

KEEI

MONTHLY KOREA ENERGY TRENDS

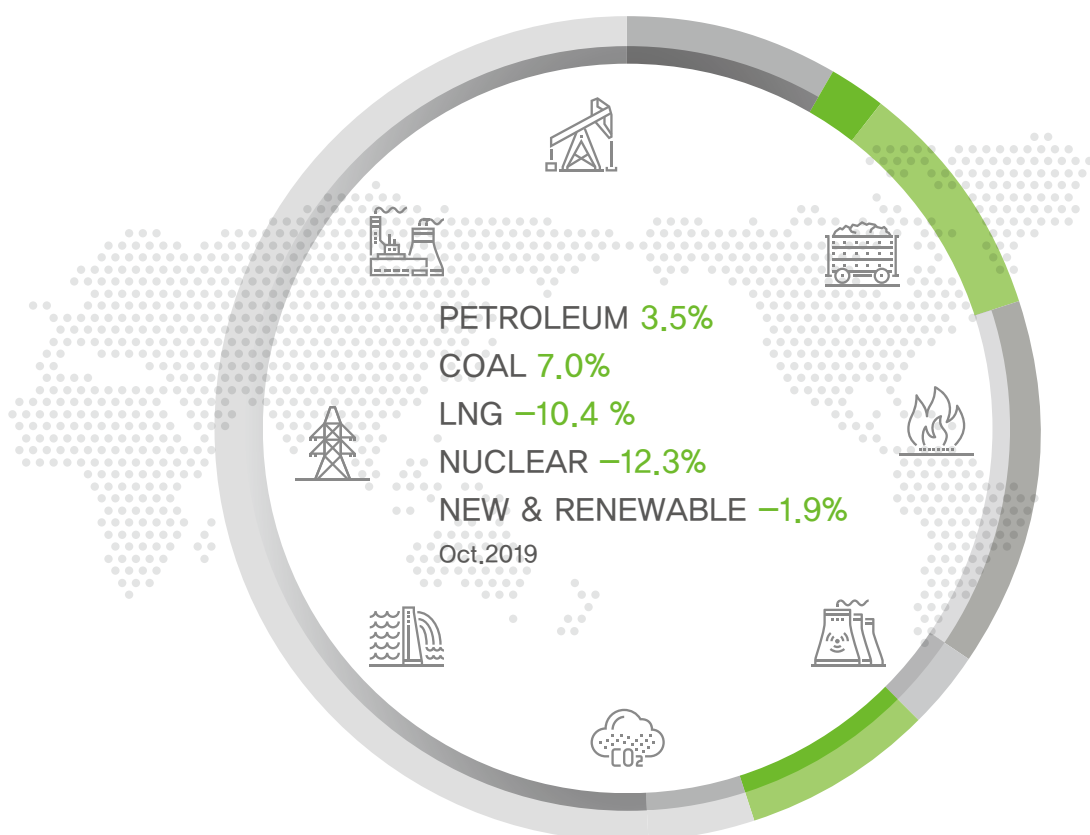


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1. The Economy and the Industry

- ☐ **The mining & manufacturing production index declined by 2.1% year-on-year in October despite increased semiconductor production, because the index dropped faster in major industrial sectors.**
 - The semiconductor production index went up by 11.7%, as its export volume increased (11.2%), though the export value decreased due to the lower unit prices.
 - The production index of basic chemical materials fell by 3.1% year-on-year, as the outputs of benzene, xylene and paraxylene declined due to the scheduled maintenance at some facilities, although ethylene and propylene outputs increased following the construction of new naphtha cracking centers (LG Chemical, 230,000 tons, 2019.4).
 - The iron & steel production index went down by 3.9% year-on-year, owing to the weak domestic demand, especially those used in construction such as shape steel and rebar, and sluggish automobile sector that is a major source of demand.
 - The automobile production index fell by 6.0% year-on-year due to the base effect of the surge during the same month last year (30.1%) and decreased domestic sales with growing number of customers waiting for new models.
- ☐ **The service production index rose by 0.8% year-on-year (in October) led by the health & social welfare sectors, although it declined in the wholesale & retail sectors.**
 - The service production index slightly increased, owing to the continued upward trends in the information & communications sector (6.6%) with expanded 5G communication networks and in the health & social welfare sectors (6.4%) due to aging population, although the index fell more sharply in the wholesale & retail sectors (-1.5%) and also declined in the restaurant & accommodation sectors (-0.5%).

► Trend in major economic and industrial indicators

	2017	2018	2019p				
			M1~10	M10	M1~10	M9	M10
GDP (trillion won)	1 760.8 (3.2)	1 807.7 (2.7)	1 332.6 (2.6)	- -	1 358.2 (1.9)	462.3 (2.0)	- -
Total export (\$billion, customs clearance basis)	573.7 (15.8)	604.9 (5.4)	505.2 (6.4)	54.9 (22.5)	452.6 (-10.4)	44.7 (-11.8)	46.7 (-14.9)
Industrial production index (2015=100)	104.7 (2.5)	106.1 (1.3)	105.6 (1.5)	112.3 (12.6)	104.3 (-1.2)	102.8 (0.7)	109.9 (-2.1)
Semi-conductors	138.9 (10.8)	167.0 (20.3)	166.1 (21.5)	190.2 (23.1)	179.3 (7.9)	201.2 (9.7)	212.4 (11.7)
Basic compound	110.4 (5.5)	110.4 -	111.3 (1.2)	107.5 (-5.5)	106.1 (-4.6)	109.7 (-0.8)	104.2 (-3.1)
Steel	102.9 (1.7)	99.8 (-3.1)	99.9 (-3.0)	101.4 (-1.0)	97.4 (-2.5)	91.4 (-2.0)	97.4 (-3.9)
Cars	95.0 (-2.7)	93.7 (-1.4)	91.9 (-3.7)	104.6 (30.1)	92.3 (0.5)	82.5 (-2.7)	98.3 (-6.0)
Service industry performance index (2015=100)	104.5 (1.8)	106.7 (2.1)	105.7 (2.2)	108.1 (5.8)	107.0 (1.3)	106.7 (0.9)	109.0 (0.8)
Wholesale & Retail	103.3 (0.8)	104.8 (1.4)	104.0 (1.7)	107.6 (5.4)	103.7 (-0.3)	102.8 (-0.1)	106.0 (-1.5)
Restaurant & Accommodation	100.4 (-1.9)	98.5 (-1.9)	97.6 (-2.3)	98.5 (1.2)	96.1 (-1.6)	91.5 (-4.6)	98.0 (-0.5)

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

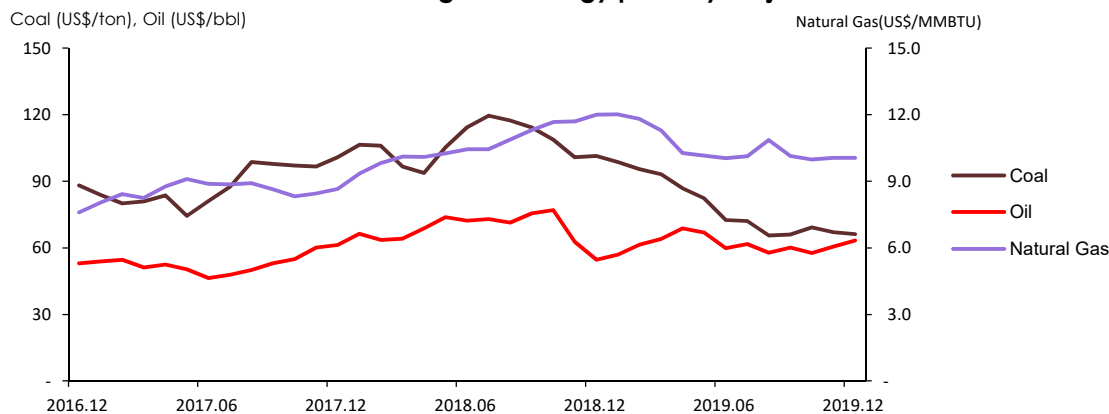
- **Global oil price went up by 4.5% in December from the previous month, following the phase one trade deal between the US and China and amid the expectation that the oversupply problem will be eased.**
 - The US crude inventory fell from 447.1mmbbl (11.29) to 429.9mmbbl (12.27), which contributed to the global oil price increase.
 - The production and export of crude oil recorded over two-fold growth in Brazil (64mmbbl, yoy), which is non-OPEC oil producer, partially offsetting the global oil price increase.
 - Global coal price dropped by 1.2% than the prior month due to China’s restriction on the import of Australian coal and weak global demand, while global natural gas price remained flat compared to the previous month.

► Trend in global energy prices

	2017	2018			2019			
		M10	M11	M12	M10	M11	M12	
Crude oil (US\$/bbl)	53.0 (22.4)	68.6 (29.5)	76.9 (40.1)	62.7 (4.4)	54.7 (-10.7)	57.7 (-25.0)	60.6 (-3.4)	63.3 (15.8)
Natural gas (US\$/MMBTU)	8.6 (16.8)	10.7 (24.0)	11.7 (40.3)	11.7 (38.5)	12.0 (38.7)	10.0 (-14.4)	10.0 (-14.1)	10.0 (-16.2)
Coal (US\$/ton)	88.6 (33.8)	107.0 (20.9)	108.7 (12.0)	100.7 (4.2)	101.4 (0.6)	69.2 (-36.4)	67.0 (-33.5)	66.2 (-34.7)

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 increased in December from the previous month, which were affected by rising oil prices overseas.**
 - Gasoline and diesel prices at gas stations started an upward move in mid-November amid rising global oil prices, and they went up by 0.8% and 0.4% respectively in December.
- ☐ **Propane and butane prices rose in December than a month earlier, as supply prices increased reflecting the increased prices overseas.**
 - Propane and butane prices were up 0.6% and 1.2% respectively than the prior month, as LPG suppliers raised their prices reflecting global prices that increased in November for the 2nd straight month and considering previous insufficient price increase.

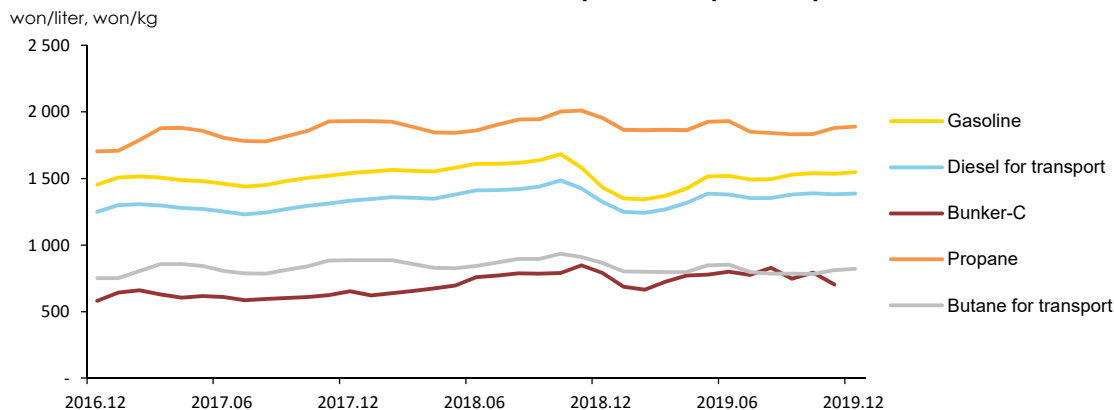
► Trend in domestic energy prices

	2017	2018				2019		
			M10	M11	M12	M10	M11	M12
Gasoline (won/liter)	1 491.3 (6.3)	1 581.3 (6.0)	1 681.1 (11.7)	1 580.9 (3.9)	1 433.1 (-7.0)	1 540.5 (-8.4)	1 535.7 (-2.9)	1 548.5 (8.0)
Diesel for transport (won/liter)	1 282.5 (8.4)	1 391.9 (8.5)	1 485.0 (14.6)	1 424.7 (8.5)	1 324.1 (-0.6)	1 387.7 (-6.6)	1 380.5 (-3.1)	1 385.4 (4.6)
Bunker-C (won/liter)	619.3 (18.9)	735.0 (18.7)	790.3 (29.5)	846.5 (35.6)	789.3 (21.0)	791.4 (0.1)	703.5 (-16.9)	-
Propane (won/kg)	1 833.8 (8.5)	1 920.5 (4.7)	2 002.4 (7.8)	2 008.6 (4.3)	1 954.7 (1.3)	1 833.6 (-8.4)	1 879.3 (-6.4)	1 889.7 (-3.3)
Butane for transport (won/liter)	826.5 (12.6)	874.6 (5.8)	934.2 (11.1)	910.5 (2.9)	863.4 (-2.5)	783.7 (-16.1)	810.5 (-11.0)	820.6 (-4.9)

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



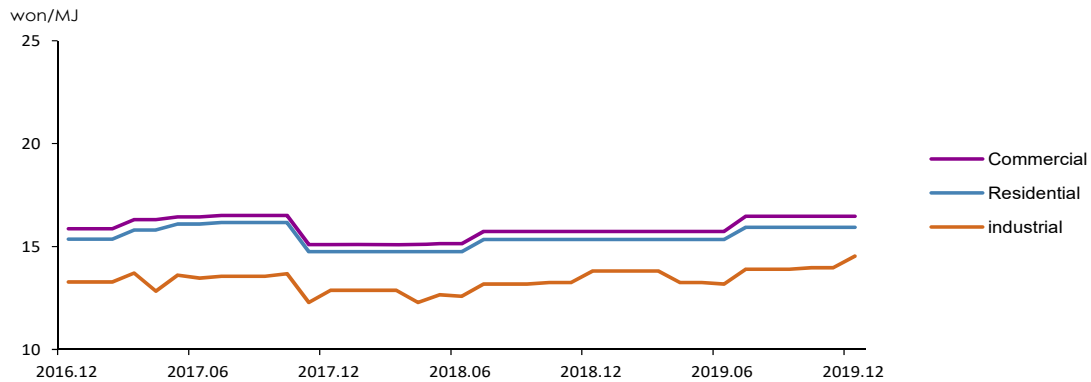
☐ **City gas price has been flat for the past six months until November, since it was raised in July, 2019.**

- City gas price had been fixed since July, 2018 despite the upward trend in global LPG price in order to alleviate economic burdens on people. The price, however, was raised in July, 2019 for the first time in a year to collect accounts receivable that were accumulated during the price-fixing period.
- According to the raw material cost pass-through scheme, city gas price is adjusted bimonthly in every odd month in order to reflect over 3% changes in natural gas importing price, which is affected by global oil prices and exchange rates.

☐ **Heat energy price has been flat for five consecutive months until December, since it was raised in August.**

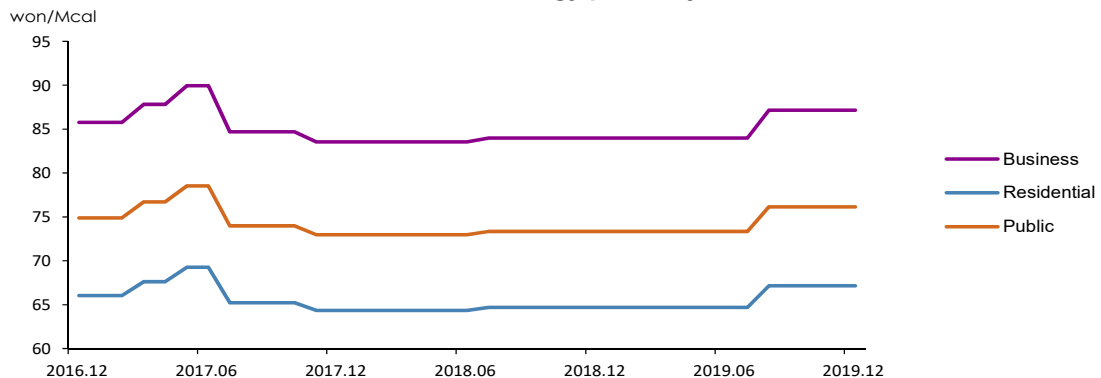
- Heat energy price was raised in August for the first time in 13 months (since July, 2018), reflecting the city gas price increase in July and the energy tax reform.
- Korea District Heating Corporation's heat energy price is linked to city gas price according to the fuel cost pass-through scheme, and 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.

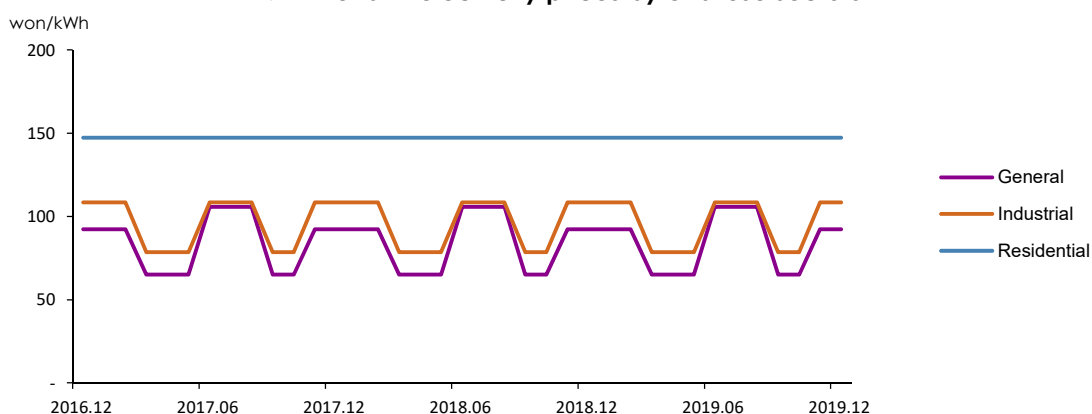
☐ **Electricity prices ¹for general and industrial use remained flat in December after they were adjusted for the winter season.**

- Electricity prices for general and industrial use, which are based on time-of-use pricing, remained flat in December after the price adjustment from spring/autumn (Mar-May, Sept-Oct) to winter (Nov-Feb) in November.
- Residential electricity price has been flat since the progressive pricing scheme was restructured from six to three stages in December, 2016.

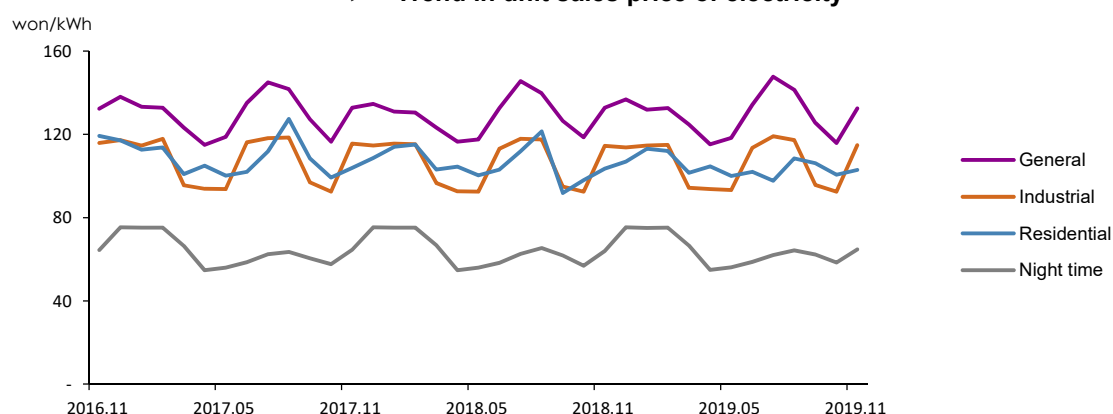
☐ **The unit sales price of electricity for general, industrial and residential use all increased in November than the previous month.**

- The unit sales price of electricity for residential use rose by 2.3% than a month earlier, as electricity demand increased amid falling temperatures, and in the case of general and industrial use, the prices were up 14.4% and 24.1% respectively with the change to winter rates in November.

► **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 fell by 3.1% year-on-year in October, despite increased import of petroleum products and bituminous coal, because the crude oil import declined.**

- The import volume of crude oil dropped by 15.8% due to the scheduled maintenance at some refineries, and accordingly, their crude input also declined by 15.2%.
- The import volume of petroleum products was up 1.2% year-on-year, led by naphtha that is a major petrochemical feedstock and LPG.
- The import volume of bituminous coal went up by 22.1%, as bituminous coal demand increased in the power generation sector along with increased capacity factor at coal fired power plants.

► Trend in energy trade and domestic production

	2017	2018	2019p				
			M1~10	M10	M1~10	M9	M10
Import volume							
Crude oil (Mbbl)	1 118.2 (3.7)	1 116.3 (-0.2)	928.0 (0.5)	97.8 (5.3)	889.4 (-4.2)	79.3 (-2.2)	82.3 (-15.8)
Petroleum product (Mbbl)	314.5 (-6.0)	341.6 (8.6)	281.0 (6.4)	27.8 (4.3)	286.4 (1.9)	31.7 (9.2)	28.1 (1.2)
Bituminous coal (Mton)	131.5 (11.0)	131.5 (0.0)	109.5 (-0.9)	10.1 (3.7)	110.0 (0.5)	11.0 (-5.2)	12.4 (22.1)
Anthracite (Mton)	7.0 (-25.7)	8.1 (16.0)	6.4 (11.6)	0.7 (118.3)	5.9 (-9.0)	0.2 (-36.7)	0.6 (-9.2)
LNG (Mton)	37.5 (12.2)	44.0 (17.3)	35.4 (17.8)	3.8 (37.2)	32.2 (-9.1)	2.5 (-25.2)	3.2 (-15.4)
Import volume (Mtoe)	339.7 (5.5)	354.5 (4.4)	292.1 (4.0)	29.4 (5.3)	288.3 (-1.3)	27.7 (-5.4)	28.5 (-3.1)
Import value (billion US\$, CIF)	109.5 (35.2)	146.0 (33.3)	119.9 (35.0)	13.6 (52.5)	104.9 (-12.5)	9.0 (-23.8)	9.8 (-28.2)
Energy share of total import value (%)	22.9	27.3	27.0	28.1	25.1	23.3	23.6
Foreign energy dependence (%)*	93.9	93.6	93.6	93.3	93.6	93.4	93.5
Domestic production							
Hydropower (TWh)	7.0 (5.5)	7.3 (3.9)	6.1 (1.0)	0.5 (-10.2)	5.3 (-13.9)	0.6 (-20.9)	0.5 (6.4)
Anthracite (Mton)	1.5 (-14.0)	1.2 (-19.2)	1.0 (-17.3)	0.1 (-7.5)	0.9 (-12.4)	0.1 (15.6)	0.1 (1.2)
Natural gas (Mton)	0.3 (120.5)	0.2 (-10.4)	0.2 (-8.6)	0.0 (-42.8)	0.2 (-21.4)	0.0 (-43.9)	0.0 (-20.8)
Renewable energy (Mtoe)	15.8 (16.7)	17.1 (8.0)	14.3 (8.8)	1.4 (13.3)	14.3 (0.1)	1.3 (-7.6)	1.4 (-1.9)

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

4. Energy Consumption

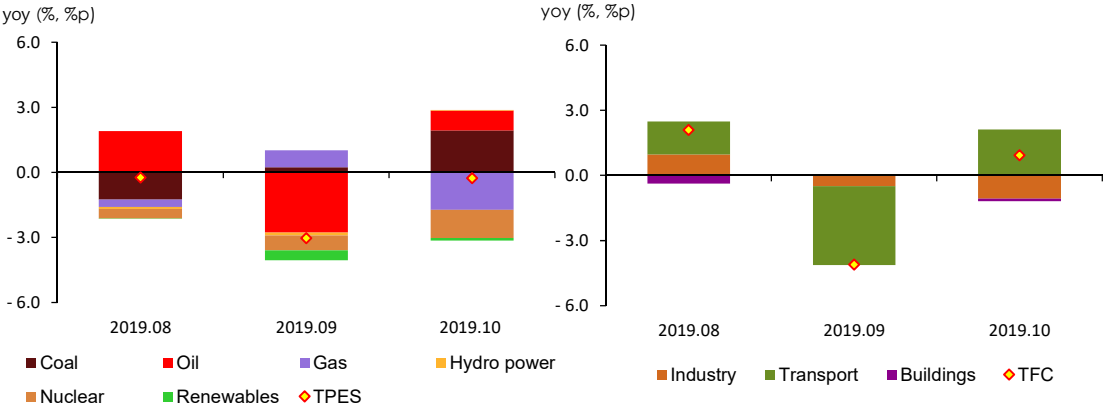
- **Total Primary Energy Supply (“TPES”) dropped by 0.3% year-on-year in October despite increased use of coal and petroleum, as gas and nuclear energy use declined.**
 - Coal consumption posted a year-on-year growth of 7.0%, as the consumption grew by over 12% in the power generation sector due to the base effect of the sharp decline during the same month last year and capacity additions, though the industrial coal consumption rose slightly owing to the continuously weak iron & steel market.
 - Petroleum consumption grew by 3.5% year-on-year, as the consumption surged in the transport sector, although the industrial consumption fell by almost 1%, mostly naphtha, due to the slowdown in petrochemical production.
 - Gas consumption dropped by 10.4% year-on-year, as city gas consumption fell by over 12% owing to the weak industrial production and a sharp drop in the number of heating degree days, and as the consumption fell by over 9% in the power generation sector as a result of the increased coal-fired generation and decreased total generation.
- **Total Final Consumption (“TFC”) went up by 0.9% year-on-year in October, led by the transport sector, though it declined in the industrial and buildings sectors.**
 - Industrial energy use fell by 1.7% year-on-year in the midst of the global and domestic economic slowdown.
 - Transport energy use grew by 11.9% year-on-year owing to the growth in traffic volume and the number of domestic & international air passengers, leading the growth in TFC, although freight transport volume declined along with decreased exports.
 - Buildings’ energy consumption was down 0.6% year-on-year, as the consumption fell by nearly 9% in residential buildings, especially city gas, with the number of heating degree days plunging (-46.5%), while the consumption increased, mainly electricity, in commercial and public & other buildings.

► Energy consumption trend

	2017	2018	2019p				
			M1~10	M10	M1~10	M9	M10
Total energy (Mtoe)	302.1	307.5	253.0	24.2	249.6	23.1	24.1
	(2.8)	(1.8)	(2.5)	(0.0)	(-1.4)	(-3.0)	(-0.3)
- Non-energy oil&coal excluded	215.4	222.9	182.5	17.2	180.1	16.1	17.4
	(1.4)	(3.5)	(4.1)	(3.6)	(-1.3)	(-3.2)	(1.4)
Final energy (Mtoe)	230.0	232.7	191.6	18.1	190.4	17.4	18.2
	(3.9)	(1.2)	(1.8)	(-1.0)	(-0.6)	(-4.1)	(0.9)

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

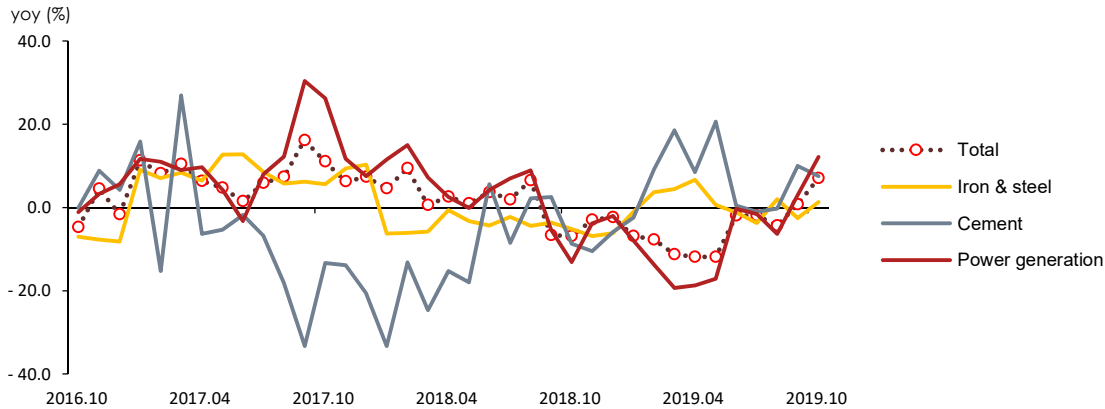
- **Coal consumption increased by 7.0% year-on-year in October, as the consumption rose dramatically in the power generation sector due to base effect and increased capacity factors.**
 - Coal consumption grew by over 10% year-on-year in the power generation sector, leading the growth in the total coal consumption, which was attributed to much higher capacity factors at coal-fired power stations.
 - Industrial coal consumption increased compared to the same month last year due to the increased use of bituminous coal for steelmaking (coking coal) and cement production.

► Coal consumption trend

	2017	2018	2019p				
			M1~10	M10	M1~10	M9	M10
Coal (Mton)	139.8	141.0	117.0	10.8	111.2	11.5	11.6
	(8.1)	(0.9)	(1.6)	(-6.9)	(-5.0)	(0.8)	(7.0)
Industry	49.3	48.3	39.9	4.1	39.6	3.5	4.1
	(3.2)	(-2.0)	(-2.1)	(4.8)	(-0.7)	(-3.4)	(0.7)
-Coking coal	36.3	34.6	28.8	2.9	29.1	2.9	3.0
	(8.5)	(-4.6)	(-4.2)	(-5.2)	(0.9)	(-2.6)	(1.3)
Buildings	1.1	0.9	0.6	0.2	0.4	0.0	0.1
	(-14.0)	(-15.7)	(-10.2)	(6.0)	(-32.6)	(-24.6)	(-39.5)
Power generation	89.4	91.8	76.5	6.6	71.1	7.9	7.4
	(11.3)	(2.6)	(3.8)	(-13.1)	(-7.0)	(3.0)	(12.2)

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

► The growth rate of coal consumption by use



6. Petroleum

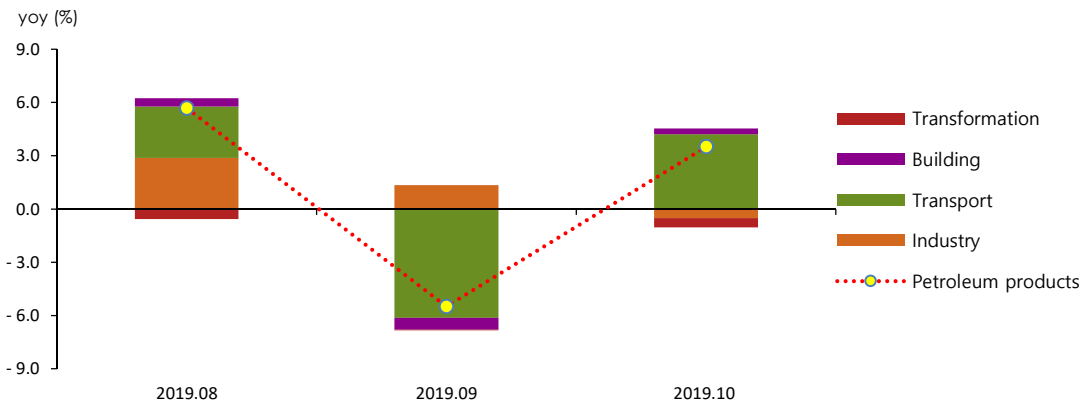
- **Petroleum consumption went up by 3.5% year-on-year in October, led by the transport sector, though the consumption declined in the industrial sector.**
 - Industrial petroleum consumption fell by mere 0.8% year-on-year despite the sharp drop in naphtha consumption, which takes up the largest share of the total consumption, because LPG consumption soared, partially offsetting the decline in naphtha consumption.
 - Petroleum consumption surged by over 10% year-on-year in the transport sector owing to the base effect of the sharp drop during the same month last year (-9.9%).

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

	2017	2018	2019p				
			M1~10	M10	M1~10	M9	M10
Petroleum (Mbbbl)	937.1	931.8	772.3	73.5	764.9	72.7	76.1
	(1.7)	(-0.6)	(0.1)	(-8.0)	(-1.0)	(-5.5)	(3.5)
Industry	567.0	564.1	470.5	46.0	466.9	48.5	45.6
	(4.5)	(-0.5)	(0.5)	(-8.5)	(-0.8)	(2.2)	(-0.8)
-Naphtha	458.4	451.2	377.3	36.3	363.8	37.1	34.3
	(6.6)	(-1.6)	(-0.4)	(-11.2)	(-3.6)	(-3.2)	(-5.7)
Transport	303.2	302.3	249.1	22.6	250.0	20.6	25.7
	(0.9)	(-0.3)	(-1.1)	(-9.9)	(0.4)	(-18.6)	(13.7)
Buildings	56.4	53.7	42.3	4.2	41.4	3.2	4.4
	(0.3)	(-4.9)	(-2.8)	(-2.2)	(-2.0)	(-13.8)	(5.9)
Power generation	10.5	11.7	10.4	0.8	6.6	0.3	0.4
	(-51.9)	(12.1)	(29.1)	(100.3)	(-36.5)	(-8.0)	(-49.6)

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

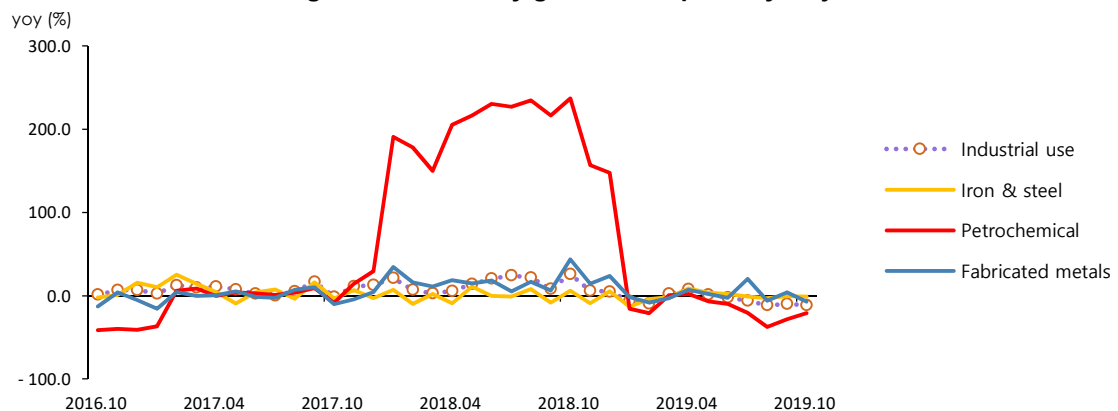
- **Gas consumption dropped by 10.4% year-on-year in October, as the consumption plunged in the power generation and city gas production sectors.**
 - Gas consumption fell sharply in the power generation sector, which was attributed to decreased total generation and over 10% growth in coal-fired power generation.
- **City gas consumption decreased in the industrial and buildings sectors, and accordingly, the total consumption fell by 8.8% (in October) on a year-on-year basis.**
 - Industrial city gas consumption went down by 4.7%, led by the petrochemical, primary metals and fabricated metals sectors that account for a large share of the total industrial city gas consumption.
 - Buildings' city gas use fell by almost 15%, leading the downward trend in the total city gas use, due to the decreased number of heating degree days (-72.3degree days) and the base effect of the surge (22.6%) during the same month last year.

► Trend in natural gas and city gas consumption

	2017	2018	2019p				
			M1~10	M10	M1~10	M9	M10
LNG (Mton)	36.4	42.3	33.7	3.1	32.2	2.4	2.8
	(4.3)	(16.2)	(21.9)	(40.7)	(-4.5)	(6.3)	(-10.4)
Power generation	15.6	18.9	15.7	1.5	14.8	1.3	1.3
	(0.6)	(21.5)	(28.6)	(55.0)	(-6.2)	(11.9)	(-9.3)
City gas production	18.4	19.8	15.3	1.4	14.6	0.9	1.1
	(5.8)	(7.7)	(11.6)	(27.4)	(-4.6)	(-5.9)	(-15.7)
City gas (bm³)	22.6	24.3	19.1	1.5	18.4	1.1	1.4
	(6.3)	(7.4)	(10.1)	(22.6)	(-3.7)	(-3.6)	(-12.2)
Industry	7.8	8.8	7.1	0.7	6.8	0.6	0.6
	(7.7)	(12.7)	(14.5)	(25.9)	(-4.4)	(-9.9)	(-11.2)
Buildings	13.6	14.3	11.0	0.7	10.6	0.4	0.6
	(6.0)	(5.1)	(8.5)	(22.6)	(-3.3)	(5.1)	(-14.8)

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

► The growth rate of city gas consumption by major industries



8. Electricity

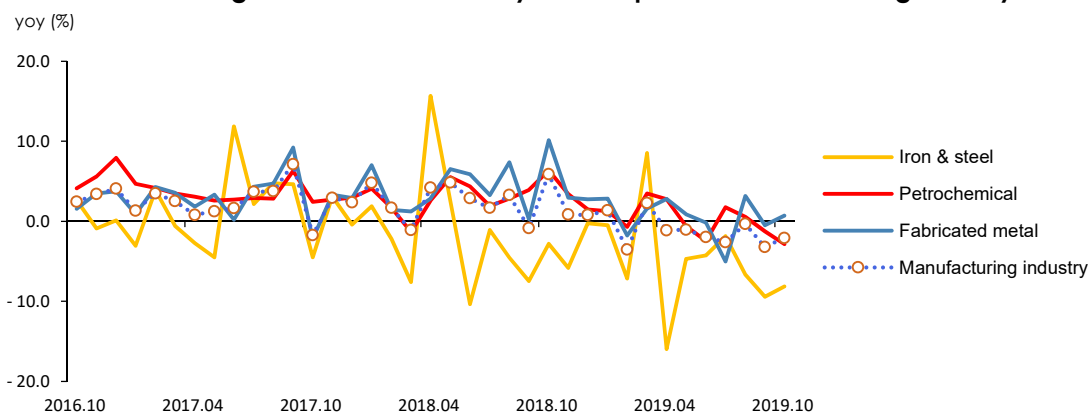
- **Electricity consumption was up 1.6% year-on-year in October, led by the buildings sector, though the consumption declined in the industrial sector.**
 - Industrial electricity consumption decreased on a year-on-year basis, owing to the base effect of the surge during the same month last year and the slowdown in industrial production in the midst of weak economy where exports of primary metals and petrochemical products declined.
 - Electricity consumption in buildings increased from the same month last year, despite decreased number of heating degree days (-46.5%), as the consumption increased in residential and commercial buildings, which was attributed to increased supply of home heating devices during the unusually cold last year's winter season.

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

	2017	2018		2019p			
			M1~10	M10	M1~10	M9	M10
Electricity (TWh)	507.7	526.1	438.9	40.0	434.7	43.6	40.6
	(2.2)	(3.6)	(4.3)	(4.2)	(-1.0)	(-0.2)	(1.6)
Industry	276.7	283.7	235.7	23.1	233.4	22.7	22.7
	(2.5)	(2.5)	(2.9)	(6.0)	(-1.0)	(-2.6)	(-1.7)
Transport	2.9	3.0	2.5	0.2	2.5	0.3	0.2
	(6.5)	(3.6)	(4.8)	(0.9)	(-1.0)	(0.8)	(-3.9)
Buildings	228.2	239.5	200.8	16.7	198.8	20.7	17.7
	(1.7)	(4.9)	(6.1)	(1.9)	(-1.0)	(2.6)	(6.3)
Residential	66.5	70.7	59.5	5.1	59.1	6.6	5.4
	(0.5)	(6.3)	(7.2)	(2.6)	(-0.7)	(4.0)	(5.6)
Commercial	130.4	136.4	114.3	9.3	113.0	11.3	9.9
	(2.3)	(4.6)	(5.9)	(1.9)	(-1.1)	(1.9)	(6.6)

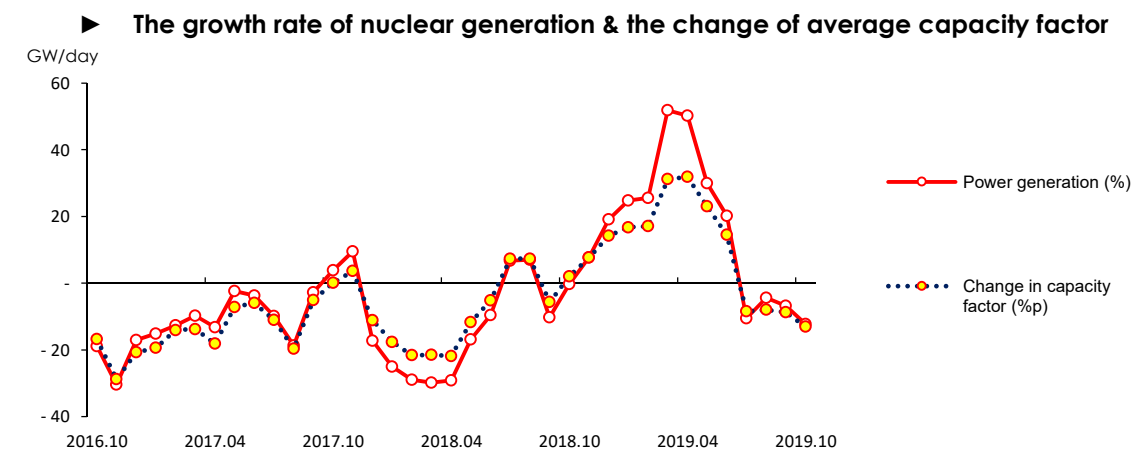
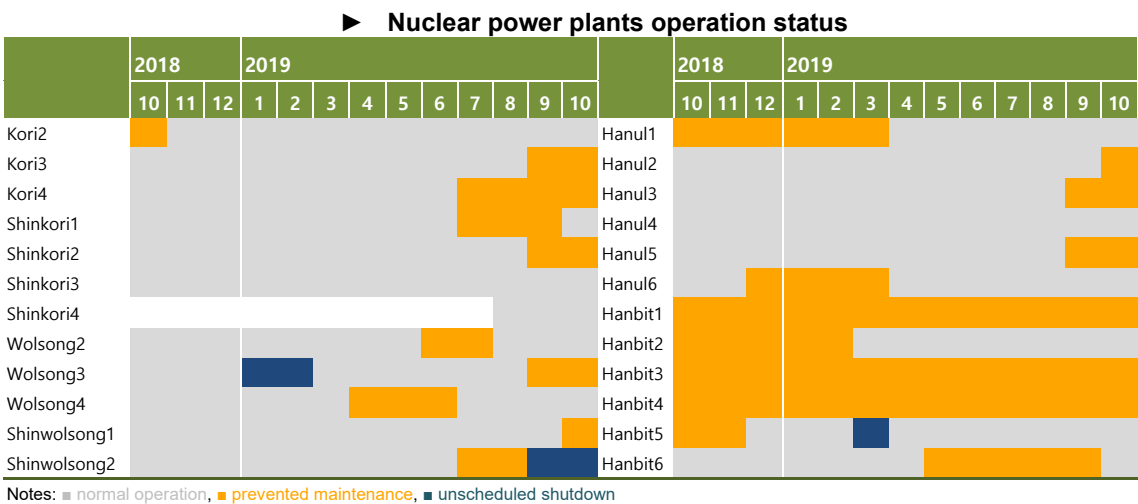
Notes: p means provisional, () is year-on-year growth rates (%)
Source: Monthly Energy Statistics

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



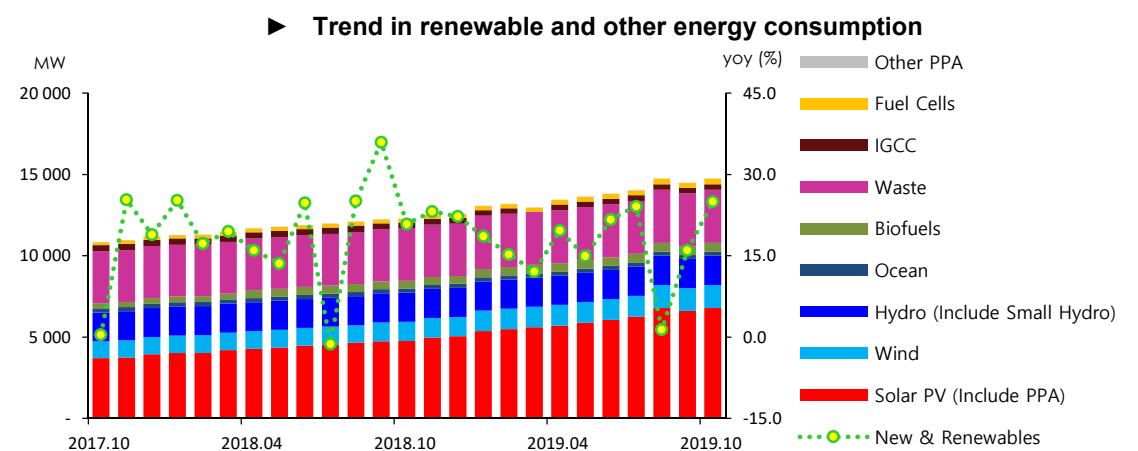
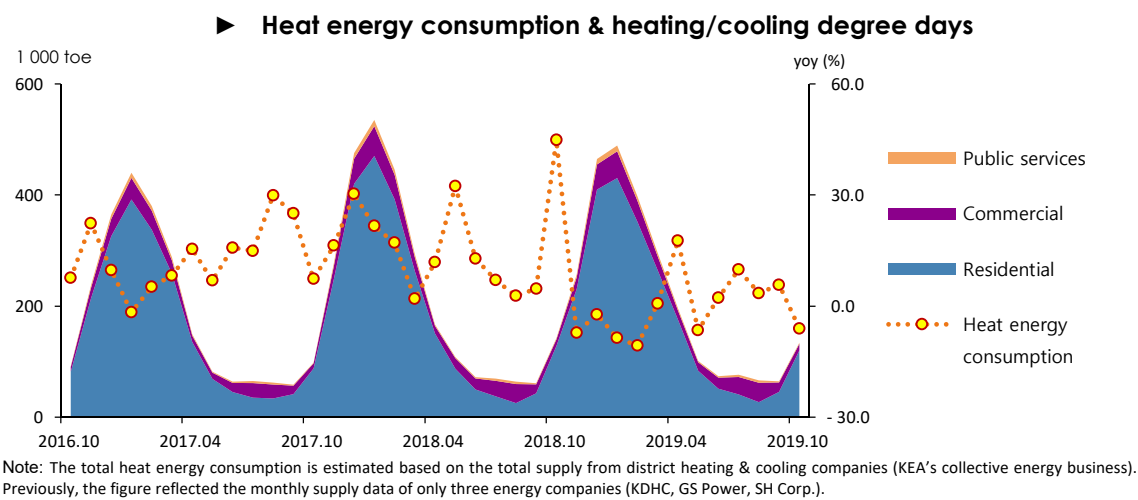
9. Nuclear

- The total nuclear generation declined by 12.3% year-on-year in October, as capacity factors decreased due to the increased preventive maintenance.
- The average capacity factor at nuclear power plants fell by 13.0%p to 61.3% on a year-on-year basis partly due to the increased number of reactors that are under maintenance, even though the operation started at Shinkori unit4 (8.30).
- Nuclear energy’s share of the total generation went up by 2.8%p to 24.1% on a year-on-year basis.



10. Heat and Renewable energy

- Heat energy consumption fell by 6.1% year-on-year in October, because heating demand decreased in warmer weather than usual.
- Heat energy consumption decreased, especially in the residential sector, as energy demand for heating decreased owing to the increased temperatures (2.8°C) with a south wind and accordingly plunged heating degree days (-72.3degree days, -46.5%).
- Renewable & other energy consumption decreased, led by the power generation sector, as the revised renewable energy act excluded some sources that were previously regarded as renewable energy.
- Renewable generation decreased despite increased use of solar PV, bioenergy, fuel cells and IGCC; the exclusion of some waste energy from the renewable category led to a sharp drop in renewable installed capacity and generation.
- Hydro generation (including pumped storage & small hydro) was up 6.4%, because the amount of rainfall increased under the influence of typhoon Mitag (10.1-3).



11. Industry

□ Industrial energy use fell by 1.7% year-on-year in October, because the industrial production decreased amid the economic slowdown at home and abroad.

- The manufacturing production index dropped by 2.0% on a year-on-year basis in the midst of the decreased exports and domestic economic downturn, and as a consequence, weak energy consumption continued in large energy consuming industries.

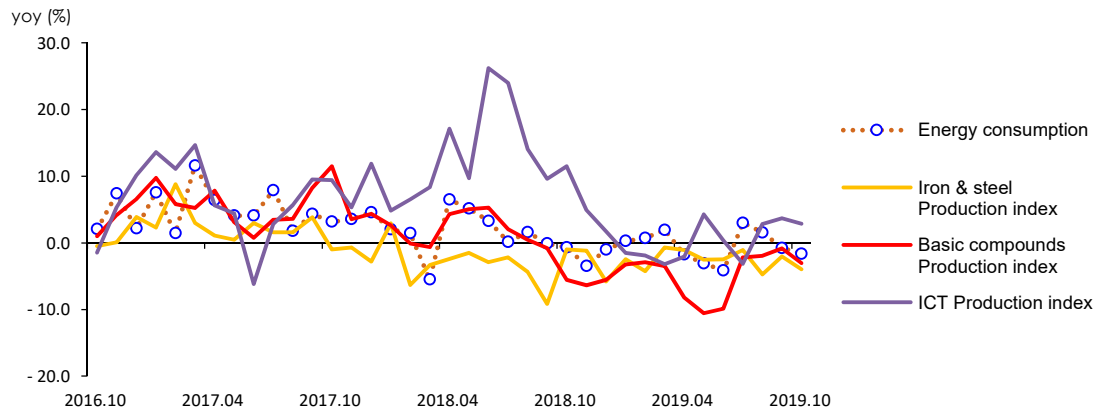
► Trend in the industrial energy consumption

	2017	2018	2019p				
			M1~10	M10	M1~10	M9	M10
Industry (Mtoe)	141.9	142.9	118.6	11.8	118.1	11.6	11.6
	(5.0)	(0.7)	(1.3)	(-0.7)	(-0.4)	(-0.8)	(-1.7)
Petrochemical	70.0	72.1	60.1	5.9	59.7	6.1	5.8
	(4.9)	(3.0)	(3.8)	(-5.4)	(-0.7)	(0.6)	(-1.2)
- Naphtha	56.2	55.3	46.2	4.5	44.6	4.5	4.2
	(6.6)	(-1.6)	(-0.4)	(-11.2)	(-3.6)	(-3.2)	(-5.7)
Iron & Steel	33.2	28.9	24.0	2.4	24.1	2.3	2.4
	(7.4)	(-13.0)	(-12.6)	(-13.0)	(0.2)	(-3.1)	(0.2)
-Coking coal	25.3	24.1	20.1	2.0	20.3	2.0	2.1
	(8.0)	(-4.6)	(-4.2)	(-5.2)	(0.9)	(-2.6)	(1.3)
Fabricated metal	10.8	11.4	9.4	0.9	9.5	0.9	0.9
	(1.9)	(5.9)	(5.9)	(14.6)	(0.5)	(-0.2)	(-0.7)
Share of feedstock (%)	60.9	59.1	59.4	59.1	58.6	60.2	57.5

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

Source: Monthly Energy Statistics

► Industrial energy consumption & production index



12. Transport

□ **Transport energy use posted a year-on-year growth of 11.9% in October, with the road transport sector taking the lead, although it declined in other transport sectors.**

- Energy use for road transport went up by over 20% due to the base effect of the sharp fall during the same month last year.
- Energy use for domestic navigation plunged by 42.3% year-on-year despite the increased coastal transport volume (9.9%), as the import and export volume (national flag vessel) fell by 9.2% and 10.8% respectively.
- Energy use for aviation maintained its downward slide, even though the number of domestic and international flights slightly increased compared to the same month last year.

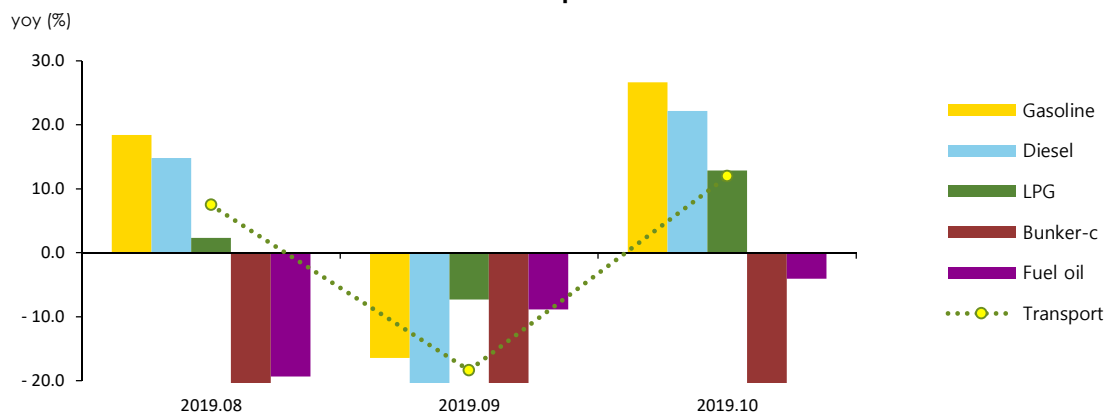
► The growth rate of petroleum consumption in the transport sector

	2017	2018		2019p			
			M1~10	M10	M1~10	M9	M10
Transport (Mtoe)	42.8	43.0	35.4	3.2	35.5	2.9	3.6
	(1.2)	(0.4)	(-0.4)	(-8.7)	(0.1)	(-18.4)	(11.9)
Road	34.1	34.4	28.3	2.5	29.0	2.4	3.0
	(0.5)	(0.9)	(-0.0)	(-11.1)	(2.5)	(-18.4)	(21.1)
Navigation	3.5	3.2	2.7	0.3	2.1	0.2	0.2
	(5.8)	(-9.9)	(-10.5)	(-2.1)	(-19.3)	(-36.5)	(-42.3)
Aviation	4.8	5.0	4.2	0.4	4.0	0.4	0.4
	(3.2)	(4.4)	(4.4)	(1.6)	(-3.8)	(-8.9)	(-4.1)
Rail	0.3	0.4	0.3	0.0	0.3	0.0	0.0
	(2.5)	(3.6)	(4.4)	(4.8)	(-1.8)	(4.4)	(-7.3)

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 use in buildings decreased by 0.6% year-on-year in October, because energy demand for heating declined amid the increased temperatures.**

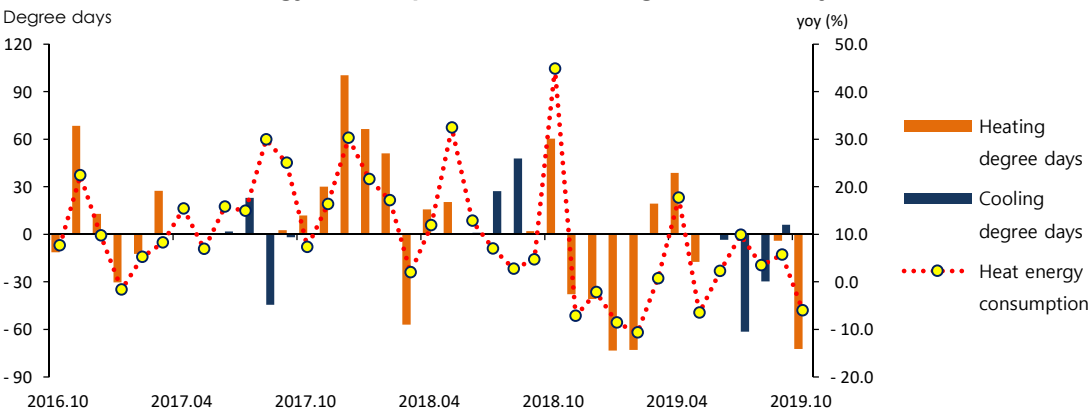
- Buildings' energy use fell by 0.6%, as the use of heating energy decreased in residential buildings including city gas, heat and kerosene, though the electricity use increased, as the amount of rainfall increased under the influence of typhoon Mitag and the number of heating degree days decreased with increased temperatures.
- Energy use in residential buildings dropped by 8.7% year-on-year, despite increased power use (5.6%), as the use of heating energy such as city gas, heat, kerosene and briquette all declined (-20.3%, -6.5%, -17.6%, -39.5%).
- Energy use in commercial & public buildings grew by 6.9% year-on-year, as petroleum use increased by 14.7%, mostly diesel, and electricity consumption grew by 6.6%, although city gas and heat consumption fell by 2.2% and 2.0% respectively.

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

	2017	2018	2019p				
			M1~10	M10	M1~10	M9	M10
Buildings (Mtoe)	45.3	46.9	37.6	3.0	36.9	2.9	3.0
	(3.1)	(3.5)	(5.8)	(7.2)	(-2.0)	(0.2)	(-0.6)
Residential	22.5	23.5	18.2	1.5	17.6	1.1	1.3
	(3.7)	(4.4)	(7.6)	(13.4)	(-3.3)	(1.0)	(-8.7)
Commercial	17.4	17.9	14.8	1.2	14.7	1.4	1.3
	(1.9)	(2.9)	(4.4)	(2.1)	(-0.4)	(2.1)	(6.5)
Public:others	5.5	5.6	4.6	0.4	4.5	0.4	0.4
	(4.1)	(2.0)	(3.6)	(1.8)	(-1.9)	(-7.1)	(8.2)
Heating degree days	2 517.1	2 597.8	1 777.3	155.4	1 595.5	0.9	83.1
	(5.5)	(3.2)	(9.8)	(63.8)	(-10.2)	(-82.0)	(-46.5)
Cooling degree days	132.7	209.0	209.0	-	120.4	6.1	-
	(-13.9)	(57.5)	(57.5)	-	(-42.4)	-	-

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

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



14. Transformation

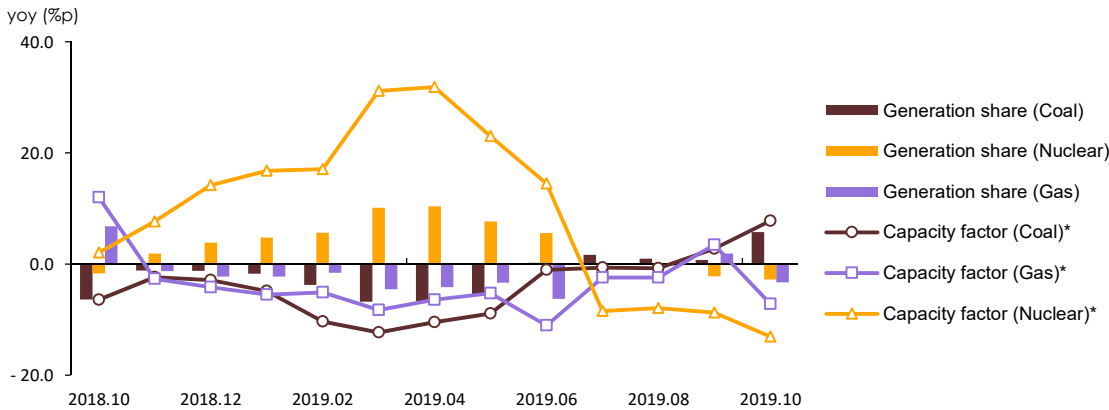
- The total energy input to power stations dropped by 1.2% year-on-year in October, as the use of all energy sources declined except coal.
 - The total energy input to power stations declined, mainly nuclear and gas, as the total power generation decreased (-2.1%) from the same month last year.
 - The average capacity factors at coal, nuclear and gas power plants stood at 71.7%, 61.3% and 34.0% respectively.

► Energy consumption in the power generation sector

	2017	2018			2019p		
			M1~10	M10	M1~10	M9	M10
Input (Mtoe)	115.1	118.7	98.5	9.3	96.4	9.3	9.2
	(0.3)	(3.1)	(3.7)	(2.8)	(-2.1)	(0.1)	(-1.2)
Coal	52.8	54.2	45.2	3.9	42.0	4.7	4.4
	(7.4)	(2.7)	(3.9)	(-13.1)	(-7.1)	(3.1)	(12.3)
Oil	1.2	1.3	1.2	0.1	0.7	0.0	0.0
	(-59.5)	(7.5)	(26.5)	(139.4)	(-44.4)	(-35.1)	(-66.4)
Gas	20.7	25.1	20.9	1.9	19.5	1.7	1.7
	(0.9)	(21.4)	(28.5)	(54.5)	(-6.4)	(11.3)	(-9.6)
Nuclear	31.6	28.4	23.2	2.6	26.5	2.2	2.3
	(-7.5)	(-10.1)	(-14.0)	(-0.2)	(14.4)	(-6.8)	(-12.3)
Hydro/other renewables	8.7	9.6	8.0	0.8	7.6	0.7	0.8
	(11.5)	(9.9)	(10.0)	(15.9)	(-4.1)	(-15.3)	(-2.5)

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

	2016	2017	2018				2019		
				1Q	2Q	3Q	1Q	2Q	3Q
GDP (trillion won)	1 706.9 (2.9)	1 299.0 (3.3)	1 807.7 (2.7)	428.7 (2.8)	450.8 (2.9)	453.0 (2.1)	435.8 (1.7)	460.1 (2.0)	462.3 (2.0)
Private consumption	825.7 (2.6)	630.4 (2.6)	872.3 (2.8)	218.8 (3.6)	212.2 (2.9)	217.8 (2.3)	222.8 (1.9)	216.5 (2.0)	221.7 (1.8)
Facilities investment	146.2 (2.6)	126.3 (18.8)	166.2 (-2.4)	44.1 (10.2)	43.2 (-4.3)	37.3 (-9.4)	36.4 (-17.4)	40.2 (-7.0)	36.3 (-2.6)
Construction investment	263.7 (10.0)	207.3 (8.9)	270.9 (-4.3)	57.1 (1.2)	74.4 (-2.5)	68.0 (-8.7)	53.0 (-7.2)	71.8 (-3.5)	65.5 (-3.7)
Consumer price index (2015=100)	101.0	102.9	104.5	103.9	104.3	104.8	104.5	104.9	104.9
USD to KRW exchange rate (won)	1 160.8	1 138.8	1 100.2	1 072.7	1 079.0	1 121.5	1 125.1	1 166.6	1 193.9
Benchmark rate (%)	1.4	1.3	1.5	1.5	1.5	1.5	1.8	1.8	1.5
Coincident composite index (2015=100)	103.3	106.9	109.4	108.7	109.4	109.6	109.8	110.4	111.0
Mining & manufacturing production index (2015=100)	102.2	104.4	106.1	102.3	106.9	105.2	100.2	106.2	104.5
Manufacturing operation ratio index (2015=100)	98.9	98.4	98.4	94.6	100.6	97.0	92.8	100.2	98.0
Average temperature	13.6	15.0	13.0	2.0	17.8	24.8	3.4	17.3	24.3
- year-on-year difference	0.2	-0.2	-0.1	-0.7	-0.3	0.7	1.4	-0.5	-0.6
Heating degree days	2 386.8 (3.9)	1 523.2 (-0.8)	2 597.8 (3.2)	1 437.2 (4.4)	179.7 (25.1)	5.0 (72.4)	1 310.4 (-8.8)	201.1 (11.9)	0.9 (-82.0)
Cooling degree days	154.1 (87.2)	132.7 (-13.9)	209.0 (57.5)	- -	3.5 (45.8)	205.5 (57.7)	- -	- (-100.0)	120.4 (-41.4)
Energy intensity	0.17 (-0.5)	0.17 (-0.9)	0.17 (-0.8)	0.19 (-0.6)	0.16 (0.8)	0.17 (0.3)	0.18 (-2.8)	0.15 (-3.7)	0.16 (-3.5)
Per capita consumption									
oil (bbl)	18.0 (7.5)	13.5 (1.7)	18.1 (-1.0)	4.6 (0.1)	4.5 (2.8)	4.5 (-1.3)	4.5 (-1.0)	4.3 (-4.6)	4.5 (0.7)
Electricity (MWh)	9.7 (2.4)	7.4 (1.7)	10.2 (3.1)	2.7 (3.9)	2.4 (3.2)	2.7 (4.4)	2.6 (-1.6)	2.4 (-0.1)	2.6 (-2.5)
City gas (1 000 m ³)	0.4 (1.9)	0.3 (4.2)	0.5 (6.9)	0.2 (9.5)	0.1 (7.5)	0.1 (8.0)	0.2 (-6.4)	0.1 (4.1)	0.1 (-3.9)
Total energy (toe)	5.7 (2.0)	4.3 (2.1)	6.0 (1.3)	1.6 (1.7)	1.4 (3.3)	1.5 (1.9)	1.5 (-1.4)	1.4 (-1.9)	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			
			M1~10	M8	M9	M10	M1~10	M8	M9	M10
Industrial production index										
All industry	105.7 (2.6)	107.2 (1.4)	106.1 (1.6)	105.4 (2.0)	104.8 (-4.5)	109.4 (7.6)	106.1 (0.0)	105.4 -	105.3 (0.5)	108.8 (-0.5)
Mining & manufacturing	104.7 (2.5)	106.1 (1.3)	105.6 (1.5)	105.2 (4.0)	102.1 (-6.7)	112.3 (12.6)	104.3 (-1.2)	101.7 (-3.3)	102.8 (0.7)	109.9 (-2.1)
Iron & steel	102.9 (1.7)	99.8 (-3.1)	99.9 (-3.0)	98.9 (-4.4)	93.3 (-9.2)	101.4 (-1.0)	97.4 (-2.5)	94.2 (-4.8)	91.4 (-2.0)	97.4 (-3.9)
Cement	110.0 (1.7)	100.1 (-9.0)	99.9 (-8.7)	90.0 (-12.1)	92.3 (-23.5)	111.2 (11.1)	91.9 (-8.0)	89.8 (-0.2)	76.8 (-16.8)	99.9 (-10.2)
Basic compound	110.4 (5.5)	110.4 -	111.3 (1.2)	112.9 (0.4)	110.6 (-0.8)	107.5 (-5.5)	106.1 (-4.6)	110.7 (-1.9)	109.7 (-0.8)	104.2 (-3.1)
Transport equipment	95.0 (-2.7)	93.7 (-1.4)	91.9 (-3.7)	87.3 (10.9)	84.8 (-14.3)	104.6 (30.1)	92.3 (0.5)	76.4 (-12.5)	82.5 (-2.7)	98.3 (-6.0)
Electric & electronic	105.5 (2.6)	105.2 (-0.3)	103.3 (-0.5)	104.1 (1.4)	100.0 (-13.5)	111.9 (11.7)	102.1 (-1.2)	96.5 (-7.3)	102.5 (2.5)	109.8 (-1.9)
Service	104.5 (1.8)	106.7 (2.1)	105.7 (2.2)	105.6 (1.5)	105.8 (-1.8)	108.1 (5.8)	107.0 (1.3)	108.1 (2.4)	106.7 (0.9)	109.0 (0.8)
Operating ratio index										
Manufacturing	98.1 (-0.9)	98.4 (0.3)	98.1 (0.3)	97.2 (2.3)	93.8 (-8.8)	104.3 (12.2)	97.6 (-0.5)	95.1 (-2.2)	96.1 (2.5)	102.8 (-1.4)
Iron & steel	102.3 (1.5)	98.8 (-3.4)	98.8 (-3.5)	97.7 (-5.1)	92.4 (-9.6)	100.6 (-1.3)	97.6 (-1.3)	94.2 (-3.6)	91.5 (-1.0)	97.5 (-3.1)
Cement	107.4 (0.4)	108.9 (1.4)	108.2 (1.5)	99.5 (-0.2)	101.6 (-13.7)	122.7 (25.8)	103.1 (-4.8)	99.1 (-0.4)	84.8 (-16.5)	110.5 (-9.9)
Basic compound	107.1 (3.6)	104.9 (-2.0)	105.8 (-1.0)	106.6 (-1.8)	104.6 (-3.0)	101.6 (-7.3)	100.1 (-5.4)	104.6 (-1.9)	102.9 (-1.6)	97.5 (-4.0)
Transport equipment	87.6 (-6.6)	90.2 (2.9)	88.4 (0.4)	84.9 (16.6)	81.8 (-10.2)	100.9 (36.5)	92.2 (4.3)	76.9 (-9.4)	82.9 (1.3)	98.4 (-2.5)
Electric & electronic	102.5 (0.7)	100.3 (-2.1)	98.8 (-2.2)	98.7 (-0.6)	93.8 (-15.2)	105.7 (8.3)	98.9 (0.1)	93.5 (-5.3)	99.4 (6.0)	106.3 (0.6)

Note: p means provisional
Source: Monthly Energy Statistics

International Energy Prices

	2016	2017	2018				2019			
				M10	M11	M12		M10	M11	M12
Crude oil (USD/bbl)										
WTI	43.3 (-11.2)	51.0 (17.6)	64.8 (27.1)	70.8 (37.2)	56.7 (0.1)	49.0 (-15.5)	57.0 (-11.9)	54.0 (-23.7)	57.1 (0.7)	59.8 (22.1)
Dubai	41.2 (-18.8)	53.2 (28.9)	69.4 (30.5)	79.4 (42.9)	65.6 (7.8)	57.3 (-7.0)	63.5 (-8.5)	59.4 (-25.2)	62.0 (-5.4)	64.9 (13.2)
Brent	45.0 (-16.0)	54.8 (21.7)	71.5 (30.5)	80.6 (39.9)	66.0 (4.9)	57.7 (-10.0)	64.2 (-10.3)	59.6 (-26.0)	62.7 (-4.9)	65.2 (13.0)
Unit value of import (C&F)	41.0 (-23.0)	53.3 (29.9)	71.4 (34.0)	79.2 (44.6)	76.2 (31.5)	66.6 (7.2)	65.5 (-8.3)	64.1 (-19.0)	64.1 (-15.8)	65.7 (-1.4)
LNG										
From Indonesia (USD/MMBTU)	7.4 (-32.6)	8.6 (16.7)	10.7 (24.0)	11.7 (40.3)	11.7 (38.5)	12.0 (38.7)	10.6 (-1.0)	10.0 (-14.4)	10.0 (-14.1)	10.0 (-16.2)
Unit value of import (USD/ton, CIF)	356.7 (-35.0)	416.3 (16.7)	526.3 (26.4)	579.9 (37.6)	584.2 (45.9)	574.2 (33.5)	505.3 (-4.0)	479.0 (-17.4)	454.3 (-22.2)	454.9 (-20.8)
Bituminous coal (USD/ton)										
From Australia	66.1 (12.2)	88.5 (33.9)	107.0 (20.9)	108.7 (12.0)	100.7 (4.2)	101.4 (0.6)	77.9 (-27.2)	69.2 (-36.4)	67.0 (-33.5)	66.2 (-34.7)
Unit value of import (CIF)	68.9 (-6.8)	104.3 (51.5)	113.6 (8.9)	114.3 (11.5)	111.2 (3.9)	114.0 (12.7)	100.7 (-11.3)	92.1 (-19.4)	87.5 (-21.3)	85.1 (-25.3)
Petroleum product (USD/bbl)										
Gasoline	56.2 (-19.1)	68.1 (21.2)	79.9 (17.4)	87.7 (25.1)	68.6 (-9.3)	60.0 (-20.4)	72.5 (-9.3)	74.0 (-15.6)	76.3 (11.1)	74.8 (24.7)
Kerosene	52.8 (-18.3)	65.3 (23.6)	84.8 (29.8)	95.1 (39.2)	82.9 (12.0)	71.1 (-5.8)	77.3 (-8.9)	75.4 (-20.8)	74.9 (-9.7)	77.8 (9.3)
Diesel	53.0 (-20.4)	66.4 (25.2)	84.9 (27.9)	97.2 (38.4)	82.3 (11.1)	70.0 (-7.8)	78.2 (-7.9)	77.1 (-20.7)	76.0 (-7.6)	79.2 (13.2)
Bunker-C	35.4 (-21.6)	49.7 (40.2)	65.2 (31.3)	76.8 (47.9)	68.3 (20.4)	56.5 (0.2)	57.5 (-11.8)	47.4 (-38.3)	39.4 (-42.3)	43.3 (-23.3)
Propane	323.3 (-22.3)	467.5 (44.6)	542.1 (16.0)	655.0 (13.9)	540.0 (-6.1)	445.0 (-24.6)	434.6 (-19.8)	420.0 (-35.9)	430.0 (-20.4)	440.0 (-1.1)
Butane	355.8 (-18.5)	501.7 (41.0)	539.2 (7.5)	655.0 (12.9)	525.0 (-9.5)	415.0 (-27.2)	441.7 (-18.1)	435.0 (-33.6)	445.0 (-15.2)	455.0 (9.6)
Naphtha	42.5 (-19.0)	53.8 (26.6)	67.0 (24.5)	74.7 (29.7)	56.8 (-11.9)	51.7 (-20.4)	56.9 (-15.1)	56.8 (-23.9)	59.5 (4.8)	63.5 (22.7)

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

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

Total Primary Energy Supply (TPES)

	2017	2018					2019p			
			M1~10	M8	M9	M10	M1~10	M8	M9	M10
Coal (Mton)	139.8 (8.1)	141.0 (0.9)	117.0 (1.6)	13.3 (6.5)	11.4 (-6.7)	10.8 (-6.9)	111.2 (-5.0)	12.7 (-4.3)	11.5 (0.8)	11.6 (7.0)
- Coking coal excluded	103.5 (7.9)	106.4 (2.8)	88.2 (3.7)	10.3 (10.1)	8.5 (-7.7)	7.9 (-7.5)	82.1 (-6.9)	9.7 (-6.1)	8.7 (1.9)	8.6 (9.1)
Oil (Mbbbl)	937.1 (1.7)	931.8 (-0.6)	772.3 (0.1)	77.8 (-0.0)	76.9 (-0.1)	73.5 (-8.0)	764.9 (-1.0)	82.2 (5.7)	72.7 (-5.5)	76.1 (3.5)
- Non-energy oil excluded	443.7 (-2.5)	445.5 (0.4)	366.2 (0.4)	37.3 (2.8)	35.6 (-2.9)	33.8 (-6.9)	370.3 (1.1)	41.2 (10.5)	32.6 (-8.6)	38.9 (15.3)
LNG (Mton)	36.4 (4.3)	42.3 (16.2)	33.7 (21.9)	2.9 (23.9)	2.3 (11.9)	3.1 (40.7)	32.2 (-4.5)	2.8 (-2.4)	2.4 (6.3)	2.8 (-10.4)
Hydro (TWh)	7.0 (5.5)	7.3 (3.9)	6.1 (1.0)	0.7 (-27.7)	0.7 (5.8)	0.5 (-10.2)	5.3 (-13.9)	0.6 (-14.4)	0.6 (-20.9)	0.5 (6.4)
Nuclear (TWh)	148.4 (-8.4)	133.5 (-10.1)	108.9 (-14.0)	12.8 (7.0)	11.1 (-10.2)	12.1 (-0.2)	124.6 (14.4)	12.2 (-4.4)	10.3 (-6.8)	10.6 (-12.3)
Others (Mtoe)	15.8 (16.7)	17.1 (8.0)	14.3 (8.8)	1.5 (9.9)	1.5 (6.6)	1.4 (13.3)	14.3 (0.1)	1.5 (-0.2)	1.3 (-7.6)	1.4 (-1.9)
TPES (Mtoe)	302.1 (2.8)	307.5 (1.8)	253.0 (2.5)	26.2 (5.7)	23.8 (-1.6)	24.2 (0.0)	249.6 (-1.4)	26.1 (-0.2)	23.1 (-3.0)	24.1 (-0.3)
- Non-energy oil excluded	240.7 (2.1)	247.1 (2.6)	202.5 (3.2)	21.2 (8.0)	18.7 (-2.5)	19.2 (2.6)	200.4 (-1.1)	21.0 (-0.6)	18.1 (-3.1)	19.5 (1.4)
- Non-energy oil&coal excluded	215.4 (1.4)	222.9 (3.5)	182.5 (4.1)	19.1 (9.5)	16.6 (-2.4)	17.2 (3.6)	180.1 (-1.3)	18.9 (-0.9)	16.1 (-3.2)	17.4 (1.4)

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

Share of TPES by Sources

(unit: %)

	2017	2018					2019p			
			M1~10	M8	M9	M10	M1~10	M8	M9	M10
Coal	28.5	28.2	28.4	31.1	29.7	27.6	27.5	29.9	30.9	29.6
- Coking coal excluded	20.2	20.3	20.5	23.2	21.1	19.2	19.4	21.9	22.2	21.1
Oil	39.5	38.5	38.8	37.8	41.1	38.8	38.8	39.8	39.5	39.8
- non-energy oil excluded	19.2	18.9	18.9	18.6	19.5	18.3	19.1	20.3	17.9	20.6
LNG	15.7	18.0	17.4	14.3	12.5	16.7	16.9	14.0	13.7	15.0
Hydro	0.5	0.5	0.5	0.6	0.6	0.4	0.5	0.5	0.5	0.5
Nuclear	10.5	9.2	9.2	10.4	9.9	10.7	10.6	10.0	9.5	9.4
Others	5.2	5.6	5.6	5.9	6.1	5.9	5.7	5.9	5.8	5.8
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	2018					2019p			
			M1~10	M8	M9	M10	M1~10	M8	M9	M10
Industry	141.9 (5.0)	142.9 (0.7)	118.6 (1.3)	12.0 (1.6)	11.7 (-0.1)	11.8 (-0.7)	118.1 (-0.4)	12.1 (1.5)	11.6 (-0.8)	11.6 (-1.6)
Transport	42.8 (1.2)	43.0 (0.4)	35.4 (-0.4)	3.8 (3.5)	3.6 (-1.6)	3.2 (-8.7)	35.5 (0.1)	4.1 (7.5)	2.9 (-18.4)	3.6 (11.9)
Residential-commercial	39.9 (2.9)	41.3 (3.7)	33.0 (6.1)	2.7 (8.7)	2.4 (1.4)	2.7 (8.1)	32.3 (-2.0)	2.6 (-2.9)	2.5 (1.6)	2.6 (-1.9)
Public	5.5 (4.1)	5.6 (2.0)	4.6 (3.6)	0.5 (2.6)	0.5 (9.2)	0.4 (1.8)	4.5 (-1.9)	0.5 (1.3)	0.4 (-7.1)	0.4 (8.2)
TFC	230.0 (3.9)	232.7 (1.2)	191.6 (1.8)	19.0 (3.0)	18.1 (-0.0)	18.1 (-1.0)	190.4 (-0.6)	19.4 (2.1)	17.4 (-4.1)	18.2 (0.9)
Coal (Mton)	50.4 (2.7)	49.2 (-2.3)	40.5 (-2.3)	4.1 (1.6)	3.7 (-9.2)	4.2 (4.8)	40.0 (-1.1)	4.1 (0.2)	3.6 (-3.8)	4.2 (-1.0)
Oil (Mbbbl)	926.6 (3.0)	920.0 (-0.7)	761.9 (-0.2)	76.8 (-0.7)	76.5 (-0.1)	72.7 (-8.6)	758.3 (-0.5)	81.6 (6.3)	72.3 (-5.5)	75.7 (4.1)
Electricity (TWh)	507.7 (2.2)	526.1 (3.6)	438.9 (4.3)	49.5 (9.2)	43.7 (3.3)	40.0 (4.2)	434.7 (-1.0)	47.6 (-4.0)	43.6 (-0.2)	40.6 (1.6)
City gas (Bm³)	22.6 (6.3)	24.3 (7.4)	19.1 (10.1)	1.2 (9.8)	1.2 (2.9)	1.5 (22.6)	18.4 (-3.7)	1.1 (-4.0)	1.1 (-3.6)	1.4 (-12.2)
Heat-others (1 000 toe)	11.1 (18.4)	11.8 (6.4)	9.6 (8.1)	0.9 (9.5)	0.8 (4.9)	0.9 (11.4)	9.7 (1.0)	0.9 (-2.0)	0.8 (-1.1)	0.8 (-1.0)

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

Share of the Total Final Consumption by Sources

(unit: %)

	2017	2018					2019p			
			M1~10	M8	M9	M10	M1~10	M8	M9	M10
Industry	61.7	61.4	61.9	63.0	64.3	65.3	62.0	62.6	66.5	63.7
Transport	18.6	18.5	18.5	20.2	19.8	17.8	18.6	21.3	16.9	19.7
Residential-commercial	17.3	17.8	17.2	14.4	13.4	14.7	17.0	13.7	14.2	14.3
Public	2.4	2.4	2.4	2.4	2.5	2.2	2.4	2.4	2.4	2.3
Final energy	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0
Coal	14.5	13.9	14.0	14.4	13.9	15.4	14.0	14.2	14.0	15.2
Oil	51.2	50.2	50.5	51.3	53.6	51.2	50.4	53.2	52.1	52.3
Electricity	19.0	19.4	19.7	22.4	20.7	19.0	19.6	21.1	21.6	19.2
City gas	10.5	11.4	10.9	7.2	7.3	9.7	10.9	7.0	7.7	8.7
Heat-others	4.8	5.1	5.0	4.7	4.5	4.7	5.1	4.5	4.7	4.6

Note: p means provisional
Source: Monthly Energy Statistics

Statistics on Energy Production Facilities

	2016	2017	2018				2019p		
				M8	M9	M10	M8	M9	M10
Total capacity (GW)	105.9	116.9	119.1	118.0	118.0	118.0	123.0	122.5	124.0
	-	(10.4)	(1.9)	(3.3)	(2.4)	(1.8)	(4.2)	(3.8)	(5.1)
Nuclear	23.1	22.5	21.9	21.9	21.9	21.9	23.3	23.3	23.3
	-	(-2.5)	(-3.0)	(-3.0)	(-3.0)	(-3.0)	(6.4)	(6.4)	(6.4)
Bituminous coal	30.9	36.1	36.4	36.4	36.4	36.4	36.4	36.4	36.4
	-	(16.8)	(0.7)	(3.0)	(0.4)	(0.4)	(0.1)	(0.1)	(0.1)
Gas	32.6	37.9	37.9	37.9	37.9	37.9	38.2	38.2	39.2
	-	(16.0)	(-0.0)	(3.2)	(3.3)	(2.0)	(1.0)	(1.0)	(3.5)
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		
				M8	M9	M10	M8	M9	M10
The number of household demanding city gas (mil)	18.0	18.6	19.1	18.8	18.8	18.9	19.3	19.4	19.4
	(3.4)	(3.3)	(3.1)	(3.0)	(3.0)	(3.3)	(2.9)	(2.9)	(2.7)
Registered cars (mil)	21.8	22.5	23.2	23.0	23.0	23.1	23.5	23.6	23.6
	(3.9)	(3.3)	(3.0)	(3.1)	(3.0)	(3.0)	(2.4)	(2.3)	(2.2)
- gasoline	10.1	10.4	10.6	10.5	10.6	10.6	10.8	10.9	10.9
	(2.9)	(2.7)	(2.5)	(2.5)	(2.4)	(2.5)	(2.7)	(2.8)	(2.9)
- diesel	9.2	9.6	9.9	9.8	9.9	9.9	10.0	10.0	10.0
	(6.4)	(4.4)	(3.7)	(4.1)	(3.9)	(3.8)	(1.8)	(1.4)	(1.0)
- LPG	2.2	2.1	2.0	2.1	2.1	2.0	2.0	2.0	2.0
	(-4.0)	(-2.9)	(-3.3)	(-3.3)	(-3.3)	(-3.3)	(-2.5)	(-2.3)	(-2.1)
- hybrid	0.2	0.3	0.4	0.4	0.4	0.4	0.5	0.5	0.5
	(37.6)	(37.6)	(30.9)	(32.5)	(30.9)	(31.4)	(28.7)	(28.5)	(27.6)

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

Source: Monthly Energy Statistics

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MONTHLY **KOREA ENERGY TRENDS** (2020, NO.94)



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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