

KEEI

MONTHLY KOREA ENERGY TRENDS

2023/10

KOREA ENERGY ECONOMICS INSTITUTE

COAL	-11.6%
PETROLEUM	-4.2%
GAS	-3.7%
NUCLEAR	3.0%
NEW & RENEWABLE	9.9%
July. 2023	

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



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1. The Economy and the Industry

- **The industrial production index dropped by 8.1% year-on-year in July due to weak production in most subsectors except the automobile sector.**
 - The semiconductor production index declined by 15.0% year-on-year, as some manufacturers reduced their production (-19.6%, based on the utilization rate index) amid sluggish demand growth in the domestic and global markets, although the pace of decline has been slowing after a sharp fall in February (-41.7%).
 - The production index of basic chemical materials fell by 4.5% due to the ongoing slump in the petrochemical sector, a drop in export and domestic demand (-2.6%, -2.4%) and the shutdown of some factories (LG Chem's 2nd NCC plant in Yeosu), although the pace of decline has slowed since March.
 - The iron & steel production index was down 5.6% year-on-year, despite increased export of steel materials (10.2%, based on export volume), as factories' utilization rate declined (-5.3%) due to slower growth in automobile and stagnant construction business, (major) sources of iron and steel demand.
 - The automobile production index was up 6.2% year-on-year, which was attributed to the normalized supply of semiconductors used in cars, the launch of a new model and stronger exports.
- **The service production index went up by 1.7% year-on-year in July, despite lower production in some sectors, as it increased in several other sectors.**
 - Although the production declined in the wholesale & retail and accommodation & food industries, it increased in other service sectors, contributing to a slight growth in the service production index.

► Major economic and industrial indicators

	2022p			2023p			
		M1~7	M7	M1~7	M5	M6	M7
GDP (trillion won)	1 968.8 (2.8)	960.9 (3.1)	- -	969.5 (0.9)	- -	497.3 (0.9)	- -
Total export (\$billion, customs clearance basis)	683.6 (6.1)	410.8 (14.5)	60.2 (8.6)	357.6 (-12.9)	52.1 (-15.4)	54.2 (-6.0)	50.5 (-16.1)
Industrial production index (2020=100)	109.7 (1.4)	111.9 (5.2)	113.1 (2.6)	102.3 (-8.6)	104.8 (-7.6)	107.5 (-6.0)	103.9 (-8.1)
Semi-conductors	136.5 (7.7)	146.9 (26.6)	149.6 (14.9)	111.1 (-24.4)	121.6 (-18.7)	134.2 (-15.8)	127.2 (-15.0)
Basic chemical products	99.1 (-6.4)	103.2 (-2.0)	102.4 (-7.3)	95.6 (-7.4)	94.2 (-6.7)	91.3 (-6.8)	97.8 (-4.5)
Iron&Steel	96.3 (-8.4)	105.3 (0.5)	108.0 (-1.9)	100.4 (-4.7)	103.4 (-3.0)	101.9 (-3.2)	101.9 (-5.6)
Cars	116.0 (9.1)	111.3 (1.8)	119.2 (9.1)	129.6 (16.5)	136.0 (18.9)	132.0 (10.8)	126.6 (6.2)
Service production index (2020=100)	112.0 (6.5)	109.3 (6.2)	112.1 (7.5)	113.6 (3.9)	114.1 (1.2)	117.6 (3.0)	114.0 (1.7)
Wholesale & Retail	107.1 (1.7)	105.8 (1.8)	105.3 (0.2)	106.2 (0.4)	107.8 (-1.7)	107.2 (0.9)	103.3 (-1.9)
Food & Accommodation	119.1 (16.9)	114.7 (19.1)	132.1 (25.6)	118.8 (3.6)	123.2 (-4.9)	119.5 (-4.6)	122.4 (-7.3)

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

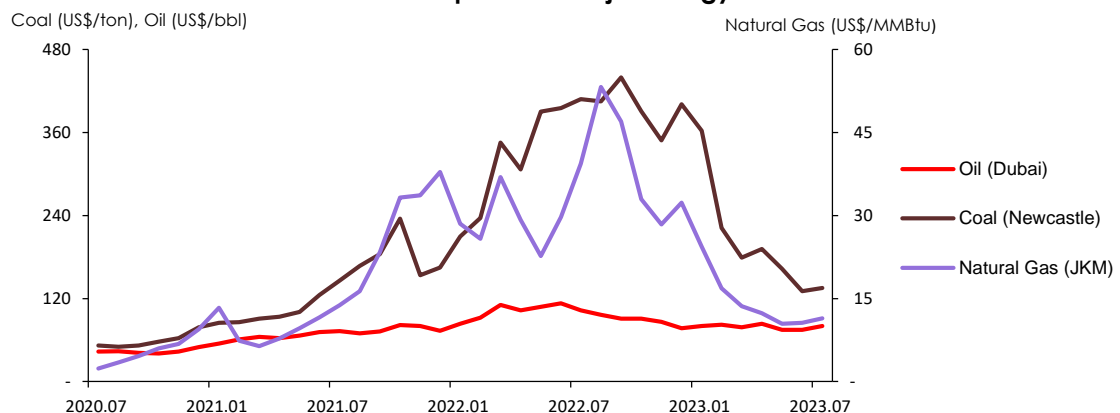
- **Global oil price surged in July, as major OPEC+ nations agreed on an additional production cut, and there was a growing expectation that the US Federal Reserve might ease its tightening policy.**
 - Saudi Arabia extended its voluntary production cut of 1 million b/d that begins from July for one more month, and Russia announced that it will curtail crude oil exports by 500,000 b/d in August, which raised concerns about a shortfall in crude oil supply.
 - The US CPI and core CPI, announced on July 12, were lower than the market expectations in June, increasing anticipations for an eased monetary policy.
 - Global steam coal price rose by 3.5% in July compared to the previous month, affected by global oil price hikes and stronger demand for power generation during the summer season.
 - As for July's global natural gas prices, the US Henry Hub natural gas price and Northeast Asian JKM price increased, while the Netherlands TTF price decreased.

► Global energy prices

	2021	2022				2023		
			M5	M6	M7	M5	M6	M7
Crude oil (US\$/bbl)	69.3 (64.2)	96.4 (39.1)	108.2 (5.2)	113.3 (4.7)	103.1 (-8.9)	75.0 (-10.2)	75.0 (0.0)	80.4 (7.3)
Coal (US\$/ton)	136.4 (126.5)	357.1 (161.8)	390.4 (27.3)	395.0 (1.2)	408.4 (3.4)	163.2 (-14.9)	130.5 (-20.0)	135.1 (3.5)
Natural gas (US\$/MMBtu)								
TTF	16.1 (397.9)	40.2 (149.6)	29.0 (-9.0)	33.4 (15.5)	51.8 (54.8)	10.0 (-25.7)	10.3 (3.6)	9.6 (-7.1)
JKM	17.9 (325.7)	33.9 (89.2)	22.7 (-22.3)	29.7 (30.9)	39.4 (32.4)	10.5 (-15.3)	10.6 (1.5)	11.4 (7.8)

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

□ Gasoline and diesel prices at gas stations remained flat in July compared to the previous month, affected by their global prices and exchange rates.

- o Singapore's gasoline and diesel spot prices went up by 2.3% to \$87.6/bbl and 3.4% to \$92.2/bbl respectively in June compared to the previous month, while the won-dollar exchange rate fell by 2.4% to 1,295.4 won than the prior month.
- o Retail prices of propane and butane dropped by 3.7% and 5.8% respectively from the previous month, as domestic LPG importers (incl. SK Gas) marked down their prices.
- o The relative price of propane for industrial use and city gas (propane/city gas) decreased by 11.9% to 1.07 compared to the previous month.

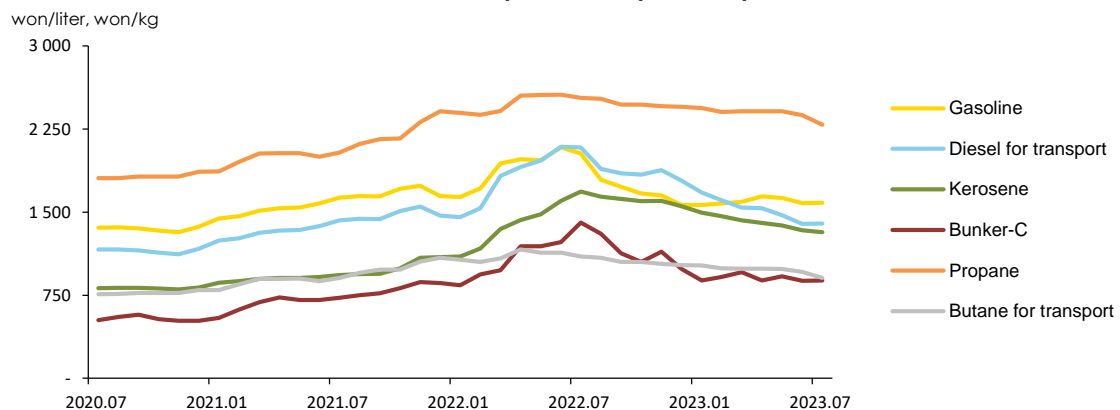
► Domestic petroleum product prices

	2021	2022	2023			2023	2023	2023
			M5	M6	M7	M5	M6	M7
Gasoline (won/liter)	1 591.2 (15.2)	1 812.7 (13.9)	1 967.1 (-0.5)	2 084.0 (5.9)	2 030.0 (-2.6)	1 628.8 (-0.7)	1 580.6 (-3.0)	1 585.5 (0.3)
Diesel for transport (won/liter)	1 392.0 (17.0)	1 843.4 (32.4)	1 964.2 (3.0)	2 089.0 (6.4)	2 084.9 (-0.2)	1 472.0 (-4.2)	1 394.5 (-5.3)	1 396.5 (0.1)
Bunker-C (won/liter)	732.2 (27.8)	1 116.1 (52.4)	1 190.4 (-0.1)	1 229.3 (3.3)	1 405.7 (14.3)	920.7 (4.3)	879.3 (-4.5)	883.3 (0.5)
Propane (won/kg)	2 093.4 (13.1)	2 480.1 (18.5)	2 558.2 (0.2)	2 558.8 (0.0)	2 531.2 (-1.1)	2 408.8 (-0.0)	2 374.2 (-1.4)	2 287.5 (-3.7)
Butane for transport (won/liter)	932.3 (17.9)	1 081.8 (16.0)	1 134.6 (-2.5)	1 133.7 (-0.1)	1 100.2 (-3.0)	987.8 (-0.1)	961.0 (-2.7)	905.3 (-5.8)

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

Source: Korea National Oil Corporation

► Domestic petroleum product prices



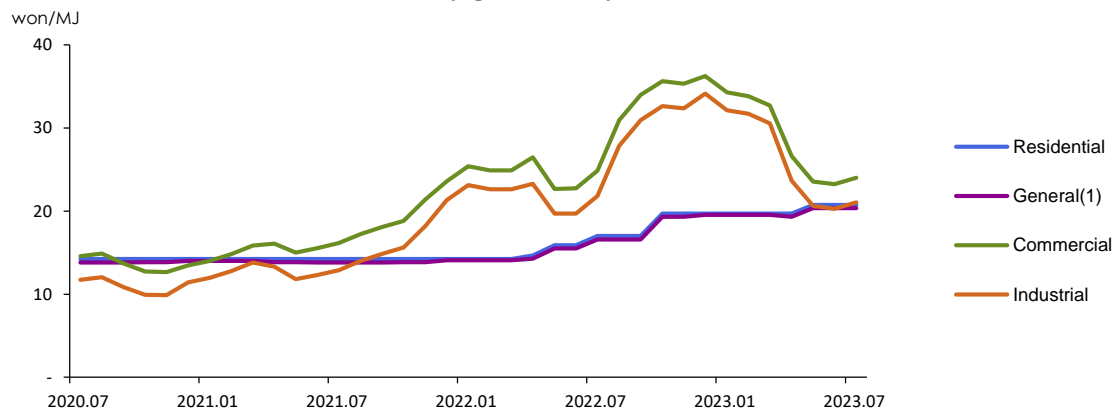
□ **City gas rates for residential and general use remained flat, while the rates for office heating and industrial use increased in July from the previous month.**

- City gas rates for residential and general use remained at 20.7 won and 20.4 won/MJ, as the raw material cost was fixed at 16.7 won/MJ.
- City gas rates for office heating and industrial use went up by 3.3% to 24.0 won/MJ and 3.8% to 21.1 won/MJ respectively than the previous month.
- On a year-on-year basis, city gas rates for residential and general use rose by around 22.5%, while the rates for office heating and industrial use fell by around 3.5%.

□ **Electric rate has remained at the same level in July, after energy charge was adjusted on May 16, and electric rate was raised for the summer season in June.**

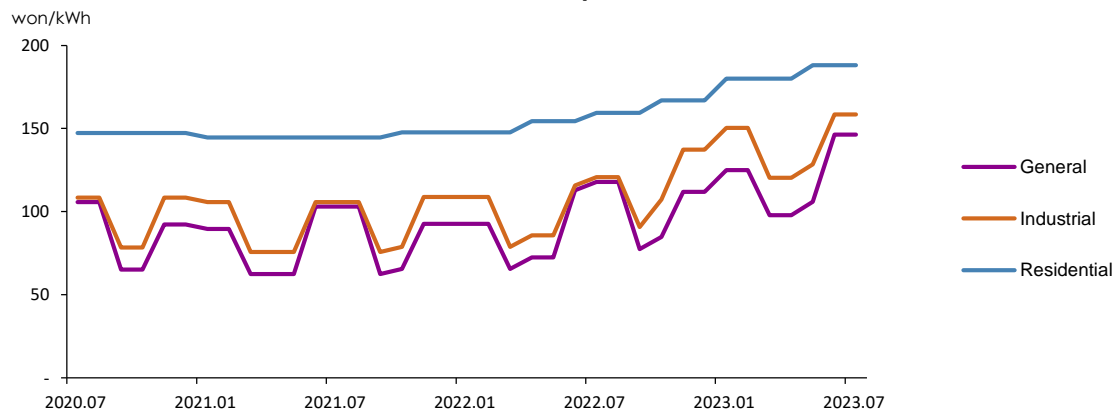
- Electric rates for residential, general and industrial use went up by 17.9%, 24.2% and 31.2% respectively in June on a year-on-year basis, that was raised three times, and climate change & environmental charge was raised once for the last one year.

► **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.

Source: KEPCO

3. Energy Supply

- **The import volume of all energy sources declined in July, and accordingly, the total energy import volume dropped by 15.5% on a year-on-year basis.**
 - The import volume of crude oil fell by 16.7% year-on-year, despite a drop in global oil prices (-22.0% yoy, based on Dubai oil price), as some domestic oil refiners (incl. S-Oil) conducted a maintenance work at their refineries, and it was also affected by the base effect of the same month last year.
 - The import volume of petroleum products went down by 19.6% year-on-year, led by naphtha and LPG.
 - The import volume of coal fell by 9.6%, led by bituminous coal (-9.5% yoy), which accounts for the largest share of the total coal import, partly because bituminous coal input fell more sharply in the domestic power generation sector (-15.8%).
 - The import volume of natural gas decreased by 19.6% partly due to a higher inventory level compared to the same period last year (approximately 2,700,000 tons, as of the end of the month), even though the global natural gas price decreased (-70.9% yoy, based on JKM).
 - The total energy import value dropped by 43.6% year-on-year, as energy import volume declined (-15.5%) amid the downward trend in global energy prices. The total energy export value also fell by 39.3% along with a drop in export volume (-19.1%). As a result, the import & export values of energy have declined for five consecutive months.

► Import and domestic production of energy

	2022p			2023p			
		M1~7	M7	M1~7	M5	M6	M7
Import volume (Mtoe)	333.4 (2.8)	193.3 (4.5)	30.0 (1.8)	186.9 (-3.3)	25.8 (-2.2)	23.8 (-1.6)	25.4 (-15.5)
Crude oil (Mbbbl)	1 031.3 (7.4)	599.7 (9.8)	98.2 (25.8)	586.1 (-2.3)	85.8 (5.1)	76.8 (3.8)	81.8 (-16.7)
Petroleum product (Mbbbl)	367.1 (-6.4)	218.8 (-0.3)	34.1 (-7.4)	205.5 (-6.0)	27.0 (-5.5)	27.6 (4.0)	27.4 (-19.6)
Coal (Mton)	125.5 (-0.4)	73.1 (2.6)	11.8 (-15.0)	68.7 (-5.9)	9.3 (-11.3)	8.8 (-21.1)	10.7 (-9.6)
LNG (Mton)	46.4 (1.0)	26.0 (-4.2)	3.3 (-19.1)	25.7 (-1.2)	3.1 (-8.3)	2.9 (16.5)	2.6 (-19.6)
Import value (billion US\$, CIF)	222.8 (58.0)	127.7 (80.0)	21.4 (74.2)	104.0 (-18.6)	13.5 (-24.0)	12.0 (-27.1)	12.1 (-43.6)
Energy share of total import value (%)	30.4	29.9	32.9	27.1	24.8	22.6	24.9
Foreign energy dependence (%)	94.3	94.0	94.0	93.5	93.0	93.1	93.3
Export volume (Mtoe)	69.0 (11.2)	39.0 (12.9)	6.5 (13.2)	38.8 (-0.4)	6.3 (4.6)	5.0 (0.3)	5.3 (-19.1)
Export value (billion US\$, FOB)	63.1 (63.5)	37.2 (87.3)	6.4 (75.3)	28.6 (-23.2)	4.3 (-34.8)	3.4 (-39.9)	3.9 (-39.3)
Domestic production							
Hydropower (TWh)	3.5 (15.9)	1.7 (-10.5)	0.4 (8.3)	2.0 (20.6)	0.3 (21.6)	0.3 (13.9)	0.7 (70.8)
Renewable energy (Mtoe)	15.9 (10.5)	9.4 (10.7)	1.4 (15.4)	9.8 (4.1)	1.4 (-2.7)	1.4 (8.8)	1.5 (6.1)

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

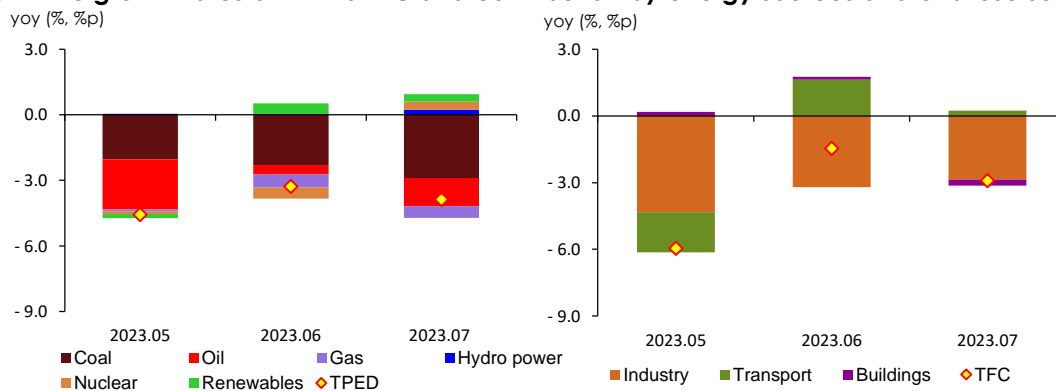
- **Total Primary Energy Demand (TPED) decreased by 3.9% year-on-year in July, as the use of most energy sources declined except renewable and nuclear energy.**
 - Since January 2023, coal use has been steadily decreasing in both industrial and power generation sectors due to weak production in the iron & steel-related downstream industries, increased power generation from nuclear and renewable & other energy and constraints on transmission lines, and consequently, the total coal use decreased (year-on-year in July).
 - Gas use posted a year-on-year decline in the power generation, industrial and buildings sectors all together, owing to a drop in electricity consumption (-3.6%), the worsening economic situation and higher city gas rates for civil use.
 - Petroleum use decreased, as it continued to decline in the industrial sector, especially in petrochemical business, although its transport use slightly increased. The use of nuclear energy increased, despite a minor growth in preventive maintenance, owing to the commissioning of Shin Hanul unit 1 reactor (Dec. 2022).
- **Total Final Consumption (TFC) decreased by 2.9% year-on-year in July, with the industrial and buildings sectors leading the downward trend, although it slightly increased in the transport sector.**
 - Industrial energy use fell by 4.5% year-on-year, leading the downward slide in TFC, which was attributed to lower production in most subsectors except the transport equipment sector amid an economic downturn at home and abroad.
 - Transport energy use rose by 1.3% year-on-year, although it declined in the aviation and rail transport sectors, as energy use increased by 3.4% year-on-year in the road transport sector, owing to a near 8% rebound in diesel use, while gasoline use decreased.
 - In the buildings sector, energy use decreased in all residential, commercial and public sectors, which was affected by decreased number of cooling degree days (-21.0%), increased energy rates for civil use and base effect, a surge in energy use during the same month last year.

► Energy consumption

	2022p			2023p			
		M1~7	M7	M1~7	M5	M6	M7
TPED (Mtoe)	304.5	179.6	26.3	172.5	23.4	22.7	25.2
	(0.4)	(2.5)	(2.6)	(-4.0)	(-4.6)	(-3.3)	(-3.9)
TFC (Mtoe)	213.7	126.7	17.5	121.2	16.3	15.6	17.0
	(-0.9)	(1.3)	(1.7)	(-4.4)	(-6.0)	(-1.5)	(-2.9)
- Feedstock exclude	141.5	83.3	11.0	80.9	10.6	10.2	11.0
	(0.2)	(0.7)	(1.5)	(-2.8)	(-5.6)	(0.1)	(-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 dropped by 11.6% year-on-year in July, as it has steadily decreased in both industrial and power generation sectors.**

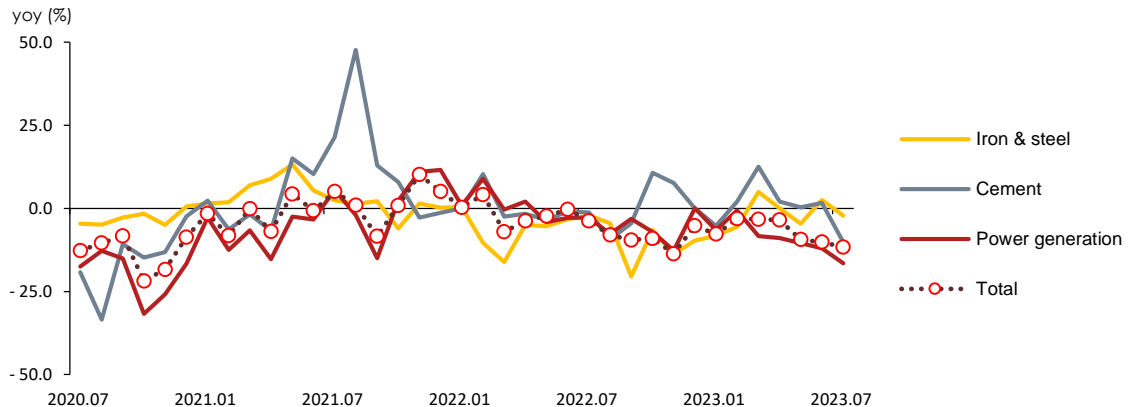
- In the industrial sector, coal consumption continued a downward trend, as it declined in most subsectors including iron & steel and petrochemical businesses amid the economic slowdown.
- In the power generation sector, coal use continued to decline, because nuclear and renewable & other energy generation increased, leading to grid constraints.

► Coal consumption

	2022p			2023p			
		M1~7	M7	M1~7	M5	M6	M7
Coal (Mton)	114.0	66.7	11.1	61.8	8.2	8.7	9.8
	(-5.0)	(-1.8)	(-3.8)	(-7.2)	(-9.4)	(-10.1)	(-11.6)
Industry	46.4	27.8	4.0	26.6	3.9	3.8	3.9
	(-8.1)	(-4.3)	(-5.5)	(-4.4)	(-8.2)	(-7.5)	(-3.1)
- Coking-coal	23.6	14.0	2.1	13.7	1.9	2.0	2.1
	(-7.5)	(-5.7)	(-1.2)	(-2.0)	(-4.2)	(2.4)	(-2.1)
Buildings	0.4	0.1	0.0	0.1	0.0	0.0	0.0
	(-5.3)	(-1.9)	(33.3)	(-6.9)	(1.1)	(-37.5)	(-61.3)
Power generation	67.1	38.7	7.1	35.1	4.3	4.9	5.9
	(-2.6)	(0.0)	(-2.8)	(-9.3)	(-10.4)	(-12.1)	(-16.5)

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 was down 4.2% year-on-year in July, despite the growth in its use in the transport and buildings sectors, as industrial petroleum use fell sharply.
 - In the industrial sector, petroleum use fell by 7.0% year-on-year, as its use as petrochemical feedstock declined due to the ongoing slump in petrochemical business.
 - In the transport sector, petroleum use went up by 0.4% year-on-year, affected by some factors, i.e., the additional fuel tax cut and diesel price which overtook gasoline price during the same period last year.

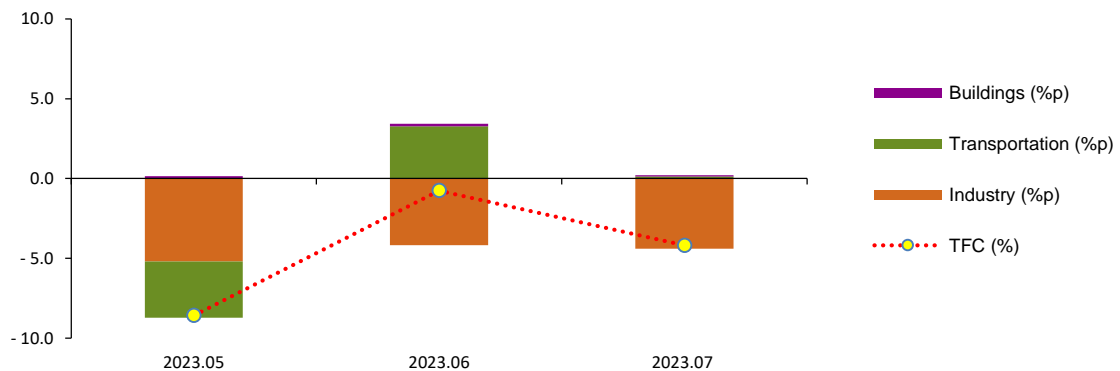
► Petroleum product consumption by end-use sectors

	2022p			2023p			
		M1~7	M7	M1~7	M5	M6	M7
TFC (Mbbl)	798.9	468.1	68.5	442.2	62.9	58.8	65.6
	(-1.3)	(1.4)	(1.1)	(-5.6)	(-8.6)	(-0.8)	(-4.2)
Industry	496.9	297.7	43.3	271.6	37.5	35.7	40.2
	(-1.8)	(3.7)	(0.0)	(-8.8)	(-8.7)	(-6.5)	(-7.0)
- Naphtha	356.0	213.2	32.2	197.6	26.9	25.3	28.4
	(-3.8)	(2.2)	(3.0)	(-7.3)	(-6.1)	(-6.7)	(-11.6)
Transport	258.0	145.1	22.9	146.4	22.7	20.8	23.0
	(-0.4)	(-2.6)	(3.6)	(0.9)	(-9.7)	(10.2)	(0.4)
Buildings	44.0	25.4	2.3	24.2	2.8	2.3	2.4
	(-0.6)	(-1.1)	(-1.3)	(-4.6)	(3.6)	(4.4)	(2.2)
Power generation (Mbbl)	5.02	3.27	0.46	1.96	0.28	0.23	0.27
	(20.0)	(39.6)	(-20.8)	(-40.2)	(-10.0)	(-33.6)	(-41.2)

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 declined by 3.7% year-on-year in July, as it fell in the industrial, power generation and buildings sectors all together partly due to the economic downturn.**

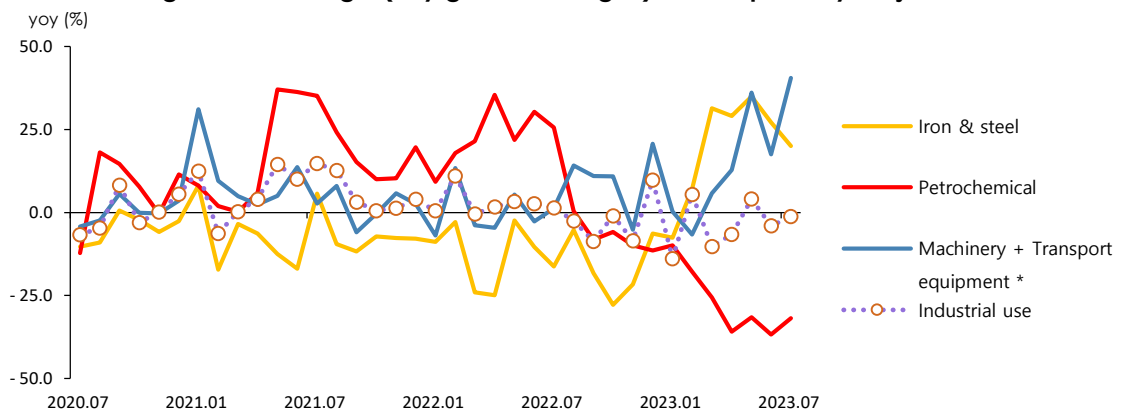
- In the power generation sector, gas use dropped faster, as electricity use and the total power generation fell by 3.6% and 3.2% respectively, and baseload generation (nuclear + coal + renewable & other) decreased (-2.3%) compared to the same month last year.
- In the industrial sector, gas use declined, with the petrochemical sector leading the downward trend amid the prolonged slump (continuing for 12 consecutive months), while gas use increased in the iron & steel and machinery sectors due to a surge in natural gas use, although city gas use decreased.
- In the buildings sector, gas use fell by 5.0% and 0.1% year-on-year in the residential and commercial sectors, as the city gas rate for civil use rose by over 20% year-on-year after gradual rate increases, and the wholesale & retail and accommodation & food industries posted lower production figures.

► Natural gas and city gas consumption

	2022p			2023p			
		M1~7	M7		M1~7	M5	M6
Gas(TPED) (Mtoe)	59.5	36.6	4.4	34.4	4.1	3.8	4.2
(Natural gas + City gas)	(-1.0)	(0.0)	(-2.7)	(-6.0)	(-0.0)	(-3.3)	(-3.7)
Power generation	30.0	17.9	2.7	16.8	2.1	2.1	2.4
	(-2.3)	(-2.7)	(-5.2)	(-6.1)	(-5.5)	(-5.7)	(-8.2)
Industry	10.0	6.0	0.8	5.8	0.8	0.8	0.8
	(0.3)	(2.0)	(0.7)	(-4.0)	(4.2)	(-3.9)	(-1.1)
Buildings	15.0	9.9	0.5	9.1	0.7	0.5	0.5
	(3.9)	(5.0)	(8.9)	(-8.3)	(1.4)	(-2.3)	(-2.7)
Natural gas(TPED) (Mton)	45.6	27.6	3.3	25.8	3.0	2.9	3.2
	(-0.5)	(0.2)	(-3.6)	(-6.4)	(-0.6)	(-3.7)	(-3.2)
City gas(TFC) (Bm³)	23.4	15.0	1.2	13.7	1.4	1.1	1.1
	(2.9)	(4.7)	(6.6)	(-8.7)	(-4.2)	(-7.4)	(-9.6)

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 dropped by 3.6% year-on-year in July, as it declined in both industrial and buildings sectors, which was affected by the economic slowdown and weather conditions.**
 - In the industrial sector, electricity use decreased by 4.9% year-on-year, with most of the major industries consuming less electricity except the transport equipment industry.
 - In the buildings sector, electricity use fell by 2.5% year-on-year, partly because the electric rate was raised, and the number of cooling degree days decreased.

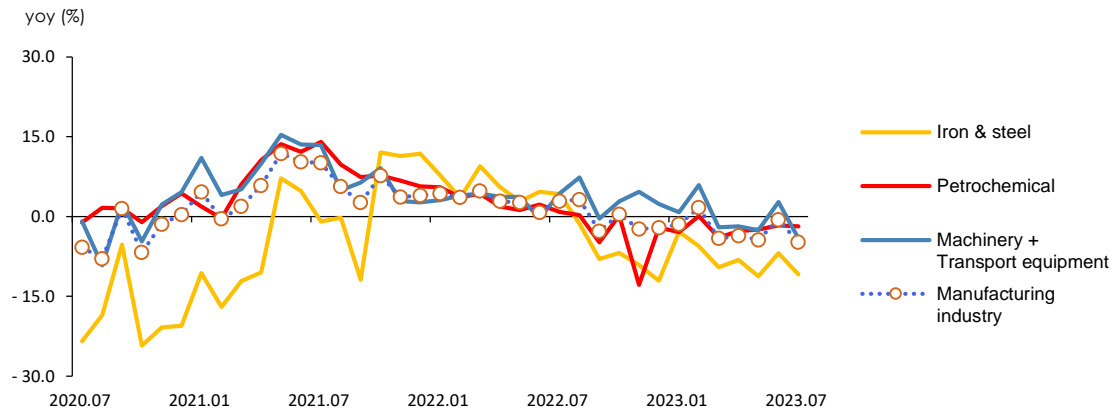
► Electricity consumption by end-use sectors

	2022p	M1~7		2023p			
			M7	M1~7	M5	M6	M7
Electricity (TWh)	535.3	313.3	47.4	310.0	40.5	42.2	45.7
	(2.9)	(4.3)	(5.9)	(-1.1)	(-1.8)	(0.4)	(-3.6)
Industry	274.1	161.8	24.0	157.5	21.5	22.0	22.8
	(1.7)	(3.5)	(3.1)	(-2.6)	(-4.3)	(-0.9)	(-4.9)
Transport	4.0	2.3	0.4	2.6	0.4	0.4	0.4
	(8.7)	(8.1)	(14.0)	(13.9)	(15.9)	(15.7)	(11.9)
Buildings	257.2	149.3	23.1	149.9	18.6	19.8	22.5
	(4.1)	(5.2)	(8.7)	(0.4)	(1.0)	(1.6)	(-2.5)
Residential	78.6	44.6	7.3	44.2	5.7	6.0	7.0
	(1.3)	(2.5)	(8.4)	(-0.9)	(1.2)	(2.4)	(-4.1)
Commercial	147.0	86.1	13.0	86.9	10.6	11.4	12.7
	(5.9)	(7.1)	(9.5)	(0.9)	(0.3)	(0.8)	(-2.0)

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

Source: Korea Energy Economics Institute

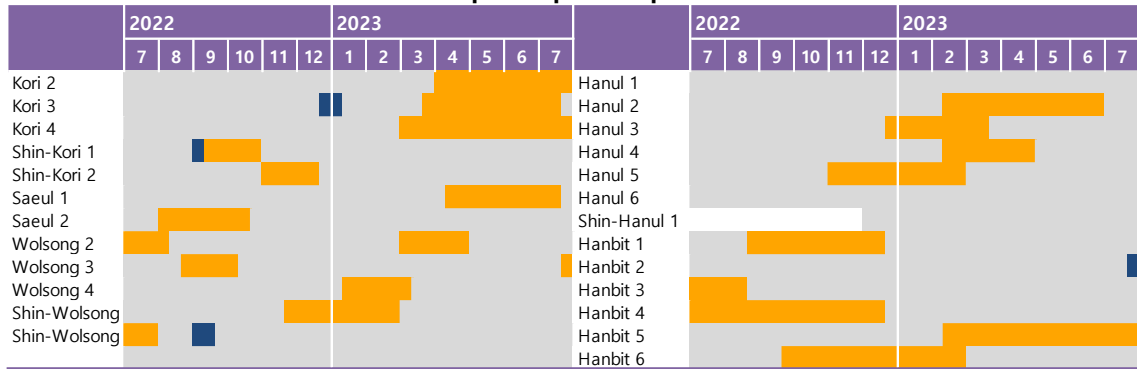
► The growth rate of electricity consumption in manufacturing industry



9. Nuclear

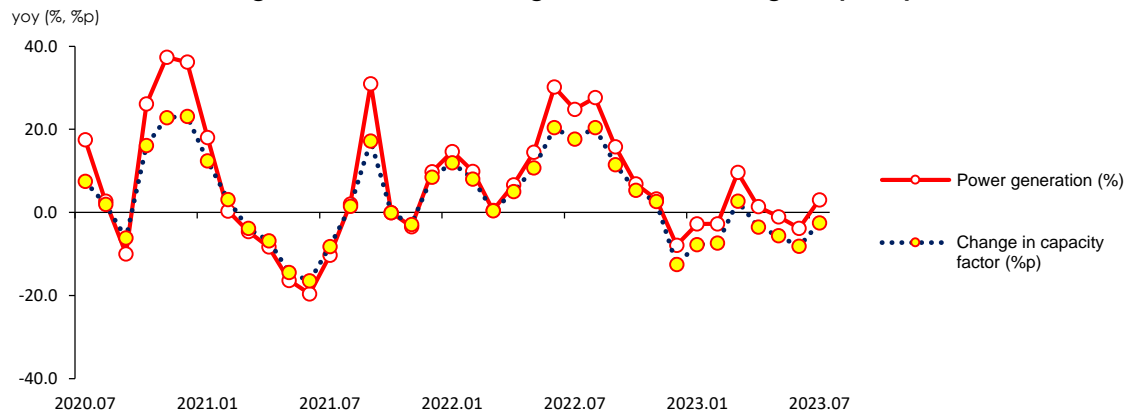
- The total nuclear generation went up by 3.0% year-on-year in July, despite a drop in capacity factor, as its installed capacity increased.
- The daily average output at nuclear power stations² increased by mere 0.8GW year-on-year, even though the installed capacity grew by 1.4GW with the commissioning of Shin Hanul unit 1 reactor, because the daily average preventive maintenance rose by 0.4GW.

► Nuclear power plants operation status



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

► The growth rate of nuclear generation & average capacity factor



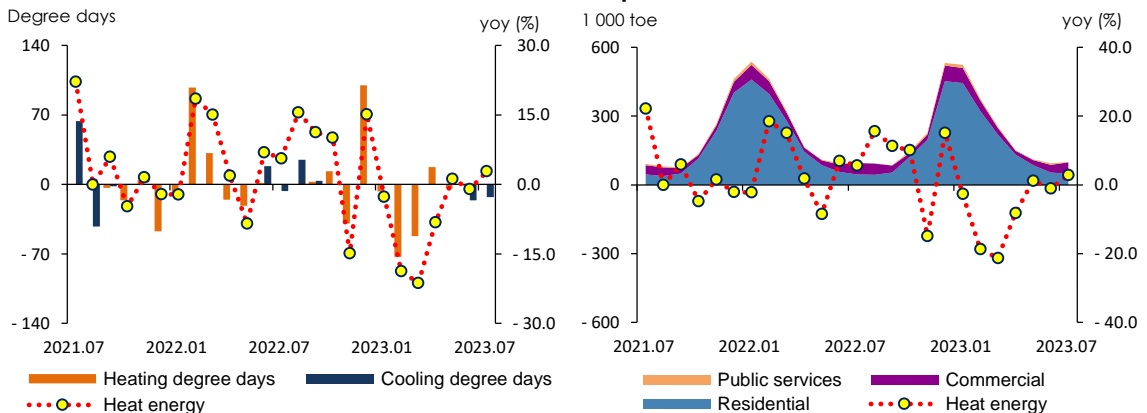
Note: Capacity factor = Ratio of actual power generated to possible power generation when utilizing 100% of available facility. Facility capacity values are based on end-of-the-month data.

² The daily average output at nuclear power stations is calculated by dividing Refinitiv Eikon's total daily output of nuclear power stations by the total number of days of the given month.

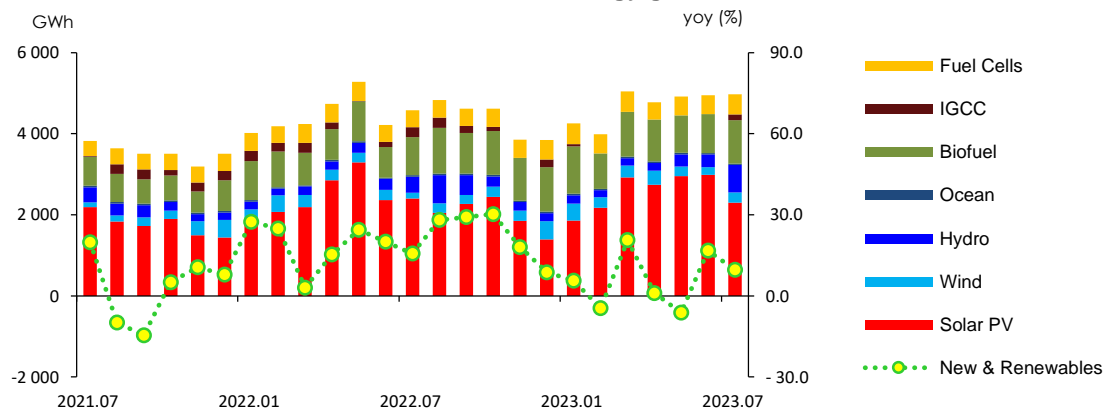
10. Heat and Renewable energy

- **Heat energy use went up by 2.8% year-on-year in July, with the residential and commercial sectors leading the growth owing to the construction of new combined heat & power (CHP) plants.**
 - Heat energy use grew by 4.8% and 1.1% respectively in the residential and commercial sectors from the same month last year, which was affected by the construction of new CHP plants in June and July (Naepo Green Energy CHP plant & Kimpo CHP plant), even though the heat energy rate increased, and the number of cooling degree days decreased.
- **Renewable & other energy use posted a year-on-year growth of 9.9% in July, as it grew in the power generation and all end-use sectors.**
 - Renewable & other energy generation went up by 9.7% year-on-year, as power generation from most energy sources increased (incl. hydro, bioenergy, wind power), except solar PV and IGCC.
 - The final use of renewable & other energy was up 6.7% year-on-year, as it grew in all end-use sectors.

► 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 4.5% year-on-year in July, with the iron & steel and petrochemical sectors leading the downward trend.

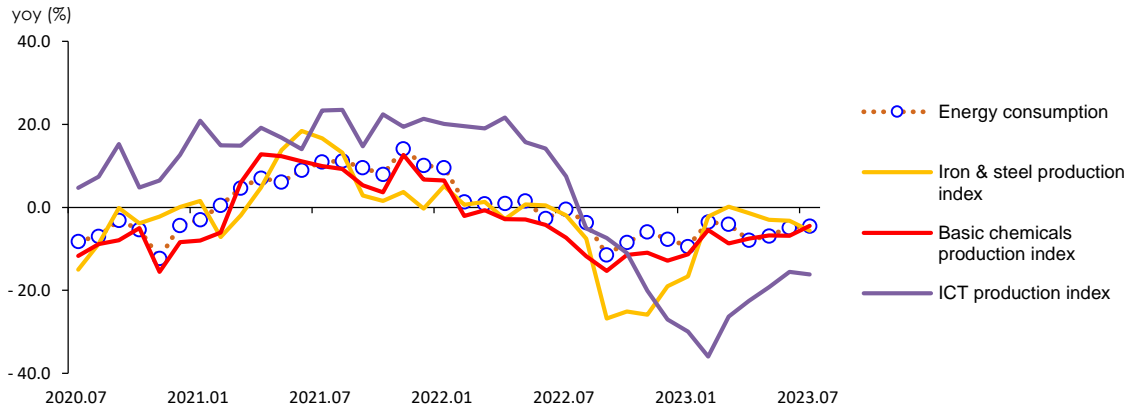
- While energy use increased in the transport equipment and machinery sectors, it fell sharply in the iron & steel and petrochemical sectors amid the worsening economic situation. As a result, the total industrial energy use maintained a downward trend.

► Industrial energy consumption

	2022p	2023p		2023p			
		M1~7	M7	M1~7	M5	M6	M7
Industry (Mtoe)	130.0	77.5	11.2	72.9	10.2	9.9	10.7
	(-2.2)	(1.6)	(-0.5)	(-5.9)	(-6.9)	(-4.9)	(-4.5)
Petrochemical	66.0	39.8	5.9	35.9	5.0	4.7	5.3
	(-1.5)	(4.5)	(1.8)	(-9.9)	(-9.3)	(-9.1)	(-9.2)
- Naphtha	43.6	26.1	3.9	24.2	3.3	3.1	3.5
	(-3.9)	(2.0)	(2.8)	(-7.3)	(-6.1)	(-6.7)	(-11.6)
Iron & Steel	25.9	15.4	2.3	15.3	2.2	2.2	2.3
	(-7.3)	(-5.1)	(-2.2)	(-1.0)	(-2.7)	(3.6)	(-1.3)
- Coking coal	16.6	9.9	1.5	9.7	1.4	1.4	1.5
	(-6.7)	(-4.9)	(-0.4)	(-2.0)	(-4.2)	(2.4)	(-2.1)
Machinery + Transport Equipment	13.0	7.5	1.1	7.6	1.0	1.0	1.1
	(4.6)	(3.2)	(4.7)	(0.9)	(3.3)	(4.3)	(2.5)
Share of feedstock (%)	55.5	56.0	57.8	55.2	55.4	55.1	55.9

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

► Industrial energy consumption & production index



12. Transport

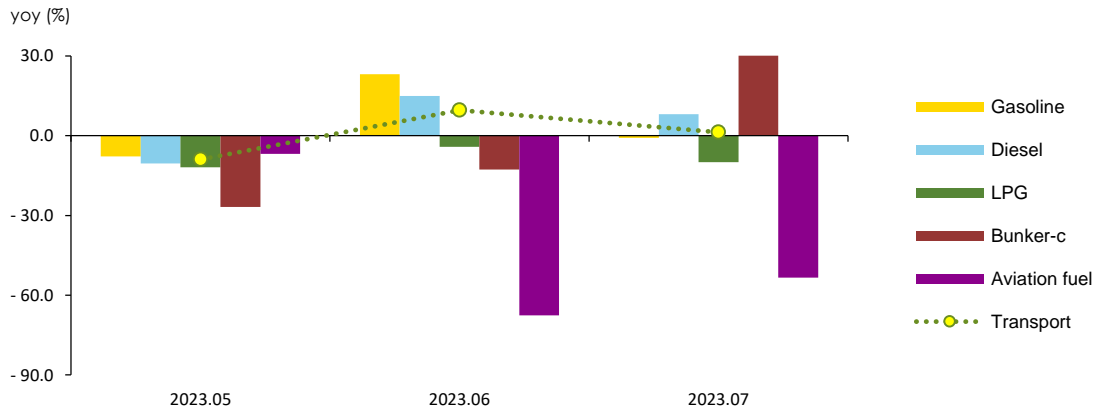
- In the transport sector, energy use rose by 1.3% year-on-year in July, which was due to growing diesel consumption in the road transport sector.
 - In the road transport sector, energy use grew by 3.4% year-on-year due to a combination of factors from last year, such as the additional fuel tax cut and diesel price overtaking that of gasoline.
 - In the aviation sector, energy use plunged compared to the same month last year, because the number of flights has steadily declined, and the standards for compiling statistics have changed.

► The growth rate of petroleum consumption in the transport sector

	2022p			2023p			
		M1~7	M7	M1~7	M5	M6	M7
Transport (Mtoe)	36.29	20.44	3.21	20.65	3.19	2.95	3.25
	(-0.9)	(-3.1)	(2.7)	(1.0)	(-8.9)	(9.6)	(1.3)
Road	33.86	19.04	3.02	19.51	3.03	2.84	3.12
	(-1.0)	(-3.3)	(3.6)	(2.5)	(-8.9)	(14.8)	(3.4)
Domestic navigation	0.46	0.28	0.03	0.27	0.03	0.04	0.04
	(8.5)	(20.4)	(-25.9)	(-4.0)	(-22.8)	(-8.8)	(36.6)
Domestic aviation	1.67	0.95	0.13	0.70	0.11	0.05	0.06
	(-0.3)	(-2.6)	(-6.2)	(-26.0)	(-6.6)	(-67.3)	(-53.0)
Rail	0.30	0.17	0.03	0.17	0.02	0.02	0.02
	(-9.9)	(-10.6)	(-3.7)	(-2.2)	(2.0)	(-1.0)	(-6.9)

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

□ In the buildings sector, energy use decreased in all subsectors due to temperature effect and a slower growth in service sector.

- The residential sector's energy use declined, as electricity use fell by 4.1% year-on-year partly owing to the decreased demand for cooling.
- In the commercial sector, energy use was down 0.6% year-on-year due to the slower growth in service industry and the base effect.
- As for the contribution of each energy source to the growth in buildings' energy use, petroleum made the biggest contribution (0.2%p), followed by heat energy (0.1%p), city gas (-0.5%p) and electricity (-1.6%p).

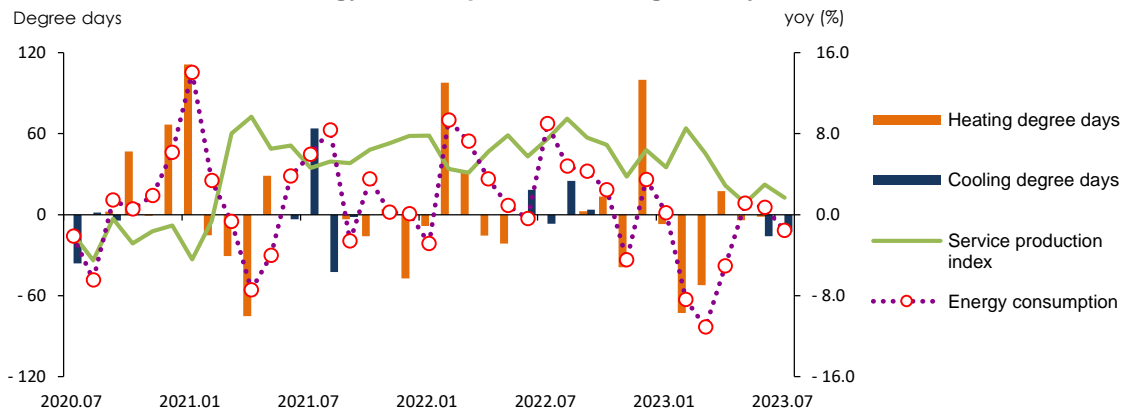
► Energy consumption in buildings

	2022p			2023p			
		M1~7	M7	M1~7	M5	M6	M7
Buildings (Mtoe)	47.4	28.8	3.1	27.6	2.9	2.7	3.0
	(3.0)	(3.6)	(9.0)	(-4.0)	(1.1)	(0.7)	(-1.6)
Residential	23.2	14.5	1.0	13.4	1.2	1.0	1.0
	(1.2)	(2.3)	(7.9)	(-7.7)	(1.3)	(-0.7)	(-2.3)
Commercial	18.9	11.1	1.6	11.1	1.3	1.4	1.5
	(5.4)	(6.1)	(7.6)	(-0.0)	(0.8)	(1.9)	(-0.6)
Public services	5.3	3.1	0.5	3.1	0.4	0.4	0.4
	(2.3)	(1.5)	(17.0)	(-1.3)	(1.5)	(0.0)	(-3.2)
Heating degree days	2 567.1	1 577.8	-	1 458.0	32.1	-	-
	(6.8)	(5.7)	-	(-7.6)	(-11.1)	(-100.0)	-
Cooling degree days	141.9	79.1	60.6	50.5	-	2.6	47.9
	(40.1)	(17.5)	(-10.0)	(-36.2)	-	(-85.9)	(-21.0)
Service production index (2020=100)	112.0	109.3	112.1	113.6	114.1	117.6	114.0
	(6.5)	(6.2)	(7.5)	(3.9)	(1.2)	(3.0)	(1.7)

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

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

► Energy consumption in buildings & major indicators



14. Power Generation

- The total power generation and fuel input fell by 3.2% and 6.5% respectively in July on a year-on-year basis, as electricity consumption decreased.
 - The total nuclear generation was up by 3.0%, even though the daily average preventive maintenance went up by 0.4GW than the same month last year, as its installed capacity rose by 1.4GW with the commissioning of Shin Hanul unit 1 reactor at the end of last year.
 - Renewable & other energy generation increased by 8.6% year-on-year, as power generation from hydropower, bioenergy, wind power and other energy grew by 70.8%, 14.0%, 77.9%, 38.1% respectively, while solar PV generation declined (-4.3%) due to the lengthy rainy season.
 - Coal-fired generation dropped by 9.2% year-on-year due to the insufficient transmission lines between the east coast & Honam areas and the Metropolitan area as well as a rapid growth in power generation from renewable & other energy sources that rank higher in merit order.
 - Gas-fired generation, which is used to meet peak load demand, fell by 6.0% year-on-year, as baseload generation including renewable & other energy decreased by only 2.3%, while the total power generation decreased by 3.2%.

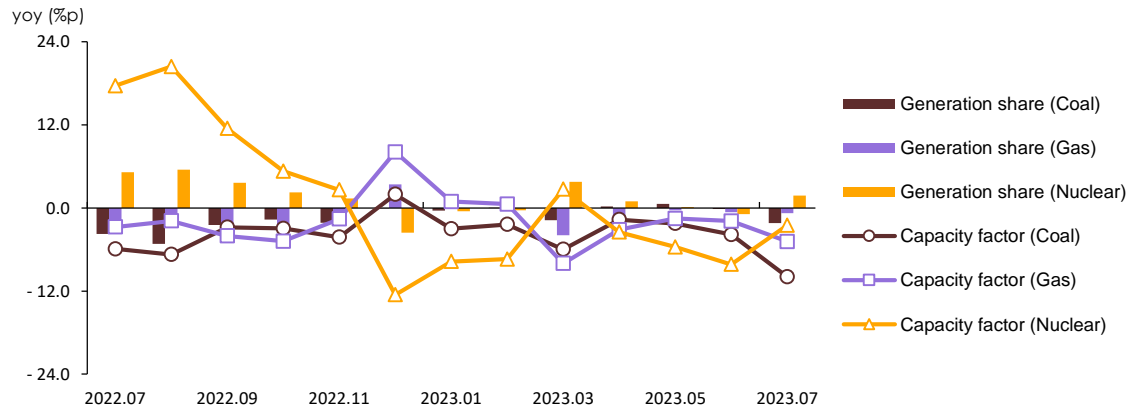
► Power generation by energy sources

	2022p			2023p			
		M1~7	M7	M1~7	M5	M6	M7
Power Generation (TWh)	594.4	346.6	55.0	339.8	45.5	47.1	53.2
	(3.1)	(4.0)	(1.6)	(-2.0)	(-1.4)	(-1.0)	(-3.2)
Coal	193.2	110.3	19.7	106.3	13.6	15.3	17.9
	(-2.4)	(-0.5)	(-8.0)	(-3.7)	(0.6)	(-1.5)	(-9.2)
Oil	2.0	1.3	0.1	1.0	0.1	0.1	0.1
	(-16.5)	(-3.7)	(-65.1)	(-23.0)	(26.8)	(-9.3)	(6.5)
Gas	163.6	97.8	14.8	93.2	11.8	12.1	13.9
	(-2.8)	(-3.5)	(-5.3)	(-4.7)	(-2.7)	(-3.4)	(-6.0)
Nuclear	176.1	102.0	15.4	102.5	14.5	14.2	15.8
	(11.4)	(14.0)	(24.8)	(0.4)	(-1.0)	(-3.8)	(3.0)
Renewables	59.6	35.1	5.1	36.8	5.5	5.4	5.5
	(18.9)	(16.9)	(13.4)	(5.0)	(-4.6)	(16.1)	(8.6)
Baseload	428.9	247.5	40.1	245.6	33.6	34.9	39.2
	(5.6)	(7.4)	(5.1)	(-0.8)	(-1.0)	(-0.1)	(-2.3)

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			
			M1~7	M5	M6	M7	M1~7	M5	M6	M7
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	106.8	107.6	108.2	108.7	110.8	111.1	111.1	111.2
USD to KRW exchange rate (won)	1 144.0	1 291.4	1 242.9	1 269.9	1 277.4	1 307.4	1 293.6	1 328.2	1 296.7	1 286.3
Benchmark rate (%)	0.6	2.1	1.6	1.8	1.8	2.3	3.5	3.5	3.5	3.5
Coincident composite index (2020=100)	104.1	108.2	107.7	107.8	108.0	108.5	109.6	110.3	110.3	110.0
Mining & manufacturing production index (2020=100)	108.2	109.7	111.9	113.4	114.4	113.1	102.3	104.8	107.5	103.9
Manufacturing operation ratio index (2020=100)	105.2	105.2	107.4	109.3	109.7	107.4	99.1	101.9	104.1	99.8
Average temperature	13.3	12.9	12.4	18.0	22.4	25.9	12.9	17.9	22.3	25.5
- year-on-year difference	0.3	-0.4	-0.2	1.4	0.6	-0.1	0.5	-0.1	-0.0	-0.4
Heating degree days	2 404.7 (-1.8)	2 567.1 (6.8)	1 577.8 (5.7)	36.1 (-37.3)	1.4 (-)	- (-)	1 458.0 (-7.6)	32.1 (-11.1)	- (-100.0)	- (-)
Cooling degree days	101.3 (18.9)	141.9 (40.1)	79.1 (17.5)	- (-)	18.5 (-)	60.6 (-10.0)	50.5 (-36.2)	- (-)	2.6 (-85.9)	47.9 (-21.0)
Energy intensity	0.16 (1.0)	0.16 (-2.2)	0.16 (-0.6)	- (-)	0.15 (-2.6)	- (-)	0.15 (-4.9)	- (-)	0.14 (-4.6)	- (-)
Per capita consumption										
Oil (bbl)	0.0 (7.3)	0.0 (-1.7)	0.0 (0.8)	0.0 (2.8)	0.0 (-12.7)	0.0 (0.0)	0.0 (-5.0)	0.0 (-8.1)	0.0 (-0.8)	0.0 (-4.5)
Electricity (MWh)	0.0 (4.9)	0.0 (3.1)	0.0 (4.6)	0.0 (3.9)	0.0 (2.9)	0.0 (6.1)	0.0 (-0.9)	0.0 (-1.7)	0.0 (0.5)	0.0 (-3.5)
City gas (1 000 m ³)	- (3.5)	- (3.2)	- (5.0)	- (-1.6)	- (-1.0)	- (6.8)	- (-8.5)	- (-4.0)	- (-7.3)	- (-9.5)
Total energy (toe)	0.0 (5.3)	0.0 (0.7)	0.0 (2.7)	- (3.4)	- (-0.6)	0.0 (2.8)	0.0 (-3.9)	- (-4.4)	- (-3.1)	- (-3.7)

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			
			M1~7	M5	M6	M7	M1~7	M5	M6	M7
Industrial production index										
All industry	105.5 (5.5)	110.1 (4.4)	108.7 (5.4)	111.2 (7.3)	114.2 (3.8)	110.1 (5.7)	108.8 (0.1)	109.6 (-1.4)	114.9 (0.6)	108.5 (-1.5)
Mining & manufacturing	108.2 (8.2)	109.7 (1.4)	111.9 (5.2)	113.4 (8.6)	114.4 (3.3)	113.1 (2.6)	102.3 (-8.6)	104.8 (-7.6)	107.5 (-6.0)	103.9 (-8.1)
Semiconductor	126.8 (26.8)	136.5 (7.7)	146.9 (26.6)	149.5 (26.7)	159.4 (24.9)	149.6 (14.9)	111.1 (-24.4)	121.6 (-18.7)	134.2 (-15.8)	127.2 (-15.0)
Iron & steel	105.2 (5.2)	96.3 (-8.4)	105.3 (0.5)	106.6 (0.7)	105.3 (0.5)	108.0 (-1.9)	100.4 (-4.7)	103.4 (-3.0)	101.9 (-3.2)	101.9 (-5.6)
Cement	103.2 (3.1)	100.2 (-2.9)	99.4 (-2.4)	112.8 (4.3)	99.6 (-10.6)	106.7 (0.4)	94.0 (-5.5)	103.3 (-8.4)	101.6 (2.0)	82.1 (-23.1)
Basic compound	105.9 (5.9)	99.1 (-6.4)	103.2 (-2.0)	101.0 (-2.9)	98.0 (-4.2)	102.4 (-7.3)	95.6 (-7.4)	94.2 (-6.7)	91.3 (-6.8)	97.8 (-4.5)
Transport equipment	106.3 (6.3)	116.0 (9.1)	111.3 (1.8)	114.4 (14.9)	119.1 (3.6)	119.2 (9.1)	129.6 (16.5)	136.0 (18.9)	132.0 (10.8)	126.6 (6.2)
Electric & electronic	107.7 (7.7)	110.8 (2.9)	109.9 (4.0)	112.7 (9.6)	114.7 (2.1)	115.6 (3.2)	107.8 (-2.0)	106.8 (-5.2)	112.2 (-2.2)	112.0 (-3.1)
Service	105.2 (5.2)	112.0 (6.5)	109.3 (6.2)	112.8 (7.8)	114.2 (5.7)	112.1 (7.5)	113.6 (3.9)	114.1 (1.2)	117.6 (3.0)	114.0 (1.7)
Wholesale and retail	105.3 (5.3)	107.1 (1.7)	105.8 (1.8)	109.7 (4.7)	106.2 (0.1)	105.3 (0.2)	106.2 (0.4)	107.8 (-1.7)	107.2 (0.9)	103.3 (-1.9)
Food & Accommodation	101.9 (1.9)	119.1 (16.9)	114.7 (19.1)	129.5 (21.0)	125.2 (18.1)	132.1 (25.6)	118.8 (3.6)	123.2 (-4.9)	119.5 (-4.6)	122.4 (-7.3)
Production output										
Iron & steel - Pig iron	46 440.5 (2.4)	42 658.2 (-8.1)	25 417.7 (-5.8)	3 581.6 (-3.9)	3 699.8 (-2.3)	3 955.1 (-1.5)	26 000.1 (2.3)	3 768.2 (5.2)	3 716.8 (0.5)	3 965.9 (0.3)
Iron & steel - Crude steel	70 418.0 (5.0)	65 846.2 (-6.5)	40 107.3 (-2.9)	5 801.6 (-1.3)	5 584.8 (-6.5)	6 275.5 (2.5)	39 386.4 (-1.8)	5 794.7 (-0.1)	5 529.8 (-1.0)	5 714.0 (-8.9)
Petrochemical - Basic petrochemicals	34 434.5 (12.7)	32 854.1 (-4.6)	20 036.2 (3.3)	2 794.3 (-0.7)	2 573.1 (-2.9)	2 915.8 (-5.9)	17 785.5 (-11.2)	2 414.3 (-13.6)	2 390.1 (-7.1)	2 716.4 (-6.8)
Petrochemical - Intermediate raw material	15 764.6 (2.6)	13 852.5 (-12.1)	8 324.8 (-8.6)	1 206.1 (-8.4)	1 062.2 (-5.3)	1 156.0 (-13.6)	7 730.8 (-7.1)	1 077.1 (-10.7)	975.2 (-8.2)	1 084.7 (-6.2)
Petrochemical - 3 major products	23 224.7 (9.2)	22 129.4 (-4.7)	13 769.2 (4.1)	1 963.3 (2.1)	1 790.0 (-3.2)	1 900.5 (-7.8)	12 340.6 (-10.4)	1 598.9 (-18.6)	1 644.7 (-8.1)	1 838.2 (-3.3)
The number of cars	3 462.4 (-1.3)	3 756.5 (8.5)	2 103.7 (-0.4)	307.0 (19.8)	328.4 (0.8)	324.7 (9.1)	2 547.8 (21.1)	382.1 (24.5)	370.3 (12.8)	353.0 (8.7)

Note: p means provisional.

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

International Energy Prices

	2021	2022					2023			
			M1~7	M5	M6	M7	M1~7	M5	M6	M7
Crude oil (USD/bbl)										
WTI	67.9 (72.4)	94.2 (38.7)	101.1 (59.3)	109.3 (67.7)	114.3 (60.2)	99.4 (37.2)	75.1 (-25.7)	71.6 (-34.4)	70.3 (-38.5)	76.0 (-23.5)
Dubai	69.3 (64.1)	96.4 (39.1)	102.0 (57.3)	108.2 (63.0)	113.3 (58.2)	103.1 (41.4)	79.3 (-22.3)	75.0 (-30.7)	75.0 (-33.8)	80.4 (-22.0)
Brent	70.8 (63.8)	98.9 (39.7)	104.7 (57.7)	112.0 (63.9)	117.5 (60.1)	105.1 (41.5)	80.1 (-23.4)	75.7 (-32.4)	75.0 (-36.2)	80.2 (-23.7)
Unit value of import (C&F)	70.2 (56.9)	102.3 (45.6)	104.2 (60.6)	110.1 (63.1)	117.0 (65.7)	115.6 (56.3)	83.4 (-20.0)	84.5 (-23.2)	79.0 (-32.5)	80.2 (-30.6)
LNG										
Henry Hub (USD/MMBTU)	3.7 (74.6)	6.5 (75.2)	6.2 (107.2)	8.2 (175.8)	7.6 (132.2)	7.2 (88.4)	2.6 (-58.8)	2.3 (-71.8)	2.5 (-67.4)	2.6 (-63.3)
TTF (USD/MMBTU)	16.0 (396.1)	40.1 (150.0)	34.7 (316.7)	29.0 (226.3)	33.4 (225.6)	51.8 (314.4)	13.3 (-61.6)	10.0 (-65.6)	10.3 (-69.1)	9.6 (-81.5)
JKM (USD/MMBTU)	17.9 (324.7)	33.9 (89.5)	30.3 (203.8)	22.7 (135.2)	29.7 (156.6)	39.4 (185.7)	14.2 (-53.1)	10.5 (-53.9)	10.6 (-64.3)	11.4 (-70.9)
Unit value of import (USD/ton, CIF)	550.8 (41.2)	1 053.5 (91.3)	887.4 (98.1)	723.3 (77.2)	762.1 (65.4)	1 032.6 (107.3)	857.6 (-3.4)	679.1 (-6.1)	687.7 (-9.8)	620.6 (-39.9)
Coal (USD/ton)										
Thermal coal (Newcastle)	136.0 (125.8)	356.3 (161.9)	327.4 (215.0)	390.4 (288.7)	395.0 (215.3)	408.4 (179.9)	197.8 (-39.6)	163.2 (-58.2)	130.5 (-67.0)	135.1 (-66.9)
Unit value of import (CIF)	115.1 (48.1)	226.3 (96.7)	233.1 (157.4)	267.0 (182.8)	258.8 (164.3)	254.6 (147.9)	186.9 (-19.8)	196.1 (-26.6)	165.4 (-36.1)	151.1 (-40.6)
Petroleum product (USD/bbl)										
Gasoline	80.3 (72.2)	115.2 (43.4)	127.3 (72.2)	147.0 (92.9)	155.2 (93.2)	121.7 (42.6)	97.0 (-23.8)	90.2 (-38.6)	92.7 (-40.3)	99.0 (-18.7)
Kerosene	75.1 (67.9)	126.7 (68.6)	130.3 (89.3)	143.0 (99.3)	164.3 (116.4)	134.9 (74.6)	99.2 (-23.8)	88.5 (-38.1)	90.0 (-45.2)	98.9 (-26.7)
Diesel	77.6 (57.2)	135.3 (74.3)	139.5 (95.6)	153.5 (107.6)	176.8 (124.3)	145.3 (81.9)	101.2 (-27.4)	89.2 (-41.9)	92.2 (-47.8)	101.8 (-30.0)
Bunker-C	64.4 (64.3)	82.3 (27.8)	93.7 (56.4)	104.5 (74.9)	99.1 (53.1)	79.4 (19.9)	67.8 (-27.6)	67.6 (-35.3)	66.9 (-32.5)	75.0 (-5.5)
Propane	647.9 (63.2)	737.1 (13.8)	810.7 (42.4)	850.0 (71.7)	750.0 (41.5)	725.0 (16.9)	580.0 (-28.5)	555.0 (-34.7)	450.0 (-40.0)	400.0 (-44.8)
Butane	629.6 (55.9)	734.2 (16.6)	814.3 (47.7)	860.0 (81.1)	750.0 (42.9)	725.0 (16.9)	578.6 (-28.9)	555.0 (-35.5)	440.0 (-41.3)	375.0 (-48.3)
Naphtha	70.6 (74.6)	83.1 (17.7)	92.5 (42.1)	94.7 (44.2)	84.3 (19.6)	81.6 (8.1)	67.6 (-26.9)	61.9 (-34.7)	56.9 (-32.6)	62.1 (-23.9)

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			
			M1~7	M5	M6	M7	M1~7	M5	M6	M7
Petroleum product										
Gasoline (won/liter)	1 590.5 (15.1)	1 812.4 (14.0)	1 906.6 (24.7)	1 967.1 (27.6)	2 084.0 (32.1)	2 030.0 (24.6)	1 595.7 (-16.3)	1 628.8 (-17.2)	1 580.6 (-24.2)	1 585.5 (-21.9)
Diesel (won/liter)	1 391.3 (16.9)	1 841.8 (32.4)	1 837.4 (38.4)	1 964.2 (46.7)	2 089.0 (52.0)	2 084.9 (46.3)	1 517.2 (-17.4)	1 472.0 (-25.1)	1 394.5 (-33.2)	1 396.5 (-33.0)
Bunker-C (won/liter)	731.7 (27.6)	1 115.2 (52.4)	1 109.9 (64.5)	1 190.4 (68.5)	1 229.3 (74.0)	1 405.7 (93.0)	903.1 (-18.6)	920.7 (-22.7)	879.3 (-28.5)	883.3 (-37.2)
Propane (won/kg)	2 092.6 (13.1)	2 479.6 (18.5)	2 483.8 (24.6)	2 558.2 (25.9)	2 558.8 (28.0)	2 531.2 (24.3)	2 390.7 (-3.7)	2 408.8 (-5.8)	2 374.2 (-7.2)	2 287.5 (-9.6)
Butane (won/liter)	931.8 (17.8)	1 081.7 (16.1)	1 105.3 (26.3)	1 134.6 (26.2)	1 133.7 (29.1)	1 100.2 (21.4)	977.7 (-11.5)	987.8 (-12.9)	961.0 (-15.2)	905.3 (-17.7)
City gas(won/MJ)										
Residential	14.2 (-5.7)	16.6 (16.7)	15.2 (6.5)	15.9 (11.6)	15.9 (11.6)	17.0 (19.5)	20.1 (32.9)	20.7 (30.6)	20.7 (30.6)	20.7 (22.0)
General(1)	13.9 (-6.5)	16.3 (17.3)	14.9 (7.0)	15.5 (12.1)	15.5 (12.1)	16.6 (20.2)	19.9 (33.5)	20.4 (31.3)	20.4 (31.4)	20.4 (22.6)
Commercial	17.2 (14.2)	28.7 (66.6)	24.6 (60.0)	22.7 (51.3)	22.7 (46.2)	24.9 (54.0)	28.3 (15.3)	23.5 (3.8)	23.3 (2.2)	24.0 (-3.4)
Industry	14.4 (14.2)	25.9 (79.9)	21.8 (72.1)	19.7 (67.0)	19.7 (60.0)	21.8 (69.1)	25.7 (17.7)	20.6 (4.7)	20.3 (3.0)	21.1 (-3.5)
Heat(won/Mcal)										
Residential	65.2 (-1.4)	74.1 (13.7)	67.3 (3.2)	67.0 (2.7)	67.0 (2.7)	74.5 (14.2)	92.2 (36.9)	89.9 (34.2)	94.2 (40.6)	101.6 (36.4)
Commercial	84.7 (-1.4)	96.3 (13.7)	87.4 (3.2)	87.0 (2.7)	87.0 (2.7)	96.7 (14.2)	119.7 (36.9)	116.7 (34.2)	122.3 (40.6)	131.9 (36.4)
Public	74.0 (-1.4)	84.1 (13.7)	76.3 (3.2)	76.0 (2.7)	76.0 (2.7)	84.5 (14.2)	104.5 (36.9)	101.9 (34.2)	106.8 (40.6)	115.2 (36.3)
Electricity(won/kWh)										
Residential	142.3 (-3.4)	147.8 (3.9)	145.1 (2.0)	147.2 (3.4)	147.2 (3.4)	147.2 (3.4)	169.4 (16.8)	174.0 (18.2)	174.0 (18.2)	174.0 (18.2)
General	79.4 (-5.9)	84.9 (7.0)	82.3 (3.5)	65.1 (8.1)	105.6 (4.9)	105.6 (4.9)	106.6 (29.6)	91.9 (41.2)	132.4 (25.4)	132.4 (25.4)
Industry	91.0 (-5.2)	98.8 (8.6)	93.4 (3.1)	78.4 (6.7)	108.4 (4.7)	108.4 (4.7)	127.0 (35.9)	114.4 (45.9)	144.4 (33.2)	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			
			M1~7	M5	M6	M7	M1~7	M5	M6	M7
Coal (Mton)	119.9 (-0.0)	114.0 (-5.0)	66.7 (-1.8)	9.1 (-2.3)	9.7 (-0.3)	11.1 (-3.8)	61.8 (-7.2)	8.2 (-9.4)	8.7 (-10.1)	9.8 (-11.6)
- Coking coal excluded	94.4 (-0.8)	90.4 (-4.3)	52.7 (-0.8)	7.0 (-0.9)	7.7 (0.3)	9.0 (-4.4)	48.1 (-8.6)	6.3 (-10.9)	6.7 (-13.3)	7.7 (-13.9)
Oil (Mbbl)	830.7 (7.1)	814.5 (-1.9)	477.0 (0.5)	69.0 (2.5)	60.1 (-12.9)	69.8 (-0.2)	452.7 (-5.1)	63.3 (-8.3)	59.6 (-0.9)	66.5 (-4.6)
LNG (Mton)	45.8 (10.4)	45.6 (-0.5)	27.6 (0.2)	3.0 (-1.1)	3.0 (-2.7)	3.3 (-3.6)	25.8 (-6.4)	3.0 (-0.6)	2.9 (-3.7)	3.2 (-3.2)
Hydro (TWh)	3.1 (-21.2)	3.5 (15.9)	1.7 (-10.5)	0.2 (-26.6)	0.3 (-28.6)	0.4 (8.3)	2.0 (20.6)	0.3 (21.6)	0.3 (13.9)	0.7 (70.8)
Nuclear (TWh)	158.0 (-1.4)	176.1 (11.4)	102.0 (14.0)	14.6 (14.5)	14.7 (30.2)	15.4 (24.8)	102.5 (0.4)	14.5 (-1.0)	14.2 (-3.8)	15.8 (3.0)
Others (Mtoe)	14.4 (13.8)	15.9 (10.6)	9.4 (10.7)	1.5 (20.1)	1.3 (10.4)	1.4 (15.4)	9.8 (4.1)	1.4 (-2.7)	1.4 (8.8)	1.5 (6.1)
TPED (Mtoe)	303.2 (5.1)	304.5 (0.4)	179.6 (2.5)	24.6 (3.1)	23.5 (-0.8)	26.3 (2.6)	172.5 (-4.0)	23.4 (-4.6)	22.7 (-3.3)	25.2 (-3.9)

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

Share of TPED by Sources

(unit: %)

	2021	2022p					2023p			
			M1~7	M5	M6	M7	M1~7	M5	M6	M7
Coal	24.0	22.7	22.5	22.4	24.9	25.6	21.8	21.4	23.4	23.7
- Coking coal excluded	18.1	17.2	17.0	16.6	19.0	19.9	16.2	15.5	17.1	17.8
Oil	40.1	40.0	39.5	42.1	39.1	39.7	39.6	41.7	40.0	40.0
LNG	19.7	19.6	20.1	16.2	16.6	16.3	19.6	16.8	16.5	16.4
Hydro	0.2	0.2	0.2	0.2	0.3	0.3	0.3	0.3	0.3	0.6
Nuclear	11.1	12.3	12.1	12.7	13.3	12.5	12.7	13.1	13.3	13.4
Others	4.7	5.2	5.2	6.0	5.5	5.2	5.7	6.1	6.2	5.8
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				2023p			
			M1~7	M5	M6	M7	M1~7	M5	M6	M7
Industry	133.0 (7.2)	130.0 (-2.2)	77.5 (1.6)	10.9 (1.6)	10.5 (-2.7)	11.2 (-0.5)	72.9 (-5.9)	10.2 (-6.9)	9.9 (-4.9)	10.7 (-4.5)
Transport	36.6 (5.4)	36.3 (-0.9)	20.4 (-3.1)	3.5 (12.8)	2.7 (-17.8)	3.2 (2.7)	20.7 (1.0)	3.2 (-8.9)	3.0 (9.6)	3.3 (1.3)
Residential	22.9 (2.6)	23.2 (1.2)	14.5 (2.3)	1.2 (-8.1)	1.0 (-7.4)	1.0 (7.9)	13.4 (-7.7)	1.2 (1.3)	1.0 (-0.7)	1.0 (-2.3)
commercial	17.9 (1.7)	18.9 (5.4)	11.1 (6.1)	1.3 (7.2)	1.4 (3.6)	1.6 (7.6)	11.1 (-0.0)	1.3 (0.8)	1.4 (1.9)	1.5 (-0.6)
Public	5.2 (4.0)	5.3 (2.3)	3.1 (1.5)	0.4 (12.0)	0.4 (5.0)	0.5 (17.0)	3.1 (-1.3)	0.4 (1.5)	0.4 (0.0)	0.4 (-3.2)
TFC	215.7 (5.8)	213.7 (-0.9)	126.7 (1.3)	17.3 (3.5)	15.9 (-5.2)	17.5 (1.7)	121.2 (-4.4)	16.3 (-5.9)	15.6 (-1.5)	17.0 (-2.9)
Coal (Mton)	51.0 (3.6)	46.9 (-8.1)	27.9 (-4.3)	4.2 (-0.2)	4.1 (3.4)	4.0 (-5.4)	26.7 (-4.4)	3.9 (-8.2)	3.8 (-7.5)	3.9 (-3.2)
Oil (Mbbbl)	809.1 (7.6)	798.9 (-1.3)	468.1 (1.4)	68.8 (6.2)	59.3 (-11.7)	68.5 (1.1)	442.2 (-5.6)	62.9 (-8.6)	58.8 (-0.8)	65.6 (-4.2)
- Non-energy oil excluded	350.6 (4.3)	345.8 (-1.4)	194.3 (-4.0)	31.3 (9.5)	24.1 (-20.0)	27.8 (-1.5)	194.3 (-0.0)	28.3 (-9.4)	26.1 (8.4)	29.0 (4.4)
Electricity (TWh)	520.3 (4.7)	535.3 (2.9)	313.3 (4.3)	41.2 (3.7)	42.1 (2.7)	47.4 (5.9)	310.0 (-1.1)	40.5 (-1.8)	42.2 (0.4)	45.7 (-3.6)
City gas (Bm³)	22.7 (3.3)	23.4 (2.9)	15.0 (4.7)	1.4 (-1.8)	1.2 (-1.2)	1.2 (6.6)	13.7 (-8.7)	1.4 (-4.2)	1.1 (-7.4)	1.1 (-9.6)
Heat-others (1 000 toe)	9.8 (6.3)	10.0 (1.9)	6.0 (1.8)	0.7 (1.8)	0.7 (1.6)	0.7 (11.2)	5.7 (-4.3)	0.7 (-3.5)	0.7 (-1.9)	0.8 (6.1)

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				2023p			
			M1~7	M5	M6	M7	M1~7	M5	M6	M7
Industry	61.7	60.8	61.1	63.1	65.9	64.2	60.2	62.5	63.6	63.1
Transport	17.0	17.0	16.1	20.3	17.0	18.4	17.0	19.6	18.9	19.1
Residential	10.6	10.9	11.5	6.8	6.1	6.0	11.1	7.4	6.1	6.0
Commercial	8.3	8.9	8.8	7.5	8.6	8.9	9.2	8.0	8.9	9.1
Public	2.4	2.5	2.5	2.2	2.5	2.6	2.6	2.4	2.5	2.6
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	14.1	15.6	16.4	14.9	14.2	15.3	15.6	14.9
Oil	47.9	47.5	46.9	50.8	47.5	49.5	46.4	49.3	48.0	49.2
- Non-energy oil excluded	21.6	21.5	20.4	24.2	20.2	21.0	21.1	23.0	22.1	22.6
Electricity	20.7	21.5	21.3	20.5	22.8	23.3	22.0	21.4	23.2	23.1
City gas	11.8	12.2	13.0	9.2	9.0	8.1	12.7	10.0	8.8	8.2
Heat-others	4.6	4.7	4.7	3.9	4.3	4.2	4.7	4.0	4.3	4.6

Note: p means provisional.

Source: Korea Energy Economics Institute

Statistics on Energy Production Facilities

	2020	2021	2022	2023			M5	M6	M7
				M5	M6	M7			
Total capacity (GW)	129.2 (3.1)	134.0 (3.7)	138.0 (3.0)	134.1 (3.4)	134.2 (2.4)	134.3 (2.3)	140.8 (5.0)	141.0 (5.0)	142.6 (6.2)
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 (2.5)	36.3 (-0.4)	36.3 (-0.4)	38.2 (5.4)	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)	41.7 (1.2)	41.7 (1.2)	43.1 (4.5)
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			M5	M6	M7
				M5	M6	M7			
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 (2.3)	20.6 (2.0)	20.9 (1.3)	20.8 (1.1)	20.8 (1.2)
Registered cars (mil)	24.4 (2.9)	24.9 (2.2)	25.5 (2.4)	25.2 (2.4)	25.2 (2.3)	25.3 (2.3)	25.7 (2.0)	25.7 (2.0)	25.8 (1.9)
- gasoline	11.4 (4.1)	11.8 (3.1)	12.1 (2.6)	11.9 (2.8)	11.9 (2.7)	12.0 (2.7)	12.2 (2.4)	12.2 (2.3)	12.2 (2.3)
- diesel	10.0 (0.3)	9.9 (-1.2)	9.8 (-1.2)	9.8 (-1.0)	9.8 (-1.0)	9.8 (-1.1)	9.7 (-1.5)	9.7 (-1.7)	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 (-2.5)	1.9 (-2.7)	1.9 (-2.9)
- hybrid	0.6 (33.1)	0.9 (34.0)	1.1 (28.5)	1.0 (32.8)	1.0 (32.2)	1.0 (31.7)	1.2 (25.4)	1.3 (25.9)	1.3 (26.5)

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

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