

KEEI

MONTHLY KOREA ENERGY TRENDS

2023/09

KOREA ENERGY ECONOMICS INSTITUTE

COAL	-10.1%
PETROLEUM	-0.8%
GAS	-3.3%
NUCLEAR	-3.8%
NEW & RENEWABLE	9.1%
June. 2023	



**This publication is derived from Energy Demand & Supply
Statistics and Energy Price Statistics issued until June 2023**



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1. The Economy and the Industry

- **Gross domestic product (GDP) increased by 0.9% year-on-year in 2Q, as private spending recovered, and the investment also increased.**
 - GDP just slightly increased amid the economic slowdown, although private spending recovered, and the investment increased following the termination of social distancing measures ('22.4.18).
- **The industrial production index fell by 5.9% year-on-year in June, as production decreased in most manufacturing sectors due to the economic slump.**
 - The semiconductor production index declined, as domestic manufacturers cut their production amid the oversupply situation, although the rate of decline slowed.
 - The production index of basic chemical materials dropped by 6.7% year-on-year due to overall sluggish business and the shutdown of some factories (LG Chem's 2nd NCC plant in Yeosu), and the iron & steel production index also fell by 3.2% year-on-year, as demand for iron & steel material declined because of weak construction business.
 - The automobile production index jumped 10.8% year-on-year, as the sales increased before the special consumption tax rate was raised (3.5%→5.0%), and the export of eco-friendly cars increased.
- **The service production index went up by 3.0% year-on-year, as production increased in most sectors except a few sectors.**
 - The production index of wholesale & retail and arts, sports & recreation related services went up by 0.9% and 9.1% respectively, and the index of transportation & storage and financial & insurance activities rose by 7.9% and 7.1% respectively on a year-on-year basis.
 - The production index of accommodation & food service activities fell by 4.7% year-on-year, led by the subsector of restaurant & bar business partly due to rising prices and weak spending.

► Major economic and industrial indicators

	2022p			2023p			
		M1~6	M6	M1~6	M4	M5	M6
GDP (trillion won)	1 968.8	960.9	493.0	969.5	-	-	497.3
	(2.8)	(3.1)	(3.1)	(0.9)	-	-	(0.9)
Total export (\$billion, customs clearance basis)	683.6	350.5	57.7	307.1	49.5	52.1	54.2
	(6.1)	(15.6)	(5.3)	(-12.4)	(-14.5)	(-15.4)	(-5.9)
Industrial production index (2020=100)	109.7	111.7	114.4	102.1	101.6	104.8	107.6
	(1.4)	(5.6)	(3.3)	(-8.6)	(-9.1)	(-7.6)	(-5.9)
Semi-conductors	136.5	146.5	159.4	108.4	109.7	121.6	134.2
	(7.7)	(28.8)	(24.9)	(-26.0)	(-21.6)	(-18.7)	(-15.8)
Basic chemical products	99.1	103.3	98.0	95.2	94.3	94.2	91.4
	(-6.4)	(-1.0)	(-4.2)	(-7.8)	(-7.5)	(-6.7)	(-6.7)
Iron&Steel	96.3	104.9	105.3	100.2	101.4	103.4	101.9
	(-8.4)	(0.9)	(0.5)	(-4.5)	(-1.4)	(-3.0)	(-3.2)
Cars	116.0	109.9	119.1	130.2	133.4	136.0	132.0
	(9.1)	(0.5)	(3.6)	(18.4)	(16.9)	(18.9)	(10.8)
Service production index (2020=100)	112.0	108.8	114.2	113.5	113.9	114.1	117.6
	(6.5)	(6.0)	(5.7)	(4.3)	(2.9)	(1.2)	(3.0)
Wholesale & Retail	107.1	105.9	106.2	106.7	105.3	107.8	107.2
	(1.7)	(2.1)	(0.1)	(0.8)	(-2.6)	(-1.7)	(0.9)

Food & Accommodation	119.1 (16.9)	111.8 (17.9)	125.2 (18.1)	118.2 (5.7)	119.5 (1.7)	123.2 (-4.9)	119.3 (-4.7)
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Note: Figures are based on the real price of 2020, P means provisional, () is year-on-year growth rates (%).

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

2. Energy Prices¹

Global Energy Prices

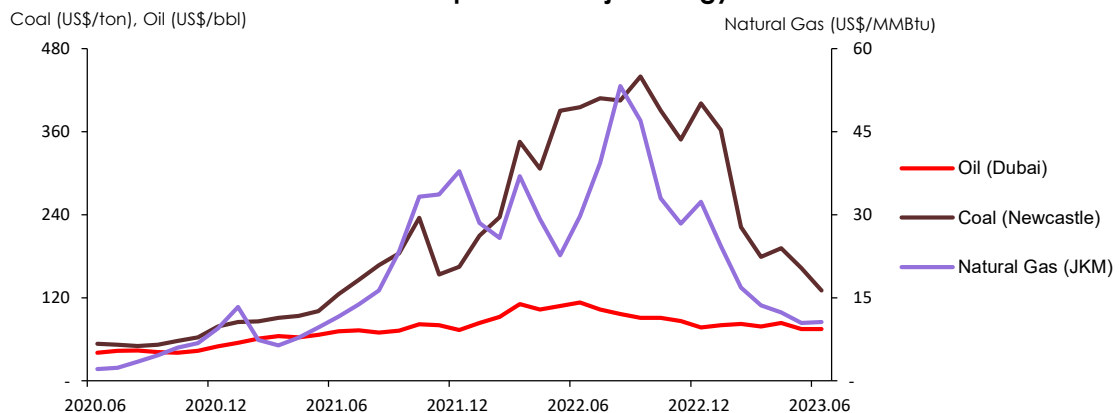
- **Global oil price (Brent, WTI) slightly decreased in June, despite the extended crude oil production cut in OPEC+ nations, which was owing to the interest rate hikes in the US and UK.**
 - OPEC+ agreed to extend the current supply cut (1.7 mb/d) for one additional year until the end of 2024 at the ministerial meeting held on June 4th.
 - The US Federal Reserve chairman hinted at two more interest rate increases within the year (6.21), and the Bank of England raised its key rate by 50bp (6.22). In addition, major investment banks (Goldman Sachs, UBS, JP Morgan etc.) lowered China's economic growth forecast. They put downward pressure on global oil prices.
 - Global steam coal price fell by 20.0% in June from the previous month as a result of a downward slide in global oil prices and weak industrial production in China.
 - Global natural gas price rebounded in June, as gas supply decreased in the global market, and some gas processing plant halted.

► Global energy prices

	2021	2022				2023		
			M4	M5	M6	M4	M5	M6
Crude oil (US\$/bbl)	69.3 (64.2)	96.4 (39.1)	102.8 (-7.3)	108.2 (5.2)	113.3 (4.7)	83.4 (6.3)	75.0 (-10.2)	75.0 (0.0)
Coal (US\$/ton)	136.4 (126.5)	357.1 (161.8)	306.6 (-11.2)	390.4 (27.3)	395.0 (1.2)	191.8 (7.0)	163.2 (-14.9)	130.5 (-20.0)
Natural gas (US\$/MMBtu)								
TTF	16.1 (397.9)	40.2 (149.6)	31.8 (-23.9)	29.0 (-9.0)	33.4 (15.5)	13.4 (-2.3)	10.0 (-25.7)	10.3 (3.6)
JKM	17.9 (325.7)	33.9 (89.2)	29.2 (-20.9)	22.7 (-22.3)	29.7 (30.9)	12.3 (-9.2)	10.5 (-15.3)	10.6 (1.5)

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



¹ For recent price trends, please refer to *Energy Brief* (<https://www.kesis.net/main/mainEng.jsp>).

Domestic energy prices

- **The prices of gasoline and diesel at gas stations dropped by 3.0% and 5.3% respectively in June than the prior month, which was partly affected by the downward trend in global prices.**
 - Singapore's spot prices of gasoline and diesel decreased by 11.3% to \$85.6/bbl and 9.6% to \$89.2/bbl respectively in May from the previous month.
 - Bunker-C oil price fell by 4.5% from the previous month and by 28.5% from the same month last year in line with the global price trend.
 - The retail prices of propane and butane dropped by 1.4% and 2.7% respectively than the prior month, because (domestic) LPG importers (incl. SK Gas) cut their supply prices.

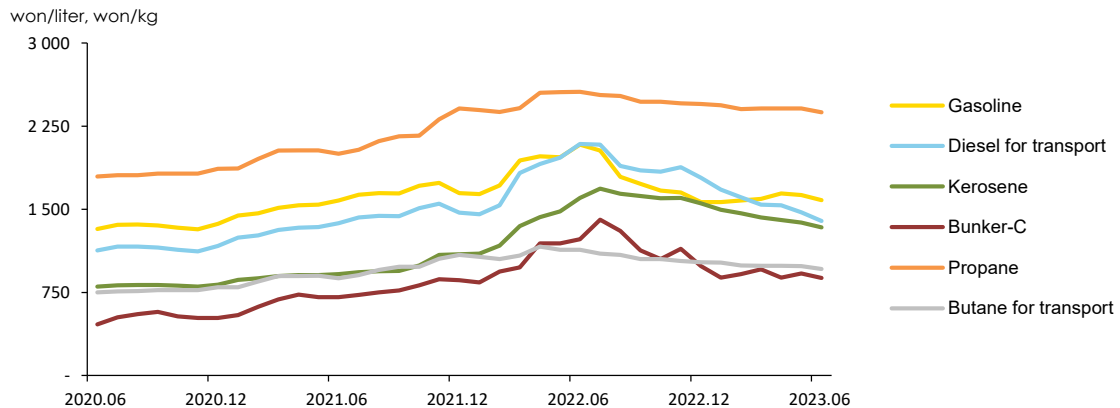
► Domestic petroleum product prices

	2021	2022				2023		
			M4	M5	M6	M4	M5	M6
Gasoline (won/liter)	1 591.2 (15.2)	1 812.7 (13.9)	1 976.5 (2.0)	1 967.1 (-0.5)	2 084.0 (5.9)	1 640.9 (3.1)	1 628.8 (-0.7)	1 580.6 (-3.0)
Diesel for transport (won/liter)	1 392.0 (17.0)	1 843.4 (32.4)	1 906.4 (4.3)	1 964.2 (3.0)	2 089.0 (6.4)	1 535.7 (-0.3)	1 472.0 (-4.2)	1 394.5 (-5.3)
Bunker-C (won/liter)	732.2 (27.8)	1 116.1 (52.4)	1 191.7 (22.3)	1 190.4 (-0.1)	1 229.3 (3.3)	882.5 (-7.8)	920.7 (4.3)	879.3 (-4.5)
Propane (won/kg)	2 093.4 (13.1)	2 480.1 (18.5)	2 552.2 (5.8)	2 558.2 (0.2)	2 558.8 (0.0)	2 409.0 (-0.0)	2 408.8 (-0.0)	2 374.2 (-1.4)
Butane for transport (won/liter)	932.3 (17.9)	1 081.8 (16.0)	1 163.2 (7.4)	1 134.6 (-2.5)	1 133.7 (-0.1)	988.3 (-0.1)	987.8 (-0.1)	961.0 (-2.7)

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



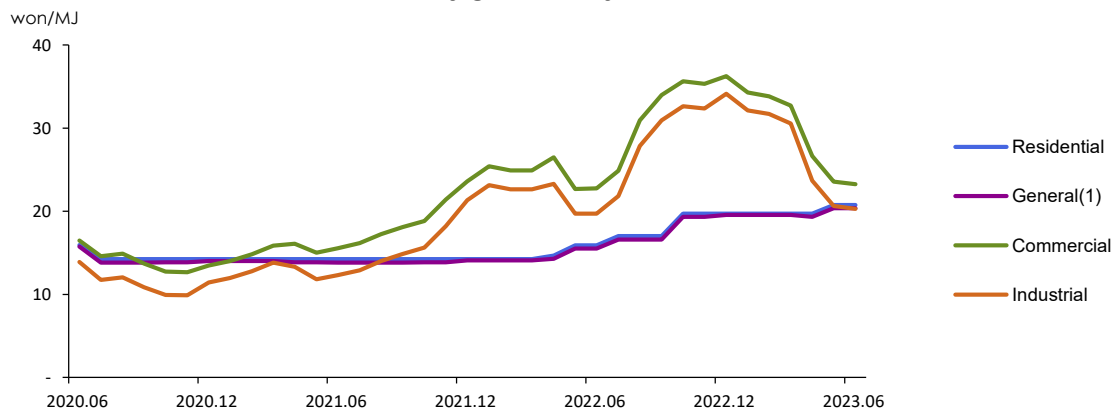
□ **In June, city gas rates for residential and general use remained flat, while the rates for office heating and industrial use decreased compared to the previous month.**

- City gas rate for residential use was fixed at 20.7 won/MJ, while the rate for general use slid by 0.1% from the previous month to 20.4 won/MJ.
- City gas rates for office heating and industrial use were down by 1.2% to 23.3 won/MJ and 1.6% to 20.3 won/MJ respectively compared to the previous month.
- The industrial city gas rate was lower than both rates for residential and general use for the first time in 23 months since July 2021.

□ **In June, electric rate for residential use was kept unchanged, while the rates for general and industrial use surged from the prior month, as the rates were adjusted for the summer season.**

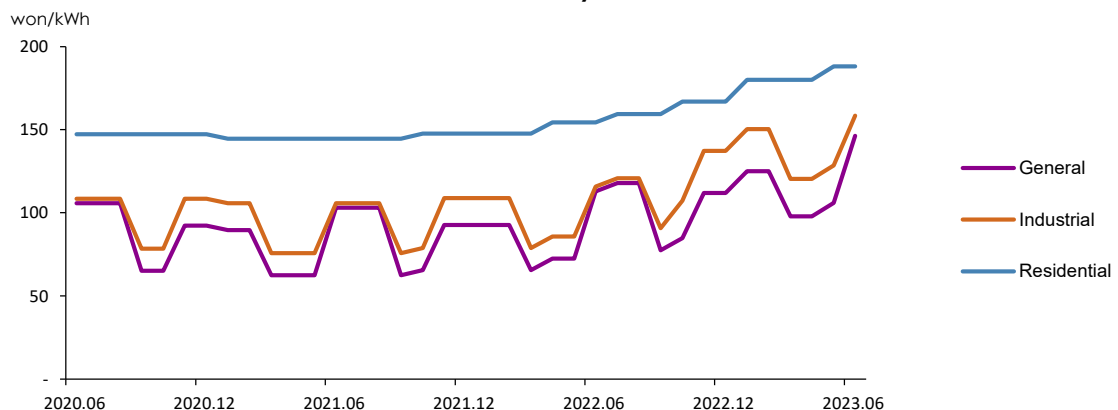
- Electric rates for residential, general and industrial use went up by 18.2%, 25.4% and 33.2% respectively in June on a year-on-year basis, as energy charge was raised three times, and climate change & environmental charge and fuel cost pass-through adjustment rate were raised once during the last one year.

► **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 2nd stage price), general use ([A], low voltage) and Industrial use ([B], high voltage B middle load), including Climate Environmental Price.

3. Energy Supply

- **The total energy import volume decreased by 1.6% year-on-year in June, led by a drop in coal imports, even though the import volume of most energy sources increased.**
 - The import volume of crude oil went up by 3.8% year-on-year, as crude imports from Middle East, which account for the largest share, steadily increased (18.6%) amid a fall in unit import prices from major oil producing countries.
 - The import volume of petroleum products rebounded (↑ 4.0% YoY), led by naphtha and LPG.
 - The import volume of bituminous coal, which represents the largest share of total coal import, fell by 18.1% year-on-year partly due to falling input from domestic power generation sector (-11.5%), and consequently, the total coal import volume dropped by 21.1%, and the pace of decline has been faster for three consecutive months.
 - The import volume of natural gas rebounded, posting a year-on-year growth of 16.5%, as the unit import price from major exporters declined amid a downward trend in global natural gas prices, and also affected by growing demand for direct-import of natural gas in the private sector.
 - The total energy import & export values have been down for four straight months, as the unit import & export prices declined (-40.3%, -25.9%).

► Import and domestic production of energy

	2022p			2023p			
		M1~6	M6	M1~6	M4	M5	M6
Import volume (Mtoe)	333.4 (2.8)	163.3 (5.0)	24.2 (-6.5)	161.5 (-1.1)	24.2 (-6.5)	25.8 (-2.2)	23.8 (-1.6)
Crude oil (Mbbl)	1 031.3 (7.4)	501.5 (7.1)	74.1 (-7.6)	504.3 (0.6)	81.1 (-5.9)	85.8 (5.1)	76.8 (3.8)
Petroleum product (Mbbl)	367.1 (-6.4)	184.6 (1.2)	26.5 (-19.5)	178.1 (-3.5)	24.4 (-15.0)	27.0 (-5.5)	27.6 (4.0)
Coal (Mton)	125.5 (-0.4)	61.2 (6.9)	11.1 (10.5)	58.0 (-5.2)	8.4 (-1.1)	9.3 (-11.3)	8.8 (-21.1)
LNG (Mton)	46.4 (1.0)	22.8 (-1.6)	2.5 (-19.7)	23.1 (1.4)	3.2 (-8.5)	3.1 (-8.3)	2.9 (16.5)
Import value (billion US\$, CIF)	222.8 (58.0)	106.3 (81.2)	16.4 (51.6)	91.9 (-13.5)	13.0 (-26.3)	13.5 (-24.0)	12.0 (-27.1)
Energy share of total import value (%)	30.4	29.4	27.3	27.4	25.0	24.8	22.6
Foreign energy dependence (%)	94.3	94.0	93.8	93.5	92.3	93.0	93.1
Export volume (Mtoe)	69.0 (11.2)	32.5 (12.9)	5.0 (0.1)	33.6 (3.4)	5.2 (-4.8)	6.3 (4.6)	5.0 (0.3)
Export value (billion US\$, FOB)	63.1 (63.5)	30.8 (90.0)	5.6 (83.6)	24.7 (-19.8)	3.7 (-28.9)	4.3 (-34.8)	3.3 (-40.2)
Domestic production							
Hydropower (TWh)	3.5 (15.9)	1.3 (-15.1)	0.3 (-28.6)	1.4 (5.1)	0.2 (-6.6)	0.3 (21.5)	0.3 (13.9)
Renewable energy (Mtoe)	15.9 (10.5)	8.0 (9.9)	1.3 (10.4)	8.3 (3.8)	1.5 (11.3)	1.4 (-2.7)	1.4 (8.9)

Note: p means provisional, () is year-on-year growth rates (%), *Foreign energy dependence (%) including Nuclear energy, Most of exports are petroleum products.

Source: Korea Energy Economics Institute, Korea International Trade Association

4. Energy Consumption

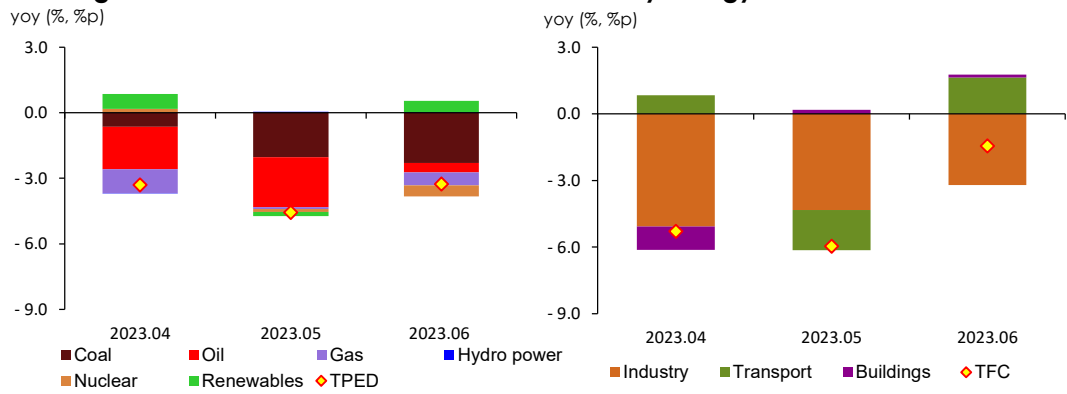
- **Total Primary Energy Demand (TPED) decreased by 3.3% year-on-year in June, as the use of most energy sources declined except renewable energy.**
 - Coal use declined faster, as its industrial use decreased, mostly anthracite, and it continued to fall sharply in the power generation sector.
 - Gas use continued to drop in the power generation and building sectors due to stagnant electricity consumption and higher city gas rate for civilian use. Industrial gas use also fell, especially in the petrochemical sector, amid the worsening economic situation. As a result, the total gas use decreased.
 - Petroleum use fell much slowly, even though it maintained a downward slide in the industrial sector, mostly in petrochemical business, as transport petroleum use increased. Meanwhile, the use of nuclear energy decreased despite the effect of the commissioning of Shin Hanul unit 1 (2022.12), owing to the increased preventive maintenance.
- **Total Final Consumption (TFC) dropped by 1.4% year-on-year (in June), with the industrial sector leading the downward trend amid the economic downturn, although energy use rebounded in the transport sector.**
 - Industrial energy use went down by 4.9% year-on-year, as production declined in most subsectors except the transport equipment sector partly due to the recession in domestic & global economies, even though the number of work days increased by one day.
 - Transport energy use rebounded by over 9% year-on-year, led by the road transport sector due to the base effect of the same month last year when stockpiling demand plunged ahead of the additional fuel tax cut in addition to growing mobility demand.
 - Energy use in buildings rose slightly (0.7%), led by the commercial sector, although it declined in the residential sector. City gas use in buildings declined (-2.3%) due to the rate increase, while electricity use increased (1.6%), as the daily maximum temperature rose on a year-on-year basis (1.6%).

► Energy consumption

	2022p			2023p			
		M1~6	M6	M1~6	M4	M5	M6
TPED (Mtoe)	304.5	153.4	23.5	147.2	22.6	23.4	22.8
	(0.4)	(2.4)	(-0.8)	(-4.0)	(-3.3)	(-4.6)	(-3.3)
TFC (Mtoe)	213.7	109.2	15.9	104.2	15.9	16.3	15.6
	(-0.9)	(1.2)	(-5.3)	(-4.6)	(-5.3)	(-6.0)	(-1.4)
- Feedstock exclude	141.5	72.3	10.2	70.0	10.4	10.6	10.2
	(0.2)	(0.6)	(-5.5)	(-3.2)	(-1.3)	(-5.6)	(0.1)

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 went down by 10.1% year-on-year in June, as its industrial use has been down for two consecutive months, and it dropped faster in the power generation sector.

- Industrial coal use continued the downward slide of the previous month, even though the iron & steel sector consumed more coal, as it declined in other industrial sectors.
- Coal use continued to decrease in the power generation sector, which was attributed to a surge in renewable & other energy and constraints on transmission lines.

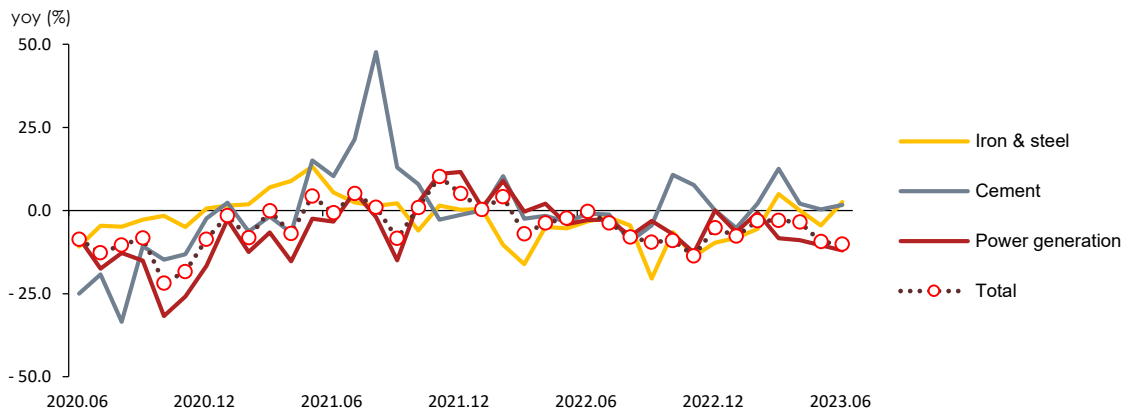
► Coal consumption

	2022p	2023p		2023p			
		M1~6	M6	M1~6	M4	M5	M6
Coal (Mton)	114.0	55.6	9.7	52.1	7.9	8.2	8.7
	(-5.0)	(-1.5)	(-0.3)	(-6.3)	(-3.5)	(-9.4)	(-10.1)
Industry	46.4	23.7	4.1	22.7	3.7	3.9	3.8
	(-8.1)	(-4.1)	(3.3)	(-4.5)	(3.5)	(-8.2)	(-7.5)
- Coking-coal	23.6	11.9	2.0	11.6	1.9	1.9	2.0
	(-7.5)	(-6.5)	(-2.5)	(-2.0)	(0.3)	(-4.2)	(2.4)
Buildings	0.4	0.1	0.0	0.1	0.0	0.0	0.0
	(-5.3)	(-3.2)	(33.3)	(-4.0)	(-23.5)	(1.1)	(-37.5)
Power generation	67.1	31.7	5.6	29.2	4.2	4.3	4.9
	(-2.6)	(0.7)	(-2.9)	(-7.7)	(-8.9)	(-10.4)	(-12.1)

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

- The final use of petroleum fell by 0.8% year-on-year in June, with the industrial sector leading the downward slide, although the transport sector's petroleum use increased.
 - In the industrial sector, petroleum use decreased by 6.5% year-on-year, as its use as petrochemical feedstock declined amid the prolonged slump in petrochemical business.
 - In the transport sector, petroleum use went up by 10.2% year-on-year due to the base effect of a sharp drop during the same period last year and growing mobility demand in the road transport sector.
 - In the building sector, petroleum use grew by 4.4% year-on-year due to the base effect of the same month last year when petroleum use fell to the lowest level in five years.

► Petroleum product consumption by end-use sectors

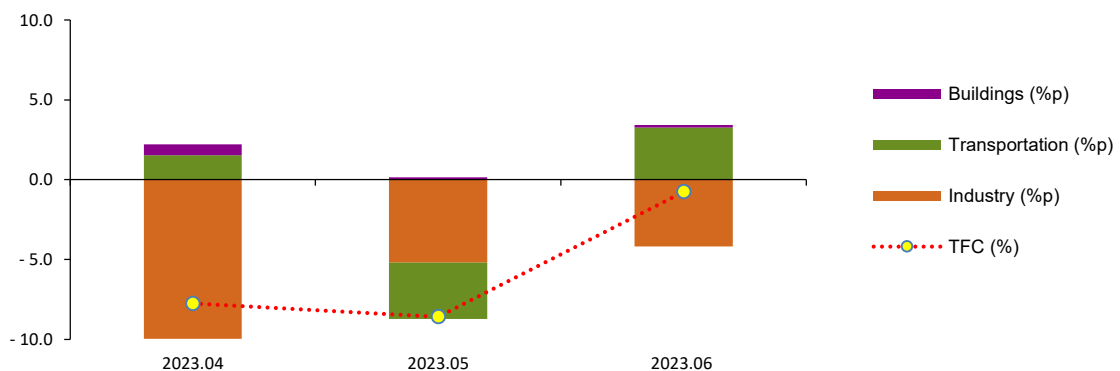
	2022p			2023p			
		M1~6	M6	M1~6	M4	M5	M6
TFC (Mbbbl)	798.9	399.7	59.3	376.5	58.4	62.9	58.8
	(-1.3)	(1.4)	(-11.7)	(-5.8)	(-7.8)	(-8.6)	(-0.8)
Industry	496.9	254.5	38.2	231.4	36.7	37.5	35.7
	(-1.8)	(4.3)	(-7.5)	(-9.1)	(-14.7)	(-8.7)	(-6.5)
- Naphtha	356.0	181.1	27.2	169.2	26.6	26.9	25.3
	(-3.8)	(2.0)	(-4.7)	(-6.6)	(-15.7)	(-6.1)	(-6.7)
Transport	258.0	122.2	18.9	123.4	18.6	22.7	20.8
	(-0.4)	(-3.7)	(-18.2)	(1.0)	(5.5)	(-9.7)	(10.2)
Buildings	44.0	23.0	2.2	21.8	3.1	2.8	2.3
	(-0.6)	(-1.1)	(-21.6)	(-5.3)	(15.9)	(3.6)	(4.4)
Power generation (Mbbbl)	5.02	2.82	0.35	1.69	0.27	0.28	0.23
	(20.0)	(59.3)	(1.3)	(-40.0)	(7.5)	(-10.0)	(-33.6)

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 3.3% year-on-year in June, as it declined in the power generation, industrial and building sectors all together.**

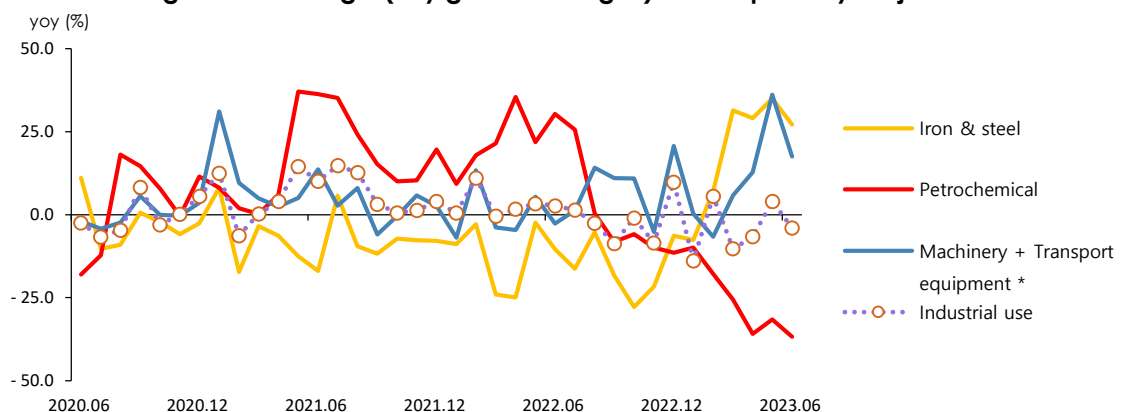
- In the power generation sector, gas use dropped faster (-5.7%), as the total power generation decreased (-1.0%), while baseload (nuclear + coal + renewable & others) generation remained flat (-0.1%) on a year-on-year basis.
- In the industrial sector, gas use started a downward slide, as it fell more rapidly in the petrochemical sector due to the sluggish business, even though gas use increased in the iron & steel and machinery sectors, mostly natural gas.
- In the building sector, gas use dropped, as it fell by 6.3% year-on-year in the residential sector, affected by over 30% growth in city gas rate for civilian use as a result of gradual rate increases since last year, although gas use grew by 3.2% in the commercial sector amid increased service production (3.0%).

► Natural gas and city gas consumption

	2022p			2023p			
		M1~6	M6		M1~6	M4	M5
Gas(TPED) (Mtoe)	59.5	32.3	4.0	30.2	4.3	4.1	3.8
(Natural gas + City gas)	(-1.0)	(0.4)	(-3.4)	(-6.3)	(-7.7)	(-0.1)	(-3.3)
Power generation	30.0	15.3	2.3	14.4	2.2	2.1	2.1
	(-2.3)	(-2.2)	(-5.0)	(-5.8)	(-7.0)	(-5.5)	(-5.7)
Industry	10.0	5.2	0.8	5.0	0.8	0.8	0.8
	(0.3)	(2.3)	(1.9)	(-4.4)	(-6.5)	(4.1)	(-3.9)
Buildings	15.0	9.4	0.5	8.6	1.0	0.7	0.5
	(3.9)	(4.8)	(-5.5)	(-8.6)	(-14.3)	(1.4)	(-2.3)
Natural gas(TPED) (Mton)	45.6	24.3	3.0	22.6	3.2	3.0	2.9
	(-0.5)	(0.8)	(-2.7)	(-6.8)	(-5.8)	(-0.6)	(-3.6)
City gas(TFC) (Bm³)	23.4	13.8	1.2	12.6	1.6	1.4	1.1
	(2.9)	(4.6)	(-1.2)	(-8.6)	(-13.4)	(-4.2)	(-7.4)

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

► The growth rate of gas(city gas+natural gas)consumption by major industries



Note: The Transport equipment sector includes only City gas consumption. Natural gas consumption in the transport equipment sector is highly variable, including the amount of LNG loaded (+) and unloaded (-) during the test operation of the LNG carrier.

8. Electricity

- Electricity use was up by 0.3% year-on-year in June, led by the building sector, although it declined in the industrial sector.
 - In the industrial sector, electricity use slid by 1.0%, with the iron & steel and petrochemical sectors leading the downward slide, while it increased in the machinery and transport equipment sectors.
 - In the building sector, electricity use went up by 1.6% year-on-year, as it grew in both of the residential and commercial sectors.

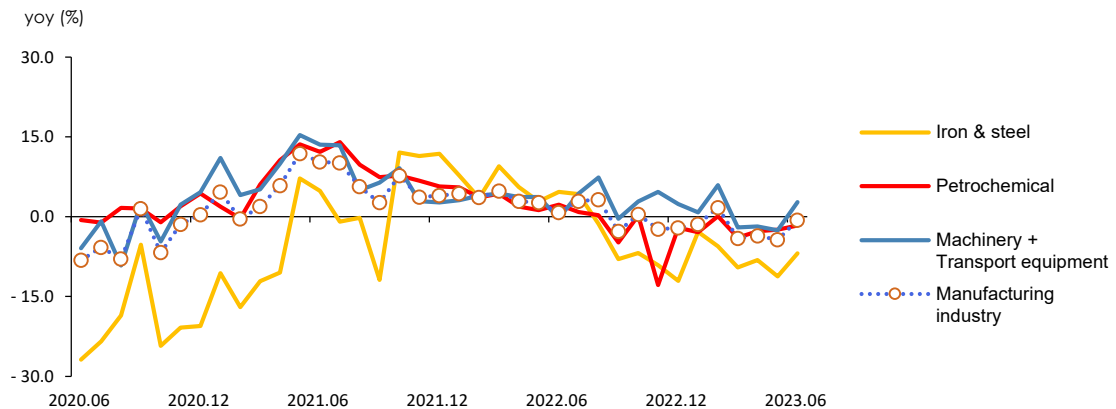
► Electricity consumption by end-use sectors

	2022p	M1~6		M6		2023p		M1~6		M4		M5		M6	
Electricity (TWh)	535.3	265.9	42.1	264.3	41.4	40.5	42.2								
	(2.9)	(4.1)	(2.7)	(-0.6)	(-3.1)	(-1.8)	(0.3)								
Industry	274.1	137.8	22.2	134.7	21.8	21.5	22.0								
	(1.7)	(3.5)	(1.4)	(-2.2)	(-3.8)	(-4.3)	(-1.0)								
Transport	4.0	1.9	0.3	2.2	0.3	0.4	0.4								
	(8.7)	(7.0)	(9.3)	(14.3)	(14.6)	(15.9)	(15.7)								
Buildings	257.2	126.2	19.5	127.4	19.3	18.6	19.8								
	(4.1)	(4.6)	(4.1)	(0.9)	(-2.5)	(1.0)	(1.6)								
Residential	78.6	37.2	5.8	37.1	5.9	5.7	6.0								
	(1.3)	(1.4)	(-0.5)	(-0.3)	(-2.6)	(1.2)	(2.4)								
Commercial	147.0	73.1	11.3	74.2	10.9	10.6	11.4								
	(5.9)	(6.7)	(7.2)	(1.4)	(-2.6)	(0.3)	(0.8)								

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

Source: Korea Energy Economics Institute

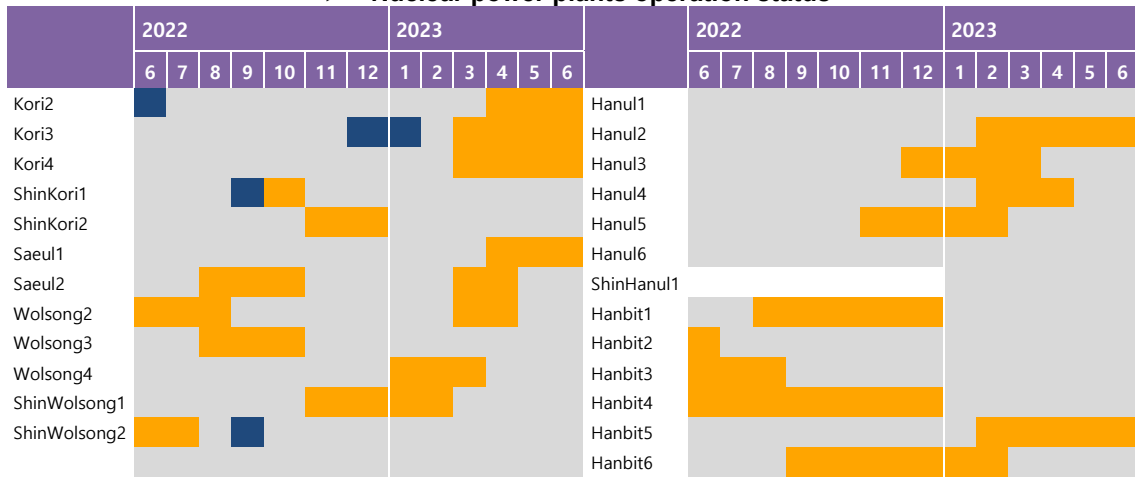
► The growth rate of electricity consumption in manufacturing industry



9. Nuclear

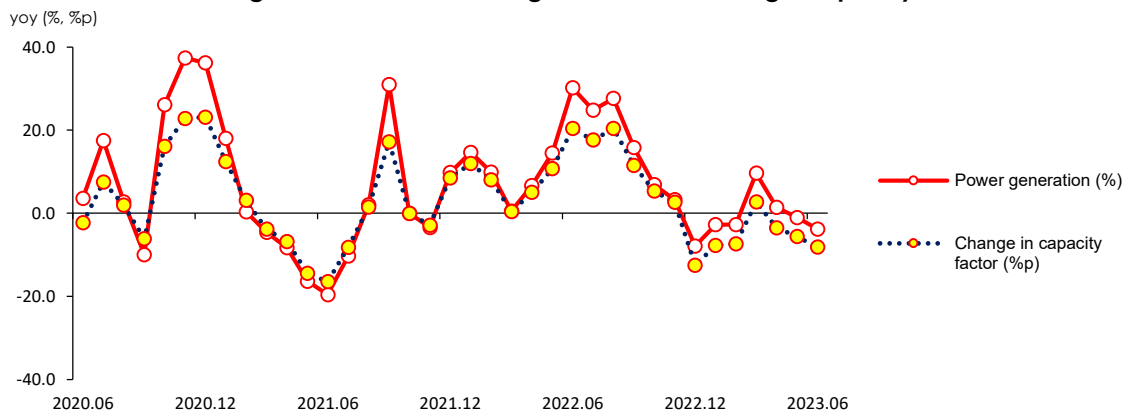
- **The total nuclear generation went down by 3.8% year-on-year in June despite the addition of new installed capacity, as the capacity factor of nuclear generators decreased.**
 - With the commissioning of Shin Hanul unit 1 (2022.12.7), the installed capacity of nuclear energy grew by 1.4GW, but the daily average of preventive maintenance went up by 1.8GW, leading to a drop in the total nuclear generation.
 - Nuclear energy's share of the total power generation remained almost flat (30.1%) compared to the same month last year, posting just a slight decline (-0.9%p).

► 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

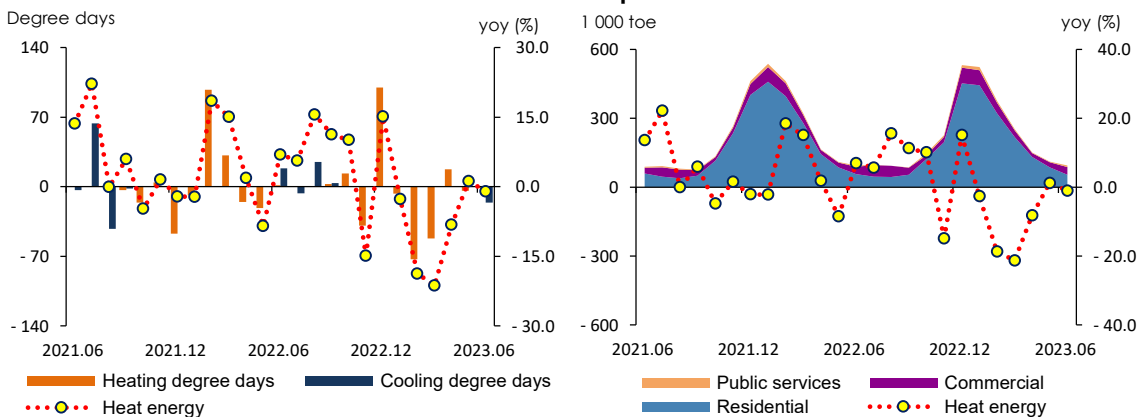
□ **Heat energy use dropped by 1.0% year-on-year in June, led by the residential sector that accounts for a large share of the total heat energy use, which was partly due to a rate hike.**

- Residential heat energy use fell by 5.6%, as heat energy rate jumped 40.6% year-on-year due to higher fuel cost, while it increased in the commercial sector despite the price effect, as production increased (3.0%) in the service industry.

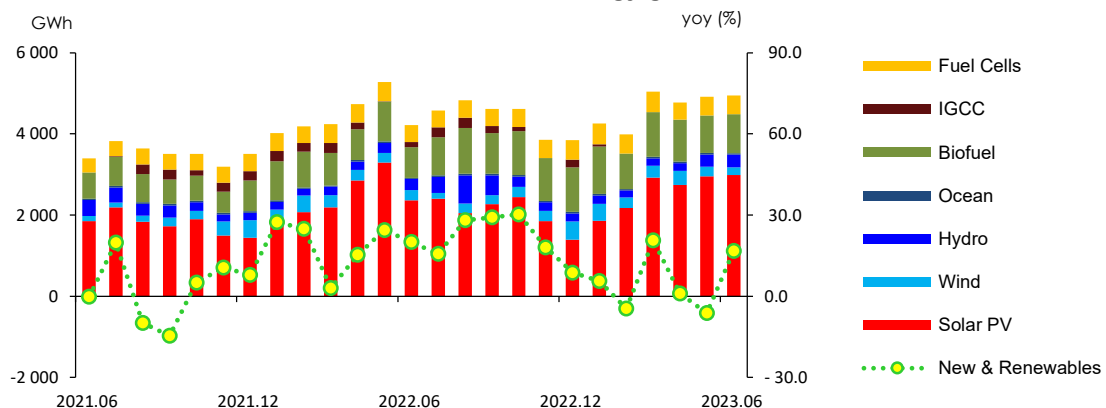
□ **Renewable & other energy use rose by 9.1%, led by a surge in the power generation sector, although its final use decreased.**

- Renewable & other energy generation went up by 16.7% year-on-year, as power generation from most energy sources increased including solar PV and bioenergy, but excluding wind power and IGCC.
- The final use of renewable & other energy decreased by 1.7% year-on-year, as it declined in all end-use sectors, including the transport sector.

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



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



Note: 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'.

11. Industry

□ Industrial energy use dropped by 4.9% year-on-year in June, with the petrochemical sector leading the downward trend amid the worsening economic conditions.

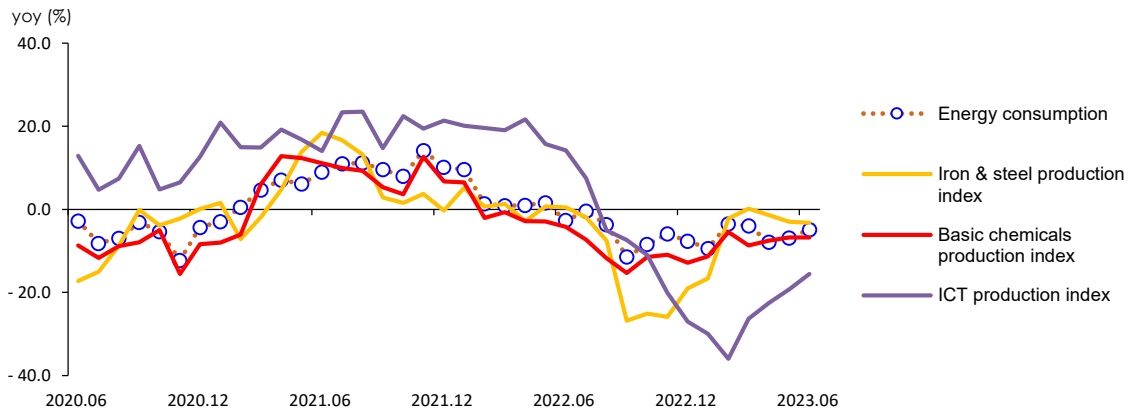
- Energy use rebounded in the iron & steel sector and grew faster in the machinery and transport equipment sectors amid the increased number of work days (↑ 1 day), but it continued to plunge in the petrochemical sector, and consequently, the industrial energy use maintained a downward slide.

► Industrial energy consumption

	2022p	2023p		2023p			
		M1~6	M6	M1~6	M4	M5	M6
Industry (Mtoe)	130.0	66.2	10.5	62.2	9.9	10.2	9.9
	(-2.2)	(2.0)	(-2.7)	(-6.1)	(-7.9)	(-6.9)	(-4.9)
Petrochemical	66.0	34.0	5.2	30.5	4.8	5.0	4.7
	(-1.5)	(5.0)	(-3.1)	(-10.1)	(-16.0)	(-9.4)	(-9.1)
- Naphtha	43.6	22.2	3.3	20.7	3.3	3.3	3.1
	(-3.9)	(1.9)	(-4.8)	(-6.6)	(-15.7)	(-6.1)	(-6.7)
Iron & Steel	25.9	13.1	2.2	13.0	2.1	2.2	2.2
	(-7.3)	(-5.6)	(-2.6)	(-1.0)	(1.1)	(-2.7)	(3.6)
- Coking coal	16.6	8.3	1.4	8.2	1.4	1.4	1.4
	(-6.7)	(-5.7)	(-1.7)	(-2.0)	(0.3)	(-4.2)	(2.4)
Machinery + Transport Equipment	13.0	6.4	1.0	6.5	1.0	1.0	1.0
	(4.6)	(2.9)	(-0.3)	(0.8)	(0.4)	(3.4)	(4.4)
Share of feedstock (%)	55.5	55.7	54.7	55.0	55.3	55.4	55.1

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

► Industrial energy consumption & production index



12. Transport

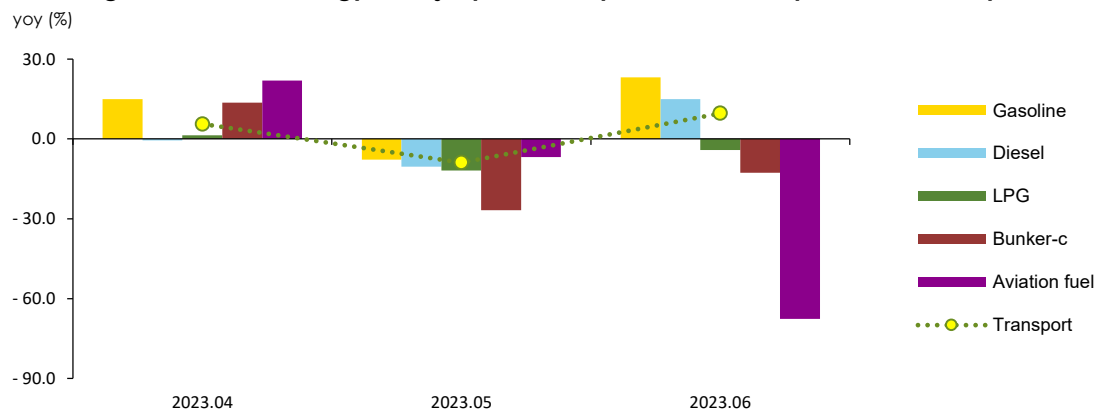
- **Transport energy use posted a year-on-year growth of 9.6% in June due to the base effect of a sharp drop during the same month last year and higher mobility demand in the road transport sector.**
 - In the road transport sector, energy use went up by 14.8% owing to the base effect of the same month last year, when energy use plunged after the announcement of the additional fuel tax cut, as well as the growth in mobility demand.
 - In the aviation sector, energy use decreased drastically from the same month last year amid a steady decline in the number of domestic flights.

► The growth rate of petroleum consumption in the transport sector

	2022p			2023p			
		M1~6	M6	M1~6	M4	M5	M6
Transport (Mtoe)	36.29	17.23	2.70	17.40	2.65	3.19	2.95
	(-0.9)	(-4.1)	(-17.8)	(1.0)	(5.6)	(-8.9)	(9.6)
Road	33.86	16.02	2.47	16.39	2.47	3.03	2.84
	(-1.0)	(-4.5)	(-19.3)	(2.3)	(4.9)	(-8.9)	(14.8)
Domestic navigation	0.46	0.25	0.04	0.23	0.04	0.03	0.04
	(8.5)	(30.5)	(29.5)	(-9.0)	(13.3)	(-22.8)	(-8.8)
Domestic aviation	1.67	0.81	0.15	0.64	0.11	0.11	0.05
	(-0.3)	(-1.9)	(1.2)	(-21.5)	(22.1)	(-6.6)	(-67.3)
Rail	0.30	0.15	0.02	0.15	0.02	0.02	0.02
	(-9.9)	(-11.8)	(-13.5)	(-1.3)	(-4.5)	(2.0)	(-1.0)

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 was up 0.7% year-on-year, with the commercial sector driving the growth, although the residential sector consumed less energy.**
 - In the residential sector, energy use fell by 0.7% year-on-year despite the growth in electricity use, because city gas use decreased.
 - In the commercial sector, energy use grew by 1.9% year-on-year, as production activities picked up in the service industry.
 - As for the contributions of each energy source to changes in buildings' energy use, electricity made the biggest contribution (1.0%p), followed by petroleum (0.4%p), heat (-0.0%p) and city gas (-0.5%p).

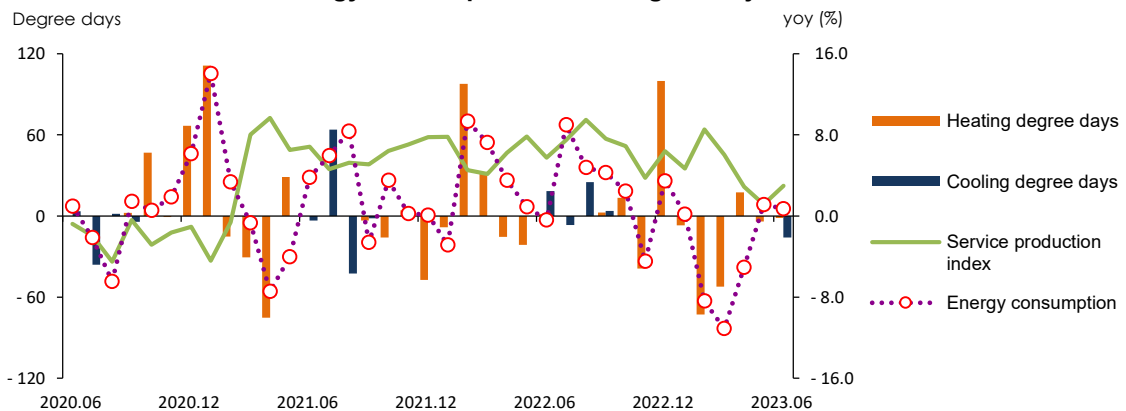
► Energy consumption in buildings

	2022p			2023p			
		M1~6	M6	M1~6	M4	M5	M6
Buildings (Mtoe)	47.4	25.7	2.7	24.6	3.3	2.9	2.7
	(3.0)	(3.0)	(-0.4)	(-4.3)	(-5.0)	(1.1)	(0.7)
Residential	23.2	13.5	1.0	12.4	1.5	1.2	1.0
	(1.2)	(1.9)	(-7.4)	(-8.1)	(-10.5)	(1.3)	(-0.7)
Commercial	18.9	9.6	1.4	9.6	1.4	1.3	1.4
	(5.4)	(5.9)	(3.6)	(0.0)	(-1.0)	(0.8)	(1.9)
Public services	5.3	2.7	0.4	2.6	0.4	0.4	0.4
	(2.3)	(-0.7)	(5.0)	(-1.0)	(4.7)	(1.5)	(0.0)
Heating degree days	2 567.1	1 577.8	1.4	1 458.0	148.3	32.1	-
	(6.8)	(5.7)	-	(-7.6)	(13.4)	(-11.1)	(-100.0)
Cooling degree days	141.9	18.5	18.5	2.6	-	-	2.6
	(40.1)	-	-	(-85.9)	-	-	(-85.9)
Service production index (2020=100)	112.0	108.8	114.2	113.5	113.9	114.1	117.6
	(6.5)	(6.0)	(5.7)	(4.3)	(2.9)	(1.2)	(3.0)

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

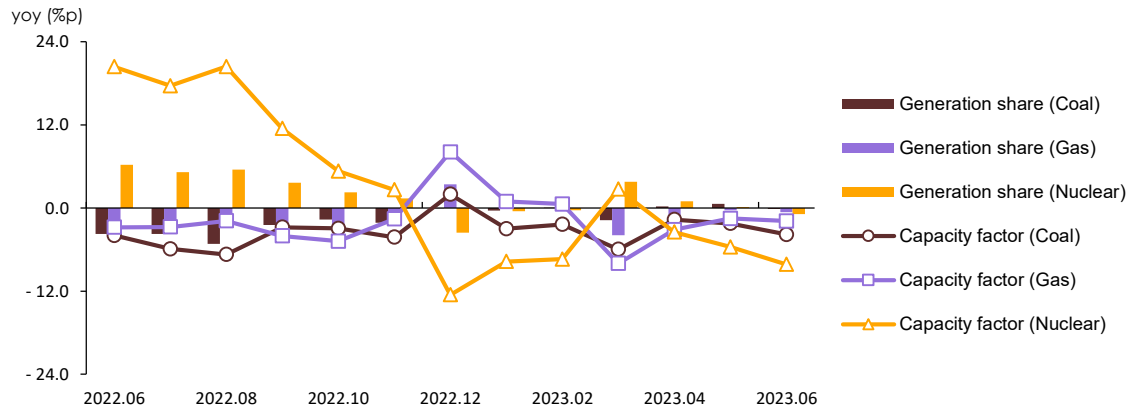
- **The total power generation fell by 1.0% year-on-year in June, as electricity consumption remained flat compared to the same month last year.**
 - Nuclear generation dropped by 3.8% year-on-year, as the daily average of preventive maintenance grew by 1.8GW, even though the installed capacity increased after the Shin Hanul unit 1 reactor (1.4GW) started the operation at the end of last year.
 - Renewable & other energy generation went up by 16.1% year-on-year, as solar PV generation that accounts for the largest share of the total renewable & other energy generation jumped 26.1% due to the growth in installed capacity, sunlight hours and solar radiation, and as bioenergy generation that takes up the second largest share increased by 26.6%.
 - Coal-fired generation went down by 1.5%, as power generation was constrained by transmission line issues, and also, as renewable & other energy generation surged.
 - Gas-fired generation, which is used to meet peak load demand, dropped by 3.4% year-on-year, as the total power generation fell by 1.0%, while baseload generation including renewable & other energy slid by mere 0.1%.

► Power generation by energy sources

	2022p			2023p			
		M1~6	M6	M1~6	M4	M5	M6
Power Generation (TWh)	594.4	291.6	47.6	286.6	44.1	45.5	47.1
	(3.1)	(4.5)	(3.9)	(-1.7)	(-1.7)	(-1.4)	(-1.0)
Coal	193.2	90.7	15.5	88.4	13.1	13.6	15.3
	(-2.4)	(1.3)	(-6.8)	(-2.5)	(-1.1)	(0.6)	(-1.5)
Oil	2.0	1.2	0.1	0.9	0.1	0.1	0.1
	(-16.5)	(16.5)	(-29.8)	(-26.0)	(-7.6)	(26.8)	(-9.3)
Gas	163.6	83.0	12.5	79.3	11.9	11.8	12.1
	(-2.8)	(-3.2)	(-6.2)	(-4.5)	(-7.3)	(-2.7)	(-3.4)
Nuclear	176.1	86.7	14.7	86.7	13.6	14.5	14.2
	(11.4)	(12.3)	(30.2)	(-0.0)	(1.4)	(-1.0)	(-3.8)
Renewables	59.6	30.0	4.7	31.3	5.4	5.5	5.4
	(18.9)	(17.6)	(9.1)	(4.4)	(2.2)	(-4.6)	(16.1)
Baseload	428.9	207.4	35.0	206.4	32.1	33.6	34.9
	(5.6)	(7.9)	(8.3)	(-0.5)	(0.5)	(-1.0)	(-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

	2021	2022					2023			
			M1~6	M4	M5	M6	M1~6	M4	M5	M6
GDP (trillion won)	1 915.8 (4.1)	1 968.8 (2.8)	960.9 (3.1)	- -	- -	493.0 (3.1)	969.5 (0.9)	- -	- -	497.3 (0.9)
Private consumption	882.5 (3.7)	917.8 (4.0)	449.3 (3.8)	- -	- -	225.7 -	463.0 (3.1)	- -	- -	229.3 -
Facilities investment	181.6 (9.0)	180.5 (-0.7)	87.1 (-6.6)	- -	- -	45.1 -	91.7 (5.3)	- -	- -	47.2 -
Construction investment	265.0 (-1.6)	257.6 (-2.8)	122.6 (-3.7)	- -	- -	70.3 -	124.9 (1.8)	- -	- -	71.6 -
Consumer price index (2020=100)	102.5	107.7	106.4	106.9	107.6	108.2	110.7	110.8	111.1	111.1
USD to KRW exchange rate (won)	1 144.0	1 291.4	1 232.2	1 232.3	1 269.9	1 277.4	1 294.8	1 320.0	1 328.2	1 296.7
Benchmark rate (%)	0.6	2.1	1.5	1.5	1.8	1.8	3.5	3.5	3.5	3.5
Coincident composite index (2020=100)	104.1	108.2	107.6	107.5	107.8	108.0	109.5	110.0	110.3	110.3
Mining & manufacturing production index (2020=100)	108.2	109.7	111.7	111.8	113.4	114.4	102.1	101.6	104.8	107.6
Manufacturing operation ratio index (2020=100)	105.2	105.2	107.4	107.8	109.3	109.7	99.0	99.0	101.9	104.3
Average temperature	13.3	12.9	10.2	13.8	18.0	22.4	10.8	13.1	17.9	22.3
- year-on-year difference	0.3	-0.4	-0.3	0.6	1.4	0.6	0.6	-0.7	-0.1	-0.0
Heating degree days	2 404.7 (-1.8)	2 567.1 (6.8)	1 577.8 (5.7)	130.8 (-10.5)	36.1 (-37.3)	1.4 -	1 458.0 (-7.6)	148.3 (13.4)	32.1 (-11.1)	- (-100.0)
Cooling degree days	101.3 (18.9)	141.9 (40.1)	18.5 -	- -	- -	18.5 -	2.6 (-85.9)	- -	- -	2.6 (-85.9)
Energy intensity	0.16 (1.0)	0.16 (-2.2)	0.16 (-0.6)	#VALUE! -	#VALUE! -	0.15 (-2.6)	0.15 (-4.8)	#VALUE! -	#VALUE! -	0.14 (-4.6)
Per capita consumption										
Oil (bbl)	0.0 (7.3)	0.0 (-1.7)	0.0 (0.9)	0.0 (-4.0)	0.0 (2.8)	0.0 (-12.7)	0.0 (-5.1)	0.0 (-7.1)	0.0 (-8.1)	0.0 (-0.8)
Electricity (MWh)	0.0 (4.9)	0.0 (3.1)	0.0 (4.3)	0.0 (4.8)	0.0 (3.9)	0.0 (2.9)	0.0 (-0.5)	0.0 (-2.9)	0.0 (-1.7)	0.0 (0.5)
City gas (1 000 m ³)	- (3.5)	- (3.2)	- (4.8)	- (7.6)	- (-1.6)	- (-1.0)	- (-8.5)	- (-13.3)	- (-4.0)	- (-7.3)
Total energy (toe)	0.0 (5.3)	0.0 (0.7)	0.0 (2.7)	- (-1.0)	- (3.4)	- (-0.6)	0.0 (-3.9)	- (-3.2)	- (-4.4)	- (-3.1)

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

	2021	2022					2023			
			M1~6	M4	M5	M6	M1~6	M4	M5	M6
Industrial production index										
All industry	105.5 (5.5)	110.1 (4.4)	108.5 (5.3)	109.5 (5.5)	111.2 (7.3)	114.2 (3.8)	108.9 (0.3)	108.4 (-1.0)	109.6 (-1.4)	115.0 (0.7)
Mining & manufacturing	108.2 (8.2)	109.7 (1.4)	111.7 (5.6)	111.8 (4.9)	113.4 (8.6)	114.4 (3.3)	102.1 (-8.6)	101.6 (-9.1)	104.8 (-7.6)	107.6 (-5.9)
Semiconductor	126.8 (26.8)	136.5 (7.7)	146.5 (28.8)	139.9 (31.4)	149.5 (26.7)	159.4 (24.9)	108.4 (-26.0)	109.7 (-21.6)	121.6 (-18.7)	134.2 (-15.8)
Iron & steel	105.2 (5.2)	96.3 (-8.4)	104.9 (0.9)	102.8 (-2.8)	106.6 (0.7)	105.3 (0.5)	100.2 (-4.5)	101.4 (-1.4)	103.4 (-3.0)	101.9 (-3.2)
Cement	103.2 (3.1)	100.2 (-2.9)	98.2 (-2.9)	110.7 (-5.5)	112.8 (4.3)	99.6 (-10.6)	96.0 (-2.3)	100.6 (-9.1)	103.3 (-8.4)	101.6 (2.0)
Basic compound	105.9 (5.9)	99.1 (-6.4)	103.3 (-1.0)	102.0 (-2.9)	101.0 (-2.9)	98.0 (-4.2)	95.2 (-7.8)	94.3 (-7.5)	94.2 (-6.7)	91.4 (-6.7)
Transport equipment	106.3 (6.3)	116.0 (9.1)	109.9 (0.5)	114.1 (-2.1)	114.4 (14.9)	119.1 (3.6)	130.2 (18.4)	133.4 (16.9)	136.0 (18.9)	132.0 (10.8)
Electric & electronic	107.7 (7.7)	110.8 (2.9)	109.0 (4.1)	109.4 (2.7)	112.7 (9.6)	114.7 (2.1)	107.1 (-1.8)	104.9 (-4.1)	106.8 (-5.2)	112.3 (-2.1)
Service	105.2 (5.2)	112.0 (6.5)	108.8 (6.0)	110.7 (6.2)	112.8 (7.8)	114.2 (5.7)	113.5 (4.3)	113.9 (2.9)	114.1 (1.2)	117.6 (3.0)
Wholesale and retail	105.3 (5.3)	107.1 (1.7)	105.9 (2.1)	108.1 (2.0)	109.7 (4.7)	106.2 (0.1)	106.7 (0.8)	105.3 (-2.6)	107.8 (-1.7)	107.2 (0.9)
Food & Accommodation	101.9 (1.9)	119.1 (16.9)	111.8 (17.9)	117.5 (19.0)	129.5 (21.0)	125.2 (18.1)	118.2 (5.7)	119.5 (1.7)	123.2 (-4.9)	119.3 (-4.7)
Production output										
Iron & steel - Pig iron	46 440.5 (2.4)	42 658.2 (-8.1)	21 462.6 (-6.6)	3 422.7 (-5.8)	3 581.6 (-3.9)	3 699.8 (-2.3)	22 034.2 (2.7)	3 651.7 (6.7)	3 768.2 (5.2)	3 716.8 (0.5)
Iron & steel - Crude steel	70 418.0 (5.0)	65 846.2 (-6.5)	33 831.8 (-3.9)	5 521.6 (-4.0)	5 801.6 (-1.3)	5 584.8 (-6.5)	33 672.4 (-0.5)	5 681.1 (2.9)	5 794.7 (-0.1)	5 529.8 (-1.0)
Petrochemical - Basic petrochemicals	34 434.5 (12.7)	32 854.1 (-4.6)	17 120.4 (5.1)	2 856.7 (2.1)	2 794.3 (-0.7)	2 573.1 (-2.9)	15 069.1 (-12.0)	2 406.4 (-15.8)	2 414.3 (-13.6)	2 390.1 (-7.1)
Petrochemical - Intermediate raw material	15 764.6 (2.6)	13 852.5 (-12.1)	7 168.7 (-7.7)	1 185.9 (-7.4)	1 206.1 (-8.4)	1 062.2 (-5.3)	6 646.0 (-7.3)	1 088.2 (-8.2)	1 077.1 (-10.7)	975.2 (-8.2)
Petrochemical - 3 major products	23 224.7 (9.2)	22 129.4 (-4.7)	11 868.7 (6.3)	1 931.9 (4.0)	1 963.3 (2.1)	1 790.0 (-3.2)	10 502.4 (-11.5)	1 755.1 (-9.1)	1 598.9 (-18.6)	1 644.7 (-8.1)
The number of cars	3 462.4 (-1.3)	3 756.5 (8.5)	1 779.0 (-2.0)	306.5 (-5.3)	307.0 (19.8)	328.4 (0.8)	2 194.8 (23.4)	382.3 (24.7)	382.1 (24.5)	370.3 (12.8)

Note: p means provisional.

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

International Energy Prices

	2021	2022					2023			
			M1~6	M4	M5	M6	M1~6	M4	M5	M6
Crude oil (USD/bbl)										
WTI	67.9 (72.4)	94.2 (38.7)	101.4 (63.6)	101.6 (64.7)	109.3 (67.7)	114.3 (60.2)	75.0 (-26.0)	79.4 (-21.8)	71.6 (-34.4)	70.3 (-38.5)
Dubai	69.3 (64.1)	96.4 (39.1)	101.8 (60.4)	102.8 (63.4)	108.2 (63.0)	113.3 (58.2)	79.1 (-22.4)	83.4 (-18.8)	75.0 (-30.7)	75.0 (-33.8)
Brent	70.8 (63.8)	98.9 (39.7)	104.6 (60.8)	105.9 (62.1)	112.0 (63.9)	117.5 (60.1)	80.1 (-23.4)	83.4 (-21.3)	75.7 (-32.4)	75.0 (-36.2)
Unit value of import (C&F)	70.2 (56.9)	102.3 (45.6)	102.3 (61.5)	110.2 (69.2)	110.1 (63.1)	117.0 (65.7)	83.9 (-18.0)	84.1 (-23.7)	84.5 (-23.2)	79.0 (-32.5)
LNG										
Henry Hub (USD/MMBTU)	3.7 (74.6)	6.5 (75.2)	6.0 (111.4)	6.7 (149.7)	8.2 (175.8)	7.6 (132.2)	2.5 (-57.9)	2.2 (-67.2)	2.3 (-71.8)	2.5 (-67.4)
TTF (USD/MMBTU)	16.0 (396.1)	40.1 (150.0)	31.9 (317.3)	31.8 (345.0)	29.0 (226.3)	33.4 (225.6)	14.0 (-56.2)	13.4 (-57.9)	10.0 (-65.6)	10.3 (-69.1)
JKM (USD/MMBTU)	17.9 (324.7)	33.9 (89.5)	28.8 (208.2)	29.2 (274.5)	22.7 (135.2)	29.7 (156.6)	14.7 (-49.0)	12.3 (-57.8)	10.5 (-53.9)	10.6 (-64.3)
Unit value of import (USD/ton, CIF)	550.8 (41.2)	1 053.5 (91.3)	863.2 (96.3)	695.0 (80.3)	723.3 (77.2)	762.1 (65.4)	897.1 (3.9)	698.9 (0.6)	679.1 (-6.1)	687.7 (-9.8)
Coal (USD/ton)										
Thermal coal (Newcastle)	136.0 (125.8)	356.3 (161.9)	313.9 (223.8)	306.6 (226.6)	390.4 (288.7)	395.0 (215.3)	208.2 (-33.7)	191.8 (-37.4)	163.2 (-58.2)	130.5 (-67.0)
Unit value of import (CIF)	115.1 (48.1)	226.3 (96.7)	229.5 (159.3)	253.4 (177.0)	267.0 (182.8)	258.8 (164.3)	192.8 (-16.0)	200.7 (-20.8)	196.1 (-26.6)	165.4 (-36.1)
Petroleum product (USD/bbl)										
Gasoline	80.3 (72.2)	115.2 (43.4)	128.2 (78.0)	126.9 (71.5)	147.0 (92.9)	155.2 (93.2)	96.7 (-24.6)	100.3 (-21.0)	90.2 (-38.6)	92.7 (-40.3)
Kerosene	75.1 (67.9)	126.7 (68.6)	129.5 (92.2)	134.4 (101.4)	143.0 (99.3)	164.3 (116.4)	99.3 (-23.3)	96.8 (-28.0)	88.5 (-38.1)	90.0 (-45.2)
Diesel	77.6 (57.2)	135.3 (74.3)	138.5 (98.2)	148.8 (116.1)	153.5 (107.6)	176.8 (124.3)	101.1 (-27.0)	98.7 (-33.7)	89.2 (-41.9)	92.2 (-47.8)
Bunker-C	64.4 (64.3)	82.3 (27.8)	96.1 (63.2)	111.1 (88.3)	104.5 (74.9)	99.1 (53.1)	66.6 (-30.7)	73.0 (-34.3)	67.6 (-35.3)	66.9 (-32.5)
Propane	647.9 (63.2)	737.1 (13.8)	825.0 (47.1)	940.0 (67.9)	850.0 (71.7)	750.0 (41.5)	610.0 (-26.1)	555.0 (-41.0)	555.0 (-34.7)	450.0 (-40.0)
Butane	629.6 (55.9)	734.2 (16.6)	829.2 (53.5)	960.0 (81.1)	860.0 (81.1)	750.0 (42.9)	612.5 (-26.1)	545.0 (-43.2)	555.0 (-35.5)	440.0 (-41.3)
Naphtha	70.6 (74.6)	83.1 (17.7)	94.3 (48.8)	96.6 (55.3)	94.7 (44.2)	84.3 (19.6)	68.5 (-27.4)	70.9 (-26.6)	61.9 (-34.7)	56.9 (-32.6)

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

	2021	2022					2023			
			M1~6	M4	M5	M6	M1~6	M4	M5	M6
Petroleum product										
Gasoline (won/liter)	1 590.5 (15.1)	1 812.4 (14.0)	1 886.0 (24.7)	1 976.5 (28.8)	1 967.1 (27.6)	2 084.0 (32.1)	1 597.3 (-15.3)	1 640.9 (-17.0)	1 628.8 (-17.2)	1 580.6 (-24.2)
Diesel (won/liter)	1 391.3 (16.9)	1 841.8 (32.4)	1 796.1 (37.0)	1 906.4 (43.0)	1 964.2 (46.7)	2 089.0 (52.0)	1 537.3 (-14.4)	1 535.7 (-19.4)	1 472.0 (-25.1)	1 394.5 (-33.2)
Bunker-C (won/liter)	731.7 (27.6)	1 115.2 (52.4)	1 060.6 (59.3)	1 191.7 (63.2)	1 190.4 (68.5)	1 229.3 (74.0)	906.5 (-14.5)	882.5 (-25.9)	920.7 (-22.7)	879.3 (-28.5)
Propane (won/kg)	2 092.6 (13.1)	2 479.6 (18.5)	2 475.9 (24.7)	2 552.2 (25.5)	2 558.2 (25.9)	2 558.8 (28.0)	2 407.9 (-2.7)	2 409.0 (-5.6)	2 408.8 (-5.8)	2 374.2 (-7.2)
Butane (won/liter)	931.8 (17.8)	1 081.7 (16.1)	1 106.2 (27.1)	1 163.2 (29.4)	1 134.6 (26.2)	1 133.7 (29.1)	989.7 (-10.5)	988.3 (-15.0)	987.8 (-12.9)	961.0 (-15.2)
City gas(won/MJ)										
Residential	14.2 (-5.7)	16.6 (16.7)	14.8 (4.4)	14.7 (3.0)	15.9 (11.6)	15.9 (11.6)	20.0 (35.0)	19.7 (34.4)	20.7 (30.6)	20.7 (30.6)
General(1)	13.9 (-6.5)	16.3 (17.3)	14.6 (4.8)	14.3 (3.1)	15.5 (12.1)	15.5 (12.1)	19.8 (35.5)	19.3 (35.5)	20.4 (31.3)	20.4 (31.4)
Commercial	17.2 (14.2)	28.7 (66.6)	24.5 (61.1)	26.5 (64.7)	22.7 (51.3)	22.7 (46.2)	29.0 (18.4)	26.6 (0.6)	23.5 (3.8)	23.3 (2.2)
Industry	14.4 (14.2)	25.9 (79.9)	21.8 (72.6)	23.3 (75.1)	19.7 (67.0)	19.7 (60.0)	26.5 (21.3)	23.6 (1.6)	20.6 (4.7)	20.3 (3.0)
Heat(won/Mcal)										
Residential	65.2 (-1.4)	74.1 (13.7)	66.1 (1.3)	67.0 (2.7)	67.0 (2.7)	67.0 (2.7)	90.6 (37.0)	89.9 (34.2)	89.9 (34.2)	94.2 (40.6)
Commercial	84.7 (-1.4)	96.3 (13.7)	85.8 (1.3)	87.0 (2.7)	87.0 (2.7)	87.0 (2.7)	117.6 (37.0)	116.7 (34.2)	116.7 (34.2)	122.3 (40.6)
Public	74.0 (-1.4)	84.1 (13.7)	75.0 (1.3)	76.0 (2.7)	76.0 (2.7)	76.0 (2.7)	102.7 (37.0)	101.9 (34.2)	101.9 (34.2)	106.8 (40.6)
Electricity(won/kWh)										
Residential	142.3 (-3.4)	147.8 (3.9)	144.8 (1.7)	147.2 (3.4)	147.2 (3.4)	147.2 (3.4)	168.7 (16.5)	166.0 (12.8)	174.0 (18.2)	174.0 (18.2)
General	79.4 (-5.9)	84.9 (7.0)	78.4 (3.2)	65.1 (8.1)	65.1 (8.1)	105.6 (4.9)	102.4 (30.5)	83.9 (28.9)	91.9 (41.2)	132.4 (25.4)
Industry	91.0 (-5.2)	98.8 (8.6)	91.0 (2.8)	78.4 (6.7)	78.4 (6.7)	108.4 (4.7)	124.1 (36.4)	106.4 (35.7)	114.4 (45.9)	144.4 (33.2)

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)

	2021	2022p					2023p			
			M1~6	M4	M5	M6	M1~6	M4	M5	M6
Coal (Mton)	119.9 (-0.0)	114.0 (-5.0)	55.6 (-1.5)	8.2 (-3.8)	9.1 (-2.3)	9.7 (-0.3)	52.1 (-6.3)	7.9 (-3.5)	8.2 (-9.4)	8.7 (-10.1)
- Coking coal excluded	94.4 (-0.8)	90.4 (-4.3)	43.7 (0.0)	6.3 (-3.1)	7.0 (-0.9)	7.7 (0.3)	40.4 (-7.5)	6.0 (-4.7)	6.3 (-10.9)	6.7 (-13.3)
Oil (Mbbl)	830.7 (7.1)	814.5 (-1.9)	407.2 (0.7)	64.3 (-4.2)	69.0 (2.5)	60.1 (-12.9)	386.1 (-5.2)	59.6 (-7.2)	63.3 (-8.3)	59.6 (-0.9)
LNG (Mton)	45.8 (10.4)	45.6 (-0.5)	24.3 (0.8)	3.4 (-1.3)	3.0 (-1.1)	3.0 (-2.7)	22.6 (-6.8)	3.2 (-5.8)	3.0 (-0.6)	2.9 (-3.6)
Hydro (TWh)	3.1 (-21.2)	3.5 (15.9)	1.3 (-15.1)	0.2 (-12.8)	0.2 (-26.6)	0.3 (-28.6)	1.4 (5.1)	0.2 (-6.6)	0.3 (21.5)	0.3 (13.9)
Nuclear (TWh)	158.0 (-1.4)	176.1 (11.4)	86.7 (12.3)	13.4 (6.7)	14.6 (14.5)	14.7 (30.2)	86.7 (-0.0)	13.6 (1.4)	14.5 (-1.0)	14.2 (-3.8)
Others (Mtoe)	14.4 (13.8)	15.9 (10.6)	8.0 (9.9)	1.4 (5.1)	1.5 (20.1)	1.3 (10.4)	8.3 (3.8)	1.5 (11.3)	1.4 (-2.7)	1.4 (8.9)
TPED (Mtoe)	303.2 (5.1)	304.5 (0.4)	153.4 (2.4)	23.4 (-1.3)	24.6 (3.1)	23.5 (-0.8)	147.2 (-4.0)	22.6 (-3.3)	23.4 (-4.6)	22.8 (-3.3)

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

Share of TPED by Sources

(unit: %)

	2021	2022p					2023p			
			M1~6	M4	M5	M6	M1~6	M4	M5	M6
Coal	24.0	22.7	22.0	21.3	22.4	24.9	21.5	21.3	21.4	23.4
- Coking coal excluded	18.1	17.2	16.5	15.5	16.6	19.0	15.9	15.3	15.5	17.1
Oil	40.1	40.0	39.5	40.5	42.1	39.1	39.6	39.8	41.7	40.0
LNG	19.7	19.6	20.7	18.9	16.2	16.6	20.1	18.4	16.8	16.5
Hydro	0.2	0.2	0.2	0.2	0.2	0.3	0.2	0.2	0.3	0.3
Nuclear	11.1	12.3	12.0	12.2	12.7	13.3	12.5	12.8	13.1	13.3
Others	4.7	5.2	5.2	5.8	6.0	5.5	5.7	6.7	6.1	6.2
TPED	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: Korea Energy Economics Institute

Total Final Consumption (TFC)

(Unit: Mtoe)

	2021	2022p					2023p			
			M1~6	M4	M5	M6	M1~6	M4	M5	M6
Industry	133.0 (7.2)	130.0 (-2.2)	66.2 (2.0)	10.8 (1.0)	10.9 (1.6)	10.5 (-2.7)	62.2 (-6.1)	9.9 (-7.9)	10.2 (-6.9)	9.9 (-4.9)
Transport	36.6 (5.4)	36.3 (-0.9)	17.2 (-4.1)	2.5 (-19.8)	3.5 (12.8)	2.7 (-17.8)	17.4 (1.0)	2.6 (5.6)	3.2 (-8.9)	3.0 (9.6)
Residential	22.9 (2.6)	23.2 (1.2)	13.5 (1.9)	1.7 (2.5)	1.2 (-8.1)	1.0 (-7.4)	12.4 (-8.1)	1.5 (-10.5)	1.2 (1.3)	1.0 (-0.7)
commercial	17.9 (1.7)	18.9 (5.4)	9.6 (5.9)	1.4 (5.5)	1.3 (7.2)	1.4 (3.6)	9.6 (0.0)	1.4 (-1.0)	1.3 (0.8)	1.4 (1.9)
Public	5.2 (4.0)	5.3 (2.3)	2.7 (-0.7)	0.4 (1.2)	0.4 (12.0)	0.4 (5.0)	2.6 (-1.0)	0.4 (4.7)	0.4 (1.5)	0.4 (0.0)
TFC	215.7 (5.8)	213.7 (-0.9)	109.2 (1.2)	16.8 (-2.3)	17.3 (3.5)	15.9 (-5.2)	104.2 (-4.6)	15.9 (-5.3)	16.3 (-6.0)	15.6 (-1.4)
Coal (Mton)	51.0 (3.6)	46.9 (-8.1)	23.9 (-4.1)	3.6 (-10.3)	4.2 (-0.2)	4.1 (3.4)	22.8 (-4.5)	3.7 (3.4)	3.9 (-8.2)	3.8 (-7.5)
Oil (Mbbl)	809.1 (7.6)	798.9 (-1.3)	399.7 (1.4)	63.3 (-3.5)	68.8 (6.2)	59.3 (-11.7)	376.5 (-5.8)	58.4 (-7.8)	62.9 (-8.6)	58.8 (-0.8)
- Non-energy oil excluded	350.6 (4.3)	345.8 (-1.4)	166.5 (-4.4)	23.2 (-18.3)	31.3 (9.5)	24.1 (-20.0)	165.3 (-0.8)	24.7 (6.5)	28.3 (-9.4)	26.1 (8.4)
Electricity (TWh)	520.3 (4.7)	535.3 (2.9)	265.9 (4.1)	42.7 (4.5)	41.2 (3.7)	42.1 (2.7)	264.3 (-0.6)	41.4 (-3.1)	40.5 (-1.8)	42.2 (0.3)
City gas (Bm³)	22.7 (3.3)	23.4 (2.9)	13.8 (4.6)	1.9 (7.3)	1.4 (-1.8)	1.2 (-1.2)	12.6 (-8.6)	1.6 (-13.4)	1.4 (-4.2)	1.1 (-7.4)
Heat-others (1 000 toe)	9.8 (6.3)	10.0 (1.9)	5.3 (0.6)	0.7 (-3.5)	0.7 (1.8)	0.7 (1.6)	5.0 (-5.7)	0.7 (-4.3)	0.7 (-3.5)	0.7 (-1.6)

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

Source: Korea Energy Economics Institute

Share of the Total Final Consumption by Sources

(unit: %)

	2021	2022p					2023p			
			M1~6	M4	M5	M6	M1~6	M4	M5	M6
Industry	61.7	60.8	60.7	64.2	63.1	65.9	59.7	62.5	62.5	63.6
Transport	17.0	17.0	15.8	14.9	20.3	17.0	16.7	16.6	19.6	18.9
Residential	10.6	10.9	12.4	10.3	6.8	6.1	11.9	9.7	7.4	6.1
Commercial	8.3	8.9	8.8	8.2	7.5	8.6	9.2	8.6	8.0	8.9
Public	2.4	2.5	2.4	2.4	2.2	2.5	2.5	2.6	2.4	2.5
TFC	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0
Coal	15.0	14.0	14.0	13.9	15.6	16.4	14.0	15.1	15.3	15.6
Oil	47.9	47.5	46.4	47.5	50.8	47.5	45.9	46.5	49.3	48.0
- Non-energy oil excluded	21.6	21.5	20.3	18.4	24.2	20.2	20.9	20.5	23.0	22.1
Electricity	20.7	21.5	20.9	21.9	20.5	22.8	21.8	22.4	21.4	23.2
City gas	11.8	12.2	13.8	12.3	9.2	9.0	13.5	11.6	10.0	8.8
Heat-others	4.6	4.7	4.8	4.4	3.9	4.3	4.8	4.5	4.0	4.3

Note: p means provisional.

Source: Korea Energy Economics Institute

Statistics on Energy Production Facilities

	2020	2021	2022	2023			2023		
				M4	M5	M6	M4	M5	M6
Total capacity (GW)	129.2 (3.1)	134.0 (3.7)	138.0 (3.0)	133.9 (4.3)	134.1 (3.4)	134.2 (2.4)	139.1 (3.9)	140.8 (5.0)	141.0 (5.0)
Nuclear	23.3 -	23.3 -	24.7 (6.0)	23.3 -	23.3 -	23.3 -	24.7 (6.0)	24.7 (6.0)	24.7 (6.0)
Bituminous coal	36.5 (0.1)	36.9 (1.3)	37.3 (1.0)	36.3 (5.8)	36.3 (2.5)	36.3 (-0.4)	37.2 (2.4)	38.2 (5.4)	38.2 (5.4)
Gas	41.2 (4.1)	41.2 (0.1)	41.2 -	41.2 (0.1)	41.2 (0.1)	41.2 (0.1)	41.2 -	41.7 (1.2)	41.7 (1.2)
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

	2020	2021	2022	2023			2023		
				M4	M5	M6	M4	M5	M6
The number of household demanding city gas (mil)	20.1 (2.4)	20.5 (2.0)	20.9 (1.7)	20.6 (1.8)	20.6 (1.8)	20.6 (2.3)	20.9 (1.7)	20.9 (1.3)	20.8 (1.1)
Registered cars (mil)	24.4 (2.9)	24.9 (2.2)	25.5 (2.4)	25.1 (2.3)	25.2 (2.4)	25.2 (2.3)	25.7 (2.2)	25.7 (2.2)	25.8 (2.1)
- gasoline	11.4 (4.1)	11.8 (3.1)	12.1 (2.6)	11.9 (2.8)	11.9 (2.8)	11.9 (2.7)	12.2 (2.6)	12.2 (2.6)	12.2 (2.6)
- diesel	10.0 (0.3)	9.9 (-1.2)	9.8 (-1.2)	9.9 (-1.2)	9.8 (-1.0)	9.8 (-1.0)	9.7 (-1.7)	9.7 (-1.8)	9.6 (-1.9)
- LPG	2.0 (-1.3)	1.9 (-1.7)	1.9 (-2.1)	1.9 (-1.9)	1.9 (-1.9)	1.9 (-1.9)	1.9 (-2.6)	1.9 (-2.8)	1.9 (-3.0)
- hybrid	0.6 (33.1)	0.9 (34.0)	1.1 (28.5)	1.0 (32.5)	1.0 (32.8)	1.0 (32.2)	1.2 (28.5)	1.3 (28.6)	1.3 (29.4)

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

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