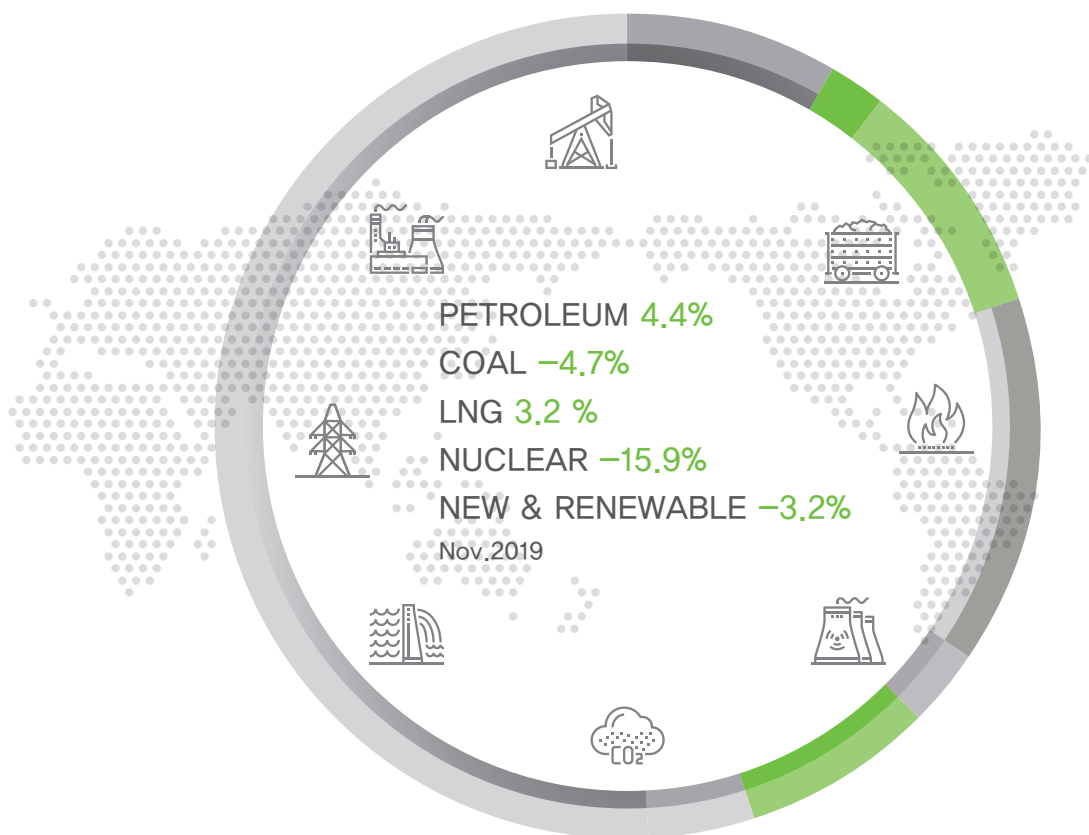


# KEEI

## MONTHLY KOREA ENERGY TRENDS

2020 / 02  
KOREA ENERGY ECONOMICS INSTITUTE



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## 1. The Economy and the Industry

- **The mining & manufacturing production index fell more slowly (-0.2%) in November on a year-on-year basis due to the stronger semiconductor output, although the index continuously declined in other major industries.**
  - The semiconductor production index posted a year-on-year growth of 30.9%, as its export volume surged, surpassing the record set in the last year's booming market, though the export value declined due to the continuously falling unit prices.
  - The production index of basic chemical materials fell slightly (-0.1%), owing to the reduced outputs of intermediary materials and three major petrochemical products, although the outputs of basic petrochemicals such as ethylene and propylene increased following the construction of new naphtha cracking centers (LG Chemical, 230,000 tons, 2019.4).
  - The iron & steel production index dropped by 4.2% year-on-year despite increased export volume, because of the sluggish domestic demand for steel plates, steel bars and rebars amid the downturn in some industries such as shipbuilding and automobile, which are major source of demand.
  - The automobile production index fell by 11.2% year-on-year despite the launch of a new model, due to the base effect that the number of automobiles produced hit a two-year high in the same month last year (390,000).
- **The service production index went up by 2.5% year-on-year (in November) as the index continued to grow in the information & communications and health & social welfare sectors.**
  - The service production index returned to above 2% growth for the first time in three months since August 2019, as the index fell more slowly in the wholesale & retail sectors (0.2% respectively) and continued to rise in the information & communications and health & social welfare sectors (6.7%, 9.7%).

► Trend in major economic and industrial indicators

	2017	2018	2019p				
			M1~11	M11	M1~11	M10	M11
GDP (trillion won)	1 760.8 (3.2)	1 807.7 (2.7)	1 332.6 (2.6)	- -	1 358.2 (1.9)	- -	- -
Total export (\$billion, customs clearance basis)	573.7 (15.8)	604.9 (5.4)	556.7 (6.1)	51.5 (3.6)	496.6 (-10.8)	46.7 (-14.9)	44.0 (-14.4)
Industrial production index (2015=100)	104.7 (2.5)	106.1 (1.3)	105.9 (1.4)	109.4 (0.1)	104.7 (-1.1)	110.0 (-2.0)	109.2 (-0.2)
Semi-conductors	138.9 (10.8)	167.0 (20.3)	166.7 (21.2)	172.1 (18.4)	183.5 (10.1)	212.4 (11.7)	225.2 (30.9)
Basic compound	110.4 (5.5)	110.4 -	110.4 (0.5)	101.7 (-6.4)	105.7 (-4.3)	104.2 (-3.1)	101.6 (-0.1)
Steel	102.9 (1.7)	99.8 (-3.1)	100.0 (-2.8)	100.3 (-1.2)	97.3 (-2.7)	97.4 (-3.9)	96.1 (-4.2)
Cars	95.0 (-2.7)	93.7 (-1.4)	93.2 (-3.0)	106.7 (3.0)	92.5 (-0.8)	98.4 (-5.9)	94.7 (-11.2)
Service industry performance index (2015=100)	104.5 (1.8)	106.7 (2.1)	105.9 (2.1)	107.5 (1.2)	107.3 (1.4)	109.0 (0.8)	110.2 (2.5)
Wholesale & Retail	103.3 (0.8)	104.8 (1.4)	104.4 (1.6)	108.9 (0.6)	104.1 (-0.3)	105.9 (-1.6)	108.7 (-0.2)
Restaurant & Accommodation	100.4 (-1.9)	98.5 (-1.9)	97.6 (-2.1)	97.1 (0.1)	96.1 (-1.5)	98.0 (-0.5)	96.9 (-0.2)

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 fell by 2.4% in January 2020 from the previous month, as a military collision risk was addressed and oil demand is more likely to decline due to the fast spreading Covid-19 virus.**
  - Global oil price decreased, as a military collision between the US and Iran was averted following the US president's statement that his administration would not use military force against Iran and the anti-government protests in Iran, and as there are concerns that the rapidly spreading Covid-19 virus, emerged in Wuhan, would curtail oil demand.
  - The US inventories of crude oil and gasoline increased (5.1mmbbl, 18.6mmbbl), which also contributed to the oil price decrease.
  - Global coal price went up by 6.5% from the earlier month as a result of decreased coal supply; coal production was disrupted in Australia by a devastating wildfire in the eastern states. Natural gas price has been flat for five consecutive months since Sept 2019.

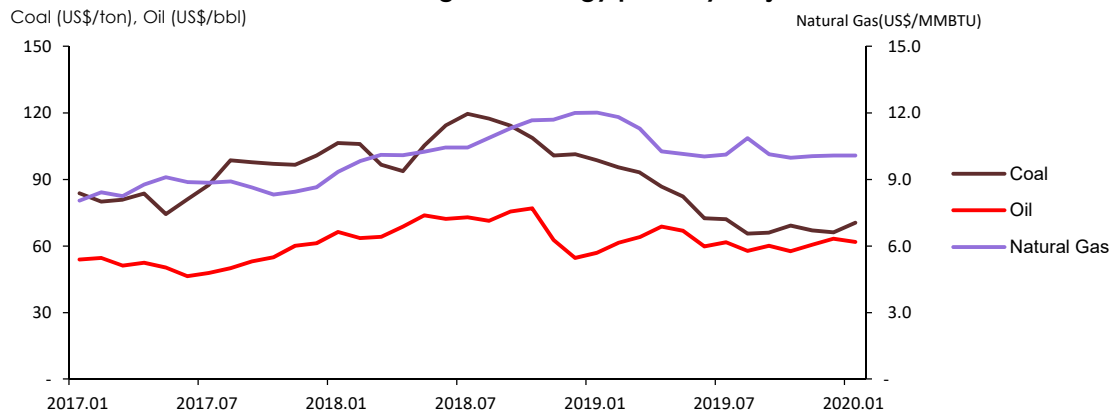
#### ► Trend in global energy prices

	2018			2019			2020	
		M11	M12	M1		M11	M12	M1
Crude oil (US\$/bbl)	68.6	62.7	54.7	57.0	61.6	60.6	63.3	61.8
	(29.5)	(4.4)	(-10.7)	(-14.1)	(-10.2)	(-3.4)	(15.8)	(8.6)
Natural gas (US\$/MMBTU)	10.7	11.7	12.0	12.0	10.6	10.0	10.1	10.1
	(24.0)	(38.5)	(38.7)	(28.5)	(-1.0)	(-14.1)	(-16.0)	(-16.1)
Coal (US\$/ton)	107.0	100.7	101.4	98.6	77.9	67.0	66.2	70.5
	(20.9)	(4.2)	(0.6)	(-7.4)	(-27.3)	(-33.5)	(-34.7)	(-28.5)

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 January 2020 from a month earlier, which was attributed to the oil price increase in the previous month.**

- Gasoline and diesel prices at gas stations went up by 1.3% and 0.9% respectively from the previous month reflecting the global oil price increase in December 2019 amid fears of a collision between the US and Iran.
- The price of Bunker-C oil fell by 6.5% in December 2019 from the previous month, as its demand decreased due to the enforcement of the International Maritime Organization's environmental regulations, which include a more stringent sulfur standard for marine fuels.

☐ **Propane and butane prices remained flat in January compared to the previous month as a result of the price freeze by importing companies.**

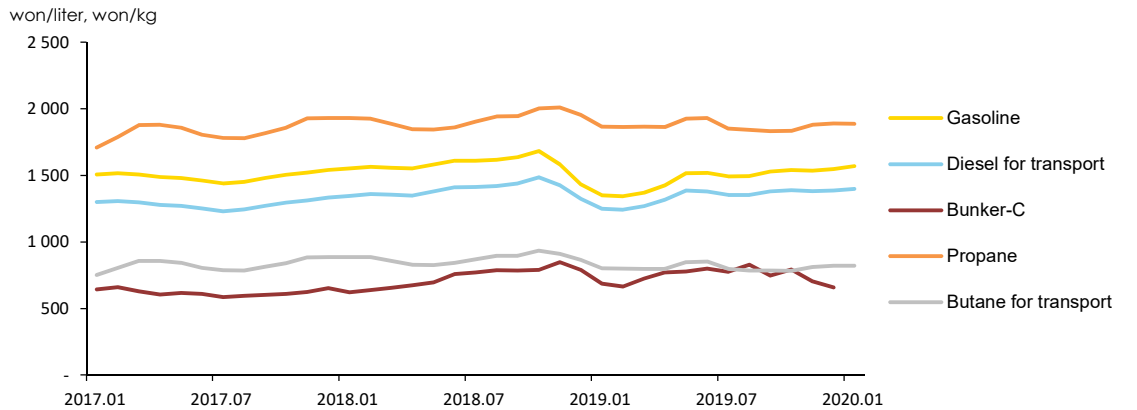
- Domestic prices of propane and butane were the same as the previous month in January, as major LPG importers fixed the prices, even though global prices increased in December (2.3%, 2.2%).

► **Trend in domestic energy prices**

	2018			2019				2020
		M11	M12	M1		M11	M12	M1
Gasoline (won/liter)	1 581.4 (6.0)	1 580.9 (3.9)	1 433.1 (-7.0)	1 351.2 (-12.9)	1 472.3 (-6.9)	1 535.7 (-2.9)	1 548.5 (8.0)	1 568.4 (16.1)
Diesel for transport (won/liter)	1 392.0 (8.5)	1 424.7 (8.5)	1 324.1 (-0.6)	1 249.4 (-7.1)	1 340.4 (-3.7)	1 380.5 (-3.1)	1 385.4 (4.6)	1 398.4 (11.9)
Bunker-C (won/liter)	735.2 (18.7)	846.5 (35.6)	789.3 (21.0)	685.9 (10.3)	744.2 (1.2)	703.5 (-16.9)	658.0 (-16.6)	706.5 -
Propane (won/kg)	1 920.5 (4.7)	2 008.6 (4.3)	1 954.7 (1.3)	1 864.4 (-3.4)	1 869.6 (-2.7)	1 879.3 (-6.4)	1 889.7 (-3.3)	1 887.6 (1.2)
Butane for transport (won/liter)	874.6 (5.8)	910.5 (2.9)	863.4 (-2.5)	801.3 (-9.5)	806.2 (-7.8)	810.5 (-11.0)	820.6 (-4.9)	820.8 (2.4)

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](http://www.opinet.co.kr)

► **Trend in domestic petroleum product prices**



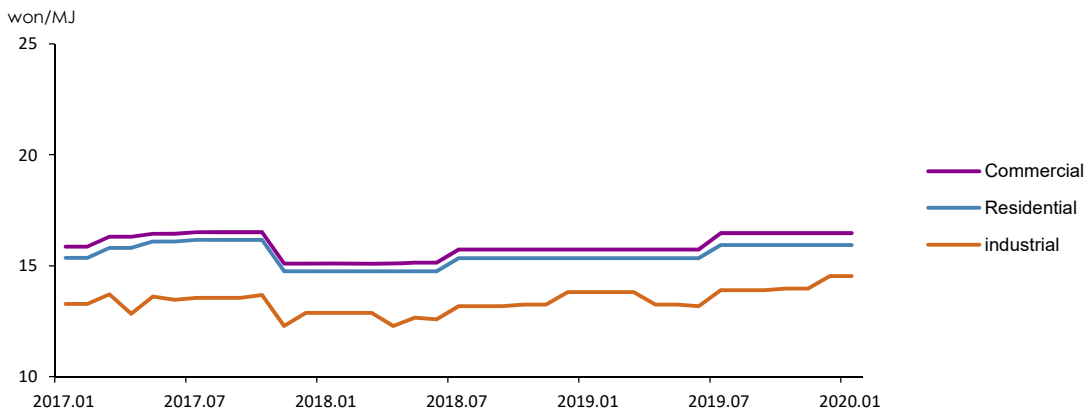
□ **City gas price has been flat for the past seven months until January, since it was raised in July 2019.**

- 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 freeze 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 changes in global oil price and exchange rates.

□ **Heat energy price has been flat for six consecutive months until January, since it was raised in August.**

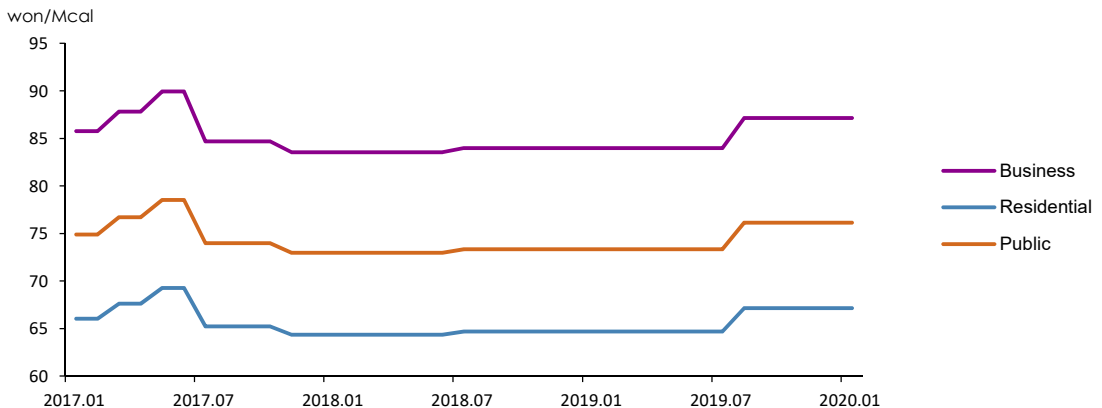
- Heat energy price was raised in August for the first time in 13 months (since July, 2018), reflecting the city gas price increase in July and the energy tax reform.
- Korea District Heating Corporation's heat energy price is linked to city gas price according to the fuel cost pass-through scheme, and 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(M<sup>3</sup>), 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**



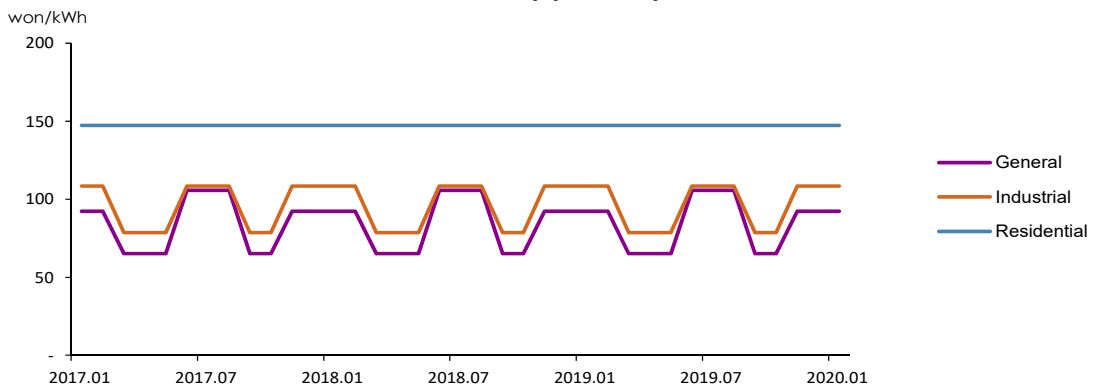
□ **Electricity prices <sup>1</sup>for general and industrial use have been flat until January after they were adjusted for the winter season in November.**

- 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 and residential use rose from the previous month, and as for the industrial use, it remained flat.**

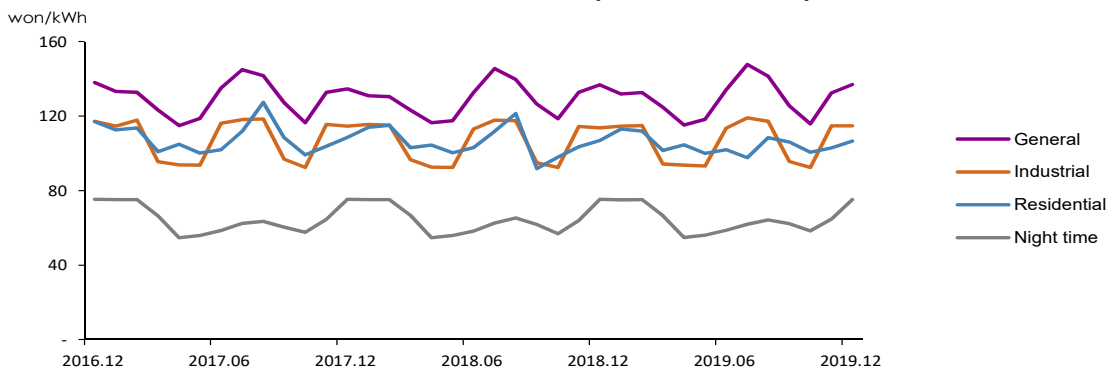
- The unit sales price of electricity for residential use rose by 3.6% from a month earlier, owing to the increased electricity consumption amid lower temperatures, and that for general use went up by 3.3% from the previous month, though electricity price for general use was fixed after the price adjustment for the winter season (Nov-Feb) in November.

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



Source: Korea Electric Power Corporation

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



<sup>1</sup> The electricity prices by end-use sectors refer to the prices for residential use ([high voltage], the 2<sup>nd</sup> 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 dropped by 4.7% year-on-year in November, led by crude oil and bituminous coal.**

- The import volume of crude oil fell by 2.3% year-on-year, owing to the maintenance work at some refineries and lower run rates as a result of reduced refining margin. The crude input also fell by 6.4%.
- The import volume of petroleum products went up by 0.1%, led by naphtha and LPG, even though the import of bunker-C oil plunged.
- The import of bituminous coal declined by 5.1%, as its demand fell in the power generation sector with lower capacity factors at coal-fired power stations.

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

	2017	2018	2019p				
			M1~11	M11	M1~11	M10	M11
Import volume							
Crude oil (Mbbbl)	1 118.2 (3.7)	1 116.3 (-0.2)	1 023.3 (0.5)	95.3 (0.7)	982.5 (-4.0)	82.3 (-15.8)	93.1 (-2.3)
Petroleum product (Mbbbl)	314.5 (-6.0)	341.6 (8.6)	309.5 (7.4)	28.5 (17.7)	315.0 (1.8)	28.1 (1.2)	28.6 (0.1)
Bituminous coal (Mton)	131.5 (11.0)	131.5 (0.0)	121.1 (0.6)	11.7 (16.7)	121.1 (-0.1)	12.4 (22.1)	11.1 (-5.1)
Anthracite (Mton)	7.0 (-25.7)	8.1 (16.0)	7.4 (15.0)	0.9 (44.9)	6.3 (-14.6)	0.6 (-9.2)	0.4 (-53.2)
LNG (Mton)	37.5 (12.2)	44.0 (17.3)	39.3 (17.8)	3.9 (17.5)	36.0 (-8.5)	3.2 (-15.4)	3.8 (-2.7)
Import volume (Mtoe)	339.7 (5.5)	354.5 (4.4)	322.7 (4.4)	30.6 (9.4)	317.4 (-1.6)	28.5 (-3.1)	29.1 (-4.7)
Import value (billion US\$, CIF)	109.5 (35.2)	146.0 (33.3)	133.6 (35.7)	13.7 (42.5)	115.4 (-13.6)	9.8 (-28.2)	10.4 (-23.9)
Energy share of total import value (%)	22.9	27.3	27.2	29.2	25.2	23.6	25.6
Foreign energy dependence (%)*	93.9	93.6	93.6	93.7	93.6	93.5	93.9
Domestic production							
Hydropower (TWh)	7.0 (5.5)	7.3 (3.9)	6.7 (2.2)	0.5 (17.7)	5.7 (-14.0)	0.5 (6.4)	0.5 (-15.2)
Anthracite (Mton)	1.5 (-14.0)	1.2 (-19.2)	1.1 (-17.7)	0.1 (-22.0)	1.0 (-11.2)	0.1 (1.2)	0.1 (1.0)
Natural gas (Mton)	0.3 (120.5)	0.2 (-10.4)	0.2 (-9.7)	0.0 (-22.0)	0.2 (-22.0)	0.0 (-20.8)	0.0 (-30.1)
Renewable energy (Mtoe)	15.8 (16.7)	17.1 (8.0)	15.7 (8.5)	1.4 (5.4)	15.7 (-0.0)	1.4 (-1.7)	1.4 (-3.2)

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

## 4. Energy Consumption

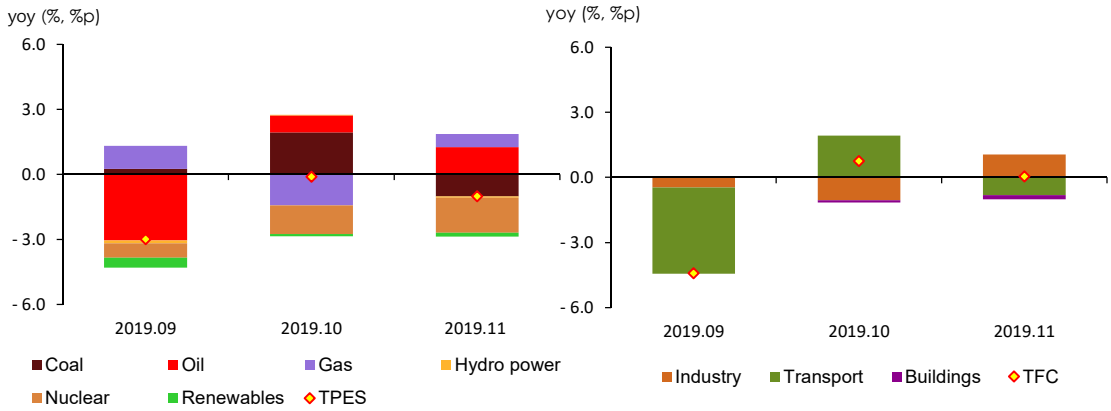
- **Total Primary Energy Supply (“TPES”) was down 1.0% in November on a year-on-year basis with coal and nuclear energy leading the downward trend.**
  - Coal consumption fell by 4.7% year-on-year, led by the power generation sector despite increased coal-fired generation, and as the industrial coal consumption fell sharply except for steelmaking.
  - Petroleum consumption grew by 4.4% year-on-year owing to the rapidly increased use of petrochemical feedstocks such as naphtha and LPG as a result of the expanded petrochemical capacity, though the use of petroleum fuel declined in the transport sector.
  - Nuclear energy use fell by 15.9% year-on-year despite the start-up of Shinkori unit4, owing to the increased preventive maintenance, and instead, gas use for power generation surged, driving up the total natural gas use by 3.2%.
- **Total Final Consumption (“TFC”) remained flat on a year-on-year basis, even though energy consumption declined in the transport and buildings sectors, as it increased in the industrial sector.**
  - Industrial energy use was up 1.8% year-on-year despite generally decreased mining and manufacturing outputs, as large energy consuming industries, such as petrochemical and iron & steel, consumed more energy.
  - Transport energy consumption was down 4.3% year-on-year, as the consumption plunged in the road and domestic navigation sectors partly due to base effect, although aviation energy use increased along with the increased number of domestic flights.
  - As unusually warm weather continued, the number of heating degree days fell by 7.0%, and the energy use in buildings was down 0.9%.

### ► Energy consumption trend

	2017	2018		2019p			
			M1~11	M11	M1~11	M10	M11
<b>Total energy (Mtoe)</b>	<b>302.1</b>	<b>307.5</b>	<b>278.6</b>	<b>25.6</b>	<b>275.3</b>	<b>24.1</b>	<b>25.3</b>
	(2.8)	(1.8)	(2.0)	(-2.2)	(-1.2)	(-0.1)	(-1.0)
- Non-energy oil&coal excluded	215.4	222.9	201.3	18.8	198.9	17.4	18.3
	(1.4)	(3.5)	(3.7)	(0.4)	(-1.2)	(1.6)	(-2.9)
<b>Final energy (Mtoe)</b>	<b>230.0</b>	<b>232.7</b>	<b>211.0</b>	<b>19.4</b>	<b>209.6</b>	<b>18.2</b>	<b>19.4</b>
	(3.9)	(1.2)	(1.5)	(-2.2)	(-0.6)	(0.8)	(0.0)

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

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



## 5. Coal

□ Coal consumption dropped by 4.7% in November on a year-on-year basis with the power generation and industrial sectors leading the downward trend.

- Coal consumption fell by 3.1% in the power generation sector compared to the same month last year, although the coal-fired generation increased.
- Industrial coal consumption went down by 6.7% year-on-year despite increased use of bituminous coal (coking coal) for steelmaking, which takes a large share of the total industrial coal consumption, as anthracite consumption fell drastically.

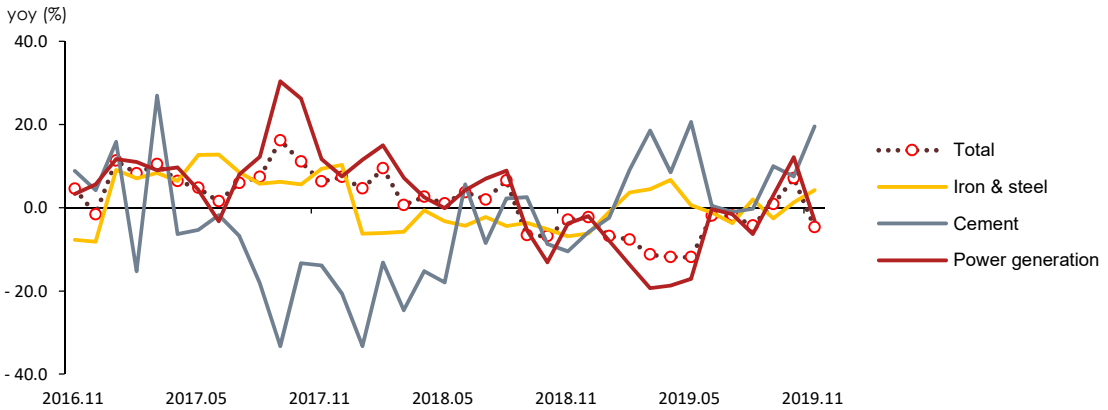
► Coal consumption trend

	2017	2018	2019p				
			M1~11	M11	M1~11	M10	M11
<b>Coal (Mton)</b>	<b>139.8</b>	<b>141.0</b>	<b>128.4</b>	<b>11.4</b>	<b>122.1</b>	<b>11.6</b>	<b>10.9</b>
	(8.1)	(0.9)	(1.2)	(-3.0)	(-5.0)	(7.0)	(-4.7)
Industry	49.3	48.3	44.1	4.2	43.6	4.1	3.9
	(3.2)	(-2.0)	(-1.9)	(0.0)	(-1.2)	(0.7)	(-6.7)
-Coking-coal	36.3	34.6	31.6	2.8	32.0	3.0	2.9
	(8.5)	(-4.6)	(-4.5)	(-6.9)	(1.2)	(1.3)	(4.2)
Buildings	1.1	0.9	0.8	0.2	0.5	0.1	0.1
	(-14.0)	(-15.7)	(-15.5)	(-30.0)	(-30.3)	(-39.5)	(-22.0)
Power generation	89.4	91.8	83.6	7.0	78.0	7.4	6.8
	(11.3)	(2.6)	(3.1)	(-3.8)	(-6.7)	(12.2)	(-3.1)

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 use posted a year-on-year growth of 4.4% in November, which was driven by surging industrial demand, though it declined in the transport sector.**
  - Industrial petroleum use grew by 9.2% from the same month last year despite decreased use of energy oil (except LPG), as the use of petrochemical feedstocks such as naphtha and LPG dramatically increased.
  - Transport petroleum use fell by almost 4% year-on-year partly due to the base effect of the growth (3.6%) during the same month last year.

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

	2017	2018		2019p			
			M1~11	M11	M1~11	M10	M11
<b>Petroleum (Mbbbl)</b>	<b>937.1</b>	<b>931.8</b>	<b>848.4</b>	<b>76.1</b>	<b>843.1</b>	<b>75.9</b>	<b>79.5</b>
	(1.7)	(-0.6)	(-0.4)	(-5.1)	(-0.6)	(3.2)	(4.4)
Industry	567.0	564.1	514.8	44.4	515.3	45.6	48.4
	(4.5)	(-0.5)	(-0.3)	(-8.2)	(0.1)	(-0.8)	(9.2)
-Naphtha	458.4	451.2	412.4	35.1	400.2	34.3	36.3
	(6.6)	(-1.6)	(-1.2)	(-9.5)	(-3.0)	(-5.7)	(3.5)
Transport	303.2	302.3	275.5	26.4	274.1	25.4	25.3
	(0.9)	(-0.3)	(-0.7)	(3.6)	(-0.5)	(12.6)	(-3.9)
Buildings	56.4	53.7	47.1	4.9	46.6	4.4	5.2
	(0.3)	(-4.9)	(-4.3)	(-15.4)	(-1.2)	(5.9)	(6.4)
Power generation	10.5	11.7	10.9	0.5	7.1	0.4	0.5
	(-51.9)	(12.1)	(24.9)	(-23.5)	(-34.7)	(-49.6)	(0.7)

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

□ **Gas consumption rose by 3.2% in November on a year-on-year basis despite decreased consumption in the city gas sector, as it surged in the power generation sector.**

- Gas use for power generation grew by over 10% partly because of a sharp drop in nuclear generation (-15.9%), even though the total power generation declined.

□ **City gas consumption fell by 5.2% year-on-year (in November), because the consumption declined in both of the industrial and buildings sectors.**

- Industrial city gas use was down 4.8% year-on-year with the petrochemical and fabricated metals sectors leading the downward trend, which was affected by a rate increase and fewer work days (-0.5).
- City gas use decreased in buildings as well, as it fell by 7.4% in residential buildings due to lower energy demand for heating amid a drop in the number of heating degree days (-21.0degree days).

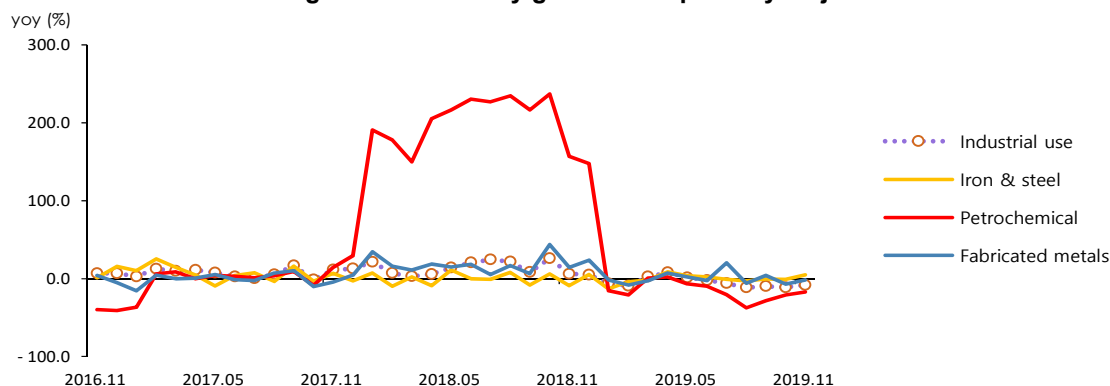
### ► Trend in natural gas and city gas consumption

	2017	2018	2019p				
			M1~11	M11	M1~11	M10	M11
<b>LNG (Mton)</b>	<b>36.4</b>	<b>42.3</b>	<b>37.4</b>	<b>3.7</b>	<b>36.5</b>	<b>2.8</b>	<b>3.8</b>
	(4.3)	(16.2)	(19.2)	(-0.7)	(-2.5)	(-8.6)	(3.2)
Power generation	15.6	18.9	17.2	1.5	16.4	1.3	1.6
	(0.6)	(21.5)	(25.0)	(-3.6)	(-4.8)	(-9.3)	(10.9)
City gas production	19.0	20.9	18.1	2.0	17.8	1.3	1.9
	(6.9)	(10.2)	(12.1)	(-0.5)	(-1.3)	(-12.3)	(-2.4)
<b>City gas (bm<sup>3</sup>)</b>	<b>23.4</b>	<b>25.7</b>	<b>22.5</b>	<b>2.3</b>	<b>22.4</b>	<b>1.5</b>	<b>2.2</b>
	(7.4)	(9.9)	(11.7)	(5.7)	(-0.8)	(-8.8)	(-5.2)
Industry	8.6	10.2	9.2	0.9	9.5	0.8	0.9
	(10.9)	(19.2)	(19.8)	(16.4)	(3.1)	(-4.7)	(-4.8)
Buildings	13.6	14.3	12.3	1.2	11.8	0.6	1.2
	(6.0)	(5.1)	(7.5)	(-0.6)	(-3.5)	(-14.8)	(-5.6)

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

Source: Monthly Energy Statistics

### ► The growth rate of city gas consumption by major industries



# 8. Electricity

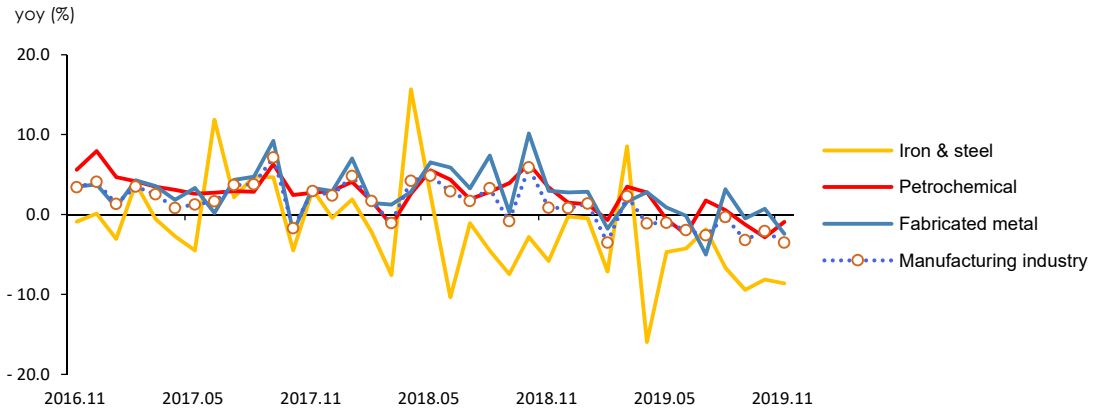
- Electricity use fell by 1.9% year-on-year in November, as its industrial use declined, especially in the primary metals sector.
  - Industrial electricity consumption decreased on a year-on-year basis, with the primary metals, fabricated metals and petrochemical sectors leading the downward trend.
  - Electricity use in buildings posted a small year-on-year growth, as its residential use rose by 1.4% partly due to the increased use of home heating devices.

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

	2017	2018	2019p				
			M1~11	M11	M1~11	M10	M11
<b>Electricity (TWh)</b>	<b>507.7</b>	<b>526.1</b>	<b>480.8</b>	<b>41.9</b>	<b>475.8</b>	<b>40.6</b>	<b>41.1</b>
	(2.2)	(3.6)	(4.1)	(1.5)	(-1.1)	(1.6)	(-1.9)
Industry	276.7	283.7	259.3	23.6	256.1	22.7	22.8
	(2.5)	(2.5)	(2.7)	(1.1)	(-1.2)	(-1.7)	(-3.6)
Transport	2.9	3.0	2.7	0.2	2.7	0.2	0.2
	(6.5)	(3.6)	(4.2)	(-1.6)	(-1.5)	(-3.9)	(-6.6)
Buildings	228.2	239.5	218.8	18.1	217.0	17.7	18.1
	(1.7)	(4.9)	(5.7)	(2.0)	(-0.8)	(6.3)	(0.4)
Residential	66.5	70.7	64.9	5.4	64.6	5.4	5.5
	(0.5)	(6.3)	(6.8)	(2.7)	(-0.5)	(5.6)	(1.4)
Commercial	130.4	136.4	124.5	10.1	123.1	9.9	10.1
	(2.3)	(4.6)	(5.6)	(2.0)	(-1.1)	(6.6)	(-0.3)

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

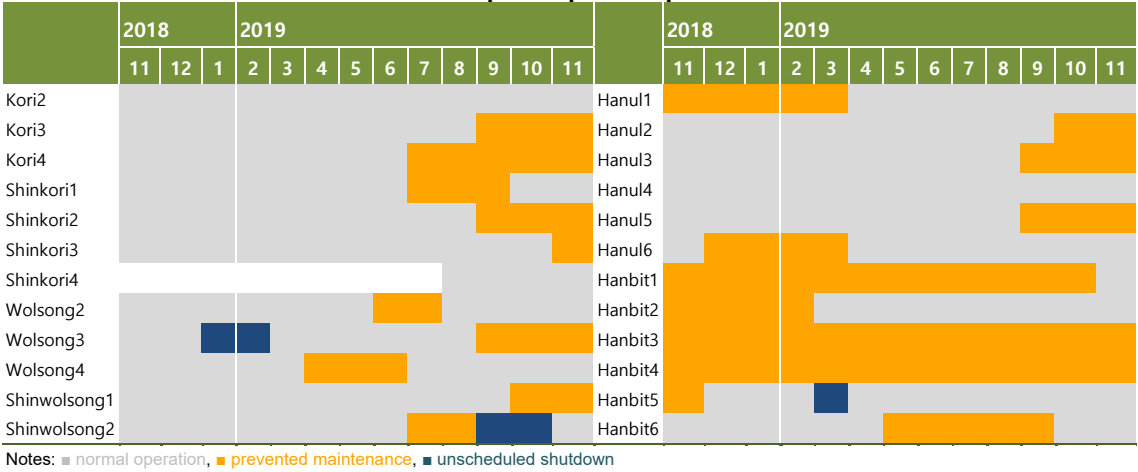
## ► The growth rate of electricity consumption in manufacturing industry



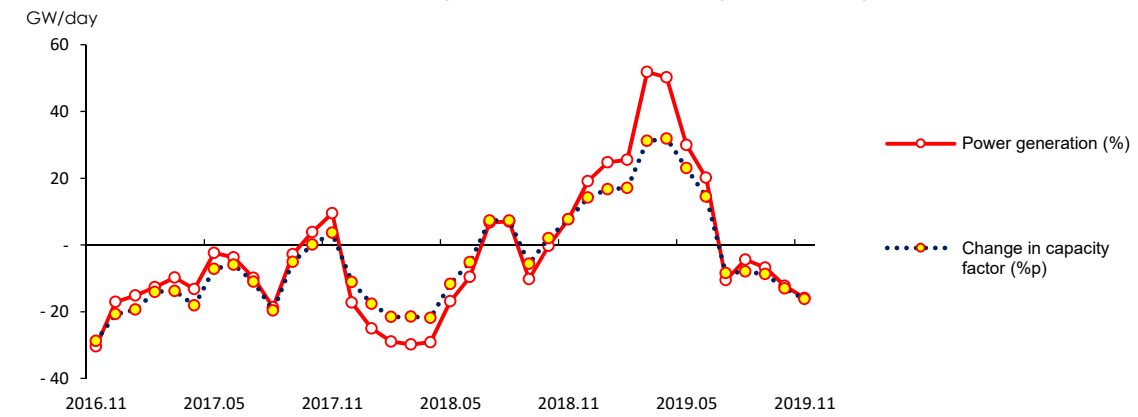
# 9. Nuclear

- **The total nuclear generation fell by 15.9% year-on-year in November with the power plants running at lower capacity factors.**
  - The average capacity factor at nuclear power plants dropped by 16.2%p to 61.1% despite the operation of Shinkori unit4 (8.30), because increased number of reactors were under maintenance.
  - Nuclear energy's share of the total generation went down by 3.7%p to 22.7% on a year-on-year basis

► **Nuclear power plants operation status**



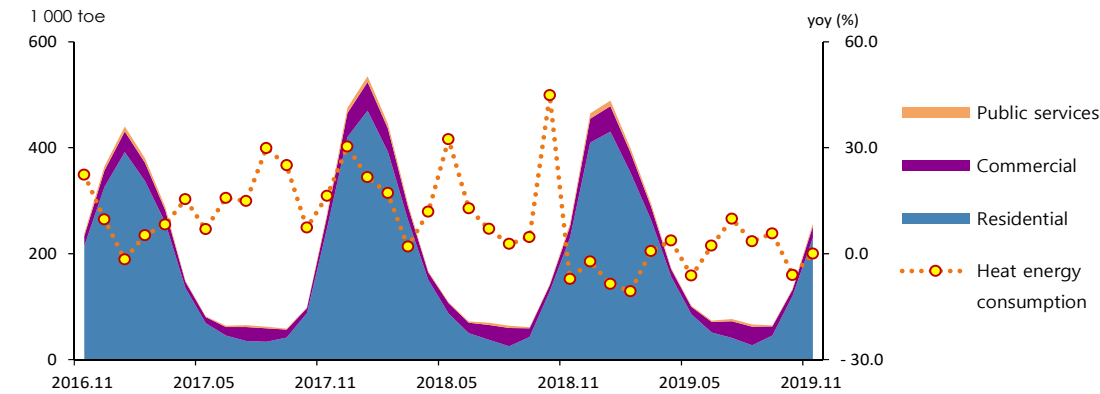
► **The Growth rate of nuclear generation & the change of average capacity factor**



# 10. Heat and Renewable energy

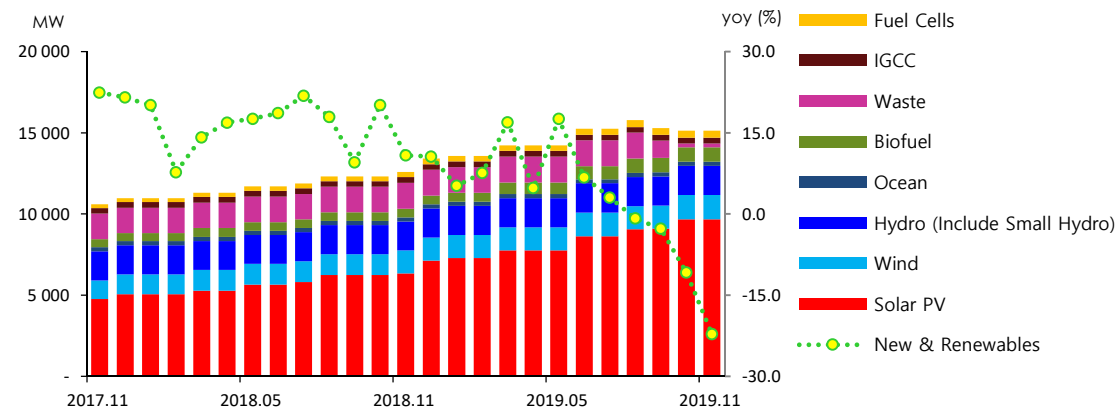
- **Heat energy consumption was flat in November on a year-on-year basis despite warm weather, as its demand increased in the commercial & public sectors.**
  - Residential heat energy use decreased slightly owing to the warmer weather than the same month last year and decreased number of heating degree days (-21.0), which was offset by the growth in heat energy use in the commercial & public sectors.
- **Renewable energy use fell by over 20%, as some energy sources were excluded from the renewable category through a legal revision, and IGCC plants generated less power.**
  - The total renewable generation sharply declined despite increased power generation from solar PV, wind and bioenergy, because power generation plunged in IGCC plants, and the exclusion of non-renewable waste energy from the renewable category led to a sharp drop in total installed capacity and generation.
  - Hydro generation (including pumped storage, small hydro) dropped by 15.2% due to the base effect of the surge in the same month last year (17.7%).

## ► 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 posted a year-on-year growth of 1.8% despite the output reduction in the mining & manufacturing sector, as the iron & steel and petrochemical sectors consumed more energy.
  - The mining & manufacturing production fell by 2.0% on a year-on-year basis, led by the automobile and metal fabrication sectors, though the semiconductor production increased. Consequently, the energy consumption growth continued to be subdued in large energy consuming industries.

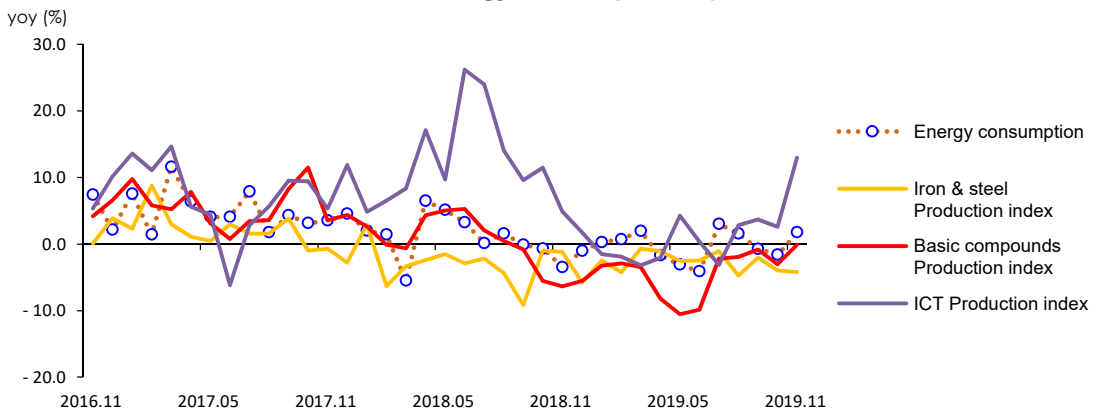
### ► Trend in the industrial energy consumption

	2017	2018	2019p				
			M1~11	M11	M1~11	M10	M11
<b>Industry (Mtoe)</b>	<b>141.9</b>	<b>142.9</b>	<b>130.3</b>	<b>11.8</b>	<b>130.1</b>	<b>11.6</b>	<b>12.0</b>
	(5.0)	(0.7)	(0.8)	(-3.5)	(-0.2)	(-1.6)	(1.8)
Petrochemical	70.0	72.1	65.8	5.7	65.7	5.8	6.1
	(4.9)	(3.0)	(3.2)	(-2.5)	(-0.1)	(-1.2)	(5.8)
- Naphtha	56.2	55.3	50.5	4.3	49.1	4.2	4.5
	(6.6)	(-1.6)	(-1.2)	(-9.5)	(-3.0)	(-5.7)	(3.5)
Iron & Steel	33.2	28.9	26.4	2.3	26.5	2.4	2.4
	(7.4)	(-13.0)	(-12.9)	(-15.6)	(0.4)	(0.2)	(3.1)
-Coking coal	25.3	24.1	22.1	2.0	22.3	2.1	2.1
	(8.0)	(-4.6)	(-4.5)	(-6.9)	(1.2)	(1.3)	(4.2)
Fabricated metal	10.8	11.4	10.4	1.0	10.4	0.9	0.9
	(1.9)	(5.9)	(5.8)	(4.2)	(0.3)	(-0.7)	(-2.4)
Share of feedstock (%)	60.9	59.1	59.2	57.2	58.6	57.4	58.5

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

Source: Monthly Energy Statistics

### ► Industrial energy consumption & production index



# 12. Transport

□ **Transport energy consumption slid by 4.3% year-on-year in November, as it declined in all transport sectors except the aviation sector.**

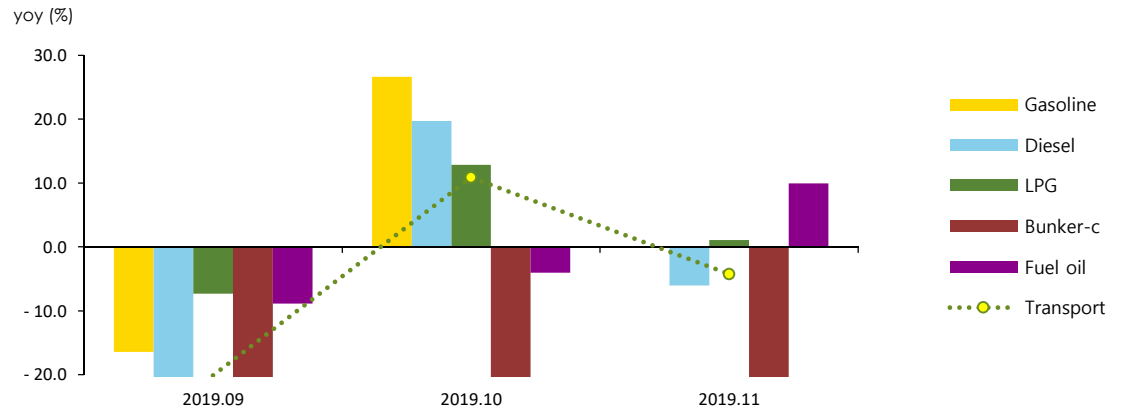
- Energy consumption for road transport decreased by 4.0% year-on-year due to the base effect of the surge in the same month last year.
- Energy consumption for domestic navigation declined by 28.0% from the same month last year, even though the costal transport, import and export volumes all increased (8.8%, 20.6%, 6.7%, national flag vessel).
- Energy consumption for aviation increased due to the increased number of domestic flights (2.5%), though that of international flights slightly decreased (-0.3%).

► **The growth rate of petroleum consumption in the transport sector**

	2017	2018	2019p				
			M1~11	M11	M1~11	M10	M11
<b>Transport (Mtoe)</b>	<b>42.8</b>	<b>43.0</b>	<b>39.2</b>	<b>3.7</b>	<b>38.9</b>	<b>3.6</b>	<b>3.6</b>
	(1.2)	(0.4)	(0.0)	(3.9)	(-0.8)	(10.8)	(-4.3)
Road	34.1	34.4	31.3	3.1	31.7	3.0	2.9
	(0.5)	(0.9)	(0.6)	(7.2)	(1.3)	(19.6)	(-4.0)
Navigation	3.5	3.2	2.9	0.3	2.3	0.2	0.2
	(5.8)	(-9.9)	(-11.1)	(-16.9)	(-20.1)	(-42.3)	(-28.0)
Aviation	4.8	5.0	4.6	0.4	4.5	0.4	0.4
	(3.2)	(4.4)	(3.7)	(-3.7)	(-2.7)	(-4.1)	(9.9)
Rail	0.3	0.4	0.3	0.0	0.3	0.0	0.0
	(2.5)	(3.6)	(4.4)	(4.8)	(-2.3)	(-7.3)	(-7.9)

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

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



## 13. Buildings

□ **Buildings' energy use dropped by 0.9% year-on-year in November, led by city gas, amid a drop in the number of heating degree days.**

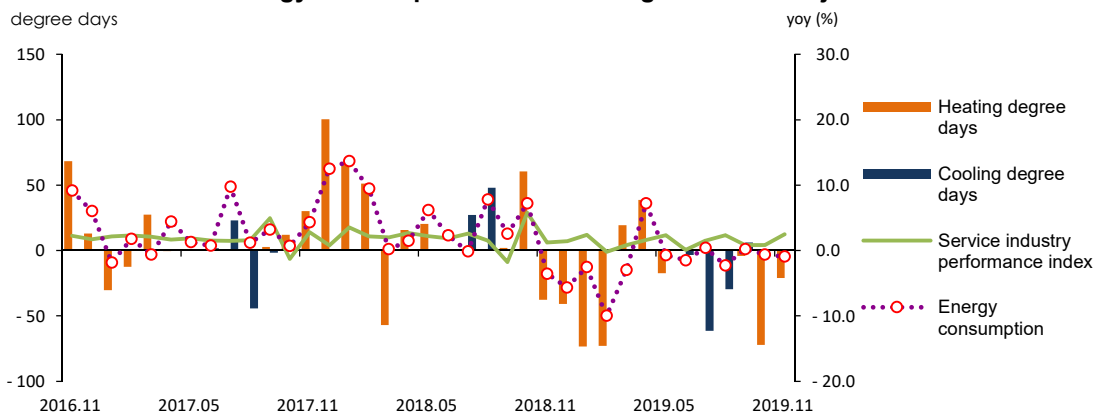
- Energy use in buildings has been down for two consecutive months, as energy demand for heating declined or was stagnant, especially residential city gas, due to the increased prices of some heating energy and amid decreased number of heating degree days compared to the same month last year when the weather was still warm.
- Energy use in residential buildings fell by 3.6% year-on-year despite increased electricity use (1.4%), as city gas, heat and briquette use all declined (-7.4%, -0.2%, -22.0%) due to the increased temperatures and prices.
- Energy use in commercial & public buildings grew by 2.2% year-on-year, as petroleum use increased (11.3%) for the 2<sup>nd</sup> consecutive month, led by diesel, though the electricity and city gas use remained stagnant.

### ► Energy consumption trend in the buildings sector

	2017	2018			2019p		
			M1~11	M11	M1~11	M10	M11
<b>Buildings (Mtoe)</b>	<b>45.3</b>	<b>46.9</b>	<b>41.5</b>	<b>3.9</b>	<b>40.7</b>	<b>3.0</b>	<b>3.9</b>
	(3.1)	(3.5)	(4.8)	(-3.6)	(-1.9)	(-0.6)	(-0.9)
Residential	22.5	23.5	20.3	2.1	19.6	1.3	2.0
	(3.7)	(4.4)	(6.3)	(-3.9)	(-3.4)	(-8.7)	(-3.6)
Commercial	17.4	17.9	16.1	1.4	16.1	1.3	1.4
	(1.9)	(2.9)	(3.7)	(-2.8)	(-0.2)	(6.5)	(2.2)
Public·others	5.5	5.6	5.0	0.4	5.0	0.4	0.5
	(4.1)	(2.0)	(2.9)	(-4.0)	(-1.6)	(8.2)	(2.2)
Heating degree days	2 517.1	2 597.8	2 075.5	298.2	1 872.7	83.1	277.2
	(5.5)	(3.2)	(6.2)	(-11.2)	(-9.8)	(-46.5)	(-7.0)
Cooling degree days	132.7	209.0	209.0	-	120.4	-	-
	(-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

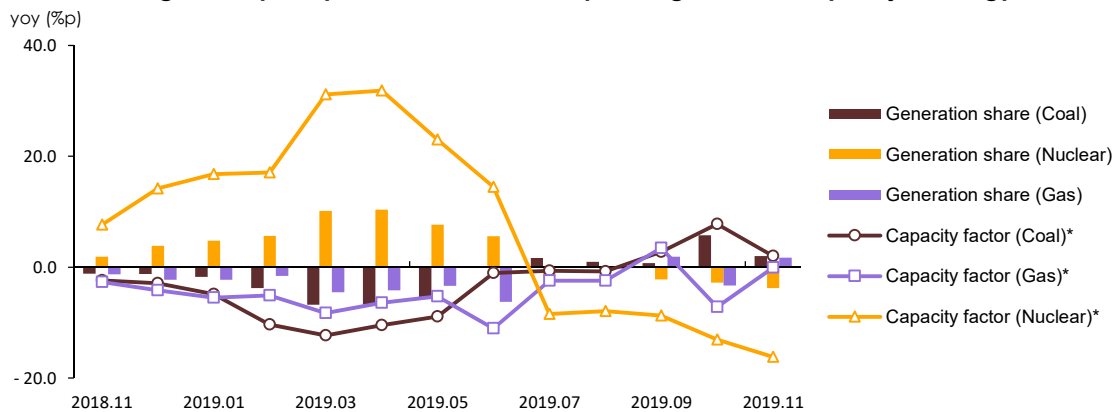
- The total energy input to power stations decreased by 4.3% year-on-year in November, as the use of all energy sources declined except gas.
  - The total power generation fell by 2.0% year-on-year amid a slowdown in electricity sales, and accordingly, the total energy input decreased.
  - The average capacity factors at coal, nuclear and gas power plants were 70.9%, 61.1% and 44.4% respectively.

## ► Energy Use in the Transformation Sector

	2017	2018	2019p				
			M1~11	M11	M1~11	M10	M11
<b>Input (Mtoe)</b>	<b>115.1</b>	<b>118.7</b>	<b>108.0</b>	<b>9.5</b>	<b>105.5</b>	<b>9.2</b>	<b>9.1</b>
	(0.3)	(3.1)	(3.3)	(-0.1)	(-2.3)	(-1.2)	(-4.3)
Coal	52.8	54.2	49.4	4.2	46.0	4.4	4.0
	(7.4)	(2.7)	(3.2)	(-3.9)	(-6.8)	(12.3)	(-3.0)
Oil	1.2	1.3	1.2	0.0	0.7	0.0	0.0
	(-59.5)	(7.5)	(22.5)	(-31.6)	(-43.6)	(-66.4)	(-22.1)
Gas	20.7	25.1	22.8	1.9	21.7	1.7	2.1
	(0.9)	(21.4)	(25.0)	(-3.6)	(-5.0)	(-9.6)	(10.5)
Nuclear	31.6	28.4	25.8	2.6	28.7	2.3	2.2
	(-7.5)	(-10.1)	(-12.3)	(7.7)	(11.4)	(-12.3)	(-15.9)
Hydro/other renewables	8.7	9.6	8.7	0.8	8.4	0.8	0.7
	(11.5)	(9.9)	(9.9)	(9.4)	(-4.5)	(-2.5)	(-8.6)

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

	2017	2018				2019			
			1Q	2Q	3Q		1Q	2Q	3Q
GDP (trillion won)	1 760.8 (3.2)	1 807.7 (2.7)	428.7 (2.8)	450.8 (2.9)	453.0 (2.1)	1 844.0 (2.0)	435.8 (1.7)	460.1 (2.0)	462.3 (2.0)
Private consumption	848.6 (2.8)	872.3 (2.8)	218.8 (3.6)	212.2 (2.9)	217.8 (2.3)	888.5 (1.9)	222.8 (1.9)	216.5 (2.0)	221.7 (1.8)
Facilities investment	170.3 (16.5)	166.2 (-2.4)	44.1 (10.2)	43.2 (-4.3)	37.3 (-9.4)	152.8 (-8.1)	36.4 (-17.4)	40.2 (-7.0)	36.3 (-2.6)
Construction investment	282.9 (7.3)	270.9 (-4.3)	57.1 (1.2)	74.4 (-2.5)	68.0 (-8.7)	262.0 (-3.3)	53.0 (-7.2)	71.8 (-3.5)	65.5 (-3.7)
Consumer price index (2015=100)	102.9	104.5	103.9	104.3	104.8	96.1	104.5	104.9	104.9
USD to KRW exchange rate (won)	1 131.0	1 100.2	1 072.7	1 079.0	1 121.5	1 165.4	1 125.1	1 166.6	1 193.9
Benchmark rate (%)	1.3	1.5	1.5	1.5	1.5	1.6	1.8	1.8	1.5
Coincident composite index (2015=100)	107.2	109.4	108.7	109.4	109.6	110.7	109.8	110.4	111.0
Mining & manufacturing production index (2015=100)	104.7	106.1	102.3	106.9	105.2	105.4	100.2	106.2	104.5
Manufacturing operation ratio index (2015=100)	98.1	98.4	94.6	100.6	97.0	98.1	92.8	100.2	98.0
Average temperature	13.1	13.0	2.0	17.8	24.8	13.5	3.4	17.3	24.3
- year-on-year difference	- 0.5	- 0.1	- 0.7	- 0.3	0.7	0.5	1.4	- 0.5	- 0.6
Heating degree days	2 517.1 (5.5)	2 597.8 (3.2)	1 437.2 (4.4)	179.7 (25.1)	5.0 (72.4)	2 342.9 (-9.8)	1 310.4 (-8.8)	201.1 (11.9)	0.9 (-82.0)
Cooling degree days	132.7 (-13.9)	209.0 (57.5)	- -	3.5 (45.8)	205.5 (57.7)	120.4 (-42.4)	- -	- (-100.0)	120.4 (-41.4)
Energy intensity	0.17 (-0.4)	0.17 (-0.8)	0.19 (-0.6)	0.16 (0.8)	0.17 (0.3)	0.15 (-11.7)	0.18 (-2.7)	0.15 (-3.5)	0.16 (-3.4)
Per capita consumption									
oil (bbl)	18.2 (1.5)	18.1 (-1.0)	4.6 (0.1)	4.5 (2.8)	4.5 (-1.3)	16.3 (-9.7)	4.5 (-1.0)	4.3 (-4.6)	4.5 (0.3)
Electricity (MWh)	9.9 (1.9)	10.2 (3.1)	2.7 (3.9)	2.4 (3.2)	2.7 (4.4)	9.2 (-9.8)	2.6 (-1.6)	2.4 (-0.1)	2.6 (-2.5)
City gas (1 000 m <sup>3</sup> )	0.4 (6.0)	0.5 (6.9)	0.2 (9.5)	0.1 (7.5)	0.1 (8.0)	0.4 (-16.0)	0.2 (-6.4)	0.1 (4.1)	0.1 (-3.9)
Total energy (toe)	5.9 (2.5)	6.0 (1.3)	1.6 (1.7)	1.4 (3.3)	1.5 (1.9)	5.3 (-10.6)	1.6 (-1.2)	1.4 (-1.7)	1.4 (-1.6)

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

## The Index of Production & Operating Ratio by Sectors

(2015=100)

2015=100

	2017	2018					2019			
			M1~11	M9	M10	M11	M1~11	M9	M10	M11
Industrial production index										
All industry	105.7 (2.6)	107.2 (1.4)	106.3 (1.4)	104.8 (-4.5)	109.4 (7.6)	108.4 (0.2)	106.5 (0.2)	105.3 (0.5)	109.2 (-0.2)	109.7 (1.2)
Mining & manufacturing	104.7 (2.5)	106.1 (1.3)	105.9 (1.4)	102.1 (-6.7)	112.3 (12.6)	109.4 (0.1)	104.7 (-1.1)	102.8 (0.7)	110.0 (-2.0)	109.2 (-0.2)
Iron & steel	102.9 (1.7)	99.8 (-3.1)	100.0 (-2.8)	93.3 (-9.2)	101.4 (-1.0)	100.3 (-1.2)	97.3 (-2.7)	91.4 (-2.0)	97.4 (-3.9)	96.1 (-4.2)
Cement	110.0 (1.7)	100.1 (-9.0)	100.9 (-8.6)	92.3 (-23.5)	111.2 (11.1)	110.4 (-7.4)	92.9 (-8.0)	76.8 (-16.8)	99.5 (-10.5)	102.8 (-6.9)
Basic compound	110.4 (5.5)	110.4 -	110.4 (0.5)	110.6 (-0.8)	107.5 (-5.5)	101.7 (-6.4)	105.7 (-4.3)	109.7 (-0.8)	104.2 (-3.1)	101.6 (-0.1)
Transport equipment	95.0 (-2.7)	93.7 (-1.4)	93.2 (-3.0)	84.8 (-14.3)	104.6 (30.1)	106.7 (3.0)	92.5 (-0.8)	82.5 (-2.7)	98.4 (-5.9)	94.7 (-11.2)
Electric & electronic	105.5 (2.6)	105.2 (-0.3)	104.4 (-0.6)	100.0 (-13.5)	111.9 (11.7)	115.6 (-1.8)	102.7 (-1.6)	102.5 (2.5)	110.1 (-1.6)	108.7 (-6.0)
Service	104.5 (1.8)	106.7 (2.1)	105.9 (2.1)	105.8 (-1.8)	108.1 (5.8)	107.5 (1.2)	107.3 (1.4)	106.7 (0.9)	109.0 (0.8)	110.2 (2.5)
Operating ratio index										
Manufacturing	98.1 (-0.9)	98.4 (0.3)	98.4 (0.2)	93.8 (-8.8)	104.3 (12.2)	101.3 (-0.3)	97.8 (-0.6)	96.1 (2.5)	102.7 (-1.5)	99.9 (-1.4)
Iron & steel	102.3 (1.5)	98.8 (-3.4)	98.9 (-3.3)	92.4 (-9.6)	100.6 (-1.3)	100.1 (-1.0)	97.4 (-1.5)	91.5 (-1.0)	97.5 (-3.1)	96.3 (-3.8)
Cement	107.4 (0.4)	108.9 (1.4)	109.5 (1.8)	101.6 (-13.7)	122.7 (25.8)	122.4 (3.9)	104.0 (-5.0)	84.8 (-16.5)	110.2 (-10.2)	113.8 (-7.0)
Basic compound	107.1 (3.6)	104.9 (-2.0)	104.9 (-1.6)	104.6 (-3.0)	101.6 (-7.3)	96.2 (-8.1)	99.7 (-5.0)	102.9 (-1.6)	97.5 (-4.0)	95.2 (-1.0)
Transport equipment	87.6 (-6.6)	90.2 (2.9)	89.7 (1.1)	81.8 (-10.2)	100.9 (36.5)	102.9 (7.6)	92.4 (3.0)	82.9 (1.3)	98.5 (-2.4)	95.0 (-7.7)
Electric & electronic	102.5 (0.7)	100.3 (-2.1)	99.8 (-2.4)	93.8 (-15.2)	105.7 (8.3)	109.9 (-4.2)	99.6 (-0.2)	99.4 (6.0)	106.6 (0.9)	106.2 (-3.4)

Note: p means provisional  
Source: Monthly Energy Statistics

## International Energy Prices

	2017	2018			2019			2020	
			M11	M12	M1		M11	M12	M1
Crude oil (USD/bbl)									
WTI	51.0 (17.6)	64.8 (27.1)	56.7 (0.1)	49.0 (-15.5)	51.6 (-19.0)	57.0 (-11.9)	57.1 (0.7)	59.8 (22.1)	57.5 (11.6)
Dubai	53.2 (28.9)	69.4 (30.5)	65.6 (7.8)	57.3 (-7.0)	59.1 (-10.7)	63.5 (-8.5)	62.0 (-5.4)	64.9 (13.2)	64.3 (8.9)
Brent	54.8 (21.7)	71.5 (30.5)	66.0 (4.9)	57.7 (-10.0)	60.2 (-12.8)	64.2 (-10.3)	62.7 (-4.9)	65.2 (13.0)	63.7 (5.7)
Unit value of import (C&F)	53.3 (29.9)	71.4 (34.0)	76.2 (31.5)	66.6 (7.2)	61.8 (-4.7)	65.5 (-8.2)	64.3 (-15.6)	65.9 (-1.2)	69.3 (12.1)
LNG									
From Indonesia (USD/MMBTU)	8.6 (16.7)	10.7 (24.0)	11.7 (38.5)	12.0 (38.7)	12.0 (28.5)	10.6 (-1.0)	10.0 (-14.1)	10.1 (-16.0)	10.1 (-16.1)
Unit value of import (USD/ton, CIF)	416.3 (16.7)	526.3 (26.4)	584.2 (45.9)	574.2 (33.5)	587.0 (29.5)	505.6 (-3.9)	454.5 (-22.2)	457.3 (-20.4)	467.7 (-20.3)
Bituminous coal (USD/ton)									
From Australia	88.5 (33.9)	107.0 (20.9)	100.7 (4.2)	101.4 (0.6)	98.6 (-7.4)	77.9 (-27.2)	67.0 (-33.5)	66.2 (-34.7)	70.5 (-28.5)
Unit value of import (CIF)	104.3 (51.5)	113.6 (8.9)	111.2 (3.9)	114.0 (12.7)	106.6 (-4.2)	100.7 (-11.3)	87.5 (-21.3)	85.1 (-25.3)	86.2 (-19.2)
Petroleum product (USD/bbl)									
Gasoline	68.1 (21.2)	79.9 (17.4)	68.6 (-9.3)	60.0 (-20.4)	61.0 (-22.4)	72.5 (-9.3)	76.3 (11.1)	74.8 (24.7)	71.3 (16.8)
Kerosene	65.3 (23.6)	84.8 (29.8)	82.9 (12.0)	71.1 (-5.8)	71.8 (-11.3)	77.3 (-8.9)	74.9 (-9.7)	77.8 (9.3)	75.4 (5.0)
Diesel	66.4 (25.2)	84.9 (27.9)	82.3 (11.1)	70.0 (-7.8)	72.6 (-11.3)	78.2 (-7.9)	76.0 (-7.6)	79.2 (13.2)	76.5 (5.4)
Bunker-C	49.7 (40.2)	65.2 (31.3)	68.3 (20.4)	56.5 (0.2)	57.8 (-1.8)	57.5 (-11.8)	39.4 (-42.3)	43.3 (-23.3)	51.9 (-10.2)
Propane	467.5 (44.6)	542.1 (16.0)	540.0 (-6.1)	445.0 (-24.6)	430.0 (-27.1)	434.6 (-19.8)	430.0 (-20.4)	440.0 (-1.1)	565.0 (31.4)
Butane	501.7 (41.0)	539.2 (7.5)	525.0 (-9.5)	415.0 (-27.2)	420.0 (-26.3)	441.7 (-18.1)	445.0 (-15.2)	455.0 (9.6)	590.0 (40.5)
Naphtha	53.8 (26.6)	67.0 (24.5)	56.8 (-11.9)	51.7 (-20.4)	51.7 (-21.9)	56.9 (-15.1)	59.5 (4.8)	63.5 (22.7)	60.9 (17.8)

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			
			M1~11	M9	M10	M11	M1~11	M9	M10	M11
Coal (Mton)	139.8 (8.1)	141.0 (0.9)	128.4 (1.2)	11.4 (-6.7)	10.8 (-6.9)	11.4 (-3.0)	122.1 (-5.0)	11.5 (0.8)	11.6 (7.0)	10.9 (-4.7)
- Coking coal excluded	103.5 (7.9)	106.4 (2.8)	96.8 (3.2)	8.5 (-7.7)	7.9 (-7.5)	8.6 (-1.6)	90.0 (-7.0)	8.7 (2.0)	8.6 (9.1)	8.0 (-7.6)
Oil (Mbbl)	937.1 (1.7)	931.8 (-0.6)	848.4 (-0.4)	76.9 (-0.1)	73.5 (-8.0)	76.1 (-5.1)	843.1 (-0.6)	72.2 (-6.0)	75.9 (3.2)	79.5 (4.4)
- Non-energy oil excluded	443.7 (-2.5)	445.5 (0.4)	404.0 (0.3)	35.6 (-2.9)	33.8 (-6.9)	37.8 (-0.4)	408.6 (1.1)	32.1 (-9.8)	38.7 (14.6)	39.5 (4.7)
LNG (Mton)	36.4 (4.3)	42.3 (16.2)	37.4 (19.2)	2.3 (11.9)	3.1 (40.7)	3.7 (-0.7)	36.5 (-2.5)	2.5 (8.5)	2.8 (-8.6)	3.8 (3.2)
Hydro (TWh)	7.0 (5.5)	7.3 (3.9)	6.7 (2.2)	0.7 (5.8)	0.5 (-10.2)	0.5 (17.7)	5.7 (-14.0)	0.6 (-20.9)	0.5 (6.4)	0.5 (-15.2)
Nuclear (TWh)	148.4 (-8.4)	133.5 (-10.1)	121.1 (-12.3)	11.1 (-10.2)	12.1 (-0.2)	12.2 (7.7)	134.9 (11.4)	10.3 (-6.8)	10.6 (-12.3)	10.2 (-15.9)
Others (Mtoe)	15.8 (16.7)	17.1 (8.0)	15.7 (8.5)	1.5 (6.6)	1.4 (13.3)	1.4 (5.4)	15.7 (-0.0)	1.4 (-7.4)	1.4 (-1.7)	1.4 (-3.2)
<b>TPES (Mtoe)</b>	<b>302.1</b> (2.8)	<b>307.5</b> (1.8)	<b>278.6</b> (2.0)	<b>23.8</b> (-1.6)	<b>24.2</b> (0.0)	<b>25.6</b> (-2.2)	<b>275.3</b> (-1.2)	<b>23.1</b> (-3.0)	<b>24.1</b> (-0.1)	<b>25.3</b> (-1.0)
- Non-energy oil excluded	240.7 (2.1)	247.1 (2.6)	223.4 (2.9)	18.7 (-2.5)	19.2 (2.6)	20.8 (-0.3)	221.2 (-1.0)	18.1 (-3.1)	19.5 (1.6)	20.4 (-2.2)
- Non-energy oil&coal excluded	215.4 (1.4)	222.9 (3.5)	201.3 (3.7)	16.6 (-2.4)	17.2 (3.6)	18.8 (0.4)	198.9 (-1.2)	16.1 (-3.1)	17.4 (1.6)	18.3 (-2.9)

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

## Share of TPES by Sources

(unit: %)

	2017	2018					2019p			
			M1~11	M9	M10	M11	M1~11	M9	M10	M11
Coal	28.5	28.2	28.3	29.7	27.6	27.3	27.4	30.9	29.6	26.6
- Coking coal excluded	20.2	20.3	20.4	21.1	19.2	19.6	19.3	22.2	21.0	18.5
Oil	39.5	38.5	38.7	41.1	38.8	38.0	38.8	39.2	39.6	39.6
- non-energy oil excluded	19.2	18.9	18.9	19.5	18.3	19.3	19.1	17.6	20.4	20.0
LNG	15.7	18.0	17.5	12.5	16.7	18.7	17.3	14.0	15.2	19.4
Hydro	0.5	0.5	0.5	0.6	0.4	0.4	0.4	0.5	0.5	0.4
Nuclear	10.5	9.2	9.3	9.9	10.7	10.1	10.4	9.5	9.4	8.6
Others	5.2	5.6	5.6	6.1	5.9	5.5	5.7	5.9	5.8	5.3
TPES	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0

Note: p means provisional  
Source: Monthly Energy Statistics

## Total Final Consumption (TFC)

(Unit: Mtoe)

	2017	2018					2019p			
			M1~11	M9	M10	M11	M1~11	M9	M10	M11
Industry	141.9 (5.0)	142.9 (0.7)	130.3 (0.8)	11.7 (-0.1)	11.8 (-0.7)	11.8 (-3.5)	130.1 (-0.2)	11.6 (-0.7)	11.6 (-1.6)	12.0 (1.8)
Transport	42.8 (1.2)	43.0 (0.4)	39.2 (0.0)	3.6 (-1.6)	3.2 (-8.7)	3.7 (3.9)	38.9 (-0.8)	2.9 (-20.1)	3.6 (10.8)	3.6 (-4.3)
Residential-commercial	39.9 (2.9)	41.3 (3.7)	36.5 (5.1)	2.4 (1.4)	2.7 (8.1)	3.5 (-3.5)	35.8 (-2.0)	2.5 (1.6)	2.6 (-1.9)	3.4 (-1.3)
Public	5.5 (4.1)	5.6 (2.0)	5.0 (2.9)	0.5 (9.2)	0.4 (1.8)	0.4 (-4.0)	5.0 (-1.6)	0.4 (-7.1)	0.4 (8.2)	0.5 (2.2)
<b>TFC</b>	<b>230.0</b> (3.9)	<b>232.7</b> (1.2)	<b>211.0</b> (1.5)	<b>18.1</b> (-0.0)	<b>18.1</b> (-1.0)	<b>19.4</b> (-2.2)	<b>209.6</b> (-0.6)	<b>17.3</b> (-4.4)	<b>18.2</b> (0.8)	<b>19.4</b> (0.0)
Coal (Mton)	50.4 (2.7)	49.2 (-2.3)	44.9 (-2.2)	3.7 (-9.2)	4.2 (4.8)	4.4 (-1.6)	44.1 (-1.7)	3.6 (-3.7)	4.2 (-1.0)	4.1 (-7.3)
Oil (Mbbbl)	926.6 (3.0)	920.0 (-0.7)	837.4 (-0.7)	76.5 (-0.1)	72.7 (-8.6)	75.6 (-4.9)	836.0 (-0.2)	71.9 (-6.0)	75.5 (3.8)	78.9 (4.4)
Electricity (TWh)	507.7 (2.2)	526.1 (3.6)	480.8 (4.1)	43.7 (3.3)	40.0 (4.2)	41.9 (1.5)	475.8 (-1.1)	43.6 (-0.2)	40.6 (1.6)	41.1 (-1.9)
City gas (Bm³)	22.6 (6.3)	24.3 (7.4)	21.3 (9.2)	1.2 (2.9)	1.5 (22.6)	2.1 (1.7)	20.4 (-3.9)	1.1 (-3.6)	1.4 (-12.2)	2.0 (-6.4)
Heat-others (1 000 toe)	11.1 (18.4)	11.8 (6.4)	10.6 (7.3)	0.8 (4.9)	0.9 (11.4)	1.0 (0.2)	10.7 (1.0)	0.8 (-0.8)	0.8 (-0.7)	1.0 (0.5)

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			
			M1~11	M9	M10	M11	M1~11	M9	M10	M11
Industry	61.7	61.4	61.8	64.3	65.3	60.6	62.0	66.8	63.8	61.6
Transport	18.6	18.5	18.6	19.8	17.8	19.2	18.5	16.6	19.6	18.4
Residential-commercial	17.3	17.8	17.3	13.4	14.7	17.9	17.1	14.2	14.3	17.7
Public	2.4	2.4	2.4	2.5	2.2	2.3	2.4	2.4	2.3	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	13.9	15.4	14.6	14.0	14.0	15.2	13.9
Oil	51.2	50.2	50.4	53.6	51.2	49.6	50.5	51.9	52.2	51.3
Electricity	19.0	19.4	19.6	20.7	19.0	18.6	19.5	21.6	19.2	18.2
City gas	10.5	11.4	11.0	7.3	9.7	12.1	11.0	7.7	8.7	11.5
Heat-others	4.8	5.1	5.0	4.5	4.7	5.1	5.1	4.7	4.7	5.1

Note: p means provisional  
Source: Monthly Energy Statistics

## Statistics on Energy Production Facilities

	2016	2017	2018	2019			M9	M10	M11
				M9	M10	M11			
Total capacity (GW)	105.9 (8.5)	116.9 (10.4)	119.1 (1.9)	118.0 (2.4)	118.0 (1.8)	118.3 (1.7)	122.5 (3.8)	124.0 (5.1)	124.4 (5.2)
Nuclear	23.1 (6.5)	22.5 (-2.5)	21.9 (-3.0)	21.9 (-3.0)	21.9 (-3.0)	21.9 (-3.0)	23.3 (6.4)	23.3 (6.4)	23.3 (6.4)
Bituminous coal	30.9 (23.1)	36.1 (16.8)	36.4 (0.7)	36.4 (0.4)	36.4 (0.4)	36.4 (0.4)	36.4 (0.1)	36.4 (0.1)	36.4 (0.1)
Gas	32.6 (1.2)	37.9 (16.0)	37.9 (-0.0)	37.9 (3.3)	37.9 (2.0)	37.9 (1.0)	38.2 (1.0)	39.2 (3.5)	39.5 (4.4)
Refinery capacity (mil BPSD)	3.1 (0.2)	3.1 (1.3)	3.2 (4.6)	3.2 (4.6)	3.2 (4.6)	3.2 (4.6)	3.2 (3.2)	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	2019			M9	M10	M11
				M9	M10	M11			
The number of household demanding city gas (mil)	18.0 (3.4)	18.6 (3.3)	19.1 (3.1)	18.8 (3.0)	18.9 (3.3)	19.0 (3.2)	19.4 (2.9)	19.4 (2.7)	19.5 (2.6)
Registered cars (mil)	21.8 (3.9)	22.5 (3.3)	23.2 (3.0)	23.0 (3.0)	23.1 (3.0)	23.2 (3.0)	23.6 (2.3)	23.6 (2.2)	23.6 (2.1)
- gasoline	10.1 (2.9)	10.4 (2.7)	10.6 (2.5)	10.6 (2.4)	10.6 (2.5)	10.6 (2.5)	10.9 (2.8)	10.9 (2.9)	10.9 (3.0)
- diesel	9.2 (6.4)	9.6 (4.4)	9.9 (3.7)	9.9 (3.9)	9.9 (3.8)	9.9 (3.7)	10.0 (1.4)	10.0 (1.0)	10.0 (0.6)
- LPG	2.2 (-4.0)	2.1 (-2.9)	2.0 (-3.3)	2.1 (-3.3)	2.0 (-3.3)	2.0 (-3.3)	2.0 (-2.3)	2.0 (-2.1)	2.0 (-1.8)
- hybrid	0.2 (37.6)	0.3 (37.6)	0.4 (30.9)	0.4 (30.9)	0.4 (31.4)	0.4 (31.1)	0.5 (28.5)	0.5 (27.6)	0.5 (26.2)

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

Source: Monthly Energy Statistics

KEEI

MONTHLY **KOREA ENERGY TRENDS** (2020, NO.95)



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KEEI Monthly Korea Energy Trends is designed to be used for energy policy and market strategy in the government and industrial sector by analyzing and providing energy economic indicators in Korea.

This report is written by the Energy Demand and Supply Division of the Center for Energy Information and Statistics in cooperation with the Energy Statistics Research Division of KEEI and other related research divisions.

The energy economic indicators included in this report will be constantly updated until further confirmation.

If you have any further inquiries, please send an email to [EnergyOutlook@keei.re.kr](mailto:EnergyOutlook@keei.re.kr)

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

Phone: +82-52-714-2270

Fax: +82-52-714-2025

Email: [webmaster@keei.re.kr](mailto:webmaster@keei.re.kr)

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