

KEEI

MONTHLY KOREA ENERGY TRENDS

KOREA ENERGY ECONOMICS INSTITUTE

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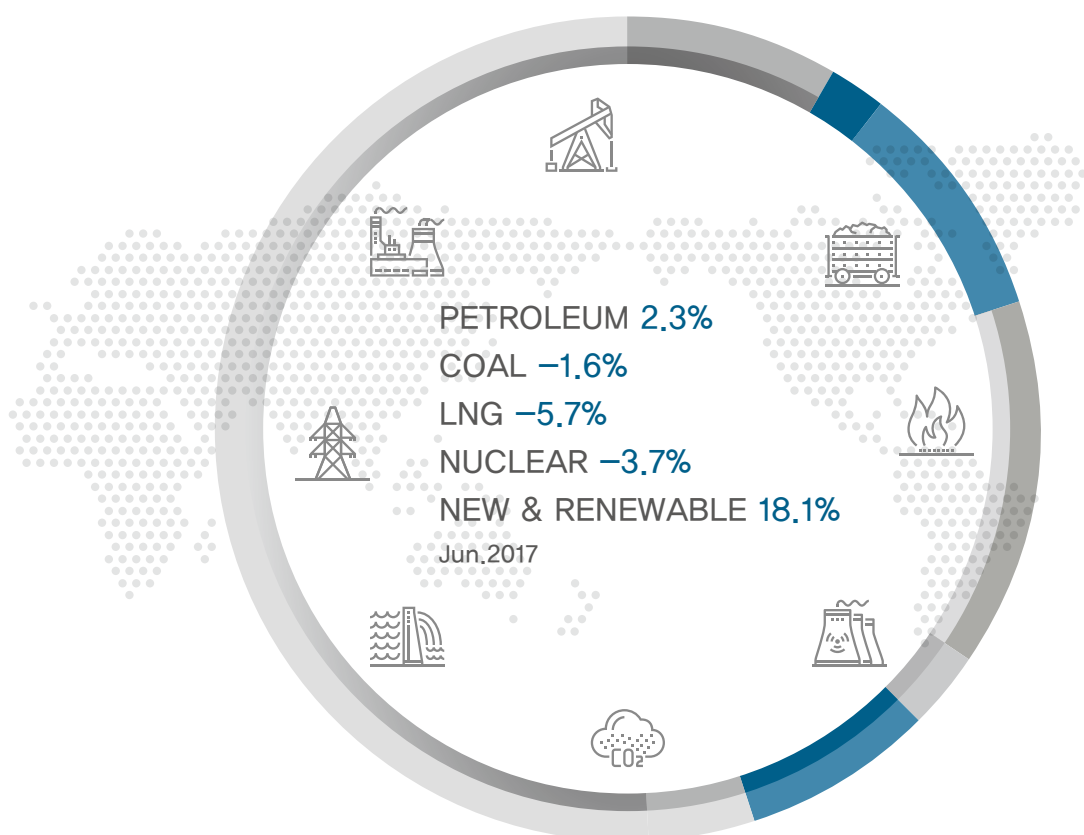


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1. The Economy and the Industry

- **Gross Domestic Product (“GDP”) went up by 2.7% year-on-year in Q2, backed by stronger consumer sentiment and a decent growth in facility investment.**
 - Private spending increased by 2.2% (in Q2) on a year-on-year basis, both on durable and non-durable goods, while facility investment rose by 17.3% year-on-year, led by the semi-conductor industry, although construction investment grew at slower pace.
- **The export value made a year-on-year growth of 13.5% in June, boosted by the highest export record of semi-conductors and marine vessels.**
 - The export value of semi-conductors has increased for nine consecutive months (52.0%) due to the constant rise in unit price and demand of memory chips, making the highest record (\$8.03 billion).
 - The export value of petroleum products has been in upward trend for eight months in a row (4.8%), helped by growing unit price (16.3%). The growth rate, however, fell sharply from the previous quarter, due to decreased export, especially to China, the U.S., and Singapore.
- **The production index of mining and manufacturing industries fell by 0.5% year-on-year (in June) from a month earlier, affected by weaker result of the ICT and cement industries, while the service industry production index rose by 2.1%.**
 - The production index of mining and manufacturing started to decline for the first time in eight months, owing to a decline in the cement production (-12.1%) and ICT (-6.9%) industries, although the index increased in the basic chemical materials (1.9%) and iron & steel industries (3.3%).
 - The service industry production index has been up around 2% for six consecutive months despite a stagnant growth in wholesale & retail business (0.3%) and a constant decline in restaurant & accommodations business (-3.5%), partly because the index of health and social welfare business continues to rise fast (8.9%).

► Trend in major economic and industrial indicators

	2015	2016	2017			2017		
			M4	M5	M6	M4	M5	M6
GDP (trillion won)	1 466.8 (2.8)	1 508.3 (2.8)	- -	- -	378.6 (3.4)	- -	- -	388.8 (2.7)
Total export (\$billion, customs clearance basis)	526.8 (-8.0)	495.4 (-5.9)	41.1 (-11.1)	39.7 (-6.1)	45.2 (-2.9)	50.9 (23.8)	44.9 (13.1)	51.3 (13.5)
Semi-conductors	62.9 (0.4)	62.2 (-1.1)	4.6 (-11.8)	4.9 (-4.3)	5.3 (-0.5)	7.1 (56.9)	7.5 (53.6)	8.0 (52.0)
Petroleum products	32.0 (-37.0)	26.5 (-17.3)	2.4 (-6.3)	2.2 (-22.8)	2.3 (-26.5)	2.5 (3.8)	2.8 (28.2)	2.4 (4.8)
Mining and manufacturing production index (2010=100)	108.1 (-0.3)	109.2 (1.0)	107.2 (-2.7)	110.2 (4.4)	111.8 (0.9)	109.2 (1.9)	110.5 (0.3)	111.2 (-0.5)
ICT production index	113.1 (1.4)	118.7 (4.9)	108.7 (-0.2)	118.0 (7.1)	122.7 (14.1)	109.5 (0.7)	118.2 (0.2)	114.2 (-6.9)
Service industry production index (2010=100)	112.1 (2.9)	115.5 (3.0)	113.8 (2.0)	115.5 (3.6)	117.3 (4.9)	116.5 (2.4)	118.2 (2.3)	119.8 (2.1)

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

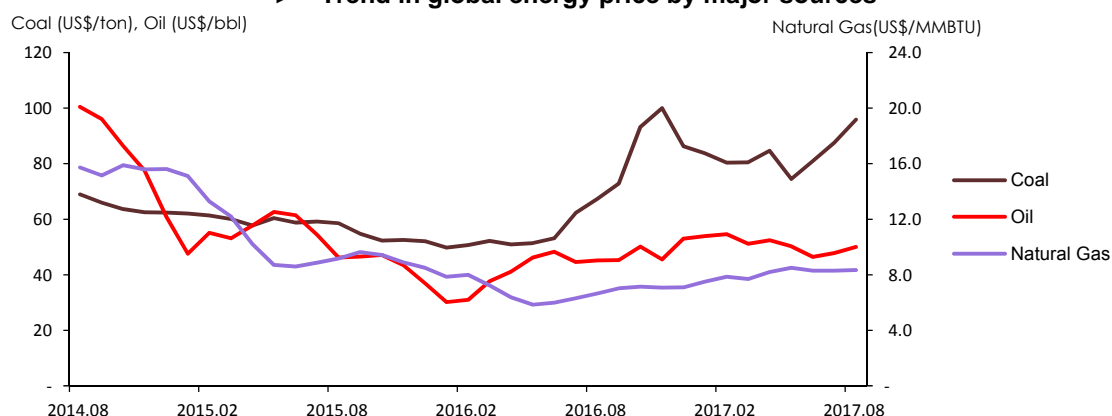
- In August, global oil price went up by 4.7% from the previous month, amid a prospect of the U.S. sanctions on Venezuela and smaller U.S. crude oil inventory
 - The global oil price went up on a rumor that the U.S. government is considering economic sanctions on Venezuelan President Nicholas Maduro, accusing his regime of stronger dictatorial move, and the sanction could include a ban on petroleum trade with the U.S.,
 - The U.S. crude inventory declined by 5.0% from 4.819mbbl on July 28 to 4.578mbbl on August 25, as gasoline consumption increased due to seasonal effect including the holiday.

► Trend in global energy prices

	2015	2016				2017		
			M6	M7	M8	M6	M7	M8
Crude oil (US\$/bbl)	51.0 (-47.0)	43.2 (-15.2)	48.4 (-21.3)	44.6 (-18.0)	45.2 (-2.3)	46.4 (4.0)	47.8 (5.8)	50.1 (10.6)
Natural gas (US\$/MMBTU)	10.2 (-36.3)	6.9 (-32.5)	6.0 (-30.3)	6.3 (-28.7)	6.7 (-27.3)	8.3 (31.3)	8.3 (24.3)	8.3 (18.5)
Coal (US\$/ton)	57.5 (-18.0)	65.9 (14.6)	53.2 (-9.6)	62.3 (5.3)	67.4 (15.0)	81.0 (30.0)	87.5 (29.9)	95.9 (31.5)
Uranium (US\$/lb)	36.7 (9.8)	26.3 (-28.5)	27.2 (-24.9)	25.9 (-28.0)	25.9 (-28.4)	19.7 (-24.1)	- (-100.0)	- (-100.0)

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, IMF (primary commodity price)

► Trend in global energy price by major sources



Domestic energy prices

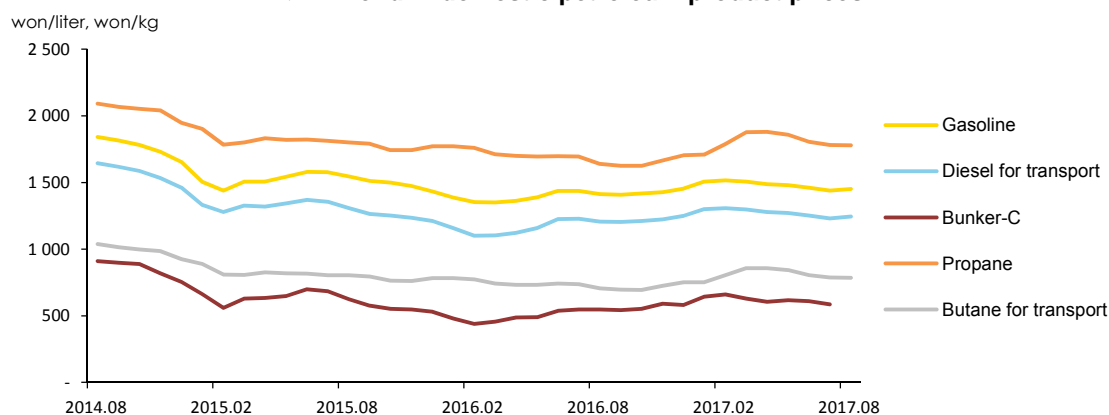
- **Gasoline and diesel prices rose by 0.9% and 1.2% respectively in August compared to the previous month, with the reflection of the increased global oil price from July to August.**
 - Gasoline and diesel prices had decreased for five consecutive months until July, however, the prices rose slightly by around 1% from a month earlier, affected by the two consecutive months of growth in global oil price.
- **Propane and butane prices were flat in August despite falling global prices, partly due to the rising exchange rate**
 - Global propane and butane prices (Aramco's supply price) declined by 10.4% and 6.4% respectively in July from a month earlier.

► Trend in domestic energy prices

	2015	2016	2017			2017	2017	2017
			M6	M7	M8	M6	M7	M8
Gasoline (won/liter)	1 510.4 (-17.3)	1 402.7 (-7.1)	1 437.6 (-9.0)	1 437.2 (-8.8)	1 411.7 (-8.6)	1 461.6 (1.7)	1 438.6 (0.1)	1 451.8 (2.8)
Diesel for transport (won/liter)	1 299.5 (-20.6)	1 182.7 (-9.0)	1 225.3 (-10.5)	1 228.4 (-9.3)	1 207.2 (-7.7)	1 251.5 (2.1)	1 229.8 (0.1)	1 244.9 (3.1)
Bunker-C (won/liter)	612.5 (-31.9)	520.8 (-15.0)	538.5 (-23.1)	547.4 (-20.0)	547.3 (-12.3)	610.4 (13.4)	584.6 (6.8)	- (-100.0)
Propane (won/kg)	1 801.5 (-14.8)	1 689.8 (-6.2)	1 697.6 (-6.8)	1 693.4 (-6.5)	1 637.8 (-9.1)	1 805.9 (6.4)	1 780.9 (5.2)	1 779.4 (8.6)
Butane for transport (won/liter)	806.5 (-23.3)	734.1 (-9.0)	741.2 (-9.3)	736.0 (-8.5)	706.7 (-12.1)	804.7 (8.6)	786.6 (6.9)	785.5 (11.2)

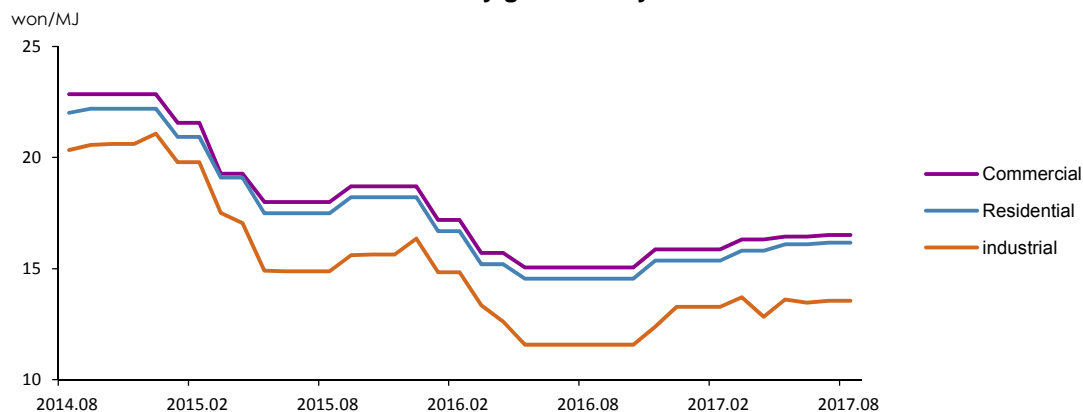
Note: Gasoline, diesel and butane prices are based on charging station prices, Bunker-C oil price is based on dealership price, propane price is based on sales shop price. () is year-on-year growth rates (%)
Source: www.opinet.co.kr

► Trend in domestic petroleum product prices



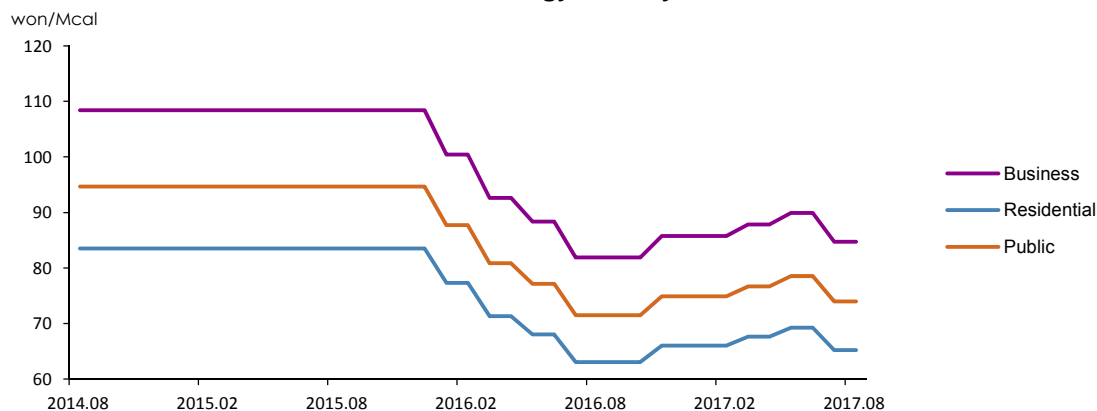
- ☐ **City gas rates were unchanged in August after the rate increase of 0.5% for the residential and commercial use and 0.6% for the industrial use in July.**
 - City gas rates had been on steady rise in line with natural gas price, which kept rising until early this year. Recently, however, city gas rates are flat as natural gas price stays at \$6 per MMBtu.
- ☐ **Heat energy rates remained steady in August after the rates fell by 5.8% for each end-user in July through the calculation of fuel cost.**
 - Heat energy rates for the residential, business and public customers rose by 3.4% each in August on a year-on-year basis, despite the rate decline in July, as the rates have continuously increased for the past one year.

► Trend in city gas rates by end use sectors



Note: Instead of volume(M³), 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 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.

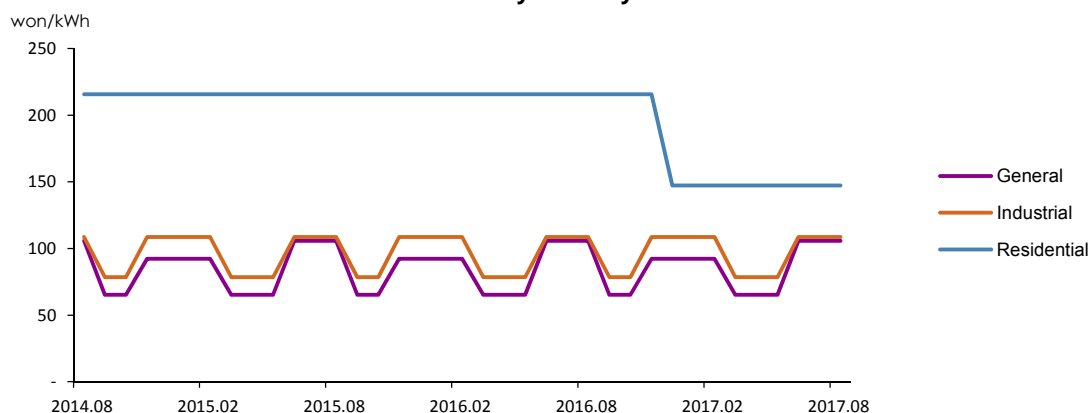
□ **Electricity rates¹ remained steady in August after the rates for general and industrial customers increased according to the seasonal rate change in June.**

- Electricity rates for industrial and general customers increased by 38.2% and 62.1% respectively in June from a month earlier due to the seasonal rate adjustment from spring/autumn (Mar-May, Sept-Oct) to summer (Jun-Aug).

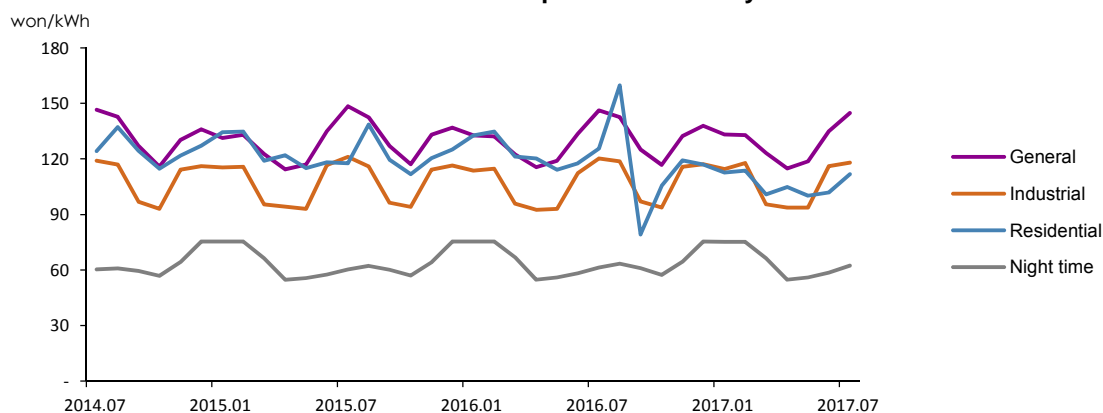
□ **The unit price of electricity for general, industrial and residential customers went up by 7.3%, 1.7% and 9.7% respectively in July from a month earlier.**

- As for the unit price of electricity by end-user sectors, residential customers witnessed the fastest rate increase, because the power demand soared for cooling due to the extreme heatwave in July, and the progressive rate system was applied for households.
- On a year-on-year basis, the unit price of electricity for general, industrial and residential customers fell by 0.9%, 1.8% and 11.0% respectively.

► **Trend in electricity rates by end use sectors**



► **Trend in unit price of electricity**



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

3. Energy Supply

□ **Energy import volume rose by 10.6% year-on-year in June, measured in calories, helped by growing import of bituminous coal and LNG.**

- Energy import (petroleum products, coal, LNG) increased due to the introduction of LNG from the U.S. and growing import of bituminous coal.
- Both crude oil import and the inventory (↑26.8%) increased, as the routine maintenance at some refineries caused a 3.3% decline in crude input.
- Foreign energy dependency ²fell by 0.2%p to 81.7% due to an increase (16.0%) in renewable energy generation.

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

	2015	2016p	2017p				
			M1~6	M1~6	M4	M5	M6
Import volume							
Crude oil (Mbbl)	1 026.2 (10.6)	1 078.1 (5.1)	531.7 (5.9)	542.7 (2.1)	84.5 (-5.8)	92.7 (-0.1)	87.3 (4.0)
Petroleum product (Mbbl)	307.9 (-5.7)	334.6 (8.7)	161.6 (13.0)	159.3 (-1.5)	25.4 (-5.9)	27.2 (5.9)	28.0 (2.4)
Bituminous coal (Mton)	119.4 (1.3)	118.5 (-0.8)	56.1 (-7.3)	65.7 (17.1)	10.5 (9.8)	9.8 (13.6)	11.2 (26.0)
Anthracite (Mton)	8.9 (7.8)	9.4 (5.4)	4.1 (-5.9)	3.4 (-18.5)	0.6 (-30.1)	0.6 (-28.1)	0.5 (-18.7)
LNG (Mton)	33.4 (-10.1)	33.4 (0.2)	16.6 (-3.1)	19.6 (18.1)	2.3 (6.9)	2.5 (12.2)	3.5 (39.7)
Import volume (Mtoe)	314.8 (1.7)	323.1 (2.6)	157.8 (1.4)	169.5 (7.4)	25.9 (3.6)	26.9 (6.0)	27.9 (10.6)
Import value (billion US\$, CIF)	102.7 (-41.0)	80.9 (-21.2)	36.2 (-33.7)	54.4 (50.4)	8.2 (41.2)	8.8 (38.6)	8.7 (37.7)
Domestic production							
Hydropower (TWh)	5.8 (-25.9)	6.6 (14.5)	3.0 (7.3)	3.2 (6.7)	0.5 (9.9)	0.6 (-4.9)	0.6 (8.1)
Anthracite (Mton)	1.8 (0.9)	1.7 (-2.2)	0.9 (-2.5)	0.8 (-6.3)	0.1 (-6.3)	0.1 (-17.5)	0.1 (-3.4)
Natural gas (Mton)	0.1 (-41.5)	0.1 (-18.0)	0.0 (-45.4)	0.1 (200.5)	0.0 (394.0)	0.0 (167.4)	0.0 (391.1)
Renewable energy (Mtoe)	12.8 (17.2)	15.0 (16.4)	7.5 (17.1)	8.7 (16.1)	1.5 (15.0)	1.5 (18.4)	1.4 (18.1)

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

² This foreign energy dependency (the share of imported energy in TPES) above excludes nuclear energy, and when nuclear energy is included, it fell by 1.0%p year-on-year to 93.0% due to lower import of nuclear energy (-3.7%).

4. Energy Consumption

□ Total Primary Energy Supply (“TPES”) rose by 1.9% (year-on-year) in June, led by renewable & other energy, gas and petroleum, although nuclear and coal consumption declined.

- Coal consumption declined in the power generation sector due to the temporary shutdown of some old power plants, and the amount of coal consumed for cement production and industrial anthracite consumption fell as well. Accordingly, the total coal consumption fell by 1.6% year-on-year. Nuclear generation declined by 3.7% following the permanent shutdown of Kori unit1 and increased preventive maintenance.
- Petroleum consumption rose by 2.3% year-on-year as the transport sector consumed more diesel and gasoline amid slower growth of fuel prices, and expanded xylene production led to an increase in naphtha consumption, though the use of bunker-C oil for power generation fell sharply (-71.0%) with its price competitiveness undermined.
- Gas consumption recovered (↑5.7%) as the power generation sector consumed 8.6% more gas amid falling baseload (coal + nuclear) generation along with growing city gas consumption in the buildings and industrial sectors.
- Renewable & other energy consumption went up by 18.1%, boosted by the commissioning of a IGCC plant, and thus, expanded renewable generation.

□ Total Final Consumption (“TFC”) was up 2.5% year-on-year (in June) despite a slower growth in the industrial energy use, as the transport energy use soared.

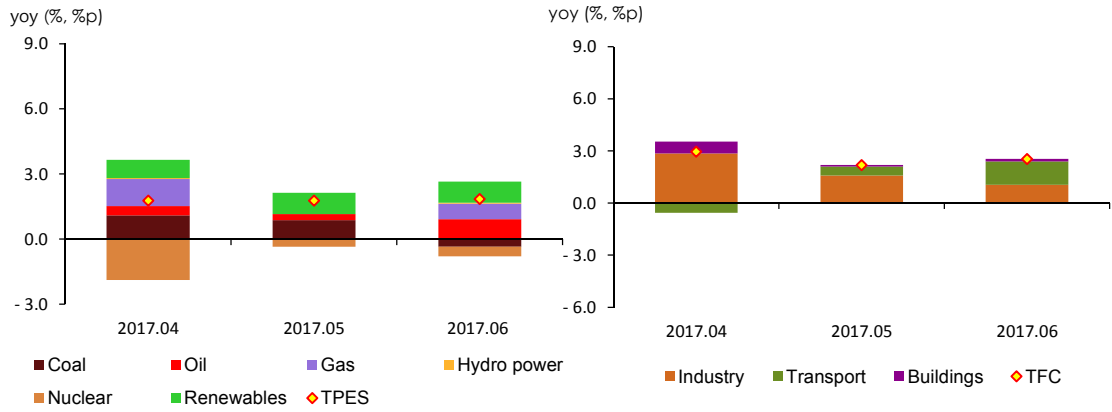
- Industrial energy use grew at slower pace as energy use, especially LPG, declined in the petrochemical sector as the effect of facility extension (PDH) disappeared, though energy use recovered in the primary metals industry amid growing iron & steel production.
- The transport sector led the growth of TFC, as the energy consumption soared in the road transport and aviation sectors amid growing demand on traveling.
- Energy use in buildings went up by 1.0% despite a decline in power use, as petroleum consumption surged, especially diesel, LPG and Kerosene.
- Electricity consumption was flat on a year-on-year basis even amid less power use in buildings, because of growing industrial energy use; the consumption rebounded in the primary metals industry and has grown for six consecutive months in the petrochemical and fabricated metals industries.

► Energy consumption trend

	2015	2016p		2017p			
			M1~6	M1~6	M4	M5	M6
Total energy (Mtoe)	287.5	295.7	146.7	149.3	23.1	23.6	23.0
	(1.6)	(2.9)	(2.5)	(1.7)	(1.8)	(1.8)	(1.9)
Final energy (Mtoe)	218.6	227.1	113.2	116.1	18.3	18.3	17.8
	(2.2)	(3.9)	(3.1)	(2.5)	(3.0)	(2.2)	(2.5)

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

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



5. Coal

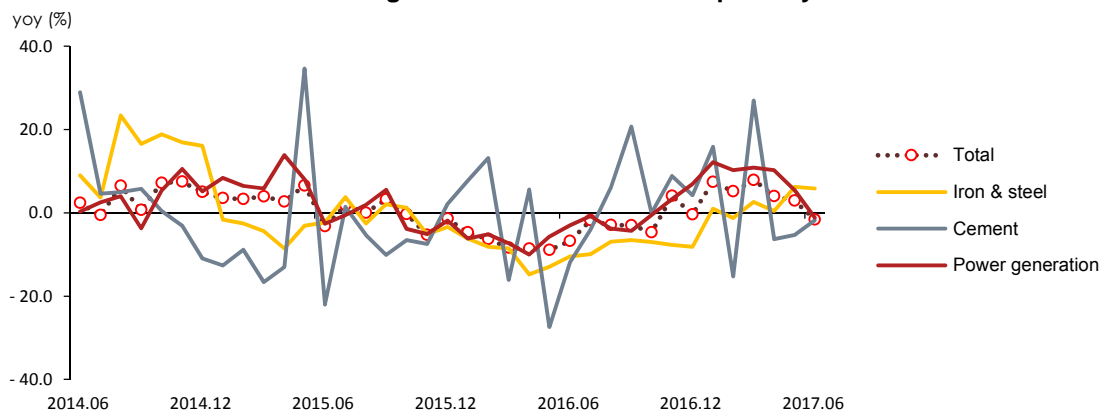
- **Coal consumption went down by 1.6% in June on a year-on-year basis, as the consumption declined in the power generation sector for the first time in eight months, influenced by the government policies.**
 - Coal use decreased in the power generation (transformation) sector due to the temporary shutdown of some old power plants along with increased preventive maintenance.
 - Industrial coal use also declined due to less use of anthracite and coal for cement production, even though the steelmaking industry consumed much more amount of coal.

► Coal consumption trend

	2015	2016p	2017p				
			M1~6	M1~6	M4	M5	M6
Coal (Mton)	134.8	129.0	61.9	64.6	10.0	10.5	10.0
	(1.1)	(-4.4)	(-7.3)	(4.4)	(4.0)	(2.9)	(-1.6)
Industry	50.9	47.7	22.8	22.4	3.6	3.9	3.6
	(-1.0)	(-6.2)	(-8.9)	(-1.4)	(-5.3)	(-1.0)	(-2.2)
Buildings	1.5	1.3	0.5	0.4	0.0	0.0	0.0
	(-9.6)	(-14.8)	(-14.6)	(-18.3)	(-7.7)	(-29.2)	(-33.3)
Power generation	82.5	80.0	38.6	41.7	6.4	6.6	6.3
	(2.8)	(-3.0)	(-6.2)	(8.0)	(10.2)	(5.4)	(-1.2)

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 made a year-on-year growth of 2.3% in June, led by the transport and buildings sectors, although the industrial energy use grew at slower rate.**

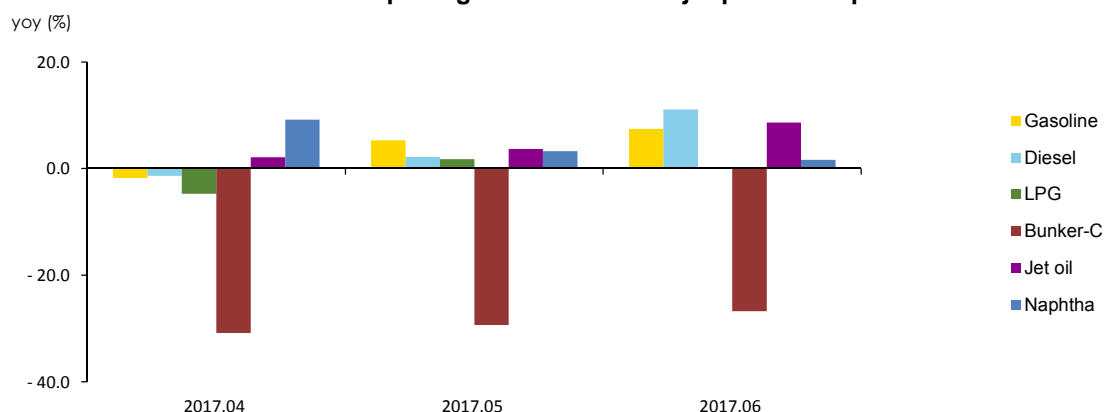
- The growth rate of the industrial petroleum use has been falling for three straight months due to less use of LPG and slower growth of naphtha use.
- The transport sector led the growth of petroleum consumption, as petroleum use soared for road transport and aviation amid growing demand on traveling.
- Petroleum consumption increased in the buildings sector; diesel, kerosene and LPG were all more used, and in the case of LPG, the consumption increased for the first time in four months.
- Petroleum consumption continued to decline in the transformation sector because of higher bunker-C oil price and the base effect of a surge during the same month last year.

► Trend in petroleum product consumption by end-use sectors

	2015	2016p		2017p			
			M1~6	M1~6	M4	M5	M6
Petroleum (Mbbbl)	856.2	924.2	451.4	458.4	71.9	76.8	74.5
	(4.2)	(7.9)	(8.1)	(1.5)	(1.6)	(1.1)	(2.3)
Industry	501.0	542.6	261.6	275.6	43.0	46.3	45.0
	(1.9)	(8.3)	(7.3)	(5.3)	(8.6)	(2.4)	(0.9)
Transport	287.1	303.6	147.9	148.7	24.6	26.3	25.6
	(6.8)	(5.7)	(6.1)	(0.5)	(-3.0)	(2.1)	(6.8)
Buildings	53.5	56.3	29.2	28.4	3.9	3.6	3.5
	(11.7)	(5.2)	(8.2)	(-2.7)	(-3.0)	(1.4)	(13.6)
Power generation	14.6	21.8	12.7	5.7	0.5	0.6	0.5
	(13.0)	(48.7)	(73.5)	(-55.0)	(-74.3)	(-58.4)	(-61.9)

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 was up 5.7% in June on a year-on-year basis, as the consumption rose dramatically in the power generation sector, driven by government policies.**
 - Gas-fired generation rose by over 8%, leading the growth of the total gas consumption, affected by the temporary shutdown of some old coal-fired power plants. although power demand was unchanged from the same period last year.
- **City gas consumption has grown at slower pace for two months in a row due to slower growth of the industrial gas consumption, although the consumption slightly increased in the buildings sector**
 - Industrial gas consumption made a small increase, affected by much slower growth in the other manufacturing sector.

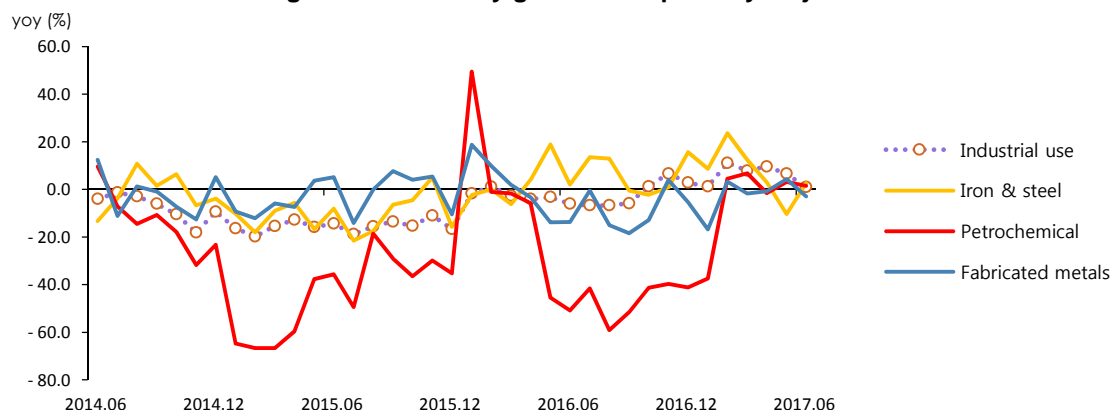
► **Trend in natural gas and city gas consumption**

	2015	2016p	2017p				
			M1~6	M1~6	M4	M5	M6
LNG (Mton)	33.4	34.9	17.9	18.5	2.5	2.1	2.3
	(-8.7)	(4.2)	(-2.0)	(3.5)	(9.7)	(-0.2)	(5.7)
Power generation	14.6	15.3	6.9	7.3	1.0	1.0	1.3
	(-8.2)	(5.3)	(-8.2)	(5.6)	(15.8)	(-1.9)	(8.6)
City gas production	16.9	17.4	9.8	10.0	1.3	1.0	0.9
	(-6.9)	(2.7)	(1.5)	(2.5)	(7.3)	(1.5)	(1.4)
City gas (bm³)	20.8	21.3	12.3	12.6	1.8	1.3	1.1
	(-5.9)	(2.3)	(1.1)	(2.8)	(7.3)	(1.7)	(1.1)
Industry	7.3	7.2	3.7	4.0	0.7	0.6	0.5
	(-15.5)	(-1.9)	(-2.6)	(6.3)	(9.7)	(6.6)	(0.9)
Buildings	12.2	12.8	8.0	8.1	1.1	0.6	0.5
	(0.5)	(5.1)	(3.2)	(1.5)	(6.8)	(-2.2)	(1.8)

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

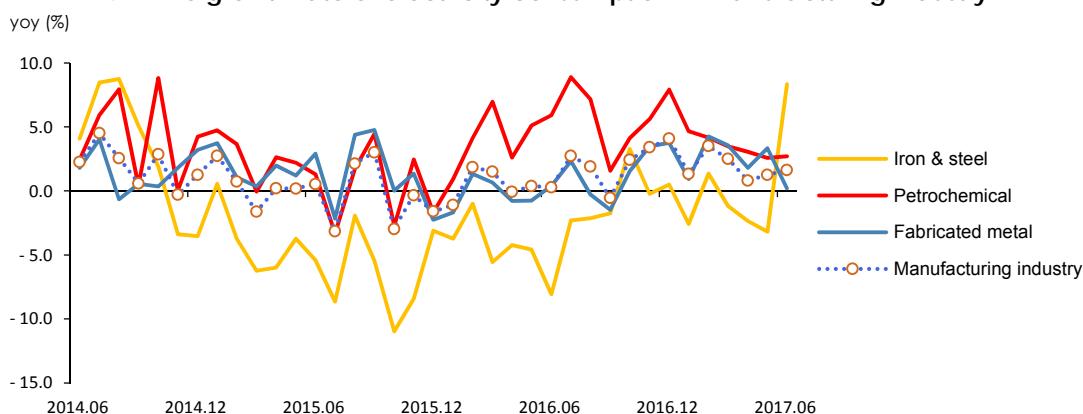
- Electricity consumption was flat in June compared to the same month last year, despite a decent recovery in the industrial sector, as the buildings sector consumed less.
 - Industrial electricity consumption rose by around 2% as the consumption rebounded in the primary metals industry for the first time in four months and the fabricated metals industry recorded six consecutive months of growth in power use, although the growth rate slightly declined.
 - Electricity consumption in buildings decreased for the first time in three months, because the consumption declined in the commercial and public buildings and was unchanged in the residential buildings on a year-on-year basis.

► Trend in electricity consumption by end-use sectors

	2015	2016p	2017p				
			M1~6	M1~6	M4	M5	M6
Electricity (TWh)	483.7	497.0	248.5	251.4	40.8	38.7	39.7
	(1.3)	(2.8)	(1.7)	(1.2)	(1.7)	(1.3)	(0.0)
Industry	265.6	270.0	134.1	136.9	22.6	22.3	22.6
	(0.4)	(1.6)	(0.7)	(2.1)	(1.1)	(1.5)	(2.5)
Transport	2.2	2.7	1.3	1.3	0.2	0.2	0.2
	(10.7)	(21.3)	(23.4)	(2.1)	(2.7)	(5.3)	(5.5)
Buildings	215.8	224.4	113.1	113.2	18.0	16.2	16.9
	(2.3)	(4.0)	(2.6)	(0.1)	(2.5)	(1.0)	(-3.2)

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

► The growth rate of electricity consumption in manufacturing industry

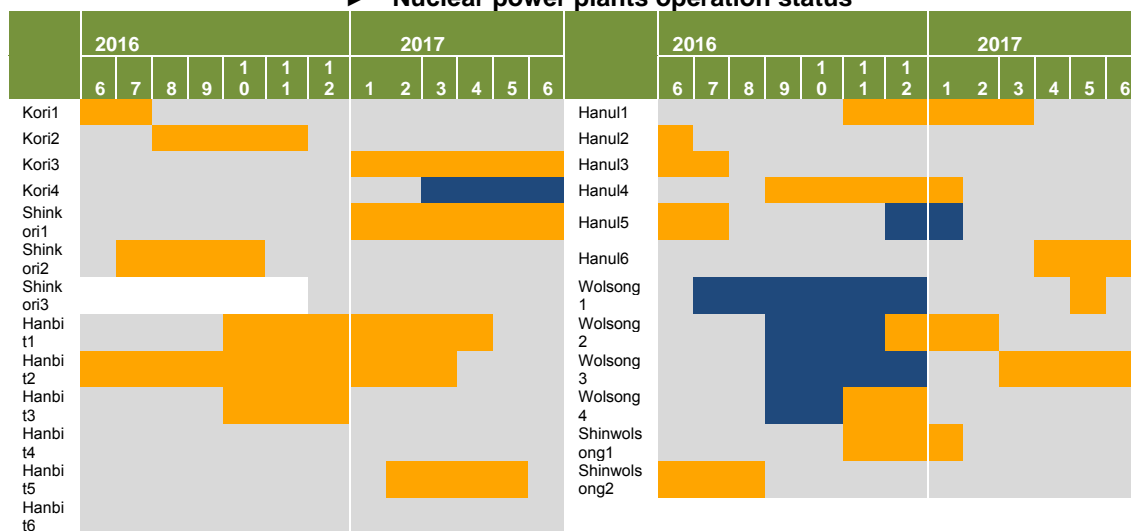


9. Nuclear energy

- **Nuclear generation fell by 3.7% in June on a year-on-year basis due to the permanent shutdown of Kori unit1 and increased preventive maintenance.**

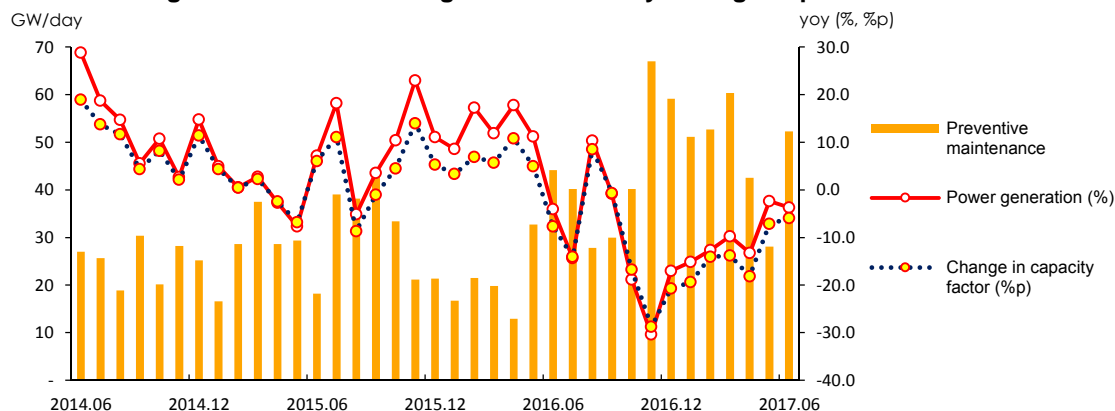
- The number of nuclear reactors fell to 24 (22.5GW), as Kori unit1 was permanently shut down on June 17, 2017 according to the permission of the Nuclear Safety and Security Commission on the permanent cease of operation.
- Nuclear capacity factors decreased by 5.9%p to 77.0% compared to the same month last year partly due to the increased planned preventive maintenance (18.5%, 8.2GW). Nuclear's share of the total power generation fell by 1.4%p to 29.1%.
- Though the nuclear generation has been decreasing for 10 consecutive months, such downward trend slowed down for the recent two months (-3.7%) due to the lower growth rate of planned preventive maintenance, which had previously soared year-on-year from H2, 2016 to H1, 2017.

► **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

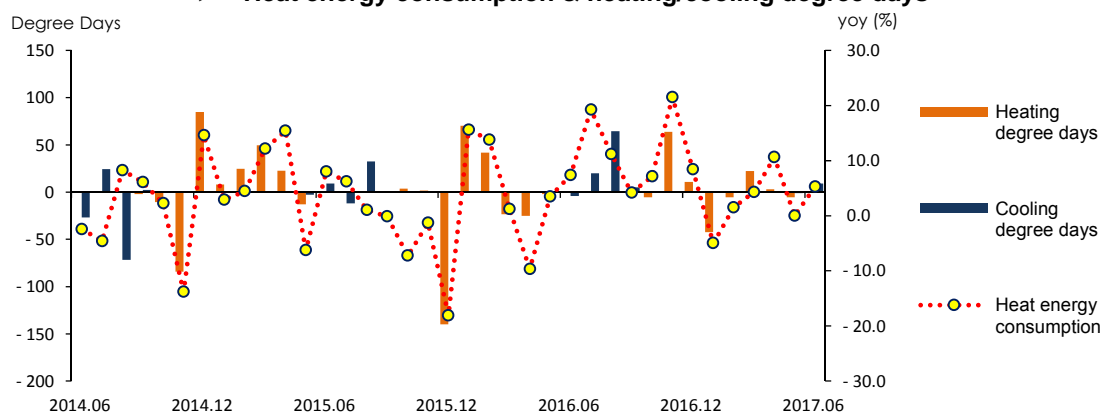
□ **Heat energy consumption went up by 5.2% in June on a year-on-year basis despite a decline in the commercial sector, as the consumption increased in the residential sector.**

- Commercial heat energy use declined (-18.5%) due to the base effect of a surge during the same month last year. Meanwhile, heat energy use rose by 14.2% in the residential sector, which takes up large part of the total consumption, offsetting the drop in commercial use.

□ **Renewable and other energy consumption rose by 17.3% (in June) on a year-on-year basis, backed by a continuous surge in renewable energy generation.**

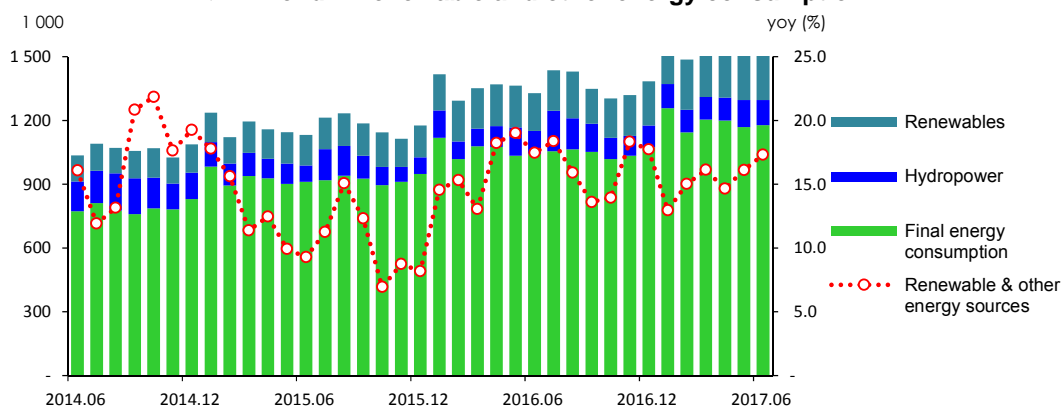
- Hydropower generation increased by 8.1% (599.0GWh) despite comparably smaller amount of rainfall (60.7mm, 90.1% of the record during the same month last year)
- Renewable energy generation soared by over 40% with the help of a continuous surge in solar PV, wind and bioenergy generation along with the commissioning of a new IGCC plant (2016.8), and the share of renewable energy in TFC has been growing at the rate of over 10%.

► 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

- **Industrial energy use increased by 1.6% year-on-year in June, led by the primary metals industry, although the energy use decreased in the petrochemical industry.**
 - The primary metals industry consumed 5.8% more energy in June on a year-on-year basis, leading the growth of industrial energy use; coking coal consumption has risen for two months in a row (5.8%), and electricity consumption also increased (8.3%), affected by growing domestic demand and export of iron & steel products.
 - Coking coal consumption rose by 5.8% year-on-year in June along with the increased output of pig iron (11.2%) and converter steel products.

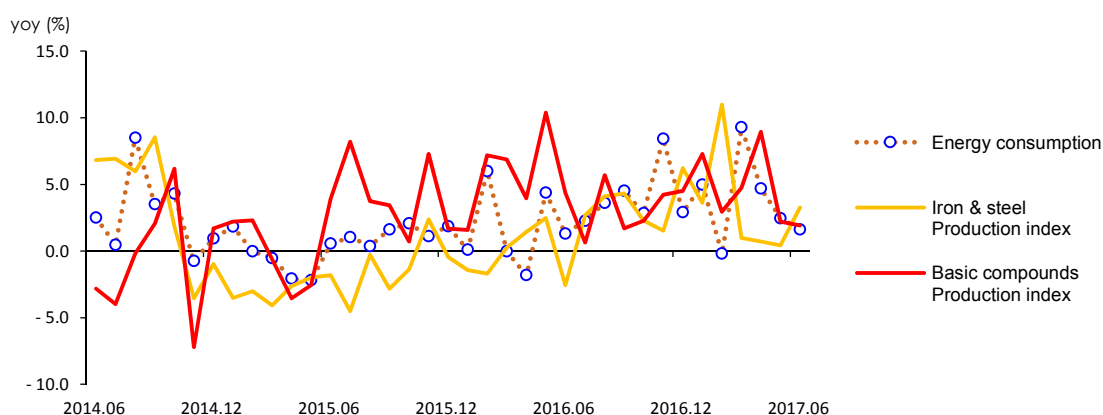
► **Trend in the industrial energy consumption**

	2015	2016p	2017p				
			M1~6	M1~6	M4	M5	M6
Industry (Mtoe)	136.7	140.6	68.6	71.2	11.4	11.9	11.5
	(0.5)	(2.8)	(1.6)	(3.8)	(4.7)	(2.5)	(1.6)
Petrochemical	61.7	65.8	32.0	33.5	5.2	5.6	5.4
	(-0.6)	(6.7)	(6.5)	(4.8)	(7.3)	(2.5)	(-0.3)
- Naptha	50.4	52.7	25.8	27.3	4.2	4.5	4.3
	(3.7)	(4.7)	(3.7)	(5.8)	(9.2)	(3.3)	(1.7)
Iron & Steel	31.4	29.0	14.2	14.5	2.3	2.4	2.5
	(-2.6)	(-7.6)	(-8.9)	(2.2)	(0.3)	(3.9)	(5.8)
Fabricated metal	10.6	10.6	5.3	5.5	0.9	0.9	0.9
	(-1.1)	(0.4)	(0.4)	(2.8)	(3.2)	(5.0)	(2.6)
Share of feedstock (%)	59.0	57.7	57.7	57.9	56.4	58.5	58.6

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

Source: Monthly energy statistics

► **Industrial energy consumption & production index**



12. Transport

□ Transport energy use went up by 6.8% year-on-year in June, led by the road transport and aviation sectors.

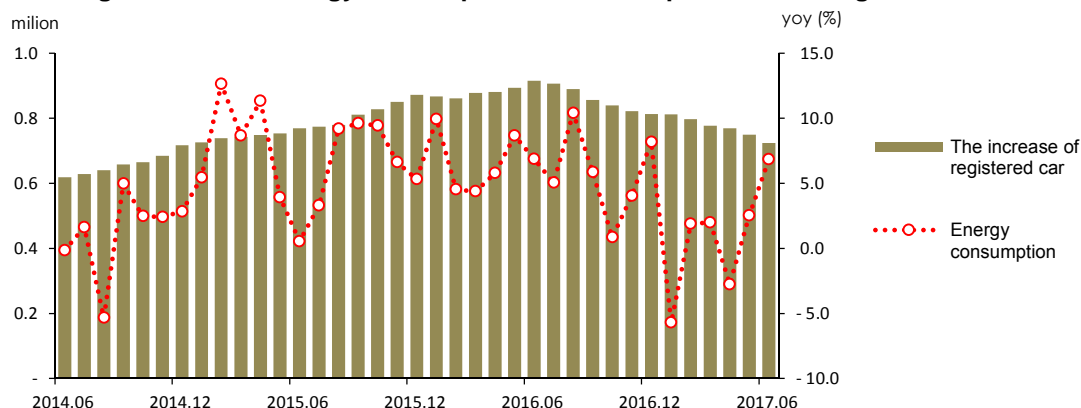
- Global oil price fell by 4.0% year-on-year in June, and domestic prices of gasoline, diesel, bunker-C oil and butane for transport rose by 1.7%, 2.1%, 13.4% and 8.6% respectively, although the growth was much slower.
- The road transport sector led the growth of transport energy use with a rapid increase in gasoline and diesel consumption (7.4%, 10.3%), affected by much slower growth in petroleum product prices and increased number of registered cars (3.4%) and heavier highway traffic (3.4%).
- The domestic navigation sector consumed 4.8% less energy in June compared to the same month last year, despite increased cargo volume, due to the restructuring of the shipping industry.
- The aviation sector posted this year's highest growth rate in energy use (8.5%), amid growing demand on air travel and flights to/from Jeju island during Memorial Day interspersed with work days and also affected by expanded air cargo volume including semi-conductors.
- In terms of the contribution to the energy consumption growth, road transport accounted for 6.3%p, followed by aviation 0.9%p, railways 0.0%p and domestic navigation -0.4%.

► The growth rate of petroleum consumption in the transport sector

	2015	2016p	2017p				
			M1~6	M6	M4	M5	M6
Transport (Mtoe)	40.3	42.8	20.9	3.6	3.5	3.7	3.6
	(7.1)	(6.2)	(6.7)	(6.8)	(-2.8)	(2.5)	(6.8)
Road	32.8	34.4	16.8	3.0	2.8	3.0	3.0
	(5.6)	(5.1)	(6.0)	(7.8)	(-4.3)	(3.2)	(7.8)
Navigation	2.9	3.4	1.6	0.2	0.3	0.3	0.2
	(27.0)	(13.8)	(10.9)	(-4.8)	(7.7)	(-0.9)	(-4.8)
Aviation	4.3	4.7	2.3	0.4	0.4	0.4	0.4
	(7.5)	(9.1)	(8.1)	(8.5)	(2.0)	(0.2)	(8.5)
Rail	0.3	0.3	0.2	0.0	0.0	0.0	0.0
	(2.2)	(8.3)	(12.2)	(1.2)	(-0.0)	(1.4)	(1.2)

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

► The growth rate of energy consumption in the transport sector & registered car status



13. Buildings

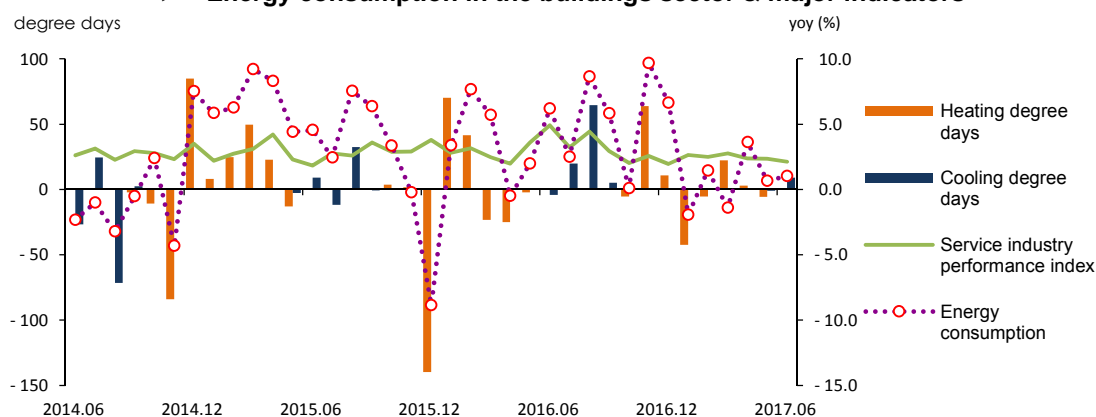
- **Energy consumption in the buildings sector was up 1.0% year-on-year in June along with growing petroleum and city gas consumption, though electricity and coal consumption declined.**
 - Energy use in buildings increased, especially petroleum and city gas, even after the price increase.
 - As for the residential energy use by sources, petroleum, city gas and heat energy use rose by 10.3%, 4.0% and 14.5% respectively, and electricity was flat (-0.0%) while briquette use declined by 33.3% on a year-on-year basis.
 - Energy use in commercial buildings posted faster growth (0.8%) in June than the previous month, because of a surge in petroleum use (18.5%) and increased power use (0.8%). Meanwhile, city gas and heat energy use declined (-0.6%, -18.5%).
 - Energy use in public buildings decreased due to a sharp decline in city gas and electricity use (-20.2%, -21.1%), although petroleum use increased (12.3%).

► Energy consumption trend in the buildings sector

	2015	2016p	2017p				
			M1~6	M1~6	M4	M5	M6
Buildings (Mtoe)	41.6	43.7	23.8	23.9	3.4	2.7	2.6
	(3.6)	(5.0)	(4.3)	(0.3)	(3.6)	(0.7)	(1.0)
Residential	20.1	21.2	12.2	12.2	1.7	1.1	1.0
	(1.7)	(5.7)	(5.1)	(-0.1)	(4.5)	(-1.3)	(3.5)
Commercial	16.4	17.0	8.7	8.8	1.3	1.1	1.2
	(4.0)	(3.6)	(1.7)	(0.7)	(2.8)	(0.4)	(2.5)
Public:others	5.2	5.5	2.9	2.9	0.4	0.4	0.4
	(10.1)	(6.7)	(9.0)	(0.7)	(2.6)	(7.4)	(-7.4)

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

► Energy consumption in the buildings sector & major indicators



14. Transformation

- Energy use for power generation made a year-on-year decline of 0.3% in June, as coal-fired and nuclear generation decreased while gas-fired generation increased.
 - Less energy was consumed for power generation, even though the total power generation rose by 1.0%, due to expanded share of highly efficient gas-fired generation.

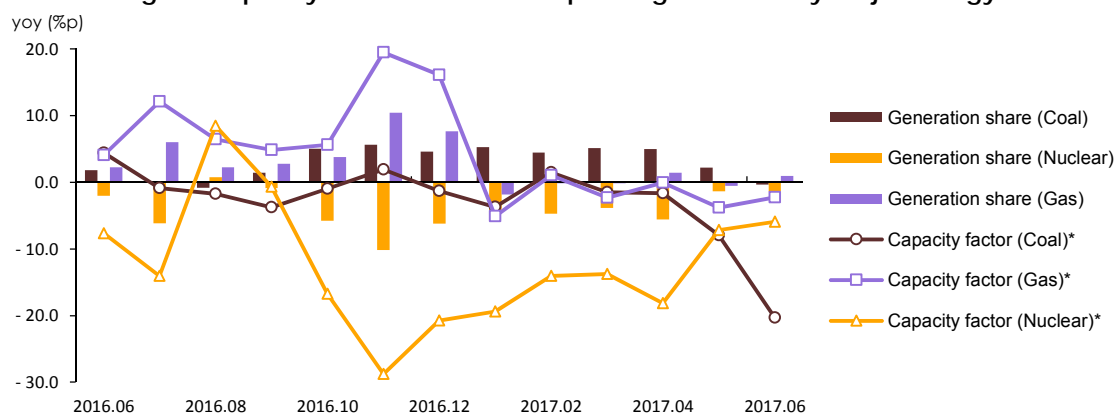
► Energy consumption in the power generation sector

	2015	2016p	2017p				
			M1~6	M1~6	M4	M5	M6
Input (Mtoe)	109.6	110.2	54.6	54.7	8.5	8.7	8.6
	(1.4)	(0.5)	(0.8)	(0.1)	(-0.2)	(0.8)	(-0.3)
Coal	50.6	49.0	23.7	25.6	3.9	4.0	3.9
	(2.7)	(-3.1)	(-6.2)	(8.1)	(10.4)	(5.6)	(-1.1)
Oil	2.0	3.0	1.8	0.7	0.1	0.1	0.1
	(16.6)	(50.1)	(78.6)	(-61.4)	(-78.1)	(-67.1)	(-67.8)
Gas	19.3	20.3	9.2	9.7	1.3	1.3	1.7
	(-8.1)	(5.2)	(-8.2)	(5.9)	(15.9)	(-1.4)	(9.0)
Nuclear	34.8	34.2	18.3	16.5	2.8	2.9	2.6
	(5.3)	(-1.7)	(10.2)	(-9.7)	(-13.2)	(-2.4)	(-3.7)
Hydro/other renewables	3.0	3.7	1.8	2.2	0.4	0.4	0.4
	(-5.5)	(24.2)	(22.6)	(26.3)	(26.0)	(26.0)	(32.9)

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

	2014	2015	2016				2017		
			4Q	1Q	2Q		4Q	1Q	2Q
GDP (trillion won)	1 427.0 (3.3)	1 466.8 (2.8)	386.6 (3.2)	355.5 (2.9)	378.6 (3.4)	1 508.3 (2.8)	395.9 (2.4)	365.8 (2.9)	388.8 (2.7)
Private consumption	692.2 (1.7)	707.5 (2.2)	181.8 (3.4)	181.9 (2.3)	176.6 (3.5)	725.0 (2.5)	184.6 (1.5)	185.6 (2.0)	180.5 (2.2)
Facilities investment	134.0 (6.0)	140.3 (4.7)	36.0 (3.1)	31.9 (-4.6)	35.2 (-2.9)	137.0 (-2.3)	36.8 (2.0)	36.5 (14.4)	41.3 (17.3)
Construction investment	198.5 (1.1)	211.5 (6.6)	58.2 (9.6)	44.7 (9.0)	62.4 (10.6)	234.2 (10.7)	64.9 (11.6)	49.7 (11.3)	67.4 (8.0)
Consumer price index (2010=100)	99.3	100.0	100.1	100.6	100.8	101.0	101.5	102.7	102.7
USD to KRW exchange rate (won)	1 052.8	1 131.0	1 157.5	1 202.4	1 163.2	1 160.8	1 156.4	1 154.9	1 129.4
Benchmark rate (%)	2.3	1.6	1.5	1.5	1.4	1.4	1.3	1.3	1.3
Coincident composite index (2010=100)	113.6	117.3	119.2	119.5	120.5	121.1	122.7	124.2	125.2
Mining & manufacturing production index (2010=100)	108.4	108.1	111.7	105.6	109.7	109.2	114.8	109.5	110.3
Manufacturing operation ratio index (2010=100)	94.3	92.4	93.9	89.1	92.3	90.4	93.5	88.2	91.2
Average temperature	13.3	13.6	8.7	1.3	19.1	13.6	8.0	1.4	18.9
- year-on-year difference	0.9	0.2	1.4	- 0.8	0.5	- 0.0	- 0.6	0.1	- 0.2
Heating degree days	2 501.6 (-13.5)	2 459.1 (-1.7)	866.1 (-13.5)	1 513.2 (6.2)	140.9 (-16.2)	2 589.7 (5.3)	935.3 (8.0)	1 487.5 (-1.7)	138.6 (-1.6)
Cooling degree days	125.4 (-35.6)	151.8 (21.1)	- n.a	- n.a	10.2 (-24.4)	238.1 (56.9)	- n.a	- n.a	18.2 (78.4)
Energy intensity	0.20 (-2.4)	0.20 (-1.1)	0.19 (-2.1)	0.22 (0.4)	0.18 (-1.7)	0.20 (0.0)	0.19 (0.5)	0.22 (-1.2)	0.18 (-0.9)
Per capita consumption									
oil (bbl)	16.2 (-1.1)	16.8 (3.7)	4.5 (6.5)	4.5 (7.2)	4.3 (8.0)	18.0 (7.5)	4.8 (6.8)	4.6 (1.0)	4.3 (1.3)
Electricity (MWh)	9.4 (-0.1)	9.5 (0.7)	2.3 (-1.4)	2.5 (1.4)	2.3 (1.0)	9.7 (2.3)	2.4 (3.1)	2.6 (0.9)	2.3 (0.6)
City gas (1 000 m ³)	0.4 (-8.1)	0.4 (-6.4)	0.1 (-11.6)	0.2 (2.7)	0.1 (-3.2)	0.4 (1.8)	0.1 (6.9)	0.2 (1.9)	0.1 (3.5)
Total energy (toe)	5.6 (0.3)	5.6 (1.1)	1.5 (0.5)	1.5 (2.8)	1.3 (1.2)	5.8 (2.4)	1.5 (2.4)	1.5 (1.3)	1.4 (1.4)

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

(2010=100)

2010=100

	2015	2016					2017			
			M1~6	M4	M5	M6	M1~6	M4	M5	M6
Industrial production index										
All industry	110.0 (1.9)	113.3 (3.0)	111.0 (2.7)	110.3 (0.7)	112.4 (4.7)	117.0 (4.4)	114.6 (3.2)	114.2 (3.5)	115.3 (2.6)	119.0 (1.7)
Mining & manufacturing	108.1 (-0.3)	109.2 (1.0)	107.7 (0.3)	107.2 (-2.7)	110.2 (4.4)	111.8 (0.9)	109.9 (2.1)	109.2 (1.9)	110.5 (0.3)	111.2 (-0.5)
Iron & steel	110.9 (-2.0)	112.7 (1.6)	110.3 (-0.2)	112.8 (1.4)	116.5 (2.5)	110.7 (-2.6)	113.8 (3.1)	113.6 (0.7)	117.0 (0.4)	114.3 (3.3)
Cement	125.8 (19.4)	134.3 (6.8)	128.4 (7.8)	145.7 (8.3)	148.7 (6.8)	152.2 (8.3)	137.2 (6.8)	151.7 (4.1)	158.4 (6.5)	133.8 (-12.1)
Basic compound	115.5 (2.2)	120.5 (4.4)	119.0 (5.7)	113.0 (4.0)	122.2 (10.4)	119.4 (4.4)	124.6 (4.6)	123.1 (8.9)	124.9 (2.2)	121.7 (1.9)
Transport equipment	120.8 (1.2)	117.4 (-2.8)	120.2 (-1.8)	120.3 (-8.6)	119.9 (3.1)	126.5 (-4.0)	119.8 (-0.3)	123.0 (2.2)	116.6 (-2.8)	123.2 (-2.6)
Electric & electronic	95.6 (-3.3)	96.6 (1.1)	94.5 (-0.5)	94.1 (-5.7)	95.2 (5.5)	96.9 (-4.2)	94.0 (-0.5)	93.9 (-0.2)	92.8 (-2.5)	98.5 (1.7)
Service	112.1 (2.9)	115.5 (3.0)	113.4 (3.2)	113.8 (2.0)	115.5 (3.6)	117.3 (4.9)	116.2 (2.5)	116.5 (2.4)	118.2 (2.3)	119.8 (2.1)
Operating ratio index										
Manufacturing	92.4 (-2.0)	90.4 (-2.1)	90.7 (-2.2)	90.4 (-5.9)	93.1 (1.1)	93.4 (-4.1)	89.7 (-1.1)	90.5 (0.1)	91.2 (-2.0)	91.9 (-1.6)
Iron & steel	100.2 (-2.4)	103.4 (3.2)	100.5 (1.8)	101.4 (3.6)	105.9 (3.0)	99.9 (-2.3)	105.3 (4.8)	104.4 (3.0)	108.5 (2.5)	104.4 (4.5)
Cement	108.8 (8.3)	129.8 (19.4)	124.4 (18.2)	142.5 (28.1)	144.1 (14.5)	147.6 (20.5)	131.9 (6.0)	145.6 (2.2)	154.0 (6.9)	128.8 (-12.7)
Basic compound	91.1 (-1.8)	94.1 (3.3)	93.5 (4.6)	89.4 (4.8)	95.8 (9.7)	93.3 (2.5)	95.8 (2.4)	94.6 (5.8)	95.5 (-0.3)	93.6 (0.3)
Transport equipment	105.0 (1.5)	97.2 (-7.4)	101.3 (-4.8)	101.3 (-13.8)	100.3 (-0.9)	108.3 (-8.1)	100.3 (-1.0)	106.3 (4.9)	98.7 (-1.6)	105.6 (-2.5)
Electric & electronic	91.4 (1.0)	92.2 (0.8)	89.6 (-0.6)	86.3 (-11.4)	89.3 (3.7)	90.2 (-5.1)	89.9 (0.3)	91.0 (5.4)	90.9 (1.8)	94.2 (4.4)

Note: p means provisional
Source: Monthly energy statistics

International Energy Prices

	2015	2016					2017			
		M1~8	M6	M7	M8	M1~8	M6	M7	M8	
Crude oil (USD/bbl)										
WTI	48.8 (-47.5)	43.3 (-11.2)	40.8 (-21.0)	48.9 (-18.4)	44.8 (-12.0)	44.8 (4.5)	49.4 (21.0)	45.2 (-7.5)	46.7 (4.2)	48.1 (7.3)
Dubai	50.8 (-47.5)	41.2 (-18.8)	38.3 (-30.5)	46.3 (-23.9)	42.5 (-23.5)	43.6 (-8.6)	50.8 (32.6)	46.5 (0.4)	47.6 (11.9)	50.2 (15.1)
Brent	53.6 (-46.1)	45.0 (-16.0)	42.5 (-26.3)	49.9 (-21.7)	46.5 (-18.0)	47.2 (-2.2)	52.2 (22.9)	47.6 (-4.8)	49.2 (5.6)	51.9 (10.0)
Unit value of import (C&F)	53.3 (-47.5)	41.0 (-23.0)	38.4 (-32.9)	45.0 (-29.1)	46.0 (-24.5)	43.8 (-19.8)	45.5 (18.4)	49.9 (11.0)	47.4 (3.1)	- -
LNG										
From Indonesia (USD/MMBTU)	10.2 (-36.3)	6.9 (-32.6)	6.8 (-37.0)	6.0 (-30.3)	6.3 (-28.7)	6.7 (-27.3)	8.1 (19.1)	8.3 (38.6)	8.3 (31.2)	8.3 (25.0)
Unit value of import (USD/ton, CIF)	549.1 (-35.3)	356.9 (-35.0)	348.0 (-39.9)	296.9 (-37.3)	306.5 (-33.5)	330.9 (-31.2)	414.1 (19.0)	407.8 (37.3)	407.9 (33.1)	- -
Bituminous coal (USD/ton)										
From Australia	57.5 (-18.0)	65.9 (14.5)	54.7 (-8.5)	53.2 (-9.6)	62.3 (5.3)	67.4 (15.0)	83.5 (52.6)	81.0 (52.3)	87.5 (40.5)	95.9 (42.3)
Unit value of import (CIF)	73.9 (-19.8)	68.8 (-6.8)	61.2 (-21.0)	60.6 (-20.2)	62.2 (-13.1)	63.6 (-8.2)	107.9 (76.4)	116.3 (92.0)	101.5 (63.2)	- -
Petroleum product (USD/bbl)										
Gasoline	69.4 (-37.4)	56.2 (-19.1)	53.4 (-27.6)	59.1 (-30.2)	51.8 (-32.6)	54.2 (-18.3)	65.7 (23.0)	59.8 (1.2)	61.8 (19.2)	67.5 (24.5)
Kerosene	64.7 (-42.5)	52.8 (-18.3)	49.7 (-28.3)	58.4 (-21.6)	54.5 (-18.5)	53.6 (-5.7)	62.3 (25.3)	57.0 (-2.2)	59.8 (9.6)	63.1 (17.8)
Diesel	66.6 (-41.6)	53.0 (-20.4)	49.8 (-30.2)	59.1 (-24.0)	55.0 (-20.9)	54.1 (-11.1)	63.5 (27.4)	58.4 (-1.2)	61.5 (11.7)	64.3 (18.9)
Bunker-C	45.2 (-47.7)	35.4 (-21.6)	31.1 (-38.5)	37.0 (-34.5)	37.3 (-23.9)	37.3 (-4.5)	47.6 (52.7)	45.3 (22.6)	46.1 (23.7)	47.3 (26.9)
Propane	416.3 (-47.4)	323.3 (-22.3)	309.4 (-28.6)	330.0 (-18.5)	295.0 (-25.3)	285.0 (-21.9)	423.8 (37.0)	385.0 (16.7)	345.0 (16.9)	420.0 (47.4)
Butane	436.7 (-46.1)	355.8 (-18.5)	340.0 (-24.9)	365.0 (-17.0)	310.0 (-27.1)	290.0 (-27.5)	473.8 (39.3)	390.0 (6.8)	365.0 (17.7)	460.0 (58.6)
Naphtha	52.5 (-44.3)	42.5 (-19.0)	40.3 (-27.2)	45.3 (-24.8)	41.6 (-23.0)	39.9 (-14.9)	50.5 (25.2)	44.8 (-1.2)	45.7 (9.8)	50.3 (26.1)

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)

	2015	2016p					2017p			
			M1~6	M4	M5	M6	M1~6	M4	M5	M6
Coal (Mton)	134.8 (1.1)	129.0 (-4.4)	61.9 (-7.3)	9.6 (-8.7)	10.2 (-8.9)	10.1 (-6.8)	64.6 (4.4)	10.0 (4.0)	10.5 (2.9)	10.0 (-1.6)
- Coking coal excluded	98.1 (2.5)	95.5 (-2.6)	45.7 (-6.2)	7.0 (-6.2)	7.5 (-7.4)	7.4 (-5.4)	48.0 (5.0)	7.4 (5.3)	7.6 (1.7)	7.1 (-4.3)
Oil (Mbbl)	856.2 (4.2)	924.2 (7.9)	451.4 (8.1)	70.8 (2.7)	75.9 (14.2)	72.9 (8.9)	458.4 (1.5)	71.9 (1.6)	76.8 (1.1)	74.5 (2.3)
- Non-energy oil excluded	411.7 (6.0)	458.0 (11.2)	223.2 (12.1)	36.6 (12.2)	36.8 (13.6)	34.7 (14.2)	219.5 (-1.7)	34.8 (-4.9)	36.8 (-0.2)	36.2 (4.1)
LNG (Mton)	33.4 (-8.7)	34.9 (4.2)	17.9 (-2.0)	2.2 (-13.5)	2.1 (-6.2)	2.1 (-0.6)	18.5 (3.5)	2.5 (9.7)	2.1 (-0.2)	2.3 (5.7)
Hydro (TWh)	5.8 (-25.9)	6.6 (14.5)	3.0 (7.3)	0.5 (8.4)	0.6 (38.3)	0.5 (43.7)	3.2 (6.7)	0.5 (9.9)	0.6 (-4.9)	0.6 (8.1)
Nuclear (TWh)	164.8 (5.3)	162.0 (-1.7)	86.5 (10.2)	15.3 (17.8)	14.0 (11.2)	13.0 (-4.0)	78.1 (-9.7)	13.3 (-13.2)	13.7 (-2.4)	12.5 (-3.7)
Others (Mtoe)	12.8 (17.2)	15.0 (16.4)	7.5 (17.1)	1.3 (19.1)	1.2 (17.2)	1.2 (15.6)	8.7 (16.1)	1.5 (15.0)	1.5 (18.4)	1.4 (18.1)
TPES (Mtoe)	287.5 (1.6)	295.7 (2.9)	146.7 (2.5)	22.7 (-0.6)	23.2 (4.0)	22.6 (1.6)	149.3 (1.7)	23.1 (1.8)	23.6 (1.8)	23.0 (1.8)
- Non-energy oil excluded	232.2 (1.4)	237.6 (2.4)	118.3 (2.0)	18.5 (0.6)	18.3 (1.4)	17.8 (0.8)	119.6 (1.1)	18.5 (0.2)	18.6 (1.7)	18.2 (2.2)
- Non-energy oil&coal excluded	206.4 (1.9)	214.2 (3.8)	107.0 (3.5)	16.6 (2.6)	16.4 (3.4)	15.9 (2.3)	107.9 (0.9)	16.7 (0.2)	16.6 (1.2)	16.2 (1.7)

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

Share of TPES by Sources

(unit: %)

	2015	2016p					2017p			
			M1~6	M4	M5	M6	M1~6	M4	M5	M6
Coal	29.7	27.6	26.7	26.9	27.8	28.5	27.4	27.5	28.2	27.6
- Coking coal excluded	20.8	19.7	19.0	18.9	19.8	20.1	19.6	19.6	19.8	18.9
Oil	38.1	39.9	39.4	40.0	41.9	41.2	39.1	39.7	41.4	41.3
- non-energy oil excluded	18.9	20.3	20.1	21.2	20.8	20.1	19.2	19.7	20.3	20.5
LNG	15.2	15.4	15.9	12.9	11.7	12.4	16.2	13.9	11.5	12.8
Hydro	0.4	0.5	0.4	0.4	0.6	0.5	0.5	0.5	0.5	0.5
Nuclear	12.1	11.6	12.4	14.2	12.7	12.1	11.0	12.1	12.2	11.5
Others	4.5	5.1	5.1	5.6	5.3	5.4	5.8	6.3	6.2	6.3
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)

	2015	2016p					2017p			
			M1~6	M4	M5	M6	M1~6	M4	M5	M6
Industry	136.7 (0.5)	140.6 (2.8)	68.6 (1.6)	10.9 (-1.8)	11.6 (4.4)	11.3 (1.3)	71.2 (3.8)	11.4 (4.7)	11.9 (2.5)	11.5 (1.6)
Transport	40.3 (7.1)	42.8 (6.2)	20.9 (6.7)	3.6 (5.8)	3.6 (8.7)	3.4 (6.9)	21.0 (0.8)	3.5 (-2.8)	3.7 (2.5)	3.6 (6.8)
Residential-commercial	36.4 (2.7)	38.2 (4.8)	20.9 (3.7)	2.9 (-1.1)	2.3 (1.7)	2.1 (3.2)	21.0 (0.2)	3.0 (3.8)	2.3 (-0.5)	2.2 (2.9)
Public	5.2 (10.1)	5.5 (6.7)	2.9 (9.0)	0.4 (3.5)	0.4 (3.5)	0.5 (21.8)	2.9 (0.7)	0.4 (2.6)	0.4 (7.4)	0.4 (-7.4)
TFC	218.6 (2.2)	227.1 (3.9)	113.2 (3.1)	17.8 (-0.1)	17.9 (4.8)	17.3 (3.1)	116.1 (2.5)	18.3 (3.0)	18.3 (2.2)	17.8 (2.5)
Coal (Mton)	52.4 (-1.3)	49.0 (-6.4)	23.2 (-9.0)	3.9 (-6.6)	3.9 (-13.5)	3.7 (-12.7)	22.8 (-1.8)	3.6 (-5.4)	3.9 (-1.2)	3.6 (-2.3)
Oil (Mbbl)	841.6 (4.1)	902.4 (7.2)	438.7 (7.0)	68.9 (1.8)	74.5 (13.4)	71.6 (7.8)	452.7 (3.2)	71.4 (3.7)	76.1 (2.3)	74.1 (3.4)
Electricity (TWh)	483.7 (1.3)	497.0 (2.8)	248.5 (1.7)	40.1 (0.1)	38.2 (0.9)	39.7 (3.4)	251.4 (1.2)	40.8 (1.7)	38.7 (1.3)	39.7 (0.0)
City gas (Bm ³)	20.8 (-5.9)	21.3 (2.3)	12.3 (1.1)	1.7 (-4.6)	1.3 (-1.5)	1.1 (-1.4)	12.6 (2.8)	1.8 (7.3)	1.3 (1.7)	1.1 (1.1)
Heat-others (1 000 toe)	12.7 (14.7)	14.4 (13.6)	7.4 (13.6)	1.2 (13.1)	1.1 (14.1)	1.1 (14.0)	8.2 (10.7)	1.3 (11.5)	1.2 (12.3)	1.2 (12.7)

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

Source: Monthly energy statistics

Share of the Total Final Consumption by Sources

(unit: %)

	2015	2016p					2017p			
			M1~6	M4	M5	M6	M1~6	M4	M5	M6
Industry	62.5	61.9	60.5	61.3	64.7	65.5	61.3	62.3	64.9	64.9
Transport	18.4	18.8	18.4	20.2	20.3	19.6	18.1	19.0	20.4	20.4
Residential-commercial	16.7	16.8	18.5	16.1	12.8	12.1	18.1	16.2	12.5	12.2
Public	2.4	2.4	2.5	2.4	2.1	2.7	2.5	2.4	2.2	2.5
Final energy	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0
Coal	16.0	14.4	13.7	14.4	14.7	14.5	13.2	13.4	14.3	13.9
Oil	49.1	50.5	49.4	49.4	53.0	52.6	49.5	49.8	53.0	53.1
Electricity	19.0	18.8	18.9	19.4	18.4	19.7	18.6	19.2	18.2	19.2
City gas	10.1	9.9	11.5	10.1	7.8	7.0	11.6	10.5	7.8	6.9
Heat-others	5.8	6.3	6.5	6.6	6.1	6.3	7.1	7.2	6.7	6.9

Note: p means provisional

Source: Monthly energy statistics

Statistics on Energy Production Facilities

	2014	2015	2016				2017p		
				M4	M5	M6	M4	M5	M6
Total capacity (GW)	93.2 (7.2)	97.6 (4.8)	105.9 (13.6)	98.9 (12.2)	98.9 (12.9)	98.9 (12.3)	110.7 (16.0)	111.3 (16.3)	113.7 (18.8)
Nuclear	20.7 -	21.7 (4.8)	23.1 (11.6)	21.7 (4.8)	21.7 (4.8)	21.7 (4.8)	23.1 (11.6)	23.1 (11.6)	22.5 (8.8)
Bituminous coal	25.9 (10.7)	26.2 (1.1)	30.9 (19.3)	26.4 (9.5)	26.4 (9.5)	26.4 (5.6)	31.6 (21.9)	31.7 (22.4)	34.7 (34.0)
Gas	30.3 (27.2)	32.2 (6.5)	32.6 (7.8)	32.6 (20.7)	32.6 (22.9)	32.6 (22.9)	36.2 (13.6)	36.6 (14.9)	36.6 (14.9)
Refinery capacity (mil BPSD)	2.9 -	3.1 (3.7)	3.1 (3.7)	3.1 (3.7)	3.1 (3.7)	3.1 (3.7)	3.1 -	3.1 -	3.1 -

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

Source: The monthly report on major electric power statistics

Statistics on Energy Consumption

	2014	2015	2016				2017p		
				M4	M5	M6	M4	M5	M6
The number of household demanding city gas (mil)	16.9 (3.1)	17.4 (3.0)	18.0 (3.4)	17.6 (3.2)	17.6 (3.3)	17.6 (3.3)	18.2 (3.3)	18.1 (3.2)	18.2 (3.3)
Registered cars (mil)	20.1 (3.7)	21.0 (4.3)	21.8 (3.9)	21.3 (4.3)	21.4 (4.4)	21.5 (4.5)	22.1 (3.6)	22.1 (3.5)	22.2 (3.4)
- gasoline	9.6 (2.0)	9.8 (2.3)	10.1 (2.9)	9.9 (2.4)	9.9 (0.6)	10.0 (2.7)	10.2 (3.1)	10.2 (3.0)	10.3 (2.9)
- diesel	7.9 (7.3)	8.6 (8.6)	9.2 (6.4)	8.8 (8.4)	8.9 (8.3)	8.9 (8.2)	9.3 (5.3)	9.3 (5.1)	9.4 (4.8)
- LPG	2.3 (-2.3)	2.3 (-3.4)	2.2 (-4.0)	2.2 (-3.7)	2.2 (-3.7)	2.2 (-3.6)	2.1 (-3.6)	2.1 (-3.5)	2.1 (-3.4)
- hybrid	0.1 (40.0)	0.2 (31.3)	0.2 (37.6)	0.2 (30.9)	0.2 (32.3)	0.2 (34.8)	0.2 (31.2)	0.2 (35.2)	0.3 (34.3)

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

Source: Monthly energy statistics

KEEI

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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.

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