

KEEI

MONTHLY KOREA ENERGY TRENDS

KOREA ENERGY ECONOMICS INSTITUTE

2023 / 06

COAL	-2.7%
PETROLEUM	2.0%
NATURAL GAS	-15.5%
NUCLEAR	9.6%
NEW & RENEWABLE	13.3%
March. 2023	

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



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1. The Economy and the Industry

- **Gross Domestic Product (GDP) rose by 0.9% year-on-year in 1Q, which was driven by increased private spending and investment, although the growth was slower.**
 - GDP increased along with the recovery in private spending and stronger investment, which was affected by eased quarantine rules and increased face-to-face activities.
- **The mining & manufacturing production index has declined for six consecutive months until March, despite the recovery in some sectors, as production continued to be sluggish, mostly in the semiconductor sector.**
 - The semiconductor production index dropped by 26.9% year-on-year due to continuously weak business and output reduction by some domestic manufacturers, and the production index of basic chemical materials fell by 8.9% year-on-year due to a slowdown in demand and lower exports.
 - The automobile production index was up 27.2% year-on-year in March, marking the 11th consecutive month of growth, as parts supply returned to normal, and the export of eco-friendly cars increased. The iron & steel production index rose by 0.1%, following the normalization of facilities and the recovery of the industries that are the source of iron & steel demand.
- **In the service industry, the production index increased by 6.2% year-on-year in March, as all subsectors reported stronger production except the information and communications sector.**
 - The wholesale & retail production index was up 0.5%, led by the motor sales of vehicles and parts and retail businesses. The transportation and storage production index grew by 18.8% year-on-year, driven by increased production in the road & air transport businesses.
 - The food & accommodation production index went up by 17.8% year-on-year, as production increased in the accommodation, restaurant and bar businesses all together, which was affected by the increases in average temperature (1.7℃), outdoor activities and traveling demand.

► Major economic and industrial indicators

	2022p			2023p			
		M1~3	M3	M1~3	M1	M2	M3
GDP (trillion won)	1 968.8 (2.8)	468.0 (3.1)	468.0 (3.1)	472.2 (0.9)	- -	- -	472.2 (0.9)
Total export (\$billion, customs clearance basis)	683.6 (6.1)	173.4 (18.4)	63.8 (18.8)	151.3 (-12.7)	46.4 (-16.4)	50.0 (-7.7)	55.0 (-13.8)
Industrial production index (2020=100)	109.7 (1.4)	110.2 (5.7)	117.8 (4.8)	99.4 (-9.7)	95.6 (-13.4)	93.9 (-8.2)	108.8 (-7.6)
Semi-conductors	136.5 (7.7)	143.4 (30.2)	154.7 (26.8)	94.9 (-33.8)	93.3 (-33.9)	78.3 (-41.7)	113.1 (-26.9)
Basic chemical products	99.1 (-6.4)	106.3 (1.2)	109.1 (-0.7)	97.1 (-8.7)	98.8 (-11.3)	93.0 (-5.5)	99.4 (-8.9)
Iron&Steel	96.3 (-8.4)	104.9 (2.4)	107.7 (1.3)	98.1 (-6.5)	91.7 (-16.6)	94.8 (-2.3)	107.8 (0.1)
Cars	116.0 (9.1)	104.0 (-4.0)	112.2 (-7.2)	126.5 (21.7)	112.7 (10.7)	124.2 (26.7)	142.7 (27.2)
Service production index (2020=100)	112.0 (6.5)	105.1 (5.5)	110.8 (4.1)	111.9 (6.5)	109.8 (4.8)	108.3 (8.6)	117.7 (6.2)

Wholesale & Retail	107.1 (1.7)	103.8 (2.0)	111.4 (2.2)	106.7 (2.7)	107.0 (2.0)	101.0 (6.1)	112.0 (0.5)
Food & Accommodation	119.1 (16.9)	99.6 (16.0)	101.7 (5.5)	115.8 (16.2)	114.3 (8.5)	113.2 (23.3)	119.8 (17.8)

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

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

2. Energy Prices¹

Global Energy Prices

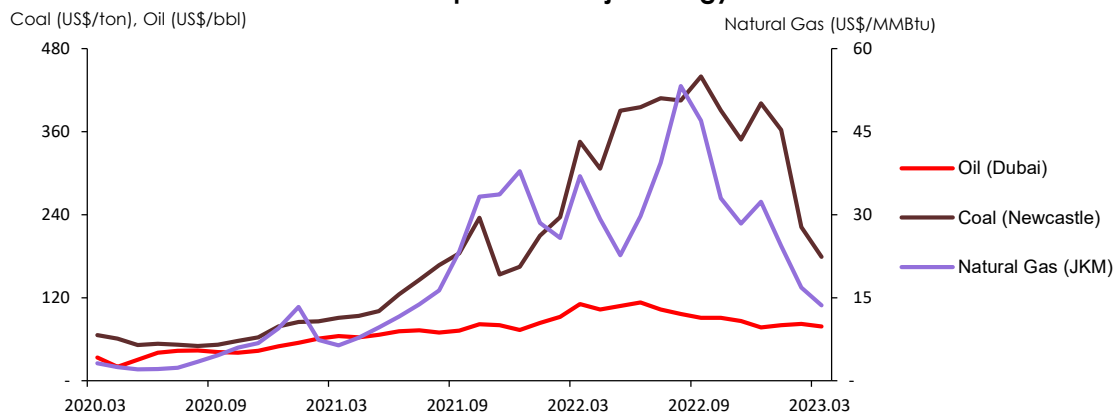
- **Global oil price declined by 4.4% from a month earlier in March amid the tight monetary policy in the US and escalating concerns about the global financial crisis.**
 - The core personal consumption & expenditure price index, announced on Feb.24, was higher than the market's expectation in January, raising concerns about more base rate hikes.
 - The failure of small and mid-size banks in the US, including Silicon Valley Bank, as well as Credit Suisse's liquidity crisis have deepened the instability of the financial market.
 - Global steam coal price fell by 19.3% in March than the prior month due to the seasonal demand contraction and stable inventory in Europe.
 - Global natural gas price declined in March, as mild weather, stable supply and high level of inventory continued from the previous month.

► Global energy prices

	2021	2022	M1	M2	M3	2023	M1	M2	M3
Crude oil (US\$/bbl)	69.3	96.4	83.5	92.4	110.9	80.4	82.1	78.5	
	(64.2)	(39.1)	(14.0)	(10.7)	(20.1)	(4.1)	(2.1)	(-4.4)	
Coal (US\$/ton)	136.4	357.1	209.6	236.2	345.3	362.3	222.1	179.3	
	(126.5)	(161.8)	(27.3)	(12.7)	(46.1)	(-9.6)	(-38.7)	(-19.3)	
Natural gas (US\$/MMBtu)									
TTF	16.1	40.2	28.2	26.9	41.8	19.8	16.5	13.7	
	(397.9)	(149.6)	(-25.0)	(-4.6)	(55.2)	(-46.1)	(-16.5)	(-16.9)	
JKM	17.9	33.9	28.5	25.8	37.0	24.3	16.9	13.6	
	(325.7)	(89.2)	(-24.6)	(-9.5)	(43.1)	(-24.7)	(-30.7)	(-19.4)	

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

Domestic energy prices

□ **At domestic gas stations, the price of gasoline increased in March from the previous month, while that of diesel declined, affected by fluctuating global prices.**

- In the domestic market, gasoline price was up 0.9% from the previous month, while diesel price fell by 4.2%, reflecting fluctuating prices at Singapore's spot market from February to March, and consequently, the trend of diesel price surpassing that of gasoline ended in nine months.
- The prices of propane and butane remained flat compared to the previous month, even though Saudi Aramco raised its contract price, as domestic importers kept their supply prices unchanged.
- The relative price of propane in terms of city gas (propane/city gas) for industrial customers went up by 3.7% to 0.84 in March compared to the previous month.

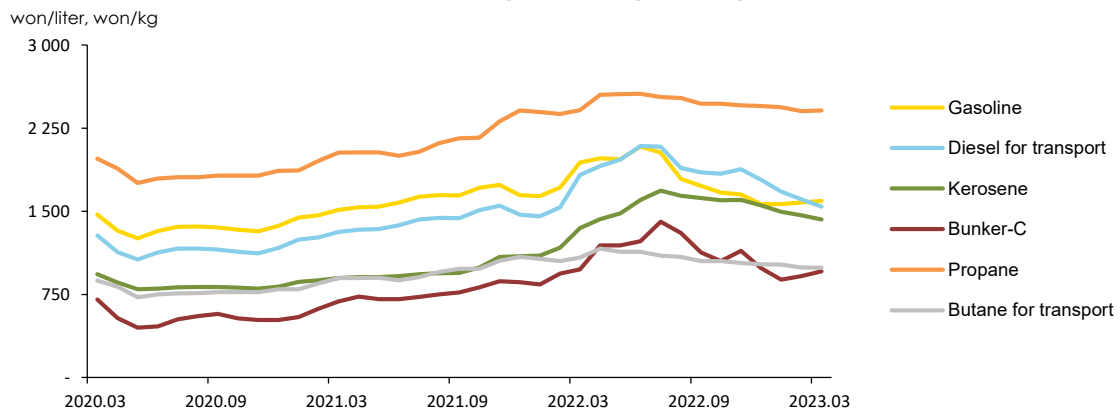
► Domestic petroleum product prices

	2021	2022				2023		
			M1	M2	M3	M1	M2	M3
Gasoline (won/liter)	1 591.2 (15.2)	1 812.7 (13.9)	1 635.2 (-0.7)	1 714.6 (4.9)	1 938.5 (13.1)	1 562.9 (-0.1)	1 578.5 (1.0)	1 592.2 (0.9)
Diesel for transport (won/liter)	1 392.0 (17.0)	1 843.4 (32.4)	1 453.5 (-1.0)	1 536.6 (5.7)	1 827.0 (18.9)	1 675.4 (-6.1)	1 606.4 (-4.1)	1 539.7 (-4.2)
Bunker-C (won/liter)	732.2 (27.8)	1 116.1 (52.4)	840.4 (-2.2)	937.4 (11.6)	974.0 (3.9)	883.8 (-10.4)	915.6 (3.6)	956.9 (4.5)
Propane (won/kg)	2 093.4 (13.1)	2 480.1 (18.5)	2 395.0 (-0.6)	2 379.0 (-0.7)	2 412.1 (1.4)	2 440.0 (-0.4)	2 405.4 (-1.4)	2 409.7 (0.2)
Butane for transport (won/liter)	932.3 (17.9)	1 081.8 (16.0)	1 071.8 (-1.4)	1 050.7 (-2.0)	1 083.0 (3.1)	1 019.7 (-0.2)	992.2 (-2.7)	989.4 (-0.3)

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



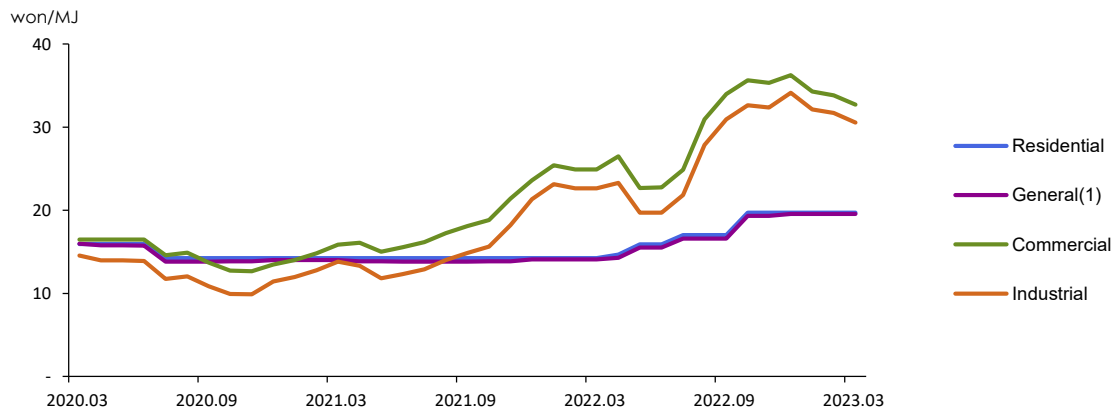
□ **City gas retail rates for residential and general customers have been frozen, while the rates for office heating and industrial customers fell by 3.4% and 3.6% respectively from the previous month.**

- The material cost of city gas for residential and general customers is lower than the actual cost, but it was kept at 15.6 won/MJ without any upward adjustment, considering the cost burden for heating.
- The material cost of city gas for office heating and industrial customers dropped by 3.9% from the previous month to 28.2 won/MJ, as global oil and natural gas prices have recently been weaker.

□ **Electric rates for general and industrial customers declined in March after they were adjusted for the spring & autumn season, while the rate for residential customers was the same as the previous month.**

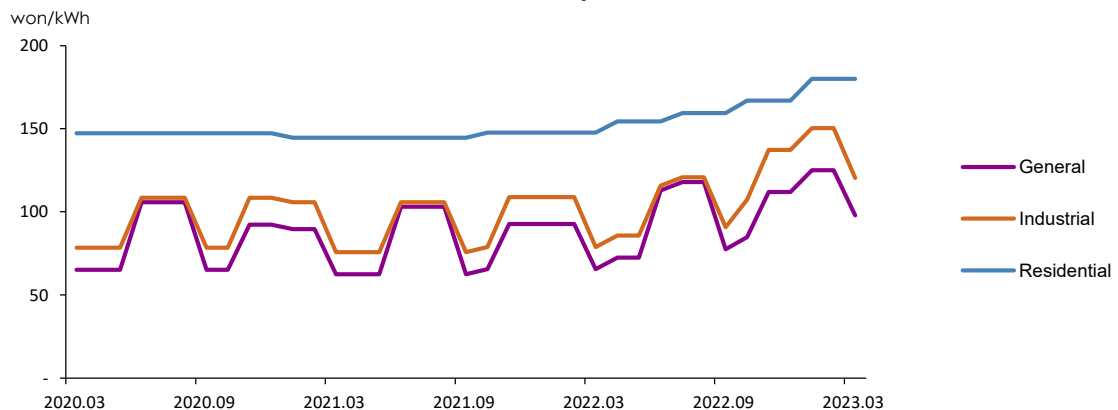
- Energy charges for general and industrial customers were lowered by 24.4% and 22.0% respectively compared to the previous month as a result of the seasonal rate adjustment (spring & autumn).
- Energy charge and climate change & environmental charge were raised by 11.4 won/kWh and 1.7 won/kWh respectively in January from the previous quarter.
- Though the fuel cost pass-through adjustment rate was estimated to be 6.8 won/kWh for 2Q, it is expected to be fixed at 5.0 won/kWh due to the upper and lower limits of the rate adjustment.

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



Source: Seoul City Gas

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



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

3. Energy Supply

- **The total energy import volume increased by 1.4% year-on-year in March, led by crude oil and coal, although the import volume of natural gas declined.**
 - The import volume of crude oil rose by 7.3%, as its unit import price has been down for two consecutive months in all region in line with the global oil price decrease, and the import volume of crude oil from Middle East and Africa grew by 16.8% and 22.7% on a year-on-year basis.
 - The import volume of petroleum products fell by 0.9% year-on-year due to a drop in naphtha and LPG imports.
 - The import volume of bituminous coal rebounded by 12.3% as the unit import prices were in a downward trend (-4.4%), amid its increased industrial use (5.0%), although bituminous coal input was lower in the domestic power generation sector.
 - The import volume of natural gas dropped by 18.5% partly owing to the increased inventory level and base effect, although the unit import price was lower.
 - The total import value (based on CIF) decreased by 12.4% year-on-year despite a slight increase in the import volume, as the unit import prices declined.

► Import and domestic production of energy

	2022p			2023p			
		M1~3	M3	M1~3	M1	M2	M3
Import volume							
Crude oil (Mbbbl)	1 031.3	259.6	85.6	260.6	81.6	87.2	91.8
	(7.4)	(16.0)	(19.0)	(0.4)	(-13.9)	(9.9)	(7.3)
Petroleum product (Mbbbl)	367.1	100.8	31.6	99.1	33.4	34.4	31.3
	(-6.4)	(14.5)	(8.3)	(-1.7)	(-7.9)	(4.3)	(-0.9)
Bituminous coal (Mton)	120.2	29.8	9.5	30.3	10.3	9.4	10.6
	(0.5)	(8.7)	(-13.1)	(1.5)	(-4.9)	(-1.9)	(12.3)
Anthracite (Mton)	5.4	1.3	0.5	1.2	0.4	0.3	0.5
	(-16.8)	(-15.1)	(-28.6)	(-3.0)	(-10.5)	(-7.4)	(7.9)
LNG (Mton)	46.4	13.4	5.0	13.9	4.8	5.1	4.0
	(1.0)	(-2.5)	(18.1)	(3.6)	(-4.2)	(46.4)	(-18.5)
Import volume (Mtoe)	331.1	86.3	28.8	87.2	28.6	29.4	29.2
	(2.1)	(9.5)	(8.6)	(1.0)	(-9.2)	(12.8)	(1.4)
Import value (billion US\$, CIF)	217.9	52.4	18.8	51.8	17.8	17.5	16.5
	(59.0)	(93.7)	(101.9)	(-1.3)	(-3.5)	(15.3)	(-12.4)
Energy share of total import value (%)	29.8	29.4	29.5	29.8	30.2	31.6	27.6
Foreign energy dependence (%)	94.2	94.7	94.0	94.0	95.2	94.0	93.0
Domestic production							
Hydropower (TWh)	3.5	0.6	0.2	0.6	0.2	0.2	0.2
	(15.9)	(0.1)	(3.2)	(-2.0)	(7.6)	(0.5)	(-12.7)
Anthracite (Mton)	0.8	0.2	0.1	0.2	0.1	0.1	0.1
	(-8.7)	(-6.3)	(-7.3)	(-12.0)	(-23.6)	(5.0)	(-14.5)
Renewable energy (Mtoe)	16.0	3.9	1.3	4.1	1.3	1.2	1.5
	(11.0)	(8.5)	(3.1)	(4.6)	(3.1)	(-3.8)	(14.1)

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

4. Energy Consumption

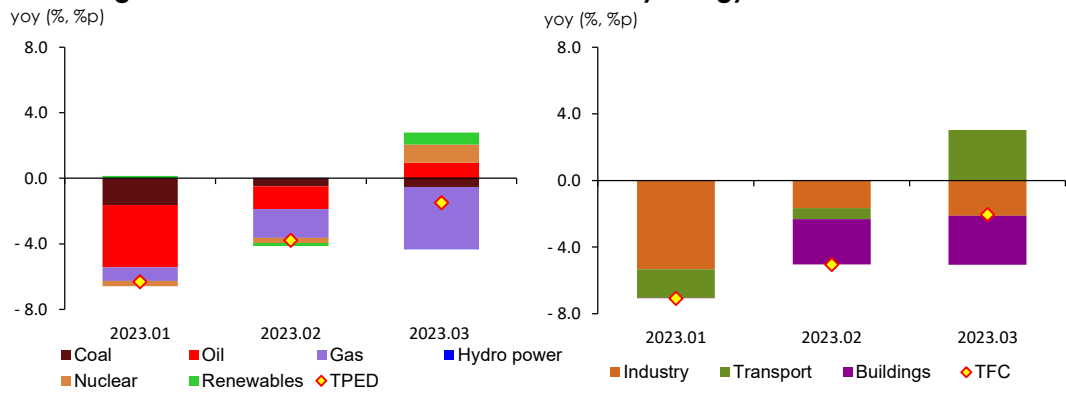
- **Total Primary Energy Demand (TPED) fell by 1.5% year-on-year in March, despite growing use of petroleum and nuclear energy, as coal and gas use declined.**
 - Coal use dropped by 2.7% year-on-year, as the demand declined in the power generation sector due to a surge in nuclear and renewable & other energy generation, although its industrial use increased, driven by a recovery in iron & steel production.
 - Gas use decreased by 15.5% year-on-year, because it plunged in the power generation sector amid a drop in the total power generation and a growth in baseload generation, and as its final use also declined as a result of the economic downturn, temperature effect and rate hikes.
 - Petroleum use went up by 2.0%, as it surged in the transport sector due to growing stockpiling demand at gas stations, although the industrial petroleum demand was lower amid the deteriorating petrochemical business. The use of nuclear energy grew by 9.6% along with the growth in installed capacity and capacity factors.
- **Total Final Consumption (TFC) went down by 2.0% year-on-year in March, which was attributed to the economic slowdown, temperature effect and higher energy prices.**
 - Industrial energy use fell by 3.5% year-on-year, as energy use fell sharply in large energy consuming businesses such as the petrochemical, machinery and transport equipment sectors, except the iron & steel sector that consumed more energy with production activities returning to normal.
 - Transport energy use jumped 21.1% year-on-year amid growing petroleum sales at gas stations due to expanded mobility demand, and as gas stations' stockpiling demand also increased with an expectation that the fuel tax cut may expire in May.
 - Energy use in buildings dropped by 11.8%, as the residential, commercial and public sectors all consumed less energy due to the decreased number of heating degree days and higher energy rates for civilian use (residential, general).

Energy consumption

	2022p			2023p			
		M1~3	M3	M1~3	M1	M2	M3
TPED (Mtoe)	302.0	81.3	25.8	78.0	27.7	24.8	25.5
	(-0.4)	(3.5)	(1.4)	(-4.0)	(-6.3)	(-3.8)	(-1.5)
TFC (Mtoe)	213.5	59.3	18.6	56.4	20.1	18.1	18.3
	(-1.1)	(3.6)	(1.1)	(-4.8)	(-7.1)	(-5.0)	(-2.0)
- Feedstock exclude	141.4	40.4	12.2	38.9	14.1	12.7	12.1
	(0.1)	(2.9)	(0.4)	(-3.8)	(-5.0)	(-5.1)	(-1.0)

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

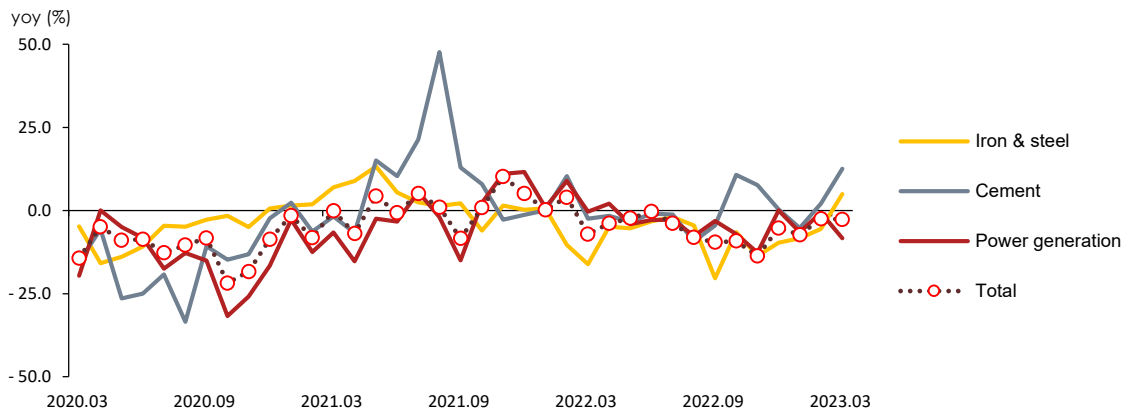
- **Coal use dropped by 2.7% year-on-year in March, with the power generation sector leading the downward trend, although it rebounded in the industrial sector.**
 - Industrial coal use grew by 4.2% year-on-year, as it bounced back in the iron & steel sector that had posted a steady decline in coal use, and as it also grew in the cement production sector.
 - Coal use for power generation decreased by 8.3% year-on-year as a result of a surge in nuclear and renewable & other energy generation.

► Coal consumption

	2022p	2023p		2023p			
		M1~3	M3	M1~3	M1	M2	M3
Coal (Mton)	113.9	28.6	8.5	27.3	10.1	9.0	8.3
	(-5.0)	(-1.0)	(-7.1)	(-4.4)	(-7.3)	(-2.5)	(-2.7)
Industry	46.3	11.8	3.8	11.4	3.9	3.5	4.0
	(-8.3)	(-6.1)	(-14.3)	(-3.4)	(-8.5)	(-5.4)	(4.2)
-Coking-coal	23.3	5.9	1.9	5.7	2.0	1.7	2.0
	(-8.8)	(-8.9)	(-16.5)	(-3.4)	(-8.8)	(-5.5)	(4.9)
Buildings	0.4	0.1	0.0	0.1	0.0	0.0	0.0
	(-5.1)	(-5.7)	(3.6)	(0.8)	(-6.0)	(17.1)	(-6.9)
Power generation	67.1	16.7	4.7	15.8	6.1	5.5	4.3
	(-2.6)	(3.0)	(-0.4)	(-5.1)	(-6.5)	(-0.7)	(-8.3)

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 posted a year-on-year growth of 1.8% in March, led by a surge in the transport sector, while it declined in the industrial and building sectors.
 - Industrial petroleum use decreased by 5.7% year-on-year, as the use of LPG as feedstock declined amid the deteriorating petrochemical business.
 - In the transport sector, petroleum use increased by 22.4% year-on-year, which was driven by growing stockpiling demand in the road transport sector.
 - In the building sector, petroleum use went down by 10.0% year-on-year, as the number of heating degree days fell by 16.3% amid mild weather.

► Petroleum product consumption by end-use sectors

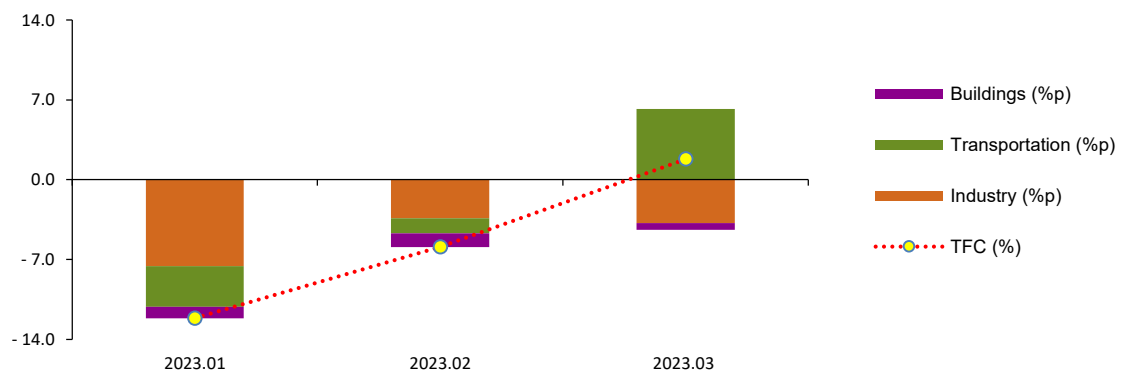
	2022p	2023p		2023p			
		M1~3	M3	M1~3	M1	M2	M3
TFC (Mbbl)	795.6	208.3	67.8	196.5	66.7	60.8	69.0
	(-1.7)	(6.1)	(2.5)	(-5.7)	(-12.1)	(-5.9)	(1.8)
Industry	493.8	132.2	45.1	121.7	41.4	37.8	42.5
	(-2.4)	(8.6)	(7.6)	(-8.0)	(-12.2)	(-5.5)	(-5.7)
- Naphtha	356.0	93.8	32.0	90.7	30.7	28.0	32.0
	(-3.8)	(3.5)	(2.2)	(-3.3)	(-9.3)	(0.2)	(-0.1)
Transport	257.7	60.6	18.7	61.3	19.9	18.4	22.9
	(-0.5)	(1.2)	(-7.7)	(1.1)	(-12.0)	(-4.4)	(22.4)
Buildings	44.1	15.5	4.0	13.6	5.4	4.6	3.6
	(-0.3)	(5.0)	(1.1)	(-12.4)	(-12.3)	(-14.4)	(-10.0)
Power generation (Mbbl)	4.99	1.95	0.41	0.92	0.35	0.26	0.31
	(19.2)	(107.1)	(88.0)	(-52.6)	(-63.6)	(-54.6)	(-23.7)

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 15.6% year-on-year in March, as the downward trend continued in the building sector and started in the power generation and industrial sectors.**
 - In the power generation sector, gas use fell by 16.0% year-on-year, because baseload generation (nuclear + coal + renewable & other) grew by 2.3%, while electricity use declined by 3.5%.
 - In the industrial sector, gas use started to decline, as it fell more sharply in the petrochemical sector due to the sluggish business including a drop in exports and facility utilization rates, and as it also declined in the transport equipment sector², especially for the commissioning of LNG carriers.
 - In the building sector, gas use decreased more rapidly (-19.4%), as it fell in both the residential and commercial sectors owing to the increased average temperature (1.7℃), higher city gas rates for civilian use(residential, general) and the high base effect of the same month last year.

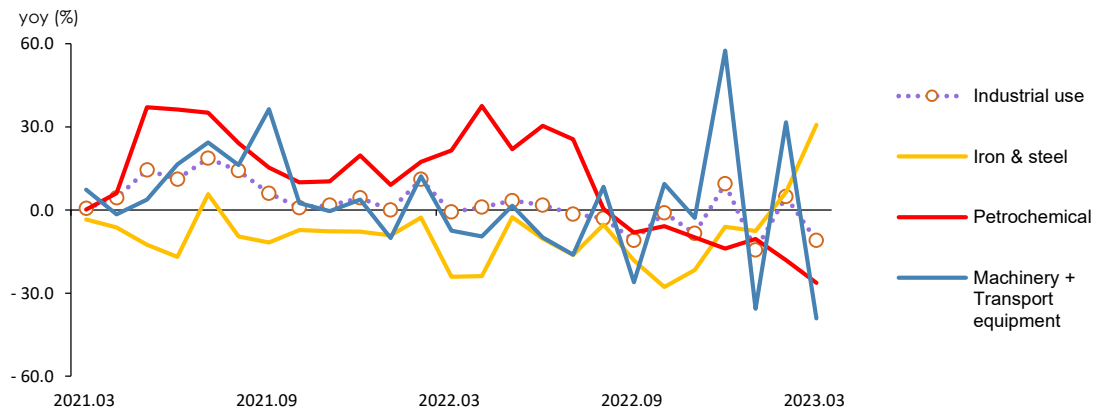
► Natural gas and city gas consumption

	2022p			2023p			
		M1~3	M3	M1~3	M1	M2	M3
Gas(TPED) (Mtoe)	59.5	19.5	6.2	18.0	6.8	6.0	5.2
(Natural gas + City gas)	(-1.2)	(1.4)	(7.3)	(-7.9)	(-3.0)	(-5.7)	(-15.6)
Power generation	29.7	8.4	3.0	8.0	2.9	2.5	2.6
	(-3.2)	(-2.8)	(7.3)	(-4.7)	(3.0)	(0.2)	(-16.0)
Industry	10.0	2.8	0.9	2.6	0.9	1.0	0.8
	(-0.5)	(2.4)	(-1.5)	(-6.4)	(-13.9)	(5.6)	(-10.3)
Buildings	15.2	7.0	1.9	6.3	2.6	2.2	1.5
	(5.3)	(7.5)	(14.4)	(-10.0)	(-0.9)	(-12.7)	(-19.4)
Natural gas(TPED) (Mton)	45.3	14.8	4.6	13.6	5.2	4.5	3.9
	(-1.1)	(1.9)	(7.6)	(-8.5)	(-3.3)	(-7.1)	(-16.1)
City gas(TFC) (Bm³)	23.6	9.3	2.6	8.4	3.4	2.8	2.2
	(3.9)	(6.6)	(10.5)	(-9.9)	(-3.2)	(-11.7)	(-16.5)

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

² Gas consumption in the transport equipment manufacturing sector includes the amount of LNG shipment volume (+) and the unloaded volume (-) during the commissioning of LNG carriers.

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



8. Electricity

- Electricity use decreased by 3.5% year-on-year in March due to lower demand in both the industrial and building sectors.
 - Industrial electricity use fell by 4.2% year-on-year, because it fell sharply in the machinery, petrochemical and iron & steel sectors, though it increased in the transport equipment sector.
 - Energy use in buildings was down 2.9% year-on-year partly due to the decreased number of heating degree days and increased electric rates.

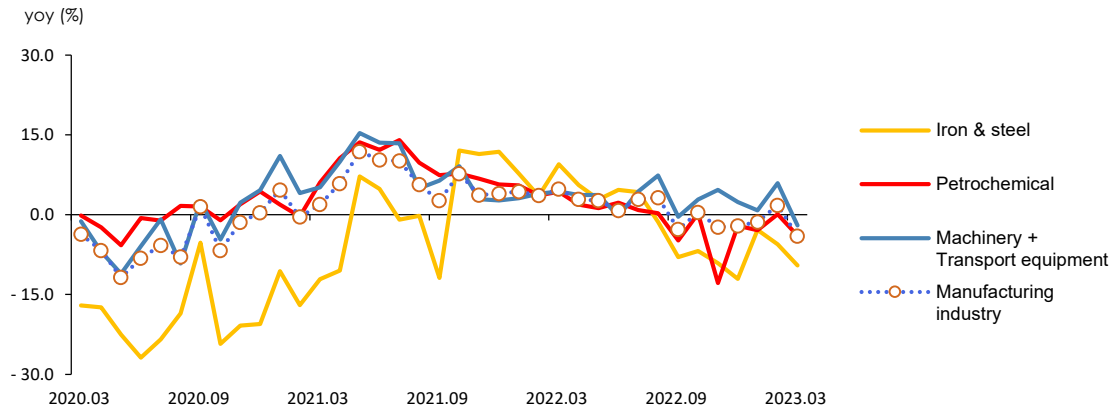
► Electricity consumption by end-use sectors

	2022p			2023p			
		M1~3	M3	M1~3	M1	M2	M3
Electricity (TWh)	535.3	139.9	44.7	140.3	50.2	47.0	43.1
	(2.7)	(4.3)	(6.2)	(0.3)	(3.0)	(1.0)	(-3.5)
Industry	274.1	70.4	23.6	69.5	24.2	22.7	22.6
	(1.7)	(4.5)	(5.3)	(-1.3)	(-1.1)	(1.5)	(-4.2)
Transport	4.0	1.0	0.3	1.1	0.4	0.4	0.3
	(8.7)	(6.2)	(4.3)	(13.3)	(11.9)	(13.6)	(14.4)
Buildings	257.2	68.5	20.8	69.7	25.6	24.0	20.2
	(3.8)	(4.1)	(7.4)	(1.7)	(7.1)	(0.4)	(-2.9)
Residential	78.6	19.7	6.0	19.6	7.0	6.8	5.8
	(1.3)	(1.8)	(4.8)	(-0.7)	(1.9)	(-0.5)	(-4.0)
Commercial	147.0	40.1	12.1	41.3	15.3	14.3	11.8
	(5.4)	(5.5)	(9.1)	(3.0)	(10.3)	(0.6)	(-2.6)

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

Source: Korea Energy Economics Institute

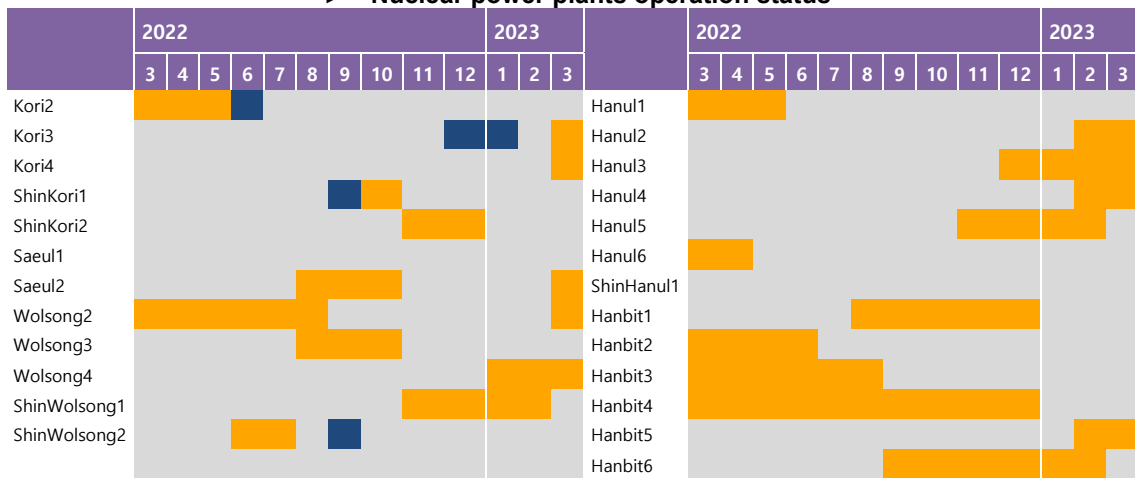
► The growth rate of electricity consumption in manufacturing industry



9. Nuclear

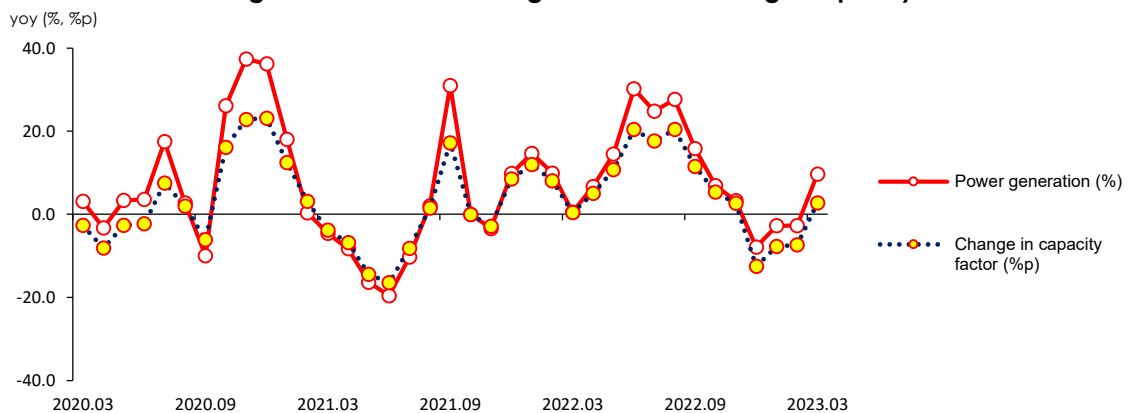
- **The total nuclear generation posted a year-on-year growth of 9.6% in March, as its installed capacity increased, while the daily average of preventive maintenance decreased.**
 - The installed capacity of nuclear energy increased by around 6% year-on-year after the commissioning of Shin Hanul Unit 1 (1.4GW) in December 2022, and the capacity factor grew by around 3%p year-on-year, driving up the total nuclear generation.
 - Even though the number of reactors that were subject to the scheduled and unscheduled shutdown rose by two reactors, the daily average of preventive maintenance fell by 0.1GW (90MW) to 5.0GW from the same month last year.
 - Nuclear energy's share of the total power generation recorded 31.7% (3.8%p), which was the biggest share in 15 months.

► Nuclear power plants operation status



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

► The growth rate of nuclear generation & average capacity factor

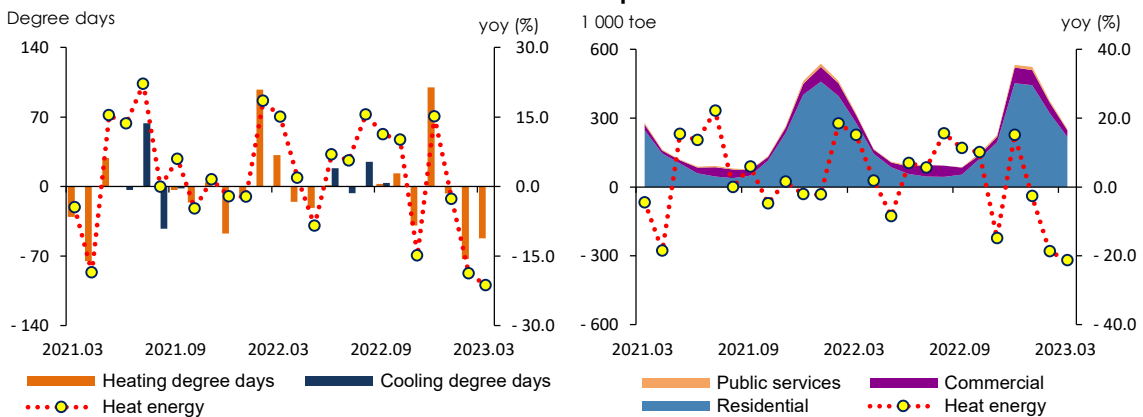


Note: Capacity factor = Ratio of actual power generated to possible power generation when utilizing 100% of available facility. Facility capacity values are based on end-of-the-month data

10. Heat and Renewable energy

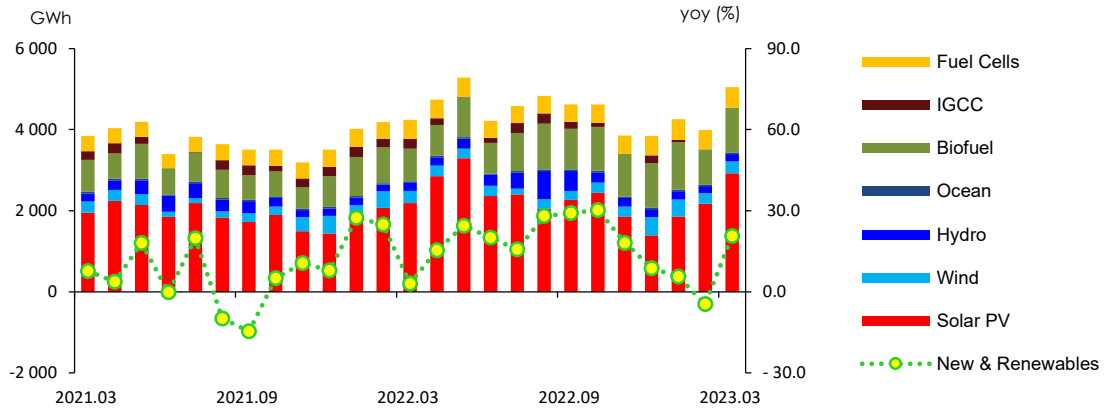
- **Heat energy use has been decreasing more rapidly for three consecutive months, posting a year-on-year decline of 21.3% in March, which was due to temperature and price effect.**
 - Owing to the temperature effect amid the decreased number of heating degree days (-16.3%) and the price effect from several price increases in the previous year (3 times), heat energy use in the residential sector fell by 21.8% year-on-year and its use in the commercial sector also dropped by 17.2% despite stronger service production.
- **Renewable & other energy use grew by 13.3% year-on-year, with the power generation sector leading the growth, although its final use declined.**
 - Renewable & other energy generation³ jumped 20.6% year-on-year with over 30% growth in solar PV that takes up the largest share and bioenergy generation as well as the growth in fuel cell generation which accounts for the next largest share.
 - The final use of renewable & other energy declined in all end-use sectors, posting a year-on-year decrease of 4.6%.

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



³ 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'.

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



11. Industry

□ Industrial energy use went down by 3.5% year-on-year in March despite growing energy demand in the iron & steel sector, as it declined in other large energy consuming businesses.

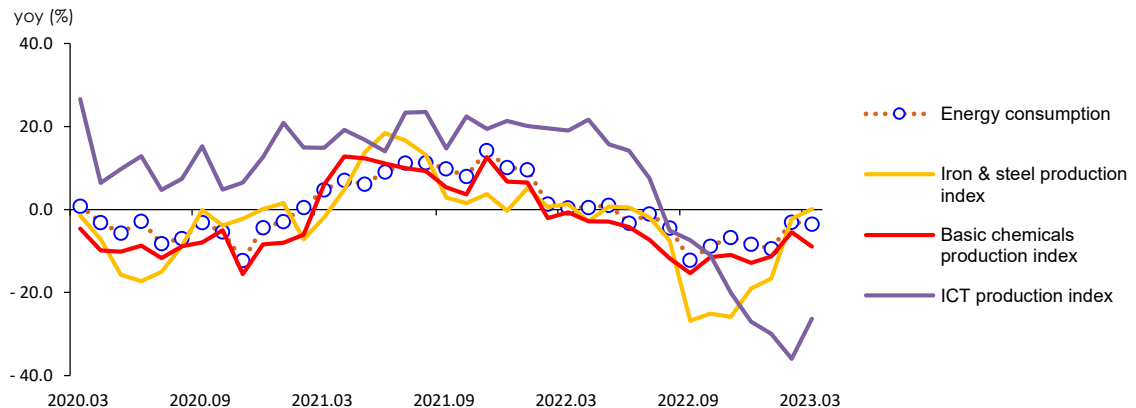
- Energy use in the iron & steel bounced back, as the production was fully back to normal in February after disruptions from a typhoon in September, while it declined in the petrochemical, machinery, and transport equipment sectors due to the economic downturn.

► Industrial energy consumption

	2022p			2023p			
		M1~3	M3		M1~3	M1	M2
Industry (Mtoe)	129.4	34.0	11.3	32.2	11.0	10.2	10.9
	(-2.7)	(3.8)	(0.4)	(-5.5)	(-9.4)	(-3.0)	(-3.5)
Petrochemical	65.5	17.5	6.0	16.1	5.6	5.0	5.5
	(-2.3)	(7.4)	(6.5)	(-7.7)	(-10.4)	(-5.3)	(-7.0)
- Naphtha	43.6	11.5	3.9	11.1	3.8	3.4	3.9
	(-3.8)	(3.5)	(2.2)	(-3.3)	(-9.3)	(0.2)	(-0.1)
Iron & Steel	25.9	6.6	2.1	6.4	2.2	1.9	2.2
	(-7.4)	(-7.4)	(-14.5)	(-3.1)	(-8.4)	(-5.1)	(4.9)
- Coking coal	16.4	4.1	1.3	3.9	1.4	1.2	1.4
	(-8.0)	(-8.1)	(-15.8)	(-4.3)	(-9.6)	(-6.4)	(4.0)
Machinery + Transport Equipment	13.0	3.4	1.1	3.3	1.1	1.2	1.0
	(4.2)	(3.7)	(2.8)	(-1.9)	(-7.2)	(11.1)	(-9.1)
Share of feedstock (%)	55.6	55.4	56.5	54.6	54.3	53.2	56.3

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 rose by 21.1% year-on-year in March, with the road transport sector leading the upward move with the expectation of the ending of fuel tax cuts⁴ in May.

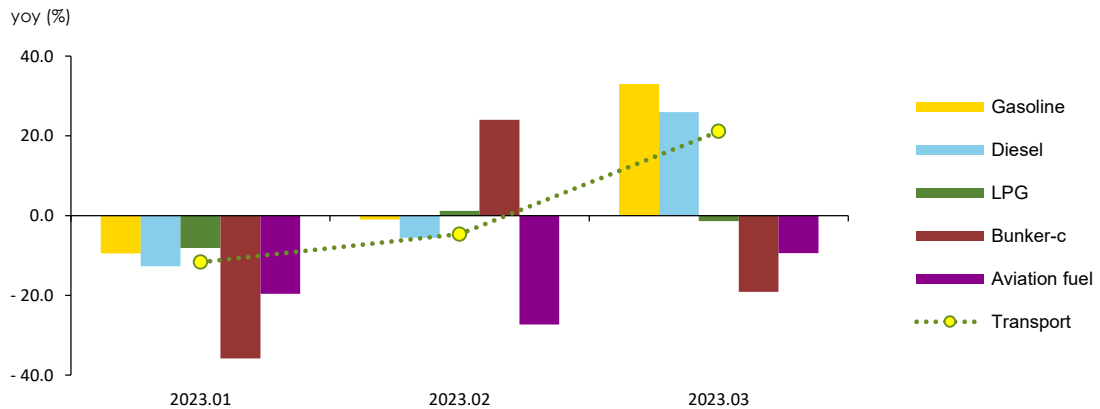
- In the road transport sector, energy use grew by 24.0% year-on-year as a result of surging stockpiling demand at gas stations with the expectation that the tax cuts would expire in May.
- In the aviation sector, energy use declined by 9.3%, as the number of domestic flights continued the downward trend, posting a 6.6% year-on-year decline in March.

► The growth rate of petroleum consumption in the transport sector

	2022p			2023p			
		M1~3	M3	M1~3	M1	M2	M3
Transport (Mtoe)	36.43	8.57	2.68	8.64	2.81	2.59	3.24
	(-0.6)	(1.5)	(-6.8)	(0.8)	(-11.7)	(-4.7)	(21.1)
Road	33.96	7.89	2.46	8.08	2.60	2.42	3.06
	(-0.7)	(0.2)	(-7.7)	(2.4)	(-10.8)	(-3.5)	(24.0)
Domestic navigation	0.50	0.15	0.05	0.11	0.03	0.04	0.04
	(16.7)	(57.3)	(71.2)	(-22.8)	(-35.9)	(-2.0)	(-25.0)
Domestic aviation	1.67	0.45	0.14	0.37	0.14	0.10	0.12
	(-0.3)	(16.7)	(-4.7)	(-18.8)	(-19.5)	(-27.1)	(-9.3)
Rail	0.30	0.08	0.02	0.08	0.03	0.03	0.02
	(-9.9)	(-10.2)	(-13.7)	(-1.4)	(-4.0)	(0.2)	(-0.1)

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



⁴ As of March, the possibility was high for the fuel tax cuts to be expired in May, but the decision was made in mid-April to extend the tax cuts for four more month until August 31.

13. Buildings

- **Energy use in buildings decreased by 11.8% year-on-year in March due to temperature effect, even though the service industry was recovering.**
 - In the residential sector, energy use dropped by 16.8% year-on-year, as heating demand decreased amid warmer weather than the same month last year.
 - In the commercial sector, energy use decreased by 5.7% year-on-year partly due to temperature effect, even though production activities increased in the service industry.
 - City gas and heat energy use plunged by 19.4% and 21.3% year-on-year, which was attributed to lower consumer sentiment as a result of hikes in heating costs in addition to the temperature effect.

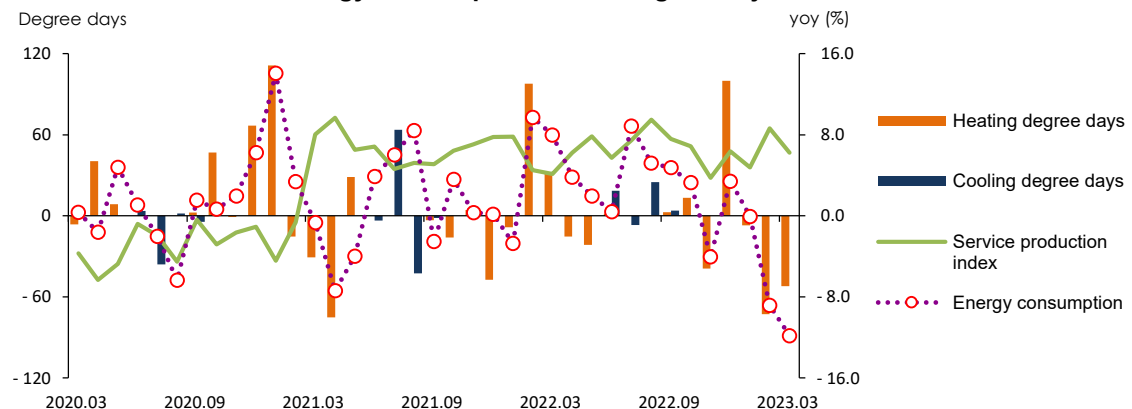
► Energy consumption in buildings

	2022p			2023p			
		M1~3	M3	M1~3	M1	M2	M3
Buildings (Mtoe)	47.7	16.7	4.6	15.6	6.2	5.3	4.1
	(3.4)	(4.3)	(8.0)	(-6.4)	(-0.0)	(-8.8)	(-11.8)
Residential	23.3	9.6	2.5	8.7	3.6	3.0	2.1
	(1.4)	(4.4)	(9.7)	(-9.8)	(-2.7)	(-12.3)	(-16.8)
Commercial	19.1	5.6	1.6	5.5	2.1	1.9	1.5
	(6.2)	(7.0)	(9.8)	(-1.3)	(4.9)	(-4.0)	(-5.7)
Public services	5.3	1.5	0.5	1.4	0.5	0.5	0.4
	(2.5)	(-5.2)	(-5.5)	(-3.5)	(-0.4)	(-4.5)	(-6.1)
Heating degree days	2 567.1	1 409.5	319.7	1 277.6	576.1	433.9	267.6
	(6.8)	(9.4)	(11.0)	(-9.4)	(-1.2)	(-14.4)	(-16.3)
Cooling degree days	141.9	-	-	-	-	-	-
	(40.1)	-	-	-	-	-	-
Service production index (2020=100)	112.0	105.1	110.8	111.9	109.8	108.3	117.7
	(6.5)	(5.5)	(4.1)	(6.5)	(4.8)	(8.6)	(6.2)

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

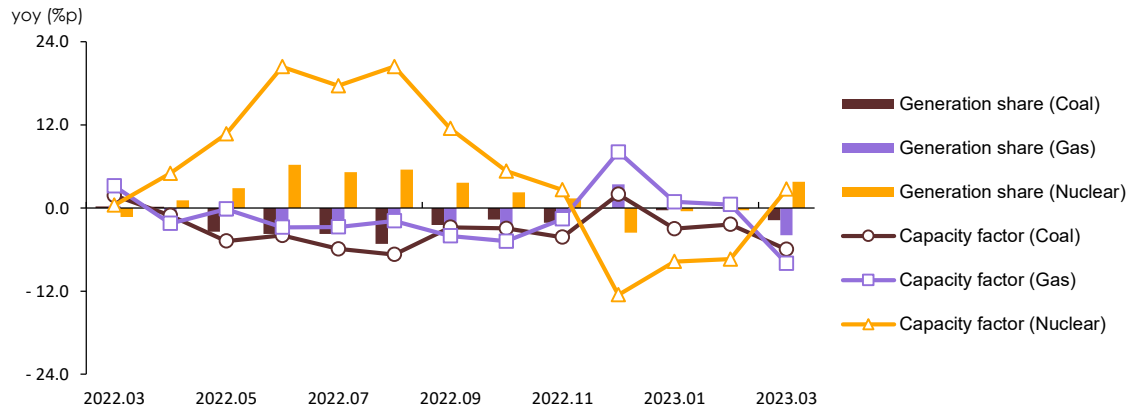
- The total power generation and fuel input fell by 3.5% and 2.7% respectively in March on a year-on-year basis, as the use of electricity declined by 3.5%.
 - The total nuclear generation went up by 9.6% year-on-year owing to the growth in nuclear installed capacity (Shin Hanul unit 1, 1.4GW, 2022.12.7) and the average capacity factor as well as a drop in preventive maintenance on daily average.
 - Renewable & other energy generation increased by 15.2%, led by a surge in solar PV and bioenergy generation.
 - Coal-fired power generation dropped by 9.6% due to transmission constraints in the East Coast and Honam areas, and as nuclear and renewable & other energy generation, which are given higher priority in power generation, rapidly increased.
 - Power generation from gas plants, which are peak load power plants, fell by 14.8% year-on-year, as the total power generation fell by over 3%, while baseload generation including renewable & other energy grew by over 2%.
 - Nuclear, gas, coal and renewable & other energy accounted for 31.7%, 29.6%, 26.4% and 11.9% respectively in the power generation mix.

► Power generation by energy sources

	2022p			2023p			
		M1~3	M3	M1~3	M1	M2	M3
Power Generation (TWh)	594.4	152.9	49.7	149.8	54.2	47.7	47.9
	(3.1)	(5.3)	(5.2)	(-2.0)	(-1.2)	(-1.6)	(-3.5)
Coal	193.2	48.3	14.0	46.3	18.0	15.7	12.7
	(-2.4)	(6.2)	(6.0)	(-4.1)	(-2.2)	(-1.4)	(-9.6)
Oil	2.0	0.8	0.2	0.5	0.2	0.2	0.2
	(-16.5)	(47.5)	(36.3)	(-37.4)	(-58.0)	(-14.8)	(-6.0)
Gas	163.6	45.5	16.7	43.5	15.5	13.8	14.2
	(-2.8)	(-2.6)	(6.3)	(-4.5)	(1.8)	(1.0)	(-14.8)
Nuclear	176.1	44.0	13.9	44.5	15.7	13.6	15.2
	(11.4)	(8.3)	(0.5)	(1.1)	(-2.8)	(-2.7)	(9.6)
Renewables	59.6	14.3	5.0	15.0	4.8	4.5	5.7
	(18.9)	(20.2)	(13.2)	(5.0)	(4.9)	(-5.5)	(15.2)
Baseload	428.9	106.6	32.8	105.8	38.4	33.8	33.6
	(5.6)	(8.8)	(4.6)	(-0.7)	(-1.6)	(-2.5)	(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			
			M1~3	M1	M2	M3	M1~3	M1	M2	M3
GDP (trillion won)	1 915.8 (4.1)	1 968.8 (2.8)	468.0 (3.1)	- -	- -	468.0 (3.1)	472.2 (0.9)	- -	- -	472.2 (0.9)
Private consumption	882.5 (3.7)	917.8 (4.0)	223.6 (3.7)	- -	- -	223.6 -	233.8 (4.6)	- -	- -	233.8 -
Facilities investment	181.6 (9.0)	180.5 (-0.7)	42.0 (-6.7)	- -	- -	42.0 -	44.5 (5.9)	- -	- -	44.5 -
Construction investment	265.0 (-1.6)	257.6 (-2.8)	52.3 (-4.0)	- -	- -	52.3 -	53.3 (1.9)	- -	- -	53.3 -
Consumer price index (2020=100)	102.5	107.7	105.4	104.7	105.3	106.1	110.3	110.1	110.4	110.6
USD to KRW exchange rate (won)	1 144.0	1 291.4	1 204.5	1 194.0	1 198.3	1 221.0	1 274.6	1 247.3	1 270.7	1 305.7
Benchmark rate (%)	0.6	2.1	1.3	1.3	1.3	1.3	3.5	3.5	3.5	3.5
Coincident composite index (2020=100)	104.1	108.3	107.4	107.0	107.5	107.7	108.9	108.2	108.8	109.6
Mining & manufacturing production index (2020=100)	108.2	109.7	110.2	110.4	102.3	117.8	99.4	95.6	93.9	108.8
Manufacturing operation ratio index (2020=100)	105.2	105.2	105.9	106.4	98.3	113.1	96.2	92.4	90.6	105.5
Average temperature	13.3	12.9	2.3	- 0.8	- 0.1	7.7	3.8	- 0.6	2.5	9.4
- year-on-year difference	0.3	- 0.4	- 1.4	0.3	- 3.5	- 1.0	1.5	0.2	2.6	1.7
Heating degree days	2 404.7 (-1.8)	2 567.1 (6.8)	1 409.5 (9.4)	583.1 (-1.4)	506.7 (23.9)	319.7 (11.0)	1 277.6 (-9.4)	576.1 (-1.2)	433.9 (-14.4)	267.6 (-16.3)
Cooling degree days	101.3 (18.9)	141.9 (40.1)	- -	- -	- -	- -	- -	- -	- -	- -
Energy intensity	0.16 (1.0)	0.15 (-3.0)	0.17 (0.4)	- -	- -	0.17 (0.4)	0.17 (-4.8)	- -	- -	0.17 (-4.8)
Per capita consumption										
Oil (bbl)	0.0 (7.3)	0.0 (-1.7)	0.0 (6.8)	0.0 (15.4)	0.0 (1.2)	0.0 (3.6)	0.0 (-4.8)	0.0 (-10.9)	0.0 (-4.9)	0.0 (2.1)
Electricity (MWh)	0.0 (5.0)	0.0 (3.0)	0.0 (4.6)	0.0 (2.2)	0.0 (5.3)	0.0 (6.5)	0.0 (0.4)	0.0 (3.1)	0.0 (1.1)	0.0 (-3.4)
City gas (1 000 m ³)	- (3.5)	- (4.1)	- (6.9)	- (-0.8)	- (13.1)	- (10.8)	- (-9.8)	- (-3.1)	- (-11.6)	- (-16.4)
Total energy (toe)	0.0 (5.3)	0.0 (-0.2)	0.0 (3.8)	0.0 (5.5)	0.0 (4.0)	0.0 (1.7)	0.0 (-3.9)	0.0 (-6.2)	- (-3.7)	- (-1.4)

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			
			M1~3	M1	M2	M3	M1~3	M1	M2	M3
Industrial production index										
All industry	105.5 (5.5)	110.1 (4.4)	105.4 (5.1)	104.5 (6.5)	99.0 (4.7)	112.7 (4.2)	106.8 (1.3)	103.0 (-1.4)	102.5 (3.5)	114.9 (2.0)
Mining & manufacturing	108.2 (8.2)	109.7 (1.4)	110.2 (5.7)	110.4 (5.7)	102.3 (6.7)	117.8 (4.8)	99.4 (-9.7)	95.6 (-13.4)	93.9 (-8.2)	108.8 (-7.6)
Semiconductor	126.8 (26.8)	136.5 (7.7)	143.4 (30.2)	141.1 (34.8)	134.4 (29.7)	154.7 (26.8)	94.9 (-33.8)	93.3 (-33.9)	78.3 (-41.7)	113.1 (-26.9)
Iron & steel	105.2 (5.2)	96.3 (-8.4)	104.9 (2.4)	110.0 (5.2)	97.0 (0.6)	107.7 (1.3)	98.1 (-6.5)	91.7 (-16.6)	94.8 (-2.3)	107.8 (0.1)
Cement	103.2 (3.1)	100.2 (-2.9)	88.7 (-1.5)	86.1 (12.3)	75.6 (-4.8)	104.5 (-8.4)	90.2 (1.6)	78.1 (-9.3)	86.1 (13.9)	106.3 (1.7)
Basic compound	105.9 (5.9)	99.1 (-6.4)	106.3 (1.2)	111.4 (6.5)	98.4 (-2.1)	109.1 (-0.7)	97.1 (-8.7)	98.8 (-11.3)	93.0 (-5.5)	99.4 (-8.9)
Transport equipment	106.3 (6.3)	116.0 (9.1)	104.0 (-4.0)	101.8 (-6.9)	98.0 (3.5)	112.2 (-7.2)	126.5 (21.7)	112.7 (10.7)	124.2 (26.7)	142.7 (27.2)
Electric & electronic	107.7 (7.7)	110.8 (2.9)	105.7 (3.5)	103.8 (1.3)	100.1 (8.1)	113.3 (1.7)	106.2 (0.4)	100.7 (-3.0)	103.4 (3.3)	114.5 (1.1)
Service	105.2 (5.2)	112.0 (6.5)	105.1 (5.5)	104.8 (7.8)	99.7 (4.5)	110.8 (4.1)	111.9 (6.5)	109.8 (4.8)	108.3 (8.6)	117.7 (6.2)
Wholesale and retail	105.3 (5.3)	107.1 (1.7)	103.8 (2.0)	104.9 (3.6)	95.2 (0.1)	111.4 (2.2)	106.7 (2.7)	107.0 (2.0)	101.0 (6.1)	112.0 (0.5)
Food & Accommodation	101.9 (1.9)	119.1 (16.9)	99.6 (16.0)	105.3 (35.9)	91.8 (9.8)	101.7 (5.5)	115.8 (16.2)	114.3 (8.5)	113.2 (23.3)	119.8 (17.8)
Production output										
Iron & steel - Pig iron	46 440.5 (2.4)	42 658.2 (-8.1)	10 758.5 (-9.0)	3 872.3 (-5.9)	3 336.6 (-10.4)	3 549.6 (-10.9)	10 897.4 (1.3)	3 737.1 (-3.5)	3 360.4 (0.7)	3 799.8 (7.0)
Iron & steel - Crude steel	70 418.0 (5.0)	65 846.2 (-6.5)	16 923.8 (-3.8)	6 070.7 (0.5)	5 145.5 (-6.3)	5 707.6 (-5.8)	16 666.7 (-1.5)	5 626.2 (-7.3)	5 205.8 (1.2)	5 834.7 (2.2)
Petrochemical - Basic petrochemicals	34 434.5 (12.7)	32 854.1 (-4.6)	8 896.4 (10.8)	3 129.5 (20.5)	2 751.3 (5.6)	3 015.5 (6.6)	7 858.2 (-11.7)	2 777.5 (-11.2)	2 435.8 (-11.5)	2 644.9 (-12.3)
Petrochemical - Intermediate raw material	15 764.6 (2.6)	13 852.5 (-12.1)	3 714.5 (-8.2)	1 272.3 (-5.0)	1 147.9 (-11.7)	1 294.3 (-8.1)	3 505.5 (-5.6)	1 217.5 (-4.3)	1 119.1 (-2.5)	1 168.9 (-9.7)
Petrochemical - 3 major products	23 224.7 (9.2)	22 129.4 (-4.7)	6 183.5 (11.7)	2 164.6 (15.9)	1 917.4 (9.8)	2 101.5 (9.4)	5 503.8 (-11.0)	1 852.4 (-14.4)	1 748.7 (-8.8)	1 902.7 (-9.5)
The number of cars	3 462.4 (-1.3)	3 756.5 (8.5)	837.2 (-7.9)	271.1 (-13.7)	264.0 (1.1)	302.2 (-9.5)	1 060.1 (26.6)	306.7 (13.2)	343.6 (30.2)	409.8 (35.6)

Note: p means provisional

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

International Energy Prices

	2021	2022					2023			
			M1~3	M1	M2	M3	M1~3	M1	M2	M3
Crude oil (USD/bbl)										
WTI	67.9 (72.4)	94.2 (38.7)	94.3 (63.0)	83.0 (59.3)	91.6 (55.1)	108.3 (73.6)	76.1 (-19.3)	78.2 (-5.8)	76.9 (-16.1)	73.4 (-32.2)
Dubai	69.3 (64.1)	96.4 (39.1)	95.6 (59.2)	83.5 (52.3)	92.4 (51.7)	110.9 (72.2)	80.3 (-15.9)	80.4 (-3.7)	82.1 (-11.1)	78.5 (-29.2)
Brent	70.8 (63.8)	98.9 (39.7)	97.4 (59.4)	85.6 (54.7)	94.1 (51.1)	112.5 (71.2)	82.2 (-15.6)	83.9 (-1.9)	83.5 (-11.2)	79.2 (-29.6)
Unit value of import (C&F)	70.2 (56.9)	102.3 (45.6)	92.2 (56.3)	82.2 (53.0)	91.5 (54.5)	103.1 (60.7)	85.3 (-7.5)	86.1 (4.7)	85.7 (-6.3)	84.2 (-18.2)
LNG										
Henry Hub (USD/MMBTU)	3.7 (74.6)	6.5 (75.2)	4.6 (67.3)	4.3 (60.7)	4.5 (53.0)	5.0 (89.9)	2.8 (-39.6)	3.4 (-19.6)	2.4 (-45.4)	2.4 (-51.6)
TTF (USD/MMBTU)	16.0 (396.1)	40.1 (150.0)	32.3 (396.8)	28.2 (288.6)	26.9 (338.5)	41.8 (584.2)	16.7 (-48.4)	19.8 (-30.0)	16.5 (-38.7)	13.7 (-67.2)
JKM (USD/MMBTU)	17.9 (324.7)	33.9 (89.5)	30.4 (237.2)	28.5 (114.0)	25.8 (250.9)	37.0 (478.5)	18.3 (-40.0)	24.3 (-14.7)	16.9 (-34.6)	13.6 (-63.2)
Unit value of import (USD/ton, CIF)	550.8 (41.2)	1 053.5 (91.3)	999.6 (116.7)	1 138.1 (175.1)	843.9 (58.8)	1 016.6 (131.9)	1 105.7 (10.6)	1 295.6 (13.8)	1 102.9 (30.7)	918.5 (-9.6)
Coal (USD/ton)										
Thermal coal (Newcastle)	136.0 (125.8)	356.3 (161.9)	263.7 (202.1)	209.6 (146.9)	236.2 (174.5)	345.3 (279.8)	254.6 (-3.5)	362.3 (72.8)	222.1 (-6.0)	179.3 (-48.1)
Unit value of import (CIF)	115.1 (48.1)	226.3 (96.7)	199.2 (141.7)	185.0 (139.9)	197.1 (144.9)	215.5 (140.4)	198.2 (-0.5)	195.7 (5.8)	193.1 (-2.0)	205.9 (-4.5)
Petroleum product (USD/bbl)										
Gasoline	80.3 (72.2)	115.2 (43.4)	113.3 (68.8)	98.1 (63.2)	110.8 (63.2)	131.1 (78.5)	99.0 (-12.7)	99.0 (1.0)	99.4 (-10.3)	98.5 (-24.9)
Kerosene	75.1 (67.9)	126.7 (68.6)	111.8 (76.5)	95.7 (64.9)	106.2 (63.0)	133.5 (99.8)	106.8 (-4.5)	115.0 (20.2)	106.6 (0.4)	98.8 (-26.0)
Diesel	77.6 (57.2)	135.3 (74.3)	117.2 (78.0)	99.2 (65.3)	110.8 (63.1)	141.7 (103.4)	108.9 (-7.1)	116.2 (17.1)	107.7 (-2.8)	102.8 (-27.5)
Bunker-C	64.4 (64.3)	82.3 (27.8)	87.3 (54.2)	76.1 (47.8)	82.6 (43.4)	103.1 (69.7)	64.1 (-26.6)	61.4 (-19.4)	63.7 (-22.8)	67.1 (-34.9)
Propane	647.9 (63.2)	737.1 (13.8)	803.3 (35.4)	740.0 (34.5)	775.0 (28.1)	895.0 (43.2)	700.0 (-12.9)	590.0 (-20.3)	790.0 (1.9)	720.0 (-19.6)
Butane	629.6 (55.9)	734.2 (16.6)	801.7 (40.6)	710.0 (34.0)	775.0 (32.5)	920.0 (54.6)	711.7 (-11.2)	605.0 (-14.8)	790.0 (1.9)	740.0 (-19.6)
Naphtha	70.6 (74.6)	83.1 (17.7)	96.8 (59.6)	84.4 (51.8)	95.5 (54.9)	110.6 (70.7)	73.9 (-23.7)	72.4 (-14.3)	76.5 (-19.9)	72.7 (-34.2)

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

2.Gasoline type is 95RON, diesel is 0.001%, Bunker-C is high-sulfur oil(180cst/3.5%), for propane and butane, CP is reference value
Source: Korea National Oil Corporation, World Bank, Korea Energy Economics Institute, CME Group, Korea International Trade Association

Domestic Energy Prices

	2021	2022					2023			
			M1~3	M1	M2	M3	M1~3	M1	M2	M3
Petroleum product										
Gasoline (won/liter)	1 590.5 (15.1)	1 812.4 (14.0)	1 762.8 (19.7)	1 635.2 (13.4)	1 714.6 (17.2)	1 938.5 (28.1)	1 577.9 (-10.5)	1 562.9 (-4.4)	1 578.5 (-7.9)	1 592.2 (-17.9)
Diesel (won/liter)	1 391.3 (16.9)	1 841.8 (32.4)	1 605.7 (26.2)	1 453.5 (17.0)	1 536.6 (21.6)	1 827.0 (39.2)	1 607.2 (0.1)	1 675.4 (15.3)	1 606.4 (4.5)	1 539.7 (-15.7)
Bunker-C (won/liter)	731.7 (27.6)	1 115.2 (52.4)	917.3 (48.7)	840.4 (54.1)	937.4 (51.3)	974.0 (42.0)	918.8 (0.2)	883.8 (5.2)	915.6 (-2.3)	956.9 (-1.8)
Propane (won/kg)	2 092.6 (13.1)	2 479.6 (18.5)	2 395.3 (22.8)	2 395.0 (28.2)	2 379.0 (21.8)	2 412.1 (18.9)	2 418.4 (1.0)	2 440.0 (1.9)	2 405.4 (1.1)	2 409.7 (-0.1)
Butane (won/liter)	931.8 (17.8)	1 081.7 (16.1)	1 068.5 (26.0)	1 071.8 (34.5)	1 050.7 (23.9)	1 083.0 (20.5)	1 000.4 (-6.4)	1 019.7 (-4.9)	992.2 (-5.6)	989.4 (-8.6)
City gas(won/MJ)										
Residential	14.2 (-5.7)	16.6 (16.7)	14.2 -	14.2 -	14.2 -	14.2 -	19.7 (38.4)	19.7 (38.4)	19.7 (38.4)	19.7 (38.4)
General(1)	13.9 (-6.5)	16.3 (17.3)	14.1 (0.6)	14.1 (0.6)	14.1 (0.6)	14.1 (0.6)	19.5 (38.6)	19.5 (38.6)	19.5 (38.6)	19.5 (38.6)
Commercial	17.2 (14.2)	28.7 (66.6)	25.1 (68.3)	25.4 (81.4)	24.9 (68.1)	24.9 (56.9)	33.6 (34.1)	34.3 (35.0)	33.8 (35.9)	32.7 (31.3)
Industry	14.4 (14.2)	25.9 (79.9)	22.8 (77.4)	23.1 (93.4)	22.6 (77.2)	22.6 (63.7)	31.5 (38.0)	32.1 (39.0)	31.7 (40.1)	30.6 (35.1)
Heat(won/Mcal)										
Residential	65.2 (-1.4)	74.1 (13.7)	65.2 -	65.2 -	65.2 -	65.2 -	89.9 (37.8)	89.9 (37.8)	89.9 (37.8)	89.9 (37.8)
Commercial	84.7 (-1.4)	96.3 (13.7)	84.7 -	84.7 -	84.7 -	84.7 -	116.7 (37.8)	116.7 (37.8)	116.7 (37.8)	116.7 (37.8)
Public	74.0 (-1.4)	84.1 (13.7)	74.0 -	74.0 -	74.0 -	74.0 -	101.9 (37.8)	101.9 (37.8)	101.9 (37.8)	101.9 (37.8)
Electricity(won/kWh)										
Residential	142.3 (-3.4)	147.8 (3.9)	142.3 -	142.3 -	142.3 -	142.3 -	166.0 (16.7)	166.0 (16.7)	166.0 (16.7)	166.0 (16.7)
General	79.4 (-5.9)	84.9 (7.0)	78.3 -	87.3 -	87.3 -	60.2 -	102.0 (30.3)	111.0 (27.1)	111.0 (27.1)	83.9 (39.4)
Industry	91.0 (-5.2)	98.8 (8.6)	93.5 -	103.5 -	103.5 -	73.5 -	126.4 (35.2)	136.4 (31.8)	136.4 (31.8)	106.4 (44.8)

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			
			M1~3	M1	M2	M3	M1~3	M1	M2	M3
Coal (Mton)	119.9 (-0.0)	113.9 (-5.0)	28.6 (-1.0)	10.9 (0.2)	9.2 (3.9)	8.5 (-7.1)	27.3 (-4.4)	10.1 (-7.3)	9.0 (-2.5)	8.3 (-2.7)
- Coking coal excluded	94.4 (-0.8)	90.6 (-4.0)	22.7 (1.3)	8.7 (-0.1)	7.4 (8.5)	6.6 (-4.1)	21.7 (-4.6)	8.1 (-6.9)	7.3 (-1.7)	6.3 (-4.9)
Oil (Mbbl)	830.7 (7.1)	815.0 (-1.9)	214.3 (6.6)	78.2 (15.1)	66.5 (1.0)	69.5 (3.4)	203.7 (-4.9)	69.6 (-11.0)	63.2 (-5.0)	70.9 (2.0)
LNG (Mton)	45.9 (10.6)	45.3 (-1.1)	14.8 (1.9)	5.4 (-6.6)	4.8 (7.5)	4.6 (7.6)	13.6 (-8.5)	5.2 (-3.3)	4.5 (-7.1)	3.9 (-16.1)
Hydro (TWh)	3.1 (-21.2)	3.5 (15.9)	0.6 (0.1)	0.2 (-1.6)	0.2 (-1.5)	0.2 (3.2)	0.6 (-2.0)	0.2 (7.6)	0.2 (0.5)	0.2 (-12.7)
Nuclear (TWh)	158.0 (-1.4)	176.1 (11.4)	44.0 (8.3)	16.1 (14.7)	14.0 (9.9)	13.9 (0.5)	44.5 (1.1)	15.7 (-2.8)	13.6 (-2.7)	15.2 (9.6)
Others (Mtoe)	14.4 (13.8)	16.0 (11.0)	3.9 (8.5)	1.3 (10.9)	1.3 (12.2)	1.3 (3.1)	4.1 (4.6)	1.3 (3.1)	1.2 (-3.8)	1.5 (14.1)
TPED (Mtoe)	303.3 (5.2)	302.0 (-0.4)	81.3 (3.5)	29.6 (5.2)	25.8 (3.8)	25.8 (1.4)	78.0 (-4.0)	27.7 (-6.3)	24.8 (-3.8)	25.5 (-1.5)

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

Share of TPED by Sources

(unit: %)

	2021	2022p					2023p			
			M1~3	M1	M2	M3	M1~3	M1	M2	M3
Coal	24.0	22.8	21.3	22.2	21.6	20.0	21.3	22.0	21.9	19.8
- Coking coal excluded	18.1	17.4	16.3	17.1	16.6	14.9	16.2	17.0	17.1	14.4
Oil	40.1	39.5	38.2	38.1	37.2	39.2	38.2	36.6	37.2	40.8
LNG	19.8	19.6	23.9	24.0	24.3	23.3	22.7	24.7	23.4	19.9
Hydro	0.2	0.3	0.1	0.1	0.1	0.2	0.2	0.2	0.1	0.2
Nuclear	11.1	12.4	11.5	11.6	11.5	11.4	12.1	12.0	11.7	12.7
Others	4.7	5.3	4.8	4.3	5.0	5.2	5.2	4.8	5.0	6.0
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			
			M1~3	M1	M2	M3	M1~3	M1	M2	M3
Industry	133.0 (7.3)	129.4 (-2.7)	34.0 (3.8)	12.2 (9.6)	10.5 (1.3)	11.3 (0.4)	32.2 (-5.5)	11.0 (-9.4)	10.2 (-3.0)	10.9 (-3.5)
Transport	36.6 (5.4)	36.4 (-0.6)	8.6 (1.5)	3.2 (14.1)	2.7 (-2.7)	2.7 (-6.8)	8.6 (0.8)	2.8 (-11.7)	2.6 (-4.7)	3.2 (21.1)
Residential	22.9 (2.6)	23.3 (1.4)	9.6 (4.4)	3.7 (-3.5)	3.4 (10.2)	2.5 (9.7)	8.7 (-9.8)	3.6 (-2.7)	3.0 (-12.3)	2.1 (-16.8)
commercial	18.0 (1.8)	19.1 (6.2)	5.6 (7.0)	2.0 (0.5)	2.0 (12.0)	1.6 (9.8)	5.5 (-1.3)	2.1 (4.9)	1.9 (-4.0)	1.5 (-5.7)
Public	5.2 (4.0)	5.3 (2.5)	1.5 (-5.2)	0.5 (-8.1)	0.5 (-1.4)	0.5 (-5.5)	1.4 (-3.5)	0.5 (-0.4)	0.5 (-4.5)	0.4 (-6.1)
TFC	215.8 (5.9)	213.5 (-1.1)	59.3 (3.6)	21.6 (6.3)	19.1 (3.1)	18.6 (1.1)	56.4 (-4.8)	20.1 (-7.1)	18.1 (-5.0)	18.3 (-2.0)
Coal (Mton)	51.0 (3.6)	46.8 (-8.3)	11.9 (-6.1)	4.4 (-0.8)	3.7 (-2.7)	3.9 (-14.2)	11.5 (-3.4)	4.0 (-8.5)	3.5 (-5.2)	4.0 (4.1)
Oil (Mbbbl)	809.1 (7.6)	795.6 (-1.7)	208.3 (6.1)	75.9 (15.2)	64.6 (0.4)	67.8 (2.5)	196.5 (-5.7)	66.7 (-12.1)	60.8 (-5.9)	69.0 (1.8)
- Non-energy oil excluded	350.6 (4.3)	343.0 (-2.1)	88.2 (1.3)	33.5 (9.4)	28.4 (0.6)	26.3 (-6.9)	86.2 (-2.3)	29.4 (-12.2)	26.5 (-6.8)	30.3 (15.2)
Electricity (TWh)	521.0 (4.8)	535.3 (2.7)	139.9 (4.3)	48.7 (2.0)	46.5 (5.0)	44.7 (6.2)	140.3 (0.3)	50.2 (3.0)	47.0 (1.0)	43.1 (-3.5)
City gas (Bm³)	22.7 (3.3)	23.6 (3.9)	9.3 (6.6)	3.5 (-1.1)	3.2 (12.8)	2.6 (10.5)	8.4 (-9.9)	3.4 (-3.2)	2.8 (-11.7)	2.2 (-16.5)
Heat:others (1 000 toe)	9.8 (6.3)	10.1 (2.6)	3.2 (1.5)	1.2 (-2.6)	1.0 (7.3)	0.9 (0.8)	2.9 (-7.4)	1.1 (-2.3)	0.9 (-10.5)	0.8 (-10.3)

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			
			M1~3	M1	M2	M3	M1~3	M1	M2	M3
Industry	61.6	60.6	57.4	56.4	55.2	60.7	57.0	54.9	56.3	59.8
Transport	17.0	17.1	14.5	14.7	14.2	14.4	15.3	14.0	14.3	17.7
Residential	10.6	10.9	16.2	17.2	17.8	13.6	15.4	18.0	16.4	11.6
Commercial	8.3	9.0	9.4	9.2	10.3	8.7	9.8	10.4	10.4	8.4
Public	2.4	2.5	2.5	2.5	2.6	2.5	2.6	2.7	2.6	2.4
TFC	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0
Coal	14.9	14.0	12.8	12.9	12.4	13.2	12.9	12.6	12.3	13.9
Oil	47.9	47.4	44.6	44.9	42.9	46.0	44.2	42.3	42.5	48.2
- Non-energy oil excluded	21.6	21.3	19.7	20.6	19.7	18.7	20.1	19.3	19.1	22.0
Electricity	20.8	21.6	20.3	19.4	21.0	20.6	21.4	21.5	22.3	20.3
City gas	11.9	12.3	17.0	17.4	18.2	15.2	16.3	17.9	17.7	13.1
Heat:others	4.6	4.7	5.3	5.4	5.5	5.0	5.2	5.7	5.2	4.6

Note: p means provisional

Source: Korea Energy Economics Institute

Statistics on Energy Production Facilities

	2020	2021	2022	2023			2023	2023	2023
				M1	M2	M3			
Total capacity (GW)	129.2 (3.1)	134.0 (3.7)	138.0 (3.0)	133.1 (3.3)	133.6 (3.4)	133.7 (3.3)	138.8 (4.3)	138.9 (4.0)	139.1 (4.0)
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 (2.4)	36.3 (2.4)	36.3 (2.4)	37.2 (2.4)	37.2 (2.4)	37.2 (2.4)
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 -	41.2 -	41.2 -
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	2023	2023
				M1	M2	M3			
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 (1.8)	20.9 (1.6)	21.0 (1.9)	21.0 (1.8)
Registered cars (mil)	24.4 (2.9)	24.9 (2.2)	25.5 (2.4)	25.0 (2.2)	25.0 (2.2)	25.1 (2.2)	25.6 (2.3)	25.6 (2.3)	25.6 (2.3)
- gasoline	11.4 (4.1)	11.8 (3.1)	12.1 (2.6)	11.8 (3.0)	11.8 (3.0)	11.8 (2.9)	12.1 (2.6)	12.1 (2.7)	12.2 (2.7)
- diesel	10.0 (0.3)	9.9 (-1.2)	9.8 (-1.2)	9.9 (-1.3)	9.9 (-1.4)	9.9 (-1.4)	9.8 (-1.2)	9.7 (-1.4)	9.7 (-1.5)
- LPG	2.0 (-1.3)	1.9 (-1.7)	1.9 (-2.1)	1.9 (-1.6)	1.9 (-1.6)	1.9 (-1.7)	1.9 (-2.2)	1.9 (-2.4)	1.9 (-2.5)
- hybrid	0.6 (33.1)	0.9 (34.0)	1.1 (28.5)	0.9 (33.0)	0.9 (32.8)	0.9 (32.6)	1.1 (28.7)	1.2 (28.6)	1.2 (28.9)

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

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