

KEEI

MONTHLY KOREA ENERGY TRENDS

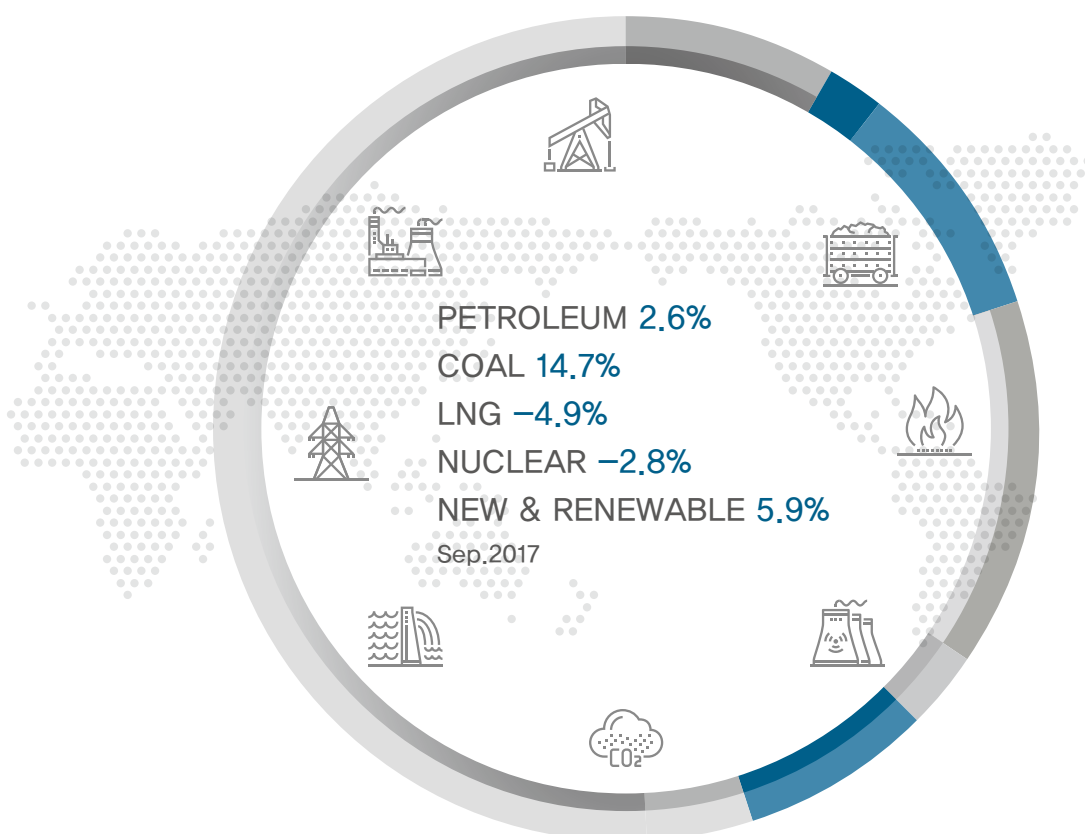


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1. The Economy and the Industry

- ☐ **Gross Domestic Product (“GDP”) increased by 3.6% in 3Q on a year-on-year basis, backed by increased private spending and facility investment.**
 - Private spending rose by 2.4% on a year-on-year basis due to more spending on medical service and durable goods, especially automobiles and mobile phones.
 - Facility investment was up 17.0%, helped by growing investment on machineries such as industrial electric devices and precision devices along with the base effect from a decline during the same period last year. Construction investment rose by 7.6%, with its focus on buildings construction.
- ☐ **Total export value recorded a year-on-year growth of 35.0% in September, affected by higher unit prices and expanded export volume of major products in addition to the continuous boom in the semi-conductor industry.**
 - The export value of semi-conductors increased by 69.9% in September with the highest record (\$9.69billion), which was six consecutive months of over 50% growth. It was attributable to continuously rising memory chip price and demand increase due to the launch of a new smartphone.
 - The export value of iron & steel products rose by 106.7% with an all-time high record (\$4.66billion), owing to the export of large-scale steel structure for offshore plants to Norway (\$1.9 billion).
- ☐ **The production index of mining and manufacturing industries increased by 8.5% year-on-year (in September), helped by bigger outputs of major exporting goods, and the service industry production index was up 5.3%.**
 - The production index of mining and manufacturing industries rose by 6.2%p from the previous month as the production of cement and automobiles surged (18.1%, 27.3%), and the production continued to increase decently in the basic chemical materials (6.0%), iron & steel (1.8%) and semi-conductor industries (4.7%) in line with growing export demand.
 - The service industry production index rose by 3.2%p, compared to the previous month, as the index started to rise in the restaurant & accommodations business (0.8%), surged in the wholesale & retail business (8.6%) and continuously grew in the health & social welfare (7.1%) and real estate & leasing business (8.7%).

► Trend in major economic and industrial indicators

	2015	2016	2017			2017		
			M7	M8	M9	M7	M8	M9
GDP (trillion won)	1 466.8	1 508.3	-	-	378.2	-	-	392.0
	(2.8)	(2.8)	-	-	(2.6)	-	-	(3.6)
Total export (\$billion, customs clearance basis)	526.8	495.4	40.9	40.1	40.8	48.8	47.1	55.1
	(-8.0)	(-5.9)	(-10.5)	(2.6)	(-6.0)	(19.5)	(17.4)	(35.0)
Semi-conductors	62.9	62.2	5.0	5.6	5.7	7.9	8.8	9.7
	(0.4)	(-1.1)	(-2.6)	(2.5)	(-2.6)	(57.7)	(56.7)	(69.9)
Petroleum products	32.0	26.5	2.7	2.1	2.4	2.7	2.9	3.7
	(-37.0)	(-17.3)	(-12.1)	(-24.4)	(-12.0)	(1.8)	(38.6)	(53.2)
Iron & steel	30.2	28.5	2.4	2.3	2.3	2.6	2.6	4.7
	(-15.0)	(-5.5)	(-11.2)	(4.6)	(-4.4)	(10.5)	(13.4)	(106.7)
Mining and manufacturing production index (2010=100)	108.1	109.2	110.8	104.0	104.8	110.5	106.4	113.7
	(-0.3)	(1.0)	(1.5)	(2.2)	(-2.0)	(-0.3)	(2.3)	(8.5)
ICT production index	113.1	118.7	126.1	123.6	124.9	120.7	129.9	133.1
	(1.4)	(4.9)	(19.6)	(8.2)	(-1.2)	(-4.3)	(5.1)	(6.6)
Service industry performance index (2010=100)	112.1	115.5	115.5	115.8	115.7	118.1	118.2	121.8
	(2.9)	(3.0)	(3.2)	(4.4)	(2.9)	(2.3)	(2.1)	(5.3)

Note: Figures are based on the real price of 2010, P means provisional, () is year-on-year growth rates (%)
Source: Korea International Trade Association, Korea Statistical Information Service

2. Energy Prices

Global energy prices

- **Global oil price went up by 9.5% in November than a month earlier, influenced by the extended oil output reduction period in oil producing countries, in addition to the escalating geopolitical instability in the Middle East.**
 - OPEC and non-OPEC oil producers agreed to delay the deadline for oil output reduction from March, 2018 to the end of 2018 at an OPEC meeting held in Vienna on November 30.
 - Saudi Arabia's crown prince Mohammed bin Salman solidified his power with the arrest of 11 princes, four incumbent and several former ministers in an anti-corruption crackdown.

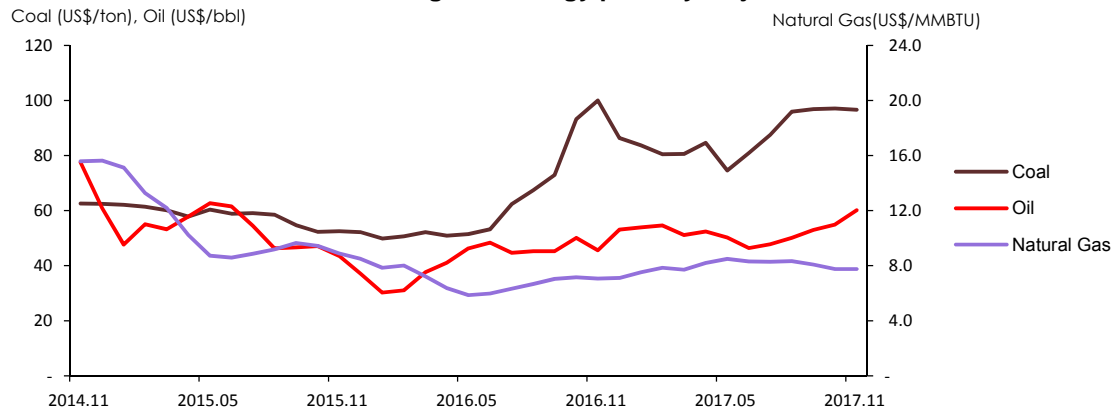
► Trend in global energy prices

	2015	2016	2017			2017		
			M9	M10	M11	M9	M10	M11
Crude oil (US\$/bbl)	51.0	43.2	45.3	50.1	45.6	53.0	54.9	60.1
	(-47.0)	(-15.2)	(-2.8)	(6.3)	(4.8)	(5.8)	(20.5)	(13.3)
Natural gas (US\$/MMBTU)	10.2	6.9	7.0	7.2	7.1	8.1	7.8	7.8
	(-36.3)	(-32.5)	(-27.0)	(-24.3)	(-20.5)	(12.9)	(9.6)	(9.2)
Coal (US\$/ton)	57.5	65.9	72.9	93.2	100.0	96.9	97.1	96.6
	(-18.0)	(14.6)	(33.2)	(78.1)	(90.2)	(4.0)	(-2.9)	(11.9)

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

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

► Trend in global energy price by major sources



Domestic energy prices

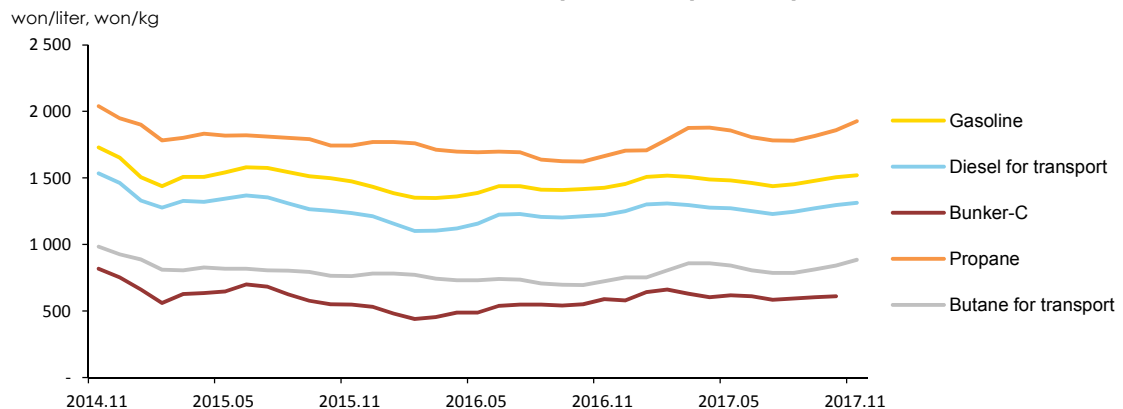
- **The price of gasoline and diesel maintained its upward trend in November amid steadily rising global oil price.**
 - Gasoline and diesel prices have increased for four months in a row since August in line with global oil price that has been rising after July, and compared to the previous year's lowest level (July), the prices increased by 5.7% and 6.8% respectively.
- **The price of propane and butane went up by 3.7% and 5.2% respectively in November from a month earlier, affected by a surge in global prices.**
 - Global prices of propane and butane, based on which domestic LPG price is set in the following month, went up by 19.8% and 16.0% respectively in October from a month earlier, influenced by rising global oil price, seasonal demand growth and lower oil production in the U.S. that was disrupted by Hurricane Harvey.

► Trend in domestic energy prices

	2015	2016	2017			2017	2017	2017
			M9	M10	M11			
Gasoline (won/liter)	1 510.4 (-17.3)	1 402.7 (-7.1)	1 408.2 (-6.8)	1 416.6 (-5.5)	1 427.0 (-3.2)	1 479.7 (5.1)	1 504.5 (6.2)	1 521.1 (6.6)
Diesel for transport (won/liter)	1 299.5 (-20.6)	1 182.7 (-9.0)	1 203.0 (-4.8)	1 211.1 (-3.3)	1 222.7 (-1.0)	1 271.0 (5.7)	1 295.6 (7.0)	1 313.0 (7.4)
Bunker-C (won/liter)	612.5 (-31.9)	520.8 (-15.0)	541.3 (-6.1)	551.3 (0.0)	589.2 (7.6)	603.1 (11.4)	610.5 (10.7)	-
Propane (won/kg)	1 801.5 (-14.8)	1 689.8 (-6.2)	1 625.4 (-9.2)	1 624.2 (-6.8)	1 664.4 (-4.5)	1 815.8 (11.7)	1 857.9 (14.4)	1 926.7 (15.8)
Butane for transport (won/liter)	806.5 (-23.3)	734.1 (-9.0)	696.6 (-12.3)	694.3 (-9.1)	724.9 (-4.9)	813.4 (16.8)	841.2 (21.2)	884.6 (22.0)

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



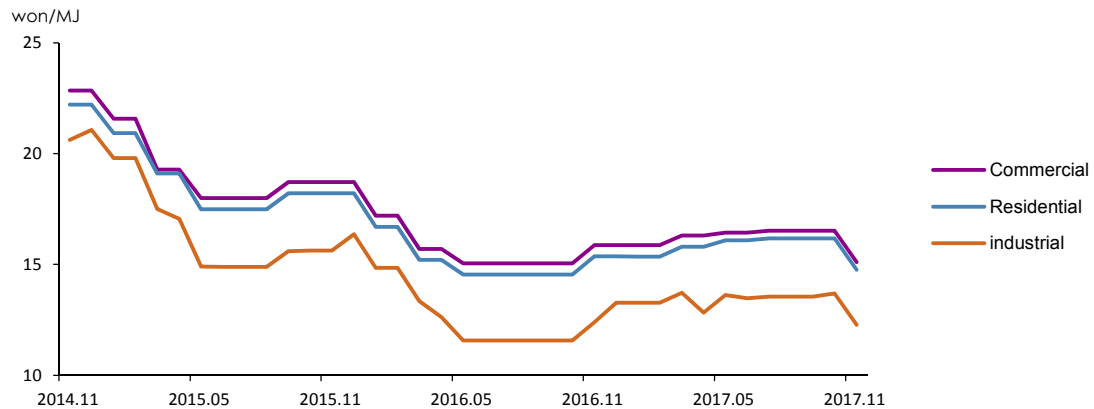
☐ **City gas rates fell sharply in November from the previous month, as Korea Gas Corporation (“KOGAS”) collected all accounts receivable.**

- The accounts receivable was accumulated after KOGAS suspended the raw material cost pass-through scheme (2008.3~2013.2) at the time of high oil price, and as KOGAS completed the collection of all accounts receivable by raising gas rates from September 2010, the rates declined again.

☐ **Heat energy rates for each end-use decreased by 1.4% respectively, affected by lower city gas rates.**

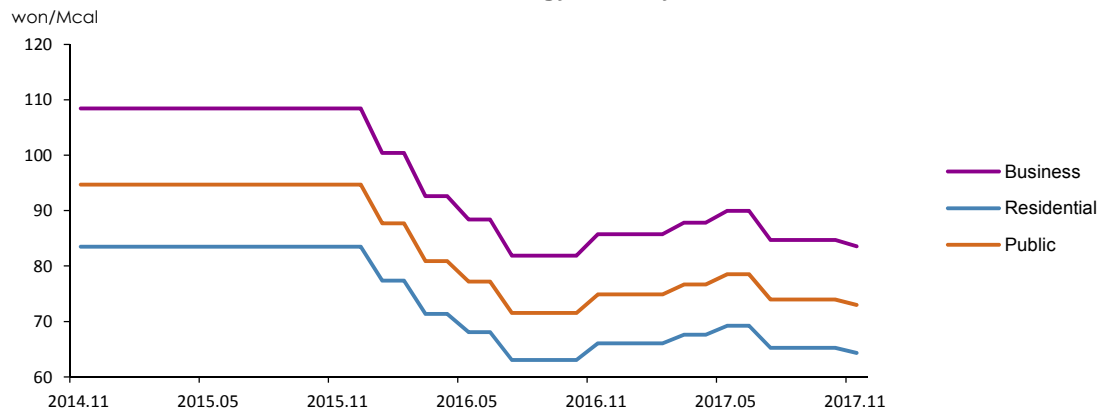
- Korea District Heating Corporation’s heat energy rates are linked to city gas rates according to the fuel cost pass-through scheme. In the case of November’s heat energy rates, the influence of KOGAS’s collection of accounts receivable and resultant city gas rate change was separately assessed and reflected.

► **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**

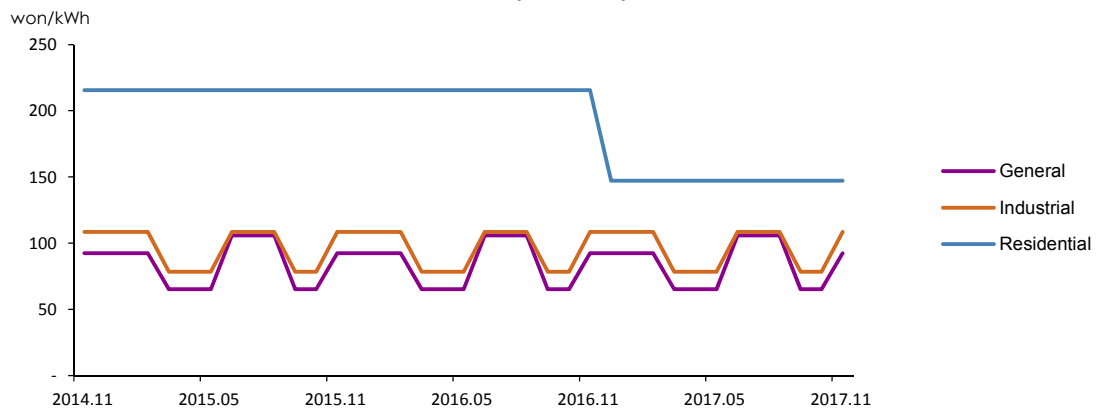


Note: The rates are based on flat rate for heating (additional tax, base charge excluded)

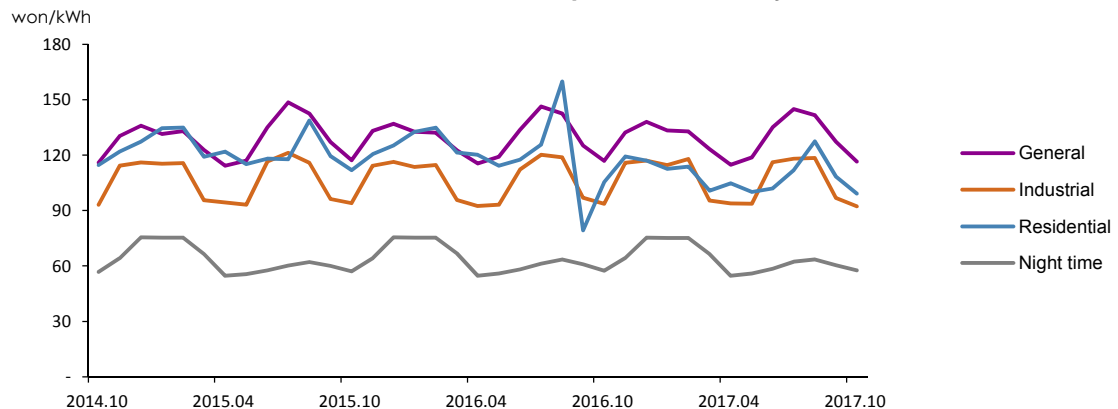
Source: Korea District Heating Corporation.

- **As for November's electricity rates by end-use sectors¹, the rates for industrial and general use rose dramatically from a month earlier after the rate was adjusted for winter.**
 - The electricity rates for industrial and general customers are adjusted by season, and the rates jumped by 38.2% and 41.6% respectively from a month earlier after the seasonal rate change from spring/autumn (Mar-May, Sept-Oct) to winter (Nov-Feb).
- **Unit price of electricity for general, industrial and residential use declined by 8.5%, 4.6% and 8.4% respectively in October than the previous month.**
 - Unit price of electricity for general and industrial use declined, because less electricity is sold in October during the time of maximum load, compared to September. In the case of residential electricity, the unit price decreased due to seasonal decline in sales volume and the characteristics of the progressive electricity rate system.

► 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 value jumped by 30.3% year-on-year in September, recording 11 consecutive months of growth, influenced by bigger import volume and higher oil & LNG prices.**
 - Energy import volume (petroleum products, coal, LNG) increased, especially bituminous coal and LNG, although the import of petroleum products declined.
 - Crude oil import slightly declined despite bigger crude input to refineries (4.9%), because the crude inventory increased by 14Mbbl (47.6%) in the previous month, and part of the inventory was used in the following month.
 - Foreign energy dependency² went up by 0.2%p to 82.9% due to expanded volume of energy import, although hydropower and renewable energy generation increased.

► Trend in energy trade and domestic production

	2015	2016p		2017p			
			M1~9	M1~9	M7	M8	M9
Import volume							
Crude oil (Mbbl)	1 026.2 (10.6)	1 078.1 (5.1)	802.1 (5.2)	830.8 (3.6)	93.6 (3.9)	101.5 (17.8)	93.1 (-1.1)
Petroleum product (Mbbl)	307.9 (-5.7)	334.6 (8.7)	250.6 (13.5)	237.0 (-5.4)	25.5 (-14.0)	24.9 (-17.8)	27.4 (-5.4)
Bituminous coal (Mton)	119.4 (1.3)	118.5 (-0.8)	86.6 (-4.2)	100.7 (16.3)	10.9 (13.2)	11.4 (15.8)	13.2 (19.2)
Anthracite (Mton)	8.9 (7.8)	9.4 (5.4)	6.8 (4.8)	5.4 (-20.9)	0.7 (-32.1)	0.5 (-42.5)	0.5 (-44.7)
LNG (Mton)	33.4 (-10.1)	33.4 (0.2)	22.7 (-5.8)	27.3 (20.1)	2.7 (41.5)	2.6 (32.3)	2.4 (6.1)
Import volume (Mtoe)	314.8 (1.7)	323.1 (2.6)	237.1 (1.6)	253.9 (7.1)	28.2 (7.3)	28.0 (5.5)	28.4 (7.4)
Import value (billion US\$, CIF)	102.7 (-41.0)	80.9 (-21.2)	56.4 (-28.9)	80.0 (41.8)	8.1 (18.9)	8.5 (30.8)	9.0 (30.3)
Domestic production							
Hydropower (TWh)	5.8 (-25.9)	6.6 (14.5)	5.2 (12.0)	5.5 (4.8)	0.6 (-29.6)	1.0 (38.8)	0.7 (7.1)
Anthracite (Mton)	1.8 (0.9)	1.7 (-2.2)	1.3 (-2.0)	1.1 (-9.6)	0.1 (-19.0)	0.1 (-18.0)	0.1 (-11.7)
Natural gas (Mton)	0.1 (-41.5)	0.1 (-18.0)	0.1 (-49.2)	0.2 (244.2)	0.0 (79.1)	0.0 n.a	0.0 n.a
Renewable energy (Mtoe)	12.8 (17.2)	15.0 (16.4)	11.2 (16.6)	11.5 (2.3)	1.3 (0.5)	1.3 (2.3)	1.3 (5.9)

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) excludes nuclear energy, and when it is included, the foreign energy dependency fell by 0.7%p year-on-year to 93.7% due to lower import of nuclear energy (-2.8%).

4. Energy Consumption

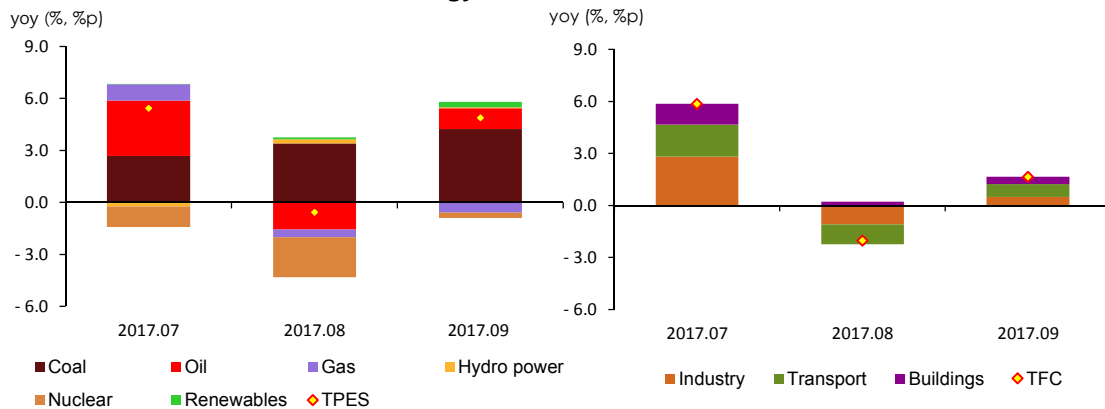
- **Total Primary Energy Supply (“TPES”) rebounded by 4.9% in September on a year-on-year basis, led by coal and petroleum, although gas and nuclear energy were consumed less.**
 - Gas consumption fell by 4.9% year-on-year, as gas-fired generation plunged due to rapidly growing bituminous coal-fired generation. Meanwhile, nuclear generation decreased by 2.8%, though the pace of such decline slowed down with no more disruption from the earthquake in Gyeongju district.
 - Coal consumption rose by 14.7% year-on-year, mostly in the power generation sector with much expanded installed capacity, leading the growth of TPES, although industrial coal consumption further declined due to less use of anthracite and coal for cement production.
 - Petroleum consumption rebounded by 2.6%, as more naphtha was consumed after the construction of new petrochemical facilities, and more diesel was consumed with heavier traffics even with higher oil price. LPG consumption, however, decreased with no more effect from the extension of PDH facilities.
- **Total Final Consumption (“TFC”) rebounded by 1.7% (year-on-year in September), as energy consumption started to increase in the industrial & transport sectors and grew more rapidly in the buildings sector.**
 - Industrial energy consumption rose by 0.7%, backed by faster growth in the primary & fabricated metals industry due to bigger output and more work days, and growing energy use in the petrochemical industry, especially naphtha.
 - Transport energy use bounced back by 3.8%, as the increased number of registered cars and more traffics raised energy consumption in the road transport sector.
 - Energy consumption in buildings went up by 2.8%, as petroleum, city gas and heat energy were all more consumed with higher heating degree days.
 - Electricity consumption rose by 2.7%, especially in the industrial sector due to more work days and stronger production activity, though less power was consumed in buildings with fewer cooling degree days.

► Energy consumption trend

	2015	2016p		2017p			
			M1~9	M1~9	M7	M8	M9
Total energy (Mtoe)	287.5	295.7	218.9	224.1	25.3	25.0	24.1
	(1.6)	(2.9)	(2.8)	(2.4)	(5.4)	(-0.6)	(4.9)
Final energy (Mtoe)	218.6	227.1	167.8	170.8	18.7	18.5	18.2
	(2.2)	(3.9)	(3.5)	(1.8)	(5.9)	(-2.0)	(1.7)

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 source and end-use sectors



5. Coal

□ Coal consumption increased by 14.7% year-on-year in September along with over 30% growth in the power generation sector, although industrial coal consumption decreased.

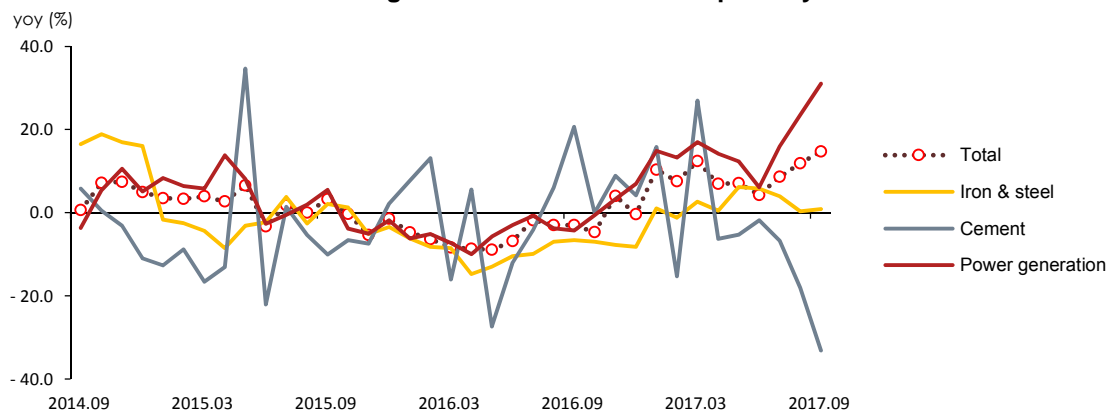
- Coal consumption for power generation dramatically increased due to much expanded installed capacity (6.9GW, 22.9%) and decreased preventive maintenance on daily average (-2.0GW, -51.0%), marking 11 consecutive months of growth.
- Industrial coal consumption fell most sharply since December 2016 (-11.0%), because coal use for cement production and anthracite consumption declined by 33.2% and 44.7% respectively, although more coal was consumed in the steelmaking industry (0.8%), which takes up the largest part of the industrial coal consumption.

► Coal consumption trend

	2015	2016p	2017p				
			M1~9	M1~9	M7	M8	M9
Coal (Mton)	134.8	129.0	95.4	104.4	12.6	12.7	12.1
	(1.1)	(-4.4)	(-5.7)	(9.4)	(8.6)	(11.9)	(14.7)
Industry	50.9	47.7	35.3	34.5	4.1	3.8	3.7
	(-1.0)	(-6.2)	(-6.5)	(-2.2)	(-3.9)	(-7.9)	(-9.8)
Buildings	1.5	1.3	0.6	0.5	0.0	0.0	0.1
	(-9.6)	(-14.8)	(-11.6)	(-16.0)	(-42.9)	(-50.0)	(12.9)
Power generation	82.5	80.0	59.5	69.3	8.5	8.9	8.2
	(2.8)	(-3.0)	(-5.1)	(16.5)	(16.0)	(23.5)	(31.0)

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

► The growth rate of coal consumption by use



6. Petroleum

□ **Petroleum consumption rallied by 2.6% year-on-year in September, as the consumption started to increase in the industrial and transport sectors and grew faster in the buildings sector.**

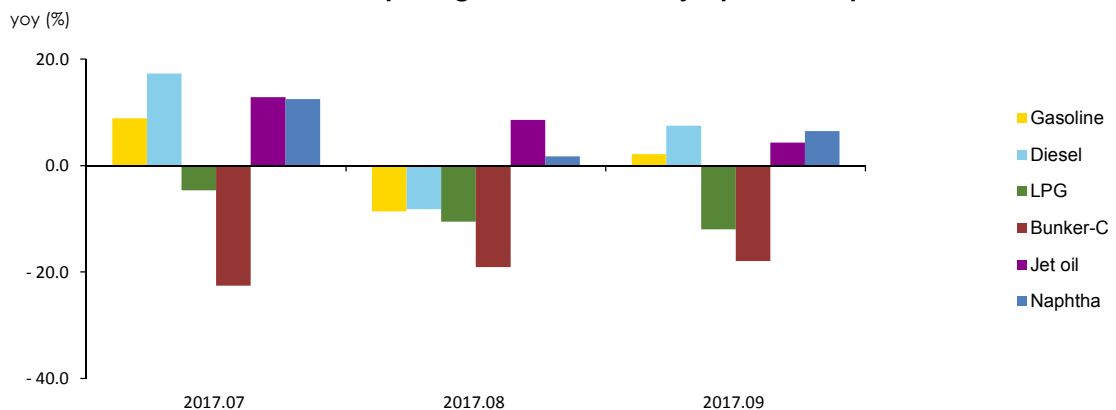
- Industrial petroleum consumption rebounded after a drop in the previous month, with the help of growing naphtha use, leading the growth of total consumption.
- Petroleum consumption in the transport sector bounced back by 3.4% after a decline in the prior month, led by the road transport sector.
- Petroleum consumption in the buildings sector increased, especially diesel and kerosene (13.2%, 10.8%).
- Petroleum consumption in the transformation sector has been on the downward trend due to a surge in coal-fired generation and a drop in oil-fired generation with the latter affected by higher bunker-C oil price.

► Trend in petroleum product consumption by end-use sectors

	2015	2016p	2017p				
			M1~9	M1~9	M7	M8	M9
Petroleum (Mbbbl)	856.2	924.2	680.6	692.7	79.2	78.0	77.1
	(4.2)	(7.9)	(8.2)	(1.8)	(8.3)	(-3.6)	(2.6)
Industry	501.0	542.6	398.5	418.0	48.3	47.5	46.6
	(1.9)	(8.3)	(7.5)	(4.9)	(10.5)	(-1.0)	(3.2)
Transport	287.1	303.6	226.4	228.5	27.1	26.5	26.2
	(6.8)	(5.7)	(6.3)	(0.9)	(9.0)	(-6.1)	(3.4)
Buildings	53.5	56.3	39.0	38.8	3.0	3.5	3.9
	(11.7)	(5.2)	(5.9)	(-0.4)	(12.3)	(1.2)	(6.3)
Power generation	14.6	21.8	16.7	7.4	0.8	0.6	0.3
	(13.0)	(48.7)	(87.9)	(-56.0)	(-58.2)	(-58.7)	(-63.2)

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

► The consumption growth rates of major petroleum products



7. Gas

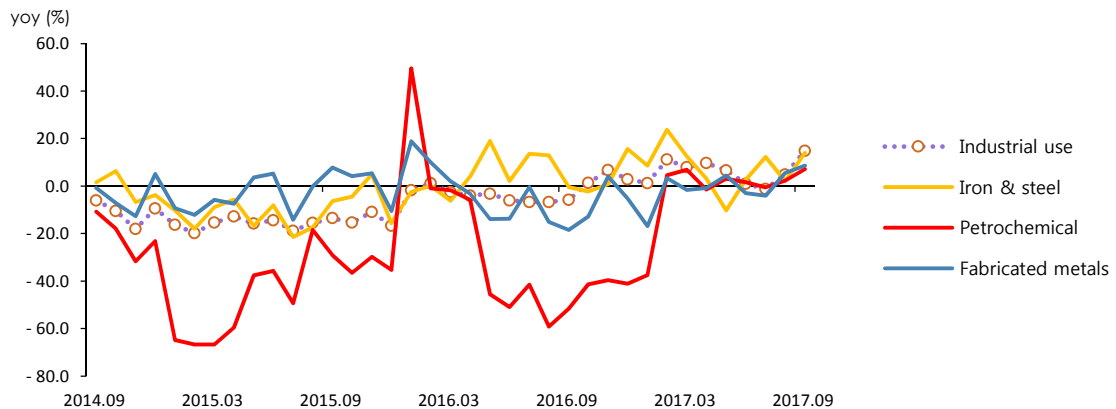
- **Gas consumption made a year-on-year decline of 4.9% in September because of a sharp decline in the power generation sector, although more gas was consumed for city gas production.**
 - Gas use for power generation dropped by over 10%, as coal-fired generation surged (21.5%) along with the construction of a new large-scale bituminous coal power plant, even though the nuclear generation decreased (-2.8%), as power plant restart was delayed with no permission yet.
- **City gas consumption increased by 10.3% year-on-year in September, led by the industrial and buildings sectors.**
 - The industrial city gas consumption recorded the most rapid growth since April, 2013, and the considerable growth occurred in the primary metals, fabricated metals and petrochemical industries.
 - City gas consumption in buildings rose by 8.4%, as the consumption rebounded (0.5%) in the commercial sector due to stronger production activity in the restaurant and accommodations business (0.8%), and as the consumption also rose by over 30% in the residential sector for heating and hot water.

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

	2015	2016p	2017p				
			M1~9	M1~9	M7	M8	M9
LNG (Mton)	33.4	34.9	24.7	25.3	2.5	2.3	2.0
	(-8.7)	(4.2)	(0.1)	(2.4)	(7.3)	(-3.7)	(-4.9)
Power generation	14.6	15.3	10.9	11.2	1.5	1.3	1.0
	(-8.2)	(5.3)	(-2.1)	(2.5)	(13.3)	(-7.9)	(-15.2)
City gas production	16.9	17.4	12.2	12.6	0.9	0.8	0.9
	(-6.9)	(2.7)	(0.8)	(2.9)	(-1.3)	(4.4)	(11.9)
City gas (bm³)	20.8	21.3	15.4	15.9	1.1	1.1	1.1
	(-5.9)	(2.3)	(0.4)	(3.1)	(-0.8)	(2.6)	(10.3)
Industry	7.3	7.2	5.2	5.6	0.5	0.5	0.6
	(-15.5)	(-1.9)	(-3.8)	(6.2)	(-1.2)	(4.9)	(14.8)
Buildings	12.2	12.8	9.3	9.4	0.5	0.4	0.4
	(0.5)	(5.1)	(3.2)	(1.7)	(-0.5)	(1.0)	(7.0)

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 increased by 2.7% year-on-year in September, led by the industrial sector, although the consumption declined in the buildings sector.**
 - Industrial electricity consumption posted the highest record for this year in September, influenced by 2.5 more work days and bigger outputs in large energy-consuming industries due to base effect and increased export demand.
 - Electricity consumption in buildings declined for the first time in three months despite more power use in commercial & public buildings, because residential electricity consumption plunged.

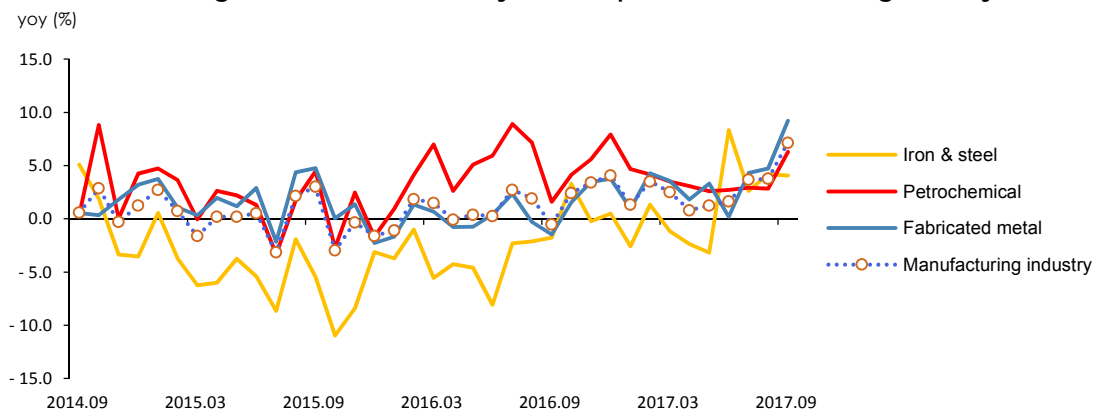
► Trend in electricity consumption by end-use sectors

	2015	2016p	2017p				
			M1~9	M1~9	M7	M8	M9
Electricity (TWh)	483.7	497.0	374.7	382.3	43.2	45.4	42.3
	(1.3)	(2.8)	(2.5)	(2.0)	(6.5)	(2.1)	(2.7)
Industry	265.6	270.0	201.6	207.3	23.6	23.4	23.3
	(0.4)	(1.6)	(1.1)	(2.8)	(3.8)	(3.2)	(6.2)
Transport	2.2	2.7	2.0	2.1	0.3	0.3	0.2
	(10.7)	(21.3)	(22.8)	(3.2)	(9.1)	(2.2)	(4.7)
Buildings	215.8	224.4	171.1	172.9	19.3	21.7	18.7
	(2.3)	(4.0)	(4.1)	(1.1)	(9.8)	(1.0)	(-1.2)

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

Source: Monthly energy statistics

► The growth rate of electricity consumption in manufacturing industry

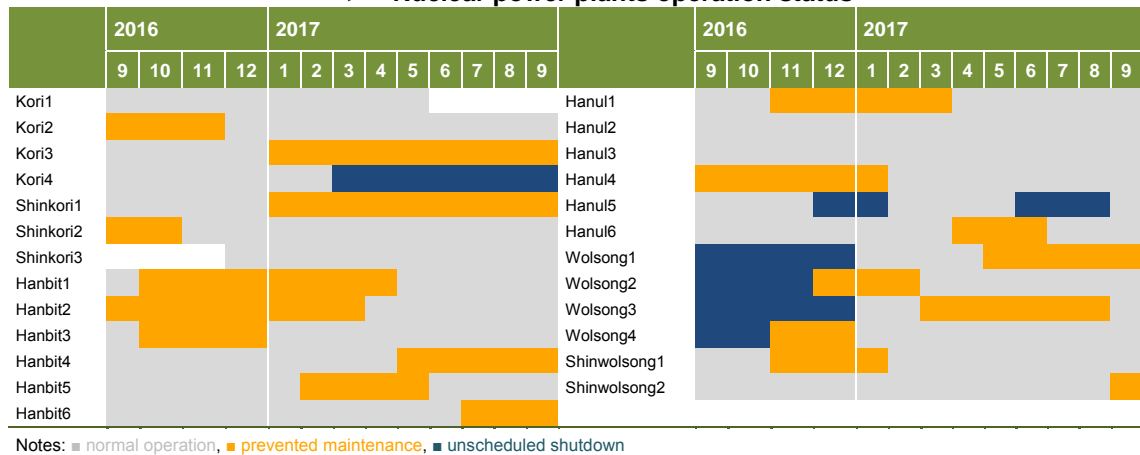


9. Nuclear

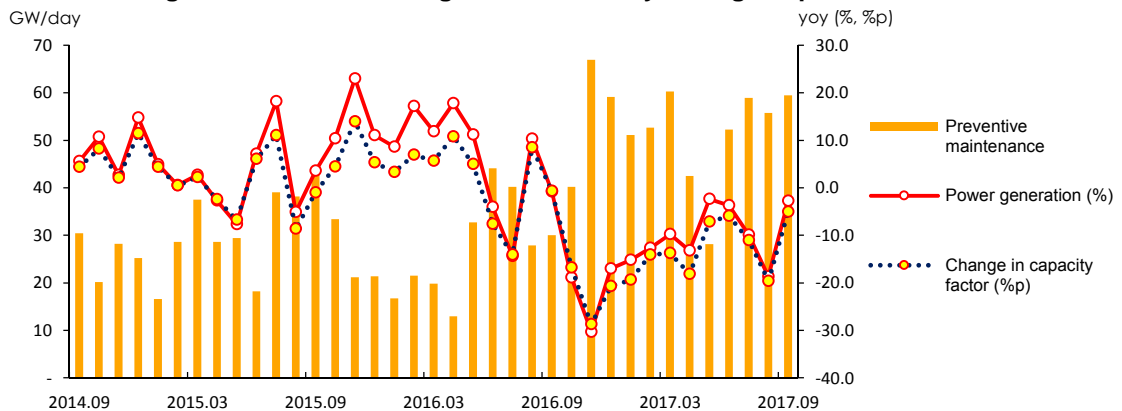
□ **Nuclear generation declined by 2.8% in September on a year-on-year basis along with decreased capacity factor at nuclear power plants, though the pace of decline slowed down.**

- Nuclear generation has declined for 13 consecutive months until September, affected by increased planned preventive maintenance (98.2%, 2.9GW) with a delay in permitting the power plant restart by a regulatory body. Such decline, however, slowed down without any disruption from an earthquake, unlike the same month last year.
- The (average) capacity factor at nuclear power stations fell by 5.1p to 76.0% on a year-on-year basis, and nuclear's share of the total generation declined by 2.4p year-on-year to 28%, posting four consecutive months of less than 30%.

► Nuclear power plants operation status



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



10. Heat and Renewable energy

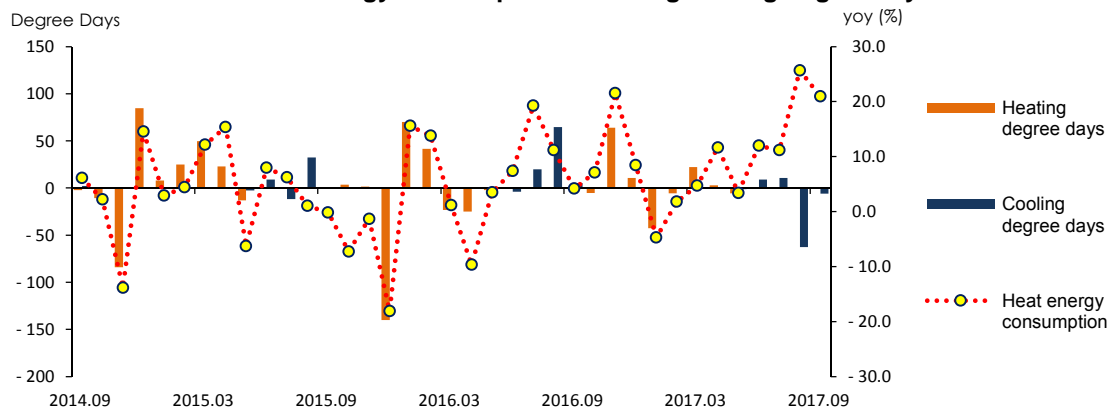
☐ **Heat energy consumption rose by 20.9% year-on-year in September, mostly for residential and commercial use amid falling temperature.**

- Residential heat energy use increased by 25.7% due to lower average temperature (-1.0°C) in September and slightly increased heating degree days (0.6degree days), while commercial heat energy use rose by 11.8%, affected by stronger production activity in the service industry, even though heat energy price increased.

☐ **Renewable & other energy consumption went up by 6.0% in September on a year-on-year basis, led by the power generation sector, although its share declined in TFC.**

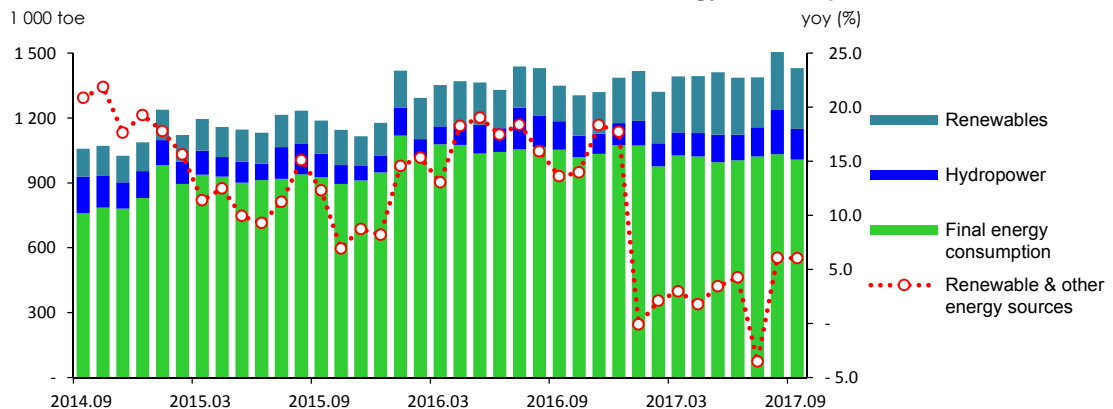
- Hydropower generation (670.0 GWh) rose by 7.1% year-on-year, despite smaller amount of rainfall (92.1 mm) than the average, thanks to the heavy rain in the previous month (241.0 mm) and accordingly increased level of reservoir.
- Renewable energy generation increased by over 30%, as the power generation from solar PV, wind and bio-energy has been keep soaring, in addition to the base effect from the temporary shutdown of IGCC for maintenance during the same month last year. Meanwhile, the share of renewable energy in TFC declined by 4.3%.

► 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 consumption rose by 0.7% in September on a year-on-year basis, as increased number of work days led to more energy use in each industrial sector.**

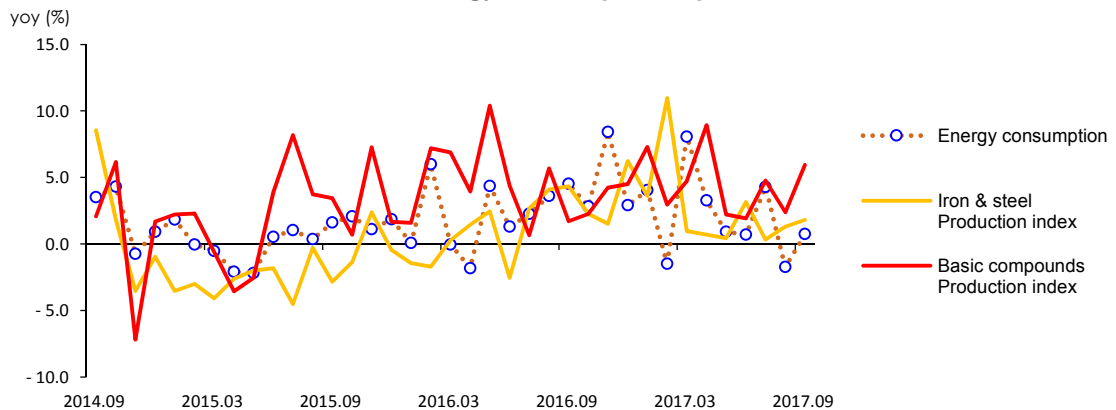
- Energy consumption increased in the petrochemical industry, affected by rebounded naphtha consumption (6.5%) that was stagnant during the previous month.
- Energy consumption rose slightly in the primary metals industry, owing to the 4.1% growth in power use amid growing production of electric furnace steel (27.4%).
- Energy consumption soared in the fabricated metals industry, influenced by steady growth in the production and export of semi-conductors along with the recovery of automobile export.
- Meanwhile, energy consumption fell by as much as 18.6% in the non-metallic industry, offsetting the growth of total industrial energy consumption.

► Trend in the industrial energy consumption

	2015	2016p	2017p				
			M1~9	M1~9	M7	M8	M9
Industry (Mtoe)	136.7	140.6	103.9	106.0	12.1	11.8	11.7
	(0.5)	(2.8)	(2.2)	(2.1)	(4.3)	(-1.7)	(0.7)
Petrochemical	61.7	65.8	48.7	50.7	5.9	5.8	5.6
	(-0.6)	(6.7)	(6.3)	(4.2)	(8.3)	(-1.7)	(2.9)
- Naphtha	50.4	52.7	39.0	41.4	4.8	4.7	4.6
	(3.7)	(4.7)	(4.1)	(6.1)	(12.5)	(1.7)	(6.5)
Iron & Steel	31.4	29.0	21.6	22.0	2.6	2.5	2.5
	(-2.6)	(-7.6)	(-8.1)	(2.2)	(4.1)	(1.2)	(1.8)
Fabricated metal	10.6	10.6	7.9	8.2	0.9	0.9	0.9
	(-1.1)	(0.4)	(-0.1)	(4.0)	(5.4)	(5.0)	(8.8)
Share of feedstock (%)	59.0	57.7	57.8	59.1	59.9	60.7	59.7

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

► Industrial energy consumption & production index



12. Transport

□ **Transport energy use rose by 3.8% year-on-year in September even with higher oil price, as energy consumption rebounded in the road transport sector.**

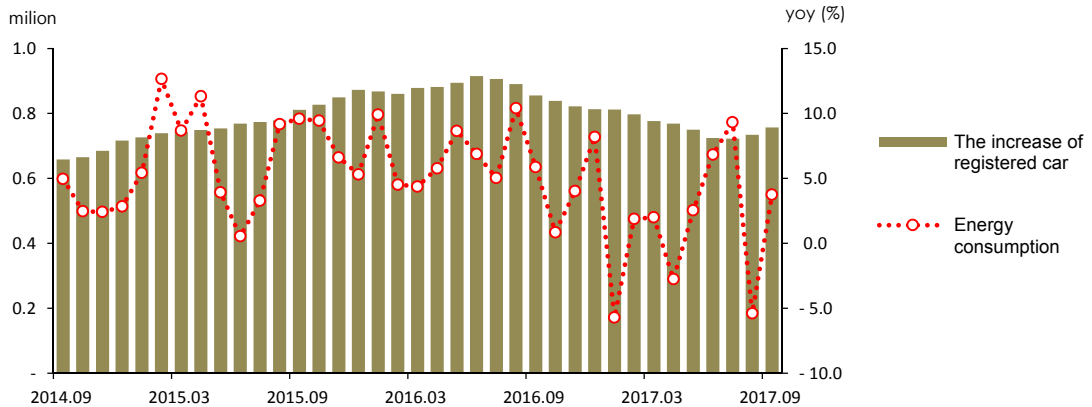
- Energy consumption rebounded by 4.5% in the road transport sector, as increased number of registered cars and heavier traffics led to 9.2% and 1.9% growth in diesel and gasoline consumption, even though the price of petroleum products increased.
- Energy consumption started to decline in the domestic navigation sector after two consecutive months of growth, affected by higher bunker-C oil price and smaller coastal transport (-6.4%).
- Energy use has been growing in the aviation sector for six months in a row due to increased demand on air traveling from/to Jeju Island, Japan, Southeast Asia, Europe and others, although the number of Chinese tourists visiting Korea declined in the wake of the Terminal High Altitude Area Defense ("THAAD") issue.

► The growth rate of petroleum consumption in the transport sector

	2015	2016p	2017p				
			M1~9	M9	M7	M8	M9
Transport (Mtoe)	40.3	42.8	31.9	3.7	3.8	3.7	3.7
	(7.1)	(6.2)	(6.8)	(3.8)	(9.3)	(-5.4)	(3.8)
Road	32.8	34.4	25.7	3.0	3.1	3.0	3.0
	(5.6)	(5.1)	(5.9)	(4.5)	(9.6)	(-8.6)	(4.5)
Navigation	2.9	3.4	2.5	0.3	0.3	0.3	0.3
	(27.0)	(13.8)	(16.1)	(-3.4)	(1.3)	(4.7)	(-3.4)
Aviation	4.3	4.7	3.5	0.4	0.4	0.5	0.4
	(7.5)	(9.1)	(7.7)	(3.7)	(14.5)	(12.7)	(3.7)
Rail	0.3	0.3	0.3	0.0	0.0	0.0	0.0
	(2.2)	(8.3)	(12.0)	(1.9)	(2.8)	(-1.0)	(1.9)

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

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



13. Buildings

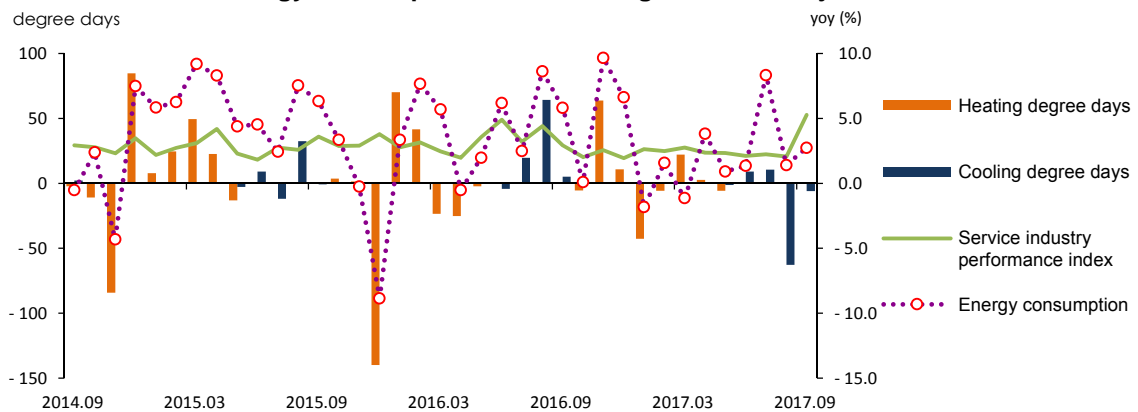
- **Energy consumption in buildings rose by 2.8% in September on a year-on-year basis despite less use of electricity, as petroleum and city gas use increased because of lower temperature.**
 - As for the energy consumption in buildings by sources, electricity consumption declined, especially in the residential sector, due to lower temperature and cooling degree days. Meanwhile, petroleum, city gas and heat energy consumption increased even with higher price due to increased number of heating degree days.
 - Energy consumption rose by 3.1% in residential buildings despite less use of electricity (-5.4%), owing to a surging use of city gas for heating & hot water (13.6%), diesel (10.4%), kerosene (9.1%), and heat energy (25.7%)
 - Energy consumption went up by 1.7% in commercial buildings due to more use of all energy sources except LPG (-1.3%) amid stronger production activity in the service industry (5.3%).

► Energy consumption trend in the buildings sector

	2015	2016p		2017p			
			M1~9	M1~9	M7	M8	M9
Buildings (Mtoe)	41.6	43.7	32.0	32.4	2.7	3.0	2.8
	(3.6)	(5.0)	(4.7)	(1.4)	(8.3)	(1.4)	(2.8)
Residential	20.1	21.2	15.1	15.2	0.9	1.0	1.1
	(1.7)	(5.7)	(5.3)	(0.5)	(4.5)	(1.1)	(3.1)
Commercial	16.4	17.0	12.7	12.9	1.4	1.5	1.3
	(4.0)	(3.6)	(3.2)	(1.5)	(6.9)	(1.3)	(1.7)
Public-others	5.2	5.5	4.1	4.3	0.5	0.5	0.4
	(10.1)	(6.7)	(7.1)	(4.1)	(22.7)	(2.5)	(5.0)

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

► Energy consumption in the buildings sector & major indicators



14. Transformation

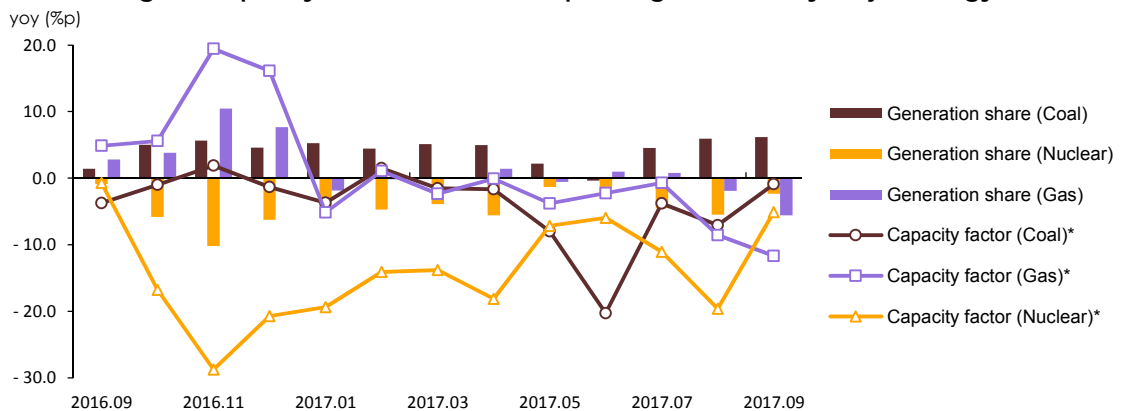
- **Energy input for power generation increased by 11.1% year-on-year in September, boosted by increased coal consumption, although nuclear and gas consumption declined.**
 - Energy use for power generation grew rapidly, as coal-fired generation that has relatively low efficiency satisfied the majority of the power generation increase (5.5%) amid growing power demand (2.7%).

► Energy consumption in the power generation sector

	2015	2016p	2017p				
			M1~9	M1~9	M7	M8	M9
Input (Mtoe)	109.6	110.2	82.9	86.0	10.3	10.3	9.5
	(1.4)	(0.5)	(1.0)	(3.7)	(5.3)	(3.4)	(11.1)
Coal	50.6	49.0	36.4	42.5	5.2	5.5	5.0
	(2.7)	(-3.1)	(-5.1)	(16.7)	(16.3)	(23.9)	(31.5)
Oil	2.0	3.0	2.3	0.9	0.1	0.1	0.0
	(16.6)	(50.1)	(96.9)	(-61.9)	(-60.9)	(-61.9)	(-72.7)
Gas	19.3	20.3	14.5	14.9	2.0	1.8	1.4
	(-8.1)	(5.2)	(-2.2)	(2.8)	(13.6)	(-7.4)	(-14.5)
Nuclear	34.8	34.2	26.9	24.2	2.6	2.5	2.6
	(5.3)	(-1.7)	(5.8)	(-10.1)	(-9.9)	(-18.7)	(-2.8)
Hydro/other renewables	3.0	3.7	2.8	3.5	0.4	0.5	0.4
	(-5.5)	(24.2)	(22.6)	(24.7)	(-4.5)	(32.3)	(42.5)

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		
				1Q	2Q	3Q	1Q	2Q	3Q
GDP (trillion won)	1 427.0 (3.3)	1 080.2 (2.6)	1 508.3 (2.8)	355.5 (2.9)	378.6 (3.4)	378.2 (2.6)	365.8 (2.9)	388.8 (2.7)	392.0 (3.6)
Private consumption	692.2 (1.7)	525.6 (1.8)	725.0 (2.5)	181.9 (2.3)	176.6 (3.5)	181.9 (2.7)	185.6 (2.0)	180.7 (2.3)	186.3 (2.4)
Facilities investment	134.0 (6.0)	104.2 (5.2)	137.0 (-2.3)	31.9 (-4.6)	35.2 (-2.9)	33.1 (-3.9)	36.5 (14.4)	41.3 (17.3)	38.8 (17.0)
Construction investment	198.5 (1.1)	153.4 (5.5)	234.2 (10.7)	44.7 (9.0)	62.4 (10.6)	62.2 (11.2)	49.7 (11.3)	67.4 (8.0)	66.9 (7.6)
Consumer price index (2010=100)	99.3	100.0	101.0	100.6	100.8	101.0	102.7	102.7	103.3
USD to KRW exchange rate (won)	1 052.8	1 122.1	1 160.8	1 202.4	1 163.2	1 121.1	1 154.9	1 129.4	1 132.3
Benchmark rate (%)	2.3	1.7	1.4	1.5	1.4	1.3	1.3	1.3	1.3
Coincident composite index (2010=100)	113.6	116.6	121.1	119.5	120.5	122.0	124.2	125.2	126.1
Mining & manufacturing production index (2010=100)	108.4	106.9	109.2	105.6	109.7	106.5	109.5	110.3	110.2
Manufacturing operation ratio index (2010=100)	94.3	91.9	90.4	89.1	92.3	86.9	88.2	91.2	89.5
Average temperature	13.3	15.2	13.6	1.3	19.1	25.8	1.4	18.9	25.0
- year-on-year difference	0.9	- 0.2	- 0.0	- 0.8	0.5	0.9	0.1	- 0.2	- 0.8
Heating degree days	2 501.6 (-13.5)	1 593.0 (6.1)	2 589.7 (5.3)	1 513.2 (6.2)	140.9 (-16.2)	0.3 n.a	1 487.5 (-1.7)	138.6 (-1.6)	0.6 (100.0)
Cooling degree days	125.4 (-35.6)	151.8 (21.1)	238.1 (56.9)	- n.a	10.2 (-24.4)	227.9 (64.8)	- n.a	18.2 (78.4)	169.9 (-25.5)
Energy intensity	0.20 (-2.4)	0.20 (-0.8)	0.20 (0.0)	0.22 (0.4)	0.18 (-1.7)	0.19 (0.9)	0.22 (-1.1)	0.18 (-0.5)	0.19 (-0.5)
Per capita consumption									
oil (bbl)	16.2 (-1.1)	12.3 (2.7)	18.0 (7.5)	4.5 (7.2)	4.3 (8.0)	4.5 (7.8)	4.6 (1.0)	4.3 (1.3)	4.6 (1.8)
Electricity (MWh)	9.4 (-0.1)	7.2 (1.5)	9.7 (2.3)	2.5 (1.4)	2.3 (1.0)	2.5 (3.8)	2.6 (0.9)	2.3 (0.6)	2.5 (3.3)
City gas (1 000 m ³)	0.4 (-8.1)	0.3 (-4.4)	0.4 (1.8)	0.2 (2.7)	0.1 (-3.2)	0.1 (-2.6)	0.2 (1.9)	0.1 (3.5)	0.1 (3.5)
Total energy (toe)	5.6 (0.3)	4.2 (1.3)	5.8 (2.4)	1.5 (2.8)	1.3 (1.2)	1.4 (3.0)	1.5 (1.4)	1.4 (1.8)	1.4 (2.8)

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)

	2015	2016					2017			
			M1~9	M7	M8	M9	M1~9	M7	M8	M9
Industrial production index										
All industry	110.0 (1.9)	113.3 (3.0)	111.3 (2.8)	113.2 (3.2)	110.3 (4.5)	112.4 (1.3)	115.2 (3.5)	115.5 (2.0)	113.2 (2.6)	120.7 (7.4)
Mining & manufacturing	108.1 (-0.3)	109.2 (1.0)	107.3 (0.4)	110.8 (1.5)	104.0 (2.2)	104.8 (-2.0)	110.0 (2.5)	110.5 (-0.3)	106.4 (2.3)	113.7 (8.5)
Iron & steel	110.9 (-2.0)	112.7 (1.6)	111.4 (1.1)	115.1 (2.7)	114.2 (4.1)	110.9 (4.3)	114.1 (2.5)	115.5 (0.3)	115.7 (1.3)	112.9 (1.8)
Cement	125.8 (19.4)	134.3 (6.8)	129.0 (5.6)	129.4 (-0.4)	135.6 (9.4)	126.0 (-4.0)	135.3 (4.9)	124.2 (-4.0)	121.9 (-10.1)	148.8 (18.1)
Basic compound	115.5 (2.2)	120.5 (4.4)	120.4 (4.6)	123.7 (0.7)	126.3 (5.7)	119.3 (1.7)	125.9 (4.5)	129.6 (4.8)	129.3 (2.4)	126.4 (6.0)
Transport equipment	120.8 (1.2)	117.4 (-2.8)	113.2 (-4.5)	120.0 (-5.9)	84.0 (-12.3)	93.9 (-13.9)	117.2 (3.5)	120.9 (0.8)	95.8 (14.0)	119.5 (27.3)
Electric & electronic	95.6 (-3.3)	96.6 (1.1)	94.1 (-0.3)	94.8 (-3.3)	89.4 (4.6)	96.1 (-0.1)	93.9 (-0.2)	90.9 (-4.1)	90.2 (0.9)	100.6 (4.7)
Service	112.1 (2.9)	115.5 (3.0)	114.2 (3.3)	115.5 (3.2)	115.8 (4.4)	115.7 (2.9)	117.3 (2.7)	118.1 (2.3)	118.2 (2.1)	121.8 (5.3)
Operating ratio index										
Manufacturing	92.4 (-2.0)	90.4 (-2.1)	89.4 (-2.7)	92.1 (-3.1)	83.7 (-3.0)	84.8 (-4.7)	89.7 (0.3)	91.4 (-0.8)	85.2 (1.8)	91.9 (8.4)
Iron & steel	100.2 (-2.4)	103.4 (3.2)	102.0 (2.7)	105.9 (3.3)	107.1 (4.8)	102.3 (5.8)	105.7 (3.6)	107.8 (1.8)	109.0 (1.8)	102.5 (0.2)
Cement	108.8 (8.3)	129.8 (19.4)	124.8 (18.0)	124.4 (12.6)	130.4 (26.7)	122.0 (14.0)	130.4 (4.5)	119.9 (-3.6)	117.8 (-9.7)	144.2 (18.2)
Basic compound	91.1 (-1.8)	94.1 (3.3)	94.4 (3.5)	97.2 (-0.7)	98.3 (4.8)	92.7 (0.7)	96.6 (2.4)	98.4 (1.2)	99.2 (0.9)	97.2 (4.9)
Transport equipment	105.0 (1.5)	97.2 (-7.4)	92.8 (-9.7)	99.1 (-11.4)	58.2 (-28.3)	70.0 (-24.6)	97.7 (5.3)	103.1 (4.0)	75.5 (29.7)	99.1 (41.6)
Electric & electronic	91.4 (1.0)	92.2 (0.8)	89.8 (-0.6)	91.8 (-3.3)	83.7 (-0.9)	94.6 (2.0)	89.7 (-0.1)	86.5 (-5.8)	88.1 (5.3)	94.3 (-0.3)

Note: p means provisional
Source: Monthly energy statistics

International Energy Prices

	2015	2016					2017			
		M1~11	M9	M10	M11	M1~11	M9	M10	M11	
Crude oil (USD/bbl)										
WTI	48.8 (-47.5)	43.3 (-11.2)	42.5 (-14.7)	45.2 (-0.5)	49.9 (7.9)	45.8 (6.6)	50.3 (18.3)	49.9 (10.3)	51.6 (3.3)	56.7 (23.8)
Dubai	50.8 (-47.5)	41.2 (-18.8)	40.3 (-22.9)	43.3 (-5.3)	49.0 (6.9)	43.9 (5.5)	52.4 (30.2)	53.7 (23.8)	55.5 (13.4)	60.9 (38.6)
Brent	53.6 (-46.1)	45.0 (-16.0)	44.1 (-19.7)	47.2 (-2.7)	51.4 (4.3)	47.1 (2.5)	54.0 (22.3)	55.5 (17.5)	57.7 (12.2)	62.9 (33.5)
Unit value of import (C&F)	53.3 (-47.5)	41.0 (-23.0)	40.4 (-25.9)	43.8 (-10.7)	45.7 (-2.5)	47.5 (4.7)	47.2 (16.9)	51.9 (18.4)	54.6 (19.7)	- -
LNG										
From Indonesia (USD/MMBTU)	10.2 (-36.3)	6.9 (-32.6)	6.9 (-33.8)	7.0 (-27.0)	7.2 (-24.3)	7.1 (-20.5)	8.0 (16.8)	8.1 (14.6)	7.8 (8.4)	7.8 (9.6)
Unit value of import (USD/ton, CIF)	549.1 (-35.3)	356.9 (-35.0)	354.9 (-36.4)	352.9 (-29.3)	379.0 (-24.9)	388.3 (-21.6)	414.9 (16.9)	421.4 (19.4)	421.6 (11.2)	399.4 (2.8)
Bituminous coal (USD/ton)										
From Australia	57.5 (-18.0)	65.9 (14.5)	64.0 (10.3)	72.9 (33.2)	93.2 (78.1)	100.0 (90.2)	87.2 (36.2)	96.9 (32.9)	97.1 (4.3)	96.6 (-3.4)
Unit value of import (CIF)	73.9 (-19.8)	68.8 (-6.8)	66.0 (-11.7)	66.8 (-2.7)	74.9 (9.2)	95.1 (45.3)	104.7 (58.6)	94.3 (41.2)	102.6 (37.0)	107.1 (12.6)
Petroleum product (USD/bbl)										
Gasoline	69.4 (-37.4)	56.2 (-19.1)	55.2 (-21.9)	58.1 (-10.3)	63.0 (-1.9)	59.0 (-0.4)	67.4 (22.1)	70.5 (21.5)	70.1 (11.3)	75.7 (28.2)
Kerosene	64.7 (-42.5)	52.8 (-18.3)	51.8 (-21.8)	54.9 (-5.8)	60.9 (3.6)	56.6 (-0.3)	64.4 (24.3)	68.1 (24.1)	68.3 (12.1)	74.0 (30.9)
Diesel	66.6 (-41.6)	53.0 (-20.4)	52.0 (-23.8)	55.2 (-8.9)	61.6 (1.1)	57.0 (-2.1)	65.5 (25.9)	69.4 (25.7)	70.3 (14.0)	73.2 (28.3)
Bunker-C	45.2 (-47.7)	35.4 (-21.6)	34.1 (-27.0)	39.5 (7.6)	43.9 (17.1)	42.6 (22.0)	49.1 (43.9)	50.7 (28.4)	51.9 (18.3)	56.7 (33.1)
Propane	416.3 (-47.4)	323.3 (-22.3)	318.2 (-22.8)	295.0 (-6.3)	340.0 (-5.6)	390.0 (-1.3)	457.7 (43.9)	480.0 (62.7)	575.0 (69.1)	590.0 (51.3)
Butane	436.7 (-46.1)	355.8 (-18.5)	350.0 (-19.2)	320.0 (-7.2)	370.0 (1.4)	440.0 (1.1)	494.5 (41.3)	500.0 (56.3)	580.0 (56.8)	570.0 (29.5)
Naphtha	52.5 (-44.3)	42.5 (-19.0)	41.7 (-21.6)	42.4 (-7.8)	47.5 (-1.2)	46.5 (-2.6)	52.8 (26.5)	54.9 (29.6)	57.6 (21.1)	64.4 (38.4)

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			
			M1~9	M7	M8	M9	M1~9	M7	M8	M9
Coal (Mton)	134.8	129.0	95.4	11.6	11.4	10.5	104.4	12.6	12.7	12.1
	(1.1)	(-4.4)	(-5.7)	(-1.8)	(-3.0)	(-3.0)	(9.4)	(8.6)	(11.9)	(14.7)
- Coking coal excluded	98.1	95.5	70.5	8.7	8.5	7.6	78.9	9.6	9.8	9.2
	(2.5)	(-2.6)	(-4.3)	(1.2)	(-1.5)	(-1.6)	(11.9)	(10.2)	(15.9)	(19.9)
Oil (Mbbl)	856.2	924.2	680.6	73.1	81.0	75.1	692.7	79.2	78.0	77.1
	(4.2)	(7.9)	(8.2)	(6.6)	(9.5)	(8.7)	(1.8)	(8.3)	(-3.6)	(2.6)
- Non-energy oil excluded	411.7	458.0	336.0	35.7	40.0	37.2	330.5	37.6	36.6	36.9
	(6.0)	(11.2)	(12.3)	(9.2)	(16.6)	(11.4)	(-1.6)	(5.4)	(-8.5)	(-0.7)
LNG (Mton)	33.4	34.9	24.7	2.4	2.4	2.1	25.3	2.5	2.3	2.0
	(-8.7)	(4.2)	(0.1)	(14.1)	(3.8)	(0.5)	(2.4)	(7.3)	(-3.7)	(-4.9)
Hydro (TWh)	5.8	6.6	5.2	0.9	0.7	0.6	5.5	0.6	1.0	0.7
	(-25.9)	(14.5)	(12.0)	(29.9)	(4.4)	(22.7)	(4.8)	(-29.6)	(38.8)	(7.1)
Nuclear (TWh)	164.8	162.0	127.4	13.6	14.7	12.7	114.6	12.2	11.9	12.3
	(5.3)	(-1.7)	(5.8)	(-14.3)	(10.3)	(-0.8)	(-10.1)	(-9.9)	(-18.7)	(-2.8)
Others (Mtoe)	12.8	15.0	11.2	1.2	1.3	1.2	11.5	1.3	1.3	1.3
	(17.2)	(16.4)	(16.6)	(16.8)	(17.4)	(12.7)	(2.3)	(0.5)	(2.3)	(5.9)
TPES (Mtoe)	287.5	295.7	218.9	24.0	25.1	23.0	224.1	25.3	25.0	24.1
	(1.6)	(2.9)	(2.8)	(2.4)	(5.2)	(2.9)	(2.4)	(5.4)	(-0.6)	(4.9)
- Non-energy oil excluded	232.2	237.6	176.0	19.4	20.0	18.3	179.1	20.2	19.8	19.1
	(1.4)	(2.4)	(2.4)	(2.0)	(5.7)	(2.1)	(1.7)	(4.1)	(-1.0)	(4.6)
- Non-energy oil&coal excluded	206.4	214.2	158.6	17.4	18.0	16.3	161.3	18.1	17.8	17.1
	(1.9)	(3.8)	(3.9)	(3.6)	(7.4)	(3.2)	(1.7)	(4.1)	(-1.1)	(5.1)

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

Share of TPES by Sources

(unit: %)

	2015	2016p					2017p			
			M1~9	M7	M8	M9	M1~9	M7	M8	M9
Coal	29.7	27.6	27.6	30.6	28.7	29.0	29.5	31.6	32.3	31.6
- Coking coal excluded	20.8	19.7	19.7	22.2	20.6	20.2	21.5	23.3	24.1	23.2
Oil	38.1	39.9	39.8	38.7	41.0	41.5	39.3	39.8	39.7	40.7
- non-energy oil excluded	18.9	20.3	20.2	19.4	20.7	21.0	19.3	19.4	19.1	20.0
LNG	15.2	15.4	14.7	12.8	12.3	12.0	14.7	13.0	11.9	10.9
Hydro	0.4	0.5	0.5	0.8	0.6	0.6	0.5	0.5	0.8	0.6
Nuclear	12.1	11.6	12.3	11.9	12.3	11.6	10.8	10.2	10.1	10.8
Others	4.5	5.1	5.1	5.2	5.1	5.3	5.1	4.9	5.3	5.3
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			
			M1~9	M7	M8	M9	M1~9	M7	M8	M9
Industry	136.7 (0.5)	140.6 (2.8)	103.9 (2.2)	11.6 (2.3)	12.0 (3.6)	11.7 (4.5)	106.0 (2.1)	12.1 (4.3)	11.8 (-1.7)	11.7 (0.7)
Transport	40.3 (7.1)	42.8 (6.2)	31.9 (6.8)	3.5 (5.0)	4.0 (10.4)	3.6 (5.9)	32.3 (1.3)	3.8 (9.3)	3.7 (-5.4)	3.7 (3.8)
Residential-commercial	36.4 (2.7)	38.2 (4.8)	27.9 (4.3)	2.2 (4.5)	2.5 (8.1)	2.3 (5.9)	28.1 (1.0)	2.3 (5.9)	2.5 (1.2)	2.4 (2.3)
Public	5.2 (10.1)	5.5 (6.7)	4.1 (7.1)	0.4 (-7.7)	0.5 (11.4)	0.4 (5.3)	4.3 (4.1)	0.5 (22.7)	0.5 (2.5)	0.4 (5.0)
TFC	218.6 (2.2)	227.1 (3.9)	167.8 (3.5)	17.7 (2.8)	18.9 (5.7)	18.0 (5.0)	170.8 (1.8)	18.7 (5.9)	18.5 (-2.0)	18.2 (1.7)
Coal (Mton)	52.4 (-1.3)	49.0 (-6.4)	35.9 (-6.6)	4.3 (-3.6)	4.2 (-1.5)	4.2 (-0.9)	35.0 (-2.4)	4.1 (-4.0)	3.8 (-8.3)	3.9 (-9.3)
Oil (Mbbl)	841.6 (4.1)	902.4 (7.2)	663.9 (7.0)	71.3 (4.5)	79.6 (8.6)	74.2 (8.4)	685.3 (3.2)	78.4 (10.0)	77.5 (-2.7)	76.7 (3.4)
Electricity (TWh)	483.7 (1.3)	497.0 (2.8)	374.7 (2.5)	40.6 (3.0)	44.4 (5.9)	41.2 (3.7)	382.3 (2.0)	43.2 (6.5)	45.4 (2.1)	42.3 (2.7)
City gas (Bm ³)	20.8 (-5.9)	21.3 (2.3)	15.4 (0.4)	1.1 (-1.1)	1.0 (-2.5)	1.0 (-3.0)	15.9 (3.1)	1.1 (-0.8)	1.1 (2.6)	1.1 (10.3)
Heat-others (1 000 toe)	12.7 (14.7)	14.4 (13.6)	10.7 (13.7)	1.1 (15.0)	1.1 (13.2)	1.1 (13.3)	10.4 (-3.2)	1.1 (-2.6)	1.1 (-2.0)	1.1 (-3.4)

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			
			M1~9	M7	M8	M9	M1~9	M7	M8	M9
Industry	62.5	61.9	61.9	65.8	63.6	64.9	62.1	64.8	63.8	64.4
Transport	18.4	18.8	19.0	19.9	20.9	19.9	18.9	20.5	20.2	20.3
Residential-commercial	16.7	16.8	16.6	12.2	13.0	12.8	16.5	12.2	13.5	12.9
Public	2.4	2.4	2.4	2.1	2.4	2.3	2.5	2.4	2.5	2.4
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	14.3	16.2	14.7	15.7	13.8	14.8	13.9	14.2
Oil	49.1	50.5	50.3	51.1	53.4	52.4	51.0	53.3	53.1	53.6
Electricity	19.0	18.8	19.2	19.8	20.2	19.7	19.3	19.9	21.1	20.0
City gas	10.1	9.9	9.8	6.7	5.9	6.0	9.9	6.3	6.1	6.5
Heat-others	5.8	6.3	6.4	6.2	5.8	6.1	6.1	5.7	5.8	5.8

Note: p means provisional

Source: Monthly energy statistics

Statistics on Energy Production Facilities

	2014	2015	2016	2017p			M7	M8	M9
				M7	M8	M9			
Total capacity (GW)	93.2 (7.2)	97.6 (4.8)	105.9 (13.6)	100.2 (12.0)	101.0 (12.1)	102.0 (13.1)	113.4 (17.1)	114.2 (17.9)	115.2 (19.0)
Nuclear	20.7 -	21.7 (4.8)	23.1 (11.6)	21.7 (4.8)	21.7 (4.8)	21.7 (4.8)	22.5 (3.7)	22.5 (3.7)	22.5 (3.7)
Bituminous coal	25.9 (10.7)	26.2 (1.1)	30.9 (19.3)	27.3 (9.4)	27.9 (11.7)	28.8 (15.4)	34.7 (34.0)	35.3 (36.3)	36.2 (39.8)
Gas	30.3 (27.2)	32.2 (6.5)	32.6 (7.8)	32.6 (16.5)	32.6 (13.5)	32.6 (15.3)	36.7 (15.1)	36.7 (15.1)	36.6 (15.0)
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			M7	M8	M9
				M7	M8	M9			
The number of household demanding city gas (mil)	16.9 (3.1)	17.4 (3.0)	18.0 (3.4)	17.6 (3.4)	17.6 (3.4)	17.7 (3.4)	18.2 (3.2)	18.2 (3.3)	18.2 (3.3)
Registered cars (mil)	20.1 (3.7)	21.0 (4.3)	21.8 (3.9)	21.5 (4.4)	21.6 (4.3)	21.6 (4.1)	22.3 (3.4)	22.3 (3.4)	22.4 (3.5)
- gasoline	9.6 (2.0)	9.8 (2.3)	10.1 (2.9)	10.0 (2.8)	10.0 (2.8)	10.0 (2.8)	10.3 (2.8)	10.3 (2.9)	10.3 (2.9)
- diesel	7.9 (7.3)	8.6 (8.6)	9.2 (6.4)	9.0 (7.8)	9.0 (7.6)	9.0 (7.2)	9.4 (4.8)	9.4 (4.8)	9.5 (4.8)
- LPG	2.3 (-2.3)	2.3 (-3.4)	2.2 (-4.0)	2.2 (-3.6)	2.2 (-3.7)	2.2 (-3.8)	2.1 (-3.3)	2.1 (-3.3)	2.1 (-3.1)
- hybrid	0.1 (40.0)	0.2 (31.3)	0.2 (37.6)	0.2 (35.8)	0.2 (36.4)	0.2 (36.7)	0.3 (34.6)	0.3 (35.4)	0.3 (36.4)

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

Source: Monthly energy statistics

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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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