

KEEI

MONTHLY KOREA ENERGY TRENDS

2023/05

KOREA ENERGY ECONOMICS INSTITUTE

COAL	-2.5%
PETROLEUM	-5.0%
NATURAL GAS	-5.6%
NUCLEAR	-2.7%
NEW & RENEWABLE	-12.9%
FEBRUARY, 2023	

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



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1. The Economy and the Industry

☐ **The mining & manufacturing production index has declined for five consecutive months until February, despite the recovery in some sectors, as production continued to fall in most of the sectors.**

- The semiconductor production index went down by 41.7% year-on-year, marking the 7th consecutive months of decline, as facilities were operated at a much-reduced capacity (-46%, based on the index) amid weak demand, and its export value decreased (-42.5%).
- The production index of basic chemical products went down by 5.4% year-on-year due to contraction of demand and lower facility utilization rate, although the pace of the decline was much slower.
- The iron & steel production index fell more slowly by 0.9% year-on-year, despite overall sluggish business, which was affected by the increased number of work days (two days) and the recovery in exports (7.8%, based on the export volume).
- The automobile production index has been up for 10 months in a row, as the supply shortage was eased, posting a year-on-year growth of 26.4% in February.

☐ **The service production index went up by 8.0% year-on-year in February, as production increased in almost all subsectors except the information & communications sector.**

- The wholesale & retail production index rose by 3.5%, led by motor sales of vehicles and parts business, while the production index of transportation and storage business went up by 10.4% as a result of much stronger production in air transport business amid growing international freight volume.
- The food & accommodation production index jumped 23.3% year-on-year, as outdoor activities increased amid warmer-than-usual weather (2.6℃ in average temperature), and travel demand also continued an upward trend.

► Major economic and industrial indicators

	2021	2022p				2023p	
		M1	M2		M12	M1	M2
GDP (trillion won)	1 915.8 (4.1)	-	-	1 964.8 (2.6)	512.2 (1.3)	-	-
Total export (\$billion, customs clearance basis)	644.4 (25.7)	55.5 (15.5)	54.2 (21.1)	683.6 (6.1)	54.8 (-9.7)	46.4 (-16.4)	50.0 (-7.6)
Industrial production index (2020=100)	108.2 (8.2)	110.4 (5.7)	102.3 (6.7)	109.7 (1.4)	108.7 (-10.5)	95.6 (-13.4)	94.1 (-8.0)
Semi-conductors	126.8 (26.8)	141.1 (34.8)	134.4 (29.7)	136.5 (7.7)	114.7 (-25.1)	93.3 (-33.9)	78.3 (-41.7)
Basic chemical products	105.9 (5.9)	111.4 (6.5)	98.4 (-2.1)	99.1 (-6.4)	96.8 (-12.9)	98.8 (-11.3)	93.1 (-5.4)
Iron&Steel	105.2 (5.2)	110.0 (5.2)	97.0 (0.6)	96.3 (-8.4)	86.1 (-19.0)	91.7 (-16.6)	96.1 (-0.9)
Cars	106.3 (6.3)	101.8 (-6.9)	98.0 (3.5)	116.0 (9.1)	131.9 (11.4)	112.7 (10.7)	123.9 (26.4)
Service production index (2020=100)	105.2 (5.2)	104.8 (7.8)	99.7 (4.5)	112.0 (6.5)	126.8 (6.4)	109.8 (4.8)	107.7 (8.0)
Wholesale & Retail	105.3 (5.3)	104.9 (3.6)	95.2 (0.1)	107.1 (1.7)	112.3 (0.3)	107.0 (2.0)	98.5 (3.5)

Food & Accommodation	101.9	105.3	91.8	119.1	130.0	114.3	113.2
	(1.9)	(35.9)	(9.8)	(16.9)	(12.8)	(8.5)	(23.3)

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

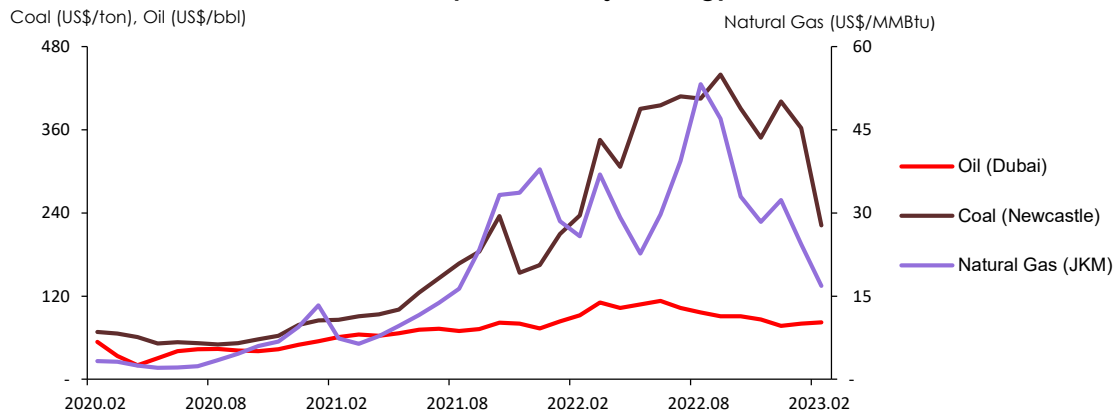
- **Global oil price increased in February due to supply disruptions, while global steam coal and natural gas prices decreased partly due to temperature effect.**
 - The disruptions in crude oil supply following an earthquake in Türkiye and Russia's announcement of cutting its oil production put an upward pressure on global oil prices.
 - Global steam coal price plunged amid stronger downward pressure, as demand for power generation decreased due to abnormally high temperatures in Europe.
 - Global natural gas price fell sharply, as mild weather, strong supply and high inventory level continued from the previous month.

► Global energy prices

	2020	2021	2022				2023	
			M1	M2		M12	M1	M2
Crude oil (US\$/bbl)	42.2	69.3	83.5	92.4	96.4	77.2	80.4	82.1
	(-33.6)	(64.2)	(14.0)	(10.7)	(39.1)	(-10.5)	(4.1)	(2.1)
Coal (US\$/ton)	60.2	136.4	209.6	236.2	357.1	400.9	362.3	222.1
	(-22.8)	(126.5)	(27.3)	(12.7)	(161.8)	(15.0)	(-9.6)	(-38.7)
Natural gas (US\$/MMBtu)								
TTF	3.2	16.1	28.2	26.9	40.2	36.7	19.8	16.5
	(-32.3)	(397.9)	(-25.0)	(-4.6)	(149.6)	(2.2)	(-46.1)	(-16.5)
JKM	4.2	17.9	28.5	25.8	33.9	32.3	24.3	16.9
	(-24.9)	(325.7)	(-24.6)	(-9.5)	(89.2)	(14.0)	(-24.7)	(-30.7)

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, gasoline price increased in February in line with the global price trend, while the price of diesel declined.**

- The domestic price of gasoline went up by 1.0% from the previous month, reflecting the price changes in Singapore's spot market from Jan.-Feb., while the domestic price of diesel fell by 4.1%. Accordingly, their price gap (diesel-gasoline) was narrowed by 84.5 won from the previous month to 27.9 won/liter.
- The prices of propane and butane fell by 1.4% and 2.7% respectively than the prior month, as domestic LPG importers lowered their supply prices.
- The relative price of propane in terms of city gas (propane/city gas) for industrial customers fell by 2.4% from the previous month to 0.81.

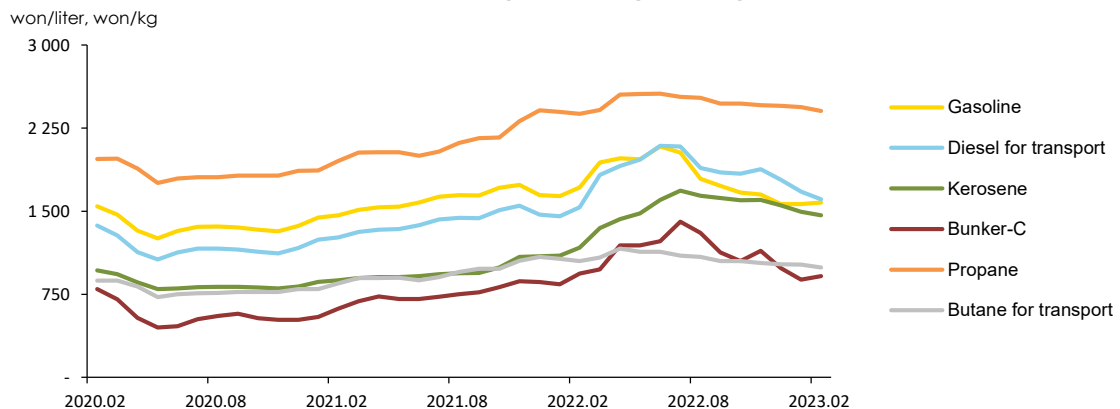
► Domestic petroleum product prices

	2020	2021	2022				2023	
			M1	M2		M12	M1	M2
Gasoline (won/liter)	1 381.3 (-6.2)	1 591.2 (15.2)	1 635.2 (-0.7)	1 714.6 (4.9)	1 812.7 (13.9)	1 563.8 (-5.2)	1 562.9 (-0.1)	1 578.5 (1.0)
Diesel for transport (won/liter)	1 189.5 (-11.3)	1 392.0 (17.0)	1 453.5 (-1.0)	1 536.6 (5.7)	1 843.4 (32.4)	1 783.3 (-5.1)	1 675.4 (-6.1)	1 606.4 (-4.1)
Bunker-C (won/liter)	572.9 (-23.0)	732.2 (27.8)	840.4 (-2.2)	937.4 (11.6)	1 116.1 (52.4)	986.7 (-13.6)	883.8 (-10.4)	915.6 (3.6)
Propane (won/kg)	1 850.3 (-1.0)	2 093.4 (13.1)	2 395.0 (-0.6)	2 379.0 (-0.7)	2 480.1 (18.5)	2 449.7 (-0.2)	2 440.0 (-0.4)	2 405.4 (-1.4)
Butane for transport (won/liter)	790.8 (-1.9)	932.3 (17.9)	1 071.8 (-1.4)	1 050.7 (-2.0)	1 081.8 (16.0)	1 021.4 (-1.0)	1 019.7 (-0.2)	992.2 (-2.7)

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

Source: Korea National Oil Corporation

► Domestic petroleum product prices



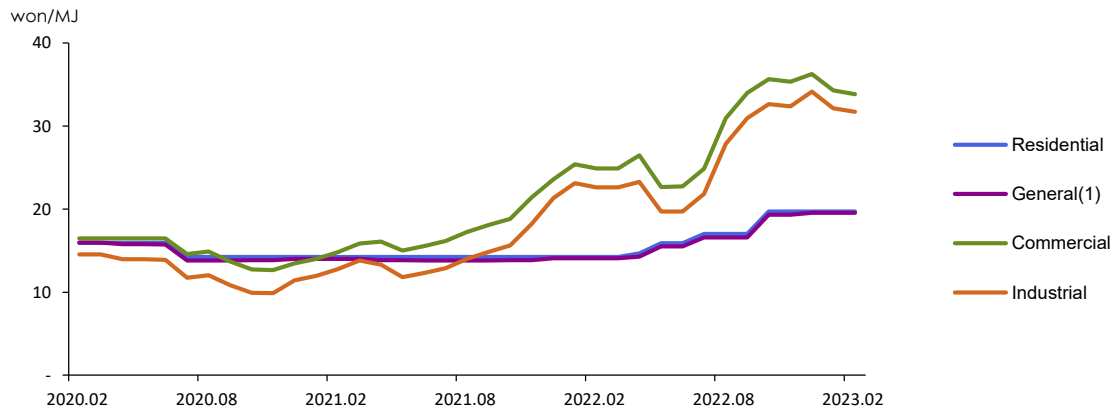
□ In February, city gas retail rates for residential and general customers were flat, while the rates for office heating and industrial customers dropped by 1.3% and 1.4% respectively from the previous month.

- The material cost of city gas for residential and general customers is to be fixed at 15.6 won/MJ in 1Q despite some factors that could have driven up the cost, considering the heating cost burden. In the case of city gas for office heating and industrial customers, the material cost was set at 29.3 won/MJ, which was 1.5% lower than the previous month, due to the recent downward trend in global oil prices.
- City gas rates for residential and industrial customers are currently winter rates (Dec.-Mar.), and their wholesale & retail supply prices were fixed for all uses.

□ Electric rate was raised by 13.1 won/kWh in January as a result of the increase in energy charge and climate & environment charge, and it remained flat in February.

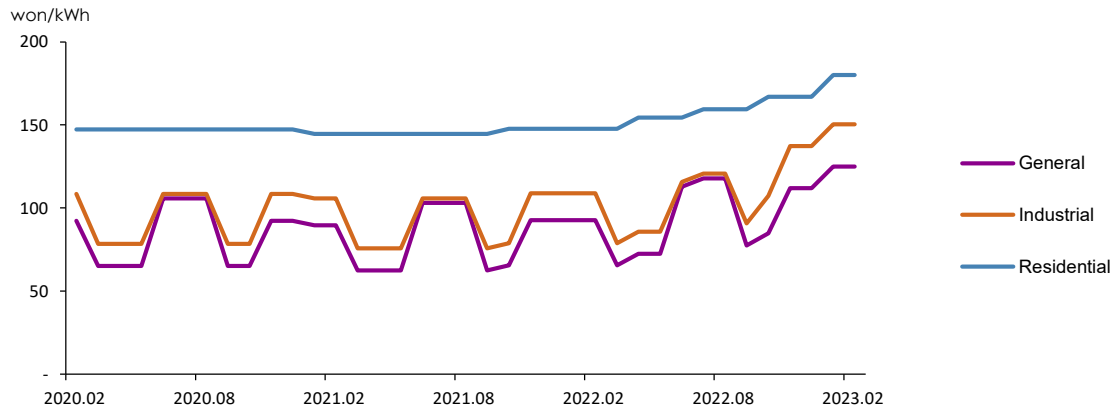
- Energy charge was raised by 11.4 won/kWh (7.4% for residential customers) in 1Q compared to the previous quarter, reflecting higher fuel cost of power generation.
- Climate & environment charge was raised by 1.7 won/kWh to 9.0 won/kWh in 1Q compared to the previous quarter despite lower cost of reducing coal-fired generation, due to higher cost of implementing the Renewable Portfolio Standard (RPS) and Emission Trading System (ETS).

► 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 grew by 12.8% year-on-year in February, as the import of most energy sources increased, except bituminous coal.**
 - The import volume of crude oil went up by 9.9% year-on-year, as the unit import price declined in all regions amid the downward trend in global oil prices, and crude oil coming from Middle East, which takes up the largest share of the total import volume, was up 28.0%.
 - The import volume of petroleum products rose by 4.3% year-on-year, especially naphtha, which accounts for the biggest part of the total import volume, although LPG import decreased.
 - The import volume of bituminous coal fell by 1.9% year-on-year, even though there were some factors that could have driven up the import volume (e.g., YoY drop in global prices), owing to lower input (-1.5%) at domestic power stations and high base effect of the previous year (10.2%).
 - The import volume of natural gas surged by 46.4% year-on-year, as natural gas price (JKM) fell by 38.7% year-on-year in February to \$16.9/MMBtu amid the recent downward trend in global natural gas prices.
 - The total energy import value (CIF) went up by 15.3% year-on-year despite a drop in unit import prices of major energy sources, as energy import volume increased. Energy's share of the total import value bounced back to 32%, after it reached a high of 32.4% in September.

► Import and domestic production of energy

	2021	2022p				2023p	
		M1	M2		M12	M1	M2
Import volume							
Crude oil (Mbbbl)	960.1	94.8	79.3	1 031.3	87.6	81.6	87.2
	(-2.1)	(23.3)	(5.7)	(7.4)	(0.7)	(-13.9)	(9.9)
Petroleum product (Mbbbl)	392.3	36.2	33.0	367.1	30.5	33.4	34.4
	(13.0)	(25.4)	(10.0)	(-6.4)	(-19.4)	(-7.9)	(4.3)
Bituminous coal (Mton)	119.6	10.8	9.6	120.2	10.5	10.3	9.4
	(1.7)	(37.3)	(10.2)	(0.5)	(4.6)	(-4.9)	(-1.9)
Anthracite (Mton)	6.5	0.5	0.4	5.4	0.3	0.4	0.3
	(3.0)	(-29.5)	(62.7)	(-16.8)	(-31.5)	(-10.5)	(-7.4)
LNG (Mton)	45.9	5.0	3.5	46.4	4.5	4.8	5.1
	(14.9)	(13.0)	(-32.7)	(1.0)	(16.9)	(-4.2)	(46.4)
Import volume (Mtoe)	324.3	31.5	26.0	331.1	28.8	28.6	29.4
	(3.9)	(22.8)	(-2.4)	(2.1)	(0.4)	(-9.2)	(12.8)
Import value (billion US\$, CIF)	137.1	18.5	15.2	217.9	18.6	17.8	17.5
	(58.5)	(125.2)	(58.7)	(59.0)	(17.9)	(-3.5)	(15.3)
Energy share of total import value (%)	22.1	30.5	28.3	29.8	31.3	30.3	31.6
Foreign energy dependence (%)	94.7	95.8	94.5	94.2	97.1	95.6	94.4
Domestic production							
Hydropower (TWh)	3.1	0.2	0.2	3.5	0.2	0.2	0.2
	(-21.2)	(-1.6)	(-1.5)	(15.9)	(9.4)	(7.6)	(0.4)
Anthracite (Mton)	0.9	0.1	0.1	0.8	0.1	0.1	0.1
	(-11.9)	(-6.5)	(-4.8)	(-8.7)	(-10.4)	(-23.6)	(5.0)
Renewable energy (Mtoe)	14.4	1.3	1.3	16.0	1.3	1.2	1.1
	(13.9)	(10.9)	(12.2)	(11.0)	(-3.1)	(-7.5)	(-13.3)

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

4. Energy Consumption

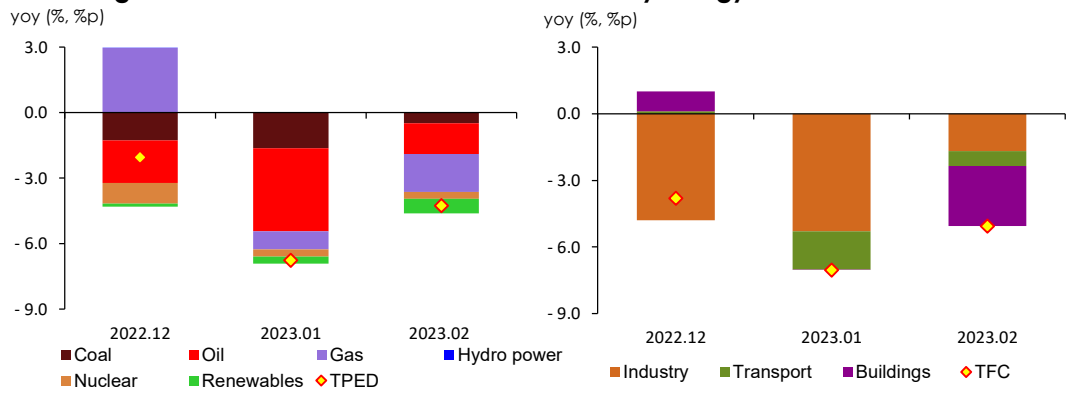
- **Total Primary Energy Demand (TPED) decreased by 4.3% year-on-year in February, as demand for all energy sources decreased amid the economic slowdown.**
 - Coal use fell by 2.5% year-on-year, as it declined in the power generation sector due to constraints on transmission lines in the metropolitan area and the growth in preventive maintenance, and as its industrial use continued to drop, mostly in the iron & steel sector due to the economic downturn.
 - Petroleum use fell by 5.0% year-on-year, as its industrial use kept falling, especially in the petrochemical sector, partly due to sluggish business, and as it also declined in the transport sector as a result of changing stockpiling demand at gas stations and dealerships.
 - Gas (natural gas + city gas) use dropped by 5.7% year-on-year, as it plunged in the building sector due to the city gas rate increase and temperature effect, although it increased in the power generation sector amid growing power demand as well as in the industrial sector, driven by growing gas demand in the transport equipment sector.
- **Total Final Consumption (TFC) decreased by 5.1% year-on-year in February, as energy use declined in all end-use sectors as a result of the worsening economic conditions and temperature effect.**
 - Industrial energy use fell by 3.1% year-on-year, as it declined in most of the sectors except the machinery and transport equipment sectors amid an overall slowdown in manufacturing, though the pace of the decline was slower partly due to the increased number of work days (two days).
 - Transport energy use went down by 4.7% year-on-year, as gas stations' stockpiling demand decreased amid a slowdown in global oil price hikes and an expectation of the expiration of fuel tax cut in May, although gas stations' petroleum sales increased due to growing travel demand.
 - Energy use in buildings dropped by 8.8% year-on-year, as it fell in both of the residential and commercial sectors because of the decreased number of heating degree days (-14.4%) and the rate increase for private consumers.

► Energy consumption

	2021	2022p				2023p	
		M1	M2		M12	M1	M2
TPED (Mtoe)	303.3	29.6	25.8	302.0	28.7	27.6	24.7
	(5.2)	(5.2)	(3.8)	(-0.4)	(-2.1)	(-6.8)	(-4.3)
TFC (Mtoe)	215.8	21.6	19.1	213.5	20.4	20.1	18.1
	(5.9)	(6.3)	(3.1)	(-1.1)	(-3.8)	(-7.0)	(-5.1)
- Feedstock exclude	141.3	14.8	13.4	141.4	14.3	14.1	12.7
	(4.4)	(2.6)	(5.8)	(0.1)	(0.3)	(-5.0)	(-5.1)

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 in both of the industrial and power generation sectors in February, though it declined at a slower rate by 2.5% on a year-on-year basis.

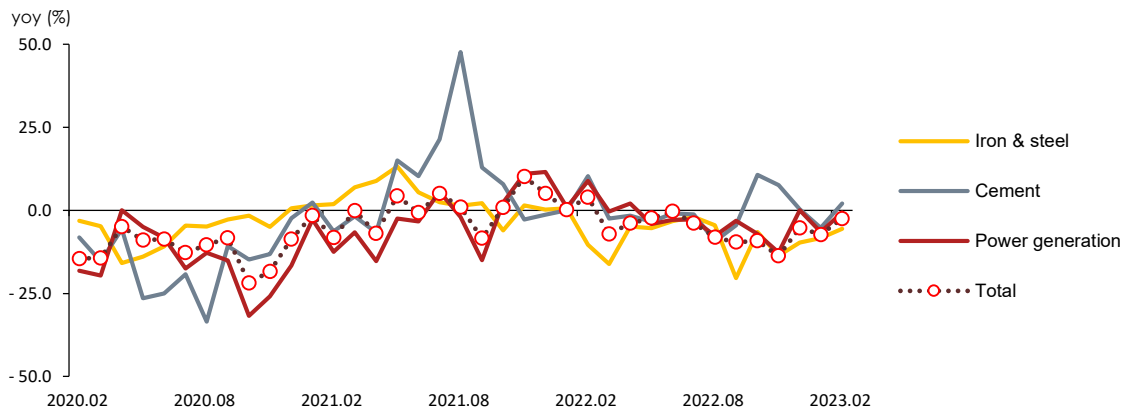
- Coal use continued to decline in the iron & steel sector amid weak production, while it rebounded in the cement sector.
- Coal use maintained a downward trend in the power generation sector, though the pace of the decline slowed due to a drop in nuclear and renewable & other energy generation.

► Coal consumption

	2021	2022p				2023p	
		M1	M2		M12	M1	M2
Coal (Mton)	119.9	10.9	9.2	113.9	10.3	10.1	9.0
	(-0.0)	(0.2)	(3.9)	(-5.0)	(-5.3)	(-7.3)	(-2.5)
Industry	50.5	4.3	3.7	46.3	3.8	3.9	3.5
	(3.8)	(-0.7)	(-2.6)	(-8.3)	(-12.8)	(-8.5)	(-5.4)
-Coking-coal	25.5	2.2	1.8	23.3	2.0	2.0	1.7
	(3.0)	(1.2)	(-11.3)	(-8.8)	(-9.5)	(-8.8)	(-5.5)
Buildings	0.4	0.0	0.0	0.4	0.1	0.0	0.0
	(-11.8)	(-8.9)	(-7.9)	(-5.1)	(-14.8)	(-6.0)	(17.1)
Power generation	68.9	6.5	5.5	67.1	6.4	6.1	5.5
	(-2.5)	(0.9)	(8.9)	(-2.6)	(0.0)	(-6.5)	(-0.7)

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 decreased in the industrial, transport and building sectors all together in February, and consequently, the total final use dropped by 5.9% year-on-year.
 - Industrial petroleum use was down by 5.5% year-on-year, as LPG use as feedstock declined in the midst of sluggish business in the petrochemical sector.
 - Transport petroleum use dropped by 4.4% year-on-year despite stronger demand for actual use in the road transport sector, as stockpiling demand decreased.
 - Petroleum use in buildings fell by 14.4% year-on-year, as the number of heating degree days fell by around 14% amid mild weather.

► Petroleum product consumption by end-use sectors

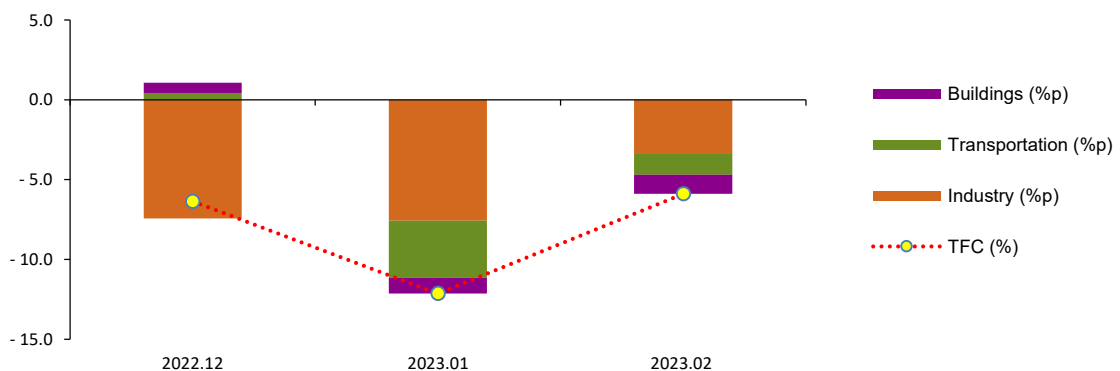
	2021	2022p				2023p	
		M1	M2		M12	M1	M2
TFC (Mbbbl)	809.1	75.9	64.6	795.6	73.2	66.7	60.8
	(7.6)	(15.2)	(0.4)	(-1.7)	(-6.4)	(-12.1)	(-5.9)
Industry	505.8	47.1	40.0	493.8	42.1	41.4	37.8
	(9.4)	(18.1)	(0.1)	(-2.4)	(-12.1)	(-12.2)	(-5.5)
- Naphtha	369.9	33.8	27.9	356.0	30.7	30.7	28.0
	(10.8)	(15.8)	(-7.0)	(-3.8)	(-13.6)	(-9.3)	(0.2)
Transport	259.0	22.6	19.3	257.7	25.1	19.9	18.4
	(5.6)	(14.6)	(-3.1)	(-0.5)	(1.3)	(-12.0)	(-4.4)
Buildings	44.2	6.2	5.3	44.1	6.1	5.4	4.6
	(-1.1)	(-1.8)	(17.8)	(-0.3)	(9.1)	(-12.3)	(-14.4)
Power generation (Mbbbl)	4.19	0.96	0.58	4.99	0.30	0.35	0.26
	(9.4)	(101.8)	(134.2)	(19.2)	(-6.7)	(-63.6)	(-54.6)

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

Source: Korea Energy Economics Institute

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

yoy(%), %p)



7. Gas

- **Gas use was 5.7% lower in February on a year-on-year basis, as it fell sharply in the building sector, although it grew in the power generation and industrial sectors.**
 - Gas use for power generation only slightly increased, as electricity use grew by less than 1% and unit fuel cost of gas-fired generation increased (31.0%), even though there were some factors that could have driven up peak load(gas) demand by lower baseload generation (-2.0%).
 - Gas use increased in the iron & steel sector, as falling gas prices led to a growth in captive power generation for daily use, and gas use also increased in the transport equipment sector ²amid a recovery in car production. As a consequence, the total industrial gas use rebounded.
 - Gas use in buildings plunged by almost 13%, as it declined in both of the residential and commercial sectors (-12.8%, -11.8%) due to the decreased number of heating degree days (-14.4%) and increased city gas rates for private consumers.

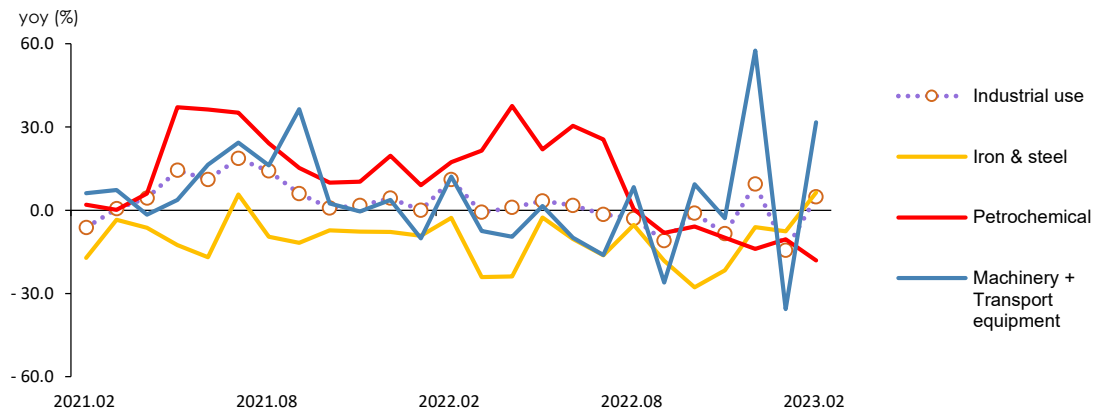
► Natural gas and city gas consumption

	2021	2022p				2023p	
		M1	M2		M12	M1	M2
Gas(TPED) (Mtoe)	60.2	7.0	6.4	59.5	7.0	6.8	6.0
(Natural gas + City gas)	(10.3)	(-6.6)	(5.8)	(-1.2)	(10.4)	(-3.0)	(-5.7)
Power generation	30.7	2.8	2.5	29.7	3.2	2.9	2.5
	(16.0)	(-12.9)	(-1.2)	(-3.2)	(16.7)	(3.0)	(0.2)
Industry	10.1	1.0	0.9	10.0	1.1	0.9	1.0
	(6.4)	(-0.8)	(10.2)	(-0.5)	(8.7)	(-13.9)	(5.6)
Buildings	14.5	2.7	2.5	15.2	2.3	2.6	2.2
	(2.0)	(-1.7)	(13.8)	(5.3)	(6.8)	(-0.9)	(-12.7)
Natural gas(TPED) (Mton)	45.9	5.4	4.8	45.3	5.7	5.2	4.5
	(10.6)	(-6.6)	(7.5)	(-1.1)	(12.9)	(-3.3)	(-7.1)
City gas(TFC) (Bm³)	22.7	3.5	3.2	23.6	3.1	3.4	2.8
	(3.3)	(-1.1)	(12.8)	(3.9)	(5.5)	(-3.2)	(-11.7)

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 gas consumed during the commissioning of LNG carriers (LNG shipment volume - unloaded volume of the month).

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



8. Electricity

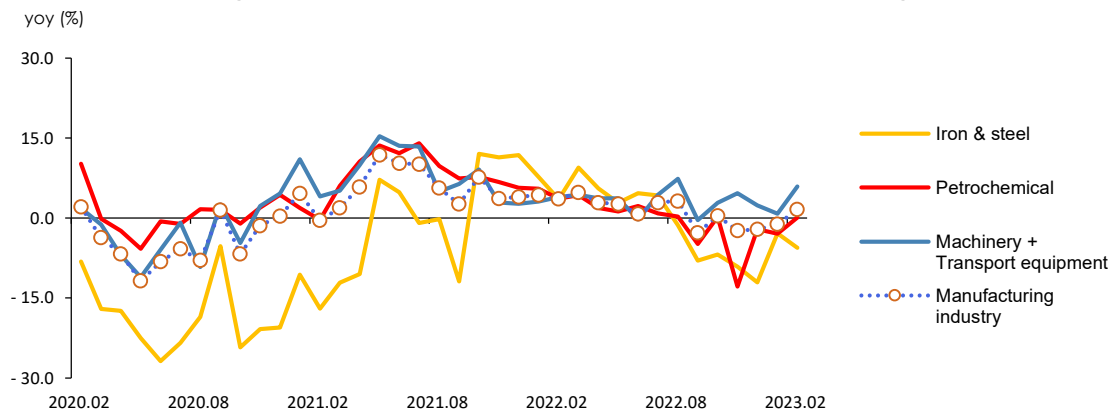
- Electricity use grew by mere 0.9% year-on-year in February, even though it rebounded in the industrial sector, as it grew at much slower pace in the building sector.
 - Industrial electricity use bounced back in four months, led by a rapid growth in the machinery and transport equipment sectors, although it was stagnant in the petrochemical sector, while it declined in the iron & steel sector.
 - Electricity use in buildings increased by less than 1% year-on-year, which was attributed to the decreased number of heating degree days and base effect.

► Electricity consumption by end-use sectors

	2021	2022p				2023p	
		M1	M2		M12	M1	M2
Electricity (TWh)	521.0	48.7	46.5	535.3	45.8	50.2	46.9
	(4.8)	(2.0)	(5.0)	(2.7)	(-0.6)	(3.1)	(0.9)
Industry	269.6	24.5	22.3	274.1	23.1	24.3	22.6
	(5.8)	(4.2)	(4.0)	(1.7)	(-2.0)	(-1.0)	(1.4)
Transport	3.7	0.3	0.3	4.0	0.4	0.4	0.4
	(11.7)	(5.8)	(8.6)	(8.7)	(3.2)	(11.9)	(13.6)
Buildings	247.8	23.9	23.9	257.2	22.3	25.6	24.0
	(3.6)	(-0.2)	(6.0)	(3.8)	(0.9)	(7.1)	(0.4)
Residential	77.6	6.9	6.8	78.6	6.3	7.0	6.8
	(4.7)	(-1.2)	(2.2)	(1.3)	(1.3)	(1.9)	(-0.5)
Commercial	139.5	13.8	14.2	147.0	13.0	15.3	14.3
	(2.5)	(-0.3)	(8.6)	(5.4)	(-0.4)	(10.3)	(0.6)

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

► The growth rate of electricity consumption in manufacturing industry

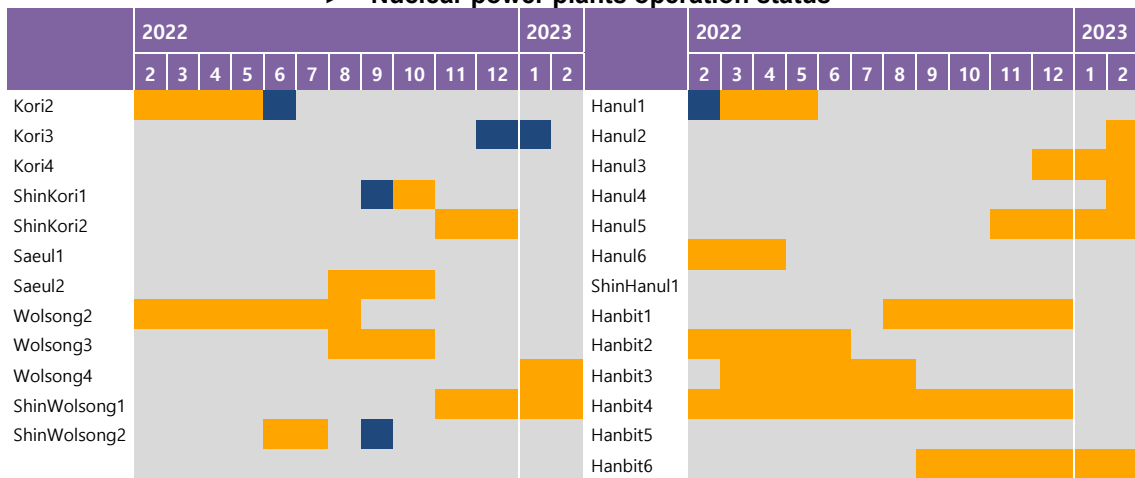


9. Nuclear

□ The total nuclear generation fell by 2.7% year-on-year in February, as the nuclear capacity factor decreased due to the increase in daily average of preventive maintenance.

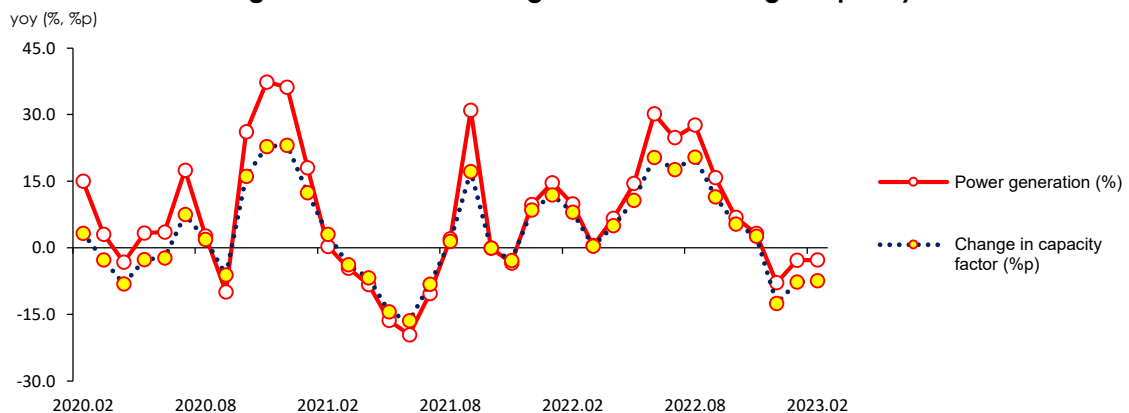
- The number of scheduled and unscheduled reactor shutdowns grew by two reactors compared to the same month last year, and the daily average of preventive maintenance rose by 1.9 GW in terms of installed capacity.
- Shin Hanul unit 1 reactor entered into the test operation stage from June 2022 and started commercial operation on December 7, adding new installed capacity for the first time since the commissioning of Shin Kori unit 4 (1.4GW, Aug. 30, 2019), with the total nuclear installed capacity reaching 24.7GW.
- Nuclear energy's share of the total power generation fell by 0.3%p year-on-year to 28.5%.

► Nuclear power plants operation status



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

► The growth rate of nuclear generation & average capacity factor

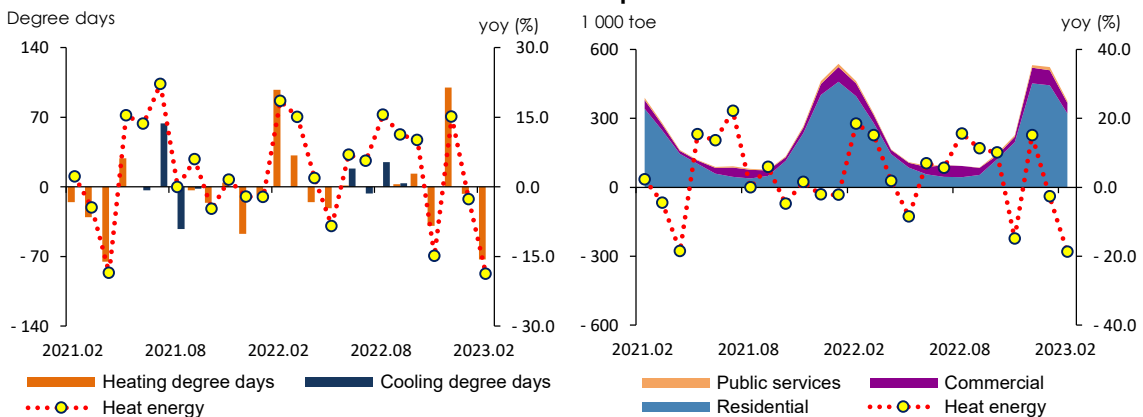


Note: Capacity factor = Ratio of actual power generated to possible power generation when utilizing 100% of available facility. Facility capacity values are based on end-of-the-month data

10. Heat and Renewable energy

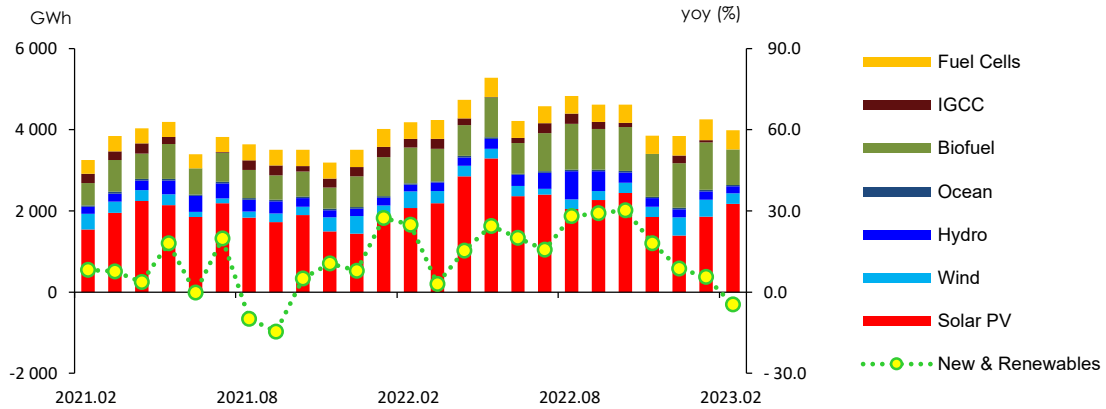
- **Heat energy use dropped by 18.7% year-on-year in February, as it declined in all sectors due to temperature and price effects.**
 - Due to the decreased number of heating degree days (-14.4%) and the rate increase (37.8%), heat energy use fell by 18.9% year-on-year in the residential sector as well as commercial sector despite of the growth in service production.
- **Renewable & other energy use fell by 12.9% year-on-year in February, as it fell in the power generation and end-use sectors all together.**
 - Renewable & other energy generation³ had been growing more slowly since last October (30.3%) due to the slower growth in solar PV and bioenergy generation, which together takes up a large share, and it started a downward trend in February for the first time in 32 months, posting a year-on-year decline of 4.6%.
 - The final use of renewable & other energy fell by 4.4% year-on-year, with the transport and building sectors leading the downward trend, although its industrial use increased.

► 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'. In the current Energy Balance report, renewable & other energy and hydropower (including pumped storage) data are collected in separate categories, and therefore, hydropower is not included in the renewable & other energy category.

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



11. Industry

□ Industrial energy use went down by 3.1% year-on-year in February, mostly in the petrochemical and iron & steel sectors.

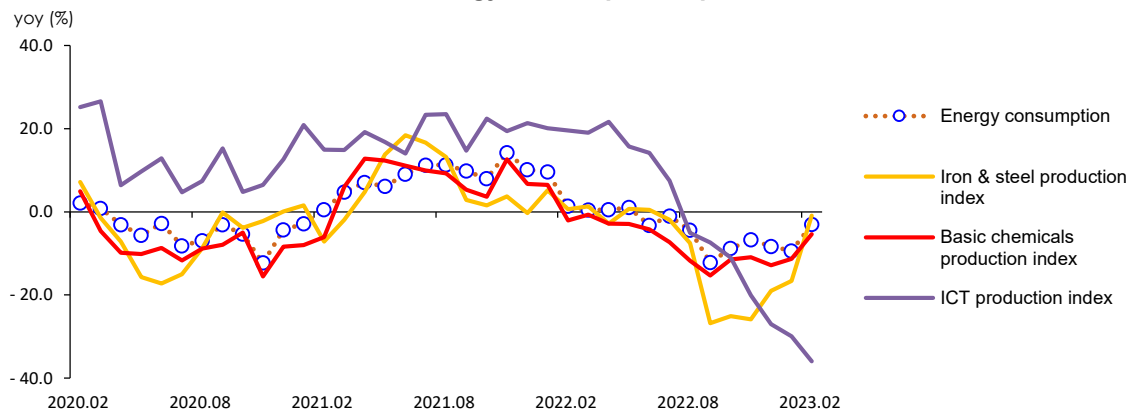
- As the Lunar New Year was in January this year, there were two more work days in February compared to the previous year, and accordingly, energy use fell more slowly in the petrochemical and iron & steel sectors, while it rebounded in the machinery and transport equipment sectors, leading to a slower decline in industrial energy use.

► Industrial energy consumption

	2021	2022p				2023p	
		M1	M2		M12	M1	M2
Industry (Mtoe)	133.0	12.2	10.5	129.4	11.2	11.0	10.2
	(7.3)	(9.6)	(1.3)	(-2.7)	(-8.3)	(-9.4)	(-3.1)
Petrochemical	67.0	6.2	5.3	65.5	5.6	5.6	5.0
	(11.0)	(15.8)	(-0.2)	(-2.3)	(-12.3)	(-10.4)	(-5.3)
- Naphtha	45.3	4.1	3.4	43.6	3.8	3.8	3.4
	(10.8)	(15.8)	(-7.0)	(-3.8)	(-13.6)	(-9.3)	(0.2)
Iron & Steel	27.9	2.4	2.0	25.9	2.2	2.2	1.9
	(1.8)	(0.7)	(-8.3)	(-7.4)	(-9.2)	(-8.4)	(-5.1)
- Coking coal	17.8	1.5	1.3	16.4	1.4	1.4	1.2
	(3.0)	(2.1)	(-10.5)	(-8.0)	(-8.8)	(-9.6)	(-6.4)
Machinery + Transport Equipment	12.5	1.2	1.1	13.0	1.3	1.1	1.2
	(6.0)	(1.4)	(7.3)	(4.2)	(15.4)	(-7.2)	(11.1)
Share of feedstock (%)	55.9	55.5	54.2	55.6	54.3	54.3	53.2

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

► Industrial energy consumption & production index



12. Transport

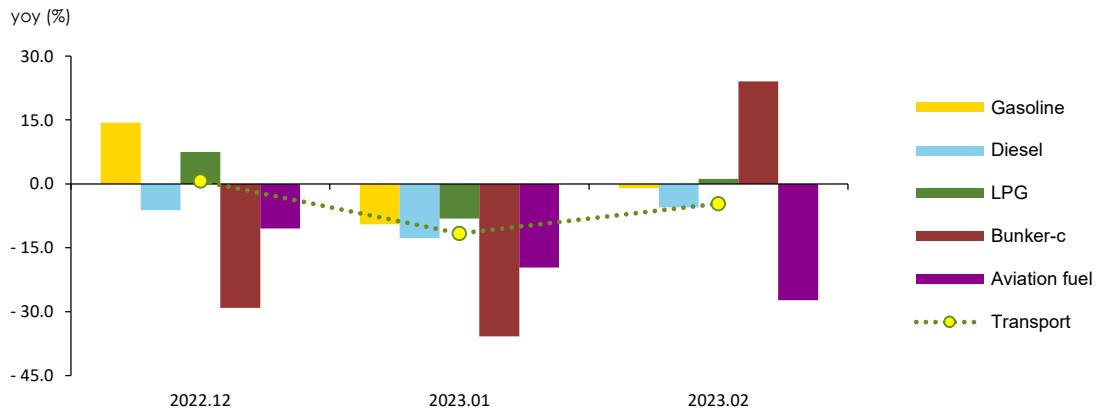
- **Transport energy use decreased by 4.7% year-on-year in February, as it declined in the road transport sector in anticipation of the expiration of fuel tax cut in May⁴.**
 - In the road transport sector, energy use dropped by 3.5% year-on-year, because gas stations' stockpiling demand decreased with the expectation of a return to the previous tax rates in May.
 - In the domestic aviation sector, energy use fell by 27.1% year-on-year, as the number of domestic flights posted a steady decline (19.5%).

► The growth rate of petroleum consumption in the transport sector

	2021	2022p				2023p	
		M1	M2		M12	M1	M2
Transport (Mtoe)	36.64	3.18	2.71	36.43	3.51	2.81	2.59
	(5.4)	(14.1)	(-2.7)	(-0.6)	(0.7)	(-11.7)	(-4.7)
Road	34.20	2.92	2.51	33.96	3.33	2.60	2.42
	(2.2)	(12.7)	(-4.2)	(-0.7)	(1.5)	(-10.8)	(-3.5)
Domestic navigation	0.43	0.05	0.04	0.50	0.03	0.03	0.04
	(27.2)	(76.9)	(24.8)	(16.7)	(-22.0)	(-35.9)	(-2.0)
Domestic aviation	1.68	0.18	0.14	1.67	0.12	0.14	0.10
	(168.3)	(32.4)	(25.0)	(-0.3)	(-10.3)	(-19.5)	(-27.1)
Rail	0.33	0.03	0.03	0.30	0.03	0.03	0.03
	(-0.3)	(-8.8)	(-8.3)	(-9.9)	(-13.6)	(-4.0)	(0.2)

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

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



⁴ As of February, there was a high possibility of the expiration of fuel tax cut in May. However, the decision was made in mid-April to extend the tax reduction for four more month until Aug. 31.

13. Buildings

□ Energy use in buildings dropped by 8.8% year-on-year in February due to temperature effect and price effect that resulted from the rate increase.

- In the residential sector, energy use decreased by 12.3% as a result of lower heating demand amid mild weather than the same month last year.
- In the commercial sector, energy use was down by 4.0% year-on-year due to temperature effect in spite of the recovery in service production.

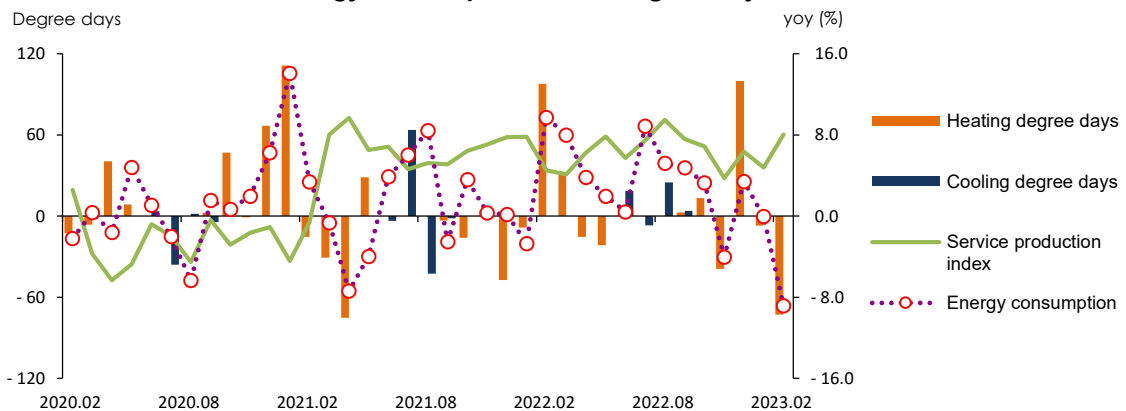
► Energy consumption in buildings

	2021	2022p				2023p	
		M1	M2		M12	M1	M2
Buildings (Mtoe)	46.1	6.2	5.8	47.7	5.7	6.2	5.3
	(2.5)	(-2.7)	(9.7)	(3.4)	(3.4)	(-0.0)	(-8.8)
Residential	22.9	3.7	3.4	23.3	3.3	3.6	3.0
	(2.6)	(-3.5)	(10.2)	(1.4)	(4.1)	(-2.6)	(-12.3)
Commercial	18.0	2.0	2.0	19.1	1.9	2.1	1.9
	(1.8)	(0.5)	(12.0)	(6.2)	(3.9)	(4.9)	(-4.0)
Public services	5.2	0.5	0.5	5.3	0.5	0.5	0.5
	(4.0)	(-8.1)	(-1.4)	(2.5)	(-2.2)	(-0.2)	(-4.4)
Heating degree days	2 404.7	583.1	506.7	2 567.1	600.3	576.1	433.9
	(-1.8)	(-1.4)	(23.9)	(6.8)	(20.0)	(-1.2)	(-14.4)
Cooling degree days	101.3	-	-	141.9	-	-	-
	(18.9)	-	-	(40.1)	-	-	-
Service production index (2020=100)	105.2	104.8	99.7	112.0	126.8	109.8	107.7
	(5.2)	(7.8)	(4.5)	(6.5)	(6.4)	(4.8)	(8.0)

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

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

► Energy consumption in buildings & major indicators



14. Power Generation

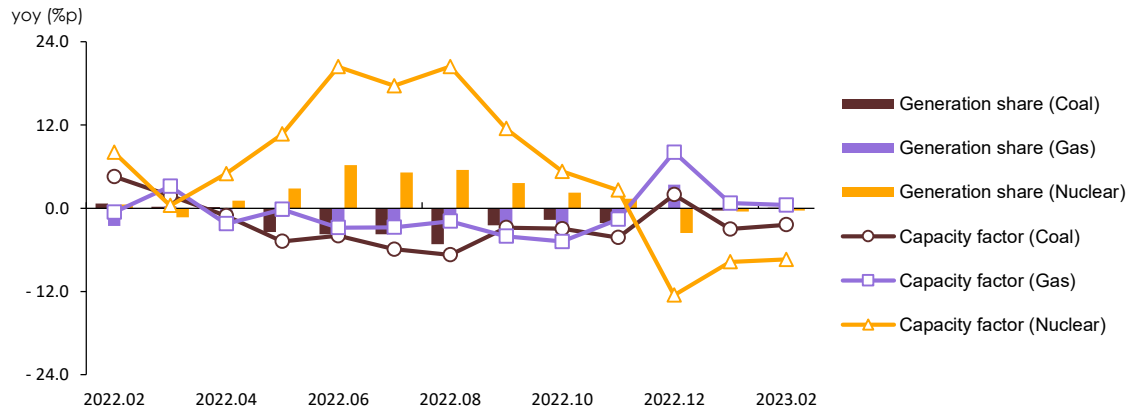
- The total power generation slightly decreased in February, as power generation from major all energy sources except gas declined except gas.
 - The total nuclear generation decreased, despite the commissioning of a new large-scale reactor (Shin Hanul unit 1, 1.4GW, Dec. 7, 2022), as the number of scheduled and unscheduled reactor shutdowns increased, and consequently, the capacity factor fell by around 8%p.
 - Coal-fired generation kept falling owing to the transmission constraints in the east coast area and grid operation issues arising from growing solar PV generation. The pace of the decline, however, was somewhat slowing, as nuclear and renewable generation decreased.
 - Solar PV generation increased by 5.0%, while bioenergy generation that had recently grown rapidly decreased by 0.9%, and wind power generation also fell sharply by 35.8%. Overall, the total renewable & other energy generation was 5.6% lower.
 - Gas-fired generation, which covers the peak load, posted a year-on-year growth of 0.9%, despite a drop in the total power generation, because baseload generation including renewable & other energy declined faster (-2.5%).

► Power generation by energy sources

	2021	2022p				2023p	
		M1	M2		M12	M1	M2
Power Generation (TWh)	576.7	54.8	48.5	594.4	55.6	54.1	47.7
	(4.5)	(3.2)	(7.8)	(3.1)	(4.1)	(-1.2)	(-1.6)
Coal	198.0	18.4	15.9	193.2	18.9	18.0	15.7
	(0.8)	(3.2)	(10.1)	(-2.4)	(3.9)	(-2.2)	(-1.4)
Oil	2.4	0.5	0.2	2.0	0.2	0.2	0.2
	(4.4)	(58.8)	(34.1)	(-16.5)	(9.0)	(-58.0)	(-14.8)
Gas	168.3	15.3	13.6	163.6	16.9	15.5	13.7
	(15.4)	(-11.7)	(-1.1)	(-2.8)	(17.2)	(1.5)	(0.9)
Nuclear	158.0	16.1	14.0	176.1	15.2	15.7	13.6
	(-1.4)	(14.7)	(9.9)	(11.4)	(-7.9)	(-2.8)	(-2.7)
Renewables	50.1	4.6	4.8	59.6	4.4	4.8	4.5
	(5.5)	(25.1)	(23.3)	(18.9)	(7.4)	(4.9)	(-5.6)
Baseload	406.1	39.1	34.7	428.9	38.5	38.4	33.8
	(13.9)	(10.0)	(11.6)	(5.6)	(-0.8)	(-1.6)	(-2.5)

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

► Power generation by major energy sources



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

Major Statistics & Indicators of the Economy

	2020	2021	2022				2023		
			M12	M1	M2		M12	M1	M2
GDP (trillion won)	1 839.5 (-0.7)	1 915.8 (4.1)	505.6 (4.2)	-	-	1 964.8 (2.6)	512.2 (1.3)	-	-
Private consumption	851.0 (-4.8)	882.5 (3.7)	228.4 (6.2)	-	-	920.7 (4.3)	236.2 (3.4)	-	-
Facilities investment	166.6 (7.2)	181.6 (9.0)	45.9 (4.2)	-	-	180.7 (-0.5)	49.2 (7.0)	-	-
Construction investment	269.3 (1.5)	265.0 (-1.6)	71.8 (-1.6)	-	-	255.6 (-3.5)	69.6 (-3.1)	-	-
Consumer price index (2020=100)	100.0	102.5	104.0	104.7	105.3	107.7	109.3	110.1	110.4
USD to KRW exchange rate (won)	1 180.3	1 144.0	1 183.7	1 194.0	1 198.3	1 291.4	1 296.2	1 247.3	1 270.7
Benchmark rate (%)	0.7	0.6	1.0	1.3	1.3	2.1	3.3	3.5	3.5
Coincident composite index (2020=100)	100.0	104.1	106.5	107.0	107.5	108.3	108.4	108.2	108.8
Mining & manufacturing production index (2020=100)	100.0	108.2	121.5	110.4	102.3	109.7	108.7	95.6	94.1
Manufacturing operation ratio index (2020=100)	100.0	105.2	116.8	106.4	98.3	105.2	102.9	92.4	91.0
Average temperature	13.0	13.3	1.9	- 0.8	- 0.1	12.9	- 1.4	- 0.6	2.5
- year-on-year difference	- 0.4	0.3	1.5	0.3	- 3.5	- 0.4	- 3.2	0.2	2.6
Heating degree days	2 448.0 (3.3)	2 404.7 (-1.8)	500.4 (-8.6)	583.1 (-1.4)	506.7 (23.9)	2 567.1 (6.8)	600.3 (20.0)	576.1 (-1.2)	433.9 (-14.4)
Cooling degree days	85.2 (-29.2)	101.3 (18.9)	-	-	-	141.9 (40.1)	-	-	-
Energy intensity	0.16 (-2.8)	0.16 (1.0)	0.16 (2.6)	-	-	0.15 (-2.9)	0.15 (-5.0)	-	-
Per capita consumption									
Oil (bbl)	0.0 (-4.2)	0.0 (7.3)	0.0 (20.6)	0.0 (15.4)	0.0 (1.2)	0.0 (-1.7)	0.0 (-5.0)	0.0 (-10.9)	0.0 (-4.9)
Electricity (MWh)	0.0 (-2.2)	0.0 (5.0)	0.0 (4.9)	0.0 (2.2)	0.0 (5.3)	0.0 (3.0)	0.0 (-0.3)	0.0 (3.2)	0.0 (1.1)
City gas (1 000 m3)	- (-2.1)	- (3.5)	- (-1.2)	- (-0.8)	- (13.1)	- (4.1)	- (5.7)	- (-3.1)	- (-11.6)
Total energy (toe)	0.0 (-3.6)	0.0 (5.3)	0.0 (8.0)	0.0 (5.5)	0.0 (4.0)	0.0 (-0.2)	0.0 (-1.8)	0.0 (-6.6)	- (-4.1)

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

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

The Index of Production & Operating Ratio by Sectors

	2020	2021	2022				2023		
			M12	M1	M2		M12	M1	M2
Industrial production index									
All industry	100.0 (-1.1)	105.5 (5.5)	122.3 (8.0)	104.5 (6.5)	99.0 (4.7)	110.1 (4.4)	123.0 (0.6)	103.0 (-1.4)	102.3 (3.3)
Mining & manufacturing	100.0 (-0.3)	108.2 (8.2)	121.5 (8.7)	110.4 (5.7)	102.3 (6.7)	109.7 (1.4)	108.7 (-10.5)	95.6 (-13.4)	94.1 (-8.0)
Semiconductor	100.0 (22.7)	126.8 (26.8)	153.1 (28.3)	141.1 (34.8)	134.4 (29.7)	136.5 (7.7)	114.7 (-25.1)	93.3 (-33.9)	78.3 (-41.7)
Iron & steel	100.0 (-6.3)	105.2 (5.2)	106.3 (-0.3)	110.0 (5.2)	97.0 (0.6)	96.3 (-8.4)	86.1 (-19.0)	91.7 (-16.6)	96.1 (-0.9)
Cement	100.0 (-7.5)	103.2 (3.1)	112.4 (5.1)	86.1 (12.3)	75.6 (-4.8)	100.2 (-2.9)	93.5 (-16.8)	78.1 (-9.3)	86.0 (13.8)
Basic compound	100.0 (-7.1)	105.9 (5.9)	111.1 (6.7)	111.4 (6.5)	98.4 (-2.1)	99.1 (-6.4)	96.8 (-12.9)	98.8 (-11.3)	93.1 (-5.4)
Transport equipment	100.0 (-9.5)	106.3 (6.3)	118.4 (9.9)	101.8 (-6.9)	98.0 (3.5)	116.0 (9.1)	131.9 (11.4)	112.7 (10.7)	123.9 (26.4)
Electric & electronic	100.0 (-1.0)	107.7 (7.7)	122.4 (6.3)	103.8 (1.3)	100.1 (8.1)	110.8 (2.9)	117.6 (-3.9)	100.7 (-3.0)	103.6 (3.5)
Service	100.0 (-2.0)	105.2 (5.2)	119.2 (7.8)	104.8 (7.8)	99.7 (4.5)	112.0 (6.5)	126.8 (6.4)	109.8 (4.8)	107.7 (8.0)
Wholesale and retail	100.0 (-2.6)	105.3 (5.3)	112.0 (4.1)	104.9 (3.6)	95.2 (0.1)	107.1 (1.7)	112.3 (0.3)	107.0 (2.0)	98.5 (3.5)
Food & Accommodation	100.0 (-18.4)	101.9 (1.9)	115.2 (35.1)	105.3 (35.9)	91.8 (9.8)	119.1 (16.9)	130.0 (12.8)	114.3 (8.5)	113.2 (23.3)
Production output									
Iron & steel - Pig iron	45 359.6 (-4.5)	46 440.5 (2.4)	3 958.0 (-3.8)	3 872.3 (-5.9)	3 336.6 (-10.4)	42 658.2 (-8.1)	3 568.4 (-9.8)	3 737.1 (-3.5)	3 360.4 (0.7)
Iron & steel - Crude steel	67 078.8 (-6.1)	70 418.0 (5.0)	5 935.3 (0.4)	6 070.7 (0.5)	5 145.5 (-6.3)	65 846.2 (-6.5)	5 232.3 (-11.8)	5 626.2 (-7.3)	5 205.8 (1.2)
Petrochemical - Basic petrochemicals	30 542.7 (-4.4)	34 434.5 (12.7)	3 115.8 (29.3)	3 129.5 (20.5)	2 751.3 (5.6)	32 854.1 (-4.6)	2 618.8 (-16.0)	2 777.5 (-11.2)	2 435.8 (-11.5)
Petrochemical - Intermediate raw material	15 369.0 (-6.1)	15 764.6 (2.6)	1 322.2 (2.2)	1 272.3 (-5.0)	1 147.9 (-11.7)	13 852.5 (-12.1)	1 097.2 (-17.0)	1 182.2 (-7.1)	1 086.9 (-5.3)
Petrochemical - 3 major products	21 268.9 (-1.7)	23 224.7 (9.2)	2 177.5 (21.6)	2 164.6 (15.9)	1 917.4 (9.8)	22 129.4 (-4.7)	1 754.8 (-19.4)	1 852.4 (-14.4)	1 748.7 (-8.8)
The number of cars	3 506.8 (-11.2)	3 462.4 (-1.3)	319.1 (7.5)	271.1 (-13.7)	264.0 (1.1)	3 756.5 (8.5)	353.4 (10.8)	306.7 (13.2)	343.6 (30.2)

Note: p means provisional

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

International Energy Prices

	2020	2021	2022				2023		
			M12	M1	M2		M12	M1	M2
Crude oil (USD/bbl)									
WTI	39.4 (-30.9)	67.9 (72.4)	71.7 (52.3)	83.0 (59.3)	91.6 (55.1)	94.2 (38.7)	76.5 (6.7)	78.2 (-5.8)	76.9 (-16.1)
Dubai	42.2 (-33.6)	69.3 (64.1)	73.2 (46.9)	83.5 (52.3)	92.4 (51.7)	96.4 (39.1)	77.2 (5.5)	80.4 (-3.7)	82.1 (-11.1)
Brent	43.2 (-32.7)	70.8 (63.8)	74.8 (49.0)	85.6 (54.7)	94.1 (51.1)	98.9 (39.7)	81.3 (8.7)	83.9 (-1.9)	83.5 (-11.2)
Unit value of import (C&F)	44.8 (-31.7)	70.2 (56.9)	79.5 (70.2)	82.2 (53.0)	91.5 (54.5)	102.3 (45.6)	89.5 (12.7)	86.1 (4.7)	85.7 (-6.3)
LNG									
Henry Hub (USD/MMBTU)	2.1 (-15.9)	3.7 (74.6)	3.9 (49.5)	4.3 (60.7)	4.5 (53.0)	6.5 (75.2)	5.8 (49.3)	3.4 (-19.6)	2.4 (-45.4)
TTF (USD/MMBTU)	3.2 (-32.4)	16.0 (396.1)	37.7 (546.7)	28.2 (288.6)	26.9 (338.5)	40.1 (150.0)	36.7 (-2.6)	19.8 (-30.0)	16.5 (-38.7)
JKM (USD/MMBTU)	4.2 (-25.1)	17.9 (324.7)	37.8 (300.0)	28.5 (114.0)	25.8 (250.9)	33.9 (89.5)	32.3 (-14.5)	24.3 (-14.7)	16.9 (-34.6)
Unit value of import (USD/ton, CIF)	390.2 (-22.8)	550.8 (41.2)	892.6 (149.0)	1 138.1 (175.1)	843.9 (58.8)	1 053.5 (91.3)	1 255.2 (40.6)	1 295.6 (13.8)	1 102.9 (30.7)
Coal (USD/ton)									
Thermal coal (Newcastle)	60.3 (-22.8)	136.0 (125.8)	164.6 (110.4)	209.6 (146.9)	236.2 (174.5)	356.3 (161.9)	400.9 (143.5)	362.3 (72.8)	222.1 (-6.0)
Unit value of import (CIF)	77.7 (-22.9)	115.1 (48.1)	187.5 (159.3)	185.0 (139.9)	197.1 (144.9)	226.3 (96.7)	204.6 (9.1)	195.7 (5.8)	193.1 (-2.0)
Petroleum product (USD/bbl)									
Gasoline	46.7 (-35.7)	80.3 (72.2)	87.9 (64.3)	98.1 (63.2)	110.8 (63.2)	115.2 (43.4)	89.4 (1.7)	99.0 (1.0)	99.4 (-10.3)
Kerosene	44.7 (-42.1)	75.1 (67.9)	83.5 (55.0)	95.7 (64.9)	106.2 (63.0)	126.7 (68.6)	110.5 (32.3)	115.0 (20.2)	106.6 (0.4)
Diesel	49.4 (-36.8)	77.6 (57.2)	85.9 (54.9)	99.2 (65.3)	110.8 (63.1)	135.3 (74.3)	114.0 (32.7)	116.2 (17.1)	107.7 (-2.8)
Bunker-C	39.2 (-31.9)	64.4 (64.3)	65.8 (38.8)	76.1 (47.8)	82.6 (43.4)	82.3 (27.8)	59.6 (-9.5)	61.4 (-19.4)	63.7 (-22.8)
Propane	397.1 (-8.6)	647.9 (63.2)	795.0 (76.7)	740.0 (34.5)	775.0 (28.1)	737.1 (13.8)	650.0 (-18.2)	590.0 (-20.3)	790.0 (1.9)
Butane	403.8 (-8.6)	629.6 (55.9)	750.0 (63.0)	710.0 (34.0)	775.0 (32.5)	734.2 (16.6)	650.0 (-13.3)	605.0 (-14.8)	790.0 (1.9)
Naphtha	40.5 (-28.9)	70.6 (74.6)	77.6 (63.1)	84.4 (51.8)	95.5 (54.9)	83.1 (17.7)	65.7 (-15.4)	72.4 (-14.3)	76.5 (-19.9)

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

	2020	2021		2022					2023	
			M12	M1	M2		M12	M1	M2	
Petroleum product										
Gasoline (won/liter)	1 381.6 (-6.1)	1 590.5 (15.1)	1 646.4 (20.4)	1 635.2 (13.4)	1 714.6 (17.2)	1 812.4 (14.0)	1 563.8 (-5.0)	1 562.9 (-4.4)	1 578.5 (-7.9)	
Diesel (won/liter)	1 189.8 (-11.2)	1 391.3 (16.9)	1 468.9 (25.7)	1 453.5 (17.0)	1 536.6 (21.6)	1 841.8 (32.4)	1 783.3 (21.4)	1 675.4 (15.3)	1 606.4 (4.5)	
Bunker-C (won/liter)	573.6 (-22.9)	731.7 (27.6)	859.0 (65.6)	840.4 (54.1)	937.4 (51.3)	1 115.2 (52.4)	986.7 (14.9)	883.8 (5.2)	915.6 (-2.3)	
Propane (won/kg)	1 850.7 (-1.0)	2 092.6 (13.1)	2 410.1 (29.2)	2 395.0 (28.2)	2 379.0 (21.8)	2 479.6 (18.5)	2 449.7 (1.6)	2 440.0 (1.9)	2 405.4 (1.1)	
Butane (won/liter)	791.1 (-1.9)	931.8 (17.8)	1 087.5 (36.5)	1 071.8 (34.5)	1 050.7 (23.9)	1 081.7 (16.1)	1 021.4 (-6.1)	1 019.7 (-4.9)	992.2 (-5.6)	
City gas(won/MJ)										
Residential	15.1 (-3.6)	14.2 (-5.7)	14.2 -	14.2 -	14.2 -	16.6 (16.7)	19.7 (38.4)	19.7 (38.4)	19.7 (38.4)	
General(1)	14.9 (-4.7)	13.9 (-6.5)	14.1 (0.6)	14.1 (0.6)	14.1 (0.6)	16.3 (17.3)	19.5 (38.6)	19.5 (38.6)	19.5 (38.6)	
Commercial	15.1 (-6.4)	17.2 (14.2)	23.6 (75.0)	25.4 (81.4)	24.9 (68.1)	28.7 (66.6)	36.2 (53.8)	34.3 (35.0)	33.8 (35.9)	
Industry	12.6 (-8.4)	14.4 (14.2)	21.3 (86.5)	23.1 (93.4)	22.6 (77.2)	25.9 (79.9)	34.1 (60.1)	32.1 (39.0)	31.7 (40.1)	
Heat(won/Mcal)										
Residential	66.2 (0.7)	65.2 (-1.4)	65.2 -	65.2 -	65.2 -	74.1 (13.7)	89.9 (37.8)	89.9 (37.8)	89.9 (37.8)	
Commercial	85.9 (0.7)	84.7 (-1.4)	84.7 -	84.7 -	84.7 -	96.3 (13.7)	116.7 (37.8)	116.7 (37.8)	116.7 (37.8)	
Public	75.1 (0.7)	74.0 (-1.4)	74.0 -	74.0 -	74.0 -	84.1 (13.7)	101.9 (37.8)	101.9 (37.8)	101.9 (37.8)	
Electricity(won/kWh)										
Residential	147.3 -	142.3 (-3.4)	142.3 (-3.4)	142.3 -	142.3 -	147.8 (3.9)	154.6 (8.6)	166.0 (16.7)	166.0 (16.7)	
General	84.4 -	79.4 (-5.9)	87.3 (-5.4)	87.3 -	87.3 -	84.9 (7.0)	99.6 (14.1)	111.0 (27.1)	111.0 (27.1)	
Industry	96.0 -	91.0 (-5.2)	103.5 (-4.6)	103.5 -	103.5 -	98.8 (8.6)	125.0 (20.8)	136.4 (31.8)	136.4 (31.8)	

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)

	2020	2021	2022p				2023p		
			M12	M1	M2		M12	M1	M2
Coal (Mton)	119.9 (-12.3)	119.9 (-0.0)	10.9 (5.1)	10.9 (0.2)	9.2 (3.9)	113.9 (-5.0)	10.3 (-5.3)	10.1 (-7.3)	9.0 (-2.5)
- Coking coal excluded	95.2 (-13.9)	94.4 (-0.8)	8.7 (6.7)	8.7 (-0.1)	7.4 (8.5)	90.6 (-4.0)	8.3 (-4.2)	8.1 (-6.9)	7.3 (-1.7)
Oil (Mbbl)	775.7 (-4.0)	830.7 (7.1)	79.9 (20.4)	78.2 (15.1)	66.5 (1.0)	815.0 (-1.9)	75.7 (-5.2)	69.6 (-11.0)	63.2 (-5.0)
LNG (Mton)	41.5 (1.2)	45.9 (10.6)	5.1 (-5.6)	5.4 (-6.6)	4.8 (7.5)	45.3 (-1.1)	5.7 (12.9)	5.2 (-3.3)	4.5 (-7.1)
Hydro (TWh)	3.9 (39.0)	3.1 (-21.2)	0.2 (-6.7)	0.2 (-1.6)	0.2 (-1.5)	3.5 (15.9)	0.2 (9.4)	0.2 (7.6)	0.2 (0.4)
Nuclear (TWh)	160.2 (9.8)	158.0 (-1.4)	16.5 (9.8)	16.1 (14.7)	14.0 (9.9)	176.1 (11.4)	15.2 (-7.9)	15.7 (-2.8)	13.6 (-2.7)
Others (Mtoe)	12.6 (9.4)	14.4 (13.8)	1.3 (9.4)	1.3 (10.9)	1.3 (12.2)	16.0 (11.0)	1.3 (-3.1)	1.2 (-7.5)	1.1 (-13.3)
TPED (Mtoe)	288.4 (-3.4)	303.3 (5.2)	29.3 (7.8)	29.6 (5.2)	25.8 (3.8)	302.0 (-0.4)	28.7 (-2.1)	27.6 (-6.8)	24.7 (-4.3)

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

Share of TPED by Sources

(unit: %)

	2020	2021	2022p				2023p		
			M12	M1	M2		M12	M1	M2
Coal	25.2	24.0	22.5	22.2	21.6	22.8	21.7	22.1	22.0
- Coking coal excluded	19.3	18.1	17.2	17.1	16.6	17.4	16.8	17.1	17.2
Oil	39.3	40.1	39.4	38.1	37.2	39.5	38.2	36.8	37.4
LNG	18.8	19.8	22.6	24.0	24.3	19.6	26.1	24.8	23.5
Hydro	0.3	0.2	0.1	0.1	0.1	0.3	0.1	0.2	0.1
Nuclear	11.8	11.1	12.0	11.6	11.5	12.4	11.3	12.1	11.7
Others	4.4	4.7	4.5	4.3	5.0	5.3	4.4	4.3	4.5
TPED	99.8	99.9	101.0	100.4	99.6	99.9	101.8	100.3	99.3

Note: p means provisional
Source: Korea Energy Economics Institute

Total Final Consumption (TFC)

(Unit: Mtoe)

	2020	2021	2022p				2023p		
			M12	M1	M2		M12	M1	M2
Industry	124.0 (-4.0)	133.0 (7.3)	12.2 (10.1)	12.2 (9.6)	10.5 (1.3)	129.4 (-2.7)	11.2 (-8.3)	11.0 (-9.4)	10.2 (-3.1)
Transport	34.7 (-6.6)	36.6 (5.4)	3.5 (20.5)	3.2 (14.1)	2.7 (-2.7)	36.4 (-0.6)	3.5 (0.7)	2.8 (-11.7)	2.6 (-4.7)
Residential	22.4 (4.1)	22.9 (2.6)	3.1 (-1.8)	3.7 (-3.5)	3.4 (10.2)	23.3 (1.4)	3.3 (4.1)	3.6 (-2.6)	3.0 (-12.3)
commercial	17.7 (-5.4)	18.0 (1.8)	1.9 (4.4)	2.0 (0.5)	2.0 (12.0)	19.1 (6.2)	1.9 (3.9)	2.1 (4.9)	1.9 (-4.0)
Public	5.0 (-3.5)	5.2 (4.0)	0.5 (-2.0)	0.5 (-8.1)	0.5 (-1.4)	5.3 (2.5)	0.5 (-2.2)	0.5 (-0.2)	0.5 (-4.4)
TFC	203.8 (-3.8)	215.8 (5.9)	21.2 (8.9)	21.6 (6.3)	19.1 (3.1)	213.5 (-1.1)	20.4 (-3.8)	20.1 (-7.0)	18.1 (-5.1)
Coal (Mton)	49.2 (-5.2)	51.0 (3.6)	4.5 (-2.9)	4.4 (-0.8)	3.7 (-2.7)	46.8 (-8.3)	3.9 (-12.9)	4.0 (-8.5)	3.5 (-5.2)
Oil (Mbbbl)	752.3 (-5.5)	809.1 (7.6)	78.2 (19.3)	75.9 (15.2)	64.6 (0.4)	795.6 (-1.7)	73.2 (-6.4)	66.7 (-12.1)	60.8 (-5.9)
- Non-energy oil excluded	336.2 (-5.3)	350.6 (4.3)	34.4 (10.2)	33.5 (9.4)	28.4 (0.6)	343.0 (-2.1)	35.4 (2.9)	29.4 (-12.2)	26.5 (-6.8)
Electricity (TWh)	497.3 (-2.0)	521.0 (4.8)	46.1 (4.7)	48.7 (2.0)	46.5 (5.0)	535.3 (2.7)	45.8 (-0.6)	50.2 (3.1)	46.9 (0.9)
City gas (Bm³)	22.0 (-2.0)	22.7 (3.3)	2.9 (-1.4)	3.5 (-1.1)	3.2 (12.8)	23.6 (3.9)	3.1 (5.5)	3.4 (-3.2)	2.8 (-11.7)
Heat-others (1 000 toe)	9.3 (3.1)	9.8 (6.3)	1.2 (2.6)	1.2 (-2.6)	1.0 (7.3)	10.1 (2.6)	1.1 (-2.2)	1.1 (-2.1)	0.9 (-10.7)

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

Source: Korea Energy Economics Institute

Share of the Total Final Consumption by Sources

(unit: %)

	2020	2021	2022p				2023p		
			M12	M1	M2		M12	M1	M2
Industry	60.9	61.6	57.6	56.4	55.2	60.6	54.9	55.0	56.3
Transport	17.1	17.0	16.4	14.7	14.2	17.1	17.2	14.0	14.3
Residential	11.0	10.6	14.7	17.2	17.8	10.9	15.9	18.0	16.4
Commercial	8.7	8.3	8.7	9.2	10.3	9.0	9.4	10.4	10.4
Public	2.4	2.4	2.5	2.5	2.6	2.5	2.5	2.7	2.6
TFC	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0
Coal	15.3	14.9	13.4	12.9	12.4	14.0	12.3	12.6	12.3
Oil	47.0	47.9	47.2	44.9	42.9	47.4	45.8	42.3	42.5
- Non-energy oil excluded	22.0	21.6	21.7	20.6	19.7	21.3	22.9	19.3	19.1
Electricity	21.0	20.8	18.7	19.4	21.0	21.6	19.3	21.5	22.3
City gas	12.1	11.9	15.3	17.4	18.2	12.3	17.0	17.9	17.7
Heat-others	4.5	4.6	5.5	5.4	5.5	4.7	5.6	5.7	5.2

Note: p means provisional

Source: Korea Energy Economics Institute

Statistics on Energy Production Facilities

	2020	2021	2022				2023		
			M12	M1	M2		M12	M1	M2
Total capacity (GW)	129.2 (3.1)	134.0 (3.7)	134.0 (3.7)	133.1 (6.2)	133.6 (6.1)	138.0 (6.8)	138.0 (6.8)	138.8 (7.8)	138.9 (7.6)
Nuclear	23.3 -	23.3 -	23.3 -	23.3 -	23.3 -	24.7 (6.0)	24.7 (6.0)	24.7 (6.0)	24.7 (6.0)
Bituminous coal	36.5 (0.1)	36.9 (1.3)	36.9 (1.3)	36.3 (-0.4)	36.3 (-0.4)	37.3 (2.3)	37.3 (2.3)	37.2 (4.9)	37.2 (4.9)
Gas	41.2 (4.1)	41.2 (0.1)	41.2 (0.1)	41.2 (0.1)	41.2 (0.1)	41.2 (0.1)	41.2 (0.1)	41.2 (0.1)	41.2 (0.1)
Refinery capacity (mil BPSD)	3.2 -	3.2 -	3.2 -	3.2 -	3.2 -	3.2 -	3.2 -	3.2 -	3.2 -

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

Source: Korea Electric Power Corporation, Korea National Oil Corporation

Statistics on Energy Consumption

	2020	2021	2022				2023		
			M12	M1	M2		M12	M1	M2
The number of household demanding city gas (mil)	20.1 (2.4)	20.5 (2.0)	20.5 (2.0)	20.6 (1.8)	20.6 (1.8)	20.9 (1.7)	20.9 (1.7)	20.9 (1.6)	21.0 (1.9)
Registered cars (mil)	24.4 (2.9)	24.9 (2.2)	24.9 (2.2)	25.0 (2.2)	25.0 (2.2)	25.5 (2.4)	25.5 (2.4)	25.6 (2.3)	25.6 (2.3)
- gasoline	11.4 (4.1)	11.8 (3.1)	11.8 (3.1)	11.8 (3.0)	11.8 (3.0)	12.1 (2.6)	12.1 (2.6)	12.1 (2.6)	12.1 (2.7)
- diesel	10.0 (0.3)	9.9 (-1.2)	9.9 (-1.2)	9.9 (-1.3)	9.9 (-1.4)	9.8 (-1.2)	9.8 (-1.2)	9.8 (-1.2)	9.7 (-1.4)
- LPG	2.0 (-1.3)	1.9 (-1.7)	1.9 (-1.7)	1.9 (-1.6)	1.9 (-1.6)	1.9 (-2.1)	1.9 (-2.1)	1.9 (-2.2)	1.9 (-2.4)
- hybrid	0.6 (33.1)	0.9 (34.0)	0.9 (34.0)	0.9 (33.0)	0.9 (32.8)	1.1 (28.5)	1.1 (28.5)	1.1 (28.7)	1.2 (28.6)

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

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