

2022 / 11

korea energy economics institute

KEEI

MONTHLY KOREA ENERGY TRENDS



COAL -8.6%
PETROLEUM 6.6%
LNG -4.2%
NUCLEAR 27.6%
NEW & RENEWABLE 12.2%
SEPTEMBER, 2022

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



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1. The Economy and the Industry

- **The mining & manufacturing production index went up by 1.5% year-on-year in August, despite the economic slowdown, as the production increased in some sectors including the auto sector.**
 - The automobile production index was up 22.3% year-on-year, marking four consecutive months of growth, as the shortage of auto parts supply relieved, and the number of work days increased(↑ 1 day).
 - The semiconductor production index fell for the first time since January 2018, due to sluggish exports (-7.8%, based on export value), increased inventory (67.5%, based on the index), and lower factory utilization rate (-15.7%, based on the index).
 - The production index of basic chemical materials dropped by 11.2% year-on-year with the petrochemical business slowing down and factory utilization rates falling, and that of the iron & steel also declined by 8.7%, affected by the economic slowdown, an inventory glut and base effect.
- **The service production index increased by 7.4% year-on-year in August, led by the major service industries such as wholesale & retail and food & accommodation.**
 - The wholesale & retail production index grew by 6.4% year-on-year, as the production increased in all sub-sectors, and the production index of art, sport and leisure surged by over 40% for two months in a row amid growing outdoor activities during the summer holiday season.
 - The food & accommodation production index went up by 31.7% year-on-year, as it increased in all sub-sectors including accommodations, restaurants and bars, affected by increased outdoor activities during the holiday season and higher face-to-face service production.

► Major economic and industrial indicators

	2021p			2022p			
		M1~8	M8	M1~8	M6	M7	M8
GDP (trillion won)	1 915.8 (4.1)	932.0 (4.2)	- -	959.5 (3.0)	492.2 (2.9)	- -	- -
Total export (\$billion, customs clearance basis)	644.4 (25.7)	411.8 (27.6)	53.2 (34.7)	467.5 (13.5)	57.7 (5.3)	60.3 (8.7)	56.7 (6.6)
Industrial production index (2015=100)	114.3 (7.4)	112.5 (9.0)	110.5 (10.8)	116.6 (3.7)	118.8 (1.4)	118.4 (1.5)	112.2 (1.5)
Semi-conductors	298.6 (29.4)	279.7 (27.5)	325.2 (36.9)	342.8 (22.6)	371.6 (23.9)	360.1 (17.3)	324.9 (-0.1)
Basic chemical products	107.9 (6.7)	108.3 (5.8)	115.9 (11.7)	105.2 (-2.9)	99.9 (-3.5)	105.4 (-6.7)	102.9 (-11.2)
Iron&Steel	97.4 (5.8)	97.5 (7.9)	98.7 (14.6)	96.0 (-1.5)	96.5 (-1.7)	98.5 (-3.7)	90.1 (-8.7)
Cars	88.2 (4.5)	88.9 (12.9)	73.4 (6.8)	92.5 (4.0)	99.4 (3.7)	100.1 (11.1)	89.8 (22.3)
Service production index (2015=100)	110.9 (4.3)	108.8 (4.0)	108.6 (4.3)	114.3 (5.1)	118.0 (4.0)	116.1 (4.6)	116.6 (7.4)
Wholesale & Retail	106.0 (4.0)	104.3 (4.5)	101.8 (5.3)	107.4 (3.0)	107.9 (0.6)	106.9 (0.9)	108.3 (6.4)
Food & Accommodation	80.7 (1.4)	76.7 (-5.9)	80.1 (-5.3)	93.2 (21.5)	100.7 (19.6)	108.0 (29.8)	105.5 (31.7)

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

Source: BOK Economic statistics system, Korea International Trade Association, Korea Statistical Information Service

2. Energy Prices¹

Global Energy Prices

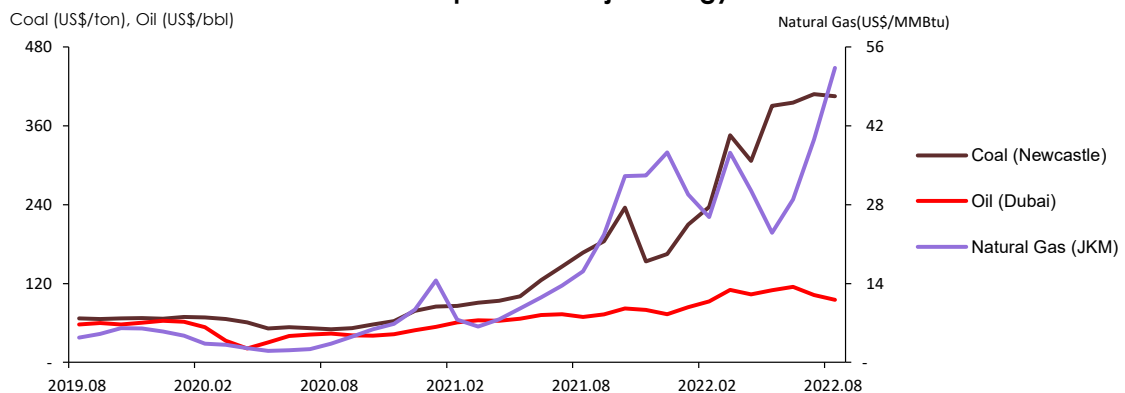
- **Global oil price dropped by 6.3% in August from the previous month due to the strong dollar and concerns about the global economic recession.**
 - The US dollar was bullish, as the Federal Reserve raised interest rates several times, and it put some downward pressure on oil prices. The manufacturing index of major countries declined in July, causing more concerns that the global economic slowdown could lead to lower petroleum demand.
 - Concerns about the global economic recession and global oil price decline put some downward pressure on global coal prices, though the price decline was limited, as China suffered power shortages due to the disruption of hydropower generation in the midst of heatwaves and droughts.
 - Global natural gas price surged, as Asia and Europe compete more fiercely for natural gas amid the supply and demand imbalance in the global market.

► Global energy prices

	2020	2021	2022			2022		
			M6	M7	M8	M6	M7	M8
Crude oil (US\$/bbl)	42.2	69.3	71.6	72.9	69.5	113.3	103.1	96.6
	(-33.5)	(64.2)	(7.9)	(1.9)	(-4.7)	(4.7)	(-8.9)	(-6.3)
Coal (US\$/ton)	60.2	136.4	125.3	145.9	167.2	395.0	408.4	404.9
	(-22.8)	(126.5)	(24.8)	(16.4)	(14.6)	(1.2)	(3.4)	(-0.8)
Natural gas (US\$/MMBtu)								
TTF	3.2	16.2	10.3	12.5	15.4	33.5	51.3	69.9
	(-32.3)	(398.7)	(15.4)	(21.7)	(23.2)	(14.8)	(53.2)	(36.2)
JKM	4.2	17.8	11.5	13.6	16.2	28.9	39.5	52.2
	(-25.2)	(326.0)	(20.5)	(18.4)	(18.5)	(25.7)	(36.6)	(32.2)

Note: Oil and coal prices are based on Dubai oil and Newcastle thermal coal in Australia, respectively. () is month-on-month growth rates (%)
Source: www.petronet.co.kr, World Bank(Commodity Markets), CME Group

► Global prices of major energy sources



¹ 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

□ Gasoline and diesel prices at gas stations plunged in August, partly affected by the previous month's price drop in the global market.

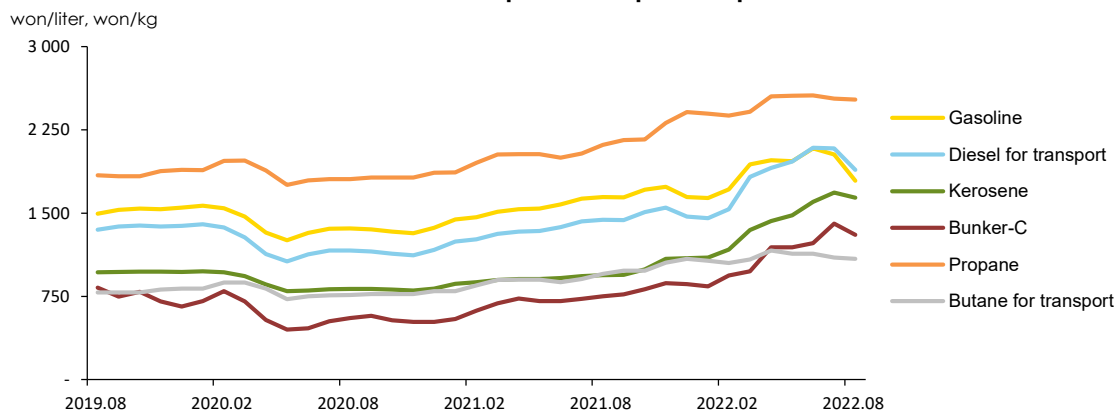
- Gasoline and diesel prices at gas stations fell by 11.7% and 9.4% respectively in August, as their global prices dropped by 21.6% and 17.8% in July from the previous month and the fuel tax cut rate was raised (30%→37%).
- Bunker-C oil price declined by 7.1% in August from the previous month, also reflecting the global price trend, while it grew by 74.0% on a year-on-year basis.
- Propane and butane prices went down by 0.4% and 1.0% than the prior month, as their supply prices were lowered in the domestic market.
- The relative price of propane in terms of city gas (propane/city gas) for industrial customers dropped by 22.8% to 1.05 in August from the previous month.

► Domestic petroleum product prices

	2020	2021	2022			2022	2022	2022
			M6	M7	M8	M6	M7	M8
Gasoline (won/liter)	1 381.2 (-6.2)	1 591.1 (15.2)	1 577.3 (2.3)	1 629.3 (3.3)	1 645.8 (1.0)	2 084.0 (5.9)	2 030.0 (-2.6)	1 792.2 (-11.7)
Diesel for transport (won/liter)	1 189.5 (-11.3)	1 392.0 (17.0)	1 374.4 (2.7)	1 425.5 (3.7)	1 440.5 (1.1)	2 089.0 (6.4)	2 084.9 (-0.2)	1 889.3 (-9.4)
Bunker-C (won/liter)	572.9 (-23.0)	732.2 (27.8)	706.4 -	728.4 (3.1)	750.1 (3.0)	1 229.3 (3.3)	1 405.7 (14.3)	1 305.3 (-7.1)
Propane (won/kg)	1 850.3 (-1.0)	2 093.4 (13.1)	1 999.6 (-1.6)	2 036.4 (1.8)	2 114.5 (3.8)	2 558.8 (0.0)	2 531.2 (-1.1)	2 522.4 (-0.4)
Butane for transport (won/liter)	790.8 (-1.9)	932.3 (17.9)	878.5 (-2.3)	906.3 (3.2)	952.3 (5.1)	1 133.7 (-0.1)	1 100.2 (-3.0)	1 088.8 (-1.0)

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: www.opinet.co.kr

► Domestic petroleum product prices



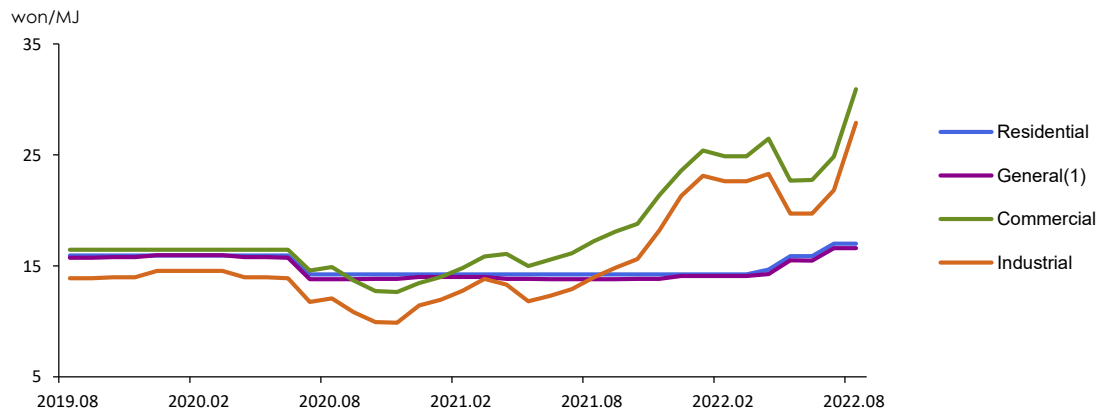
□ **City gas rates for residential and general customers were flat in August, while the rates for office heating and industrial customers sharply increased.**

- City gas rates for office heating and industrial customers are adjusted every month according to the fuel cost pass-through scheme, and the raw material cost grew by 29.7% in August from the previous month as a result of a surge in LNG import price (35.5%) in July.

□ **Electric rates for residential, general and industrial customers remained flat in August compared to the previous month at 159.5 won/kWh, 117.9 won/kWh, 120.7 won/kWh.**

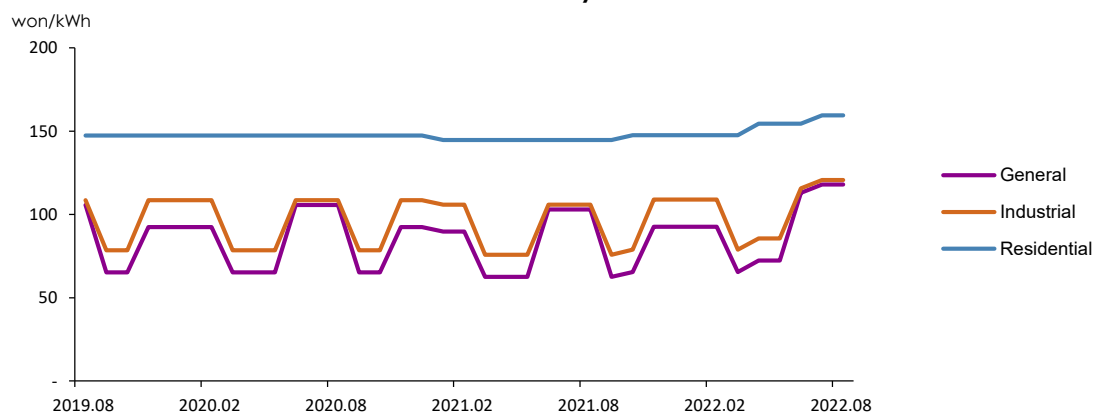
- Energy charge and climate change & environmental charge were raised by 4.9 won/kWh and 2.0 won/kWh respectively in April.
- The fuel cost pass-through adjustment rate was raised to 5.0 won/kWh, as the quarterly adjustment cap was set higher from ± 3 won/kWh to ± 5 won/kWh, following the amendment of Korea Electric Power Corporation(KEPCO)'s general terms and conditions for electricity supply.

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



Source: Seoulgas

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



Note: The electric rates by end-use sectors refer to the prices for residential use ([high voltage], the 2nd 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 posted a year-on-year growth of 1.5% in August, led by crude oil and gas.**
 - The import volume of crude oil was up 17.0% year-on-year, as the utilization rate of refining facilities increased (13.2%) due to higher refining margins.
 - The import volume of petroleum products plunged, especially naphtha and bunker-C oil, posting a year-on-year decrease of 18.2%.
 - The import volume of bituminous coal went down by 3.3% year-on-year, partly affected by lower input at coal-fired power plants.
 - The import volume of gas increased on a year-on-year basis, and it is assumed that the gas stockpile increased in preparation for the winter season, while global natural gas price kept rising (↑ 223.1% yoy, JKM) amid the global supply chain instability.
 - The major energy sources (coal, petroleum, gas) accounted for a smaller share of the total energy import value since March 2022 but rebounded in July and took up 31.4% in August.

► Import and domestic production of energy

	2021p			2022p			
		M1~8	M8	M1~8	M6	M7	M8
Import volume							
Crude oil (Mbbbl)	960.1 (-2.1)	629.1 (-5.3)	82.8 (4.9)	696.6 (10.7)	74.1 (-7.6)	98.2 (25.8)	96.9 (17.0)
Petroleum product (Mbbbl)	392.3 (12.9)	254.1 (3.6)	34.7 (34.9)	247.2 (-2.7)	26.5 (-19.5)	34.1 (-7.4)	28.4 (-18.2)
Bituminous coal (Mton)	108.0 (-6.4)	72.1 (-4.5)	10.4 (12.4)	71.6 (-0.6)	8.4 (-0.9)	10.5 (-7.8)	10.0 (-3.3)
Anthracite (Mton)	6.5 (3.0)	4.3 (4.9)	0.7 (18.5)	4.0 (-7.7)	0.7 (86.4)	0.4 (-26.6)	0.5 (-32.2)
LNG (Mton)	45.9 (14.9)	30.6 (20.8)	3.5 (77.7)	29.8 (-2.7)	2.5 (-19.7)	3.3 (-19.1)	3.8 (9.0)
Import volume (Mtoe)	335.6 (3.1)	221.1 (1.6)	29.5 (18.3)	227.6 (2.9)	25.4 (-2.9)	30.1 (-1.6)	29.9 (1.5)
Import value (billion US\$, CIF)	137.2 (58.5)	81.0 (34.6)	12.0 (100.6)	144.4 (78.2)	16.0 (54.7)	21.0 (72.9)	20.8 (73.0)
Energy share of total import value (%)	22.1	20.7	23.3	29.3	26.7	32.2	31.4
Foreign energy dependence (%)*	92.8	92.6	92.5	91.9	91.7	91.9	91.6
Domestic production							
Hydropower (TWh)	6.74 (-5.7)	4.70 (-3.5)	0.61 (-43.6)	4.84 (2.9)	0.56 (-19.0)	0.69 (-3.7)	1.02 (68.9)
Anthracite (Mton)	0.90 (-11.9)	0.60 (-12.3)	0.06 (-10.3)	0.56 (-7.8)	0.07 (-13.4)	0.07 (-13.9)	0.06 -
Natural gas (Mton)	0.04 (-70.3)	0.03 (-72.3)	0.00 (-88.2)	- (-100.0)	- (-100.0)	- (-100.0)	- (-100.0)
Renewable energy (Mtoe)	20.04 (5.6)	13.62 (9.4)	1.75 (6.1)	15.33 (12.6)	1.81 (8.5)	1.95 (11.8)	1.96 (12.2)

Note: p means provisional, () is year-on-year growth rates (%), *Foreign energy dependence (%) including nuclear energy
Source: Monthly energy statistics(KEEI)

4. Energy Consumption

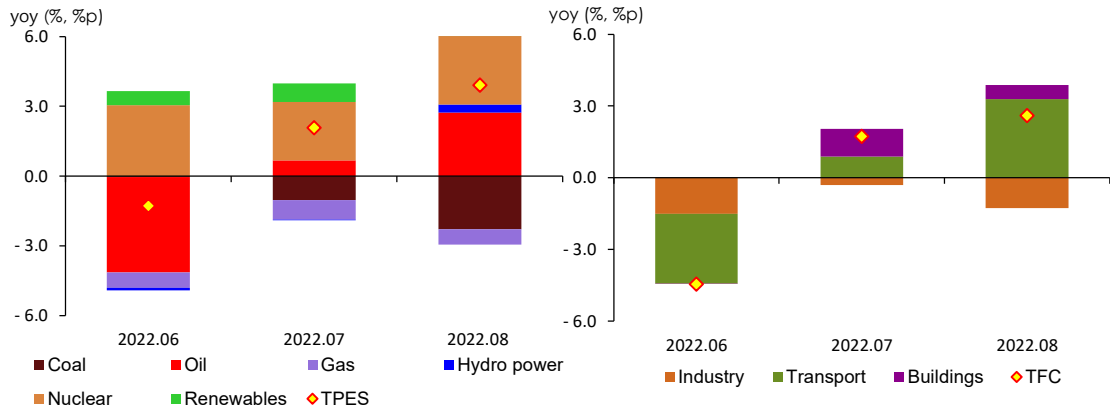
- **Total Primary Energy Supply (TPES) increased by 3.9% year-on-year in August, which was driven by growing use of nuclear energy and petroleum, while coal and gas use decreased.**
 - Coal use fell by 8.6% year-on-year, as it continued to decline in the power generation sector due to higher cost and transmission constraints, and as its industrial use declined for two consecutive months, owing to the economy contraction and the use of existing stock in the iron & steel and cement sectors.
 - Petroleum use increased by 6.6% year-on-year, as it surged in the transport sector, affected by lower petroleum price and increased mobility demand, though its industrial use remained flat, while the petrochemical sector's petroleum use declined, especially naphtha, due to sluggish business.
 - Industrial gas use decreased, mostly in the petrochemical and primary metals sectors, and it also continuously declined in the power generation sector amid growing nuclear generation and higher fuel cost, although it grew fast in the building sector, especially in residential buildings. Consequently, the total gas use declined by 4.2%.
- **Total Final Consumption (TFC) posted a year-on-year growth of 2.6% in August, with the building and transport sectors driving the growth, although the industrial energy use decreased.**
 - Industrial energy use decreased by 1.9% year-on-year, as it declined in the petrochemical and primary metals sectors partly due to the economic slowdown, although it grew in the fabricated metals sector along with the increased number of work days (+1 day).
 - Transport energy use jumped 18.9%, as domestic price of gasoline, that had been soaring, grew at much slower pace following the additional fuel tax cut in July and global oil price decrease, and also affected by growing mobility demand during the summer vacation season after the removal of social distancing measures.
 - Energy use in buildings went up by 3.5% year-on-year, as it grew rapidly in the commercial sector, even though the residential sector consumed less energy.

► Energy consumption

	2021p			2022p			
		M1~8	M8	M1~8	M6	M7	M8
TPES (Mtoe)	305.4	201.6	25.5	207.3	23.5	26.4	26.5
	(4.6)	(4.1)	(4.2)	(2.8)	(-1.3)	(2.1)	(3.9)
- Feedstock exclude	217.8	144.2	17.9	149.8	16.9	18.9	19.1
	(2.5)	(3.0)	(1.1)	(3.9)	(0.3)	(2.6)	(6.4)
TFC (Mtoe)	234.7	155.2	19.2	158.1	17.4	19.3	19.7
	(5.5)	(4.9)	(8.1)	(1.9)	(-4.4)	(1.7)	(2.6)

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

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



5. Coal

□ Coal use decreased by 8.6% year-on-year in August, as it dropped in both of the industrial and power generation sectors for two consecutive months.

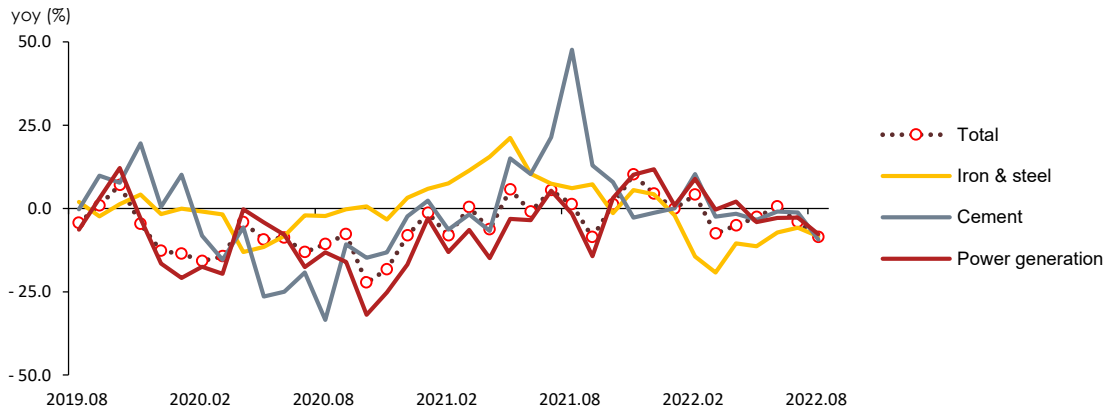
- Industrial coal use declined for two months in a row, and the iron & steel and cement sectors led the downward trend.
- Coal use dropped in the power generation sector, despite the eased voluntary cap on coal power plants, as coal-fired generation has been falling since May, owing to the steadily rising fuel cost and increased nuclear and renewable generation.

► Coal consumption

	2021p			2022p			
		M1~8	M8	M1~8	M6	M7	M8
Coal (Mton)	116.8	77.7	11.5	75.3	9.5	10.9	10.5
	(0.2)	(-0.4)	(1.2)	(-3.1)	(0.6)	(-4.1)	(-8.6)
Industry	47.4	31.4	4.2	29.6	3.9	3.8	3.7
	(4.6)	(6.5)	(6.5)	(-5.8)	(5.8)	(-6.4)	(-10.3)
-Coking-coal	35.3	23.6	3.0	22.0	2.7	2.9	2.9
	(4.5)	(6.8)	(2.6)	(-6.7)	(-3.8)	(-2.5)	(-5.2)
Buildings	0.4	0.2	0.0	0.2	0.0	0.0	0.0
	(-12.0)	(-15.6)	(33.3)	(-0.6)	(33.3)	(50.0)	(12.5)
Power generation	68.9	46.1	7.3	45.5	5.6	7.1	6.7
	(-2.5)	(-4.5)	(-1.7)	(-1.2)	(-2.9)	(-2.8)	(-7.7)

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

► The growth rate of coal consumption by use



6. Petroleum

□ Petroleum use rose by 6.6% year-on-year in August, led by the transport sector, while it was flat in the industrial sector.

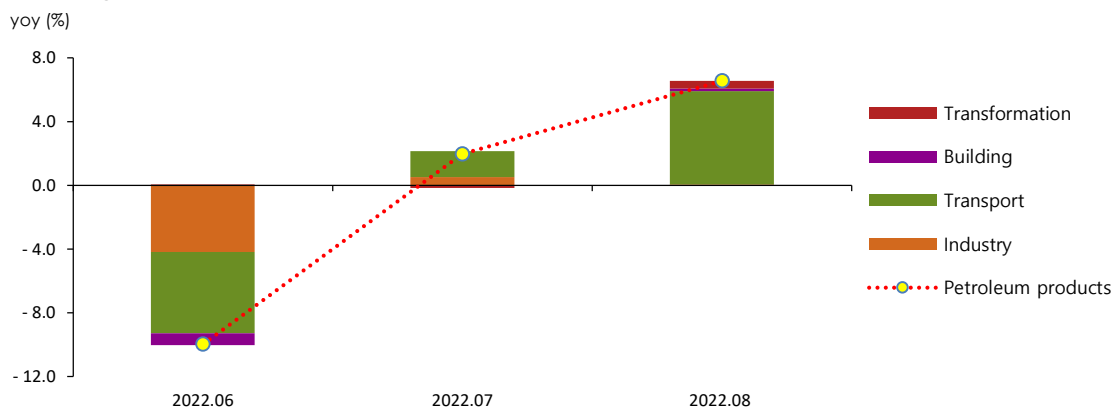
- Industrial petroleum use remained flat, posting only a 0.1% growth, because its use as feedstock decreased.
 - Naphtha consumption fell by 1.1%, with index of capacity utilization rate decreasing by 12.2% year-on-year in the petrochemical sector due to slower business activities. LPG use also declined by 3.0%, because of a drop in the use of propane and butane as feedstock.
- Petroleum use jumped 19.7% year-on-year in the transport sector, driven by higher mobility demand and lower prices of petroleum products used for transportation.

► Petroleum product consumption by end-use sectors

	2021p			2022p			
		M1~8	M8	M1~8	M6	M7	M8
Petroleum (Mbbl)	932.4	609.8	78.0	629.9	69.2	80.4	83.1
	(6.9)	(4.2)	(9.0)	(3.3)	(-10.0)	(2.0)	(6.6)
Industry	597.2	390.5	51.9	405.3	45.5	52.1	51.9
	(9.8)	(5.4)	(13.7)	(3.8)	(-6.6)	(0.8)	(0.1)
-Naphtha	450.9	293.9	39.8	302.5	33.8	39.6	39.4
	(11.3)	(5.0)	(16.9)	(2.9)	(-3.2)	(2.8)	(-1.1)
Transport	281.7	185.3	23.2	188.6	20.9	25.4	27.8
	(1.6)	(1.4)	(-0.3)	(1.8)	(-15.8)	(5.3)	(19.7)
Buildings	44.7	28.5	2.5	28.1	2.2	2.4	2.6
	(-0.1)	(0.8)	(14.0)	(-1.6)	(-20.5)	(-0.2)	(4.8)
Power generation	8.8	5.4	0.4	7.9	0.6	0.6	0.8
	(34.0)	(51.2)	(-15.6)	(44.8)	(7.7)	(-16.5)	(96.7)

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

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



7. Gas

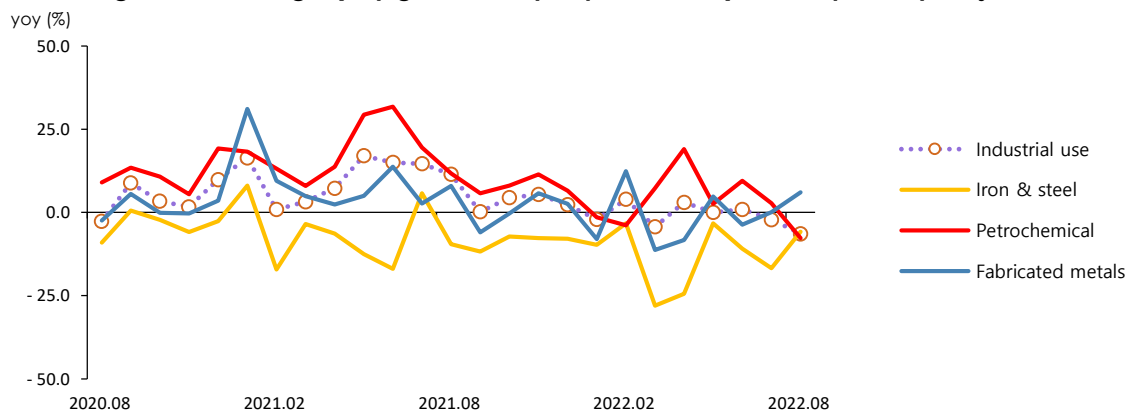
- In August, gas use fell for the second consecutive month in the industrial sector and continued to decline in the power generation sector, and accordingly, the total gas use decreased by 4.2% yoy.
- Gas use for power generation maintained the downward slide, despite growing electricity use (2.5%), as its fuel cost kept rising, along with the increased power generation from nuclear (27.6%) and renewable & other energy (26.2%, including pumped storage), which replaced gas-fired generation.
 - Industrial gas use fell more sharply, as gas use declined in the petrochemical sector due to slowing business growth, and it kept falling in the iron & steel sector amid weak sales of major steel products and a surge in inventory, although the fabricated metals sector consumed more gas.
 - As for the gas use in buildings, it decreased (-5.8%) in the residential sector, as increased outdoor activities during the holiday season resulted in less time at home, while it grew fast (17.6%) in the commercial sector, owing to the stronger production in the food & accommodation and wholesale & retail sectors, driven by increased face-to-face activities.

► Natural gas and city gas consumption

	2021p			2022p			
		M1~8	M8	M1~8	M6	M7	M8
LNG (Mton)	45.8	30.6	3.1	30.4	2.9	3.2	3.0
	(8.9)	(14.0)	(2.4)	(-0.7)	(-3.9)	(-4.9)	(-4.2)
Power generation	21.5	14.8	1.8	13.9	1.6	1.9	1.7
	(15.7)	(25.1)	(4.0)	(-6.3)	(-9.7)	(-8.2)	(-8.3)
City gas production	19.3	12.6	0.9	13.1	1.0	1.0	0.9
	(5.9)	(8.1)	(4.9)	(4.5)	(4.4)	(6.2)	(2.8)
Industry (Direct private importer)	2.7	1.8	0.2	1.7	0.2	0.2	0.2
	(-1.4)	(1.0)	(-1.4)	(-5.4)	(-12.6)	(-24.9)	(-14.9)
City gas (Bm³)	27.1	18.2	1.4	18.7	1.6	1.5	1.4
	(4.2)	(6.1)	(2.9)	(2.8)	(-0.2)	(1.1)	(-2.2)
Industry (including directly imported)	12.0	7.9	0.9	7.8	0.9	0.9	0.9
	(7.8)	(10.4)	(11.5)	(-0.9)	(0.9)	(-2.2)	(-6.4)
Buildings	14.1	9.6	0.4	10.2	0.5	0.5	0.5
	(2.0)	(3.6)	(-9.7)	(6.3)	(-1.0)	(8.6)	(6.1)

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

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



8. Electricity

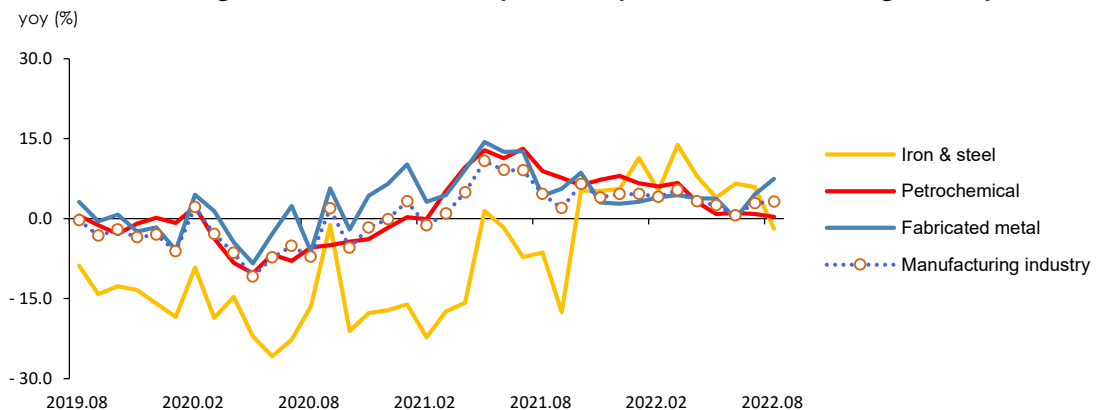
- **Electricity use increased by 2.5% year-on-year in August, led by the industrial and commercial sectors, while it declined in the residential sector.**
 - Industrial electricity use grew by 2.6% year-on-year, as it rose by 7.5% in the fabricated metals sector which accounts for the largest share of the total industrial power use, though it was flat in the petrochemical sector and declined in the iron & steel sector.
 - Electricity use in buildings increased by 2.4%, although the residential sector consumed less electricity, as it grew fast in the commercial sector.

► Electricity consumption by end-use sectors

	2021p			2022p			
		M1~8	M8	M1~8	M6	M7	M8
Electricity (TWh)	533.4 (4.7)	356.7 (5.2)	48.9 (9.7)	370.9 (4.0)	43.0 (2.3)	48.5 (5.6)	50.2 (2.5)
Industry	282.4 (5.1)	187.4 (5.4)	23.9 (6.0)	194.0 (3.5)	23.3 (1.2)	25.2 (3.1)	24.5 (2.6)
Transport	3.4 (7.3)	2.3 (9.7)	0.3 (13.7)	2.4 (3.7)	0.3 (-3.7)	0.3 (6.7)	0.3 (1.2)
Buildings	247.7 (4.3)	167.0 (5.0)	24.7 (13.5)	174.5 (4.5)	19.5 (3.8)	23.0 (8.4)	25.3 (2.4)
Residential	77.6 (4.7)	52.5 (7.6)	9.0 (25.8)	53.3 (1.5)	5.8 (-0.5)	7.3 (8.4)	8.7 (-3.3)
Commercial	136.6 (3.4)	92.3 (3.2)	12.9 (8.9)	99.3 (7.5)	11.1 (7.3)	12.8 (9.7)	13.7 (6.4)

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

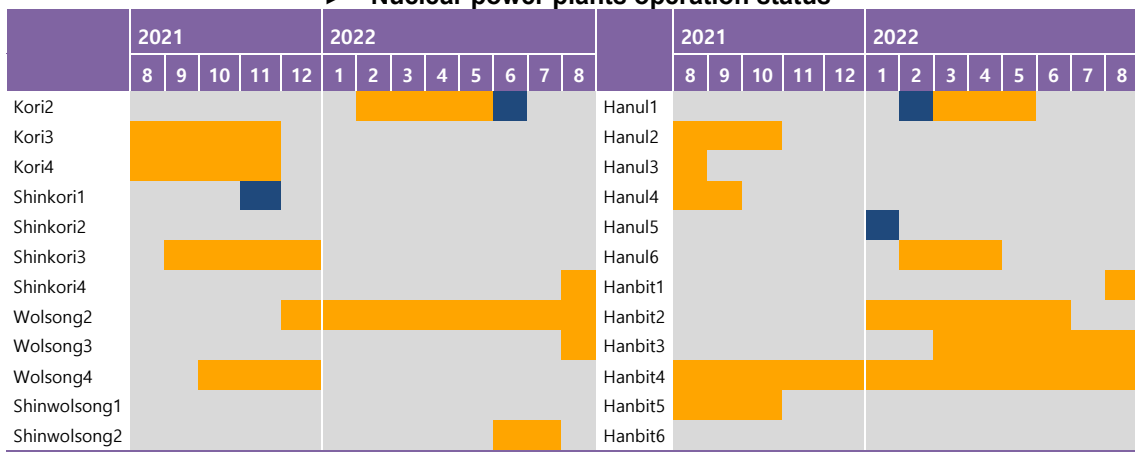
► The growth rate of electricity consumption in manufacturing industry



9. Nuclear

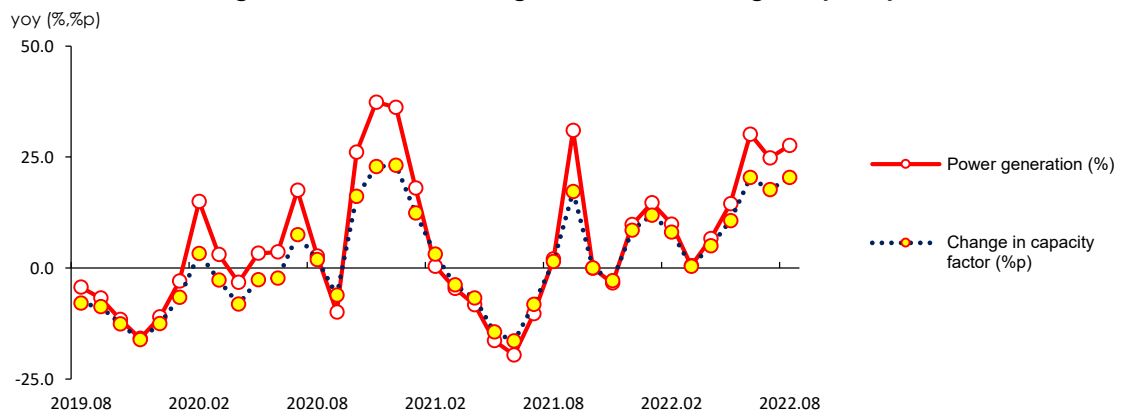
- The total nuclear generation posted a year-on-year growth of 27.6% in August, as its capacity factor increased partly due to a drop in the number of reactors that were subject to the planned preventive maintenance.
- The nuclear capacity factor increased by around 20%p year-on-year, as the number of reactors that were under planned preventive maintenance declined by one, and no reactors experienced an unscheduled shutdown.
- Nuclear energy's share of the total power generation went up by around 6%p to 30.2% in August compared to the same month last year.

► 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

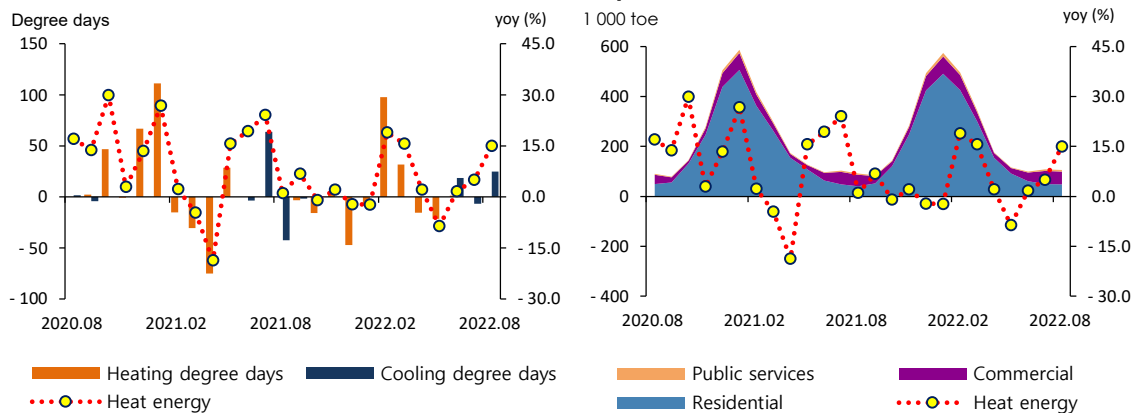
□ Heat energy use increased in all sectors, posting a year-on-year growth of 15.0% in August.

- In the residential sector, which takes up a large share of the total heat energy use, heat energy use grew by 17.9% despite temperature conditions, owing to the low base effect of the same month last year (-17.7%). In the commercial sector, it was up 11.6%, affected by increased outdoor activities during summer and stronger service production including food & accommodation businesses.

□ Renewable & other energy use maintained the upward trend, posting a year-on-year growth of 12.2% in August, and the power generation sector led the growth.

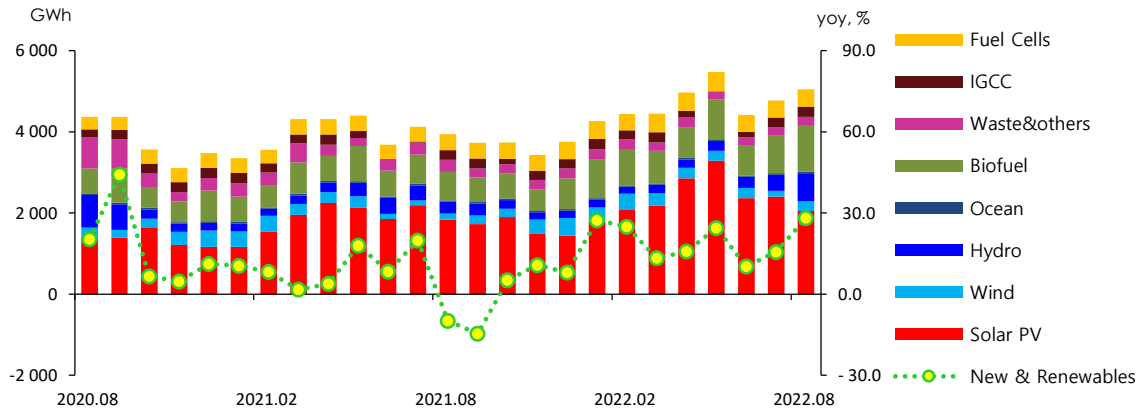
- Led by solar PV and hydropower, renewable & other energy generation² rose by 28.1% year-on-year.
- The final use of renewable & other energy grew by mere 0.4% year-on-year, as it fell by 7.6% in the transport sector, though it was up 1.0% in the industrial sector and 1.9% in the building sector.

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



² 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 1.9% yoy in August, with the petrochemical and primary metals sectors leading the downward slide, while the fabricated metals sector consumed more energy.**

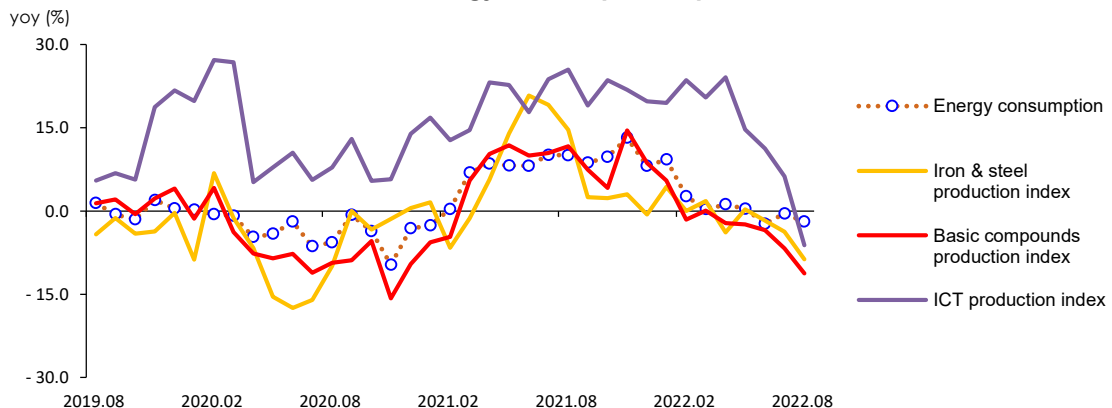
- Industrial energy use decreased, mostly in the petrochemical and primary metals sectors due to the overall slowdown in the manufacturing sector, even though August 2022 had one more work day compared to the same month last year.
 - Energy use declined in the petrochemical sector, owing to the scheduled maintenance at petrochemical facilities, lower production and shipment amid sluggish business and higher inventory levels.
 - Energy use kept falling in the iron & steel sector, as the production decreased due to the contraction of some industries at home and abroad, which are major source of demand, amid growing concerns about the economic recession, lower sales of steel products and higher inventory levels, and maintenance work at some steelmaking facilities during the summer months.

► Industrial energy consumption

	2021p	M1~8		2022p			
			M8	M1~8	M6	M7	M8
Industry (Mtoe)	148.1	97.6	12.6	98.7	11.7	12.6	12.4
	(7.3)	(6.1)	(10.0)	(1.1)	(-2.3)	(-0.5)	(-1.9)
Petrochemical	76.7	50.3	6.7	52.5	6.0	6.8	6.7
	(11.0)	(6.9)	(13.9)	(4.4)	(-2.1)	(2.6)	(-0.9)
- Naphtha	55.3	36.0	4.9	37.1	4.1	4.9	4.8
	(11.3)	(5.0)	(16.9)	(2.9)	(-3.2)	(2.8)	(-1.1)
Iron & Steel	29.7	19.8	2.5	18.1	2.2	2.4	2.3
	(5.2)	(6.8)	(3.5)	(-8.7)	(-6.3)	(-5.5)	(-7.3)
-Coking coal	24.6	16.4	2.1	15.3	1.9	2.0	2.0
	(4.5)	(6.8)	(2.6)	(-6.7)	(-3.8)	(-2.5)	(-5.2)
Fabricated metal	12.2	8.1	0.9	8.4	1.0	1.1	1.0
	(7.0)	(8.7)	(3.9)	(3.1)	(-0.5)	(4.2)	(7.9)
Share of feedstock (%)	59.0	58.7	59.8	58.1	56.7	59.4	59.9

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

► Industrial energy consumption & production index



12. Transport

□ Transport energy use posted a year-on-year growth of 18.9% in August, as energy use grew in all sub-sectors except the rail sector.

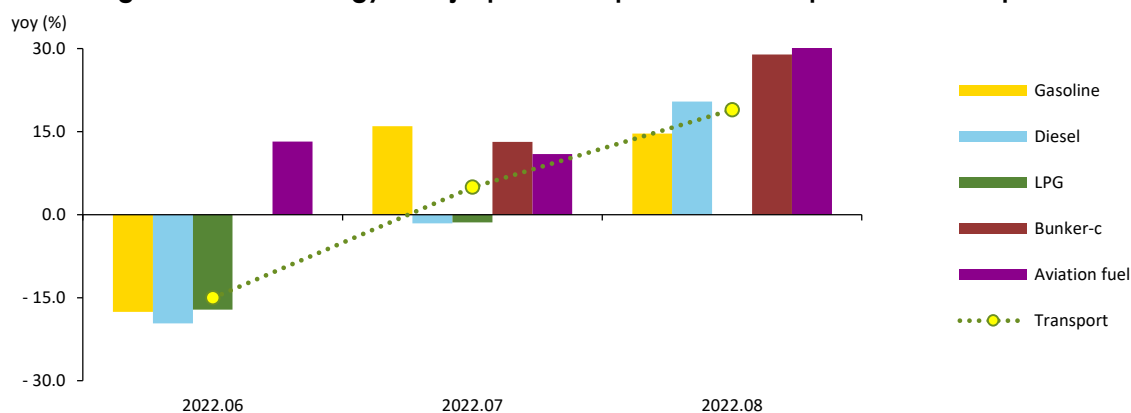
- Energy use jumped 14.7% year-on-year in the road transport sector amid growing mobility demand during the vacation season and falling global oil prices.
- Energy use soared by as much as 71.2% year-on-year in the aviation sector along with the growing number of domestic and international flights.

► The growth rate of petroleum consumption in the transport sector

	2021p			2022p			
		M1~8	M8	M1~8	M6	M7	M8
Transport (Mtoe)	40.03	26.39	3.32	26.84	3.00	3.60	3.95
	(1.5)	(1.3)	(0.1)	(1.7)	(-15.1)	(4.9)	(18.9)
Road	34.09	22.51	2.88	22.34	2.48	3.01	3.30
	(1.9)	(2.4)	(-0.1)	(-0.7)	(-19.1)	(3.2)	(14.7)
Navigation	3.18	2.09	0.24	2.42	0.27	0.33	0.32
	(2.3)	(0.5)	(-2.1)	(15.6)	(10.7)	(19.2)	(33.4)
Aviation	2.46	1.58	0.18	1.87	0.24	0.23	0.30
	(-3.9)	(-11.1)	(6.0)	(18.6)	(13.2)	(11.0)	(71.2)
Rail	0.31	0.21	0.03	0.20	0.02	0.03	0.03
	(-4.5)	(-3.8)	(5.2)	(-1.8)	(-11.0)	(2.6)	(-1.9)

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

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



13. Buildings

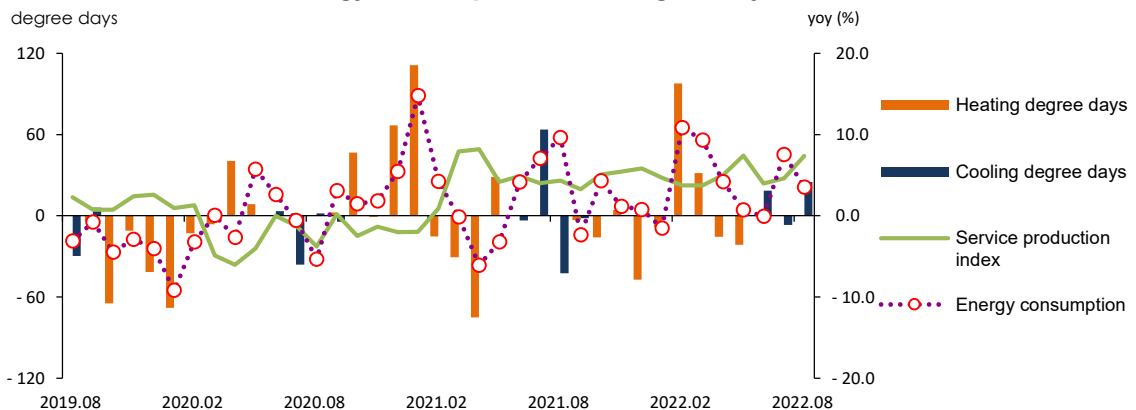
- **Energy use in buildings went up by 3.5% year-on-year in August, led by the commercial sector, partly because the service industry performed well.**
 - Energy use dropped by 0.7% year-on-year in the residential sector, as outdoor activities increased during the first vacation season since the removal of social distancing measures.
 - Energy use has increased for 15 consecutive months since June 2021 and grew by 8.6% year-on-year in August, backed by stronger performance of the service industry. It was almost 8% higher than in August 2019, before the Covid-19 virus spread.

► Energy consumption in buildings

	2021p			2022p			
		M1~8	M8	M1~8	M6	M7	M8
Buildings (Mtoe)	46.6	31.2	3.2	32.6	2.8	3.1	3.3
	(3.2)	(4.3)	(9.7)	(4.4)	(-0.1)	(7.6)	(3.5)
Residential	23.7	15.9	1.2	16.3	1.0	1.1	1.2
	(2.4)	(4.5)	(13.0)	(2.8)	(-7.9)	(7.0)	(-0.7)
Commercial	17.3	11.6	1.5	12.5	1.3	1.5	1.6
	(3.6)	(3.4)	(6.8)	(7.7)	(6.7)	(7.5)	(8.6)
Public others	5.6	3.7	0.5	3.7	0.4	0.5	0.5
	(5.8)	(6.5)	(10.4)	(1.1)	(0.4)	(9.0)	(-1.3)
Heating degree days	2 404.7	1 492.3	-	1 577.8	1.4	-	-
	(-1.8)	(1.3)	-	(5.7)	-	-	-
Cooling degree days	101.3	101.3	34.0	138.1	18.5	60.6	59.0
	(18.9)	(21.3)	-	(36.3)	-	-	-
Service production index (2015=100)	110.9	108.8	108.6	114.3	118.0	116.1	116.6
	(4.3)	(4.0)	-	(5.1)	-	-	-

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

► Energy consumption in buildings & major indicators



14. Power Generation

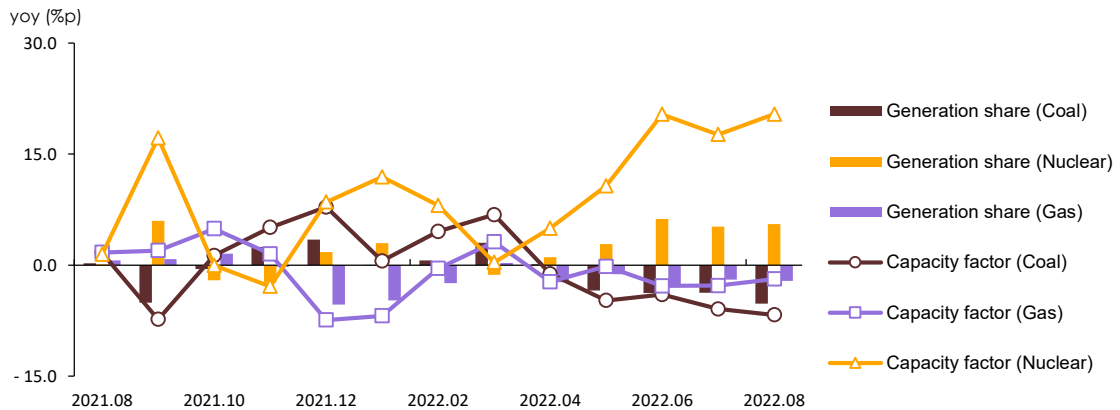
- The total power generation and fuel input rose by 4.2% and 5.2% respectively in August on a year-on-year basis as a result of increased electricity consumption.
 - Nuclear and renewable & other energy generation dramatically increased from the same month last year, while coal and gas-fired generation decreased.
 - The fuel input increased faster than the generated power due to a larger share of baseload generation that is less efficient than gas-fired generation.

► Power generation by energy sources

	2021p			2022p			
		M1~8	M8	M1~8	M6	M7	M8
Power Generation (TWh)	576.7	384.9	51.8	400.5	47.6	55.0	54.0
	(4.5)	(4.6)	(1.5)	(4.1)	(3.9)	(1.6)	(4.2)
Coal	198.0	131.8	20.9	129.3	15.5	19.7	18.9
	(0.8)	(-1.3)	(2.1)	(-1.9)	(-6.8)	(-8.0)	(-9.3)
Oil	2.4	1.5	0.1	1.4	0.1	0.1	0.1
	(4.4)	(32.6)	(-42.6)	(-3.2)	(-29.8)	(-65.1)	(3.6)
Gas	168.3	115.1	13.8	111.0	12.5	14.8	13.2
	(15.4)	(23.8)	(4.0)	(-3.6)	(-6.2)	(-5.3)	(-4.1)
Nuclear	158.0	102.3	12.8	118.3	14.7	15.4	16.3
	(-1.4)	(-5.6)	(2.0)	(15.7)	(30.2)	(24.8)	(27.6)
Hydro/other renewables	50.1	34.3	4.3	40.5	4.7	5.1	5.4
	(5.5)	(7.3)	(-8.3)	(18.1)	(9.1)	(13.1)	(26.2)
Baseload	356.0	234.1	33.6	247.6	30.3	35.0	35.2
	(-0.2)	(-3.2)	(2.1)	(5.8)	(8.2)	(4.0)	(4.8)

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

► Power generation by major energy sources



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

Major Statistics & Indicators of the Economy

	2020	2021					2022			
			M1~8	M6	M7	M8	M1~8	M6	M7	M8
GDP (trillion won)	1 839.5 (-0.7)	1 915.8 (4.1)	932.0 (4.2)	478.3 (6.2)	- -	- -	959.5 (3.0)	492.2 (2.9)	- -	- -
Private consumption	851.0 (-4.8)	882.5 (3.7)	432.7 (2.6)	217.0 -	- -	- -	450.6 (4.1)	225.6 -	- -	- -
Facilities investment	166.6 (7.2)	181.6 (9.0)	93.3 (14.1)	48.3 -	- -	- -	87.3 (-6.4)	45.1 -	- -	- -
Construction investment	269.3 (1.5)	265.0 (-1.6)	127.4 (-1.7)	73.0 (-1.2)	- -	- -	121.7 (-4.5)	70.3 (-3.7)	- -	- -
Consumer price index (2015=100)	105.4	102.5	101.9	102.1	102.3	102.8	107.0	108.2	108.7	108.6
USD to KRW exchange rate (won)	1 180.3	1 144.0	1 126.1	1 121.3	1 144.0	1 160.3	1 252.3	1 277.4	1 307.4	1 318.4
Benchmark rate (%)	0.7	0.6	0.5	0.5	0.5	0.8	1.7	1.8	2.3	2.5
Coincident composite index (2015=100)	112.5	116.9	116.1	116.9	117.3	117.6	121.3	121.4	122.2	123.1
Mining & manufacturing production index (2015=100)	106.4	114.3	112.5	117.2	116.6	110.5	116.6	118.8	118.4	112.2
Manufacturing operation ratio index (2015=100)	95.3	99.8	98.4	102.9	102.1	95.8	101.5	103.2	102.2	97.2
Average temperature	13.0	13.3	14.2	21.7	26.0	24.8	14.0	22.4	25.9	25.3
- year-on-year difference	- 0.4	0.3	- 0.0	- 1.0	3.5	- 1.7	- 0.2	0.6	- 0.1	0.5
Heating degree days	2 448.0 (3.3)	2 404.7 (-1.8)	1 492.3 (1.3)	- -	- -	- -	1 577.8 (5.7)	1.4 -	- -	- -
Cooling degree days	85.2 (- 29.2)	101.3 (18.9)	101.3 (21.3)	- (- 100.0)	67.3 (1 822.9)	34.0 (- 55.6)	138.1 (36.3)	18.5 -	60.6 (- 10.0)	59.0 (73.5)
Energy intensity	0.16 (-3.1)	0.16 (0.4)	0.16 (-0.8)	0.15 (-1.9)	- -	- -	0.16 (-0.1)	0.15 (-2.3)	- -	- -
Per capita consumption										
oil (bbl)	16.8 (-6.0)	18.0 (7.1)	11.8 (4.4)	1.5 (8.3)	1.5 (9.2)	1.5 (9.2)	12.2 (3.5)	1.3 (-9.8)	1.6 (2.2)	1.6 (6.8)
Electricity (MWh)	9.8 (-2.3)	10.3 (4.9)	6.9 (5.4)	0.8 (5.9)	0.9 (9.5)	0.9 (9.9)	7.2 (4.2)	0.8 (2.6)	0.9 (5.8)	1.0 (2.7)
City gas (1 000 m ³)	0.4 (-3.7)	0.5 (5.3)	0.3 (7.1)	0.0 (12.1)	0.0 (7.3)	0.0 (4.4)	0.3 (4.2)	0.0 (3.0)	0.0 (8.7)	0.0 (1.6)
Total energy (toe)	5.6 (-3.8)	5.9 (4.7)	3.9 (4.3)	0.5 (5.0)	0.5 (9.5)	0.5 (4.4)	4.0 (3.1)	0.5 (-1.1)	0.5 (2.3)	0.5 (4.1)

Note: Figures are based on the real price of 2010, p means provisional, () is year-on-year growth rates (%)
Source: BOK Economic statistics system, Korea Statistical Information Service, Monthly energy statistics

The Index of Production Ratio & Output by Sectors

(2015=100)

2013=100

	2020	2021					2022			
			M1~8	M6	M7	M8	M1~8	M6	M7	M8
Industrial production index										
All industry	107.4 (-1.0)	112.7 (4.9)	110.4 (5.0)	117.6 (6.5)	111.9 (4.6)	108.7 (6.0)	115.1 (4.3)	120.2 (2.2)	116.1 (3.8)	113.9 (4.8)
Mining & manufacturing	106.4 (-0.3)	114.3 (7.4)	112.5 (9.0)	117.2 (12.2)	116.6 (8.5)	110.5 (10.8)	116.6 (3.7)	118.8 (1.4)	118.4 (1.5)	112.2 (1.5)
Semiconductor	230.7 (22.7)	298.6 (29.4)	279.7 (27.5)	300.0 (25.8)	307.0 (34.6)	325.2 (36.9)	342.8 (22.6)	371.6 (23.9)	360.1 (17.3)	324.9 (-0.1)
Iron & steel	92.1 (-6.3)	97.4 (5.8)	97.5 (7.9)	98.2 (20.8)	102.3 (19.1)	98.7 (14.6)	96.0 (-1.5)	96.5 (-1.7)	98.5 (-3.7)	90.1 (-8.7)
Cement	87.2 (-7.5)	91.6 (5.0)	90.1 (7.7)	98.6 (6.0)	94.2 (15.3)	84.5 (15.6)	88.2 (-2.1)	88.0 (-10.8)	94.2 (-)	86.8 (2.7)
Basic compound	101.1 (-7.1)	107.9 (6.7)	108.3 (5.8)	103.5 (10.0)	113.0 (10.5)	115.9 (11.7)	105.2 (-2.9)	99.9 (-3.5)	105.4 (-6.7)	102.9 (-11.2)
Transport equipment	84.4 (-9.6)	88.2 (4.5)	88.9 (12.9)	95.9 (20.9)	90.1 (-3.7)	73.4 (6.8)	92.5 (4.0)	99.4 (3.6)	100.1 (11.1)	89.8 (22.3)
Electric & electronic	108.5 (-1.0)	115.2 (6.1)	112.4 (9.0)	120.7 (11.4)	118.8 (6.4)	110.1 (10.0)	114.7 (2.0)	121.3 (0.5)	119.2 (0.3)	111.2 (1.0)
Service	106.2 (-2.0)	110.9 (4.3)	108.8 (4.0)	113.5 (4.9)	111.0 (4.0)	108.6 (4.3)	114.3 (5.1)	118.0 (4.0)	116.1 (4.6)	116.6 (7.4)
Wholesale and retail	101.9 (-2.6)	106.0 (4.0)	104.3 (4.5)	107.3 (3.5)	105.9 (5.4)	101.8 (5.3)	107.4 (3.0)	107.9 (0.6)	106.9 (0.9)	108.3 (6.4)
Food & Accommodation	79.6 (-18.4)	80.7 (1.4)	76.7 (-5.9)	84.2 (-0.5)	83.2 (-8.0)	80.1 (-5.3)	93.2 (21.5)	100.7 (19.6)	108.0 (29.8)	105.5 (31.7)
Production output										
Iron & steel - Pig iron	45 359.6 (-4.5)	46 440.5 (2.4)	31 012.6 (5.3)	3 788.6 (8.8)	4 015.3 (2.8)	4 022.7 (-1.7)	29 271.6 (-5.6)	3 699.8 (-2.3)	3 955.1 (-1.5)	3 853.9 (-4.2)
Iron & steel - Crude steel	67 078.8 (-6.1)	70 418.0 (5.0)	47 426.1 (8.3)	5 970.9 (17.3)	6 124.3 (10.8)	6 103.8 (5.7)	46 041.1 (-2.9)	5 584.8 (-6.5)	6 275.7 (2.5)	5 933.5 (-2.8)
Petrochemical - Basic petrochemicals	30 542.7 (-4.0)	34 434.5 (12.7)	22 523.9 (7.3)	2 651.1 (5.2)	3 099.1 (19.3)	3 130.6 (21.0)	22 800.9 (1.2)	2 572.0 (-3.0)	2 917.3 (-5.9)	2 764.3 (-11.7)
Petrochemical - Intermediate raw material	15 369.0 (-4.0)	15 764.6 (2.6)	10 549.9 (0.4)	1 121.5 (-9.3)	1 337.5 (3.9)	1 445.4 (14.5)	9 519.9 (-9.8)	1 062.2 (-5.3)	1 156.0 (-13.6)	1 195.2 (-17.3)
Petrochemical - 3 major products	21 268.9 (-1.5)	23 197.8 (9.1)	15 290.0 (6.8)	1 849.8 (10.9)	2 062.1 (18.0)	2 061.2 (14.0)	15 444.5 (1.0)	1 768.2 (-4.4)	1 876.7 (-9.0)	1 820.9 (-11.7)
The number of cars	3 506.8 (-11.2)	3 462.4 (-1.3)	2 347.2 (6.4)	325.8 (9.7)	297.6 (-13.9)	234.9 (0.7)	2 388.1 (1.7)	328.4 (0.8)	324.7 (9.1)	284.4 (21.1)

Note: p means provisional

Source: Monthly energy statistics, Korea Petrochemical Industry Association

International Energy Prices

	2020	2021					2022			
			M1~8	M6	M7	M8	M1~8	M6	M7	M8
Crude oil (USD/bbl)										
WTI	39.4 (-30.9)	67.9 (72.4)	64.0 (67.7)	71.4 (86.2)	72.4 (77.7)	67.7 (59.7)	99.9 (56.1)	114.3 (60.3)	99.4 (37.2)	91.5 (35.1)
Dubai	42.2 (-33.6)	69.3 (64.1)	65.4 (58.0)	71.6 (75.5)	72.9 (68.4)	69.5 (58.0)	101.3 (54.9)	113.3 (58.2)	103.1 (41.4)	96.6 (39.0)
Brent	43.2 (-32.7)	70.8 (63.8)	66.9 (57.0)	73.4 (80.1)	74.3 (71.9)	70.5 (56.6)	103.8 (55.2)	117.5 (60.1)	105.1 (41.5)	97.7 (38.6)
Unit value of import (C&F)	44.8 (-31.7)	70.2 (56.9)	66.0 (46.6)	70.6 (136.7)	73.9 (88.5)	73.6 (64.9)	104.2 (57.9)	116.5 (65.0)	115.9 (56.7)	108.2 (47.0)
LNG										
TTF (USD/MMBTU)	3.2 (-32.5)	16.1 (396.9)	9.2 (281.3)	10.3 (486.8)	12.5 (594.6)	15.4 (438.5)	39.2 (325.0)	33.5 (225.6)	51.3 (310.0)	69.9 (353.2)
JKM (USD/MMBTU)	4.2 (-25.4)	17.8 (324.9)	10.9 (268.7)	11.5 (441.0)	13.6 (479.5)	16.2 (384.9)	33.4 (206.9)	28.9 (151.0)	39.5 (189.7)	52.2 (223.1)
Import price(Japan) (USD/MMBTU)	8.3 (-21.3)	10.8 (29.5)	9.3 (2.1)	9.6 (7.2)	10.4 (33.0)	10.8 (70.3)	16.9 (81.1)	15.5 (61.5)	18.9 (82.3)	21.2 (96.4)
Unit value of import (USD/ton, CIF)	390.2 (-22.8)	550.7 (41.2)	458.9 (5.7)	460.9 (3.9)	498.1 (29.7)	535.0 (68.5)	926.3 (101.9)	762.1 (65.4)	1 032.4 (107.3)	1 198.8 (124.1)
Bituminous coal (USD/ton)										
From Australia	60.3 (-22.8)	136.0 (125.8)	111.8 (89.3)	125.3 (133.2)	145.9 (179.3)	167.2 (231.2)	337.1 (201.4)	395.0 (215.3)	408.4 (179.9)	404.9 (142.2)
Unit value of import (CIF)	77.7 (-22.9)	115.1 (48.1)	93.6 (15.1)	98.0 (29.9)	102.8 (49.4)	114.8 (62.4)	234.1 (150.1)	258.9 (164.2)	254.6 (147.8)	242.4 (111.1)
Petroleum product (USD/bbl)										
Gasoline	46.7 (-35.7)	80.3 (72.2)	74.8 (63.3)	80.4 (77.3)	85.4 (83.0)	81.0 (67.9)	125.2 (67.4)	155.2 (93.2)	121.7 (42.6)	110.9 (37.0)
Kerosene	44.7 (-42.1)	75.1 (67.9)	69.5 (55.9)	75.9 (84.3)	77.3 (75.9)	74.1 (71.0)	130.5 (87.9)	164.3 (116.4)	134.9 (74.6)	132.2 (78.5)
Diesel	49.4 (-36.8)	77.6 (57.2)	72.0 (43.3)	78.8 (69.1)	79.9 (59.3)	76.5 (54.8)	139.5 (93.8)	176.8 (124.3)	145.3 (81.9)	139.7 (82.5)
Bunker-C	39.2 (-31.9)	64.4 (64.3)	60.6 (62.4)	64.7 (75.6)	66.2 (68.3)	65.2 (54.3)	91.8 (51.5)	99.1 (53.1)	79.4 (20.0)	78.2 (20.0)
Propane	397.1 (-8.6)	647.9 (63.2)	580.6 (47.7)	530.0 (51.4)	620.0 (72.2)	660.0 (80.8)	793.1 (36.6)	750.0 (41.5)	725.0 (16.9)	670.0 (1.5)
Butane	403.8 (-8.6)	629.6 (55.9)	564.4 (40.7)	525.0 (59.1)	620.0 (82.4)	655.0 (89.9)	795.0 (40.9)	750.0 (42.9)	725.0 (16.9)	660.0 (0.8)
Naphtha	40.5 (-28.9)	70.6 (74.6)	65.8 (68.5)	70.5 (80.9)	75.5 (73.6)	70.7 (64.8)	90.0 (36.7)	84.3 (19.6)	81.6 (8.1)	72.0 (1.8)

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

2. Gasoline type is 95RON, diesel is 0.001%, Bunker-C is high-sulfur oil(180cst/3.5%), for propane and butane, CP is reference value
Source: www.petronet.co.kr, World Bank, Monthly energy statistics, CME Group, Korea International Trade Association

Domestic Energy Prices

	2020	2021					2022			
			M1~8	M6	M7	M8	M1~8	M6	M7	M8
Petroleum product										
Gasoline (won/liter)	1 381.6 (-6.1)	1 590.5 (15.1)	1 543.3 (10.2)	1 577.3 (19.2)	1 629.3 (19.8)	1 645.8 (20.9)	1 892.3 (22.6)	2 084.0 (32.1)	2 030.0 (24.6)	1 792.2 (8.9)
Diesel (won/liter)	1 189.8 (-11.2)	1 391.3 (16.9)	1 341.3 (10.6)	1 374.4 (21.9)	1 425.5 (22.6)	1 440.5 (23.8)	1 843.9 (37.5)	2 089.0 (52.0)	2 084.9 (46.3)	1 889.3 (31.2)
Bunker-C (won/liter)	573.6 (-22.9)	731.7 (27.6)	684.1 (15.5)	706.4 (52.6)	728.4 (38.8)	750.1 (35.5)	1 134.3 (65.8)	1 229.3 (74.0)	1 405.7 (93.0)	1 305.3 (74.0)
Propane (won/kg)	1 850.7 (-1.0)	2 092.6 (13.1)	2 008.1 (8.0)	1 999.6 (11.4)	2 036.4 (12.8)	2 114.5 (17.1)	2 488.6 (23.9)	2 558.8 (28.0)	2 531.2 (24.3)	2 522.4 (19.3)
Butane (won/liter)	791.1 (-1.9)	931.9 (17.8)	884.9 (10.9)	878.5 (17.2)	906.3 (19.3)	952.3 (25.2)	1 103.2 (24.7)	1 133.7 (29.1)	1 100.2 (21.4)	1 088.8 (14.3)
City gas(won/MJ)										
Residential	15.1 (-3.6)	14.2 (-5.7)	14.2 (-8.3)	14.2 (-10.7)	14.2 -	14.2 -	15.4 (8.2)	15.9 (11.6)	17.0 (19.5)	17.0 (19.5)
General(1)	14.9 (-4.7)	13.9 (-6.5)	13.9 (-9.5)	13.8 (-12.2)	13.8 (-0.0)	13.8 (-0.0)	15.1 (8.7)	15.5 (12.1)	16.6 (20.2)	16.6 (20.2)
Commercial	15.1 (-6.4)	17.2 (14.2)	15.6 (-2.8)	15.6 (-5.5)	16.2 (10.7)	17.2 (15.7)	25.4 (62.7)	22.7 (46.2)	24.9 (54.0)	30.9 (79.4)
Industry	12.6 (-8.4)	14.4 (14.2)	12.9 (-5.9)	12.3 (-11.4)	12.9 (9.9)	14.0 (16.0)	22.6 (75.8)	19.7 (60.0)	21.8 (69.1)	27.9 (99.3)
Heat(won/Mcal)										
Residential	66.2 (0.7)	65.2 (-1.4)	65.2 (-2.1)	65.2 (-2.8)	65.2 -	65.2 -	68.2 (4.6)	67.0 (2.7)	74.5 (14.2)	74.5 (14.2)
Commercial	85.9 (0.7)	84.7 (-1.4)	84.7 (-2.1)	84.7 (-2.8)	84.7 -	84.7 -	88.5 (4.6)	87.0 (2.7)	96.7 (14.2)	96.7 (14.2)
Public	75.1 (0.7)	74.0 (-1.4)	74.0 (-2.2)	74.0 (-2.9)	74.0 -	74.0 -	77.3 (4.5)	76.0 (2.7)	84.5 (14.2)	84.5 (14.2)
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)	145.4 (2.2)	147.2 (3.4)	147.2 (3.4)	147.2 (3.4)
General	84.4 -	79.4 (-5.9)	82.2 (-5.7)	100.7 (-4.7)	100.7 (-4.7)	100.7 (-4.7)	85.2 (3.7)	105.6 (4.9)	105.6 (4.9)	105.6 (4.9)
Industry	96.0 -	91.0 (-5.2)	92.3 (-5.1)	103.5 (-4.6)	103.5 (-4.6)	103.5 (-4.6)	95.3 (3.3)	108.4 (4.7)	108.4 (4.7)	108.4 (4.7)

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

2.Electricity prices are based on Residential(High-voltage, 201~400kWh), General((A) 1, Low-voltage), Industry((B), High-voltageB, option II mid-load)

Source: www.petronet.co.kr, www.seoulgas.co.kr, cyber.kepco.co.kr

Total Primary Energy Supply (TPES)

	2020	2021p					2022p			
			M1~8	M6	M7	M8	M1~8	M6	M7	M8
Coal (Mton)	116.6 (-12.4)	116.8 (0.2)	77.7 (-0.4)	9.5 (-1.0)	11.3 (5.4)	11.5 (1.2)	75.3 (-3.1)	9.5 (0.6)	10.9 (-4.1)	10.5 (-8.6)
- Coking coal excluded	82.8 (-15.6)	81.5 (-1.6)	54.1 (-3.2)	6.7 (-3.8)	8.3 (6.0)	8.5 (0.7)	53.3 (-1.5)	6.8 (2.4)	7.9 (-4.6)	7.6 (-9.8)
Oil (Mbbbl)	872.4 (-5.9)	932.4 (6.9)	609.8 (4.2)	76.9 (8.1)	78.9 (9.0)	78.0 (9.0)	629.9 (3.3)	69.2 (-10.0)	80.4 (2.0)	83.1 (6.6)
- Non-energy oil excluded	423.6 (-6.2)	429.6 (1.4)	282.5 (1.7)	36.9 (9.4)	36.1 (5.4)	34.1 (0.5)	293.1 (3.8)	31.4 (-15.0)	36.8 (1.8)	39.4 (15.5)
LNG (Mton)	42.1 (2.7)	45.8 (8.9)	30.6 (14.0)	3.1 (25.2)	3.4 (29.6)	3.1 (2.4)	30.4 (-0.7)	2.9 (-3.9)	3.2 (-4.9)	3.0 (-4.2)
Hydro (TWh)	7.1 (14.4)	6.7 (-5.7)	4.7 (-3.5)	0.7 (33.9)	0.7 (16.3)	0.6 (-43.6)	4.8 (2.9)	0.6 (-19.0)	0.7 (-3.7)	1.0 (68.9)
Nuclear (TWh)	160.2 (9.8)	158.0 (-1.4)	102.3 (-5.6)	11.3 (-19.6)	12.3 (-10.3)	12.8 (2.0)	118.3 (15.7)	14.7 (30.2)	15.4 (24.8)	16.3 (27.6)
Others (Mtoe)	19.0 (7.3)	20.0 (5.6)	13.6 (9.4)	1.7 (10.9)	1.7 (18.7)	1.8 (6.1)	15.3 (12.6)	1.8 (8.5)	2.0 (11.8)	2.0 (12.2)
TPES (Mtoe)	292.1 (-3.6)	305.4 (4.6)	201.6 (4.1)	23.8 (4.8)	25.9 (9.3)	25.5 (4.2)	207.3 (2.8)	23.5 (-1.3)	26.4 (2.1)	26.5 (3.9)
- Non-energy oil excluded	236.1 (-3.2)	242.4 (2.7)	160.7 (3.4)	18.8 (4.1)	20.6 (8.4)	20.0 (1.3)	165.2 (2.8)	18.8 (-0.2)	21.0 (2.1)	21.1 (5.1)
- Non-energy oil&coal excluded	212.5 (-3.2)	217.8 (2.5)	144.2 (3.0)	16.8 (3.8)	18.5 (8.9)	17.9 (1.1)	149.8 (3.9)	16.9 (0.3)	18.9 (2.6)	19.1 (6.4)

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

Share of TPES by Sources

(unit: %)

	2020	2021p					2022p			
			M1~8	M6	M7	M8	M1~8	M6	M7	M8
Coal	24.7	23.8	23.9	24.7	27.0	27.7	22.5	25.0	25.4	24.5
- Coking coal excluded	16.7	15.7	15.8	16.5	18.9	19.5	15.1	17.0	17.7	17.0
Oil	37.7	38.6	38.2	40.8	38.4	38.5	38.3	37.1	38.2	39.6
- non-energy oil excluded	18.6	18.0	17.9	19.7	17.7	17.0	17.9	16.9	17.6	19.1
LNG	18.8	19.6	19.8	16.8	17.2	15.8	19.1	16.4	16.1	14.6
Hydro	0.5	0.5	0.5	0.6	0.6	0.5	0.5	0.5	0.6	0.8
Nuclear	11.7	11.0	10.8	10.1	10.1	10.7	12.2	13.3	12.4	13.1
Others	6.5	6.6	6.8	7.0	6.7	6.9	7.4	7.7	7.4	7.4
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)

	2020	2021p					2022p			
			M1~8	M6	M7	M8	M1~8	M6	M7	M8
Industry	138.0 (-3.5)	148.1 (7.3)	97.6 (6.1)	11.9 (8.1)	12.7 (10.1)	12.6 (10.0)	98.7 (1.1)	11.7 (-2.3)	12.6 (-0.5)	12.4 (-1.9)
Transport	39.4 (-8.3)	40.0 (1.5)	26.4 (1.3)	3.5 (5.2)	3.4 (1.7)	3.3 (0.1)	26.8 (1.7)	3.0 (-15.1)	3.6 (4.9)	4.0 (18.9)
Residential	23.2 (2.8)	23.7 (2.4)	15.9 (4.5)	1.1 (5.6)	1.0 (5.1)	1.2 (13.0)	16.3 (2.8)	1.0 (-7.9)	1.1 (7.0)	1.2 (-0.7)
commercial	16.7 (-4.4)	17.3 (3.6)	11.6 (3.4)	1.3 (3.4)	1.4 (8.6)	1.5 (6.8)	12.5 (7.7)	1.3 (6.7)	1.5 (7.5)	1.6 (8.6)
Public	5.3 (-2.7)	5.6 (5.8)	3.7 (6.5)	0.4 (2.9)	0.4 (6.8)	0.5 (10.4)	3.7 (1.1)	0.4 (0.4)	0.5 (9.0)	0.5 (-1.3)
TFC	222.6 (-3.8)	234.7 (5.5)	155.2 (4.9)	18.3 (6.9)	19.0 (8.0)	19.2 (8.1)	158.1 (1.9)	17.4 (-4.4)	19.3 (1.7)	19.7 (2.6)
Coal (Mton)	45.8 (-4.9)	47.8 (4.4)	31.6 (6.3)	3.7 (3.4)	4.0 (5.6)	4.2 (6.6)	29.8 (-5.8)	3.9 (5.9)	3.8 (-6.4)	3.7 (-10.3)
Oil (Mbbbl)	865.8 (-5.7)	923.5 (6.7)	604.3 (3.9)	76.3 (8.0)	78.1 (8.4)	77.6 (9.1)	622.0 (2.9)	68.6 (-10.1)	79.8 (2.1)	82.3 (6.1)
Electricity (TWh)	509.3 (-2.2)	533.4 (4.7)	356.7 (5.2)	42.0 (5.7)	46.0 (9.3)	48.9 (9.7)	370.9 (4.0)	43.0 (2.3)	48.5 (5.6)	50.2 (2.5)
City gas (Bm³)	22.4 (-3.5)	23.6 (5.1)	15.9 (6.9)	1.3 (11.9)	1.2 (7.1)	1.1 (4.2)	16.6 (4.0)	1.3 (2.7)	1.3 (8.5)	1.1 (1.3)
Heat-others (1 000 toe)	12.3 (6.1)	12.5 (2.0)	8.4 (4.5)	0.9 (6.0)	0.9 (5.5)	1.0 (4.9)	8.7 (3.2)	0.9 (0.1)	1.0 (3.6)	1.0 (1.8)

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

Share of the Total Final Consumption by Sources

(unit: %)

	2020	2021p					2022p			
			M1~8	M6	M7	M8	M1~8	M6	M7	M8
Industry	62.0	63.1	62.9	65.4	66.7	66.0	62.4	66.8	65.3	63.1
Transport	17.7	17.1	17.0	19.4	18.1	17.3	17.0	17.2	18.6	20.1
Residential	10.4	10.1	10.2	6.0	5.4	6.4	10.3	5.8	5.7	6.2
Commercial	7.5	7.4	7.5	6.9	7.4	7.8	7.9	7.7	7.8	8.2
Public	2.4	2.4	2.4	2.3	2.4	2.5	2.4	2.4	2.5	2.4
Final energy	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0
Coal	13.7	13.6	13.6	13.6	14.2	14.4	12.5	14.7	13.2	12.7
Oil	49.1	49.7	49.1	52.9	51.8	50.9	49.6	49.7	52.0	53.0
Electricity	19.7	19.5	19.8	19.8	20.8	22.0	20.2	21.2	21.6	21.9
City gas	12.0	11.9	12.1	8.8	8.2	7.7	12.2	9.2	8.2	7.4
Heat-others	5.5	5.3	5.4	5.0	5.0	5.0	5.5	5.2	5.1	5.0

Note: p means provisional
Source: Monthly energy statistics

Statistics on Energy Production Facilities

	2018	2019	2021	2022			2022		
				M6	M7	M8	M6	M7	M8
Total capacity (GW)	119.1 (1.9)	125.3 (5.2)	134.0 (3.7)	131.1 (2.9)	131.3 (2.7)	131.6 (2.8)	134.2 (2.4)	134.3 (2.3)	134.7 (2.3)
Nuclear	21.9 (-3.0)	23.3 (6.4)	23.3 -	23.3 -	23.3 -	23.3 -	23.3 -	23.3 -	23.3 -
Bituminous coal	36.4 (0.7)	36.4 (0.1)	36.9 (1.3)	36.4 (-0.2)	36.4 (-0.2)	36.4 (-0.2)	36.3 (-0.4)	36.3 (-0.4)	36.3 (-0.4)
Gas	37.9 (-0.0)	39.6 (4.5)	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 -	3.2 -

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

Source: The monthly report on major electric power statistics, Monthly energy statistics

Statistics on Energy Consumption

	2018	2019	2021	2022			2022		
				M6	M7	M8	M6	M7	M8
The number of household demanding city gas (mil)	19.1 (3.1)	19.7 (2.8)	20.5 (2.0)	20.1 (1.8)	20.2 (1.9)	20.1 (1.6)	20.6 (2.3)	20.6 (2.0)	20.6 (2.3)
Registered cars (mil)	23.2 (3.0)	23.7 (2.0)	24.9 (2.2)	24.6 (2.6)	24.7 (2.5)	24.7 (2.5)	25.2 (2.3)	25.3 (2.3)	25.3 (2.3)
- gasoline	10.6 (2.5)	11.0 (3.1)	11.8 (3.1)	11.6 (3.5)	11.6 (3.4)	11.7 (3.4)	11.9 (2.7)	12.0 (2.7)	12.0 (2.6)
- diesel	9.9 (3.7)	10.0 (0.3)	9.9 (-1.2)	9.9 (-0.3)	9.9 (-0.4)	9.9 (-0.6)	9.8 (-1.0)	9.8 (-1.1)	9.8 (-1.1)
- LPG	2.0 (-3.3)	2.0 (-1.5)	1.9 (-1.7)	2.0 (-2.0)	2.0 (-2.0)	2.0 (-2.0)	1.9 (-1.9)	1.9 (-1.9)	1.9 (-1.9)
- hybrid	0.4 (30.9)	0.5 (26.1)	0.9 (34.0)	0.8 (36.9)	0.8 (37.0)	0.8 (37.7)	1.0 (32.2)	1.0 (31.7)	1.0 (31.0)

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

Source: Monthly energy statistics