 002.4 (7.8)
Butane for transport (won/liter)	733.9 (-9.0)	826.4 (12.6)	785.5 (11.2)	813.4 (16.8)	841.2 (21.2)	894.8 (13.9)	895.4 (10.1)	934.2 (11.1)

Note: Gasoline, diesel and butane prices are based on charging station prices, Bunker-C 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



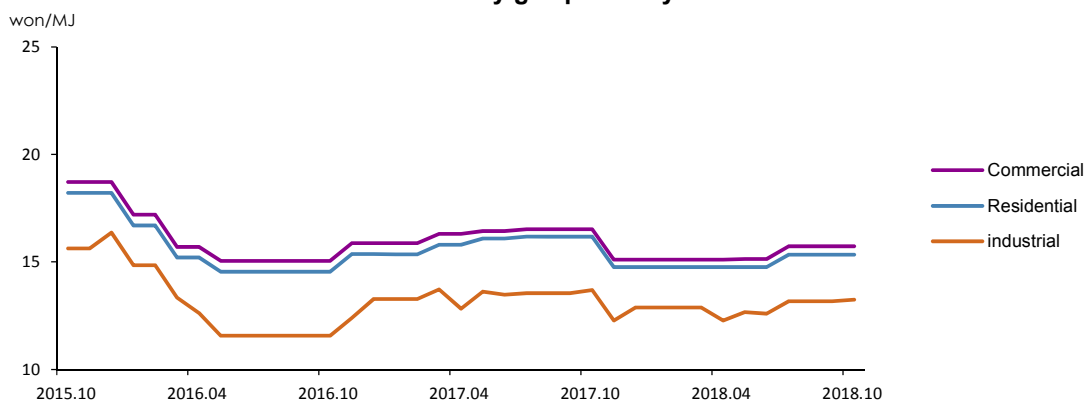
☐ **City gas price has been stagnant since July, as the price of LNG—raw material of city gas—has been almost flat.**

- According to the raw material cost pass-through scheme, city gas price is adjusted bimonthly in every odd month in order to reflect over 3% changes in natural gas importing price, which is affected by changes in global oil price and exchange rates.

☐ **Heat energy price was unchanged, as city gas price remained at the same level as the previous month.**

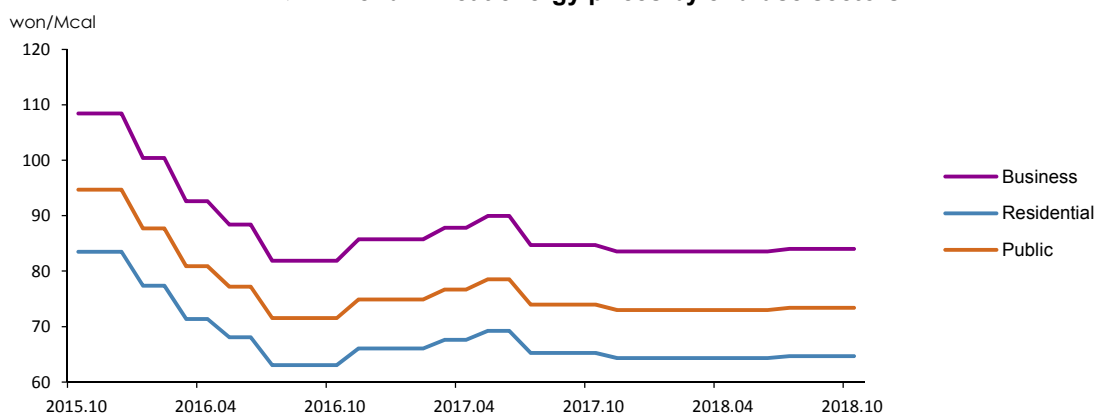
- Korea District Heating Corporation's heat energy price is linked to city gas price according to the fuel cost pass-through scheme, and the actual fuel cost is reflected in the heat energy price once a year (LNG for over 100MW, city gas for under 100MW).

#### ► Trend in city gas prices 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 rate system since July 2012. Figures before that are converted based on standard calorie (additional tax, base charge excluded)

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



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

Source: Korea District Heating Corporation.

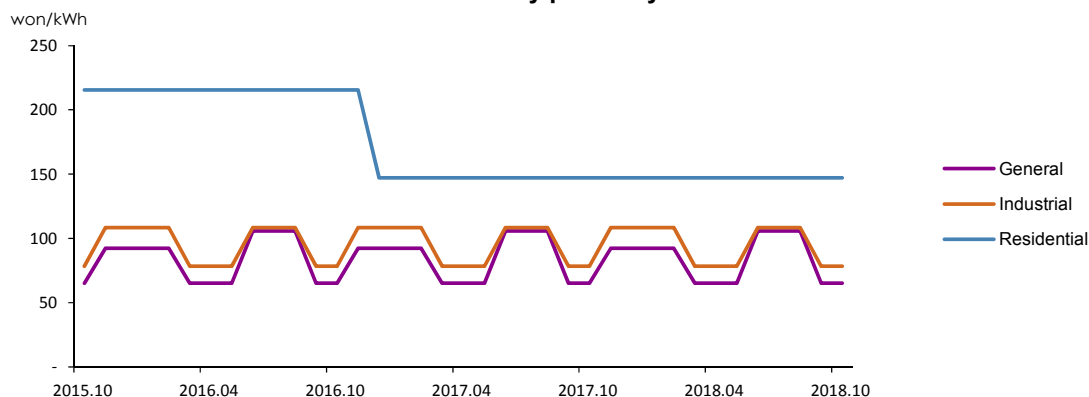
□ **Electricity prices were flat in October, after it plunged in September according to the seasonal price adjustment (spring/autumn) for industrial and general customers.**

- Electricity prices for industrial and general use declined by 27.6% and 38.3% respectively in September as a result of seasonal price change from summer (June-Aug) to spring/autumn (Mar-May, Sept-Oct)
- Residential electricity is subject to the progressive pricing scheme, and the price has been stagnant since the reform of the scheme in December 2016.

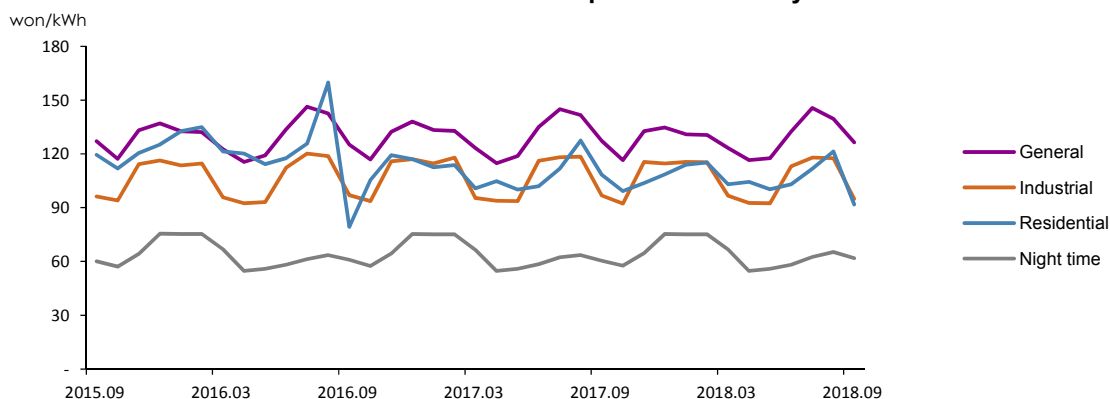
□ **The unit prices of electricity for each end-use fell sharply in September than a month earlier.**

- Under the progressive pricing scheme, the residential power rate dropped by 24.4% due to much lower consumption than the previous month (Aug), and the prices for general and industrial use fell by 9.5% and 19.3% following the seasonal price changes.

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



#### ► Trend in unit price of electricity





### 3. Energy Supply

□ The total energy import volume posted a year-on-year growth of 2.4% in August, backed by strong imports of petroleum products and LNG.

- The import volume of crude oil was down 6.4% due to decreased input to refineries. The Middle Eastern crude oil accounted for 68.8% of the total imports, representing a 12.7%p drop, which was affected by the diversification of importing sources, especially the U.S. and Algeria.
- The import volume of petroleum products much increased on the back of strong growth in naphtha import (16.5%), although bunker-C and LPG imports declined (-4.1%, -2.4%), as domestic production increased.
- The LNG import volume grew by over 10%, especially from Australia and Indonesia.
- The foreign energy dependence including nuclear energy fell by 0.2%p year-on-year to 93.7% partly because of increased renewable generation, and the energy share of the total import value was up 7.2%p to 28.2% due to increased unit import prices.

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

	2016	2017p			2018p		
			M1~8	M8	M1~8	M7	M8
Import volume							
Crude oil (Mbbbl)	1 078.1 (5.1)	1 118.2 (3.7)	737.7 (4.2)	101.5 (17.8)	749.1 (1.5)	96.7 (3.3)	95.0 (-6.4)
Petroleum product (Mbbbl)	334.6 (8.7)	314.5 (-6.0)	210.0 (-5.2)	24.9 (-17.8)	223.7 (6.5)	28.6 (11.9)	27.0 (8.1)
Bituminous coal (Mton)	118.5 (-0.8)	131.5 (11.0)	87.5 (15.9)	11.4 (15.8)	88.0 (0.6)	10.8 (-0.7)	11.3 (-0.7)
Anthracite (Mton)	9.4 (5.4)	7.0 (-25.7)	5.0 (-16.8)	0.5 (-42.5)	5.4 (9.2)	0.6 (-16.6)	0.8 (61.5)
LNG (Mton)	33.5 (0.3)	37.5 (12.2)	25.0 (21.4)	2.6 (32.0)	28.3 (13.5)	2.7 (1.2)	2.9 (11.5)
Import volume (Mtoe)	321.9 (2.7)	338.6 (5.2)	224.1 (6.8)	27.9 (5.4)	234.1 (4.5)	28.9 (3.1)	28.5 (2.4)
Import value (billion US\$, CIF)	80.9 (-21.2)	109.5 (35.2)	70.9 (43.2)	8.5 (31.2)	94.2 (33.0)	12.3 (51.6)	12.5 (46.7)
Domestic production							
Hydropower (TWh)	6.6 (14.5)	7.0 (5.5)	4.8 (4.7)	1.0 (39.5)	4.9 (1.7)	0.8 (26.4)	0.7 (-28.0)
Anthracite (Mton)	1.7 (-2.2)	1.5 (-14.0)	1.0 (-9.4)	0.1 (-18.0)	0.9 (-15.9)	0.1 (-25.2)	0.1 (-18.3)
Natural gas (Mton)	0.1 (-18.0)	0.3 (120.5)	0.2 (210.6)	0.0 n.a	0.2 (-6.5)	0.0 (-12.2)	0.0 (2.6)
Renewable energy (Mtoe)	13.6 (5.7)	15.8 (16.7)	10.5 (16.4)	1.4 (16.7)	14.5 (37.6)	1.8 (37.1)	2.0 (41.9)

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

## 4. Energy Consumption

□ **Total Primary Energy Supply (“TPES”) increased by 5.4% year-on-year in August despite decreased petroleum consumption, as coal, gas and nuclear consumption all increased.**

- Coal consumption rose by 7.5%, leading the growth of TPES along with gas; industrial coal use increased, especially bituminous coal for steel-making and anthracite; coal use for power generation also increased following the commissioning of new facilities.
- Petroleum consumption has been down for two months in a row, which was partly affected by lower naphtha use due to a decrease in price competitiveness.
- Gas consumption surged by 17.0%, led by the power generation and city gas production sectors amid growing electricity and industrial gas consumption.
- Nuclear generation went up by 7.0%, marking two consecutive months of growth, due to the base effect of a surge in preventive maintenance (2.8GW, 100.4%) during the same month last year as well as the restart of some reactors.
- By energy sources, petroleum represented the biggest share of TPES (37.8%), followed by coal (31.5%), gas (13.6%), nuclear (10.4%) and renewable & other energy (6.0%).

□ **Total Final Consumption (“TFC”) rallied by 3.0% year-on-year (in August), as the consumption increased in all end-use sectors.**

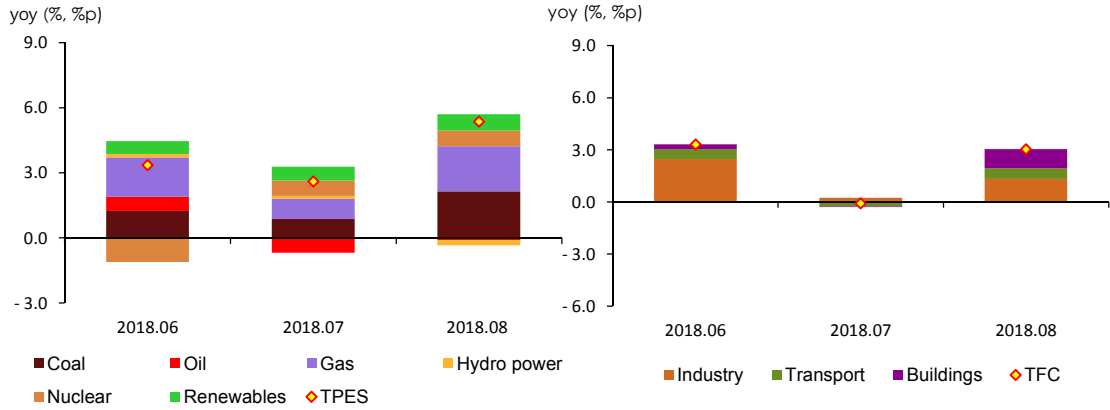
- Industrial energy consumption was up 2.1%, led by the fabricated metals industry (8.8%), particularly the automobile and semi-conductor sectors, although the primary metals and petrochemical industries consumed less amount of power and naphtha respectively.
- Transport energy use rebounded by 3.0% due to the consumption growth in the road transport sector, although the consumption declined in the domestic navigation and aviation sectors.
- Energy consumption in buildings bounced back by 6.8%, as extreme heatwaves and more tropical nights drove up the power demand for cooling.
- Electricity consumption was up 9.2%, led by the fabricated metals industry (9.0%) where the consumption bounced back in the automobile sector and grew steadily in the audio & video communications sector, although it declined in the primary metals sector (-4.5%) due to the reduced outputs of major iron & steel products.

► **Energy consumption trend**

	2016	2017p			2018p		
			M1~8	M8	M1~8	M7	M8
Total energy (Mtoe)	293.4 (2.4)	302.0 (2.9)	198.6 (2.1)	24.7 (-1.3)	205.4 (3.4)	25.8 (2.6)	26.1 (5.4)
Final energy (Mtoe)	225.1 (3.3)	233.9 (3.9)	154.3 (3.9)	18.8 (0.3)	158.9 (3.0)	18.9 (-0.1)	19.3 (3.0)

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

► The growth rates of total and final energy consumption & energy consumption trend by energy sources and end-use sectors



## 5. Coal

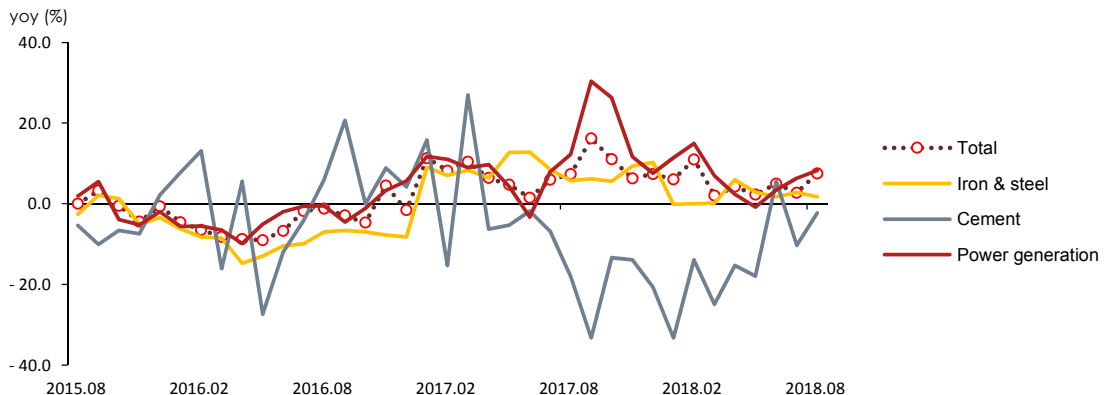
- **Coal consumption went up by 7.5% in August on a year-on-year basis, with the industrial and transformation sectors taking the lead.**
  - Coal consumption grew by 8.3% in the transformation sector on the back of increased installed capacity (1.1GW, 3.0%), even though the daily average of preventive maintenance was up 0.2GW to 0.5GW on a year-on-year basis.
  - Industrial coal use also increased despite less use of bituminous coal for cement production, as bituminous coal use kept growing in the steel-making sector along with surging industrial anthracite use.

### ► Coal consumption trend

	2016	2017p		2018p			
			M1~8	M8	M1~8	M7	M8
<b>Coal (Mton)</b>	<b>129.3</b>	<b>139.8</b>	<b>91.3</b>	<b>12.5</b>	<b>95.9</b>	<b>12.7</b>	<b>13.4</b>
	(-4.3)	(8.1)	(7.0)	(7.4)	(5.1)	(2.7)	(7.5)
Industry	47.8	49.3	32.9	4.1	33.6	4.2	4.3
	(-6.6)	(3.2)	(5.9)	(-1.0)	(2.1)	(-3.9)	(5.9)
Buildings	1.3	1.1	0.4	0.0	0.4	0.0	0.0
	(-14.8)	(-14.0)	(-21.0)	(-50.0)	(-9.7)	(57.1)	(-11.1)
Power generation	80.3	89.4	58.0	8.4	62.0	8.5	9.1
	(-2.7)	(11.3)	(8.0)	(12.2)	(6.9)	(6.3)	(8.3)

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 fell by 0.3% year-on-year in August despite increased consumption in the transport sector, as the industrial and buildings sectors consumed less petroleum.**

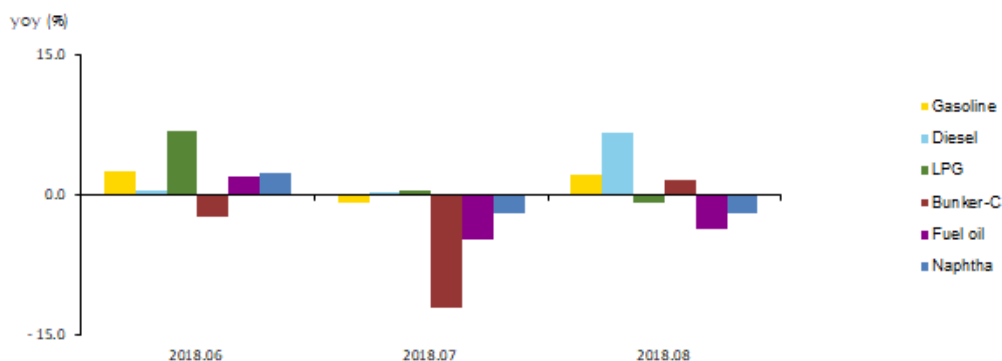
- Industrial petroleum consumption started a downward move, as the use of major petroleum products all declined, although LPG use increased.
- Petroleum consumption rebounded in the transport sector, boosted by the road transport sector, although the domestic navigation and aviation sectors posted a decline.
- Petroleum consumption in buildings has been falling for three months straight, particularly LPG, affected by increased petroleum product prices and temperatures.
- Petroleum consumption recorded rapid growth of over 20% for three months in a low partly due to the increased oil-fired generation (126.6%).

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

	2016	2017p	2018p				
			M1~8	M8	M1~8	M7	M8
<b>Petroleum (Mbbl)</b>	<b>921.1</b> (8.0)	<b>937.1</b> (1.7)	<b>614.9</b> (1.9)	<b>77.8</b> (-3.5)	<b>623.2</b> (1.4)	<b>77.9</b> (-1.6)	<b>77.6</b> (-0.3)
Industry	542.6 (8.3)	567.0 (4.5)	371.3 (5.1)	47.6 (-0.9)	375.8 (1.2)	47.8 (-1.2)	46.7 (-1.9)
Transport	300.5 (5.8)	303.2 (0.9)	201.1 (1.1)	26.3 (-5.8)	202.2 (0.6)	26.2 (-2.4)	26.8 (1.7)
Buildings	56.3 (5.2)	56.4 (0.3)	35.2 (-0.4)	3.4 (-0.8)	36.1 (2.6)	2.9 (-8.1)	3.1 (-8.6)
Power generation	21.8 (48.7)	10.5 (-51.9)	7.3 (-54.2)	0.6 (-58.8)	9.0 (23.8)	1.0 (26.2)	1.0 (88.0)

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

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



## 7. Gas

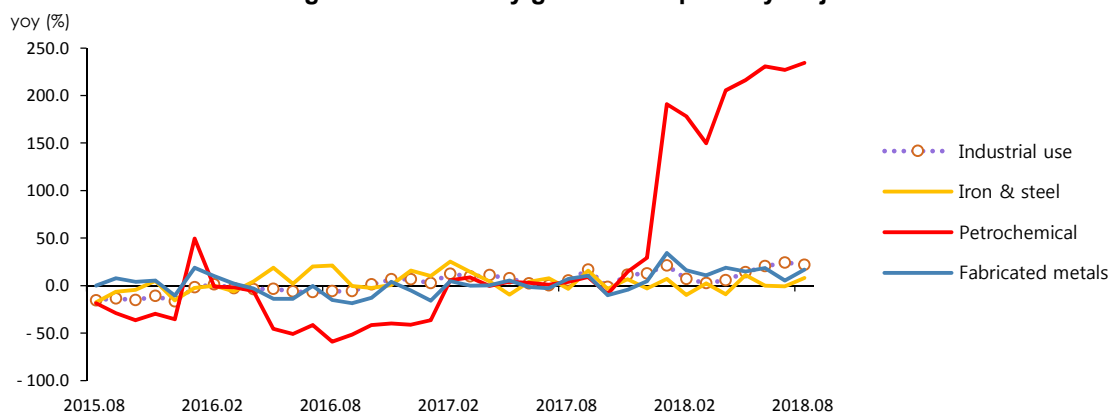
- **Natural gas consumption recorded a 17.0% year-on-year growth in August, backed by rapid consumption growth in the power generation and city gas production sectors.**
  - Gas use for power generation rose dramatically according to the growing cooling demand and thus increased power use, and its share of the total generation was up 2.6%p to 24.1%.
- **City gas consumption went up by 4.1% year-on-year (in August), even though its use decreased in buildings, as the industrial sector consumed more city gas.**
  - Industrial city gas consumption rose by over 20%, as the consumption surged in the petrochemical industry with enhanced price competitiveness.
  - City gas consumption in buildings fell more sharply as compared to the previous month, because the consumption continuously declined in the commercial sector and started to decline in the residential sector as well.

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

	2016	2017p	2018p				
			M1~8	M8	M1~8	M7	M8
<b>LNG (Mton)</b>	<b>34.9</b>	<b>36.4</b>	<b>23.5</b>	<b>2.3</b>	<b>27.6</b>	<b>2.7</b>	<b>2.7</b>
	(4.4)	(4.3)	(3.6)	(-2.3)	(17.7)	(7.0)	(17.0)
Power generation	15.5	15.6	10.3	1.3	12.5	1.5	1.6
	(6.4)	(0.6)	(4.7)	(-8.3)	(21.7)	(-0.6)	(18.5)
City gas production	17.4	18.4	11.7	0.8	13.0	1.0	0.9
	(2.7)	(5.8)	(2.3)	(4.4)	(10.8)	(14.2)	(10.7)
<b>City gas (bm<sup>3</sup>)</b>	<b>21.3</b>	<b>22.6</b>	<b>15.0</b>	<b>1.1</b>	<b>15.9</b>	<b>1.2</b>	<b>1.1</b>
	(2.3)	(6.3)	(3.9)	(3.8)	(5.9)	(7.0)	(4.1)
Industry	7.2	7.8	5.1	0.5	5.8	0.7	0.6
	(-1.4)	(7.7)	(6.6)	(5.4)	(13.9)	(24.3)	(21.9)
Buildings	12.8	13.6	9.1	0.4	9.3	0.4	0.4
	(5.0)	(6.0)	(2.9)	(2.9)	(2.2)	(-10.3)	(-15.6)

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 9.2% year-on-year in August, backed by rapid consumption growth in the industrial and buildings sectors.

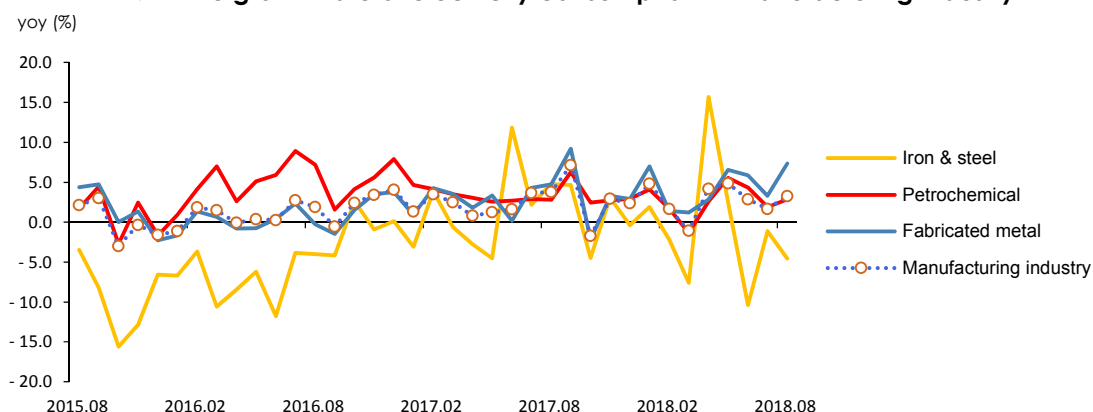
- Industrial electricity consumption grew rapidly by over 4% compared to the same month last year, due to the rapid consumption growth in the fabricated metals industry (7.4%), although the primary metals industry consumed less electricity.
- Electricity consumption in buildings rose by over 14% amid the increased number of extremely hot days and tropical nights, and accordingly growing cooling demand, making a large contribution to the growth in total power consumption.

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

	2016	2017p			2018p		
			M1~8	M8	M1~8	M7	M8
Electricity (TWh)	497.0 (2.8)	507.7 (2.2)	340.0 (1.9)	45.4 (2.1)	355.2 (4.5)	44.0 (1.9)	49.5 (9.2)
Industry	270.0 (1.6)	276.7 (2.5)	184.0 (2.4)	23.4 (3.2)	189.3 (2.9)	24.1 (1.8)	24.5 (4.5)
Transport	2.7 (21.3)	2.9 (6.5)	1.9 (4.4)	0.3 (3.8)	2.0 (5.7)	0.3 (0.2)	0.3 (6.6)
Buildings	224.4 (4.0)	228.2 (1.7)	154.1 (1.3)	21.7 (1.0)	163.9 (6.4)	19.7 (2.0)	24.8 (14.3)

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

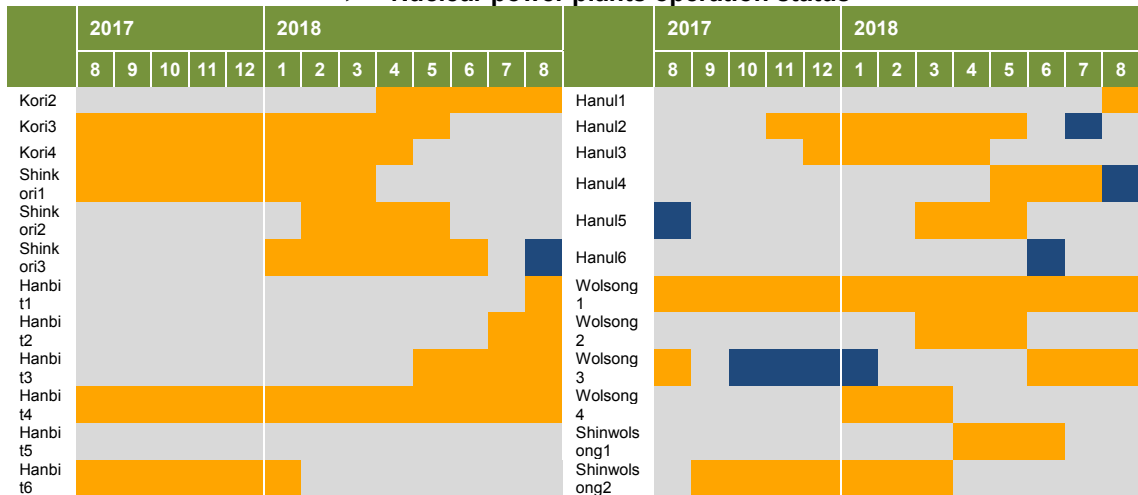
#### ► The growth rate of electricity consumption in manufacturing industry



## 9. Nuclear

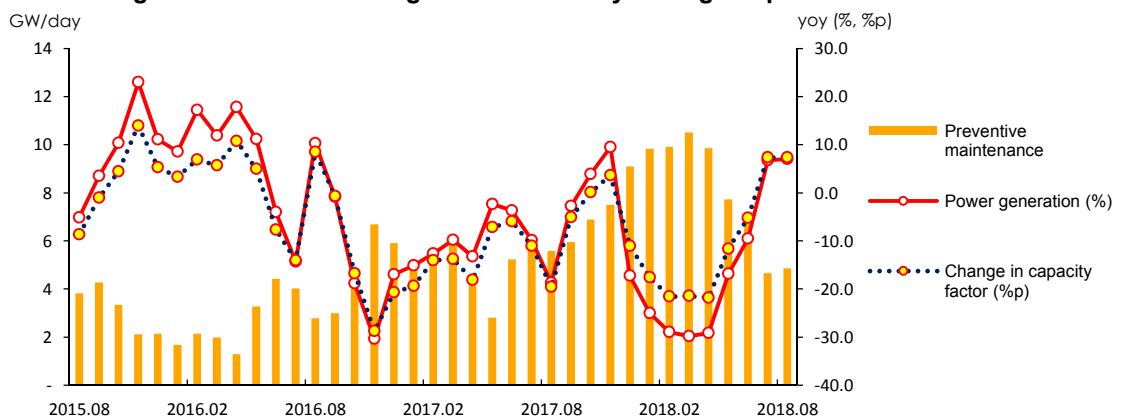
- The total nuclear generation posted a year-on-year growth of 7.0% in August with increased capacity factors.
- The daily average of preventive maintenance declined due to the base effect of a surge during the same month last year (2.8GW, 100.4%), and the average capacity factor at nuclear power plants rose by 7.4%p to 78.4%.

► Nuclear power plants operation status



Notes: ■ normal operation, ■ prevented maintenance, ■ unscheduled shutdown

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





## 10. Heat and Renewable energy

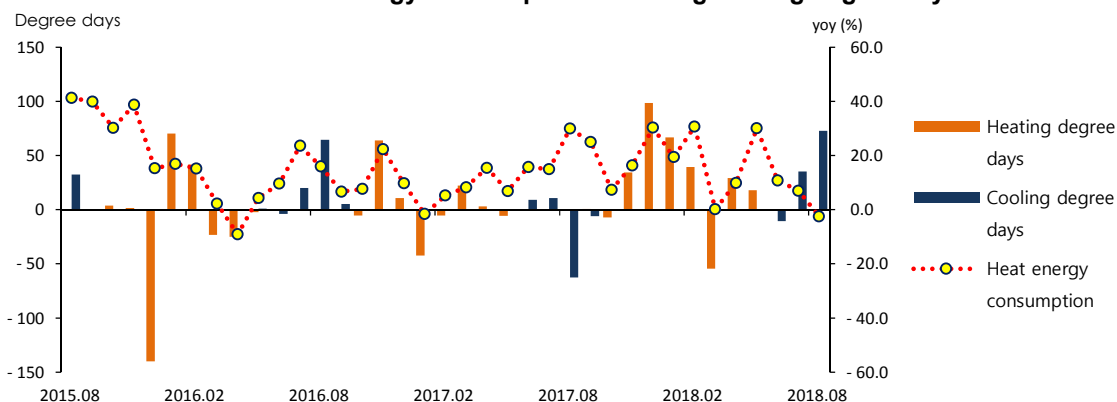
□ **Heat energy consumption fell by 2.5% year-on-year in August despite growing consumption in the commercial and public sectors, as the consumption plunged in the residential sector.**

- Heat energy consumption started a downward move, driven by a sharp fall in the residential sector (-25.1%), even though it increased in the commercial and public sectors to meet growing cooling demand amid increased average temperature (2.8°C in Seoul) and cooling degree days (72.7degree days) during extreme heatwave.

□ **Renewable & other energy consumption rose by 8.1% year-on-year (in August) despite decreased hydropower generation, on the back of increased renewable generation.**

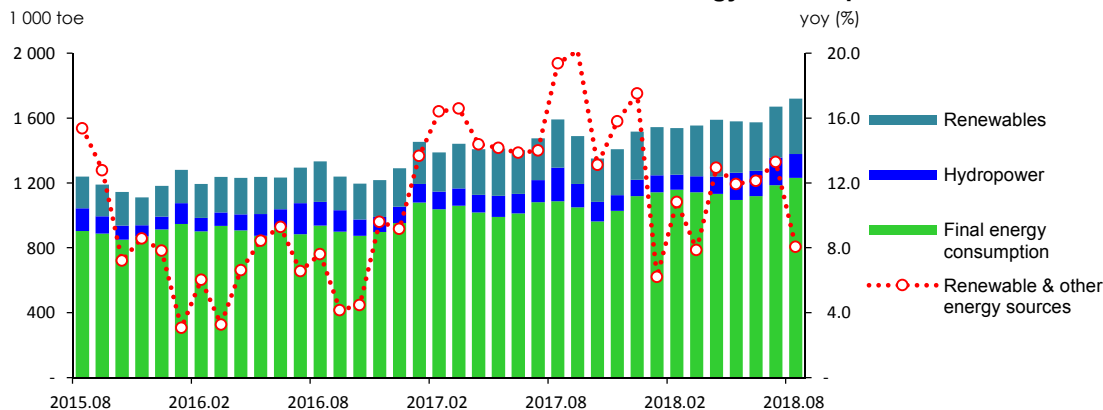
- Hydropower generation declined by 28.0% (697.2GWh) due to the base effect of rapid generation growth (40.8%) during the same month last year.
- Renewable generation (except hydro) was up 14.0% boosted by the restart of integrated gas combined cycle facilities and increased power generation from wind, bio energy and solar PV. The renewable's share of TFC also increased by 13.3%, especially in the industrial and transport sectors.

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



Note: The total heat energy consumption is estimated based on the total supply from district heating & cooling companies (KEA's collective energy business). Previously, the figure reflected the monthly supply data of only three energy companies (KDHC, GS Power, SH Corp.).

### ► Trend in renewable and other energy consumption



## 11. Industry

- **Industrial energy consumption grew by 2.1% year-on-year in August, owing to the consumption recovery in the fabricated metals industry.**
  - By sectors, energy use continued to fall sharply in the primary metals sector while slightly increased in the petrochemical sector, and in the case of the fabricated metals sector, the consumption rebounded on increased outputs of automobiles and semi-conductors.

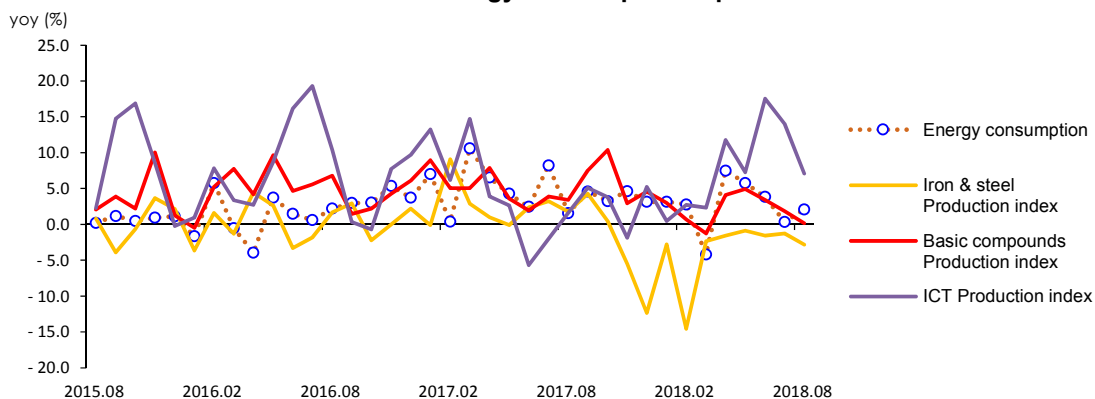
### ► Trend in the industrial energy consumption

	2016	2017p	2018p				
			M1~8	M8	M1~8	M7	M8
<b>Industry (Mtoe)</b>	<b>137.8</b>	<b>144.3</b>	<b>95.1</b>	<b>12.0</b>	<b>97.5</b>	<b>12.3</b>	<b>12.2</b>
	(1.9)	(4.7)	(5.1)	(1.6)	(2.6)	(0.4)	(2.1)
Petrochemical	65.9	70.4	46.3	5.9	47.7	6.1	6.0
	(6.7)	(6.8)	(6.8)	(1.1)	(3.0)	(0.4)	(1.1)
- Naphtha	52.7	56.2	36.8	4.7	37.1	4.7	4.7
	(4.7)	(6.6)	(6.1)	(1.8)	(0.7)	(-2.0)	(-1.9)
Iron & Steel	28.1	35.0	23.2	3.0	20.2	2.6	2.6
	(-8.0)	(24.4)	(24.8)	(22.2)	(-12.8)	(-12.0)	(-13.2)
-Coking coal	23.4	25.3	16.7	2.1	17.0	2.3	2.2
	(-9.0)	(8.0)	(8.3)	(5.3)	(1.9)	(2.8)	(1.7)
Fabricated metal	10.6	10.8	7.2	0.9	7.6	0.9	0.9
	(0.4)	(1.9)	(2.0)	(4.4)	(6.1)	(1.5)	(8.8)
Share of feedstock (%)	58.8	60.0	59.7	61.0	58.5	59.6	58.8

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

Source: Monthly Energy Statistics

### ► Industrial energy consumption & production index



## 12. Transport

□ Transport energy use recorded a 3.0% year-on-year growth in August, led by the road transport sector, although the domestic navigation and aviation sectors witnessed a decline in energy use.

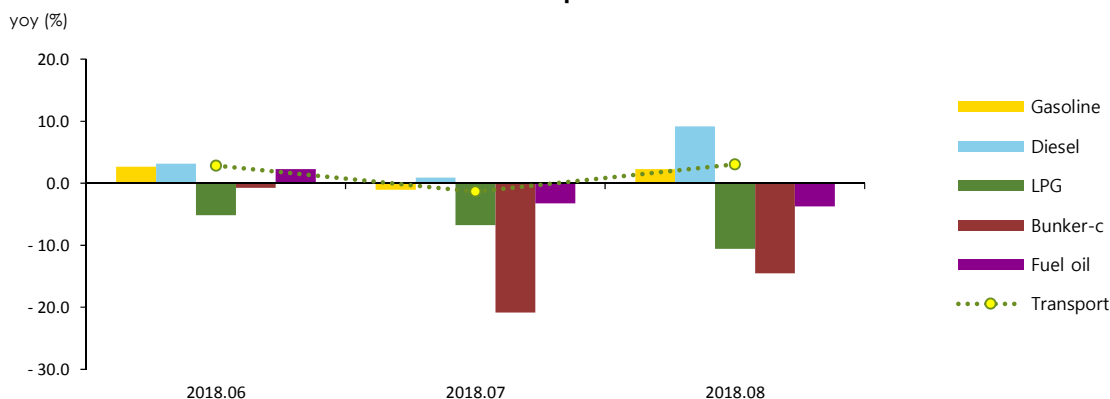
- Energy use for road transport has increased for three consecutive months, particularly diesel and gasoline, though the LPG consumption decreased.
- Energy use for domestic navigation declined due to decreased coastal transport and increased bunker-C price, limiting the growth of the total transport energy use.
- Energy use for aviation has been down for two months, as domestic flights (-2.7%) and passenger & cargo traffics (-5.5%, -7.9%) all declined, hit by decreased number of travelers to Jeju island amid seasonal weather events such as a record-breaking heatwave and typhoon Soulik.
- By types of transport, road transport accounted for the largest share (81.1%) of the total transport energy use, followed by aviation (11.5%), domestic navigation (6.5%) and railways (0.9%).
- The road transport sector made the largest contribution (4.6%p) to the energy consumption growth, and the railways (0.1%p), aviation (-0.5%p), domestic navigation (-1.2%p) sectors followed behind.

► The growth rate of petroleum consumption in the transport sector

	2016	2017p	2018p		2018p		
			M1~8	M8	M1~8	M7	M8
<b>Transport (Mtoe)</b>	<b>42.3</b>	<b>42.7</b>	<b>28.4</b>	<b>3.7</b>	<b>28.8</b>	<b>3.7</b>	<b>3.8</b>
	(6.1)	(1.1)	(1.3)	(-5.3)	(1.4)	(-1.4)	(3.0)
Road	33.9	34.0	22.5	2.9	23.1	3.0	3.1
	(4.9)	(0.3)	(0.2)	(-8.6)	(2.5)	(1.0)	(5.9)
Navigation	3.4	3.5	2.4	0.3	2.1	0.2	0.2
	(13.8)	(5.7)	(9.3)	(5.9)	(-13.4)	(-21.1)	(-15.0)
Aviation	4.7	4.8	3.2	0.5	3.3	0.4	0.4
	(9.1)	(3.3)	(3.9)	(12.7)	(4.7)	(-3.4)	(-3.9)
Rail	0.3	0.3	0.2	0.0	0.2	0.0	0.0
	(8.3)	(2.4)	(-1.5)	(-1.0)	(5.5)	(3.0)	(6.9)

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 grew by 6.8% year-on-year in August as a result of growing energy demand for cooling, especially electricity, during extremely hot days.**

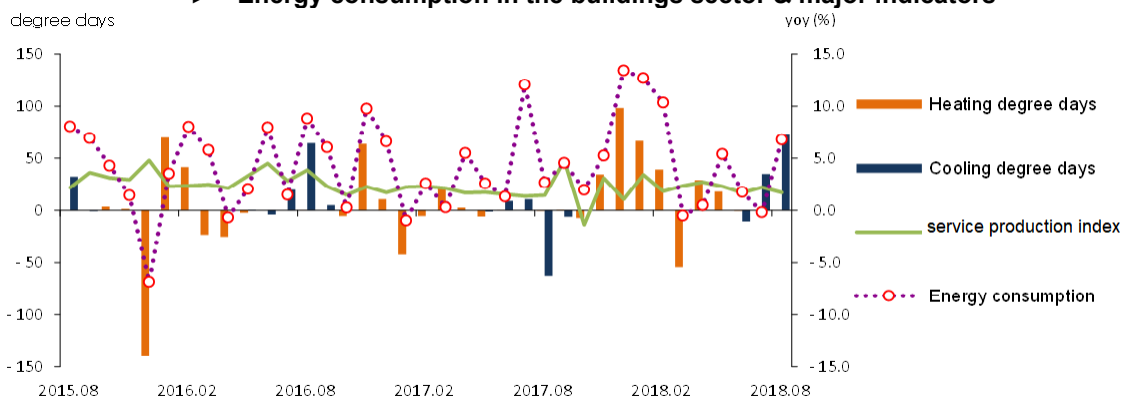
- By energy sources, electricity consumption rose by 14.3% amid unusually high temperatures and increased cooling degree days, leading the growth of energy use in buildings. Meanwhile, petroleum and city gas consumption in buildings declined by 8.6% and 15.6% respectively.
- Energy use in residential buildings increased by 9.9% compared to the same month last year, backed by almost all-time high growth in power use (23.4%) due to fast increased cooling degree days, although petroleum, city gas and heat energy use declined (-4.7%, -11.6%, -25.1%).
- Energy use in commercial buildings bounced back, as increased cooling degree days led to the rapid growth in electricity & heat energy consumption (11.1%, 23.4%), even though LPG and city gas consumption plunged (-21.1%, -19.0%) owing to the continuously sluggish performance of the restaurant & accommodation business.
- Energy use in public buildings went up by 8.3%, despite less use of petroleum (-9.1%), as electricity, heat energy and city gas use all increased (5.3%, 30.9% and 8.8%).

► **Energy consumption trend in the buildings sector**

	2016	2017p	M1~8	M8	2018p	M1~8	M7	M8
<b>Buildings (Mtoe)</b>	<b>45.0</b> (5.2)	<b>46.9</b> (4.2)	<b>30.9</b> (2.6)	<b>3.1</b> (2.7)	<b>32.6</b> (5.5)	<b>2.9</b> (-0.2)		<b>3.3</b> (6.8)
Residential	21.7 (5.5)	22.5 (3.8)	14.5 (1.1)	1.0 (0.8)	15.8 (8.3)	1.0 (2.5)		1.2 (9.9)
Commercial	17.1 (3.5)	17.4 (2.2)	11.7 (1.7)	1.5 (1.6)	11.9 (1.1)	1.3 (-3.2)		1.5 (4.0)
Public · others	6.2 (8.7)	6.9 (11.0)	4.6 (10.3)	0.6 (9.3)	5.0 (7.6)	0.6 (2.8)		0.6 (8.3)

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 increased by 9.8% year-on-year in August; almost all generation sources were more consumed due to a surge in power generation.
  - The total energy input for power generation increased, as more power was generated from coal, nuclear, gas and oil according to the construction of new bituminous coal power plants, reduced preventive maintenance at nuclear plants in addition to the surging power demand (9.2%).
  - Gas took a larger share of the total generation than nuclear energy, after its share fell behind that of nuclear energy in the previous month.

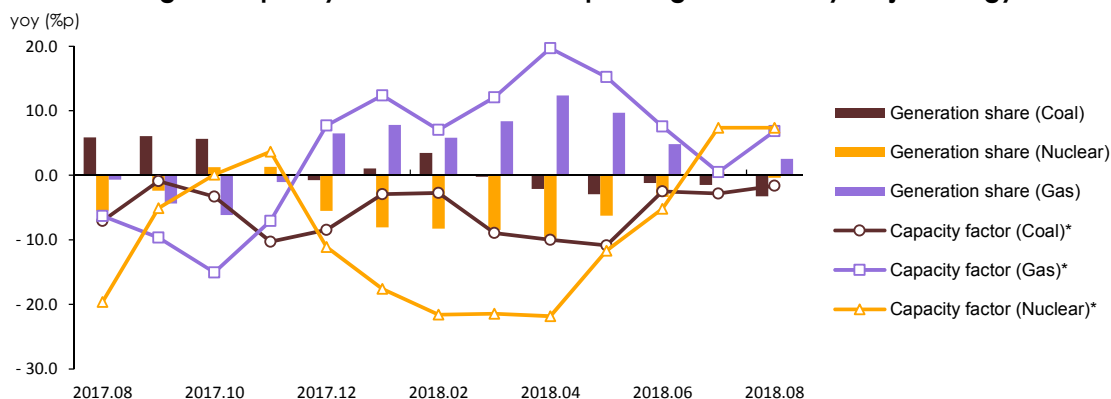
### ► Energy consumption in the power generation sector

	2016	2017p			2018p		
			M1~8	M8	M1~8	M7	M8
<b>Input (Mtoe)</b>	<b>110.9</b>	<b>111.2</b>	<b>73.8</b>	<b>9.8</b>	<b>76.1</b>	<b>10.4</b>	<b>10.8</b>
	(0.8)	(0.2)	(-1.7)	(-3.2)	(3.2)	(5.9)	(9.8)
Coal	49.2	52.8	34.2	5.0	36.6	5.0	5.4
	(-2.8)	(7.4)	(4.2)	(8.5)	(7.0)	(6.1)	(8.1)
Oil	3.0	1.2	0.9	0.1	1.0	0.1	0.1
	(50.1)	(-59.5)	(-61.1)	(-62.0)	(17.8)	(27.2)	(104.7)
Gas	20.5	20.7	13.7	1.8	16.6	2.0	2.1
	(6.3)	(0.9)	(5.0)	(-7.9)	(21.7)	(-0.4)	(18.5)
Nuclear	34.2	31.6	21.8	2.5	18.3	2.8	2.7
	(-1.7)	(-7.5)	(-10.0)	(-17.9)	(-16.1)	(6.8)	(7.0)
Hydro/other renewables	4.0	4.8	3.2	0.5	3.6	0.5	0.5
	(17.4)	(19.3)	(17.9)	(27.3)	(11.2)	(23.3)	(-3.2)

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		
			4Q	1Q	2Q		4Q	1Q	2Q
GDP (trillion won)	1 466.8 (2.8)	1 509.8 (2.9)	396.5 (2.6)	366.2 (2.9)	389.6 (2.8)	1 556.0 (3.1)	407.6 (2.8)	376.4 (2.8)	400.6 (2.8)
Private consumption	707.5 (2.2)	725.4 (2.5)	184.5 (1.4)	185.8 (2.1)	181.0 (2.4)	744.3 (2.6)	190.7 (3.4)	192.4 (3.5)	186.1 (2.8)
Facilities investment	140.3 (4.7)	138.8 (-1.0)	37.4 (3.3)	37.3 (16.1)	42.0 (17.9)	159.1 (14.6)	40.6 (8.6)	40.1 (7.3)	40.8 (-3.0)
Construction investment	211.5 (6.6)	233.4 (10.3)	65.1 (11.9)	49.5 (11.3)	67.1 (8.5)	251.1 (7.6)	67.6 (3.8)	50.4 (1.8)	66.1 (-1.5)
Consumer price index (2015=100)	100.0	101.0	101.5	102.7	102.7	102.9	103.1	104.0	104.3
USD to KRW exchange rate (won)	1 131.0	1 160.8	1 156.4	1 154.9	1 129.4	1 131.0	1 107.5	1 072.7	1 079.0
Benchmark rate (%)	1.6	1.4	1.3	1.3	1.3	1.3	1.4	1.5	1.5
Coincident composite index (2015=100)	100.0	103.3	104.5	105.9	106.8	107.0	107.9	108.5	109.1
Mining & manufacturing production index (2015=100)	100.0	102.3	108.4	103.2	104.3	104.2	104.3	100.9	105.0
Manufacturing operation ratio index (2015=100)	100.0	98.2	101.4	95.9	98.3	97.1	96.0	92.7	99.2
Average temperature	13.6	13.6	8.0	1.4	18.9	13.0	6.7	0.8	18.1
- year-on-year difference	0.2	- 0.0	- 0.6	0.1	- 0.2	- 0.6	- 1.3	- 0.6	- 0.8
Heating degree days	2 459.1 (-1.7)	2 589.7 (5.3)	935.3 (8.0)	1 487.5 (-1.7)	138.6 (-1.6)	2 687.6 (3.8)	1 060.9 (13.4)	1 538.9 (3.5)	185.4 (33.8)
Cooling degree days	151.8 (21.1)	238.1 (56.9)	- -	- -	18.2 (78.4)	188.1 (-21.0)	- -	- -	7.7 (-57.7)
Energy intensity	0.20 (-1.2)	0.20 (-0.5)	0.19 (-0.1)	0.22 (-0.7)	0.18 (-0.6)	0.19 (-0.2)	0.20 (1.3)	0.22 (-0.1)	0.18 (1.1)
Per capita consumption									
oil (bbl)	16.7 (3.7)	18.0 (7.4)	4.7 (6.8)	4.6 (1.3)	4.3 (1.6)	18.2 (1.4)	4.8 (0.6)	4.6 (0.3)	4.5 (3.3)
Electricity (MWh)	9.5 (0.7)	9.7 (2.3)	2.4 (3.0)	2.6 (1.0)	2.3 (0.7)	9.9 (1.8)	2.4 (2.2)	2.7 (4.1)	2.4 (3.3)
City gas (1 000 m <sup>3</sup> )	0.4 (-6.4)	0.4 (1.8)	0.1 (7.2)	0.2 (3.4)	0.1 (5.0)	0.4 (5.9)	0.1 (10.7)	0.2 (7.4)	0.1 (2.2)
Total energy (toe)	5.6 (1.0)	5.7 (1.9)	1.5 (1.9)	1.5 (1.8)	1.3 (1.9)	5.9 (2.6)	1.5 (3.8)	1.6 (2.3)	1.4 (3.6)

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)

	2016	2017					2018			
			M1~8	M6	M7	M8	M1~8	M6	M7	M8
Industrial production index										
All industry	103.1 (3.2)	105.5 (2.3)	104.1 (2.9)	108.9 (2.0)	104.3 (2.4)	103.1 (2.1)	105.2 (1.1)	109.1 (0.2)	105.8 (1.4)	104.8 (1.6)
Mining & manufacturing	102.3 (2.3)	104.2 (1.8)	103.5 (3.0)	105.4 (1.2)	104.8 (1.6)	100.8 (2.3)	103.4 (-0.1)	105.1 (-0.3)	105.9 (1.0)	103.3 (2.5)
Iron & steel	100.2 (0.2)	100.7 (0.4)	101.8 (2.4)	102.7 (2.4)	104.7 (3.3)	103.5 (1.8)	98.3 (-3.4)	101.1 (-1.6)	103.4 (-1.2)	100.6 (-2.8)
Cement	108.3 (8.3)	109.9 (1.4)	109.1 (4.4)	110.7 (-9.2)	102.4 (-2.8)	102.2 (-7.5)	99.1 (-9.2)	115.8 (4.6)	102.5 (0.1)	90.2 (-11.7)
Basic compound	104.8 (4.8)	110.4 (5.4)	109.4 (4.9)	105.2 (1.9)	112.0 (3.9)	112.4 (3.4)	111.7 (2.1)	108.8 (3.4)	114.1 (1.9)	112.6 (0.2)
Transport equipment	97.7 (-2.3)	94.9 (-2.9)	96.7 (0.4)	101.9 (-2.9)	99.5 (-0.3)	78.9 (12.4)	90.5 (-6.4)	93.4 (-8.3)	87.4 (-12.2)	86.5 (9.6)
Electric & electronic	103.3 (3.3)	106.4 (3.0)	103.5 (3.8)	109.1 (5.4)	103.6 (4.2)	103.4 (5.7)	101.7 (-1.8)	104.1 (-4.6)	102.7 (-0.9)	102.1 (-1.3)
Service	102.6 (2.6)	104.5 (1.8)	103.0 (1.8)	106.0 (1.5)	103.5 (1.4)	103.9 (1.5)	105.3 (2.3)	107.8 (1.7)	105.8 (2.2)	105.7 (1.7)
Operating ratio index										
Manufacturing	98.2 (-1.8)	97.1 (-1.2)	96.9 (-0.7)	99.6 (-2.4)	98.3 (-1.3)	94.1 (1.0)	96.4 (-0.5)	99.4 (-0.2)	98.8 (0.5)	96.6 (2.7)
Iron & steel	99.9 (-0.1)	101.0 (1.0)	101.5 (2.4)	102.5 (2.4)	104.3 (3.1)	103.3 (2.0)	98.9 (-2.6)	99.9 (-2.5)	102.2 (-2.0)	99.2 (-4.0)
Cement	107.0 (7.0)	107.6 (0.5)	106.6 (3.0)	107.8 (-10.5)	99.8 (-3.9)	99.8 (-8.2)	106.9 (0.3)	127.5 (18.3)	113.1 (13.3)	100.2 (0.4)
Basic compound	103.6 (3.6)	107.2 (3.4)	106.6 (3.0)	102.3 (0.2)	108.3 (1.5)	108.7 (1.1)	107.1 (0.5)	105.0 (2.6)	109.0 (0.6)	107.4 (-1.2)
Transport equipment	94.2 (-5.8)	89.7 (-4.8)	91.6 (-1.7)	96.3 (-4.8)	94.3 (-2.1)	74.9 (11.1)	88.5 (-3.5)	91.8 (-4.7)	85.9 (-8.9)	85.3 (13.9)
Electric & electronic	102.2 (2.2)	102.8 (0.5)	100.8 (2.0)	105.8 (3.9)	100.1 (1.1)	100.0 (4.1)	95.8 (-5.0)	98.4 (-7.0)	96.8 (-3.3)	95.9 (-4.1)

Note: p means provisional  
Source: Monthly Energy Statistics

	2016	2017					2018			
			M1~10	M8	M9	M10	M1~10	M8	M9	M10
Crude oil (USD/bbl)										
WTI	43.3 (-11.2)	51.0 (17.6)	49.7 (17.8)	48.1 (7.3)	49.9 (10.3)	51.6 (3.3)	67.2 (35.2)	67.9 (41.2)	70.1 (40.5)	70.8 (37.2)
Dubai	41.2 (-18.8)	53.2 (28.9)	51.6 (29.3)	50.2 (15.1)	53.7 (23.8)	55.5 (13.4)	71.0 (37.7)	72.5 (44.3)	77.2 (43.9)	79.4 (42.9)
Brent	45.0 (-16.0)	54.8 (21.7)	53.1 (21.1)	51.9 (10.0)	55.5 (17.5)	57.7 (12.2)	73.5 (38.4)	73.8 (42.4)	79.1 (42.5)	80.6 (39.9)
Unit value of import (C&F)	41.0 (-23.0)	53.3 (29.9)	52.0 (30.9)	48.8 (11.4)	51.9 (18.4)	54.6 (19.7)	71.5 (37.5)	75.2 (54.0)	76.5 (47.4)	79.5 (45.5)
LNG										
From Indonesia (USD/MMBTU)	7.4 (-32.6)	8.6 (16.7)	8.6 (17.6)	8.9 (24.9)	8.6 (14.6)	8.3 (8.6)	10.4 (20.7)	10.9 (22.0)	11.3 (30.8)	11.3 (36.0)
Unit value of import (USD/ton, CIF)	356.7 (-35.0)	416.3 (16.7)	416.5 (18.5)	426.0 (28.7)	421.4 (19.4)	421.6 (11.2)	515.5 (23.8)	532.3 (25.0)	561.8 (33.3)	578.1 (37.1)
Bituminous coal (USD/ton)										
From Australia	65.9 (14.5)	88.5 (34.4)	86.5 (43.2)	98.6 (46.3)	97.8 (34.2)	97.1 (4.2)	108.2 (25.2)	117.3 (19.0)	114.2 (16.7)	108.7 (12.0)
Unit value of import (CIF)	68.9 (-6.8)	104.3 (51.5)	104.4 (65.3)	92.7 (45.7)	94.4 (41.3)	102.6 (36.8)	113.5 (8.7)	110.1 (18.7)	116.4 (23.3)	114.4 (11.5)
Petroleum product (USD/bbl)										
Gasoline	56.2 (-19.1)	68.1 (21.2)	66.6 (21.5)	67.5 (24.5)	70.5 (21.5)	70.1 (11.3)	83.1 (24.7)	84.8 (25.7)	89.5 (26.9)	87.7 (25.1)
Kerosene	52.8 (-18.3)	65.3 (23.6)	63.5 (23.6)	63.1 (17.8)	68.1 (24.1)	68.3 (12.1)	86.3 (36.1)	87.3 (38.3)	91.7 (34.6)	95.1 (39.2)
Diesel	53.0 (-20.4)	66.4 (25.2)	64.7 (25.6)	64.3 (18.9)	69.4 (25.7)	70.3 (14.0)	86.7 (33.9)	88.5 (37.7)	93.8 (35.2)	97.2 (38.4)
Bunker-C	35.4 (-21.6)	49.7 (40.2)	48.3 (45.3)	47.3 (26.9)	50.7 (28.4)	51.9 (18.3)	65.8 (36.2)	69.1 (46.1)	70.7 (39.5)	76.8 (47.9)
Propane	323.3 (-22.3)	467.5 (44.6)	444.5 (42.9)	420.0 (47.4)	480.0 (62.7)	575.0 (69.1)	552.0 (24.2)	580.0 (38.1)	600.0 (25.0)	655.0 (13.9)
Butane	355.8 (-18.5)	501.7 (41.0)	487.0 (42.8)	460.0 (58.6)	500.0 (56.3)	580.0 (56.8)	553.0 (13.6)	595.0 (29.3)	635.0 (27.0)	655.0 (12.9)
Naphtha	42.5 (-19.0)	53.8 (26.6)	51.6 (25.2)	50.3 (26.1)	54.9 (29.6)	57.6 (21.1)	69.6 (34.7)	71.5 (42.2)	75.2 (36.9)	74.7 (29.7)

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.petronet.co.kr, IMF (primary commodity price), Monthly Energy Statistics



## Total Primary Energy Supply (TPES)

	2016	2017p					2018p			
			M1~8	M6	M7	M8	M1~8	M6	M7	M8
Coal (Mton)	129.3 (-4.3)	139.8 (8.1)	91.3 (7.0)	10.3 (1.5)	12.4 (5.9)	12.5 (7.4)	95.9 (5.1)	10.8 (5.0)	12.7 (2.7)	13.4 (7.5)
- Coking coal excluded	95.8 (-2.5)	103.5 (7.9)	67.3 (6.4)	7.3 (-2.6)	9.2 (5.1)	9.4 (7.9)	71.5 (6.2)	7.7 (6.3)	9.5 (2.7)	10.3 (9.4)
Oil (Mbbbl)	921.1 (8.0)	937.1 (1.7)	614.9 (1.9)	74.4 (2.5)	79.2 (8.7)	77.8 (-3.5)	623.2 (1.4)	75.8 (1.9)	77.9 (-1.6)	77.6 (-0.3)
- Non-energy oil excluded	454.9 (11.3)	443.7 (-2.5)	291.8 (-1.7)	35.9 (4.1)	37.3 (5.5)	36.3 (-8.7)	299.4 (2.6)	36.7 (2.3)	36.8 (-1.6)	37.2 (2.6)
LNG (Mton)	34.9 (4.4)	36.4 (4.3)	23.5 (3.6)	2.3 (6.3)	2.6 (6.7)	2.3 (-2.3)	27.6 (17.7)	2.6 (14.0)	2.7 (7.0)	2.7 (17.0)
Hydro (TWh)	6.6 (14.5)	7.0 (5.5)	4.8 (4.7)	0.6 (9.1)	0.6 (-29.4)	1.0 (39.5)	4.9 (1.7)	0.7 (29.8)	0.8 (26.4)	0.7 (-28.0)
Nuclear (TWh)	162.0 (-1.7)	148.4 (-8.4)	102.3 (-10.9)	12.5 (-3.7)	12.2 (-9.9)	11.9 (-18.7)	85.8 (-16.1)	11.3 (-9.5)	13.1 (6.8)	12.8 (7.0)
Others (Mtoe)	13.6 (5.7)	15.8 (16.7)	10.5 (16.4)	1.3 (14.2)	1.3 (21.4)	1.4 (16.7)	11.7 (11.2)	1.4 (10.5)	1.5 (12.0)	1.6 (13.4)
<b>TPES (Mtoe)</b>	<b>293.4</b> (2.4)	<b>302.0</b> (2.9)	<b>198.6</b> (2.1)	<b>23.0</b> (2.3)	<b>25.1</b> (5.3)	<b>24.7</b> (-1.3)	<b>205.4</b> (3.4)	<b>23.7</b> (3.3)	<b>25.8</b> (2.6)	<b>26.1</b> (5.4)
- Non-energy oil excluded	235.5 (1.8)	240.6 (2.2)	158.4 (1.3)	18.1 (2.6)	19.9 (3.7)	19.6 (-2.1)	165.2 (4.3)	18.9 (3.9)	20.7 (3.7)	21.1 (7.6)
- Non-energy oil&coal excluded	212.0 (3.2)	215.3 (1.6)	141.7 (0.5)	16.0 (1.4)	17.7 (3.2)	17.4 (-2.9)	148.2 (4.6)	16.7 (4.2)	18.4 (3.8)	18.9 (8.3)

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

## Share of TPES by Sources

(unit: %)

	2016	2017p					2018p			
			M1~8	M6	M7	M8	M1~8	M6	M7	M8
Coal	27.7	28.5	28.4	27.9	30.3	31.1	28.8	28.2	30.4	31.5
- Coking coal excluded	19.7	20.2	20.0	18.7	21.6	22.4	20.5	19.1	21.7	23.2
Oil	40.1	39.5	39.4	41.3	40.1	40.0	38.6	40.6	38.5	37.8
- non-energy oil excluded	20.3	19.2	19.2	20.3	19.4	19.1	19.0	20.1	18.6	18.6
LNG	15.5	15.7	15.4	13.1	13.3	12.2	17.6	14.4	13.9	13.6
Hydro	0.5	0.5	0.5	0.5	0.5	0.8	0.5	0.7	0.7	0.6
Nuclear	11.6	10.5	11.0	11.6	10.4	10.3	8.9	10.2	10.8	10.4
Others	4.6	5.2	5.3	5.6	5.3	5.6	5.7	6.0	5.8	6.0
TPES	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0

Note: p means provisional  
Source: Monthly Energy Statistics

## Total Final Consumption (TFC)

(Unit: Mtoe)

	2016	2017p					2018p			
			M1~8	M6	M7	M8	M1~8	M6	M7	M8
Industry	137.8 (1.9)	144.3 (4.7)	95.1 (5.1)	11.5 (2.5)	12.3 (8.2)	12.0 (1.6)	97.5 (2.6)	12.0 (3.8)	12.3 (0.4)	12.2 (2.1)
Transport	42.3 (6.1)	42.7 (1.1)	28.4 (1.3)	3.6 (7.5)	3.8 (9.3)	3.7 (-5.3)	28.8 (1.4)	3.7 (2.8)	3.7 (-1.4)	3.8 (3.0)
Residential-commercial	38.7 (4.6)	39.9 (3.1)	26.3 (1.4)	2.2 (3.7)	2.3 (6.7)	2.5 (1.3)	27.6 (5.1)	2.2 (1.0)	2.3 (-0.9)	2.7 (6.4)
Public	6.2 (8.7)	6.9 (11.0)	4.6 (10.3)	0.5 (-7.3)	0.6 (41.4)	0.6 (9.3)	5.0 (7.6)	0.6 (5.0)	0.6 (2.8)	0.6 (8.3)
<b>TFC</b>	<b>225.1</b> (3.3)	<b>233.9</b> (3.9)	<b>154.3</b> (3.9)	<b>17.9</b> (3.3)	<b>19.0</b> (9.0)	<b>18.8</b> (0.3)	<b>158.9</b> (3.0)	<b>18.5</b> (3.3)	<b>18.9</b> (-0.1)	<b>19.3</b> (3.0)
Coal (Mton)	49.0 (-6.8)	50.4 (2.7)	33.3 (5.5)	4.1 (9.8)	4.4 (2.4)	4.1 (-1.5)	34.0 (1.9)	4.4 (7.4)	4.2 (-3.8)	4.3 (5.8)
Oil (Mbbbl)	899.3 (7.3)	926.6 (3.0)	607.6 (3.4)	73.9 (3.6)	78.4 (10.4)	77.3 (-2.6)	614.2 (1.1)	75.2 (1.7)	76.9 (-1.9)	76.5 (-1.0)
Electricity (TWh)	497.0 (2.8)	507.7 (2.2)	340.0 (1.9)	39.7 (0.0)	43.2 (6.5)	45.4 (2.1)	355.2 (4.5)	41.0 (3.5)	44.0 (1.9)	49.5 (9.2)
City gas (Bm <sup>3</sup> )	21.3 (2.3)	22.6 (6.3)	15.0 (3.9)	1.2 (2.6)	1.1 (0.4)	1.1 (3.8)	15.9 (5.9)	1.2 (5.4)	1.2 (7.0)	1.1 (4.1)
Heat{others (1 000 toe)	13.1 (4.2)	15.0 (14.0)	9.9 (13.0)	1.1 (9.4)	1.1 (21.8)	1.1 (16.7)	11.0 (11.0)	1.2 (10.5)	1.3 (9.5)	1.3 (12.4)

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			
			M1~8	M6	M7	M8	M1~8	M6	M7	M8
Industry	61.2	61.7	61.6	64.6	64.8	63.8	61.4	64.9	65.1	63.2
Transport	18.8	18.3	18.4	20.1	20.0	19.7	18.1	20.1	19.7	19.7
Residential-commercial	17.2	17.1	17.0	12.3	12.2	13.4	17.4	12.0	12.1	13.8
Public	2.8	3.0	3.0	3.0	3.0	3.1	3.1	3.0	3.1	3.2
Final energy	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0
Coal	14.3	14.3	14.3	15.2	15.4	14.5	14.1	15.6	15.0	14.8
Oil	50.8	50.4	50.0	52.7	52.6	52.3	49.1	51.7	51.5	50.2
Electricity	19.0	18.7	18.9	19.1	19.6	20.8	19.2	19.1	20.0	22.0
City gas	10.1	10.3	10.3	7.1	6.4	6.3	10.7	7.2	6.8	6.3
Heat{others	5.8	6.4	6.4	6.0	6.0	6.1	6.9	6.4	6.6	6.7

Note: p means provisional  
Source: Monthly Energy Statistics

## Statistics on Energy Production Facilities

	2015	2016	2017				2018p		
				M6	M7	M8	M6	M7	M8
Total capacity (GW)	97.6 (4.8)	105.9 (8.4)	116.9 (19.7)	113.7 (18.8)	113.4 (17.1)	114.2 (17.9)	117.2 (18.5)	117.5 (17.3)	118.0 (16.8)
Nuclear	21.7 (4.8)	23.1 (6.4)	22.5 (3.7)	22.5 (8.8)	22.5 (3.7)	22.5 (3.7)	21.9 (0.6)	21.9 (0.6)	21.9 (0.6)
Bituminous coal	26.2 (1.1)	30.9 (18.0)	36.1 (37.8)	34.7 (34.0)	34.7 (34.0)	35.3 (36.3)	36.3 (37.5)	36.4 (33.2)	36.4 (30.3)
Gas	32.2 (6.5)	32.6 (1.2)	37.9 (17.4)	36.6 (15.0)	36.7 (15.1)	36.7 (15.1)	37.9 (16.1)	37.9 (16.1)	37.9 (16.1)
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		
				M6	M7	M8	M6	M7	M8
The number of household demanding city gas (mil)	17.4 (3.0)	18.0 (3.4)	18.6 (3.3)	18.2 (3.3)	18.2 (3.2)	18.2 (3.3)	18.8 (3.3)	18.8 (3.3)	18.8 (3.0)
Registered cars (mil)	21.0 (4.3)	21.8 (3.9)	22.5 (3.3)	22.2 (3.4)	22.3 (3.4)	22.3 (3.4)	22.9 (3.1)	22.9 (3.1)	23.0 (3.1)
- gasoline	9.8 (2.3)	10.1 (2.9)	10.4 (2.7)	10.3 (2.9)	10.3 (2.8)	10.3 (2.9)	10.5 (2.5)	10.5 (2.5)	10.5 (2.5)
- diesel	8.6 (8.6)	9.2 (6.4)	9.6 (4.4)	9.4 (4.8)	9.4 (4.8)	9.4 (4.8)	9.8 (4.1)	9.8 (4.1)	9.8 (4.1)
- LPG	2.3 (-3.4)	2.2 (-4.0)	2.1 (-2.9)	2.1 (-3.4)	2.1 (-3.3)	2.1 (-3.3)	2.1 (-3.3)	2.1 (-3.3)	2.1 (-3.3)
- hybrid	0.2 (31.3)	0.2 (37.6)	0.3 (37.6)	0.3 (34.3)	0.3 (34.6)	0.3 (35.4)	0.3 (34.6)	0.3 (33.2)	0.4 (32.5)

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

Source: Monthly Energy Statistics

# KEEI

MONTHLY **KOREA ENERGY TRENDS** (2018, NO.80)



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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.

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