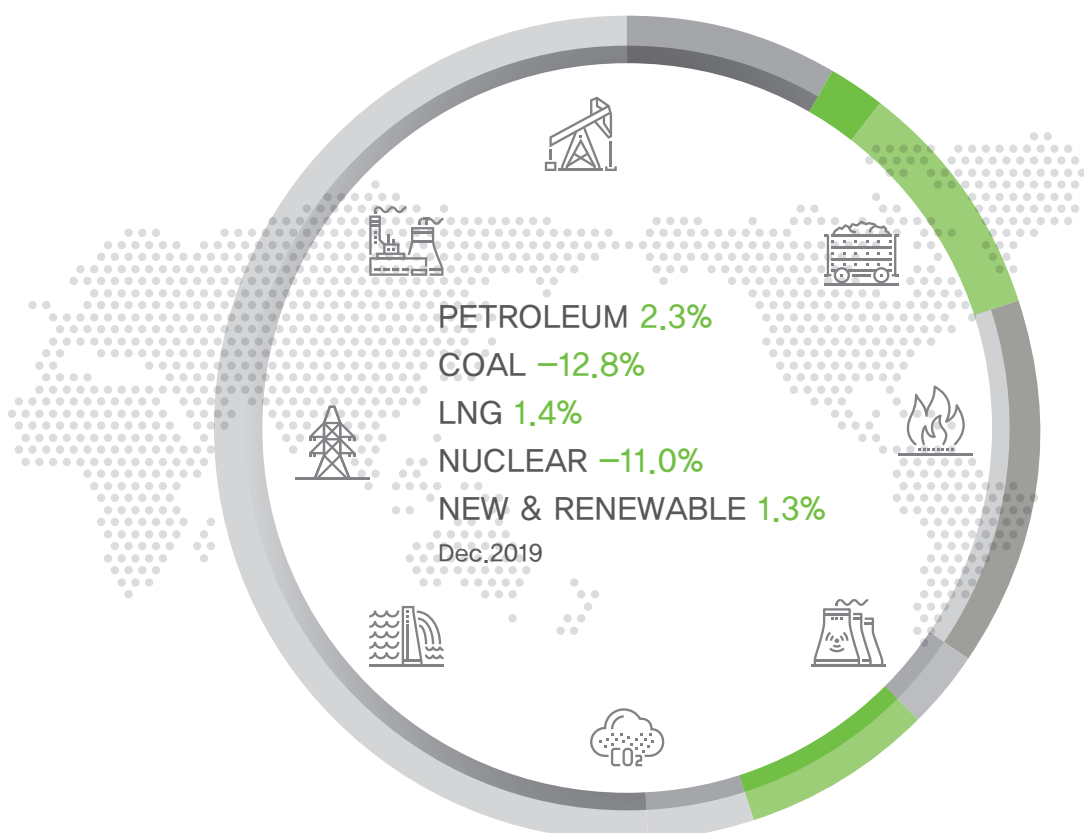


# KEEI

## MONTHLY KOREA ENERGY TRENDS



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## 1. The Economy and the Industry

- **Gross Domestic Product (“GDP”) rose by 2.3% in 4Q 2019 on a year-on-year basis on the back of the growth in private spending and construction investment, though the facility investment declined.**
  - Facility investment fell by 2.5% due to decreased investment in transport equipment (-9.2%) such as automobiles, while the construction investment was up 1.1%, led by the civil engineering sector (12.3%). Private spending grew by 1.9% mainly on services and non-durable goods.
- **The mining & manufacturing production index posted a year-on-year growth of 6.2% in December, led by strong growth in the semiconductor and basic chemical materials sectors.**
  - The semiconductor production index went up by 35.3% year-on-year, as the export volume grew by over 30% partly due to base effect, even though its export value declined amid continuously falling unit prices of Dram and NAND flash chips.
  - The production index of basic chemical materials rose by 2.7% year-on-year, as the outputs of basic petrochemicals and synthetic resin increased following the construction of a new naphtha cracking center (LG Chemical, 230,000 tons, 2019.4).
  - The automobile production index dropped by 4.9%, and the iron & steel production index declined due to falling domestic demand amid the downturn in some industries that are major source of demand. The pace of decline, however, slowed down (-0.4%) backed by increased export volume, mainly steel plates.
- **The service production index was up 2.5% year-on-year (in December), as the index continued an upward trend in the information & communications and health & social welfare sectors.**
  - The service production index maintained its upward trend, as the index slightly increased in the wholesale & retail and restaurant & accommodation sectors (0.2%, 0.8%) and continuously increased in the information & communications and health & social welfare sectors (4.3%, 8.4%).

► **Trend in major economic and industrial indicators**

	2017	2018	2019p				
			M12		M10	M11	M12
GDP (trillion won)	1 760.8 (3.2)	1 807.7 (2.7)	475.2 (2.9)	1 844.5 (2.0)	- -	- -	486.3 (2.3)
Total export (\$billion, customs clearance basis)	573.7 (15.8)	604.9 (5.4)	48.2 (-1.7)	539.9 (-10.7)	46.6 (-15.0)	44.0 (-14.5)	45.7 (-5.3)
Industrial production index (2015=100)	104.8 (2.5)	106.4 (1.5)	108.2 (0.7)	106.3 (-0.0)	111.6 (-0.8)	111.1 (1.3)	114.9 (6.2)
Semi-conductors	138.9 (10.8)	168.4 (21.2)	171.5 (11.7)	188.1 (11.7)	213.5 (11.3)	229.3 (32.1)	232.1 (35.3)
Basic compound	110.4 (5.6)	110.4 (0.1)	110.4 (-5.4)	107.5 (-2.6)	105.1 (-2.1)	101.9 (0.2)	113.4 (2.7)
Steel	103.4 (1.9)	100.5 (-2.7)	98.5 (-5.3)	98.3 (-2.2)	98.3 (-4.0)	97.2 (-3.8)	98.1 (-0.4)
Cars	95.1 (-2.6)	93.9 (-1.2)	99.2 (20.7)	93.1 (-0.9)	98.9 (-5.8)	94.9 (-11.3)	94.3 (-4.9)
Service industry performance index (2015=100)	104.5 (1.9)	106.9 (2.2)	115.8 (1.5)	108.4 (1.4)	109.1 (0.7)	110.3 (2.4)	118.7 (2.5)
Wholesale & Retail	103.2 (0.7)	105.0 (1.8)	109.6 -	104.6 (-0.4)	105.9 (-1.8)	108.7 (-0.3)	109.8 (0.2)
Restaurant & Accommodation	100.4 (-1.9)	98.5 (-1.9)	108.9 (0.6)	97.5 (-1.0)	98.4 -	97.3 (0.2)	109.8 (0.8)

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

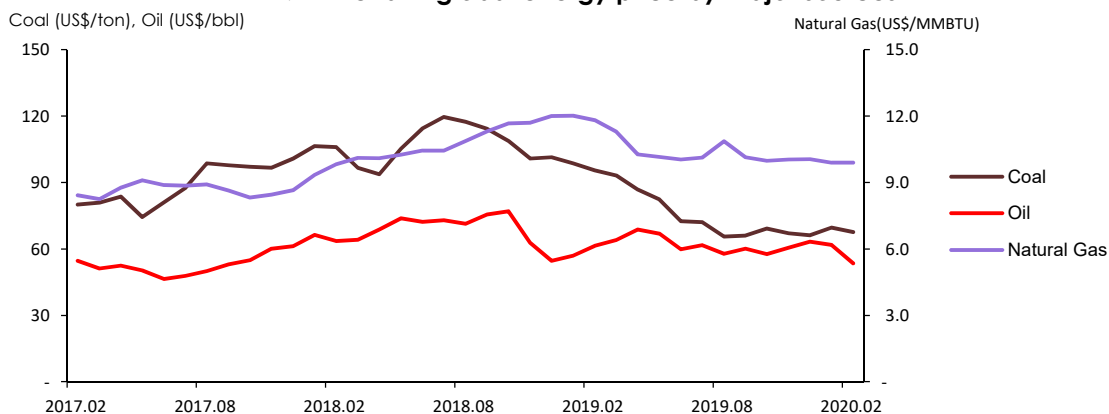
- **Global oil price dropped by 13.6% in February from the previous month despite some factors that could have driven up the price, due to the weaker demand outlook amid the spread of COVID-19 virus.**
  - Global oil price showed an upward trend until mid-February, which was attributed to the US sanctions on Rosneft Trading SA, a subsidiary of Russian state-owned oil company Rosneft, and a blockade of crude oil export port in Libya that disrupted oil production.
  - Since then, the price fell sharply due to the growing expectations of the global economic recession and weaker petroleum demand, as numerous countries reported an increasing number of confirmed cases of COVID-19 virus.
  - Global coal price fell by 2.9% from the previous month as a result of the oil price decrease and falling coal demand amid the global phase out of coal. Global natural gas price has been flat for six consecutive months since September 2019.

#### ► Trend in global energy prices

	2018		2019			2020		
		M12	M1	M2		M12	M1	M2
Crude oil (US\$/bbl)	68.6	54.7	57.0	61.3	61.6	63.3	61.8	53.4
	(29.5)	(-10.7)	(-14.1)	(-3.5)	(-10.2)	(15.8)	(8.6)	(-12.9)
Natural gas (US\$/MMBTU)	10.7	12.0	12.0	11.8	10.6	10.1	9.9	9.9
	(24.0)	(38.7)	(28.5)	(20.2)	(-1.1)	(-16.2)	(-17.6)	(-16.2)
Coal (US\$/ton)	107.0	101.4	98.6	95.4	77.9	66.2	69.7	67.6
	(20.9)	(0.6)	(-7.4)	(-9.9)	(-27.3)	(-34.7)	(-29.3)	(-29.1)

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 fell in February 2020 from the previous month, which was affected by the global oil price decline in the prior month.

- The prices of gasoline and diesel at gas stations dropped by 1.5% and 2.0% respectively in February from the previous month, as a military collision risk between the US and Iran was addressed and global oil price decreased in January amid the expectations of falling petroleum demand following the outbreak of coronavirus.
- The price of bunker-C oil went up by 7.4% in January 2020 despite an environmental regulation by the International Maritime Organization.

### □ Propane and butane prices rose by 4.4% and 6.5% respectively in February from the prior month, because the importers adjusted the prices to reflect the global price increase.

- Major LPG importers raised their prices after Saudi Aramco's global propane and butane prices soared (28.4%, 29.7%) in January 2020, though the rate of increase was lower than global prices.

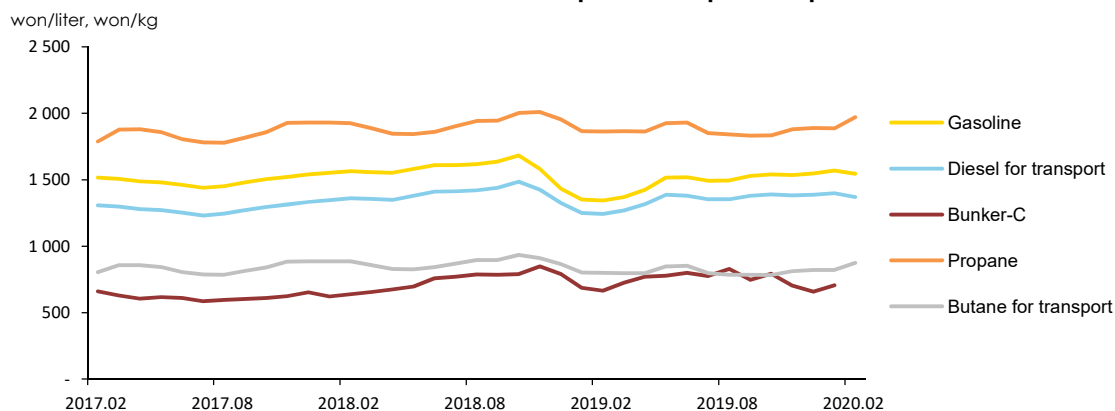
#### ► Trend in domestic energy prices

	2018		2019			2020		
		M12	M1	M2		M12	M1	M2
Gasoline (won/liter)	1 581.4 (6.0)	1 433.1 (-7.0)	1 351.2 (-12.9)	1 343.8 (-14.1)	1 472.3 (-6.9)	1 548.5 (8.0)	1 568.4 (16.1)	1 545.3 (15.0)
Diesel for transport (won/liter)	1 392.0 (8.5)	1 324.1 (-0.6)	1 249.4 (-7.1)	1 242.9 (-8.6)	1 340.4 (-3.7)	1 385.4 (4.6)	1 398.4 (11.9)	1 369.9 (10.2)
Bunker-C (won/liter)	735.2 (18.7)	789.3 (21.0)	685.9 (10.3)	665.8 (4.3)	744.2 (1.2)	658.0 (-16.6)	706.5 (3.0)	797.7 -
Propane (won/kg)	1 920.5 (4.7)	1 954.7 (1.3)	1 864.4 (-3.4)	1 863.3 (-3.3)	1 869.6 (-2.7)	1 889.7 (-3.3)	1 887.6 (1.2)	1 971.5 (5.8)
Butane for transport (won/liter)	874.6 (5.8)	863.4 (-2.5)	801.3 (-9.5)	798.7 (-9.9)	806.2 (-7.8)	820.6 (-4.9)	820.8 (2.4)	874.5 (9.5)

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 (%)

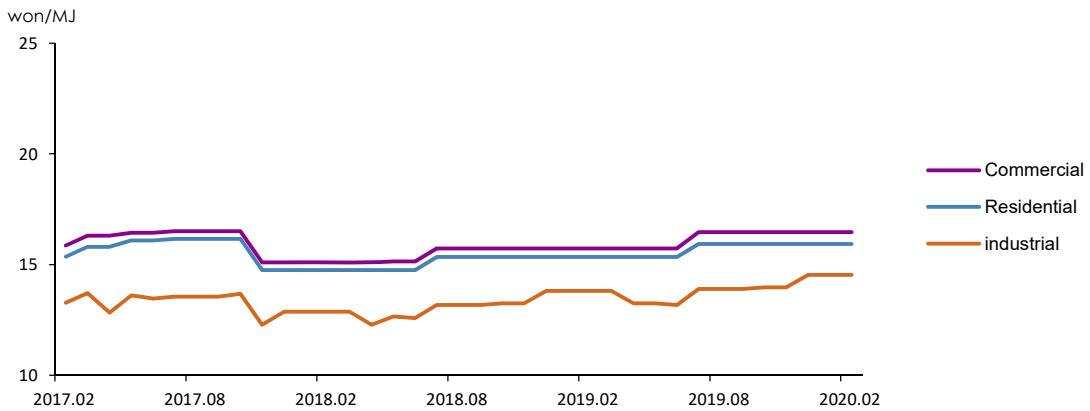
Source: [www.opinet.co.kr](http://www.opinet.co.kr)

#### ► Trend in domestic petroleum product prices



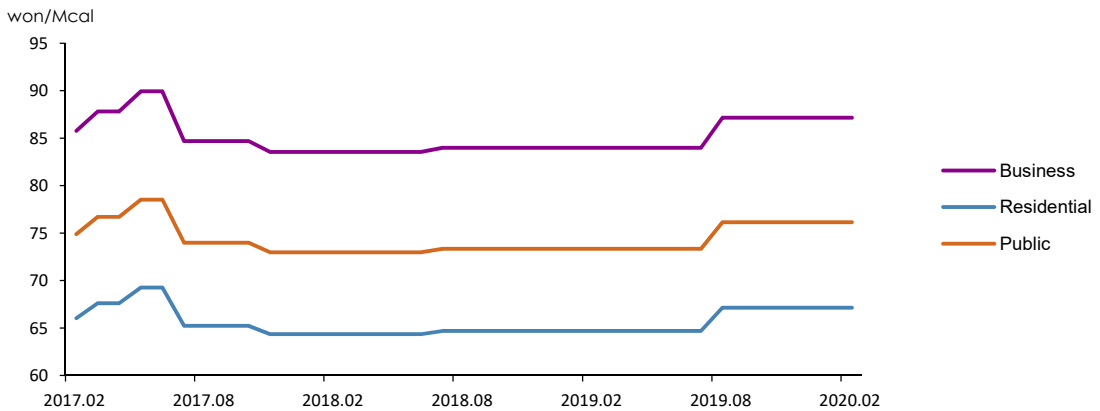
- **City gas price has been flat for the past eight months until March, since it was raised in July 2019.**
  - City gas price had been fixed since July 2018 despite the upward trend in global LPG price in order to alleviate economic burdens on people. The price, however, was raised in July 2019 for the first time in a year to collect accounts receivable that were accumulated during the price-fixing period.
- **Heat energy price has been flat for seven consecutive months until March, 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.

► **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**



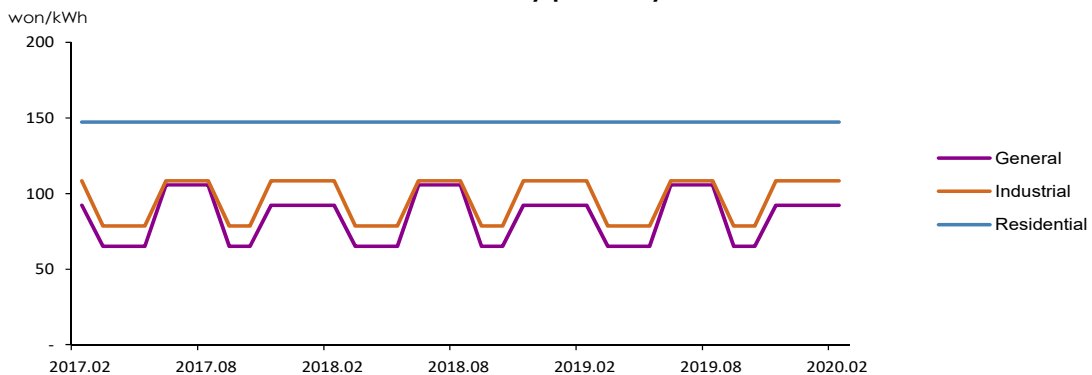
□ Electricity prices <sup>1</sup>for general and industrial use have been flat until February after they were adjusted for the winter season in November.

- 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 industrial use declined in January 2020 from the previous month, while it increased in the case of residential use.

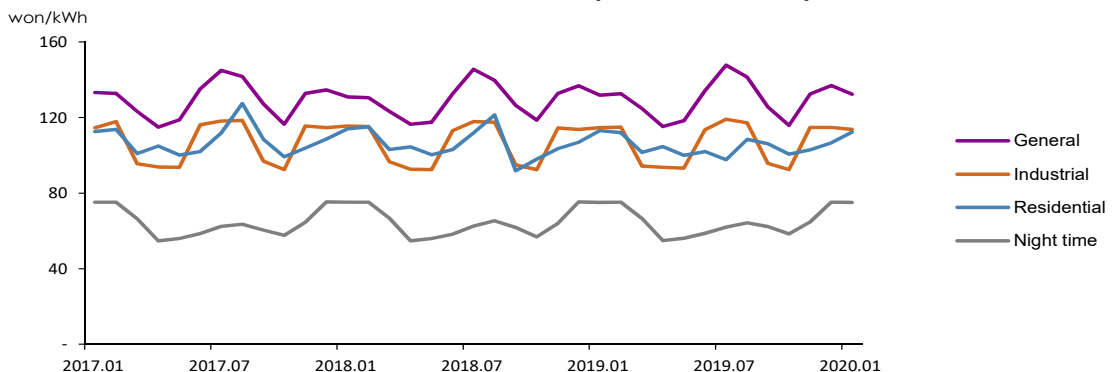
- The unit sales price of electricity for residential use went up by 5.5% from the previous month, as electricity consumption increased due to lower temperature, and although the electricity prices for general and industrial use have been flat since the price adjustment for the winter season in November, their unit sales prices went down by 3.3% and 0.9% respectively.

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



자료: 한국전력공사

#### ► 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 posted a year-on-year growth of 2.3% in December, led by petroleum products.

- The import volume of petroleum products went up by 12.2% year-on-year, owing to the increased imports of LPG, used as a (petrochemical) feedstock (41.3%) and naphtha.
- The import volume of crude oil fell by 3.8%, as crude input to refineries slid by 2.4% year-on-year with lower run rates (5.5%) as a result of reduced refining margin. The crude oil inventory went up by 7.1% on a year-on-year basis.
- The import volume of LNG grew by 11.9%, as the demand increased in the power generation sector due to lower capacity factors at nuclear and coal fired power plants.

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

	2017	2018	M12	2019p			
				M10	M11	M12	
Import volume							
Crude oil (Mbbbl)	1 118.2 (3.7)	1 116.3 (-0.2)	93.0 (-6.9)	1 071.9 (-4.0)	82.3 (-15.8)	93.1 (-2.3)	89.5 (-3.8)
Petroleum product (Mbbbl)	314.5 (-6.0)	341.6 (8.6)	32.1 (22.6)	352.1 (3.1)	28.1 (1.2)	28.6 (0.1)	36.0 (12.2)
Bituminous coal (Mton)	131.5 (11.0)	131.5 (0.0)	10.4 (-5.7)	132.7 (0.9)	12.4 (22.1)	11.1 (-5.1)	11.6 (11.9)
Anthracite (Mton)	7.0 (-25.7)	8.1 (16.0)	0.8 (27.6)	6.9 (-15.6)	0.6 (-9.2)	0.4 (-53.2)	0.6 (-25.1)
LNG (Mton)	37.5 (12.2)	44.0 (17.3)	4.7 (13.1)	40.8 (-7.4)	3.2 (-15.4)	3.8 (-2.7)	4.8 (2.1)
Import volume (Mtoe)	339.7 (5.5)	354.5 (4.4)	31.8 (3.4)	349.1 (-1.5)	28.5 (-3.1)	29.1 (-4.8)	32.5 (2.3)
Import value (billion US\$, CIF)	109.5 (35.2)	146.0 (33.3)	12.4 (12.2)	126.7 (-13.2)	9.8 (-28.2)	10.4 (-23.9)	11.3 (-8.8)
Energy share of total import value (%)	22.9	27.3	28.2	25.2	23.6	25.6	25.9
Foreign energy dependence (%)*	93.9	93.6	94.2	93.4	93.2	93.7	94.1
Domestic production							
Hydropower (TWh)	7.0 (5.5)	7.3 (3.9)	0.6 (28.2)	6.2 (-14.3)	0.5 (6.4)	0.5 (-15.2)	0.5 (-16.7)
Anthracite (Mton)	1.5 (-14.0)	1.2 (-19.2)	0.1 (-36.1)	1.1 (-9.5)	0.1 (1.2)	0.1 (1.0)	0.1 (15.4)
Natural gas (Mton)	0.3 (120.5)	0.2 (-10.4)	0.0 (-17.5)	0.2 (-21.5)	0.0 (-20.8)	0.0 (-30.1)	0.0 (-15.6)
Renewable energy (Mtoe)	15.8 (16.7)	17.1 (8.0)	1.5 (3.4)	17.9 (4.7)	1.5 (3.2)	1.4 (1.5)	1.5 (1.3)

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 3.3% year-on-year in December, as the use of coal and nuclear energy continued to decline.

- Coal consumption dropped by 16.5% in the power generation sector and 5.1% in the industrial sector, especially bituminous coal for steelmaking (-1.7%) and anthracite (-23.4%), and consequently, the total consumption fell by 12.8% on a year-on-year basis.
- Nuclear energy consumption was down 11.0% year-on-year despite the commissioning of Shinkori unit4, due to the increased preventive maintenance since Sept 2019. As a result, gas consumption increased in the power generation sector, and the total natural gas consumption grew by 1.4%.
- Petroleum consumption posted a year-on-year growth of 2.3% despite decreased use of petroleum fuel in the transport sector (2.2%), owing to the rapidly increased LPG use as a feedstock following the construction of new ethylene production facilities that exclusively use LPG.

### □ Total Final Consumption (“TFC”) decreased by 0.8% year-on-year (in December), with the transport and buildings sectors leading the downward trend.

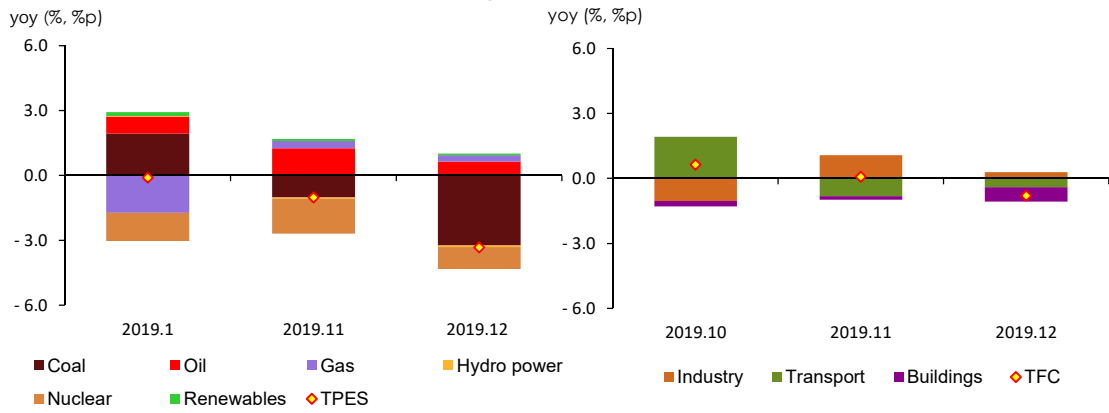
- Transport energy consumption fell by 2.3% year-on-year, as it dropped by 2.7% in the road transport sector due to the base effect of the previous year when the fuel tax was temporarily cut, although the consumption grew in the aviation sector (8.6%) with the increased number of domestic flights.
- Buildings’ energy use slid by 2.7%, with the residential buildings leading the downward trend (-4.9%), as the weather was warm in December and the number of heating degree days fell by 10.0%.
- Industrial energy consumption grew by 0.5% year-on-year, which is attributed to the increased LPG consumption as a petrochemical feedstock.

#### ► Energy consumption trend

	2017	2018		2019p			
			M12		M10	M11	M12
<b>Total energy (Mtoe)</b>	<b>302.1</b>	<b>307.5</b>	<b>28.9</b>	<b>303.4</b>	<b>24.1</b>	<b>25.3</b>	<b>28.0</b>
	(2.8)	(1.8)	(-0.5)	(-1.3)	(-0.1)	(-1.0)	(-3.3)
- Non-energy oil&coal excluded	215.4	222.9	21.6	219.7	17.4	18.3	20.7
	(1.4)	(3.5)	(1.2)	(-1.5)	(1.6)	(-2.9)	(-4.5)
<b>Final energy (Mtoe)</b>	<b>230.0</b>	<b>232.7</b>	<b>21.7</b>	<b>231.2</b>	<b>18.2</b>	<b>19.4</b>	<b>21.6</b>
	(3.9)	(1.2)	(-1.3)	(-0.6)	(0.6)	(0.1)	(-0.8)

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 declined by 10.9% year-on-year in December, as it continued to decline in the power generation and industrial sectors.

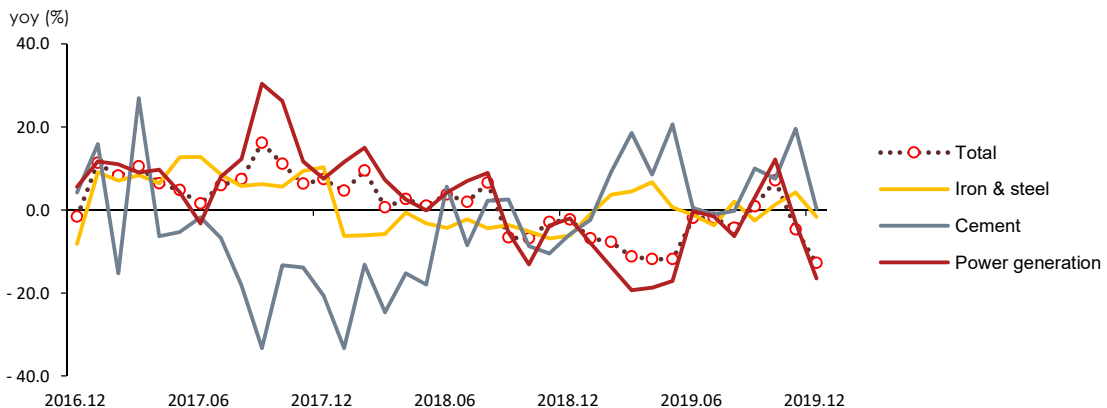
- Coal consumption is provisionally estimated to have decreased by 5.7% in 2019 compared to 2018, as the consumption declined in all sectors except the steelmaking sector.
- Coal consumption fell by 16.5% year-on-year in the power generation sector, owing to the decreased electricity demand and the implementation of the upper limit on power output at coal-fired power plants according to the government's plan for electricity supply and demand in winter & the reduction of coal-fired generation.
- Industrial coal use dropped by 5.1% year-on-year, because the use of bituminous coal (coking coal) for steelmaking that had been growing for some time showed a downward trend on a year-on-year basis.

► Coal consumption trend

	2017	2018	2019p				
			M12		M10	M11	M12
<b>Coal (Mton)</b>	<b>139.8</b>	<b>141.0</b>	<b>12.5</b>	<b>133.0</b>	<b>11.6</b>	<b>10.9</b>	<b>10.9</b>
	(8.1)	(0.9)	(-2.3)	(-5.7)	(7.0)	(-4.7)	(-12.8)
Industry	49.3	48.3	4.2	47.6	4.1	3.9	4.0
	(3.2)	(-2.0)	(-2.3)	(-1.6)	(0.7)	(-6.7)	(-5.1)
-Coking-coal	36.3	34.6	3.0	35.0	3.0	2.9	2.9
	(8.5)	(-4.6)	(-6.2)	(1.0)	(1.3)	(4.2)	(-1.7)
Buildings	1.1	0.9	0.1	0.6	0.1	0.1	0.1
	(-14.0)	(-15.7)	(-16.8)	(-29.8)	(-39.5)	(-22.0)	(-26.6)
Power generation	89.4	91.8	8.2	84.8	7.4	6.8	6.8
	(11.3)	(2.6)	(-2.0)	(-7.6)	(12.2)	(-3.1)	(-16.5)

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 rose by 2.3% year-on-year in December, despite the decline in consumption in the transport and buildings sectors, as it grew consistently in the industrial sector.**

- Industrial petroleum use went up by 5.4% on a year-on-year basis, as the use of energy oil (except LPG) grew by 12.0% year-on-year, and the use of LPG also continued to increase in the petrochemical industry.
- Transport petroleum consumption dropped by 2.2% year-on-year partly due to the base effect of the previous year when the fuel tax was temporarily reduced.
- Petroleum consumption in buildings fell by 5.2% amid warm weather in December and decreased number of heating degree days (-10%).

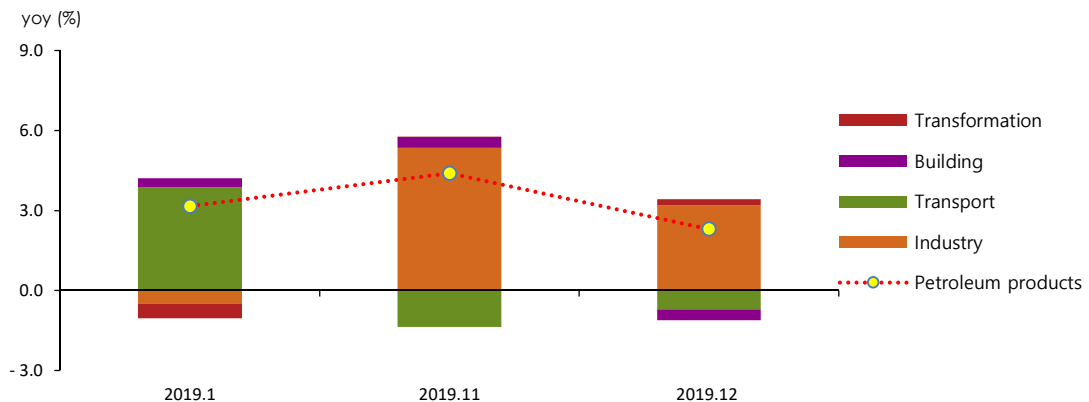
### ► Trend in petroleum product consumption by end-use sectors

	2017	2018		2019p			
			M12		M10	M11	M12
<b>Petroleum (Mbbl)</b>	<b>937.1</b>	<b>931.8</b>	<b>83.4</b>	<b>928.4</b>	<b>75.9</b>	<b>79.5</b>	<b>85.3</b>
	(1.7)	(-0.6)	(-2.0)	(-0.4)	(3.2)	(4.4)	(2.3)
Industry	567.0	564.1	49.2	567.2	45.6	48.4	51.9
	(4.5)	(-0.5)	(-2.4)	(0.6)	(-0.8)	(9.2)	(5.4)
-Naphtha	458.4	451.2	38.8	438.6	34.3	36.3	38.4
	(6.6)	(-1.6)	(-5.2)	(-2.8)	(-5.7)	(3.5)	(-0.9)
Transport	303.2	302.3	26.8	300.3	25.4	25.3	26.2
	(0.9)	(-0.3)	(4.0)	(-0.7)	(12.6)	(-3.9)	(-2.2)
Buildings	56.4	53.7	6.6	52.8	4.4	5.2	6.2
	(0.3)	(-4.9)	(-8.7)	(-1.7)	(5.9)	(6.4)	(-5.2)
Power generation	10.5	11.7	0.8	8.1	0.4	0.5	1.0
	(-51.9)	(12.1)	(-53.2)	(-30.8)	(-49.6)	(0.7)	(23.2)

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 posted a year-on-year growth of 1.4% in December, led by the power generation sector, though the consumption continued to decline in the city gas production sector.**

- Gas consumption grew by 16.3% in the power generation sector, because the baseload generation (nuclear + coal) declined (-11.0%, -10.6% respectively).
- Gas consumption dropped by 3.2% in 2019 due to decreased electricity demand (-1.1%) and the base effect of the growth in the previous year (16.2%).

□ **City gas consumption went down by 3.6% (in December) on a year-on-year basis, as the consumption declined in both of the industrial and buildings sectors.**

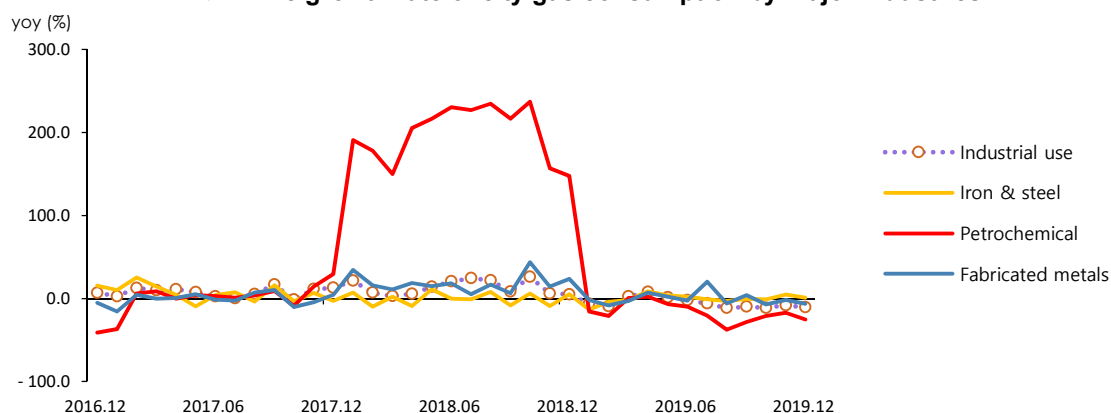
- City gas consumption fell more sharply in the petrochemical and fabricated metals sectors, and as a result, the total industrial city gas consumption dropped by 4.0%.
- City gas consumption in buildings slid by 3.5%, as heating demand declined from the same month last year due to a sharp drop in the number of heating degree days (-52.1degree days).

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

	2017	2018		2019p			
			M12		M10	M11	M12
<b>LNG (Mton)</b>	<b>36.4</b>	<b>42.3</b>	<b>4.9</b>	<b>40.9</b>	<b>2.8</b>	<b>3.7</b>	<b>5.0</b>
	(4.3)	(16.2)	(-2.9)	(-3.2)	(-10.4)	(1.8)	(1.4)
Power generation	15.6	18.9	1.8	18.4	1.3	1.6	2.0
	(0.6)	(21.5)	(-5.0)	(-2.7)	(-9.3)	(10.9)	(16.3)
City gas production	18.4	19.8	2.7	18.8	1.1	1.8	2.5
	(5.8)	(7.7)	(-3.0)	(-5.0)	(-15.7)	(-3.4)	(-8.6)
<b>City gas (bm<sup>3</sup>)</b>	<b>22.6</b>	<b>24.3</b>	<b>3.0</b>	<b>23.3</b>	<b>1.4</b>	<b>2.0</b>	<b>2.8</b>
	(6.3)	(7.4)	(-3.9)	(-4.1)	(-12.2)	(-6.4)	(-5.6)
Industry	7.8	8.8	0.9	8.3	0.6	0.7	0.8
	(7.7)	(12.7)	(4.9)	(-5.4)	(-11.2)	(-8.1)	(-10.7)
Buildings	13.6	14.3	2.0	13.8	0.6	1.2	2.0
	(6.0)	(5.1)	(-7.3)	(-3.5)	(-14.8)	(-5.6)	(-3.5)

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 dropped by 1.3% year-on-year in December, as the consumption declined in large power consuming industries such as the primary metals and fabricated metals sectors.

- Industrial power consumption fell by 3.1% from the same month last year, led by the primary metals and fabricated metals sectors (-15.9%, -1.7%), though the consumption was flat in the petrochemical sector (0.1%)
- Electricity consumption in buildings went up by 1.0% year-on-year, as the consumption grew by around 1% in both of the residential and commercial buildings.

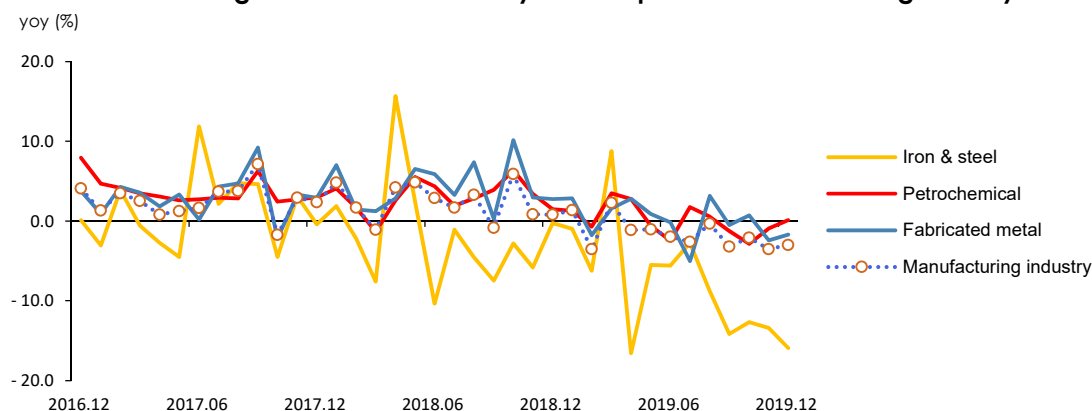
► Trend in electricity consumption by end-use sectors

	2017	2018		2019p			
			M12		M10	M11	M12
<b>Electricity (TWh)</b>	<b>507.7</b>	<b>526.1</b>	<b>45.3</b>	<b>520.5</b>	<b>40.6</b>	<b>41.1</b>	<b>44.7</b>
	(2.2)	(3.6)	(-1.0)	(-1.1)	(1.6)	(-1.9)	(-1.3)
Industry	276.7	283.7	24.4	279.8	22.7	22.8	23.6
	(2.5)	(2.5)	(0.7)	(-1.4)	(-1.7)	(-3.6)	(-3.1)
Transport	2.9	3.0	0.3	2.9	0.2	0.2	0.2
	(6.5)	(3.6)	(-2.1)	(-2.0)	(-3.9)	(-6.6)	(-7.8)
Buildings	228.2	239.5	20.7	237.8	17.7	18.1	20.9
	(1.7)	(4.9)	(-2.9)	(-0.7)	(6.3)	(0.4)	(1.0)
Residential	66.5	70.7	5.7	70.5	5.4	5.5	5.8
	(0.5)	(6.3)	(1.0)	(-0.3)	(5.6)	(1.4)	(1.5)
Commercial	130.4	136.4	11.9	135.2	9.9	10.1	12.1
	(2.3)	(4.6)	(-4.5)	(-0.9)	(6.6)	(-0.3)	(0.9)

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

Source: Monthly Energy Statistics

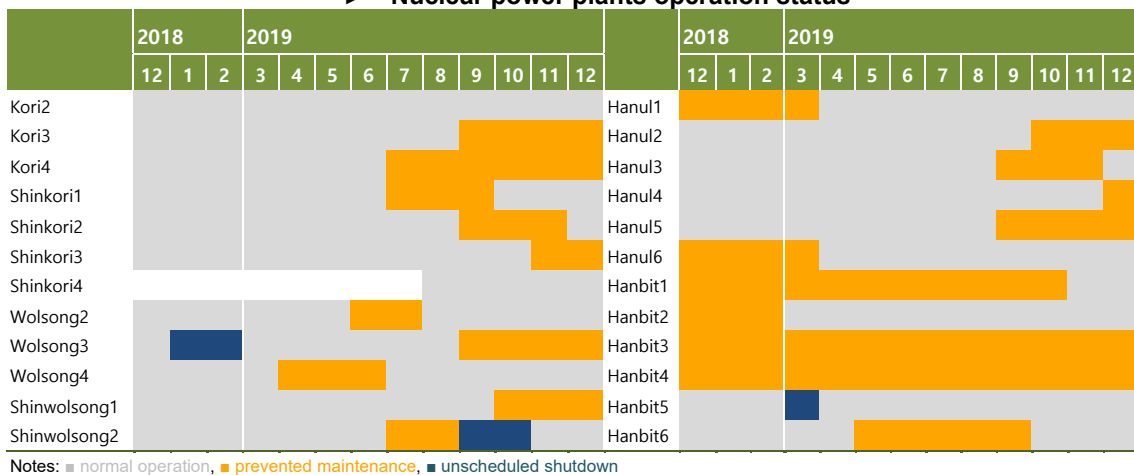
► The growth rate of electricity consumption in manufacturing industry



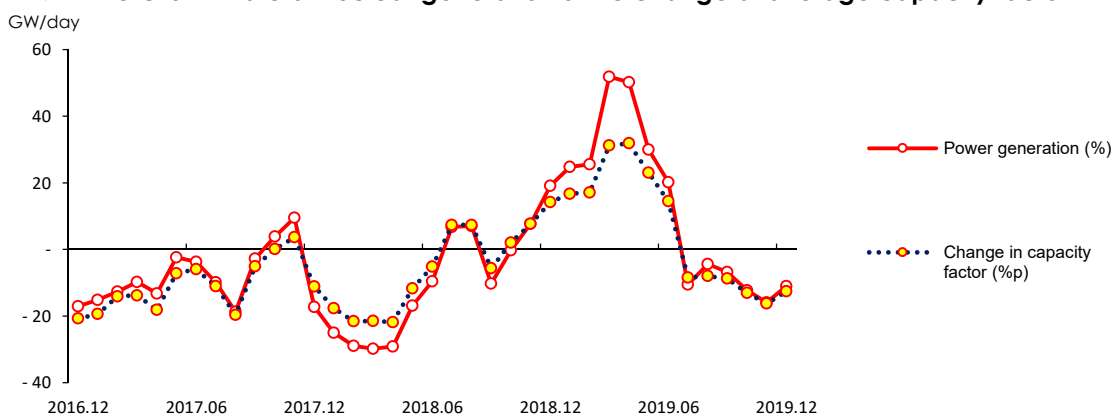
## 9. Nuclear

- **The total nuclear generation fell by 11.0% in December on a year-on-year basis despite the commissioning of a new reactor, owing to the increased planned preventive maintenance.**
  - With the commercial operation of Shinkori unit4 (1.4GW), a large-scale reactor, on August 30, the total nuclear installed capacity grew by 6.4% on a year-on-year basis.
  - However, the average capacity factor fell by 12.5%p year-on-year, as the number of reactors that are under preventive maintenance increased.
  - Nuclear energy's share of the total generation fell by 2.0%p to 22.0% on a year-on-year basis

► **Nuclear power plants operation status**



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

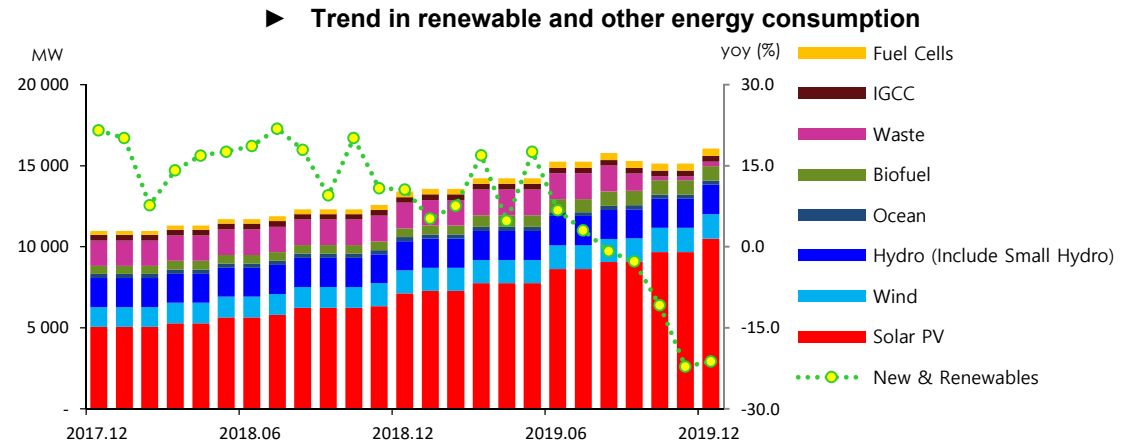
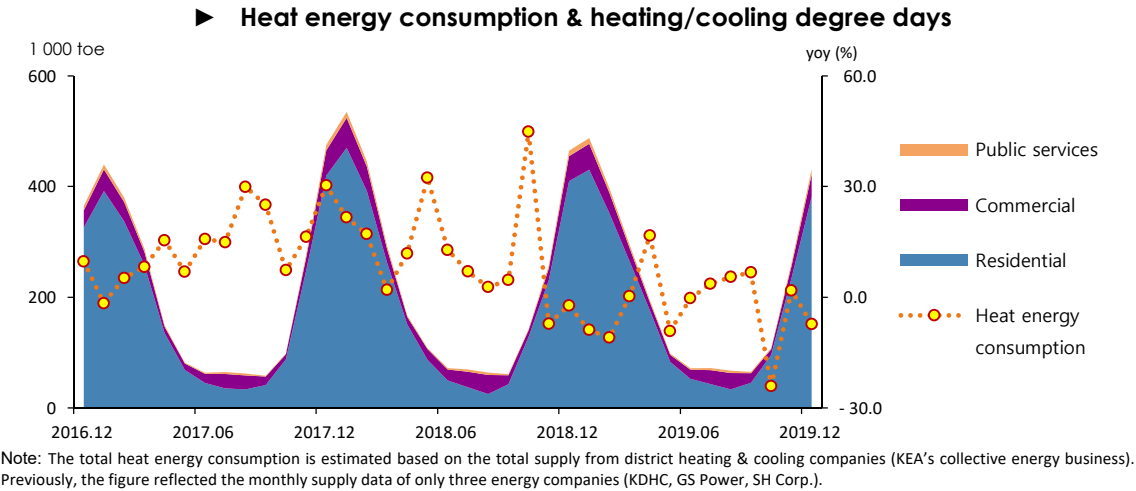


# 10. Heat and Renewable energy

- Heat energy consumption dropped by 7.3% year-on-year in December due to warm weather and decreased number of heating degree days.**

  - Heat energy consumption declined in the residential, commercial and public sectors all together, as the temperature was 1.7°C higher than the same month last year, and accordingly, the number of heating degree days fell sharply (-52.1degree days)
- The total renewable generation fell by over 20%, due to the exclusion of some energy sources from the renewable category and decline in hydro generation.**

  - The total renewable generation (except hydro) continued its rapid downward spiral despite increased power generation from solar PV, wind, fuel cells and IGCC plants, as the exclusion of non-renewable waste energy from the renewable category led to a sharp drop in the total installed capacity and power generation.



## 11. Industry

□ Industrial energy use grew by 0.5% year-on-year in December, with the petrochemical sector solely leading the growth.

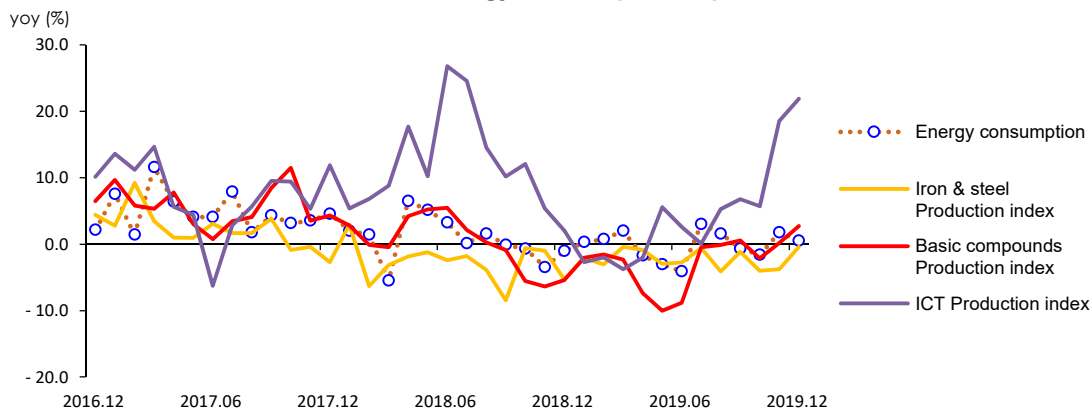
- Energy use in the petrochemical sector grew by 2.4% year-on-year in December, as the outputs of chemical products increased to meet the surging export demand, though the domestic demand was weak.
- In the mining & manufacturing industries, machinery & equipment and semiconductor outputs increased, and the average operation rate of manufacturing facilities was higher than the previous year, while the bar steel output decreased.

► Trend in the industrial energy consumption

	2017	2018		2019p			
			M12		M10	M11	M12
<b>Industry (Mtoe)</b>	<b>141.9</b>	<b>142.9</b>	<b>12.6</b>	<b>142.7</b>	<b>11.6</b>	<b>12.0</b>	<b>12.6</b>
	(5.0)	(0.7)	(-1.0)	(-0.1)	(-1.6)	(1.8)	(0.5)
Petrochemical	70.0	72.1	6.3	72.2	5.8	6.1	6.4
	(4.9)	(3.0)	(1.0)	(0.1)	(-1.2)	(5.8)	(2.4)
- Naphtha	56.2	55.3	4.8	53.8	4.2	4.5	4.7
	(6.6)	(-1.6)	(-5.2)	(-2.8)	(-5.7)	(3.5)	(-0.9)
Iron & Steel	33.2	28.9	2.5	28.8	2.4	2.4	2.4
	(7.4)	(-13.0)	(-14.0)	(-0.0)	(-0.2)	(2.6)	(-2.8)
-Coking coal	25.3	24.1	2.1	24.4	2.1	2.1	2.0
	(8.0)	(-4.6)	(-6.2)	(1.0)	(1.3)	(4.2)	(-1.7)
Fabricated metal	10.8	11.4	1.1	11.4	0.9	0.9	1.0
	(1.9)	(5.9)	(7.3)	(-0.0)	(-0.7)	(-2.4)	(-2.8)
Share of feedstock (%)	60.9	59.1	57.9	58.5	57.4	58.5	57.6

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

► Industrial energy consumption & production index



## 12. Transport

□ **Transport energy consumption declined by 2.3% year-on-year in December, despite the growth in consumption in the aviation sector, as it declined in other transport sectors.**

- Energy use for road transport fell by 2.7% year-on-year due to the base effect of the previous year when the fuel tax was temporarily reduced.
- Energy use for domestic navigation dropped by 14.6% year-on-year, despite increased cargo volume.
- Energy use for aviation increased, as the number of the international and domestic flights went up by 1.3% and 1.4% respectively.

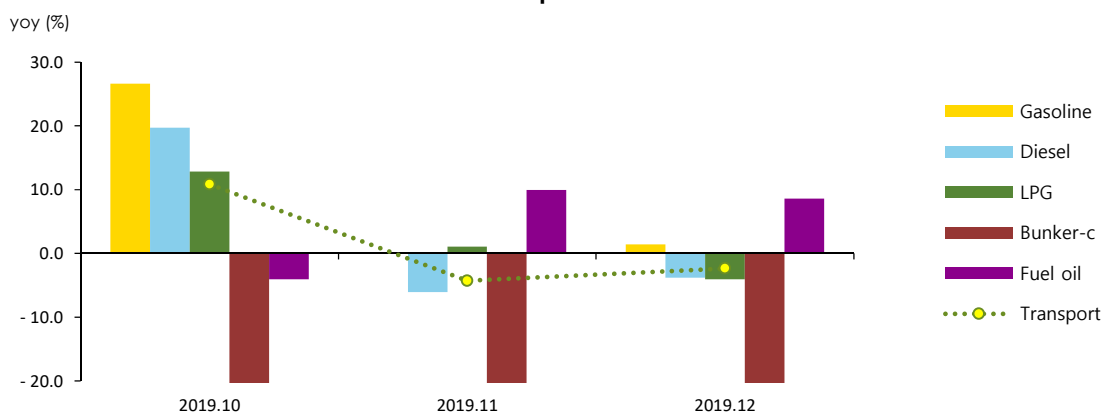
► **The growth rate of petroleum consumption in the transport sector**

	2017	2018		2019p			
			M12		M10	M11	M12
<b>Transport (Mtoe)</b>	<b>42.8</b>	<b>43.0</b>	<b>3.8</b>	<b>42.6</b>	<b>3.6</b>	<b>3.6</b>	<b>3.7</b>
	(1.2)	(0.4)	(4.4)	(-0.9)	(10.8)	(-4.3)	(-2.3)
Road	34.1	34.4	3.1	34.7	3.0	2.9	3.0
	(0.5)	(0.9)	(3.4)	(0.9)	(19.6)	(-4.0)	(-2.7)
Navigation	3.5	3.2	0.3	2.6	0.2	0.2	0.2
	(5.8)	(-9.9)	(4.7)	(-19.6)	(-42.3)	(-28.0)	(-14.6)
Aviation	4.8	5.0	0.4	4.9	0.4	0.4	0.5
	(3.2)	(4.4)	(12.2)	(-1.7)	(-4.1)	(9.9)	(8.6)
Rail	0.3	0.4	0.0	0.3	0.0	0.0	0.0
	(2.5)	(3.6)	(-4.7)	(-2.9)	(-7.3)	(-7.9)	(-8.4)

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 fell by 2.7% year-on-year in December, as the energy demand for heating decreased amid warm weather.**

- Energy use in buildings has decreased for three consecutive months, led by heating energy sources such as petroleum, city gas and heat, as the number of heating degree days declined while the prices of some heating energy sources increased.
- The residential sector led the decline in buildings' total energy use, as the use of all heating energy sources such as coal(briquette), petroleum, city gas and heat declined in residential buildings (-26.6%, -13.9%, -2.9%, -7.0%) except electricity (1.5%)
- Energy use in commercial & public buildings slightly increased (0.3%) despite decreased use of city gas and heat (-5.9%, -9.3%), as petroleum and electricity use increased (5.9%, 0.8%) as a result of the growth in service sector output.

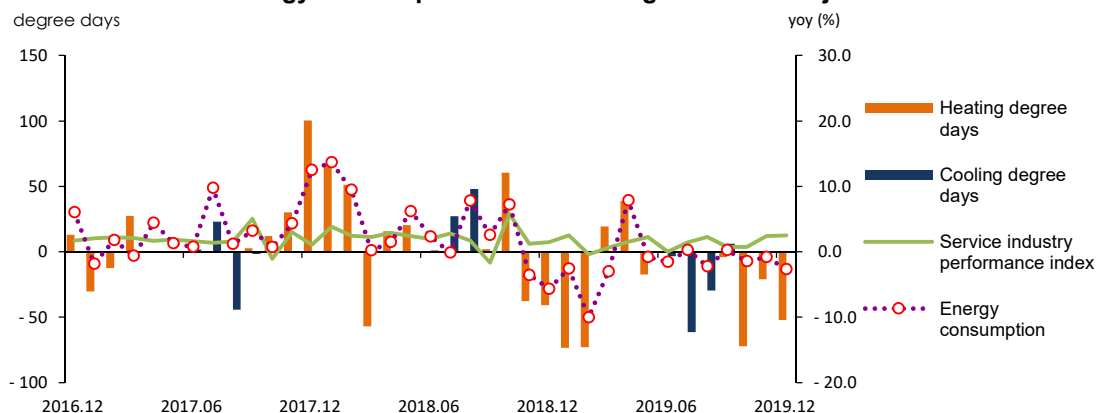
► **Energy consumption trend in the buildings sector**

	2017	2018		2019p			
			M12		M10	M11	M12
<b>Buildings (Mtoe)</b>	<b>45.3</b>	<b>46.9</b>	<b>5.4</b>	<b>46.0</b>	<b>3.0</b>	<b>3.9</b>	<b>5.2</b>
	(3.1)	(3.5)	(-5.7)	(-2.0)	(-1.5)	(-0.8)	(-2.7)
Residential	22.5	23.5	3.1	22.6	1.3	2.0	3.0
	(3.7)	(4.4)	(-6.5)	(-3.6)	(-10.3)	(-3.4)	(-4.9)
Commercial	17.4	17.9	1.7	17.8	1.3	1.4	1.7
	(1.9)	(2.9)	(-4.0)	(-0.3)	(6.3)	(2.2)	(-0.1)
Public:others	5.5	5.6	0.5	5.5	0.4	0.5	0.5
	(4.1)	(2.0)	(-5.7)	(-1.2)	(8.2)	(2.2)	(1.7)
Heating degree days	2 517.1	2 597.8	522.3	2 342.9	83.1	277.2	470.2
	(5.5)	(3.2)	(-7.2)	(-9.8)	(-46.5)	(-7.0)	(-10.0)
Cooling degree days	132.7	209.0	-	120.4	-	-	-
	(-13.9)	(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 6.6% year-on-year in December, as the total power generation decreased, and the share of energy sources in power generation has changed.
  - The total power generation fell by 3.0% year-on-year, as electricity demand declined, mainly in the industrial sector.
  - The energy input to power stations decreased more rapidly (-6.6%) compared to the total generation (-3.0%), because less efficient nuclear generation and coal-fired generation plunged while highly efficient gas generation surged.

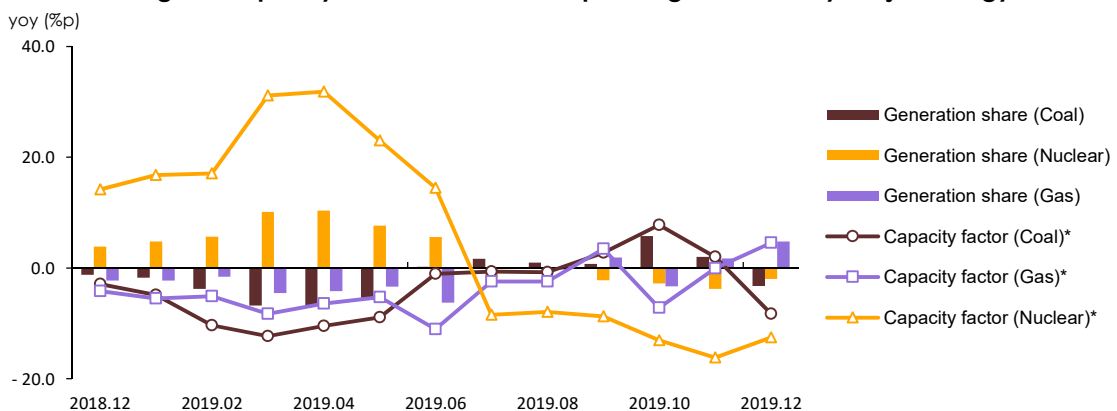
Energy consumption in the power generation sector

	2017	2018		2019p			
			M12		M10	M11	M12
<b>Input (Mtoe)</b>	<b>115.1</b>	<b>118.7</b>	<b>10.7</b>	<b>116.3</b>	<b>9.3</b>	<b>9.2</b>	<b>10.0</b>
	(0.3)	(3.1)	(1.2)	(-2.0)	(-0.5)	(-3.7)	(-6.6)
Coal	52.8	54.2	4.8	50.1	4.4	4.0	4.0
	(7.4)	(2.7)	(-2.1)	(-7.6)	(12.3)	(-3.0)	(-16.6)
Oil	1.2	1.3	0.1	0.8	0.0	0.0	0.1
	(-59.5)	(7.5)	(-66.7)	(-39.3)	(-66.4)	(-22.1)	(38.1)
Gas	20.7	25.1	2.3	24.4	1.7	2.1	2.7
	(0.9)	(21.4)	(-5.0)	(-2.9)	(-9.6)	(10.5)	(15.9)
Nuclear	31.6	28.4	2.6	31.1	2.3	2.2	2.4
	(-7.5)	(-10.1)	(19.1)	(9.3)	(-12.3)	(-15.9)	(-11.0)
Hydro/other renewables	8.7	9.6	0.8	9.9	0.9	0.8	0.8
	(11.5)	(9.9)	(9.3)	(3.6)	(5.6)	(-0.5)	(-1.6)

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			
			2Q	3Q	4Q		2Q	3Q	4Q
GDP (trillion won)	1 760.8 (3.2)	1 807.7 (2.7)	450.8 (2.9)	453.0 (2.1)	475.2 (2.9)	1 844.5 (2.0)	460.1 (2.0)	462.3 (2.0)	486.3 (2.3)
Private consumption	848.6 (2.8)	872.3 (2.8)	212.2 (2.9)	217.8 (2.3)	223.5 (2.4)	889.0 (1.9)	216.5 (2.0)	221.7 (1.8)	227.9 (1.9)
Facilities investment	170.3 (16.5)	166.2 (-2.4)	43.2 (-4.3)	37.3 (-9.4)	41.7 (-5.3)	153.5 (-7.7)	40.2 (-7.0)	36.3 (-2.6)	40.6 (-2.5)
Construction investment	282.9 (7.3)	270.9 (-4.3)	74.4 (-2.5)	68.0 (-8.7)	71.3 (-5.7)	262.4 (-3.1)	71.8 (-3.5)	65.5 (-3.7)	72.1 (1.1)
Consumer price index (2015=100)	102.9	104.5	104.3	104.8	104.8	104.9	104.9	104.9	105.2
USD to KRW exchange rate (won)	1 131.0	1 100.2	1 079.0	1 121.5	1 127.4	1 165.4	1 166.6	1 193.9	1 175.8
Benchmark rate (%)	1.3	1.5	1.5	1.5	1.7	1.6	1.8	1.5	1.3
Coincident composite index (2015=100)	107.6	110.1	110.1	110.4	110.6	111.7	111.3	112.0	112.9
Mining & manufacturing production index (2015=100)	104.8	106.4	107.2	105.4	110.1	106.3	106.9	105.7	112.5
Manufacturing operation ratio index (2015=100)	98.4	98.8	101.1	97.3	101.8	98.5	100.3	98.9	102.4
Average temperature	13.1	13.0	17.8	24.8	7.4	13.5	17.3	24.3	9.1
- year-on-year difference	- 0.5	- 0.1	- 0.3	0.7	0.1	0.5	- 0.5	- 0.6	1.7
Heating degree days	2 517.1 (5.5)	2 597.8 (3.2)	179.7 (25.1)	5.0 (72.4)	975.9 (-1.8)	2 342.9 (-9.8)	201.1 (11.9)	0.9 (-82.0)	830.5 (-14.9)
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)	0.16 (0.8)	0.17 (0.3)	0.17 (-3.7)	0.17 (-3.3)	0.15 (-3.4)	0.16 (-3.3)	0.16 (-3.8)
Per capita consumption									
oil (bbl)	18.2 (1.5)	18.1 (-1.0)	4.5 (2.8)	4.5 (-1.3)	4.5 (-5.4)	18.0 (-0.6)	4.3 (-4.6)	4.5 (0.3)	4.7 (3.1)
Electricity (MWh)	9.9 (1.9)	10.2 (3.1)	2.4 (3.2)	2.7 (4.4)	2.5 (0.9)	10.1 (-1.3)	2.4 (-0.1)	2.6 (-2.5)	2.4 (-0.8)
City gas (1 000 m <sup>3</sup> )	0.4 (6.0)	0.5 (6.9)	0.1 (7.5)	0.1 (8.0)	0.1 (2.6)	0.5 (-4.3)	0.1 (4.1)	0.1 (-3.9)	0.1 (-7.6)
Total energy (toe)	5.9 (2.5)	6.0 (1.3)	1.4 (3.3)	1.5 (1.9)	1.5 (-1.4)	5.9 (-1.5)	1.4 (-1.6)	1.4 (-1.5)	1.5 (-1.8)

Note: Figures are based on the real price of 2010, p means provisional, ( ) is year-on-year growth rates (%)

Source: BOA Economic statistics system, Monthly Energy Statistics

## The Index of Production & Operating Ratio by Sectors

(2015=100)

	2016	2017	2018	2019				M10	M11	M12
				M10	M11	M12				
Industrial production index										
All industry	98.2 (1.4)	100.0 (1.9)	107.5 (1.6)	109.8 (7.8)	108.8 (0.4)	116.7 (0.4)	108.1 (0.5)	109.9 (0.1)	110.5 (1.6)	121.3 (3.9)
Mining & manufacturing	100.3 (0.2)	100.0 (-0.3)	106.4 (1.5)	112.5 (12.7)	109.7 (0.3)	108.2 (0.7)	106.3 (-0.0)	111.6 (-0.8)	111.1 (1.3)	114.9 (6.2)
Iron & steel	101.5 (1.5)	103.4 (1.9)	100.5 (-2.7)	102.4 (-0.6)	101.0 (-1.0)	98.5 (-5.3)	98.3 (-2.2)	98.3 (-4.0)	97.2 (-3.8)	98.1 (-0.4)
Cement	107.9 (7.9)	109.7 (1.7)	100.0 (-8.8)	111.3 (11.4)	110.5 (-7.1)	91.4 (-13.6)	93.7 (-6.3)	100.0 (-10.2)	102.9 (-6.9)	94.5 (3.4)
Basic compound	104.5 (4.6)	110.4 (5.6)	110.4 (0.1)	107.4 (-5.5)	101.7 (-6.4)	110.4 (-5.4)	107.5 (-2.6)	105.1 (-2.1)	101.9 (0.2)	113.4 (2.7)
Transport equipment	97.6 (-2.4)	95.1 (-2.6)	93.9 (-1.2)	105.0 (30.4)	107.0 (3.3)	99.2 (20.7)	93.1 (-0.9)	98.9 (-5.8)	94.9 (-11.3)	94.3 (-4.9)
Electric & electronic	103.5 (3.5)	106.6 (3.0)	106.5 (-0.2)	114.0 (12.2)	117.1 (-0.8)	111.5 (0.2)	107.7 (1.2)	116.6 (2.3)	112.7 (-3.8)	120.7 (8.3)
Service	102.6 (2.6)	104.5 (1.9)	106.9 (2.2)	108.3 (5.8)	107.7 (1.2)	115.8 (1.5)	108.4 (1.4)	109.1 (0.7)	110.3 (2.4)	118.7 (2.5)
Operating ratio index										
Manufacturing	99.0 (-1.0)	98.4 (-0.6)	98.8 (0.4)	104.6 (12.1)	101.8 (-0.1)	99.0 (2.0)	98.5 (-0.3)	103.7 (-0.9)	100.8 (-1.0)	102.7 (3.7)
Iron & steel	101.0 (1.0)	102.8 (1.7)	100.1 (-2.6)	102.2 (-0.3)	100.9 (-0.7)	98.3 (-4.9)	98.1 (-2.0)	97.9 (-4.2)	97.0 (-3.9)	97.8 (-0.5)
Cement	106.7 (6.7)	107.2 (0.5)	108.4 (1.1)	122.2 (25.6)	122.0 (3.7)	102.5 (-2.1)	101.6 (-6.3)	108.4 (-11.3)	111.3 (-8.8)	-
Basic compound	102.9 (2.9)	105.9 (3.0)	103.5 (-2.3)	100.2 (-7.5)	94.6 (-8.5)	102.7 (-7.1)	99.4 (-4.0)	96.6 (-3.6)	93.6 (-1.1)	103.8 (1.1)
Transport equipment	93.8 (-6.2)	87.7 (-6.5)	89.6 (2.3)	100.3 (35.5)	102.5 (7.2)	95.0 (25.8)	92.9 (3.6)	99.2 (-1.1)	95.4 (-6.9)	94.3 (-0.7)
Electric & electronic	102.7 (2.7)	104.0 (1.2)	102.2 (-1.7)	108.8 (9.2)	112.6 (-2.9)	105.8 (0.1)	103.5 (1.3)	111.5 (2.5)	109.0 (-3.2)	115.4 (9.1)

Note: p means provisional  
Source: Monthly Energy Statistics

## International Energy Prices

	2017	2018	2019				2020		
			M12	M1	M2		M12	M1	M2
Crude oil (USD/bbl)									
WTI	51.0 (17.6)	64.8 (27.1)	49.0 (-15.5)	51.6 (-19.0)	55.0 (-11.6)	57.0 (-11.9)	59.8 (22.1)	57.5 (11.6)	50.6 (-8.0)
Dubai	53.2 (28.9)	69.4 (30.5)	57.3 (-7.0)	59.1 (-10.7)	64.6 (3.0)	63.5 (-8.5)	64.9 (13.2)	64.3 (8.9)	54.2 (-16.0)
Brent	54.8 (21.7)	71.5 (30.5)	57.7 (-10.0)	60.2 (-12.8)	64.4 (-2.0)	64.2 (-10.3)	65.2 (13.0)	63.7 (5.7)	55.5 (-13.9)
Unit value of import (C&F)	53.3 (29.9)	71.4 (34.0)	66.6 (7.2)	61.8 (-4.7)	63.0 (-5.8)	65.5 (-8.3)	65.9 (-1.2)	69.1 (11.8)	64.5 (2.4)
LNG									
From Indonesia (USD/MMBTU)	8.6 (16.7)	10.7 (24.0)	12.0 (38.7)	12.0 (28.5)	11.8 (20.2)	10.6 (-1.0)	10.1 (-16.2)	9.9 (-17.6)	9.9 (-16.2)
Unit value of import (USD/ton, CIF)	416.3 (16.7)	526.3 (26.4)	574.2 (33.5)	587.0 (29.5)	614.3 (18.8)	506.5 (-3.8)	469.0 (-18.3)	467.7 (-20.3)	444.7 (-27.6)
Bituminous coal (USD/ton)									
From Australia	88.5 (33.9)	107.0 (20.9)	101.4 (0.6)	98.6 (-7.4)	95.4 (-9.9)	77.9 (-27.2)	66.2 (-34.7)	69.7 (-29.3)	67.6 (-29.1)
Unit value of import (CIF)	104.3 (51.5)	113.6 (8.9)	114.0 (12.7)	106.6 (-4.2)	110.4 (-0.5)	100.7 (-11.3)	85.1 (-25.3)	86.2 (-19.2)	85.0 (-23.0)
Petroleum product (USD/bbl)									
Gasoline	68.1 (21.2)	79.9 (17.4)	60.0 (-20.4)	61.0 (-22.4)	66.3 (-13.9)	72.5 (-9.3)	74.8 (24.7)	71.3 (16.8)	64.5 (-2.7)
Kerosene	65.3 (23.6)	84.8 (29.8)	71.1 (-5.8)	71.8 (-11.3)	77.9 (-2.7)	77.3 (-8.9)	77.8 (9.3)	75.4 (5.0)	63.1 (-19.0)
Diesel	66.4 (25.2)	84.9 (27.9)	70.0 (-7.8)	72.6 (-11.3)	78.9 (1.0)	78.2 (-7.9)	79.2 (13.2)	76.5 (5.4)	66.0 (-16.4)
Bunker-C	49.7 (40.2)	65.2 (31.3)	56.5 (0.2)	57.8 (-1.8)	63.9 (12.1)	57.5 (-11.8)	43.3 (-23.3)	51.9 (-10.2)	46.7 (-27.0)
Propane	467.5 (44.6)	542.1 (16.0)	445.0 (-24.6)	430.0 (-27.1)	440.0 (-16.2)	434.6 (-19.8)	440.0 (-1.1)	565.0 (31.4)	505.0 (14.8)
Butane	501.7 (41.0)	539.2 (7.5)	415.0 (-27.2)	420.0 (-26.3)	470.0 (-6.9)	441.7 (-18.1)	455.0 (9.6)	590.0 (40.5)	545.0 (16.0)
Naphtha	53.8 (26.6)	67.0 (24.5)	51.7 (-20.4)	51.7 (-21.9)	56.4 (-7.9)	56.9 (-15.1)	63.5 (22.7)	60.9 (17.8)	52.3 (-7.2)

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)

	2016	2017	2018				2019p			
				M10	M11	M12		M10	M11	M12
Coal (Mton)	129.3 (-4.3)	139.8 (8.1)	141.0 (0.9)	10.8 (-6.9)	11.4 (-3.0)	12.5 (-2.3)	133.0 (-5.7)	11.6 (7.0)	10.9 (-4.7)	10.9 (-12.8)
- Coking coal excluded	95.8 (-2.5)	103.5 (7.9)	106.4 (2.8)	7.9 (-7.5)	8.6 (-1.6)	9.6 (-1.0)	98.0 (-7.8)	8.6 (9.1)	8.0 (-7.6)	8.0 (-16.2)
Oil (Mbbl)	921.1 (8.0)	937.1 (1.7)	931.8 (-0.6)	73.5 (-8.0)	76.1 (-5.1)	83.4 (-2.0)	928.4 (-0.4)	75.9 (3.2)	79.5 (4.4)	85.3 (2.3)
- Non-energy oil excluded	454.9 (11.3)	443.7 (-2.5)	445.5 (0.4)	33.8 (-6.9)	37.8 (-0.4)	41.5 (1.2)	451.8 (1.4)	38.7 (14.6)	39.5 (4.7)	43.1 (3.9)
LNG (Mton)	34.9 (4.4)	36.4 (4.3)	42.3 (16.2)	3.1 (40.7)	3.7 (-0.7)	4.9 (-2.9)	40.9 (-3.2)	2.8 (-10.4)	3.7 (1.8)	5.0 (1.4)
Hydro (TWh)	6.6 (14.5)	7.0 (5.5)	7.3 (3.9)	0.5 (-10.2)	0.5 (17.7)	0.6 (28.2)	6.2 (-14.3)	0.5 (6.4)	0.5 (-15.2)	0.5 (-16.7)
Nuclear (TWh)	162.0 (-1.7)	148.4 (-8.4)	133.5 (-10.1)	12.1 (-0.2)	12.2 (7.7)	12.4 (19.1)	145.9 (9.3)	10.6 (-12.3)	10.2 (-15.9)	11.1 (-11.0)
Others (Mtoe)	13.6 (5.7)	15.8 (16.7)	17.1 (8.0)	1.4 (13.3)	1.4 (5.4)	1.5 (3.4)	17.9 (4.7)	1.5 (3.2)	1.4 (1.5)	1.5 (1.3)
<b>TPES (Mtoe)</b>	<b>293.8</b> (2.4)	<b>302.1</b> (2.8)	<b>307.5</b> (1.8)	<b>24.2</b> (0.0)	<b>25.6</b> (-2.2)	<b>28.9</b> (-0.5)	<b>303.4</b> (-1.3)	<b>24.1</b> (-0.1)	<b>25.3</b> (-1.0)	<b>28.0</b> (-3.3)
- Non-energy oil excluded	235.8 (1.8)	240.7 (2.1)	247.1 (2.6)	19.2 (2.6)	20.8 (-0.3)	23.7 (0.5)	244.0 (-1.2)	19.5 (1.6)	20.3 (-2.2)	22.7 (-4.3)
- Non-energy oil&coal excluded	212.4 (3.1)	215.4 (1.4)	222.9 (3.5)	17.2 (3.6)	18.8 (0.4)	21.6 (1.2)	219.7 (-1.5)	17.4 (1.6)	18.3 (-2.9)	20.7 (-4.5)

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

## Share of TPES by Sources

(unit: %)

	2016	2017	2018				2019p			
				M10	M11	M12		M10	M11	M12
Coal	27.7	28.5	28.2	27.6	27.3	26.6	27.0	29.6	26.6	24.1
- Coking coal excluded	19.8	20.2	20.3	19.2	19.6	19.4	19.0	21.0	18.5	16.8
Oil	40.0	39.5	38.5	38.8	38.0	36.7	38.7	39.6	39.6	38.6
- non-energy oil excluded	20.3	19.2	18.9	18.3	19.3	18.7	19.2	20.4	20.0	19.8
LNG	15.5	15.7	18.0	16.7	18.7	22.1	17.6	14.9	19.2	23.1
Hydro	0.5	0.5	0.5	0.4	0.4	0.4	0.4	0.5	0.4	0.4
Nuclear	11.6	10.5	9.2	10.7	10.1	9.2	10.2	9.4	8.6	8.4
Others	4.6	5.2	5.6	5.9	5.5	5.0	5.9	6.1	5.6	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)

	2016	2017	2018	2019p			2019p	2019p		
				M10	M11	M12		M10	M11	M12
Industry	135.2 (1.6)	141.9 (5.2)	142.9 (0.7)	11.8 (-0.7)	11.8 (-3.5)	12.6 (-1.0)	142.7 (-0.1)	11.6 (-1.6)	12.0 (1.8)	12.6 (0.5)
Transport	42.3 (6.1)	42.8 (1.2)	43.0 (0.4)	3.2 (-8.7)	3.7 (3.9)	3.8 (4.4)	42.6 (-0.9)	3.6 (10.8)	3.6 (-4.3)	3.7 (-2.3)
Residential-commercial	38.7 (4.6)	39.9 (2.9)	41.3 (3.7)	2.7 (8.1)	3.5 (-3.5)	4.9 (-5.7)	40.5 (-2.2)	2.6 (-2.9)	3.4 (-1.2)	4.7 (-3.2)
Public	5.2 (2.8)	5.5 (4.1)	5.6 (2.0)	0.4 (1.8)	0.4 (-4.0)	0.5 (-5.7)	5.5 (-1.2)	0.4 (8.2)	0.5 (2.2)	0.5 (1.7)
<b>TFC</b>	<b>221.4</b> (3.0)	<b>230.0</b> (3.9)	<b>232.7</b> (1.2)	<b>18.1</b> (-1.0)	<b>19.4</b> (-2.2)	<b>21.7</b> (-1.3)	<b>231.2</b> (-0.6)	<b>18.2</b> (0.6)	<b>19.4</b> (0.1)	<b>21.6</b> (-0.8)
Coal (Mton)	49.0 (-6.8)	50.4 (2.7)	49.2 (-2.3)	4.2 (4.8)	4.4 (-1.6)	4.3 (-2.8)	48.2 (-2.1)	4.2 (-1.0)	4.1 (-7.3)	4.1 (-5.7)
Oil (Mbbl)	899.3 (7.3)	926.6 (3.0)	920.0 (-0.7)	72.7 (-8.6)	75.6 (-4.9)	82.6 (-1.0)	920.3 (0.0)	75.5 (3.8)	78.9 (4.4)	84.3 (2.1)
Electricity (TWh)	497.0 (2.8)	507.7 (2.2)	526.1 (3.6)	40.0 (4.2)	41.9 (1.5)	45.3 (-1.0)	520.5 (-1.1)	40.6 (1.6)	41.1 (-1.9)	44.7 (-1.3)
City gas (Bm <sup>3</sup> )	21.3 (2.3)	22.6 (6.3)	24.3 (7.4)	1.5 (22.6)	2.1 (1.7)	3.0 (-3.9)	23.3 (-4.1)	1.4 (-12.2)	2.0 (-6.4)	2.8 (-5.6)
Heat-others (1 000 toe)	9.4 (-2.2)	11.1 (18.4)	11.8 (6.4)	0.9 (11.4)	1.0 (0.2)	1.2 (-0.2)	11.9 (0.9)	0.8 (-3.3)	1.0 (1.3)	1.2 (-1.9)

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

Source: Monthly Energy Statistics

## Share of the Total Final Consumption by Sources

(unit: %)

	2016	2017	2018	2019p			2019p	2019p		
				M10	M11	M12		M10	M11	M12
Industry	61.0	61.7	61.4	65.3	60.6	57.8	61.7	63.9	61.6	58.5
Transport	19.1	18.6	18.5	17.8	19.2	17.4	18.4	19.6	18.4	17.2
Residential-commercial	17.5	17.3	17.8	14.7	17.9	22.4	17.5	14.2	17.7	21.8
Public	2.4	2.4	2.4	2.2	2.3	2.4	2.4	2.3	2.3	2.5
Final energy	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0
Coal	14.6	14.5	13.9	15.4	14.6	13.1	13.8	15.2	13.9	12.6
Oil	51.6	51.2	50.2	51.2	49.6	48.3	50.4	52.3	51.3	49.4
Electricity	19.3	19.0	19.4	19.0	18.6	17.9	19.4	19.2	18.2	17.8
City gas	10.2	10.5	11.4	9.7	12.1	15.0	11.3	8.7	11.5	14.6
Heat-others	4.2	4.8	5.1	4.7	5.1	5.7	5.1	4.5	5.2	5.6

Note: p means provisional

Source: Monthly Energy Statistics

## Statistics on Energy Production Facilities

	2016	2017	2018				2019		
				M10	M11	M12	M10	M11	M12
Total capacity (GW)	105.9 (8.5)	116.9 (10.4)	119.1 (1.9)	118.0 (1.8)	118.3 (1.7)	119.1 (1.9)	124.0 (5.1)	124.4 (5.2)	125.3 (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 (0.7)	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 (2.0)	37.9 (1.0)	37.9 (-0.0)	39.2 (3.5)	39.5 (4.4)	39.6 (4.5)
Refinery capacity (mil BPSD)	3.1 (0.2)	3.1 (1.3)	3.2 (3.2)	3.2 (3.2)	3.2 (3.2)	3.2 (3.2)	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		
				M10	M11	M12	M10	M11	M12
The number of household demanding city gas (mil)	18.0 (3.4)	18.6 (3.3)	19.1 (3.1)	18.9 (3.3)	19.0 (3.2)	19.1 (3.1)	19.4 (2.7)	19.5 (2.6)	19.7 (2.8)
Registered cars (mil)	21.8 (3.9)	22.5 (3.3)	23.2 (3.0)	23.1 (3.0)	23.2 (3.0)	23.2 (3.0)	23.6 (2.2)	23.6 (2.1)	23.7 (2.0)
- gasoline	10.1 (2.9)	10.4 (2.7)	10.6 (2.5)	10.6 (2.5)	10.6 (2.5)	10.6 (2.5)	10.9 (2.9)	10.9 (3.0)	11.0 (3.1)
- diesel	9.2 (6.4)	9.6 (4.4)	9.9 (3.7)	9.9 (3.8)	9.9 (3.7)	9.9 (3.7)	10.0 (1.0)	10.0 (0.6)	10.0 (0.3)
- LPG	2.2 (-4.0)	2.1 (-2.9)	2.0 (-3.3)	2.0 (-3.3)	2.0 (-3.3)	2.0 (-3.3)	2.0 (-2.1)	2.0 (-1.8)	2.0 (-1.5)
- hybrid	0.2 (37.6)	0.3 (37.6)	0.4 (30.9)	0.4 (31.4)	0.4 (31.1)	0.4 (30.9)	0.5 (27.6)	0.5 (26.2)	0.5 (26.1)

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

Source: Monthly Energy Statistics

# KEEI

MONTHLY **KOREA ENERGY TRENDS** (2020, NO.96)



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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>