

KEEI

MONTHLY KOREA ENERGY TRENDS

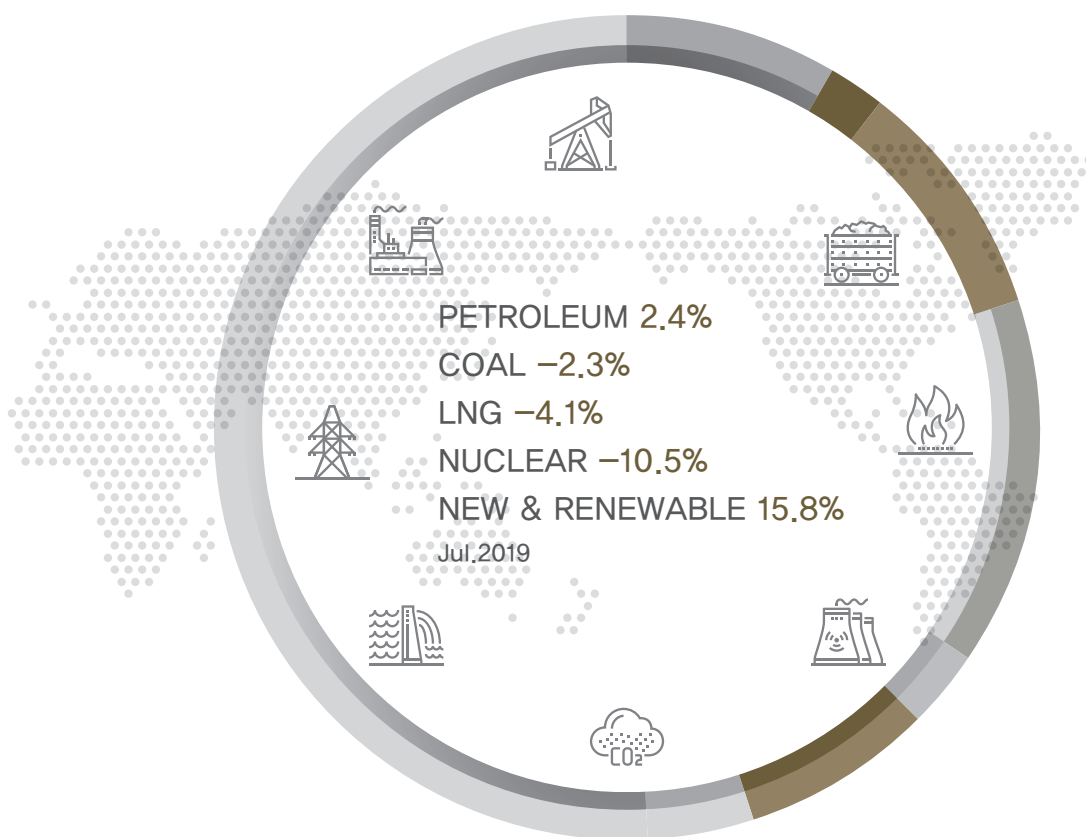


Table of Contents

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

1. The Economy and the Industry

The production index of mining & manufacturing industries posted a year-on-year growth of 0.6% in July, led by the semiconductor and automobile sectors, although the outputs of other major products declined.

- The production index of semiconductors grew by 3.3% year-on-year despite sluggish exports, the rate of growth, however, declined for two consecutive months.
- The production index of basic chemical materials fell by 1.9% year-on-year despite expanded naphtha cracking capacity, as Hanwha Total's Daesan naphtha cracking center (unit 1) was blacked out and shuttered after it was struck by a lightning.
- The production index of iron and steel products dropped by 1.1% year-on-year due to decreased outputs of bar steel (-2.0%) and pig iron (-2.3%), even though the production of steel plate increased (3.0%) driven by domestic demand.
- The production index of automobiles went up by 14.2% year-on-year as a result of increased exports of SUVs and eco-friendly vehicles.

The service production index grew by 1.4%, led by the health & social welfare sectors, though the index declined in the wholesale & retail and restaurant & accommodation sectors.

► Trend in major economic and industrial indicators

	2017	2018p	2019p				
			M1~7	M7	M1~7	M6	M7
GDP (trillion won)	1 760.8 (3.2)	1 807.7 (2.7)	879.5 (2.8)	- -	895.9 (1.9)	460.1 (2.0)	- -
Total export (\$billion, customs clearance basis)	573.7 (15.8)	604.9 (5.4)	348.5 (6.3)	51.8 (6.1)	317.3 (-8.9)	44.0 (-13.8)	46.1 (-11.1)
Industrial production index (2015=100)	104.7 (2.5)	106.1 (1.3)	105.1 (0.9)	108.2 (3.2)	104.0 (-1.0)	104.6 (-2.7)	108.9 (0.6)
Semi-conductors	138.9 (10.8)	167.0 (20.3)	159.2 (20.5)	186.1 (39.4)	169.3 (6.3)	193.8 (7.3)	192.2 (3.3)
Basic compound	110.4 (5.5)	110.4 -	111.7 (2.6)	113.8 (2.1)	105.2 (-5.8)	99.2 (-9.9)	111.6 (-1.9)
Steel	102.9 (1.7)	99.8 (-3.1)	100.8 (-2.2)	102.1 (-2.2)	98.7 (-2.1)	98.1 (-2.5)	101.0 (-1.1)
Cars	95.0 (-2.7)	93.7 (-1.4)	91.7 (-7.8)	88.0 (-11.8)	95.1 (3.7)	92.9 (-1.6)	100.5 (14.2)
Service production index (2015=100)	104.5 (1.8)	106.7 (2.1)	105.3 (2.4)	106.3 (2.6)	106.6 (1.2)	108.1 (0.1)	107.8 (1.4)
Wholesale & Retail	103.3 (0.8)	104.8 (1.4)	104.0 (2.0)	103.2 (2.2)	103.6 (-0.4)	103.8 (-1.1)	102.7 (-0.5)
Restaurant & Accommodation	100.4 (-1.9)	98.5 (-1.9)	97.1 (-2.6)	101.9 (-1.6)	95.7 (-1.5)	96.2 (-1.3)	99.2 (-2.7)

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

2. Energy Prices

Global energy prices

Global oil price rose by 4.0% in September from the previous month after a new Energy Minister was named in Saudi Arabia and following an air attack on its oil facilities.

- The global oil price increase was influenced by the appointment of a new Saudi Energy Minister and his strong commitment to the oil price recovery as well as output reduction due to an air strike on Saudi oil facilities, despite several factors that otherwise could have lowered the oil price, including the U.S.-China import tariffs and global economic slowdown.

Global coal price went up by 0.3% (in September) from the previous month, while natural gas price has been flat for two months in a row.

- Global coal price slightly increased than the prior month despite slower demand for coal-fired generation in China, as global oil price rebounded and coal production plunged in India due to the heaviest rainfall in 25 years.

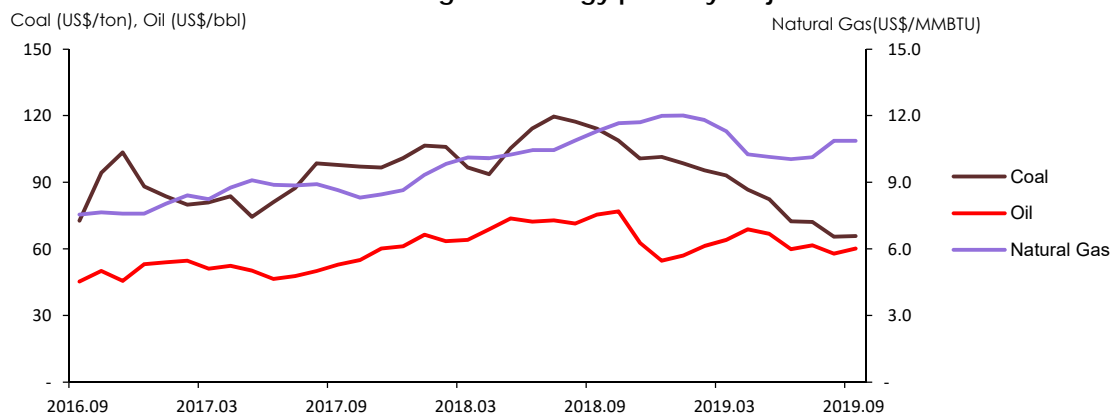
► Trend in global energy prices

	2017	2018				2019		
			M7	M8	M9	M7	M8	M9
Crude oil (US\$/bbl)	53.0 (22.4)	68.6 (29.5)	72.9 (52.5)	71.4 (42.6)	75.5 (42.4)	61.7 (-15.4)	57.8 (-19.0)	60.1 (-20.3)
Natural gas (US\$/MMBTU)	8.6 (16.8)	10.7 (24.0)	10.4 (17.9)	10.9 (22.0)	11.3 (30.8)	10.1 (-3.0)	10.9 (-0.1)	10.9 (-3.9)
Coal (US\$/ton)	88.6 (33.8)	107.0 (20.9)	119.6 (36.7)	117.3 (19.0)	114.2 (16.7)	72.1 (-39.7)	65.6 (-44.1)	65.8 (-42.4)

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

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

► Trend in global energy price by major sources



Domestic energy prices

Gasoline and diesel prices were up 2.4% and 2.1% respectively in September from the previous month, owing to an upward trend in global oil price and the elimination of the fuel tax cut.

- Gasoline and diesel prices grew faster, as the appointment of a new Saudi Energy Minister led to increased oil price and the government tax credit, which has been in place for 10 months, finally ended.

Propane and butane prices fell slightly in September compared to the previous month, partly because a number of domestic LPG importers lowered the propane price.

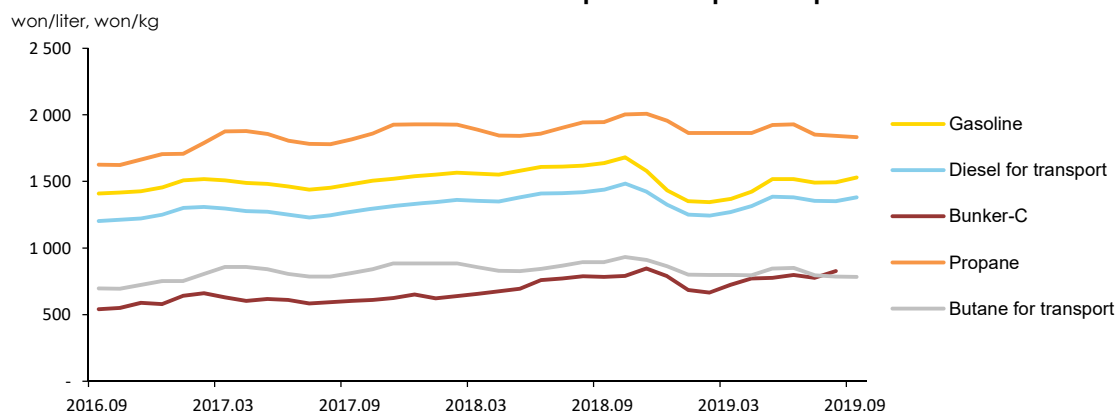
- Domestic propane price fell by 0.5%, as several LPG importers such as SK, S-OIL and GS Caltex (except EI) lowered the supply price (22-24won/liter), although Saudi Aramco's global propane and butane prices were the same as the previous month in August.
- The price of butane for transport use dropped by 0.1%, even though the fuel tax increased by a maximum of 14 won after the tax credit ended.

► Trend in domestic energy prices

	2017	2018	2019			2019	2019	2019
			M7	M8	M9	M7	M8	M9
Gasoline (won/liter)	1 491.3 (6.3)	1 581.3 (6.0)	1 610.9 (12.0)	1 618.3 (11.5)	1 637.6 (10.7)	1 491.5 (-7.4)	1 493.7 (-7.7)	1 529.3 (-6.6)
Diesel for transport (won/liter)	1 282.5 (8.4)	1 391.9 (8.5)	1 411.9 (14.8)	1 419.1 (14.0)	1 438.9 (13.2)	1 352.8 (-4.2)	1 351.9 (-4.7)	1 379.8 (-4.1)
Bunker-C (won/liter)	619.3 (18.9)	735.0 (18.7)	771.5 (32.0)	788.6 (32.7)	784.4 (30.1)	776.5 (0.6)	827.4 (4.9)	- -
Propane (won/kg)	1 833.8 (8.5)	1 920.5 (4.7)	1 902.9 (6.9)	1 942.9 (9.2)	1 945.2 (7.1)	1 851.4 (-2.7)	1 841.1 (-5.2)	1 831.9 (-5.8)
Butane for transport (won/liter)	826.5 (12.6)	874.6 (5.8)	869.1 (10.5)	894.8 (13.9)	895.4 (10.1)	796.8 (-8.3)	785.4 (-12.2)	784.7 (-12.4)

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

► Trend in domestic petroleum product prices



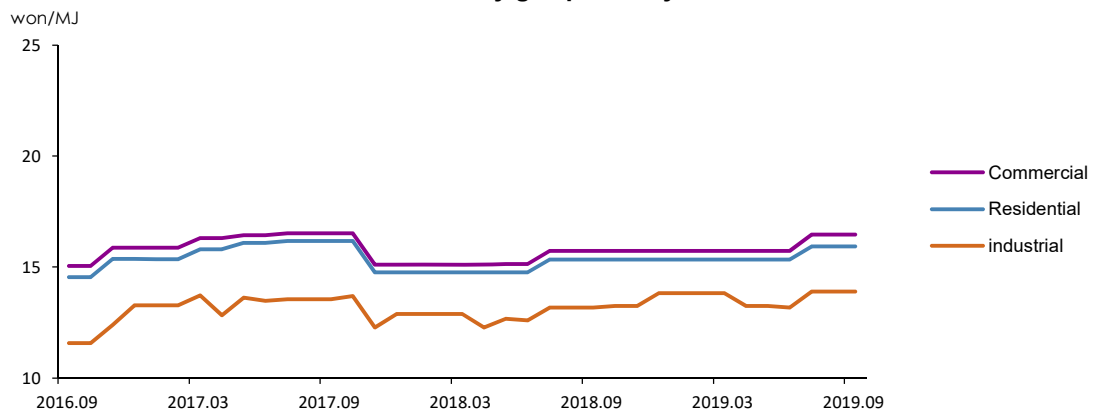
City gas price has been flat for three consecutive months, as it was fixed after the price increase in July.

- City gas price had not been raised since July 2018 despite the growth in global LNG price in order to alleviate the economic burden of people, but it was raised in July 2019 for the first time in a year to collect accounts receivable that were accumulated during the price-fixing period.

Heat energy price was raised in August and then remained flat in September.

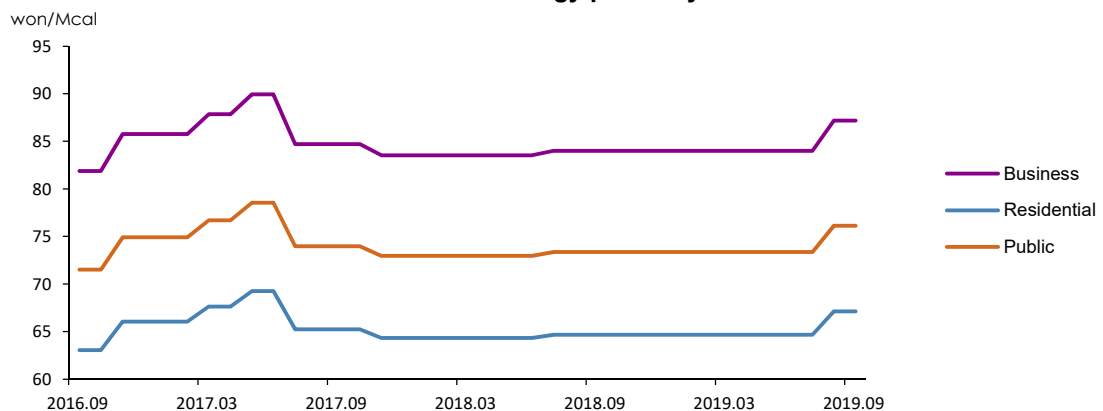
- Heat energy price increased for the first time in 13 months (since July 2018), which was affected by increased city gas price in July and decreased fuel cost as a result of the energy tax reform.
- Korea District Heating Corporation's heat energy price is linked to city gas price according to the fuel cost pass-through scheme, and the actual fuel cost is reflected in the heat energy price once a year (LNG for over 100MW, city gas for under 100MW).

► Trend in city gas prices by end-use sectors



Note: Instead of volume(M³), calorie (MJ) has been used as the unit of measurement in the city gas pricing system since July 2012. Figures before that are converted based on standard calorie (additional tax, base charge excluded)

► Trend in heat energy prices by end-use sectors

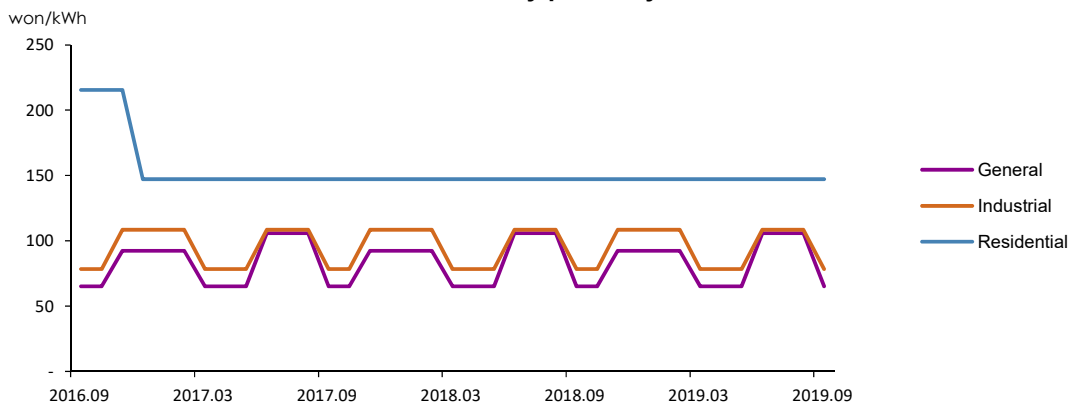


Note: The prices are based on flat price for heating (additional tax, base charge excluded)

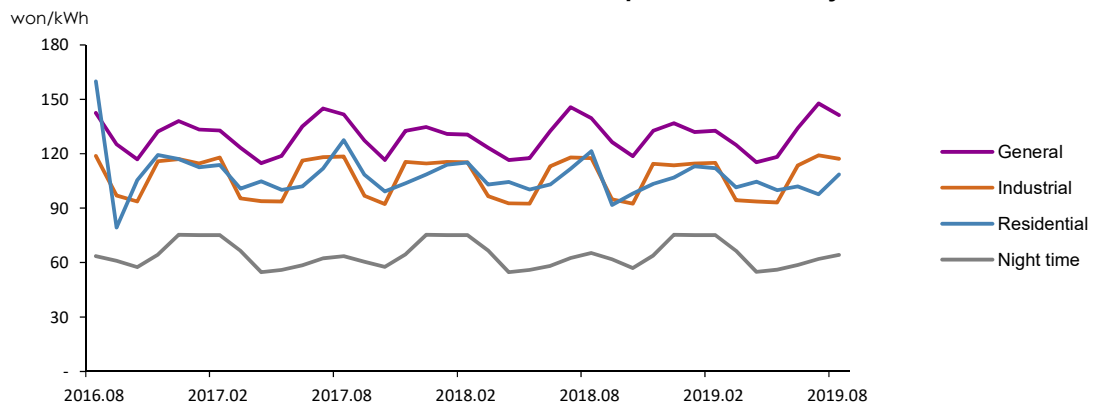
Source: Korea District Heating Corporation.

- **Electricity prices ¹ for general and industrial consumers declined than the prior month, and the residential electricity consumers gained no more price benefit, as previously raised electricity use ceilings in three-stage progressive rates returned to its original level.**
 - General and industrial electricity prices that are based on time-of-use pricing dropped by 38.3% and 27.6% respectively in September from the previous month following the seasonal price adjustment from summer (June-Aug) to spring/winter (Mar-May, Sept-Oct).
 - As for the residential electricity, each stage's rate was the same, but there were no further bill savings from the increased (electricity use) ceilings in each stage of progressive rates.
- **The unit sales price of residential electricity increased in August due to growing summertime power demand, while that of industrial and general electricity declined.**
 - The unit sales price of electricity went up by 11.1% in the residential sector, as growing cooling demand in sweltering weather led to increased power consumption. Meanwhile, the price for general and industrial electricity fell by 4.3% and 1.6% respectively.

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



► **Trend in unit sales price of electricity**



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

3. Energy Supply

- **The total energy import volume grew by 4.0% year-on-year in July despite decreased crude oil import, as the import of petroleum products and bituminous coal increased.**
 - Crude oil import fell by 10.7% compared to the same period last year, as the scheduled maintenance at some refineries lasted until July and the import of condensate decreased due to the ban on oil import from Iran.
 - The import volume of petroleum products posted a year-on-year growth of 11.5%, which was led by those used as raw materials in the petrochemical sector.

► Trend in energy trade and domestic production

	2017	2018p	2019p				
			M1~7	M7	M1~7	M6	M7
Import volume							
Crude oil (Mbbbl)	1 118.2 (3.7)	1 116.3 (-0.2)	654.1 (2.8)	96.7 (3.3)	630.6 (-3.6)	85.7 (-12.5)	86.3 (-10.7)
Petroleum product (Mbbbl)	314.5 (-6.0)	341.6 (8.6)	197.2 (6.5)	28.6 (11.9)	191.6 (-2.8)	28.3 (-1.0)	31.8 (11.5)
Bituminous coal (Mton)	131.5 (11.0)	131.5 (0.0)	76.7 (0.7)	10.8 (-0.7)	73.9 (-3.6)	9.4 (-7.4)	12.0 (11.5)
Anthracite (Mton)	7.0 (-25.7)	8.1 (16.0)	4.7 (3.6)	0.6 (-16.6)	4.3 (-7.3)	0.6 (-19.0)	0.6 (3.7)
LNG (Mton)	37.5 (12.2)	44.0 (17.3)	25.4 (13.7)	2.7 (1.2)	22.9 (-9.8)	3.2 (-13.8)	3.0 (10.4)
Import volume (Mtoe)	339.7 (5.5)	354.5 (4.4)	205.0 (4.2)	28.8 (2.2)	200.3 (-2.3)	27.1 (-6.4)	29.9 (4.0)
Import value (billion US\$, CIF)	109.5 (35.2)	146.0 (33.3)	81.9 (31.4)	12.3 (51.5)	74.4 (-9.1)	10.3 (-19.1)	10.3 (-16.4)
Energy share of total import value (%)	22.9	27.3	26.4	27.3	25.3	25.7	23.5
Foreign energy dependence (%)*	93.9	93.5	93.5	93.3	92.8	92.3	92.5
Domestic production							
Hydropower (TWh)	7.0 (5.5)	7.3 (3.9)	4.2 (9.1)	0.8 (26.6)	3.6 (-15.2)	0.5 (-34.5)	0.6 (-30.3)
Anthracite (Mton)	1.5 (-14.0)	1.2 (-19.2)	0.8 (-15.6)	0.1 (-25.2)	0.6 (-17.6)	0.1 (-25.4)	0.1 (-3.4)
Natural gas (Mton)	0.3 (120.5)	0.2 (-10.4)	0.2 (-7.7)	0.0 (-12.2)	0.1 (-19.9)	0.0 (-9.2)	0.0 (-1.0)
Renewable energy (Mtoe)	15.8 (16.7)	17.5 (10.5)	10.2 (10.9)	1.5 (12.0)	11.5 (12.8)	1.6 (15.5)	1.7 (15.8)

Note: p means provisional, () is year-on-year growth rates (%), *Foreign energy dependence (%) including Nuclear energy
Source: Monthly Energy Statistics

4. Energy Consumption

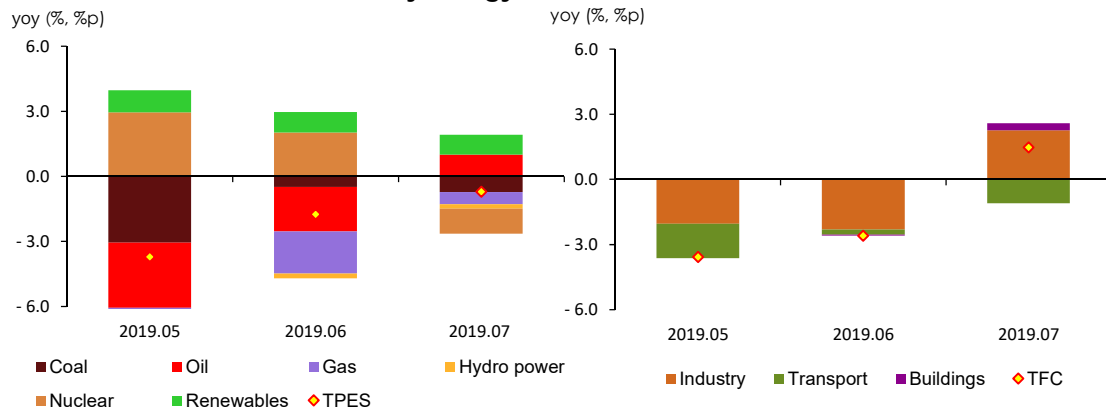
- **Total primary energy supply(“TPES”) dropped by 0.7% year-on-year in July despite increased use of petroleum and renewable energy, as coal, nuclear and gas use all declined.**
 - Petroleum consumption was up 2.4% year-on-year, led by the industrial sector where the consumption increased, especially naphtha, partly due to the petrochemical capacity additions, although the consumption declined in the transport sector owing to the decreased volume of transport and number of domestic flights.
 - Coal consumption dropped by 2.3% on a year-on-year basis, as the industrial coal demand decreased amid sluggish iron & steel business and a slowdown in construction business, and the demand also declined in the power generation sector due to increased preventive maintenance and accordingly decreased capacity factors.
 - Gas consumption fell by 4.1% from the same month last year, because city gas consumption declined as a result of increased price and decreased number of cooling degree days (-60.9%, -61.5degree days), and as it also declined in the power generation sector amid weak power demand.
- **Total Final Consumption(“TFC”) grew by 1.5% year-on-year, as the consumption recovered in the industrial and buildings sectors, although it declined in the transport sector.**
 - Industrial energy consumption was up 3.5% year-on-year led by the petrochemical sector, driving the growth of TFC, though the consumption was weak in other industrial sectors due to overall economic slowdown.
 - Energy consumption in the transport sector decreased by 5.6% year-on-year, as the consumption declined in the road, domestic navigation and aviation sectors all together.
 - Energy consumption in the buildings sector went up by 2.0% year-on-year; the consumption increased in commercial and public buildings, mostly petroleum and renewable energy, while residential energy use declined, especially electricity, despite lower residential electricity price during summer, as the number of cooling degree days decreased.

► Energy consumption trend

	2017	2018p			2019p		
			M1~7	M7	M1~7	M6	M7
Total energy (Mtoe)	302.1	306.1	178.4	25.6	175.9	23.2	25.5
	(2.9)	(1.3)	(2.6)	(2.1)	(-1.4)	(-1.7)	(-0.7)
- Non-energy oil&coal excluded	215.4	221.6	129.1	18.3	127.3	16.6	17.9
	(1.6)	(2.9)	(3.8)	(3.3)	(-1.3)	(-0.2)	(-2.4)
Final energy (Mtoe)	233.9	236.7	139.0	18.9	138.0	17.9	19.1
	(3.9)	(1.2)	(2.5)	(-0.5)	(-0.7)	(-2.6)	(1.5)

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 dropped by 2.3% year-on-year in July with the majority of the drop occurred in the industrial and power generation sectors.

Coal consumption declined by 2.3% year-on-year in the power generation sector, marking 11th consecutive month of drop, which was affected by the shutdown of Youngdong unit 2(2019.1) and decreased capacity factors.

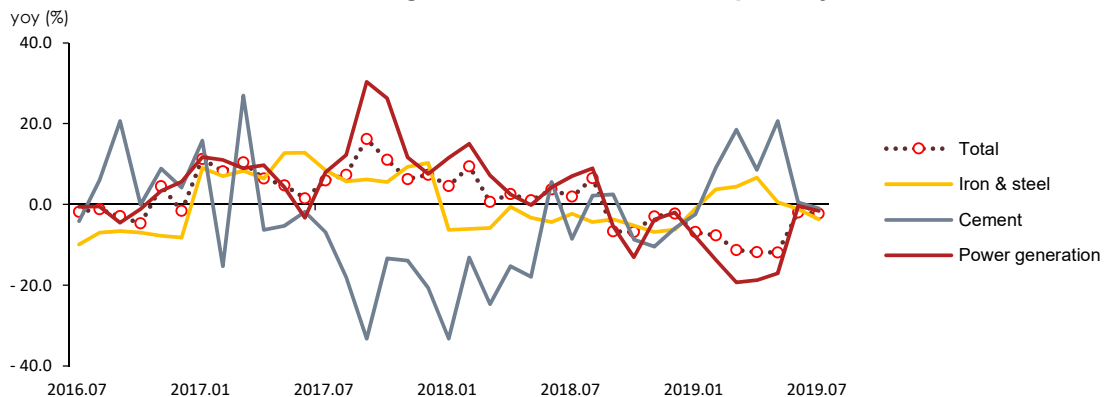
Industrial coal use also declined due to decreased bituminous coal use in the steelmaking and cement sectors amid weak production.

► Coal consumption trend

	2017	2018p			2019p		
			M1~7	M7	M1~7	M6	M7
Coal (Mton)	139.8	141.0	81.5	12.6	75.3	10.5	12.3
	(8.1)	(0.9)	(3.4)	(1.9)	(-7.6)	(-1.9)	(-2.3)
Industry	49.3	48.3	28.0	4.1	27.8	4.0	3.9
	(3.2)	(-2.0)	(-2.7)	(-7.3)	(-0.8)	(-4.3)	(-3.7)
-Coking-coal	36.3	34.6	20.0	3.1	20.3	2.9	3.0
	(8.5)	(-4.6)	(-4.1)	(-2.3)	(1.2)	(-1.2)	(-3.7)
Buildings	1.1	0.9	0.4	0.0	0.2	0.0	0.0
	(-14.0)	(-15.7)	(-9.7)	(57.1)	(-31.0)	(-42.9)	(-36.4)
Power generation	89.4	91.8	53.1	8.5	47.2	6.5	8.4
	(11.3)	(2.6)	(7.1)	(7.0)	(-11.0)	(-0.3)	(-1.6)

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 grew by 2.4% year-on-year in July led by the industrial sector, although the consumption declined in the transport sector.

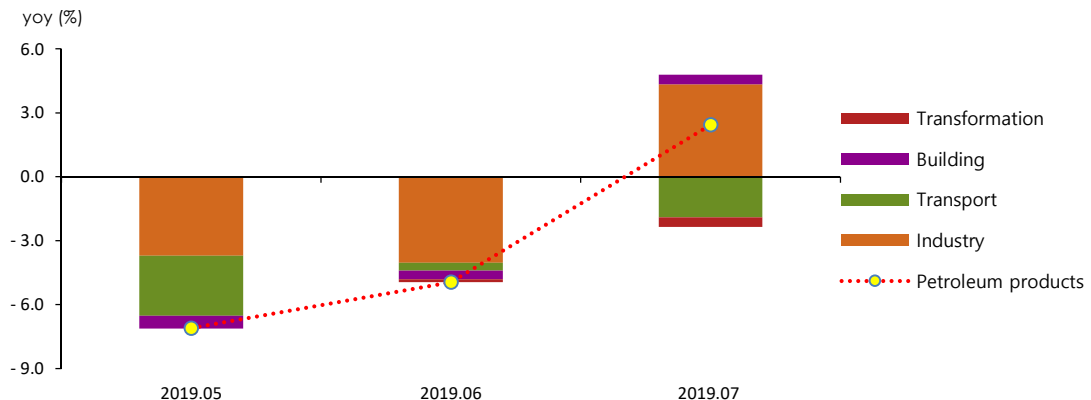
- Industrial petroleum consumption grew by 7.0% year-on-year, and a large share of the growth came from those used as raw materials in the petrochemical sector such as naphtha and LPG.
- Petroleum consumption fell by 5.7% in the transport sector on a year-on-year basis, as the consumption simultaneously declined in the road, domestic navigation and aviation sectors.

► Trend in petroleum product consumption by end-use sectors

	2017	2018p	2019p		2019p		
			M1~7	M7	M1~7	M6	M7
Petroleum (Mbbbl)	937.1	931.8	544.0	77.4	533.9	71.8	79.3
	(1.7)	(-0.6)	(1.3)	(-2.2)	(-1.9)	(-4.9)	(2.4)
Industry	567.0	564.1	330.1	47.9	323.6	43.0	51.3
	(4.5)	(-0.5)	(2.0)	(-1.0)	(-2.0)	(-6.6)	(7.0)
-Naphtha	458.4	451.2	264.7	38.2	254.3	33.5	38.9
	(6.6)	(-1.6)	(1.1)	(-2.0)	(-3.9)	(-7.5)	(1.9)
Transport	303.2	302.3	174.3	25.9	174.6	25.4	24.4
	(0.9)	(-0.3)	(-0.2)	(-3.5)	(0.1)	(-1.1)	(-5.7)
Buildings	56.4	53.7	31.4	2.6	30.4	2.8	3.0
	(0.3)	(-4.9)	(-1.3)	(-16.3)	(-3.1)	(-9.7)	(13.4)
Power generation	10.5	11.7	8.2	1.0	5.2	0.5	0.6
	(-51.9)	(12.1)	(21.8)	(27.3)	(-35.9)	(-17.6)	(-35.7)

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

► The growth rates of petroleum product consumption & the consumption by end-use sectors



7. Gas

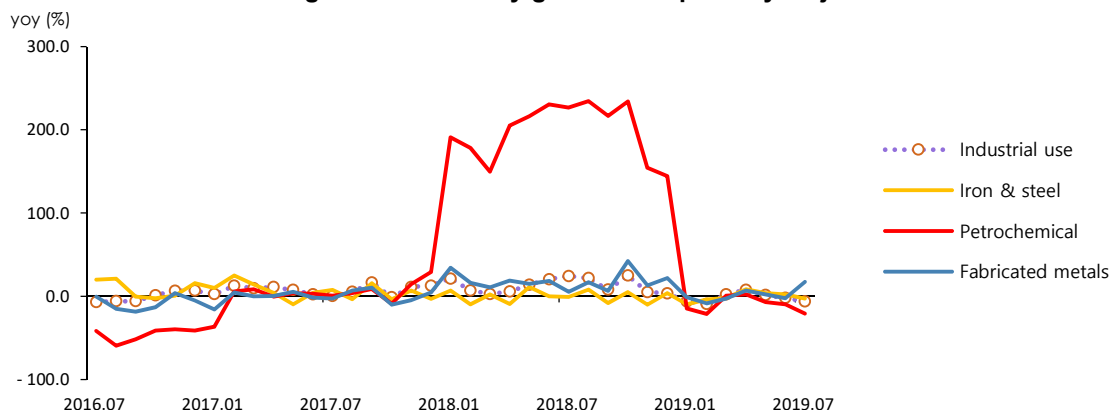
- **Natural gas consumption declined in both of the power generation and city gas production sectors in July, and accordingly, the total consumption dropped by 4.1% on a year-on-year basis.**
 - Gas consumption for power generation declined despite decreased baseload generation (nuclear + coal), because electricity consumption decreased (-2.4%).
- **City gas consumption dropped by 3.4% year-on-year (in July), as its industrial use decreased due to base effect and increased price.**
 - Industrial city gas consumption decreased, as higher price led to decreased consumption in the petrochemical sector that is relatively more sensitive to fuel price changes, though the consumption increased in the fabricated metals sector.
 - City gas consumption in buildings decreased, mostly in commercial buildings, as demand for air conditioner cooling in large buildings declined amid decreased number of cooling degree days.

► Trend in natural gas and city gas consumption

	2017	2018p	2019p				
			M1~7	M7	M1~7	M6	M7
LNG (Mton)	36.4	40.9	24.9	2.7	22.9	2.3	2.6
	(4.3)	(12.5)	(17.7)	(7.0)	(-8.0)	(-13.3)	(-4.1)
Power generation	15.6	18.0	11.0	1.5	9.6	1.1	1.5
	(0.6)	(15.6)	(22.2)	(-0.6)	(-12.2)	(-23.1)	(-5.3)
City gas production	18.4	19.8	12.0	1.0	11.6	1.0	1.0
	(5.8)	(7.7)	(10.7)	(14.2)	(-3.2)	(-0.8)	(-3.0)
City gas (bm³)	22.6	24.3	15.3	1.3	14.9	1.3	1.2
	(6.3)	(7.3)	(9.6)	(12.8)	(-2.8)	(-1.5)	(-3.4)
Industry	7.8	8.7	5.1	0.7	5.0	0.6	0.6
	(7.7)	(12.4)	(13.0)	(24.3)	(-1.9)	(-2.0)	(-6.1)
Buildings	13.6	14.3	9.4	0.5	9.1	0.5	0.5
	(6.0)	(5.2)	(8.8)	(3.5)	(-3.4)	(-0.8)	(-0.1)

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

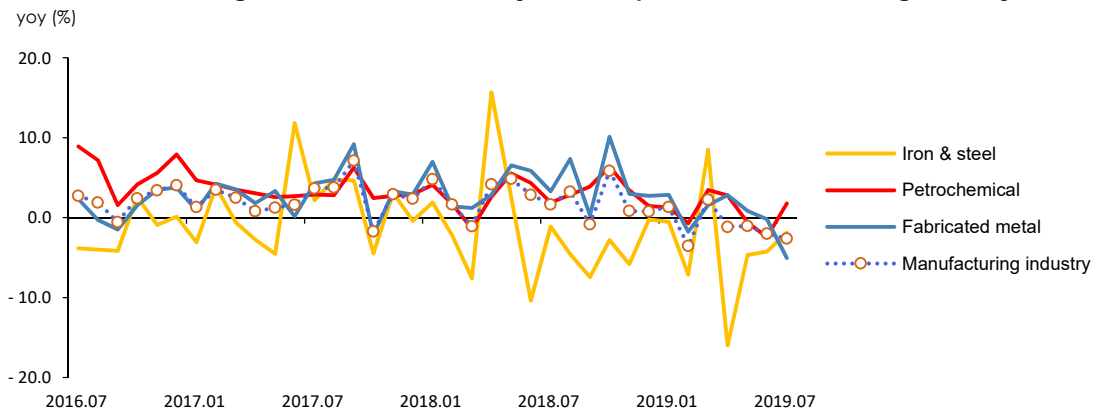
- Electricity consumption declined in all end-use sectors in July due to sluggish industrial production and temperature conditions, and therefore, the total consumption fell by 2.4% on a year-on-year basis.
 - Industrial electricity consumption decreased despite increased number of work days (1.0), because the consumption was weak in large power consuming businesses except the petrochemical sector.
 - Electricity consumption in buildings was lower than the same month last year, as cooling demand decreased amid falling number of cooling degree days (-61.5) and extremely hot days (-12.1)

► Trend in electricity consumption by end-use sectors

	2017	2018p			2019p		
			M1~7	M7	M1~7	M6	M7
Electricity (TWh)	507.7	526.1	305.7	44.0	302.8	40.6	43.0
	(2.2)	(3.6)	(3.8)	(1.9)	(-0.9)	(-1.0)	(-2.4)
Industry	276.7	283.7	164.8	24.1	163.7	22.7	23.5
	(2.5)	(2.5)	(2.7)	(1.8)	(-0.7)	(-1.6)	(-2.3)
Transport	2.9	3.0	1.7	0.3	1.7	0.2	0.3
	(6.5)	(3.6)	(5.5)	(0.2)	(-0.4)	(0.8)	(-1.8)
Buildings	228.2	239.5	139.2	19.7	137.4	17.7	19.2
	(1.7)	(4.9)	(5.1)	(2.0)	(-1.3)	(-0.3)	(-2.6)
Residential	66.5	70.7	39.4	5.9	39.5	5.3	5.6
	(0.5)	(6.3)	(3.9)	(2.4)	(0.2)	(0.6)	(-4.5)
Commercial	130.4	136.4	80.7	11.1	79.2	10.0	10.9
	(2.3)	(4.6)	(5.7)	(2.5)	(-1.8)	(-0.5)	(-2.1)

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

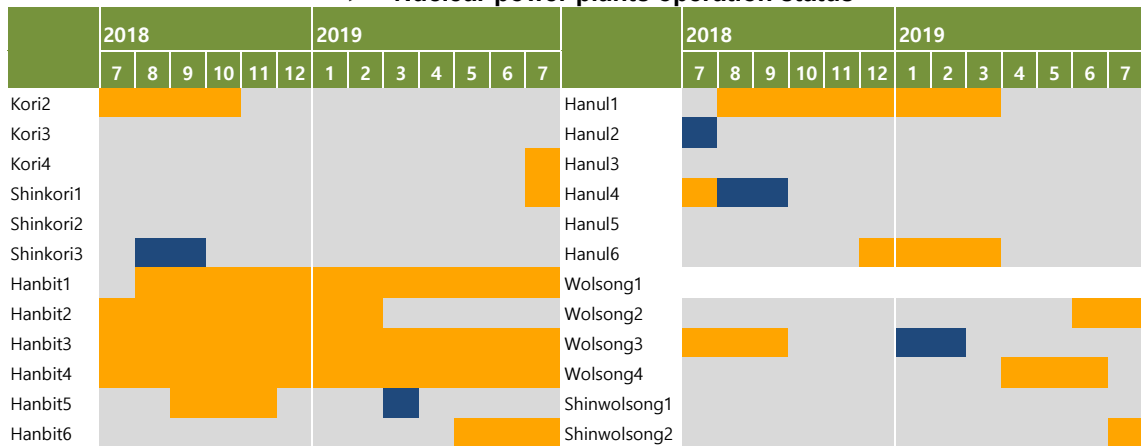
► The growth rate of electricity consumption in manufacturing industry



9. Nuclear

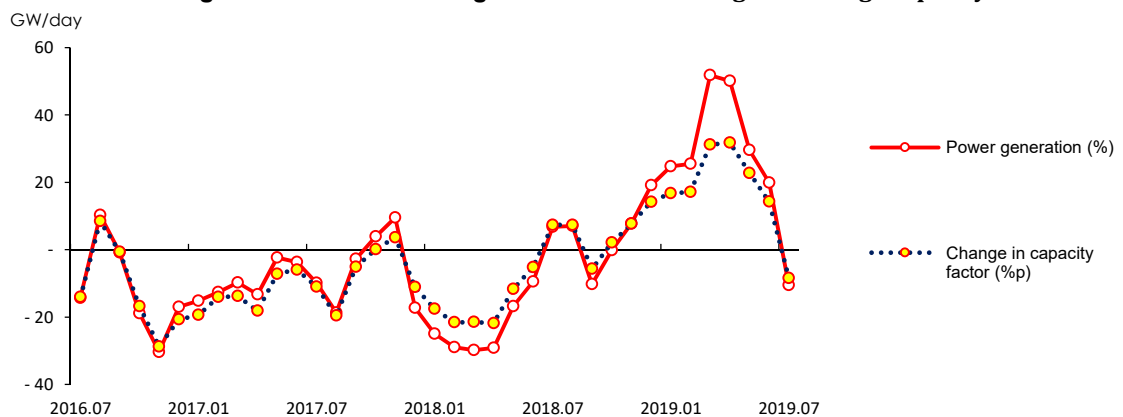
- The total nuclear generation fell by 10.5% year-on-year in July, owing to the increased planned preventive maintenance.
- The average capacity factor at nuclear power plants fell by 8.5%p to 71.8% year-on-year, due to the increased planned preventive maintenance and the base effect of the growth during the same month last year (7.4%p).
- Nuclear energy's share of the total generation went down by 5.6%p to 31.0% on a year-on-year basis

► Nuclear power plants operation status



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

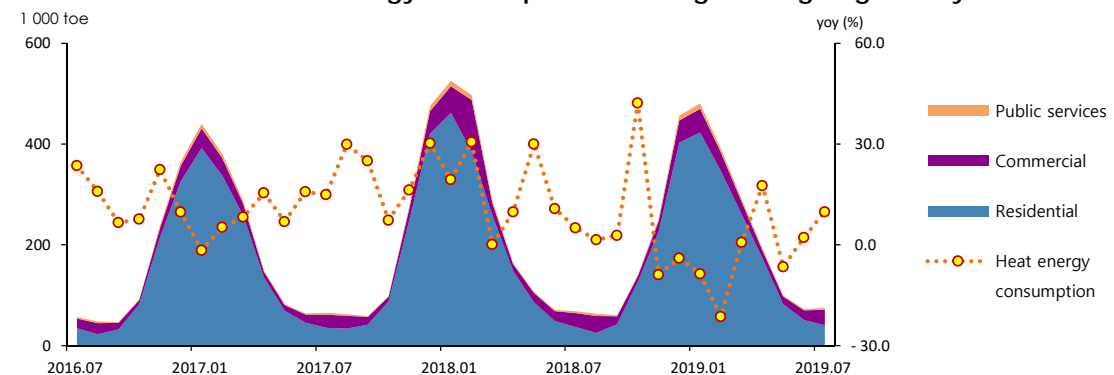
► The growth rate of nuclear generation & the change of average capacity factor



10. Heat and Renewable energy

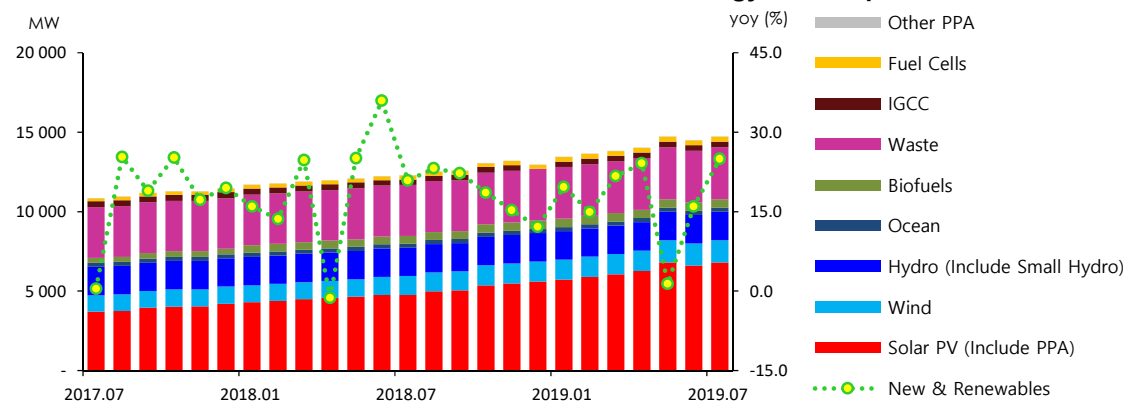
- ☐ Heat energy consumption went up by 9.8% year-on-year in July, led by the residential sector which makes up a large share of the total consumption.
- ☐ Renewable & other energy use grew by 10.5% year-on-year (in July) despite decreased hydropower generation, as renewable generation increased.
 - The total renewable generation (except hydro) increased by 22.8% with solar PV (including PPA) and bioenergy taking the lead.
 - Hydropower generation (including pumping-up & small hydro) dropped by over 30% for three months in a row, even though the amount of rainfall increased (25.2%).

► Heat energy consumption & heating/cooling degree days



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

► Trend in renewable and other energy consumption



11. Industry

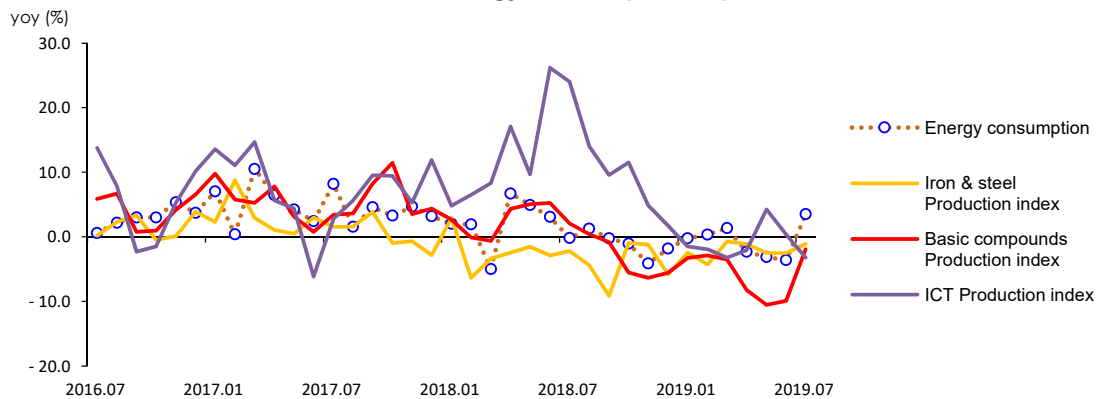
- Industrial energy use went up by 3.5% in July on a year-on-year basis due to the increased number of work days (1.0) and as the consumption rebounded in the petrochemical sector.
 - Energy consumption rebounded in the petrochemical sector, leading the growth of the industrial energy consumption, although the downward trend continued in the primary and fabricated metals sectors amid weak production in the iron & steel business and slow semiconductor business.

► Trend in the industrial energy consumption

	2017	2018p	2019p		2019p	M1~7	M6	M7
			M1~7	M7				
Industry (Mtoe)	144.3	145.0	84.6	12.3	84.1	11.5	12.7	
	(4.7)	(0.5)	(1.8)	(-0.2)	(-0.6)	(-3.6)	(3.5)	
Petrochemical	70.4	71.5	41.9	6.1	40.9	5.5	6.5	
	(6.7)	(1.6)	(3.8)	(1.0)	(-2.3)	(-6.3)	(7.4)	
- Naphtha	56.2	55.3	32.4	4.7	31.2	4.1	4.8	
	(6.6)	(-1.6)	(1.1)	(-2.0)	(-3.9)	(-7.5)	(1.9)	
Iron & Steel	35.0	28.9	16.8	2.5	16.9	2.4	2.5	
	(24.4)	(-17.6)	(-17.1)	(-15.7)	(0.5)	(-1.3)	(-3.3)	
-Coking coal	25.3	24.1	13.9	2.1	14.1	2.0	2.1	
	(8.0)	(-4.6)	(-4.1)	(-2.3)	(1.2)	(-1.2)	(-3.7)	
Fabricated metal	10.8	11.4	6.7	0.9	6.7	0.9	0.9	
	(1.9)	(5.9)	(5.3)	(1.2)	(0.6)	(-0.5)	(-1.6)	
Share of feedstock (%)	59.9	58.2	58.2	59.7	57.6	56.9	59.7	

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

► Industrial energy consumption & production index



12. Transport

□ Energy use declined in the road, domestic navigation and aviation sectors all together in July, and consequently, the total transport energy use fell by 5.6% on a year-on-year basis.

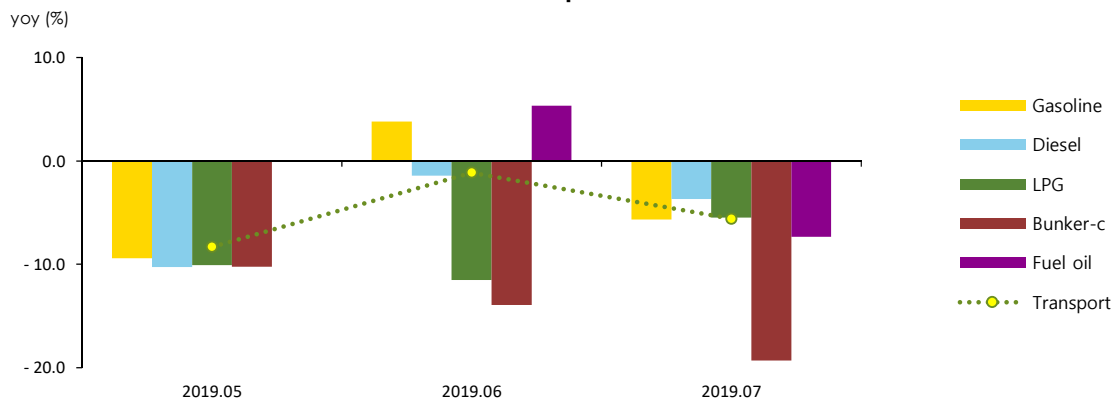
- Energy use for road transport has been down for two months in a row, though the pace was much slower.
- Energy use for domestic navigation plunged by over 15% from the same month last year, as the export, import (national flag vessels) and coastal transport volumes decreased by 7.0%, 4.1% and 7.5% respectively.
- Energy use decreased in the aviation sector despite increased number of international flights, because the number of domestic flights decreased.

► The growth rate of petroleum consumption in the transport sector

	2017	2018p			2019p		
			M1~7	M7	M1~7	M6	M7
Transport (Mtoe)	42.8	43.0	24.8	3.7	24.8	3.6	3.5
	(1.2)	(0.4)	(0.4)	(-2.7)	(0.0)	(-1.1)	(-5.6)
Road	34.1	34.4	19.8	3.0	20.1	3.0	2.9
	(0.5)	(0.9)	(0.9)	(-0.8)	(1.4)	(-1.2)	(-4.5)
Navigation	3.5	3.2	1.9	0.3	1.6	0.2	0.2
	(5.8)	(-9.9)	(-11.8)	(-20.2)	(-13.5)	(-10.6)	(-15.4)
Aviation	4.8	5.0	2.9	0.4	2.9	0.4	0.4
	(3.2)	(4.4)	(6.1)	(-3.3)	(-0.7)	(5.4)	(-7.3)
Rail	0.3	0.4	0.2	0.0	0.2	0.0	0.0
	(2.5)	(3.6)	(5.2)	(2.9)	(-1.5)	(-0.5)	(-3.1)

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

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



13. Buildings

□ **Energy consumption in buildings grew by 2.0% year-on-year in July, mostly in the commercial and public buildings, while the consumption declined in residential buildings due to decreased number of extremely hot days.**

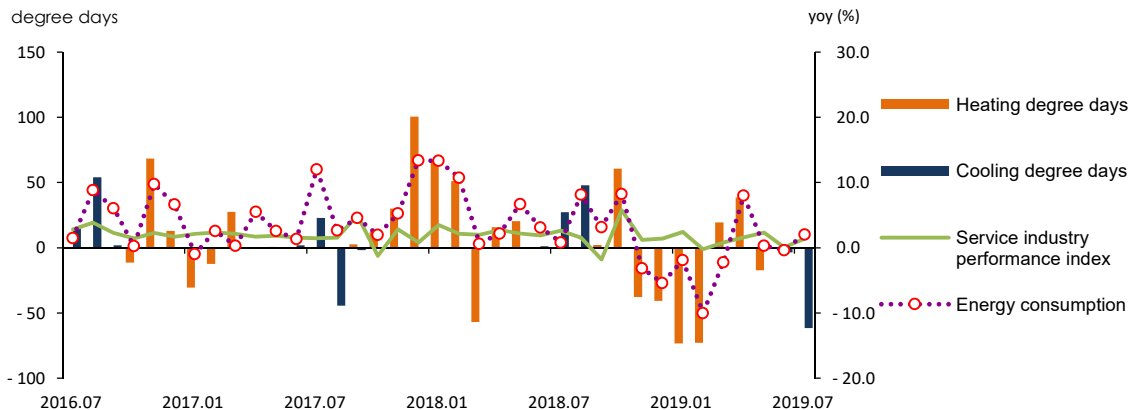
- Energy consumption climbed in the buildings sector, led by petroleum and renewable energy (14.1%, 17.5%), although the consumption fell by 2.6% in residential buildings despite electricity rate decline, due to decreased number of extremely hot days and cooling degree days.
- Energy consumption in residential buildings has been down for three consecutive months despite increased use of city gas and heat energy (2.1%, 9.6%), due to decreased use of electricity (-4.5%) amid falling number of cooling degree days as well as diesel and kerosene (-5.2%, -8.2%).
- Energy consumption in commercial buildings increased, especially diesel and LPG (26.5%, 13.3%), though electricity and city gas consumption declined (-2.1%, -2.1%).
- In the case of public buildings, the total energy use increased, mostly petroleum and renewable energy (19.1%, 17.8%), while power use declined.

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

	2017	2018p			2019p		
			M1~7	M7	M1~7	M6	M7
Buildings (Mtoe)	46.8	48.7	29.6	2.9	29.1	2.8	3.0
	(4.2)	(4.1)	(6.3)	(0.8)	(-1.6)	(-0.4)	(2.0)
Residential	22.5	23.3	14.4	0.9	14.0	1.0	0.9
	(3.7)	(3.7)	(6.8)	(-0.4)	(-3.0)	(-1.5)	(-1.4)
Commercial	17.4	18.0	10.8	1.4	10.6	1.2	1.4
	(2.2)	(3.5)	(5.2)	(0.9)	(-1.6)	(-1.0)	(0.9)
Public-others	6.9	7.4	4.3	0.6	4.5	0.6	0.6
	(11.0)	(6.7)	(7.5)	(2.7)	(2.8)	(3.1)	(10.4)
Heating degree days	2 517.1	2 597.8	1 616.9	-	1 511.5	-	-
	(5.5)	(3.2)	(6.4)	-	(-6.5)	-	-
Cooling degree days	132.7	209.0	104.5	101.0	39.5	-	39.5
	(-13.9)	(57.5)	(37.3)	(37.0)	(-62.2)	(-100.0)	(-60.9)

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

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



14. Transformation

- The total energy input to power stations fell by 5.1% year-on-year in July, as the use of all energy sources decreased except renewable energy.
 - The total power generation was down 4.5% compared to the same month last year amid falling power demand (-2.4%), and accordingly, almost all sources of input energy decreased in the transformation sector.
 - The average capacity factors at coal, nuclear and gas-fired power stations stood at 80.1%, 71.8%, and 42.7% respectively.

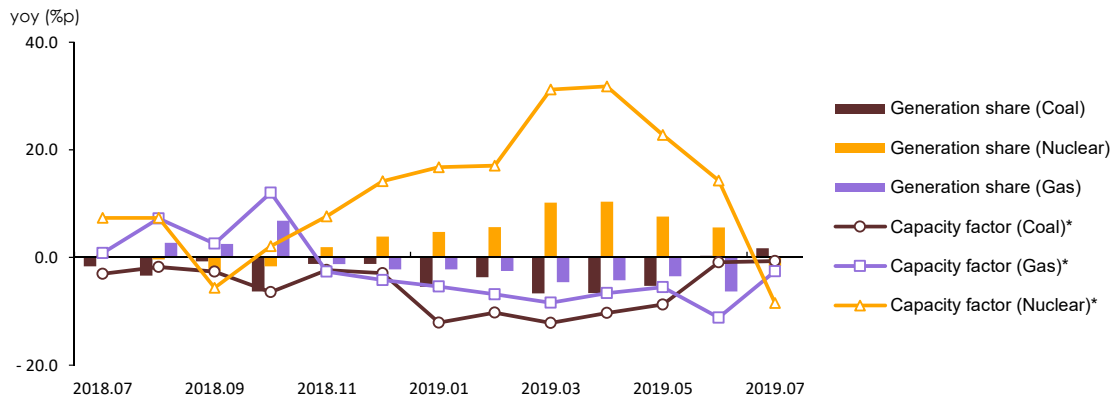
► Energy consumption in the power generation sector

	2017	2018p			2019p		
			M1~7	M7	M1~7	M6	M7
Input (Mtoe)	111.2	113.3	65.5	10.5	64.2	8.8	9.9
	(0.2)	(1.9)	(2.4)	(6.2)	(-2.0)	(0.4)	(-5.1)
Coal	52.8	54.2	31.4	5.0	27.9	3.8	4.9
	(7.4)	(2.7)	(7.2)	(6.8)	(-11.1)	(-0.4)	(-1.6)
Oil	1.2	1.3	0.9	0.1	0.5	0.0	0.1
	(-59.5)	(7.5)	(14.9)	(28.3)	(-40.6)	(-32.3)	(-51.1)
Gas	20.7	23.9	14.5	2.0	12.8	1.5	1.9
	(0.9)	(15.6)	(22.2)	(-0.4)	(-12.2)	(-23.2)	(-5.4)
Nuclear	31.6	28.4	15.6	2.8	19.5	2.9	2.5
	(-7.5)	(-10.1)	(-19.2)	(6.8)	(25.2)	(19.9)	(-10.5)
Hydro/other renewables	4.8	5.4	3.1	0.5	3.5	0.5	0.5
	(19.3)	(11.9)	(13.8)	(23.4)	(12.8)	(9.9)	(4.0)

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

	2016	2017	2018				2019		
			4Q	1Q	2Q		4Q	1Q	2Q
GDP (trillion won)	1 706.9 (2.9)	1 760.8 (3.2)	461.8 (2.8)	428.7 (2.8)	450.8 (2.9)	1 807.7 (2.7)	475.2 (2.9)	435.8 (1.7)	460.1 (2.0)
Private consumption	825.7 (2.6)	848.6 (2.8)	218.2 (3.2)	218.8 (3.6)	212.2 (2.9)	872.3 (2.8)	223.5 (2.4)	222.8 (1.9)	216.5 (2.0)
Facilities investment	146.2 (2.6)	170.3 (16.5)	44.0 (10.4)	44.1 (10.2)	43.2 (-4.3)	166.2 (-2.4)	41.7 (-5.3)	36.4 (-17.4)	40.2 (-7.0)
Construction investment	263.7 (10.0)	282.9 (7.3)	75.6 (3.1)	57.1 (1.2)	74.4 (-2.5)	270.9 (-4.3)	71.3 (-5.7)	53.0 (-7.2)	71.8 (-3.5)
Consumer price index (2015=100)	101.0	102.9	103.0	103.9	104.3	104.5	104.8	104.5	104.9
USD to KRW exchange rate (won)	1 160.8	1 131.0	1 107.5	1 072.7	1 079.0	1 100.2	1 127.4	1 125.1	1 166.6
Benchmark rate (%)	1.4	1.3	1.4	1.5	1.5	1.5	1.7	1.8	1.8
Coincident composite index (2015=100)	103.3	107.2	108.2	108.7	109.4	109.4	109.8	109.8	110.4
Mining & manufacturing production index (2015=100)	102.2	104.7	105.4	102.3	106.9	106.1	109.9	100.2	106.2
Manufacturing operation ratio index (2015=100)	98.9	98.1	97.1	94.6	100.6	98.4	101.3	92.8	100.2
Average temperature	13.6	13.1	7.3	2.0	17.8	13.0	7.4	3.4	17.3
- year-on-year difference	0.2	- 0.5	- 1.6	- 0.7	- 0.3	- 0.1	0.1	1.4	- 0.5
Heating degree days	2 386.8 (3.9)	2 517.1 (5.5)	993.9 (16.8)	1 437.2 (4.4)	179.7 (25.1)	2 597.8 (3.2)	975.9 (-1.8)	1 310.4 (-8.8)	201.1 (11.9)
Cooling degree days	154.1 (87.2)	132.7 (-13.9)	-	-	3.5 (45.8)	209.0 (57.5)	-	-	- (-100.0)
Energy intensity	0.17 (-0.5)	0.17 (-0.2)	0.17 (1.3)	0.19 (-0.7)	0.16 (0.5)	0.17 (-1.2)	0.16 (-4.3)	0.18 (-3.0)	0.15 (-3.5)
Per capita consumption									
oil (bbl)	18.0 (7.5)	18.2 (1.5)	4.8 (0.7)	4.6 (0.1)	4.5 (2.8)	18.1 (-1.0)	4.5 (-5.4)	4.5 (-1.0)	4.3 (-4.6)
Electricity (MWh)	9.7 (2.4)	9.9 (1.9)	2.4 (2.2)	2.7 (3.9)	2.4 (3.2)	10.2 (3.1)	2.5 (0.9)	2.6 (-1.6)	2.4 (-0.1)
City gas (1 000 m ³)	0.4 (1.9)	0.4 (6.0)	0.1 (10.7)	0.2 (9.6)	0.1 (7.5)	0.5 (6.8)	0.1 (2.2)	0.2 (-6.5)	0.1 (4.1)
Total energy (toe)	5.7 (2.0)	5.9 (2.7)	1.5 (3.9)	1.6 (1.6)	1.4 (2.9)	5.9 (0.9)	1.5 (-2.0)	1.5 (-1.6)	1.4 (-1.7)

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

The Index of Production & Operating Ratio by Sectors

(2015=100)

	2017	2018					2019			
			M1~7	M5	M6	M7	M1~7	M5	M6	M7
Industrial production index										
All industry	105.7 (2.6)	107.2 (1.4)	106.0 (1.6)	107.3 (2.0)	110.0 (1.0)	107.0 (2.5)	106.0 (0.0)	108.7 (1.3)	109.0 (-0.9)	107.7 (0.7)
Mining & manufacturing	104.7 (2.5)	106.1 (1.3)	105.1 (0.9)	107.1 (2.2)	107.5 (1.9)	108.2 (3.2)	104.0 (-1.0)	107.6 (0.5)	104.6 (-2.7)	108.9 (0.6)
Iron & steel	102.9 (1.7)	99.8 (-3.1)	100.8 (-2.2)	104.0 (-1.5)	100.6 (-2.9)	102.1 (-2.2)	98.7 (-2.1)	101.4 (-2.5)	98.1 (-2.5)	101.0 (-1.1)
Cement	110.0 (1.7)	100.1 (-9.0)	100.8 (-8.5)	114.6 (-11.1)	115.7 (4.2)	102.7 (0.2)	93.2 (-7.6)	106.4 (-7.2)	100.3 (-13.3)	95.1 (-7.4)
Basic compound	110.4 (5.5)	110.4 -	111.7 (2.6)	114.7 (5.0)	110.1 (5.3)	113.8 (2.1)	105.2 (-5.8)	102.6 (-10.5)	99.2 (-9.9)	111.6 (-1.9)
Transport equipment	95.0 (-2.7)	93.7 (-1.4)	91.7 (-7.8)	97.7 (0.4)	94.4 (-7.8)	88.0 (-11.8)	95.1 (3.7)	100.5 (2.9)	92.9 (-1.6)	100.5 (14.2)
Electric & electronic	105.5 (2.6)	105.2 (-0.3)	102.5 (-0.3)	104.4 (-0.4)	105.9 (-2.5)	103.5 (1.1)	101.7 (-0.7)	107.5 (3.0)	104.4 (-1.4)	106.9 (3.3)
Service	104.5 (1.8)	106.7 (2.1)	105.3 (2.4)	106.9 (2.2)	108.0 (1.9)	106.3 (2.6)	106.6 (1.2)	109.4 (2.3)	108.1 (0.1)	107.8 (1.4)
Operating ratio index										
Manufacturing	98.1 (-0.9)	98.4 (0.3)	97.9 (-0.3)	101.5 (2.0)	100.8 (0.6)	100.0 (1.0)	97.4 (-0.5)	101.7 (0.2)	98.6 (-2.2)	102.9 (2.9)
Iron & steel	102.3 (1.5)	98.8 (-3.4)	99.6 (-2.7)	102.5 (-2.2)	99.5 (-3.6)	101.0 (-2.7)	98.9 (-0.7)	101.7 (-0.8)	98.3 (-1.2)	101.2 (0.2)
Cement	107.4 (0.4)	108.9 (1.4)	108.3 (1.0)	125.4 (0.4)	127.3 (18.3)	113.0 (13.3)	105.2 (-2.9)	117.1 (-6.6)	110.6 (-13.1)	104.9 (-7.2)
Basic compound	107.1 (3.6)	104.9 (-2.0)	106.5 (0.4)	109.3 (2.5)	105.8 (4.0)	108.2 (0.4)	99.5 (-6.6)	96.8 (-11.4)	93.6 (-11.5)	105.4 (-2.6)
Transport equipment	87.6 (-6.6)	90.2 (2.9)	88.1 (-4.0)	94.6 (5.9)	91.2 (-3.0)	84.9 (-7.4)	94.8 (7.7)	100.6 (6.3)	92.9 (1.9)	100.5 (18.4)
Electric & electronic	102.5 (0.7)	100.3 (-2.1)	98.6 (-1.8)	101.3 -	101.5 (-3.3)	99.0 (-0.4)	98.6 (-0.0)	103.3 (2.0)	100.9 (-0.6)	103.4 (4.4)

Note: p means provisional
Source: Monthly Energy Statistics

International Energy Prices

	2017	2018					2019			
		M1~9	M7	M8	M9	M1~9	M7	M8	M9	
Crude oil (USD/bbl)										
WTI	51.0 (17.6)	64.8 (27.1)	66.8 (34.9)	70.6 (51.2)	67.9 (41.2)	70.1 (40.5)	57.1 (-14.5)	57.6 (-18.5)	54.8 (-19.2)	57.0 (-18.7)
Dubai	53.2 (28.9)	69.4 (30.5)	70.1 (37.1)	73.1 (53.7)	72.5 (44.3)	77.2 (43.9)	64.0 (-8.6)	63.3 (-13.5)	59.1 (-18.4)	61.1 (-20.8)
Brent	54.8 (21.7)	71.5 (30.5)	72.7 (38.2)	75.0 (52.5)	73.8 (42.4)	79.1 (42.5)	64.7 (-10.9)	64.2 (-14.3)	59.5 (-19.4)	62.3 (-21.3)
Unit value of import (C&F)	53.3 (29.9)	71.4 (34.0)	70.6 (36.6)	75.0 (58.0)	75.2 (54.0)	76.5 (47.4)	65.8 (-6.8)	65.8 (-12.3)	64.5 (-14.2)	63.1 (-17.4)
LNG										
From Indonesia (USD/MMBTU)	8.6 (16.7)	10.7 (24.0)	10.3 (19.0)	10.4 (17.9)	10.9 (22.0)	11.3 (30.8)	10.8 (5.1)	10.1 (-3.0)	10.9 (-0.1)	10.9 (-3.9)
Unit value of import (USD/ton, CIF)	416.3 (16.7)	526.3 (26.4)	508.6 (22.3)	519.5 (27.2)	532.3 (25.0)	561.9 (33.3)	519.9 (2.2)	488.3 (-6.0)	479.3 (-10.0)	509.7 (-9.3)
Bituminous coal (USD/ton)										
From Australia	88.5 (33.9)	107.0 (20.9)	108.2 (26.8)	119.6 (36.7)	117.3 (19.0)	114.2 (16.7)	81.3 (-24.8)	72.1 (-39.7)	65.6 (-44.1)	65.8 (-42.4)
Unit value of import (CIF)	104.3 (51.5)	113.6 (8.9)	113.7 (8.8)	112.5 (10.6)	110.1 (18.7)	116.4 (23.3)	104.9 (-7.8)	96.6 (-14.1)	103.5 (-6.0)	85.0 (-26.9)
Petroleum product (USD/bbl)										
Gasoline	68.1 (21.2)	79.9 (17.4)	82.5 (24.7)	83.1 (34.6)	84.8 (25.7)	89.5 (26.9)	71.7 (-13.2)	73.7 (-11.3)	70.1 (-17.4)	74.7 (-16.6)
Kerosene	65.3 (23.6)	84.8 (29.8)	85.4 (35.7)	87.4 (46.2)	87.3 (38.3)	91.7 (34.6)	77.7 (-9.0)	78.4 (-10.2)	74.6 (-14.5)	77.7 (-15.2)
Diesel	66.4 (25.2)	84.9 (27.9)	85.5 (33.4)	86.9 (41.3)	88.5 (37.7)	93.8 (35.2)	78.4 (-8.3)	78.8 (-9.3)	75.4 (-14.8)	78.1 (-16.8)
Bunker-C	49.7 (40.2)	65.2 (31.3)	64.6 (34.8)	70.4 (52.7)	69.1 (46.1)	70.7 (39.5)	62.3 (-3.6)	66.1 (-6.1)	54.5 (-21.1)	61.3 (-13.2)
Propane	467.5 (44.6)	542.1 (16.0)	540.6 (25.7)	555.0 (60.9)	580.0 (38.1)	600.0 (25.0)	436.1 (-19.3)	375.0 (-32.4)	370.0 (-36.2)	350.0 (-41.7)
Butane	501.7 (41.0)	539.2 (7.5)	541.7 (13.6)	570.0 (56.2)	595.0 (29.3)	635.0 (27.0)	440.6 (-18.7)	355.0 (-37.7)	360.0 (-39.5)	360.0 (-43.3)
Naphtha	53.8 (26.6)	67.0 (24.5)	69.0 (35.3)	72.1 (57.8)	71.5 (42.2)	75.2 (36.9)	55.9 (-19.0)	55.6 (-22.9)	50.6 (-29.3)	54.0 (-28.1)

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)

	2017	2018p					2019p			
			M1~7	M5	M6	M7	M1~7	M5	M6	M7
Coal (Mton)	139.8 (8.1)	141.0 (0.9)	81.5 (3.4)	10.8 (1.0)	10.7 (3.7)	12.6 (1.9)	75.3 (-7.6)	9.5 (-11.9)	10.5 (-1.9)	12.3 (-2.3)
- Coking coal excluded	103.5 (7.9)	106.4 (2.8)	61.5 (6.1)	7.9 (2.6)	7.8 (7.1)	9.5 (3.4)	55.1 (-10.4)	6.6 (-16.4)	7.6 (-2.2)	9.3 (-1.9)
Oil (Mbbbl)	937.1 (1.7)	931.8 (-0.6)	544.0 (1.3)	78.2 (2.1)	75.5 (1.5)	77.4 (-2.2)	533.9 (-1.9)	72.6 (-7.1)	71.8 (-4.9)	79.3 (2.4)
- Non-energy oil excluded	443.7 (-2.5)	445.5 (0.4)	259.5 (1.6)	36.2 (-0.6)	36.3 (1.1)	35.8 (-4.2)	257.6 (-0.7)	33.1 (-8.6)	35.4 (-2.5)	35.6 (-0.3)
LNG (Mton)	36.4 (4.3)	40.9 (12.5)	24.9 (17.7)	2.8 (31.5)	2.6 (14.0)	2.7 (7.0)	22.9 (-8.0)	2.5 (-9.4)	2.3 (-13.3)	2.6 (-4.1)
Hydro (TWh)	7.0 (5.5)	7.3 (3.9)	4.2 (9.1)	0.8 (30.5)	0.7 (29.8)	0.8 (26.6)	3.6 (-15.2)	0.5 (-31.8)	0.5 (-34.5)	0.6 (-30.3)
Nuclear (TWh)	148.4 (-8.4)	133.5 (-10.1)	73.0 (-19.2)	11.4 (-16.8)	11.3 (-9.5)	13.1 (6.8)	91.4 (25.2)	14.7 (29.5)	13.5 (19.9)	11.7 (-10.5)
Others (Mtoe)	15.8 (16.7)	17.5 (10.5)	10.2 (10.9)	1.4 (10.1)	1.4 (10.5)	1.5 (12.0)	11.5 (12.8)	1.7 (17.4)	1.6 (15.5)	1.7 (15.8)
TPES (Mtoe)	302.1 (2.9)	306.1 (1.3)	178.4 (2.6)	24.2 (3.1)	23.6 (2.7)	25.6 (2.1)	175.9 (-1.4)	23.3 (-3.7)	23.2 (-1.7)	25.5 (-0.7)
- Non-energy oil excluded	240.7 (2.2)	245.7 (2.1)	143.0 (3.0)	19.0 (2.8)	18.7 (3.0)	20.4 (2.7)	141.5 (-1.1)	18.4 (-3.1)	18.6 (-0.3)	19.9 (-2.6)
- Non-energy oil&coal excluded	215.4 (1.6)	221.6 (2.9)	129.1 (3.8)	16.9 (3.6)	16.7 (4.0)	18.3 (3.3)	127.3 (-1.3)	16.3 (-3.6)	16.6 (-0.2)	17.9 (-2.4)

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

Share of TPES by Sources

(unit: %)

	2017	2018p					2019p			
			M1~7	M5	M6	M7	M1~7	M5	M6	M7
Coal	28.5	28.3	28.1	27.5	27.9	30.3	26.4	25.4	27.9	29.7
- Coking coal excluded	20.2	20.4	20.3	19.1	19.4	21.9	18.4	16.6	19.3	21.6
Oil	39.5	38.7	38.8	41.0	40.7	38.4	38.6	39.4	39.3	39.7
- non-energy oil excluded	19.2	19.0	19.0	19.4	19.9	18.2	19.0	18.3	19.7	18.0
LNG	15.7	17.5	18.2	15.0	14.5	13.9	17.0	14.1	12.8	13.5
Hydro	0.5	0.5	0.5	0.7	0.7	0.7	0.4	0.5	0.4	0.5
Nuclear	10.5	9.3	8.7	10.0	10.2	10.8	11.1	13.5	12.5	9.8
Others	5.2	5.7	5.7	5.8	6.0	5.8	6.5	7.1	7.1	6.8
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)

	2017	2018p					2019p			
			M1~7	M5	M6	M7	M1~7	M5	M6	M7
Industry	144.3 (4.7)	145.0 (0.5)	84.6 (1.8)	12.3 (4.9)	11.9 (3.1)	12.3 (-0.2)	84.1 (-0.6)	11.9 (-3.1)	11.5 (-3.6)	12.7 (3.5)
Transport	42.8 (1.2)	43.0 (0.4)	24.8 (0.4)	3.6 (-3.0)	3.7 (1.6)	3.7 (-2.7)	24.8 (0.0)	3.3 (-8.3)	3.6 (-1.1)	3.5 (-5.6)
Residential-commercial	39.9 (3.0)	41.3 (3.6)	25.2 (6.1)	2.5 (6.9)	2.3 (2.7)	2.3 (0.4)	24.6 (-2.4)	2.5 (-0.9)	2.2 (-1.2)	2.3 (-0.0)
Public	6.9 (11.0)	7.4 (6.7)	4.3 (7.5)	0.5 (5.6)	0.6 (4.9)	0.6 (2.7)	4.5 (2.8)	0.6 (5.8)	0.6 (3.1)	0.6 (10.4)
TFC	233.9 (3.9)	236.7 (1.2)	139.0 (2.5)	18.9 (3.6)	18.4 (2.8)	18.9 (-0.5)	138.0 (-0.7)	18.3 (-3.6)	17.9 (-2.6)	19.1 (1.5)
Coal (Mton)	50.4 (2.7)	49.2 (-2.3)	28.4 (-2.8)	4.2 (2.7)	4.2 (2.9)	4.1 (-7.2)	28.1 (-1.2)	4.1 (-3.8)	4.0 (-4.5)	3.9 (-3.8)
Oil (Mbbl)	926.6 (3.0)	920.0 (-0.7)	535.9 (1.0)	77.7 (2.3)	74.9 (1.3)	76.5 (-2.5)	528.7 (-1.3)	72.1 (-7.2)	71.3 (-4.8)	78.7 (2.9)
Electricity (TWh)	507.7 (2.2)	526.1 (3.6)	305.7 (3.8)	40.5 (4.6)	41.0 (3.5)	44.0 (1.9)	302.8 (-0.9)	40.7 (0.4)	40.6 (-1.0)	43.0 (-2.4)
City gas (Bm ³)	22.6 (6.3)	24.3 (7.3)	15.3 (9.6)	1.5 (12.7)	1.3 (11.6)	1.3 (12.8)	14.9 (-2.8)	1.5 (1.5)	1.3 (-1.5)	1.2 (-3.4)
Heat-others (1 000 toe)	15.0 (14.0)	16.4 (9.3)	9.7 (10.8)	1.2 (11.9)	1.2 (10.5)	1.3 (9.4)	10.3 (6.7)	1.3 (6.9)	1.3 (10.3)	1.4 (13.8)

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

Share of the Total Final Consumption by Sources

(unit: %)

	2017	2018p					2019p			
			M1~7	M5	M6	M7	M1~7	M5	M6	M7
Industry	61.7	61.3	60.9	65.2	64.7	65.0	60.9	65.5	64.1	66.3
Transport	18.3	18.1	17.8	18.9	19.9	19.6	18.0	18.0	20.2	18.2
Residential-commercial	17.1	17.5	18.2	13.2	12.3	12.3	17.8	13.5	12.5	12.2
Public	3.0	3.1	3.1	2.8	3.0	3.1	3.2	3.0	3.2	3.3
Final energy	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0
Coal	14.3	13.7	13.5	14.6	14.9	14.5	13.5	14.8	14.8	13.7
Oil	50.4	49.4	48.9	52.0	51.7	51.5	48.6	49.9	50.5	52.4
Electricity	18.7	19.1	18.9	18.4	19.2	20.1	18.9	19.2	19.5	19.3
City gas	10.3	10.9	11.7	8.6	7.7	7.2	11.5	9.1	7.9	7.1
Heat-others	6.4	6.9	7.0	6.3	6.5	6.7	7.5	7.0	7.3	7.5

Note: p means provisional
Source: Monthly Energy Statistics

Statistics on Energy Production Facilities

	2016	2017	2018				2019p		
				M5	M6	M7	M5	M6	M7
Total capacity (GW)	105.9	116.9	119.1	117.8	117.2	117.5	119.8	121.1	121.1
	-	(10.4)	(1.9)	(5.8)	(3.1)	(3.6)	(1.7)	(3.4)	(3.1)
Nuclear	23.1	22.5	21.9	22.5	21.9	21.9	21.9	21.9	21.9
	-	(-2.5)	(-3.0)	(-2.5)	(-3.0)	(-3.0)	(-3.0)	-	-
Bituminous coal	30.9	36.1	36.4	36.3	36.3	36.4	36.5	36.5	36.4
	-	(16.8)	(0.7)	(14.4)	(4.5)	(4.8)	(0.5)	(0.5)	(0.1)
Gas	32.6	37.9	37.9	37.9	37.9	37.9	37.9	38.2	38.2
	-	(16.0)	(-0.0)	(3.3)	(3.3)	(3.2)	(-0.0)	(1.0)	(1.0)
Refinery capacity (mil BPSD)	3.1	3.1	3.2	3.2	3.2	3.2	3.2	3.2	3.2
	(0.2)	(1.3)	(3.2)	(3.2)	(3.2)	(3.2)	-	-	-

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

Source: The monthly report on major electric power statistics

Statistics on Energy Consumption

	2016	2017	2018				2019p		
				M5	M6	M7	M5	M6	M7
The number of household demanding city gas (mil)	18.0	18.6	19.1	18.8	18.8	18.8	19.3	19.3	19.3
	(3.4)	(3.3)	(3.1)	(3.4)	(3.3)	(3.3)	(2.8)	(2.8)	(2.9)
Registered cars (mil)	21.8	22.5	23.2	22.8	22.9	22.9	23.4	23.4	23.5
	(3.9)	(3.3)	(3.0)	(3.2)	(3.1)	(3.1)	(2.5)	(2.5)	(2.4)
- gasoline	10.1	10.4	10.6	10.5	10.5	10.5	10.8	10.8	10.8
	(2.9)	(2.7)	(2.5)	(2.6)	(2.5)	(2.5)	(2.5)	(2.5)	(2.6)
- diesel	9.2	9.6	9.9	9.7	9.8	9.8	10.0	10.0	10.0
	(6.4)	(4.4)	(3.7)	(4.1)	(4.1)	(4.1)	(2.4)	(2.1)	(1.9)
- LPG	2.2	2.1	2.0	2.1	2.1	2.1	2.0	2.0	2.0
	(-4.0)	(-2.9)	(-3.3)	(-3.2)	(-3.3)	(-3.3)	(-2.9)	(-2.8)	(-2.6)
- hybrid	0.2	0.3	0.4	0.3	0.3	0.3	0.4	0.4	0.4
	(37.6)	(37.6)	(30.9)	(36.7)	(34.7)	(33.3)	(29.5)	(29.4)	(29.4)

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.

If you have any further inquiries, please send an email to EnergyOutlook@keei.re.kr

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

Phone: +82-52-714-2270

Fax: +82-52-714-2025

Email: webmaster@keei.re.kr

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