

# KEEI

## MONTHLY KOREA ENERGY TRENDS

2023/01

KOREA ENERGY ECONOMICS INSTITUTE

COAL	-8.9%
PETROLEUM	-6.2%
NATURAL GAS	-8.2%
NUCLEAR	6.8%
NEW & RENEWABLE	9.1%
OCTOBER. 2022	

**This publication is derived from Energy Demand & Supply  
Statistics and Energy Price Statistics issued until October 2022**



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## 1. The Economy and the Industry

- **The mining & manufacturing production index went down by 1.2% year-on-year in October, owing to the weak performance of major industries that consume the most energy, except the automobile industry.**
  - The semiconductor production index dropped by 2.2% year-on-year, as the factory utilization rate declined (-13.6%, based on the index) due to the continued slowdown in demand amid concerns over the economic recession as well as lower exports (-17.4%, based on export value).
  - The production index of basic chemical materials fell by 10.0% year-on-year as a result of the slowdown in the petrochemical sector where the factory utilization rate declined (-10.7%, based on the index), while some petrochemical companies conducted routine maintenance, and the ethylene-naphtha spread decreased (-54.5%).
  - The iron & steel production index was down 24.7% year-on-year, as the production has been still disrupted due to damages caused by Typhoon Hinnamnor of the previous month as well as labor strikes at Hyundai Steel's Dangjin plant (Oct. 12-26), amid the ongoing business slowdown.
  - The automobile production index jumped 22.7% year-on-year, owing to the low base effect of the same month last year and alleviated supply chain issues.
- **The service production index increased by 4.8% year-on-year in October, with the service industry showing a steady recovery trend, although the pace of growth was slower.**
  - The wholesale & retail production index went up by 2.6% year-on-year, driven by stronger production especially in the automobile & parts sales businesses, although the growth rate has been down for three consecutive months amid the economic slowdown and lower consumer sentiment index (-16.8%).
  - The food & accommodation production index was up 16.8% year-on-year as a result of the termination of social distancing measures and growing travel demand. The pace of growth, however, was slower partly due to higher inflation and the economic slump.

### ► Major economic and industrial indicators

	2021p			2022p			
		M1~10	M10	M1~10	M8	M9	M10
GDP (trillion won)	1 915.8 (4.1)	1 410.2 (4.1)	- -	1 452.6 (3.0)	- -	493.1 (3.1)	- -
Total export (\$billion, customs clearance basis)	644.4 (25.7)	523.3 (26.0)	55.7 (24.2)	577.1 (10.3)	56.6 (6.5)	57.2 (2.3)	52.4 (-5.8)
Industrial production index (2015=100)	114.3 (7.4)	112.6 (7.5)	114.8 (5.1)	115.8 (2.9)	112.2 (1.5)	111.8 (0.6)	113.4 (-1.2)
Semi-conductors	298.6 (29.4)	289.8 (28.9)	330.6 (37.8)	338.4 (16.8)	324.9 (-0.1)	318.4 (-3.6)	323.3 (-2.2)
Basic chemical products	107.9 (6.7)	108.2 (5.8)	105.1 (4.2)	103.2 (-4.6)	103.0 (-11.1)	95.6 (-13.6)	94.6 (-10.0)
Iron&Steel	97.4 (5.8)	97.2 (6.8)	97.1 (2.3)	91.0 (-6.4)	90.0 (-8.8)	69.1 (-27.5)	73.1 (-24.7)
Cars	88.2 (4.5)	86.8 (5.3)	83.0 (-14.2)	93.9 (8.1)	89.9 (22.5)	97.0 (31.3)	101.8 (22.7)
Service production index (2015=100)	110.9	109.2	111.8	114.8	116.6	117.1	117.2

	(4.3)	(4.1)	(5.1)	(5.1)	(7.4)	(6.0)	(4.8)
Wholesale & Retail	106.0	104.9	108.5	108.0	108.4	109.3	111.3
	(4.0)	(4.0)	(4.3)	(3.0)	(6.5)	(2.8)	(2.6)
Food & Accommodation	80.7	78.4	89.7	94.8	105.5	97.9	104.8
	(1.4)	(-2.9)	(7.4)	(21.0)	(31.7)	(21.5)	(16.8)

Note: Figures are based on the real price of 2015, P means provisional, ( ) is year-on-year growth rates (%)

Source: Bank of Korea, Korea International Trade Association, Korea Statistical Information Service

## 2. Energy Prices<sup>1</sup>

### Global Energy Prices

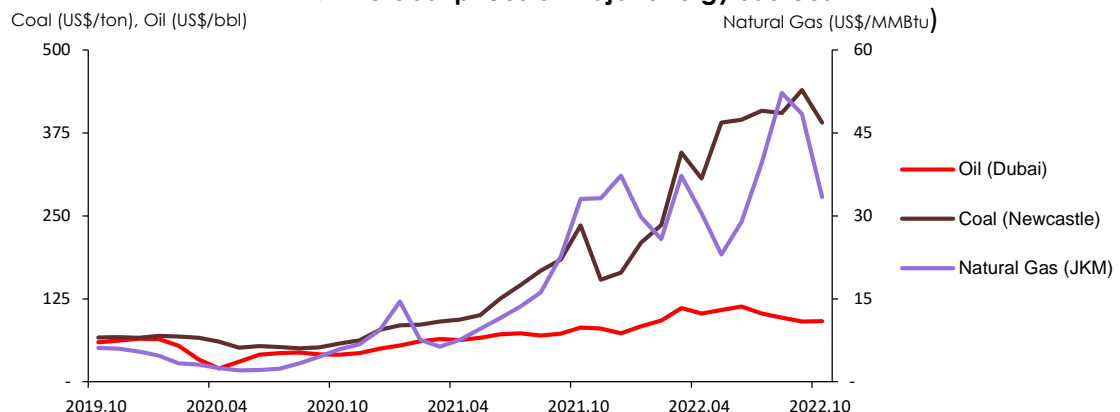
- **Global oil price increased in October, after the OPEC+ agreed to cut their crude oil production, although the increase was limited due to China's lockdown policy.**
  - The OPEC+ nations agreed on October 5 to cut their output by 2 million barrel a day compared to the August quota starting from November.
  - Global steam coal price decreased, which was affected by concerns that China's zero-COVID policy could slow down the economy and the news of coal production ramp-up in China.
  - Global natural gas price fell sharply, as Europe had a high level of inventory, and the unstable supply situation was eased with stronger supply.

#### ► Global energy prices

	2020	2021				2022		
			M8	M9	M10	M8	M9	M10
Crude oil (US\$/bbl)	42.2 (-33.5)	69.3 (64.2)	69.5 (-4.7)	72.6 (4.5)	81.6 (12.4)	96.6 (-6.3)	91.0 (-5.9)	91.2 (0.2)
Coal (US\$/ton)	60.2 (-22.8)	136.4 (126.5)	167.2 (14.6)	184.1 (10.1)	235.4 (27.9)	404.9 (-0.8)	439.4 (8.5)	390.4 (-11.1)
Natural gas (US\$/MMBtu)								
TTF	3.2 (-32.3)	16.2 (398.7)	15.4 (23.2)	22.8 (47.9)	31.0 (36.2)	69.9 (36.2)	59.0 (-15.5)	39.0 (-33.9)
JKM	4.2 (-25.2)	17.8 (326.0)	16.2 (18.5)	22.7 (40.1)	33.1 (46.1)	52.2 (32.2)	48.4 (-7.3)	33.4 (-31.0)

Note: Oil and coal prices are based on Dubai oil and Newcastle thermal coal in Australia, respectively. ( ) is month-on-month growth rates (%)  
Source: Korea National Oil Corporation, World Bank, CME Group

#### ► Global prices of major energy sources



<sup>1</sup> This report presents the energy price trend of the month for which energy consumption data is available. For more on the latest price trend, see *Energy Supply and Demand Brief*

## Domestic energy prices

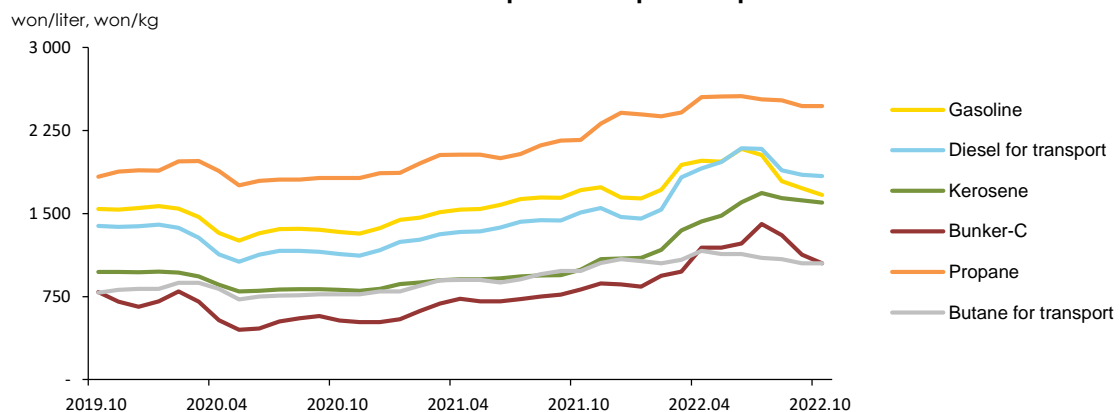
- **The prices of gasoline and diesel at gas stations dropped by 3.7% and 0.6% respectively in October from the previous month, affected by lower prices in the global market.**
  - The domestic prices of gasoline and diesel at gas stations have been down for four months in a row, as their global prices have maintained a downward trend since mid-June.
  - Bunker-C oil price fell by 6.9% in October from the previous month and by 29.2% from the same month last year in line with the global price trend.
  - Propane and butane prices remained flat compared to the previous month, as the supply price of LPG was fixed in the domestic market.
  - The relative price of propane in terms of city gas (propane/city gas) for industrial customers fell by 5.2% month-on-month to 0.85.

### ► Domestic petroleum product prices

	2020	2021				2022		
			M8	M9	M10	M8	M9	M10
Gasoline (won/liter)	1 381.2 (-6.2)	1 591.1 (15.2)	1 645.8 (1.0)	1 642.7 (-0.2)	1 712.3 (4.2)	1 792.2 (-11.7)	1 730.0 (-3.5)	1 666.7 (-3.7)
Diesel for transport (won/liter)	1 189.5 (-11.3)	1 392.0 (17.0)	1 440.5 (1.1)	1 437.2 (-0.2)	1 509.3 (5.0)	1 889.3 (-9.4)	1 850.2 (-2.1)	1 838.3 (-0.6)
Bunker-C (won/liter)	572.9 (-23.0)	732.2 (27.8)	750.1 (3.0)	768.2 (2.4)	813.4 (5.9)	1 305.3 (-7.1)	1 128.6 (-13.5)	1 050.8 (-6.9)
Propane (won/kg)	1 850.3 (-1.0)	2 093.4 (13.1)	2 114.5 (3.8)	2 160.1 (2.2)	2 163.4 (0.2)	2 522.4 (-0.4)	2 471.2 (-2.0)	2 469.8 (-0.1)
Butane for transport (won/liter)	790.8 (-1.9)	932.3 (17.9)	952.3 (5.1)	980.5 (3.0)	981.2 (0.1)	1 088.8 (-1.0)	1 051.4 (-3.4)	1 049.5 (-0.2)

Note: Gasoline, diesel and butane prices are based on charging station prices, Bunker-C oil price is based on dealership prices, propane price is based on sales shop prices. ( ) is month-on-month growth rates (%)  
Source: Korea National Oil Corporation

### ► Domestic petroleum product prices





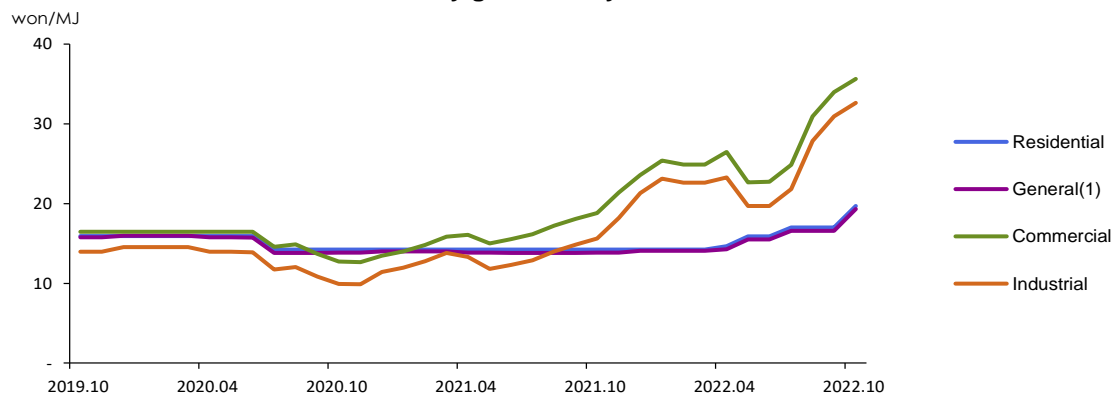
□ **City gas rates increased in all end-use sectors in October, as the unit settlement price and base material cost were raised.**

- The wholesale city gas rates for residential and general customers went up by 17.2% and 19.4% respectively from the previous month.
- The wholesale city gas rates for office heating and industrial customers rose by 5.0% and 5.6% respectively from the previous month.

□ **Electric rates increased in all end-use sectors in October, reflecting the rises in base fuel cost and energy charge.**

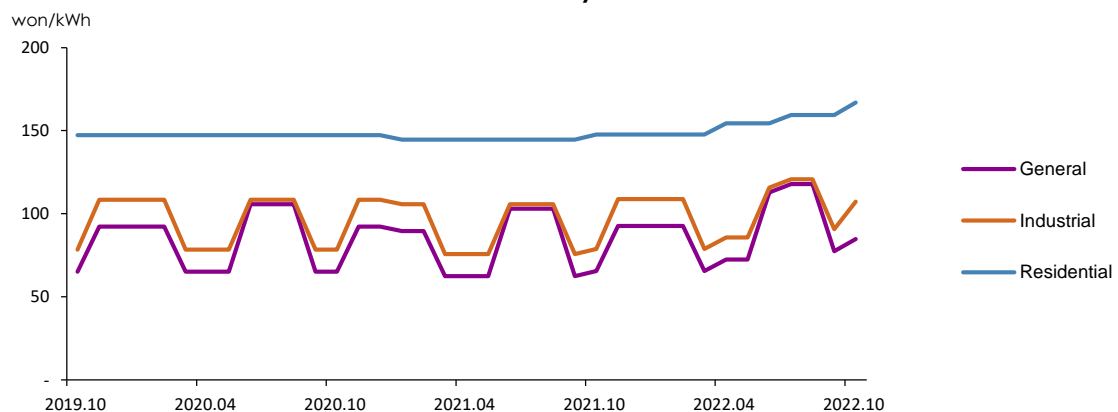
- Korea Electric Power Corporation (KEPCO) raised the base fuel cost by 4.9 won/kWh in April and another 4.9 won/kWh in October.
- Energy charge was raised by 2.5 won/kWh, which is intended to reflect accumulated factors that cause fuel cost to increase.
- Although the fuel cost pass-through adjustment rate was calculated as 52.3 won/kWh for 4Q, it was fixed at 5.0 won/kWh because of the upper and lower limits of rate adjustment.

► **City gas rates by end-use sectors**



Source: Seoul City Gas

► **Electric rates by end-use sectors**



Note: The electric rates by end-use sectors refer to the prices for residential use ([high voltage], the 2<sup>nd</sup> stage price), general use ([A], low voltage) and Industrial use ([B], high voltage B middle load), including Climate Environmental Price  
Source: KEPCO

### 3. Energy Supply

- **The total energy import volume decreased by 6.1% year-on-year in October, as the import of major energy sources declined except gas.**
  - The import volume of crude oil dropped by 6.6% year-on-year, because the domestic consumption of petroleum products decreased partly due to the slowdown in the petrochemical sector.
  - The import volume of petroleum products went down by 8.4% year-on-year, especially naphtha, owing to the base effect and weak demand.
  - The import volume of bituminous coal fell by 9.6% year-on-year, as its domestic demand decreased, while global steam coal price surged in the previous month.
  - The gas import volume was up 5.2% year-on-year, which seems to be the result of stockpiling ahead of winter. The accumulated gas import volume went up by 3.5% year-on-year during the stockpiling season (Mar-Oct).
  - Energy's share of the total import value stayed at around 30%, as global energy prices remained high. Also, the export value of energy products recorded \$5.1 billion (CIF, Korea International Trade Association), posting a year-on-year growth of 14.2%, due to higher unit export prices.

#### ► Import and domestic production of energy

	2021p			2022p			
		M1~10	M10	M1~10	M8	M9	M10
Import volume							
Crude oil (Mbbbl)	960.1	792.9	85.1	860.8	96.9	84.6	79.5
	(-2.1)	(-4.0)	(3.6)	(8.6)	(17.0)	(7.6)	(-6.6)
Petroleum product (Mbbbl)	392.4	323.0	34.0	305.0	28.4	26.7	31.1
	(13.0)	(9.4)	(67.3)	(-5.6)	(-18.2)	(-23.3)	(-8.4)
Bituminous coal (Mton)	119.6	99.2	8.8	99.6	11.8	10.2	8.0
	(1.7)	(1.6)	(-7.5)	(0.4)	(14.1)	(-17.5)	(-9.6)
Anthracite (Mton)	6.5	5.3	0.5	4.6	0.5	0.4	0.2
	(3.0)	(4.0)	(22.0)	(-13.4)	(-32.9)	(-10.1)	(-63.1)
LNG (Mton)	45.9	38.2	3.9	38.1	3.8	4.2	4.1
	(14.9)	(18.9)	(1.3)	(-0.3)	(9.0)	(13.9)	(5.2)
Import volume (Mtoe)	324.3	268.3	27.4	275.2	30.0	27.5	25.7
	(3.9)	(3.0)	(7.0)	(2.6)	(8.7)	(-3.0)	(-6.1)
Import value (billion US\$, CIF)	139.5	108.6	13.7	184.7	20.7	19.8	17.8
	(58.4)	(46.8)	(111.8)	(70.1)	(68.7)	(59.5)	(30.1)
Energy share of total import value (%)	22.5	21.8	25.4	30.1	31.4	32.5	30.1
Foreign energy dependence (%)	94.6	94.4	95.2	94.3	94.3	93.8	94.4
Domestic production							
Hydropower (TWh)	3.1	2.7	0.2	3.1	0.7	0.5	0.3
	(-21.2)	(-22.5)	(-6.9)	(16.1)	(141.2)	(63.8)	(17.4)
Anthracite (Mton)	0.9	0.7	0.1	0.7	0.1	0.1	0.1
	(-11.9)	(-13.0)	(-3.8)	(-8.0)	-	(-1.6)	(-14.7)
Natural gas (Mton)	0.0	0.0	0.0	-	-	-	-
	(-70.3)	(-68.8)	-	(-100.0)	(-100.0)	(-100.0)	(-100.0)
Renewable energy (Mtoe)	14.6	12.1	1.1	12.1	1.2	1.2	1.3
	(15.3)	(16.5)	(8.1)	(0.5)	(1.7)	(4.0)	(9.1)

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

## 4. Energy Consumption

□ **Total Primary Energy Demand (TPED) fell by 4.4% year-on-year in October, as the use of major energy sources declined except nuclear energy.**

- Coal use dropped by 8.9% year-on-year, as it declined in the power generation sector due to higher generation cost and growing nuclear & renewable generation, and as its industrial use also kept falling, especially in the steelmaking sector, affected by damages done by typhoons and labor strikes, amid the economic slowdown.
- Petroleum use was down 6.2% year-on-year, as it fell in the industrial sector (-12.7%), especially naphtha, owing to the weak performance of the petrochemical sector and routine maintenance at some facilities, although it grew fast (8.7%) in the transport sector partly due to base effect.
- Gas use went down by 8.2% year-on-year, as it continued to decline in the industrial and power generation sectors as a result of the economic slowdown and higher fuel cost of gas-fired generation, though gas use increased in buildings amid the increased number of heating degree days (11.0%) and the recovery of the service industry.

□ **Total Final Consumption (TFC) declined by 3.7% year-on-year in October, as industrial energy use decreased steadily, while the transport and building sectors used more energy.**

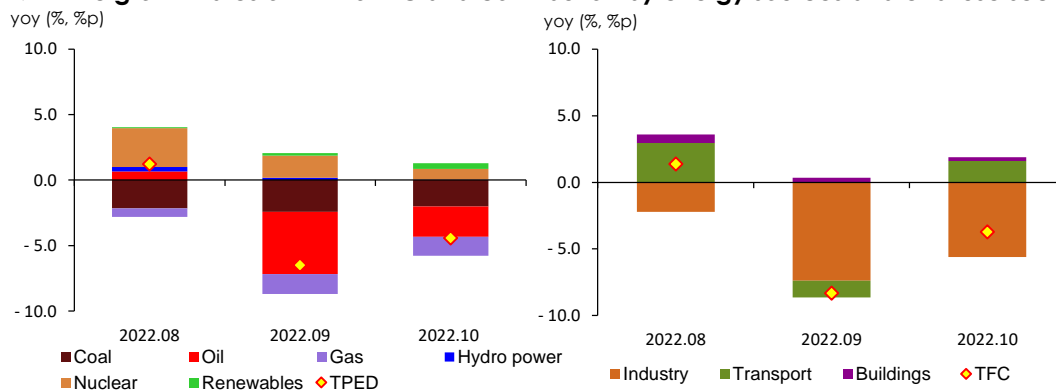
- Industrial energy use fell by 8.6% year-on-year, as it continued to fall in the petrochemical and primary metals sectors as a result of the slowdown in the overall manufacturing sector, even though the number of work days increased (0.5 day), and energy use rebounded in the fabricated metals sector.
- Transport energy use posted a year-on-year growth of 9.4%, owing to the low base effect of the same month last year when the fuel tax cut (2021.11) was announced and steadily growing mobility demand after the termination of social distancing rules.
- Energy use in buildings went up by 1.5% year-on-year, and the commercial sector led the growth amid the increased number of heating degree days and the recovery of the service industry (production index 4.8%).

### ► Energy consumption

	2021p			2022p			
		M1~10	M10	M1~10	M8	M9	M10
<b>TPED (Mtoe)</b>	<b>303.7</b>	<b>249.0</b>	<b>24.1</b>	<b>248.9</b>	<b>25.7</b>	<b>22.5</b>	<b>23.0</b>
	(5.3)	(4.8)	(7.0)	(-0.0)	(1.2)	(-6.5)	(-4.4)
<b>TFC (Mtoe)</b>	<b>215.3</b>	<b>176.1</b>	<b>16.8</b>	<b>176.1</b>	<b>17.6</b>	<b>15.7</b>	<b>16.2</b>
	(5.7)	(5.2)	(6.1)	(-0.0)	(1.4)	(-8.3)	(-3.7)
- Feedstock excluded	140.5	114.5	10.6	115.6	11.5	10.2	10.8
	(3.8)	(4.2)	(4.1)	(1.0)	(5.5)	(-3.8)	(1.1)

Note: p means provisional, ( ) is year-on-year growth rates  
Source: Korea Energy Economics Institute

## ► The growth rates of TPED & TFC and contribution by energy sources and end-use sectors



## 5. Coal

□ Coal use decreased by 8.9% year-on-year in October, as it continued to decline in the industrial and power generation sectors.

- Industrial coal use has maintained the downward trend that began in July, as coal use declined in the primary metals (iron & steel) sector due to weak demand, damages caused by typhoons and labor strikes, although it grew in the cement sector.
- Coal use for power generation decreased, even though the voluntary cap on coal power plants was put off, as coal-fired generation has been steadily falling since May partly due to the growth in nuclear and renewable generation.

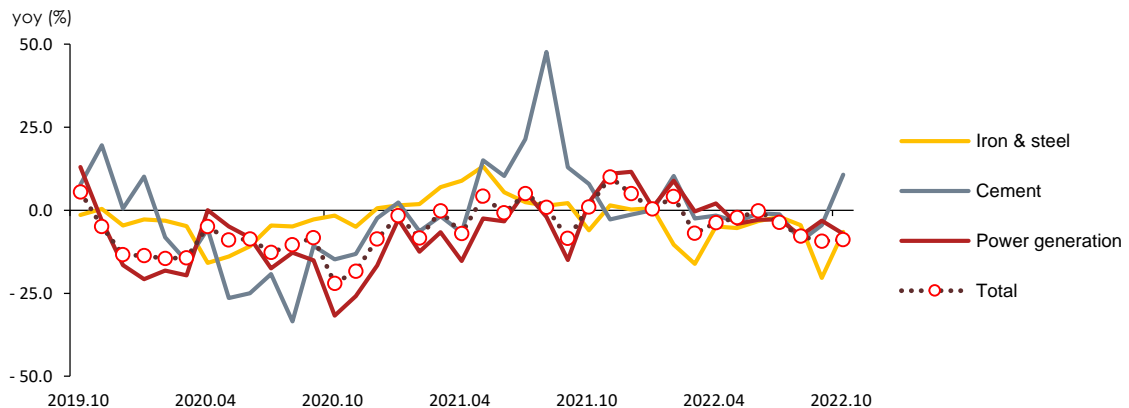
### ► Coal consumption

	2021p			2022p			
		M1~10	M10	M1~10	M8	M9	M10
<b>Coal (Mton)</b>	<b>119.8</b>	<b>98.8</b>	<b>9.4</b>	<b>94.9</b>	<b>10.8</b>	<b>9.0</b>	<b>8.5</b>
	(-0.1)	(-1.6)	(1.0)	(-3.9)	(-7.8)	(-9.3)	(-8.9)
Industry	50.4	41.6	4.1	38.8	4.0	3.5	3.6
	(3.6)	(3.8)	(-0.2)	(-6.7)	(-8.2)	(-17.7)	(-11.1)
-Coking-coal	25.5	21.2	2.0	19.5	2.1	1.7	1.9
	(3.0)	(3.7)	(-6.2)	(-8.2)	(-5.2)	(-21.5)	(-6.6)
Buildings	0.4	0.3	0.1	0.2	0.0	0.0	0.1
	(-12.0)	(-16.5)	(-20.0)	(-20.7)	(12.8)	(3.1)	(-7.9)
Power generation	68.9	57.0	5.2	55.8	6.7	5.5	4.8
	(-2.5)	(-5.0)	(2.3)	(-1.9)	(-7.7)	(-3.2)	(-7.1)

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

Source: Korea Energy Economics Institute

### ► The growth rate of coal consumption by use



## 6. Petroleum

□ Petroleum use fell by 5.7% year-on-year in October, driven by a sharp drop in industrial petroleum use, although it grew in the transport sector.

- Petroleum use plunged in the petrochemical sector due to the sluggish business environment and routine maintenance, and accordingly, the total industrial petroleum use fell by 12.7% year-on-year.
- Petroleum use grew by 8.7% year-on-year in the transport sector, owing to the growing travel demand and base effect of the previous year, when the fuel tax was reduced.
- Petroleum use fell by 5.2% in the building sector, with the residential (-3.4%) and commercial (-14.2%) sectors leading the downward slide, which was affected by higher fuel prices.

### ► Petroleum product consumption by end-use sectors

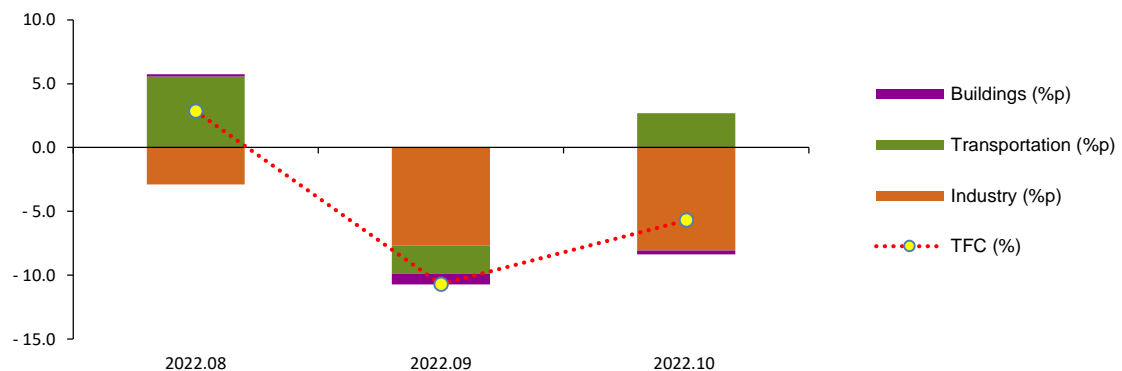
	2021p			2022p			
		M1~10	M10	M1~10	M8	M9	M10
<b>TFC (Mbbbl)</b>	<b>808.3</b>	<b>663.8</b>	<b>66.4</b>	<b>661.9</b>	<b>69.4</b>	<b>61.1</b>	<b>62.6</b>
	(7.5)	(5.9)	(10.1)	(-0.3)	(2.8)	(-10.7)	(-5.7)
Industry	505.8	416.4	42.1	415.6	41.7	38.5	36.8
	(9.4)	(6.5)	(14.0)	(-0.2)	(-4.5)	(-12.0)	(-12.7)
- Naphtha	372.5	306.3	30.7	299.7	30.8	27.8	25.7
	(11.6)	(7.4)	(20.5)	(-2.1)	(-6.3)	(-14.3)	(-16.3)
Transport	256.5	211.0	20.5	211.5	25.1	20.1	22.3
	(4.5)	(4.6)	(2.3)	(0.2)	(17.6)	(-7.1)	(8.7)
Building	46.1	36.4	3.8	34.8	2.6	2.5	3.6
	(3.0)	(5.6)	(13.9)	(-4.4)	(4.7)	(-18.3)	(-5.2)
<b>Power generation (Mbbbl)</b>	<b>4.08</b>	<b>3.39</b>	<b>0.44</b>	<b>4.33</b>	<b>0.45</b>	<b>0.32</b>	<b>0.31</b>
	(6.6)	(25.9)	(80.5)	(27.6)	(108.2)	(-30.8)	(-29.3)

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

Source: Korea Energy Economics Institute

### ► The growth rates of petroleum product consumption & contribution(%p) by end-use sectors

yoy(% , %p)



## 7. Gas

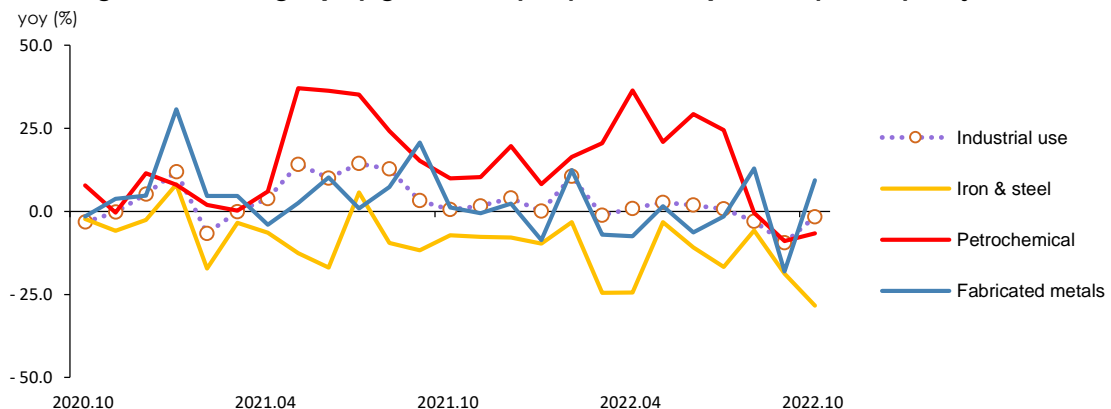
- **Gas use decreased by 8.2% year-on-year in October, as it declined in both of the power generation and industrial sectors, although it increased in the building sector.**
  - Gas use for power generation dropped faster, owing to a surge in fuel cost of gas-fired generation (147.1%) and growing power generation from other energy sources (nuclear 6.8%, renewable & other energy 30.3%), while electricity demand has been growing at slower rates of around 1%.
  - The final use of gas has been down for three consecutive months in the industrial sector; it declined in the petrochemical sector due to facility maintenance and lower demand, while it declined in the primary metals sector amid the business slowdown and the shutdown of some steel plants hit by Typhoon Hinnamnor in the previous month.
  - Gas use in buildings increased in both of the residential and commercial sectors amid the increased number of heating degree days, even though city gas rates for residential and general users were raised, after they had been fixed. Especially, it has grown in the commercial sector at the rate of around 17% for three months in a row along with the continued recovery of the service industry.

### ► Natural gas and city gas consumption

	2021p			2022p			
		M1~10	M10	M1~10	M8	M9	M10
<b>Natural gas (Mton)</b>	<b>45.9</b>	<b>36.8</b>	<b>3.3</b>	<b>36.1</b>	<b>3.0</b>	<b>2.6</b>	<b>3.0</b>
	(10.6)	(14.0)	(7.6)	(-2.1)	(-4.0)	(-9.5)	(-8.2)
Power generation	23.2	19.4	1.8	18.3	1.8	1.5	1.6
	(16.4)	(21.8)	(14.2)	(-5.5)	(-5.9)	(-11.0)	(-11.8)
City gas production	19.1	14.6	1.3	15.1	0.9	0.9	1.2
	(5.9)	(7.4)	(4.3)	(3.5)	(2.8)	(-1.2)	(-3.2)
Industry	1.6	1.3	0.1	1.3	0.1	0.1	0.1
	(-0.2)	(-2.9)	(-15.3)	(1.3)	(1.5)	(-21.1)	(26.2)
<b>City gas (Bm<sup>3</sup>)</b>	<b>24.8</b>	<b>19.4</b>	<b>1.5</b>	<b>20.2</b>	<b>1.3</b>	<b>1.2</b>	<b>1.5</b>
	(3.0)	(3.6)	(-2.3)	(3.6)	(0.3)	(-1.1)	(2.3)
Industry (incl. Natural gas)	9.7	7.9	0.7	7.9	0.7	0.7	0.7
	(5.4)	(5.9)	(0.5)	(0.3)	(-3.0)	(-9.5)	(-1.6)
Buildings	14.1	10.7	0.7	11.4	0.5	0.5	0.7
	(2.0)	(2.7)	(-5.2)	(6.6)	(6.1)	(13.2)	(7.3)

Note: p means provisional, ( ) is year-on-year growth rates (%)  
Source: Korea Energy Economics Institute

### ► The growth rate of gas(city gas+directly imported LNG)consumption by major industries



## 8. Electricity

- Electricity use grew by mere 1.2% year-on-year in October, despite growing demand in the building sector, as it was stagnant in the industrial sector.
  - Industrial electricity use was almost flat, posting a year-on-year growth of 0.3%, which was affected by plunging demand in the iron & steel sector and a slowdown in the petrochemical industry.
  - Electricity use in buildings went up by 1.7% year-on-year, led by the commercial sector, although it declined in the residential sector.

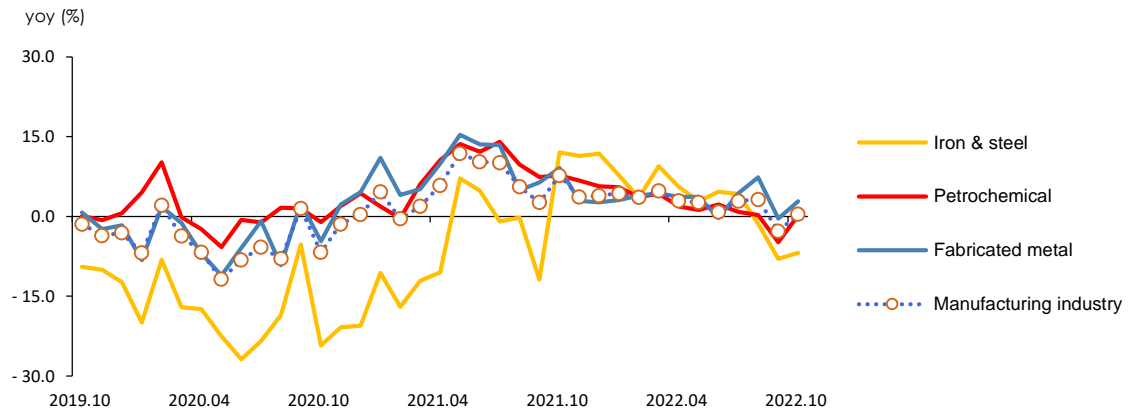
### ► Electricity consumption by end-use sectors

	2021p	M1~10		M10		2022p		M1~10		M8		M9		M10	
Electricity (TWh)	521.0	433.2		40.8		448.1		49.1		44.3		41.3			
	(4.8)	(4.8)		(7.3)		(3.4)		(2.6)		(1.3)		(1.2)			
Industry	269.6	223.7		21.9		229.1		23.3		22.0		22.0			
	(5.8)	(6.2)		(8.1)		(2.4)		(2.6)		(-2.8)		(0.3)			
Transport	3.4	2.8		0.3		3.4		0.4		0.3		0.4			
	(6.2)	(6.0)		(12.0)		(20.8)		(14.9)		(18.2)		(32.6)			
Buildings	248.1	206.7		18.6		215.6		25.4		22.0		18.9			
	(3.6)	(3.4)		(6.3)		(4.3)		(2.4)		(5.4)		(1.7)			
Residential	77.6	65.4		5.9		66.3		8.7		7.2		5.9			
	(4.7)	(5.3)		(5.5)		(1.5)		(-3.3)		(3.6)		(-0.7)			
Commercial	139.9	116.0		10.4		123.1		13.9		12.3		10.7			
	(2.7)	(1.9)		(6.7)		(6.1)		(6.0)		(7.1)		(3.1)			

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

Source: Korea Energy Economics Institute

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

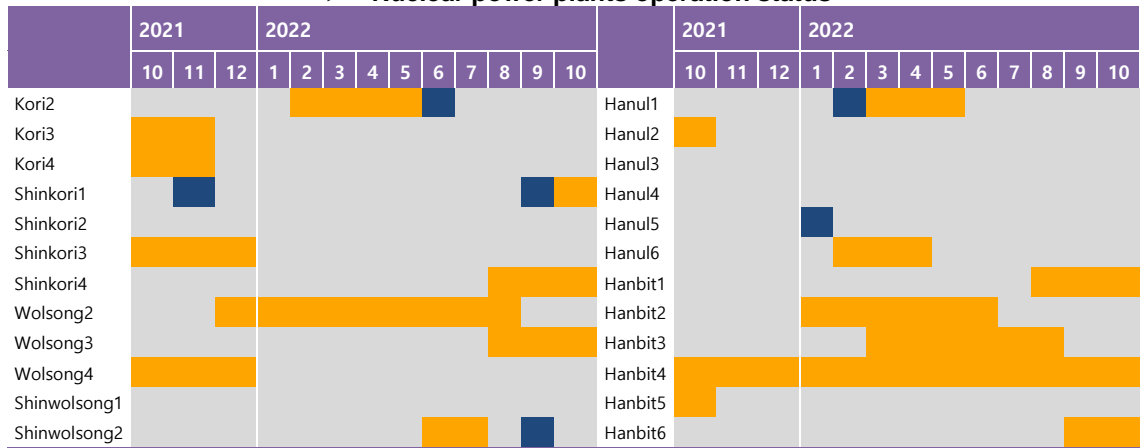




## 9. Nuclear

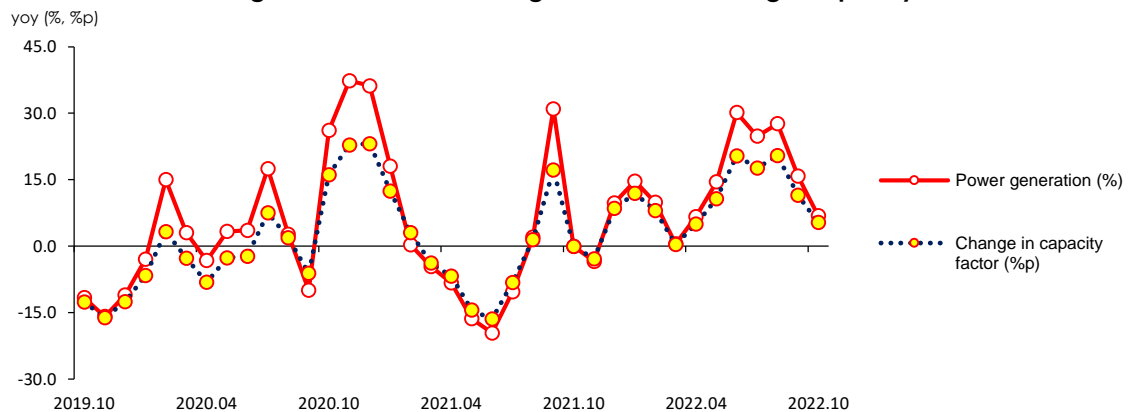
- **The total nuclear generation rose by 6.8% year-on-year in October, as its capacity factor increased due to a drop in preventive maintenance per day.**
  - The nuclear capacity factor has been decreasing, after it reached the low-to-mid 90% range, and it rose by around 5%p year-on-year to 83% in October, as the number of reactors under planned preventive maintenance fell by one, while there was no case of the unscheduled shutdown.
  - Nuclear energy's share of the total power generation rose by about 2%p to 31.4% on a year-on-year basis.

► **Nuclear power plants operation status**



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

► **The growth rate of nuclear generation & average capacity factor**



Note: Capacity factor = Ratio of actual power generated to possible power generation when utilizing 100% of available facility. Facility capacity values are based on end-of-the-month data

## 10. Heat and Renewable energy

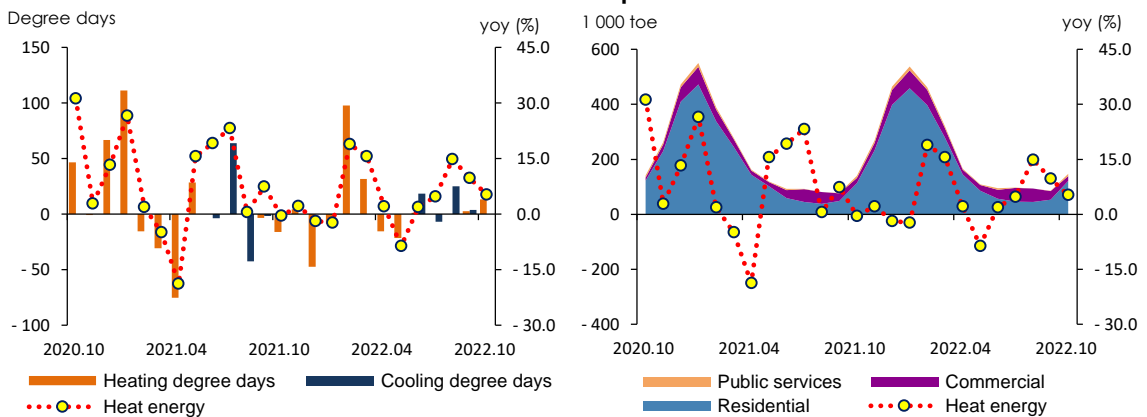
□ **Heat energy use posted a year-on-year growth of 5.3% in October, with the residential sector driving the growth, while it declined in the commercial sector.**

- Heat energy use rose by 7.1% year-on-year in the residential sector, owing to the increased number of households getting heat from district heating under the 5<sup>th</sup> Collective Energy Supply Master Plan, low base effect of the same month last year (-7.2%) and increased number of heating degree days (11.0%).
- Heat energy use dropped by 6.6% year-on-year in the commercial sector, despite the growth in service production, due to the high base effect of the same month last year (65.7%).

□ **Renewable & other energy use increased by 9.1% year-on-year in October, and the power generation sector led the growth.**

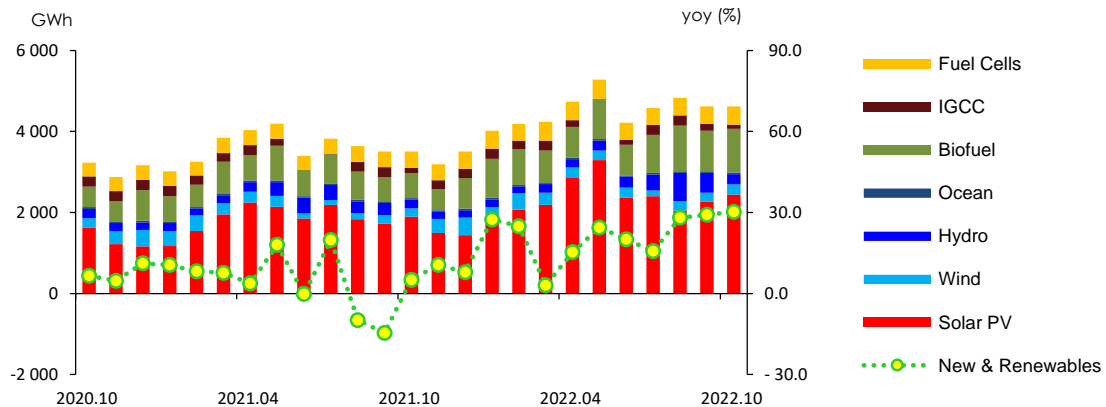
- Renewable & other energy generation<sup>2</sup> jumped 30.3% year-on-year, led by solar PV, bioenergy and wind energy.
- The final use of renewable & other energy was up 0.4% year-on-year, as it increased in the transport sector.

### ► Heat energy consumption by sector and the growth rate of total heat energy consumption



<sup>2</sup> The power generation from and installed capacity of renewable & other energy sources are based on the data from KEPCO's 'The Monthly Report on Electric Power Statistics'. In the current Energy Balance report, renewable & other energy and hydropower (including pumped storage) data are collected in separate categories, and therefore, hydropower is not included in the renewable & other energy category.

► **New & renewable energy generation by source and the growth rate of total new & renewable energy generation**



## 11. Industry

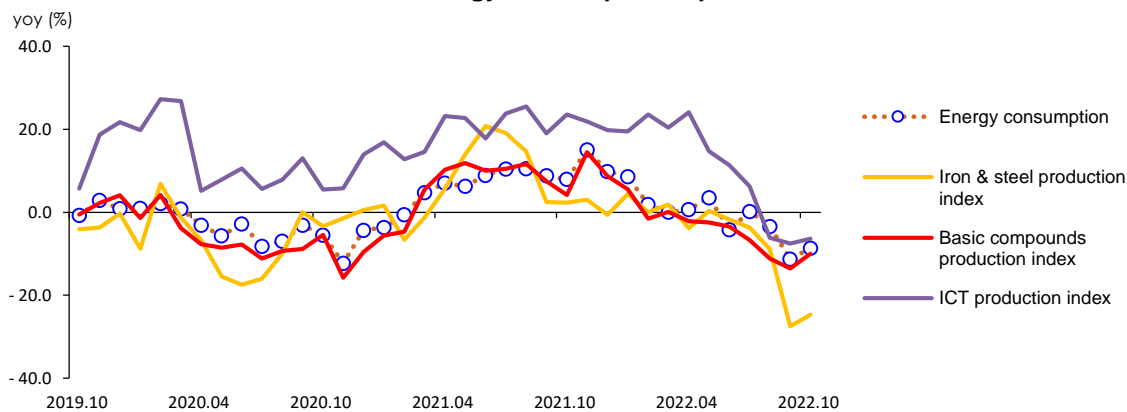
- Industrial energy use went down by 8.6% year-on-year in October, as energy use decreased in the petrochemical and primary metals sector.
  - Energy use declined in the petrochemical and primary metals sectors due to the slowdown in the overall manufacturing industry and damages caused by typhoons, although the number of work days increased (0.5 day, yoy), and energy use increased in the fabricated metals sector.

### ► Industrial energy consumption

	2021p			2022p			
		M1~10	M10	M1~10	M8	M9	M10
<b>Industry (Mtoe)</b>	<b>132.6</b>	<b>109.3</b>	<b>10.9</b>	<b>107.9</b>	<b>10.9</b>	<b>9.9</b>	<b>9.9</b>
	(6.9)	(5.9)	(8.0)	(-1.3)	(-3.4)	(-11.3)	(-8.6)
Petrochemical	66.2	54.5	5.4	54.9	5.5	5.0	4.8
	(9.6)	(6.6)	(13.2)	(0.7)	(-4.6)	(-11.3)	(-11.6)
- Naphtha	45.7	37.5	3.8	36.7	3.8	3.4	3.2
	(11.6)	(7.4)	(20.5)	(-2.1)	(-6.3)	(-14.3)	(-16.3)
Iron & Steel	27.9	23.1	2.3	21.5	2.3	1.9	2.1
	(1.7)	(1.9)	(-4.9)	(-7.1)	(-4.2)	(-19.1)	(-8.0)
- Coking coal	17.8	14.8	1.4	13.6	1.4	1.2	1.3
	(3.0)	(3.7)	(-6.2)	(-8.2)	(-5.2)	(-21.5)	(-6.6)
Fabricated metal	12.8	10.5	1.0	10.8	1.1	1.0	1.1
	(8.3)	(9.4)	(8.1)	(2.2)	(8.0)	(-2.7)	(3.9)
Share of feedstock (%)	56.3	56.3	56.4	55.9	56.7	54.7	54.4

Note: p means provisional, ( ) is year-on-year growth rates (%)  
 Source: Korea Energy Economics Institute

### ► Industrial energy consumption & production index



## 12. Transport

□ Transport energy use posted a year-on-year growth of 9.4% in October, as it was up over 10% in the road transport sector.

- In the road transport sector, energy use increased by 10.4% year-on-year, due to the growing mobility demand and base effect of the previous year, when the fuel tax was lowered.
- In the domestic aviation sector, energy use decreased by 2.0%, due to the high base effect of the previous year, when air traffic increased with the expectation of relaxed disease prevention measures.
- In the domestic navigation sector, energy use fell by 10.3%, especially bunker-C oil, as coastal cargo volume dropped by 6.7% on a year-on-year basis.

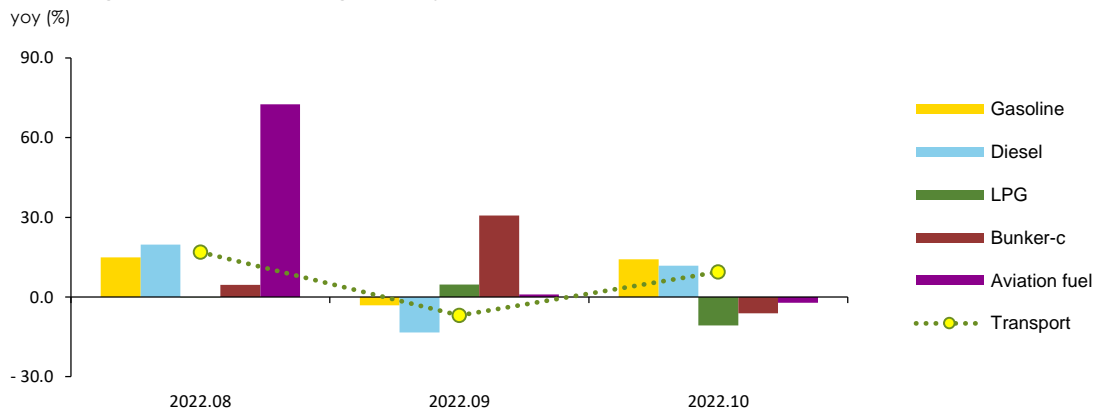
### ► The growth rate of petroleum consumption in the transport sector

	2021p			2022p			
		M1~10	M10	M1~10	M8	M9	M10
Transport (Mtoe)	36.25	29.85	2.88	29.95	3.56	2.85	3.15
	(4.4)	(4.4)	(1.8)	(0.3)	(16.8)	(-7.0)	(9.4)
Road	33.94	27.93	2.65	27.86	3.31	2.64	2.93
	(1.5)	(1.5)	(-2.7)	(-0.3)	(15.0)	(-7.8)	(10.4)
Domestic navigation	0.38	0.30	0.05	0.42	0.04	0.04	0.04
	(13.7)	(9.7)	(58.8)	(39.8)	(12.3)	(23.3)	(-10.3)
Domestic aviation	1.62	1.36	0.16	1.41	0.18	0.14	0.15
	(159.3)	(151.3)	(214.1)	(3.5)	(72.4)	(1.0)	(-2.0)
Rail	0.30	0.25	0.02	0.25	0.03	0.02	0.03
	(-5.4)	(-4.6)	(1.8)	(-0.7)	(-2.0)	(-2.0)	(7.2)

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

Source: Korea Energy Economics Institute

### ► The growth rates of energy & major petroleum product consumption in the transport sector



## 13. Buildings

□ **Energy use in buildings rose by 1.5% year-on-year in October, affected by weather conditions and the recovery of service businesses.**

- In the residential sector, energy use went up by 0.4% year-on-year, as the chilly autumn weather drove up the demand for heating.
- In the commercial sector, energy use has been up for ten consecutive months (2.5%) and grew by over 3% compared to the same month in 2019, before the COVID19 hit, as the service production picked up especially in the food & accommodation sector, which consumes a large amount of energy.

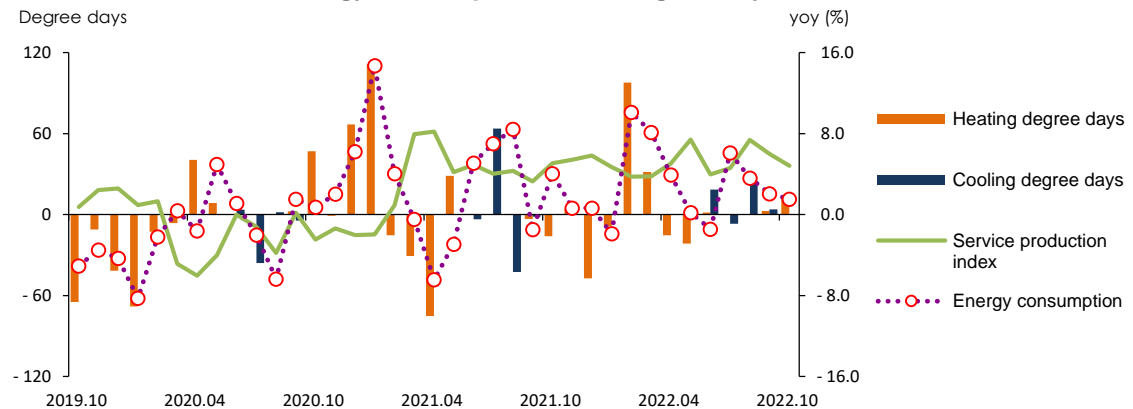
### ► Energy consumption in buildings

	2021p			2022p			
		M1~10	M10	M1~10	M8	M9	M10
<b>Buildings (Mtoe)</b>	<b>46.4</b>	<b>37.0</b>	<b>3.0</b>	<b>38.2</b>	<b>3.2</b>	<b>2.9</b>	<b>3.1</b>
	(3.1)	(3.7)	(4.0)	(3.4)	(3.6)	(2.1)	(1.5)
Residential	22.8	17.7	1.3	18.2	1.1	1.1	1.3
	(2.2)	(3.3)	(-0.5)	(2.7)	(-0.9)	(0.7)	(0.4)
Commercial	18.5	15.1	1.3	15.8	1.7	1.5	1.4
	(4.3)	(4.1)	(8.4)	(4.8)	(6.8)	(4.4)	(2.5)
Public:others	5.1	4.2	0.4	4.2	0.4	0.4	0.4
	(2.8)	(3.9)	(5.8)	(1.4)	(4.0)	(-2.5)	(1.9)
Heating degree days	2 404.7	1 613.7	121.4	1 715.2	-	2.6	134.8
	(-1.8)	(-0.0)	(-11.6)	(6.3)	-	-	(11.0)
Cooling degree days	101.3	101.3	-	141.9	59.0	3.8	-
	(18.9)	(18.9)	-	(40.1)	(73.5)	-	-
Service production index (2015=100)	110.9	109.2	111.8	114.8	116.6	117.1	117.2
	(4.3)	(4.1)	(5.1)	(5.1)	(7.4)	(6.0)	(4.8)

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

Source: Korea Energy Economics Institute, Korea Meteorological Administration, Korean Statistical Information Service

### ► Energy consumption in buildings & major indicators



## 14. Power Generation

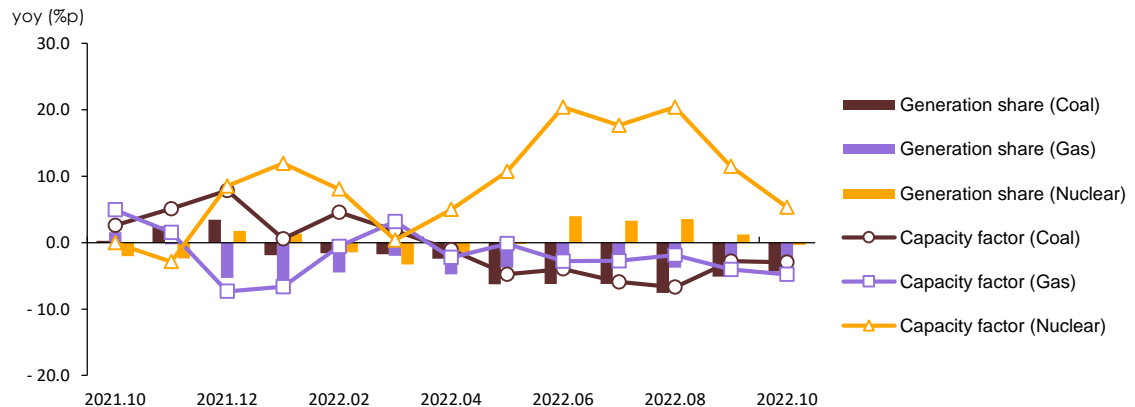
- The total power generation and fuel input declined by 0.9% and 2.7% respectively in October compared to the same month last year, despite growing electricity use.
  - Coal and gas-fired generation rapidly decreased, while nuclear and renewable & other energy generation rapidly increased.
  - In the power generation mix, the share of nuclear energy and renewable & other energy rose by 2.3%p and 2.6%p respectively to 31.4% and 11.4%, while that of coal and gas fell by 1.7%p and 2.9%p respectively to 31.7% and 25.2%.

### ► Power generation by energy sources

	2021p			2022p			
		M1~10	M10	M1~10	M8	M9	M10
<b>Power Generation (TWh)</b>	<b>576.7</b>	<b>476.5</b>	<b>46.1</b>	<b>492.6</b>	<b>54.0</b>	<b>46.3</b>	<b>45.7</b>
	(4.5)	(4.6)	(6.9)	(3.4)	(4.2)	(2.0)	(-0.9)
Coal	198.0	163.5	15.4	159.3	18.9	15.6	14.5
	(0.8)	(-1.5)	(7.8)	(-2.6)	(-9.3)	(-5.0)	(-5.9)
Oil	2.4	2.0	0.2	1.7	0.1	0.1	0.1
	(4.4)	(27.3)	(117.8)	(-15.9)	(3.6)	(-56.6)	(-49.2)
Gas	168.3	140.7	13.0	134.0	13.2	11.4	11.5
	(15.4)	(20.8)	(13.1)	(-4.8)	(-4.1)	(-9.4)	(-11.2)
Nuclear	158.0	127.9	13.5	146.8	16.3	14.1	14.4
	(-1.4)	(-2.4)	(-0.0)	(14.8)	(27.6)	(15.8)	(6.8)
Renewables	50.1	42.3	4.0	50.8	5.4	5.1	5.2
	(5.5)	(4.8)	(6.1)	(20.1)	(26.5)	(28.1)	(28.8)
Baseload	356.0	291.5	28.9	306.2	35.2	29.7	28.9
	(-0.2)	(-1.9)	(4.0)	(5.0)	(4.8)	(3.9)	(0.1)

Notes: p means provisional, ( ) is year-on-year growth rates (%)  
Source: Korea Electric Power Corporation

### ► Power generation by major energy sources



## <Appendix> Major indicators & statistics of energy supply and demand

### Major Statistics & Indicators of the Economy

	2020	2021					2022			
			M1~10	M8	M9	M10	M1~10	M8	M9	M10
GDP (trillion won)	1 839.5 (-0.7)	1 915.8 (4.1)	1 410.2 (4.1)	-	478.2 (4.0)	-	1 452.6 (3.0)	-	493.1 (3.1)	-
Private consumption	851.0 (-4.8)	882.5 (3.7)	654.1 (2.9)	-	221.3 -	-	684.5 (4.7)	-	233.9 -	-
Facilities investment	166.6 (7.2)	181.6 (9.0)	135.7 (10.8)	-	42.4 -	-	131.5 (-3.1)	-	44.1 -	-
Construction investment	269.3 (1.5)	265.0 (-1.6)	193.2 (-1.6)	-	65.8 -	-	186.1 (-3.7)	-	64.4 -	-
Consumer price index (2015=100)	105.4	102.5	102.2	102.8	103.2	103.4	107.4	108.6	108.9	109.2
USD to KRW exchange rate (won)	1 180.3	1 144.0	1 136.1	1 160.3	1 169.5	1 182.8	1 283.7	1 318.4	1 391.6	1 426.7
Benchmark rate (%)	0.7	0.6	0.6	0.8	0.8	0.8	1.9	2.5	2.5	3.0
Coincident composite index (2015=100)	112.5	116.9	116.5	117.6	117.8	118.1	121.8	123.1	123.4	123.7
Mining & manufacturing production index (2015=100)	106.4	114.3	112.6	110.5	111.1	114.8	115.8	112.2	111.8	113.4
Manufacturing operation ratio index (2015=100)	95.3	99.8	98.4	95.8	96.6	99.9	101.0	98.0	97.8	100.0
Average temperature	13.0	13.3	15.0	24.8	21.3	15.1	14.7	25.3	21.0	14.0
- year-on-year difference	- 0.4	0.3	0.3	- 1.7	1.2	1.5	- 0.3	0.5	- 0.4	- 1.2
Heating degree days	2 448.0 (3.3)	2 404.7 (-1.8)	1 613.7 (-0.0)	-	-	121.4 (-11.6)	1 715.2 (6.3)	-	2.6 -	134.8 (11.0)
Cooling degree days	85.2 (-29.2)	101.3 (18.9)	101.3 (18.9)	34.0 (-55.6)	-	-	141.9 (40.1)	59.0 (73.5)	3.8 -	-
Energy intensity	0.16 (-2.8)	0.16 (1.1)	0.16 (0.5)	-	0.16 (2.8)	-	0.16 (-2.5)	-	0.15 (-4.5)	-
Per capita consumption										
Oil (bbl)	15.0 (-4.2)	16.1 (7.4)	13.2 (5.8)	1.3 (11.1)	1.4 (10.3)	1.3 (11.7)	13.1 (-0.8)	1.4 (2.0)	1.2 (-11.9)	1.2 (-5.9)
Electricity (MWh)	9.6 (-2.2)	10.1 (5.0)	8.4 (5.0)	0.9 (10.1)	0.8 (-0.6)	0.8 (7.5)	8.7 (3.7)	1.0 (2.8)	0.9 (1.5)	0.8 (1.4)
City gas (1 000 m <sup>3</sup> )	0.4 (-2.1)	0.4 (3.5)	0.3 (4.5)	0.0 (2.5)	0.0 (-2.0)	0.0 (-0.8)	0.4 (4.1)	0.0 (0.4)	0.0 (2.6)	0.0 (0.4)
Total energy (toe)	5.6 (-3.6)	5.9 (5.5)	4.8 (5.0)	0.5 (5.8)	0.5 (5.6)	0.5 (7.2)	4.8 (0.2)	0.5 (1.4)	0.4 (-6.3)	0.4 (-4.2)

Note: Figures are based on the real price of 2015, p means provisional, ( ) is year-on-year growth rates (%)

Source: Bank of Korea, Korea Statistical Information Service, Korea Meteorological Administration, Korea Energy Economics Institute



## The Index of Production & Operating Ratio by Sectors

	2020	2021					2022			
			M1~10	M8	M9	M10	M1~10	M8	M9	M10
Industrial production index										
All industry	107.4 (-1.0)	112.7 (4.9)	110.7 (4.6)	108.7 (6.0)	111.3 (1.5)	112.4 (4.9)	115.1 (4.0)	113.9 (4.8)	114.9 (3.2)	115.4 (2.7)
Mining & manufacturing	106.4 (-0.3)	114.3 (7.4)	112.6 (7.5)	110.5 (10.8)	111.1 (-1.0)	114.8 (5.1)	115.8 (2.9)	112.2 (1.5)	111.8 (0.6)	113.4 (-1.2)
Semiconductor	230.7 (22.7)	298.6 (29.4)	289.8 (28.9)	325.2 (36.9)	330.2 (30.5)	330.6 (37.8)	338.4 (16.8)	324.9 (-0.1)	318.4 (-3.6)	323.3 (-2.2)
Iron & steel	92.1 (-6.3)	97.4 (5.8)	97.2 (6.8)	98.7 (14.6)	95.3 (2.5)	97.1 (2.3)	91.0 (-6.4)	90.0 (-8.8)	69.1 (-27.5)	73.1 (-24.7)
Cement	87.2 (-7.5)	91.6 (5.0)	89.9 (5.3)	84.5 (15.6)	82.9 (-7.7)	96.0 (0.8)	89.0 (-1.1)	86.8 (2.7)	85.4 (3.0)	98.7 (2.8)
Basic compound	101.1 (-7.1)	107.9 (6.7)	108.2 (5.8)	115.9 (11.7)	110.6 (7.5)	105.1 (4.2)	103.2 (-4.6)	103.0 (-11.1)	95.6 (-13.6)	94.6 (-10.0)
Transport equipment	84.4 (-9.6)	88.2 (4.5)	86.8 (5.3)	73.4 (6.8)	73.9 (-24.7)	83.0 (-14.2)	93.9 (8.1)	89.9 (22.5)	97.0 (31.3)	101.8 (22.7)
Electric & electronic	108.5 (-1.0)	115.2 (6.1)	112.5 (6.4)	110.1 (10.0)	109.2 (-8.6)	116.0 (3.0)	114.8 (2.1)	111.5 (1.3)	115.6 (5.9)	114.6 (-1.2)
Service	106.2 (-2.0)	110.9 (4.3)	109.2 (4.1)	108.6 (4.3)	110.5 (3.3)	111.8 (5.1)	114.8 (5.1)	116.6 (7.4)	117.1 (6.0)	117.2 (4.8)
Wholesale and retail	101.9 (-2.6)	106.0 (4.0)	104.9 (4.0)	101.8 (5.3)	106.3 (0.3)	108.5 (4.3)	108.0 (3.0)	108.4 (6.5)	109.3 (2.8)	111.3 (2.6)
Food & Accommodation	79.6 (-18.4)	80.7 (1.4)	78.4 (-2.9)	80.1 (-5.3)	80.6 (11.3)	89.7 (7.4)	94.8 (21.0)	105.5 (31.7)	97.9 (21.5)	104.8 (16.8)
Production output										
Iron & steel - Pig iron	45 359.6 (-4.5)	46 440.5 (2.4)	38 585.2 (3.2)	4 022.7 (-1.7)	3 818.2 (-3.7)	3 754.5 (-4.8)	35 857.9 (-7.1)	3 853.9 (-4.2)	3 169.0 (-17.0)	3 417.4 (-9.0)
Iron & steel - Crude steel	67 078.8 (-6.1)	70 418.0 (5.0)	58 648.8 (5.9)	6 103.8 (5.7)	5 440.8 (-5.3)	5 781.8 (-1.3)	55 806.4 (-4.8)	5 933.5 (-2.8)	4 614.6 (-15.2)	5 151.1 (-10.9)
Petrochemical - Basic petrochemicals	30 542.7 (-4.0)	34 434.5 (12.7)	28 485.3 (9.7)	3 130.6 (21.0)	3 021.5 (19.9)	2 939.8 (20.0)	27 744.1 (-2.6)	2 764.3 (-11.7)	2 552.9 (-15.5)	2 395.1 (-18.5)
Petrochemical - Intermediate raw material	15 369.0 (-4.0)	15 764.6 (2.6)	13 196.0 (1.7)	1 445.4 (14.5)	1 395.8 (11.0)	1 250.4 (3.2)	11 678.3 (-11.5)	1 195.2 (-17.3)	1 116.8 (-20.0)	1 041.5 (-16.7)
Petrochemical - 3 major products	21 268.9 (-1.5)	23 197.8 (9.1)	19 161.0 (7.5)	2 061.2 (14.0)	1 987.5 (14.8)	1 883.5 (6.4)	18 639.9 (-2.7)	1 820.9 (-11.7)	1 674.2 (-15.8)	1 521.3 (-19.2)
The number of cars	3 506.8 (-11.2)	3 462.4 (-1.3)	2 840.3 (-1.6)	234.9 (0.7)	229.4 (-33.0)	263.7 (-21.6)	3 023.3 (6.4)	284.4 (21.1)	307.7 (34.1)	327.5 (24.2)

Note: p means provisional

Source: Korea Statistical Information Service, Korea Iron & Steel Association, Korea Petrochemical Industry Association

## International Energy Prices

	2020	2021					2022			
			M1~10	M8	M9	M10	M1~10	M8	M9	M10
Crude oil (USD/bbl)										
WTI	39.4 (-30.9)	67.9 (72.4)	66.5 (72.9)	67.7 (59.7)	71.5 (80.5)	81.2 (105.4)	97.0 (45.9)	91.5 (35.1)	83.8 (17.1)	87.0 (7.2)
Dubai	42.2 (-33.6)	69.3 (64.1)	67.8 (63.9)	69.5 (58.0)	72.6 (75.0)	81.6 (100.7)	99.3 (46.5)	96.6 (39.0)	91.0 (25.2)	91.2 (11.7)
Brent	43.2 (-32.7)	70.8 (63.8)	69.4 (63.5)	70.5 (56.6)	74.9 (78.8)	83.8 (101.7)	101.5 (46.2)	97.7 (38.6)	90.6 (21.0)	93.6 (11.7)
Unit value of import (C&F)	44.8 (-31.7)	70.2 (56.9)	68.1 (52.0)	73.6 (64.9)	73.9 (66.1)	79.0 (82.3)	104.0 (52.8)	108.2 (47.0)	105.2 (42.4)	101.2 (28.1)
LNG										
TTF (USD/MMBTU)	3.2 (-32.5)	16.1 (396.9)	12.8 (352.7)	15.4 (438.5)	22.8 (477.4)	31.0 (535.0)	41.2 (222.6)	69.9 (353.2)	59.0 (159.1)	39.0 (25.7)
JKM (USD/MMBTU)	4.2 (-25.4)	17.8 (324.9)	14.3 (319.7)	16.2 (384.9)	22.7 (397.0)	33.1 (465.1)	34.9 (144.3)	52.2 (223.1)	48.4 (113.6)	33.4 (0.9)
Import price(Japan) (USD/MMBTU)	8.3 (-21.3)	10.8 (29.5)	9.9 (15.6)	10.8 (70.3)	11.4 (94.4)	12.4 (100.3)	18.1 (83.6)	21.2 (96.4)	23.7 (107.5)	21.8 (76.5)
Unit value of import (USD/ton, CIF)	390.2 (-22.8)	550.7 (41.2)	491.1 (22.4)	535.0 (68.5)	571.0 (116.8)	668.7 (142.6)	1 012.8 (106.2)	1 198.8 (124.1)	1 470.5 (157.5)	1 247.2 (86.5)
Bituminous coal (USD/ton)										
From Australia	60.3 (-22.8)	136.0 (125.8)	131.4 (125.8)	167.2 (231.2)	184.1 (254.0)	235.4 (309.7)	352.6 (168.3)	404.9 (142.2)	439.4 (138.7)	390.4 (65.8)
Unit value of import (CIF)	77.7 (-22.9)	115.1 (48.1)	101.7 (28.9)	114.8 (62.4)	126.2 (84.5)	142.3 (102.1)	230.6 (126.7)	242.5 (111.2)	203.1 (60.9)	230.1 (61.7)
Petroleum product (USD/bbl)										
Gasoline	46.7 (-35.7)	80.3 (72.2)	78.1 (70.0)	81.0 (67.9)	84.1 (78.0)	98.7 (114.6)	119.5 (52.9)	110.9 (37.0)	97.8 (16.4)	94.9 (-3.8)
Kerosene	44.7 (-42.1)	75.1 (67.9)	72.9 (66.6)	74.1 (71.0)	79.9 (103.1)	93.1 (123.5)	128.8 (76.8)	132.2 (78.5)	120.9 (51.3)	123.4 (32.6)
Diesel	49.4 (-36.8)	77.6 (57.2)	75.4 (54.0)	76.5 (54.8)	83.0 (87.7)	95.5 (117.5)	138.2 (83.3)	139.7 (82.5)	129.1 (55.7)	137.3 (43.7)
Bunker-C	39.2 (-31.9)	64.4 (64.3)	63.6 (67.6)	65.2 (54.3)	73.5 (85.4)	77.6 (88.2)	86.3 (35.7)	78.2 (20.0)	66.2 (-9.9)	62.2 (-19.8)
Propane	397.1 (-8.6)	647.9 (63.2)	611.0 (57.3)	660.0 (80.8)	665.0 (82.2)	800.0 (113.3)	758.5 (24.1)	670.0 (1.5)	650.0 (-2.3)	590.0 (-26.3)
Butane	403.8 (-8.6)	629.6 (55.9)	597.5 (51.5)	655.0 (89.9)	665.0 (87.3)	795.0 (109.2)	755.0 (26.4)	660.0 (0.8)	630.0 (-5.3)	560.0 (-29.6)
Naphtha	40.5 (-28.9)	70.6 (74.6)	68.6 (72.7)	70.7 (64.8)	75.0 (74.5)	84.3 (101.9)	85.8 (25.1)	72.0 (1.8)	67.1 (-10.6)	71.4 (-15.3)

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: Korea National Oil Corporation, World Bank, Korea Energy Economics Institute, CME Group, Korea International Trade Association

## Domestic Energy Prices

	2020	2021					2022			
			M1~10	M8	M9	M10	M1~10	M8	M9	M10
Petroleum product										
Gasoline (won/liter)	1 381.6 (-6.1)	1 590.5 (15.1)	1 570.2 (13.0)	1 645.8 (20.9)	1 642.7 (21.5)	1 712.3 (28.4)	1 853.5 (18.0)	1 792.2 (8.9)	1 730.0 (5.3)	1 666.7 (-2.7)
Diesel (won/liter)	1 189.8 (-11.2)	1 391.3 (16.9)	1 367.7 (14.1)	1 440.5 (23.8)	1 437.2 (24.5)	1 509.3 (33.1)	1 844.0 (34.8)	1 889.3 (31.2)	1 850.2 (28.7)	1 838.3 (21.8)
Bunker-C (won/liter)	573.6 (-22.9)	731.7 (27.6)	705.4 (20.7)	750.1 (35.5)	768.2 (33.6)	813.4 (52.6)	1 125.4 (59.5)	1 305.3 (74.0)	1 128.6 (46.9)	1 050.8 (29.2)
Propane (won/kg)	1 850.7 (-1.0)	2 092.6 (13.1)	2 038.8 (10.1)	2 114.5 (17.1)	2 160.1 (18.6)	2 163.4 (18.7)	2 485.0 (21.9)	2 522.4 (19.3)	2 471.2 (14.4)	2 469.8 (14.2)
Butane (won/liter)	791.1 (-1.9)	931.9 (17.8)	904.1 (14.1)	952.3 (25.2)	980.5 (27.1)	981.2 (27.2)	1 092.7 (20.9)	1 088.8 (14.3)	1 051.4 (7.2)	1 049.5 (7.0)
City gas(won/MJ)										
Residential	15.1 (-3.6)	14.2 (-5.7)	14.2 (-6.7)	14.2 -	14.2 -	14.2 -	16.0 (12.3)	17.0 (19.5)	17.0 (19.5)	19.7 (38.4)
General(1)	14.9 (-4.7)	13.9 (-6.5)	13.9 (-7.8)	13.8 (-0.0)	13.8 (-0.0)	13.8 -	15.7 (12.9)	16.6 (20.2)	16.6 (20.2)	19.3 (39.7)
Commercial	15.1 (-6.4)	17.2 (14.2)	16.2 (4.5)	17.2 (15.7)	18.1 (32.2)	18.8 (47.8)	27.2 (68.6)	30.9 (79.4)	34.0 (87.9)	35.6 (89.4)
Industry	12.6 (-8.4)	14.4 (14.2)	13.3 (2.5)	14.0 (16.0)	14.8 (36.9)	15.6 (57.0)	24.4 (83.3)	27.9 (99.3)	30.9 (108.4)	32.6 (109.1)
Heat(won/Mcal)										
Residential	66.2 (0.7)	65.2 (-1.4)	65.2 (-1.7)	65.2 -	65.2 -	65.2 -	71.0 (8.8)	74.5 (14.2)	74.5 (14.2)	89.9 (37.8)
Commercial	85.9 (0.7)	84.7 (-1.4)	84.7 (-1.7)	84.7 -	84.7 -	84.7 -	92.2 (8.8)	96.7 (14.2)	96.7 (14.2)	116.7 (37.8)
Public	75.1 (0.7)	74.0 (-1.4)	74.0 (-1.7)	74.0 -	74.0 -	74.0 -	80.5 (8.8)	84.5 (14.2)	84.5 (14.2)	101.9 (37.8)
Electricity(won/kWh)										
Residential	147.3 -	142.3 (-3.4)	142.3 (-3.4)	142.3 (-3.4)	142.3 (-3.4)	142.3 (-3.4)	146.5 (2.9)	147.2 (3.4)	147.2 (3.4)	154.6 (8.6)
General	84.4 -	79.4 (-5.9)	77.8 (-6.0)	100.7 (-4.7)	60.2 (-7.7)	60.2 (-7.7)	81.9 (5.4)	105.6 (4.9)	65.1 (8.1)	72.5 (20.4)
Industry	96.0 -	91.0 (-5.2)	88.5 (-5.3)	103.5 (-4.6)	73.5 (-6.4)	73.5 (-6.4)	93.6 (5.8)	108.4 (4.7)	78.4 (6.7)	95.0 (29.3)

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

2.Electricity prices are based on Residential(High-voltage, 201~400kWh), General((A) I , Low-voltage), Industry((B), High-voltageB, optionII mid-load)  
Source: Korea National Oil Corporation, Seoul City Gas, Korean District Heating Corporation, Korea Electric Power Corporation

## Total Primary Energy Demand (TPED)

	2020	2021p					2022p			
			M1~10	M8	M9	M10	M1~10	M8	M9	M10
Coal (Mton)	119.9 (-12.3)	119.8 (-0.1)	98.8 (-1.6)	11.7 (0.9)	10.0 (-8.5)	9.4 (1.0)	94.9 (-3.9)	10.8 (-7.8)	9.0 (-9.3)	8.5 (-8.9)
- Coking coal excluded	95.1 (-14.0)	94.3 (-0.9)	77.6 (-2.9)	9.5 (0.8)	7.8 (-11.1)	7.3 (3.2)	75.5 (-2.8)	8.7 (-8.4)	7.4 (-6.0)	6.6 (-9.5)
Oil (Mbbl)	775.7 (-4.0)	831.8 (7.2)	683.6 (5.6)	69.6 (10.9)	70.7 (10.1)	68.6 (11.5)	676.7 (-1.0)	70.9 (1.8)	62.1 (-12.1)	64.4 (-6.2)
LNG (Mton)	41.5 (1.2)	45.9 (10.6)	36.8 (14.0)	3.1 (4.3)	2.9 (4.3)	3.3 (7.6)	36.1 (-2.1)	3.0 (-4.0)	2.6 (-9.5)	3.0 (-8.2)
Hydro (TWh)	3.9 (39.0)	3.1 (-21.2)	2.7 (-22.5)	0.3 (-64.1)	0.3 (-52.7)	0.2 (-6.9)	3.1 (16.1)	0.7 (141.2)	0.5 (63.8)	0.3 (17.4)
Nuclear (TWh)	160.2 (9.8)	158.0 (-1.4)	127.9 (-2.4)	12.8 (2.0)	12.2 (31.0)	13.5 (-0.0)	146.8 (14.8)	16.3 (27.6)	14.1 (15.8)	14.4 (6.8)
Others (Mtoe)	12.6 (9.4)	14.6 (15.3)	12.1 (16.5)	1.2 (16.4)	1.2 (10.7)	1.1 (8.1)	12.1 (0.5)	1.2 (1.7)	1.2 (4.0)	1.3 (9.1)
<b>TPED (Mtoe)</b>	<b>288.4</b> (-3.4)	<b>303.7</b> (5.3)	<b>249.0</b> (4.8)	<b>25.3</b> (5.6)	<b>24.0</b> (5.4)	<b>24.1</b> (7.0)	<b>248.9</b> (-0.0)	<b>25.7</b> (1.2)	<b>22.5</b> (-6.5)	<b>23.0</b> (-4.4)

Note: p means provisional, ( ) is year-on-year growth rates (%)  
Source: Korea Energy Economics Institute

## Share of TPED by Sources

(unit: %)

	2020	2021p					2022p			
			M1~10	M8	M9	M10	M1~10	M8	M9	M10
Coal	25.2	24.0	24.1	27.8	25.2	23.6	23.2	25.4	24.3	22.6
- Coking coal excluded	19.2	18.1	18.2	21.9	18.9	17.7	17.7	19.8	19.1	16.8
Oil	39.3	40.1	40.2	40.3	43.0	41.9	39.8	40.5	40.9	41.4
LNG	18.8	19.7	19.3	15.9	15.9	17.9	18.9	15.1	15.3	17.2
Hydro	0.3	0.2	0.2	0.2	0.3	0.2	0.3	0.6	0.5	0.2
Nuclear	11.8	11.1	10.9	10.7	10.8	11.9	12.6	13.5	13.4	13.3
Others	4.4	4.8	4.9	4.7	4.8	4.8	4.9	4.7	5.4	5.4
<b>TPED</b>	<b>100.0</b>	<b>100.0</b>	<b>100.0</b>	<b>100.0</b>	<b>100.0</b>	<b>100.0</b>	<b>100.0</b>	<b>100.0</b>	<b>100.0</b>	<b>100.0</b>

Note: p means provisional  
Source: Korea Energy Economics Institute

## Total Final Consumption (TFC)

(Unit: Mtoe)

	2020	2021p	2022p				2022p			
			M1~10	M8	M9	M10	M1~10	M8	M9	M10
Industry	124.0 (-4.1)	132.6 (6.9)	109.3 (5.9)	11.2 (10.5)	11.2 (8.8)	10.9 (8.0)	107.9 (-1.3)	10.9 (-3.4)	9.9 (-11.3)	9.9 (-8.6)
Transport	34.7 (-6.6)	36.3 (4.4)	29.8 (4.4)	3.0 (1.9)	3.1 (5.9)	2.9 (1.8)	29.9 (0.3)	3.6 (16.8)	2.9 (-7.0)	3.1 (9.4)
Residential	22.4 (4.2)	22.8 (2.2)	17.7 (3.3)	1.1 (11.8)	1.1 (-5.4)	1.3 (-0.5)	18.2 (2.7)	1.1 (-0.9)	1.1 (0.7)	1.3 (0.4)
commercial	17.7 (-5.3)	18.5 (4.3)	15.1 (4.1)	1.6 (7.1)	1.4 (1.8)	1.3 (8.4)	15.8 (4.8)	1.7 (6.8)	1.5 (4.4)	1.4 (2.5)
Public	5.0 (-3.4)	5.1 (2.8)	4.2 (3.9)	0.4 (4.1)	0.4 (-1.6)	0.4 (5.8)	4.2 (1.4)	0.4 (4.0)	0.4 (-2.5)	0.4 (1.9)
<b>TFC</b>	<b>203.8</b> (-3.8)	<b>215.3</b> (5.7)	<b>176.1</b> (5.2)	<b>17.4</b> (8.5)	<b>17.1</b> (6.4)	<b>16.8</b> (6.1)	<b>176.1</b> (-0.0)	<b>17.6</b> (1.4)	<b>15.7</b> (-8.3)	<b>16.2</b> (-3.7)
Coal (Mton)	49.2 (-5.3)	50.8 (3.4)	41.9 (3.6)	4.4 (6.0)	4.3 (1.9)	4.2 (-0.7)	39.1 (-6.7)	4.0 (-8.1)	3.5 (-17.6)	3.7 (-11.1)
Oil (Mbbbl)	752.3 (-5.5)	808.3 (7.5)	663.8 (5.9)	67.5 (10.0)	68.4 (12.3)	66.4 (10.1)	661.9 (-0.3)	69.4 (2.8)	61.1 (-10.7)	62.6 (-5.7)
- Non-energy oil excluded	336.2 (-5.3)	347.2 (3.3)	284.3 (4.1)	26.8 (1.9)	28.4 (6.0)	28.4 (4.4)	280.3 (-1.4)	31.0 (15.8)	26.5 (-6.8)	29.7 (4.3)
Electricity (TWh)	497.3 (-2.0)	521.0 (4.8)	433.2 (4.8)	47.8 (9.9)	43.8 (-0.8)	40.8 (7.3)	448.1 (3.4)	49.1 (2.6)	44.3 (1.3)	41.3 (1.2)
City gas (Bm³)	22.0 (-2.0)	22.7 (3.3)	17.8 (4.3)	1.1 (2.3)	1.1 (-2.2)	1.3 (-1.0)	18.5 (3.8)	1.1 (0.1)	1.1 (2.4)	1.3 (0.2)
Heat-others (1 000 toe)	9.3 (3.1)	9.9 (6.4)	7.8 (7.2)	0.6 (10.3)	0.6 (5.6)	0.7 (3.2)	8.0 (1.8)	0.7 (2.4)	0.6 (-1.0)	0.7 (1.4)

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

Source: Korea Energy Economics Institute

## Share of the Total Final Consumption by Sources

(unit: %)

	2020	2021p	2022p				2022p			
			M1~10	M8	M9	M10	M1~10	M8	M9	M10
Industry	60.9	61.6	62.1	64.7	65.5	64.8	61.3	61.6	63.3	61.4
Transport	17.0	16.8	16.9	17.5	17.9	17.1	17.0	20.2	18.2	19.5
Residential	11.0	10.6	10.1	6.6	6.2	8.0	10.3	6.5	6.8	8.3
Commercial	8.7	8.6	8.6	9.0	8.2	7.9	9.0	9.5	9.3	8.4
Public	2.4	2.4	2.4	2.2	2.2	2.2	2.4	2.3	2.3	2.3
<b>TFC</b>	<b>100.0</b>	<b>100.0</b>	<b>100.0</b>	<b>100.0</b>	<b>100.0</b>	<b>100.0</b>	<b>100.0</b>	<b>100.0</b>	<b>100.0</b>	<b>100.0</b>
Coal	15.3	14.9	15.1	15.8	15.7	15.7	14.1	14.4	14.2	14.6
Oil	47.0	47.8	48.0	49.2	51.1	50.5	47.7	50.4	49.5	49.7
- Non-energy oil excluded	22.0	21.4	21.4	20.4	22.1	22.4	21.1	23.6	22.3	24.5
Electricity	21.0	20.8	21.1	23.7	22.0	20.9	21.9	24.0	24.3	22.0
City gas	12.1	11.8	11.4	7.6	7.4	9.0	11.8	7.5	8.0	9.5
Heat-others	4.5	4.6	4.4	3.7	3.7	4.0	4.5	3.7	4.0	4.2

Note: p means provisional

Source: Korea Energy Economics Institute

## Statistics on Energy Production Facilities

	2019	2020	2021	2022			M8	M9	M10
				M8	M9	M10			
Total capacity (GW)	125.3 (5.2)	129.2 (3.1)	134.0 (3.7)	131.6 (2.8)	132.1 (2.8)	133.5 (4.1)	134.7 (2.3)	134.8 (2.0)	136.0 (1.9)
Nuclear	23.3 (6.4)	23.3 -	23.3 -	23.3 -	23.3 -	23.3 -	23.3 -	23.3 -	23.3 -
Bituminous coal	36.4 (0.1)	36.5 (0.1)	36.9 (1.3)	36.4 (-0.2)	36.4 (-0.2)	37.4 (2.7)	36.3 (-0.4)	36.3 (-0.4)	37.3 (-0.4)
Gas	39.6 (4.5)	41.2 (4.1)	41.2 (0.1)	41.2 -	41.2 -	41.2 -	41.2 (0.1)	41.2 (0.1)	41.2 (0.1)
Refinery capacity (mil BPSD)	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: Korea Electric Power Corporation, Korea National Oil Corporation

## Statistics on Energy Consumption

	2019	2020	2021	2022			M8	M9	M10
				M8	M9	M10			
The number of household demanding city gas (mil)	19.7 (2.8)	20.1 (2.3)	20.5 (2.0)	20.1 (1.6)	20.2 (1.7)	20.3 (2.0)	20.6 (2.3)	20.7 (2.2)	20.7 (2.1)
Registered cars (mil)	23.7 (2.0)	24.4 (2.9)	24.9 (2.2)	24.7 (2.5)	24.8 (2.4)	24.8 (2.3)	25.3 (2.3)	25.4 (2.3)	25.4 (2.4)
- gasoline	11.0 (3.1)	11.4 (4.1)	11.8 (3.1)	11.7 (3.4)	11.7 (3.3)	11.7 (3.2)	12.0 (2.6)	12.0 (2.6)	12.0 (2.7)
- diesel	10.0 (0.3)	10.0 (0.3)	9.9 (-1.2)	9.9 (-0.6)	9.9 (-0.8)	9.9 (-1.0)	9.8 (-1.1)	9.8 (-1.2)	9.8 (-1.1)
- LPG	2.0 (-1.5)	2.0 (-1.3)	1.9 (-1.7)	2.0 (-2.0)	2.0 (-1.9)	2.0 (-1.9)	1.9 (-1.9)	1.9 (-1.9)	1.9 (-1.9)
- hybrid	0.5 (26.1)	0.6 (33.1)	0.9 (34.0)	0.8 (37.7)	0.8 (37.0)	0.8 (36.9)	1.0 (31.0)	1.1 (30.2)	1.1 (29.1)

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

Source: Korea City Gas Association, Ministry of Land, Infrastructure and Transport