

KEEI MONTHLY KOREA ENERGY TRENDS



COAL **-9.3%**
PETROLEUM **-12.5%**
NATURAL GAS **-9.5%**
NUCLEAR **15.8%**
NEW & RENEWABLE **4.0%**
SEPTEMBER. 2022

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



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1. The Economy and the Industry

- **Gross Domestic Product (GDP) posted a year-on-year growth of 3.1% in 3Q, driven by growing private spending and facility investment as well as a slower decline in construction investment.**
 - Private spending rose by 5.7% year-on-year, despite higher inflation, as spending increased on semi-durable goods and services such as food and accommodation. Facility investment went up by 4.1%, which was affected by stronger investment in machinery and transport equipment.
 - Construction investment dropped by 2.1% year-on-year, due to lower investment in the building (-0.4%) and civil engineering (-7.8%) sectors.
- **The mining & manufacturing production index increased by 0.7% year-on-year in September, led by the automobile sector, even though the overall industrial production was sluggish.**
 - The automobile production index was up 31.4% year-on-year, marking the fifth consecutive month of growth, owing to the improved semiconductor supply for automobiles, more work days (+ 0.5 day), the launch of a new model and stronger exports.
 - The iron & steel production index plunged by 27.5% year-on-year amid the business slowdown along with falling demand, and as the major domestic steel makers such as POSCO and Hyundai Steel announced a sharp drop in production due to massive damage caused by Typhoon Hinnamnor.
 - The production index of semiconductor and basic chemical materials dropped by 3.6% and 13.6% respectively, because the factory utilization rates declined partly due to weak export demand.
- **The service production index went up by 5.9% year-on-year, as the sector has continued to recover.**
 - The wholesale & retail production index rose by 2.9% year-on-year, which was boosted by growing private spending. The food & accommodation production index was up 21.3% year-on-year amid a rise in travel demand.

► Major economic and industrial indicators

	2021p			2022p			
		M1~9	M9		M1~9	M7	M8
GDP (trillion won)	1 915.8	1 410.2	478.2	1 452.6	-	-	493.1
	(4.1)	(4.1)	(4.0)	(3.0)	-	-	(3.1)
Total export (\$billion, customs clearance basis)	644.4	467.7	55.9	524.6	60.3	56.6	57.2
	(25.7)	(26.2)	(16.9)	(12.2)	(8.6)	(6.5)	(2.3)
Industrial production index (2015=100)	114.3	112.3	111.1	116.1	118.4	112.2	111.9
	(7.4)	(7.8)	(-1.0)	(3.4)	(1.5)	(1.5)	(0.7)
Semi-conductors	298.6	285.3	330.2	340.1	360.1	324.9	318.4
	(29.4)	(27.9)	(30.5)	(19.2)	(17.3)	(-0.1)	(-3.6)
Basic chemical products	107.9	108.5	110.6	104.1	105.4	103.0	95.6
	(6.7)	(6.0)	(7.5)	(-4.1)	(-6.7)	(-11.1)	(-13.6)
Iron&Steel	97.4	97.2	95.3	93.0	98.5	90.0	69.1
	(5.8)	(7.3)	(2.5)	(-4.3)	(-3.7)	(-8.8)	(-27.5)
Cars	88.2	87.2	73.9	93.0	100.1	89.9	97.1
	(4.5)	(7.9)	(-24.7)	(6.6)	(11.1)	(22.5)	(31.4)
Service production index (2015=100)	110.9	108.9	110.5	114.6	116.1	116.6	117.0
	(4.3)	(4.0)	(3.3)	(5.2)	(4.6)	(7.4)	(5.9)
Wholesale & Retail	106.0	104.5	106.3	107.6	106.9	108.4	109.4

	(4.0)	(4.0)	(0.3)	(3.0)	(0.9)	(6.5)	(2.9)
Food & Accommodation	80.7	77.1	80.6	93.7	108.0	105.5	97.8
	(1.4)	(-4.1)	(11.3)	(21.5)	(29.8)	(31.7)	(21.3)

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

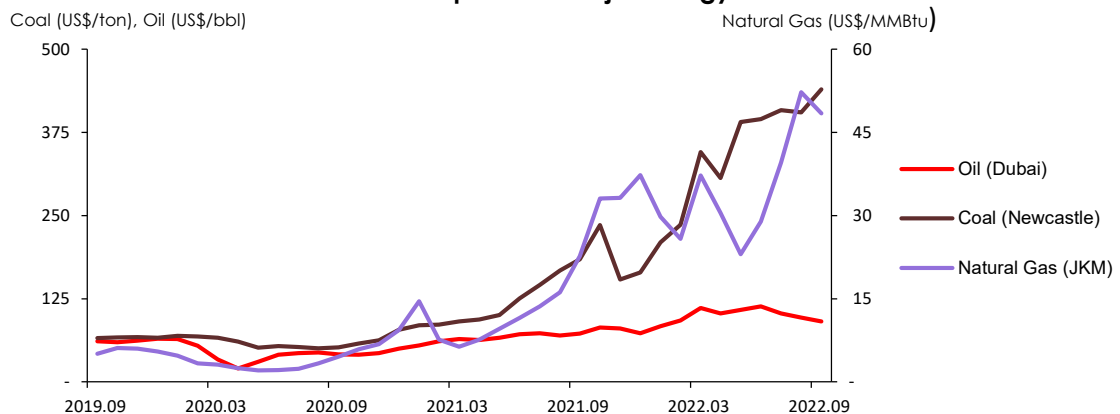
- **Global oil price dropped by 5.9% in September from the previous month, affected by a strong dollar and more concerns about the global economic recession.**
 - The US Federal Reserve showed a strong will to tighten monetary policy, raising the interest rate by 75bp for three consecutive months, and accordingly, the US Dollar Index broke the previous record set in 2002, peaking at 114.11 on September 27, which put a downward pressure on oil prices.
 - Global thermal coal price went up by 8.5% than a month ago amid an ongoing power crunch in major countries such as China and the European Union (EU), despite the global oil price decline, COVID-19 lockdown in China and growing concerns about the global economic recession.
 - Global natural gas price decreased despite a drop in Russian gas supply, because high level of gas stockpiles in Europe eased concerns over supply.

► Global energy prices

	2020	2021				2022			
			M7	M8	M9		M7	M8	M9
Crude oil (US\$/bbl)	42.2	69.3	72.9	69.5	72.6	103.1	96.6	91.0	
	(-33.5)	(64.2)	(1.9)	(-4.7)	(4.5)	(-8.9)	(-6.3)	(-5.9)	
Coal (US\$/ton)	60.2	136.4	145.9	167.2	184.1	408.4	404.9	439.4	
	(-22.8)	(126.5)	(16.4)	(14.6)	(10.1)	(3.4)	(-0.8)	(8.5)	
Natural gas (US\$/MMBtu)									
TTF	3.2	16.2	12.5	15.4	22.8	51.3	69.9	59.0	
	(-32.3)	(398.7)	(21.7)	(23.2)	(47.9)	(53.2)	(36.2)	(-15.5)	
JKM	4.2	17.8	13.6	16.2	22.7	39.5	52.2	48.4	
	(-25.2)	(326.0)	(18.4)	(18.5)	(40.1)	(36.6)	(32.2)	(-7.3)	

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

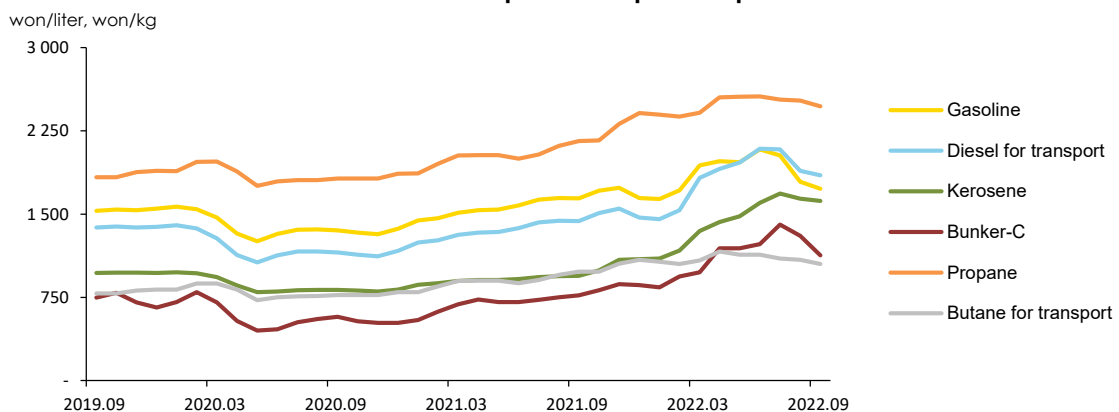
- **Gasoline and diesel prices at gas stations fell by 3.5% and 2.1% respectively in September from the previous month reflecting the downward trend in global prices.**
 - Gasoline and diesel prices have declined for three straight months until September, affected by global prices that have been falling since mid-June.
 - Bunker-C oil price dropped by 13.5% than the prior month in line with the global price trend. On a year-on-year basis, however, it was up 46.9%.
 - Propane and butane prices went down by 2.0% and 3.4% respectively from the previous month, as their supply prices declined in the domestic market.
 - The relative price of propane in terms of city gas (propane/city gas) for industrial customers fell by 14.2% to 0.9 compared to the previous month.

► Domestic petroleum product prices

	2020	2021	2022			2022	2022	2022
			M7	M8	M9	M7	M8	M9
Gasoline (won/liter)	1 381.2 (-6.2)	1 591.1 (15.2)	1 629.3 (3.3)	1 645.8 (1.0)	1 642.7 (-0.2)	2 030.0 (-2.6)	1 792.2 (-11.7)	1 730.0 (-3.5)
Diesel for transport (won/liter)	1 189.5 (-11.3)	1 392.0 (17.0)	1 425.5 (3.7)	1 440.5 (1.1)	1 437.2 (-0.2)	2 084.9 (-0.2)	1 889.3 (-9.4)	1 850.2 (-2.1)
Bunker-C (won/liter)	572.9 (-23.0)	732.2 (27.8)	728.4 (3.1)	750.1 (3.0)	768.2 (2.4)	1 405.7 (14.3)	1 305.3 (-7.1)	1 128.6 (-13.5)
Propane (won/kg)	1 850.3 (-1.0)	2 093.4 (13.1)	2 036.4 (1.8)	2 114.5 (3.8)	2 160.1 (2.2)	2 531.2 (-1.1)	2 522.4 (-0.4)	2 471.2 (-2.0)
Butane for transport (won/liter)	790.8 (-1.9)	932.3 (17.9)	906.3 (3.2)	952.3 (5.1)	980.5 (3.0)	1 100.2 (-3.0)	1 088.8 (-1.0)	1 051.4 (-3.4)

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

► Domestic petroleum product prices



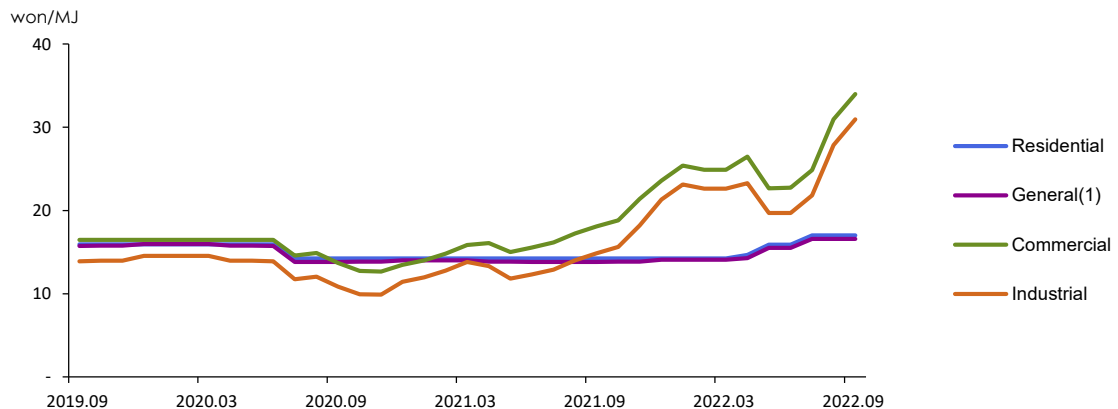
□ **City gas rates for residential and general customers remained flat in September, while the rates for office heating and industrial customers were raised by around 10% than the previous month.**

- City gas rates for residential and general customers remained the same as the previous month, as its material cost, which constitutes a part of the wholesale price, were kept unchanged.
- The material cost of city gas for office heating and industrial customers went up by 11.6% from the previous month due to the rise in LNG import price (16.1%) a month ago, and it soared by 118.6% on a year-on-year basis.

□ **Electric rate for residential customers was flat in September, while the rates for general and industrial customers plunged with the change of seasons.**

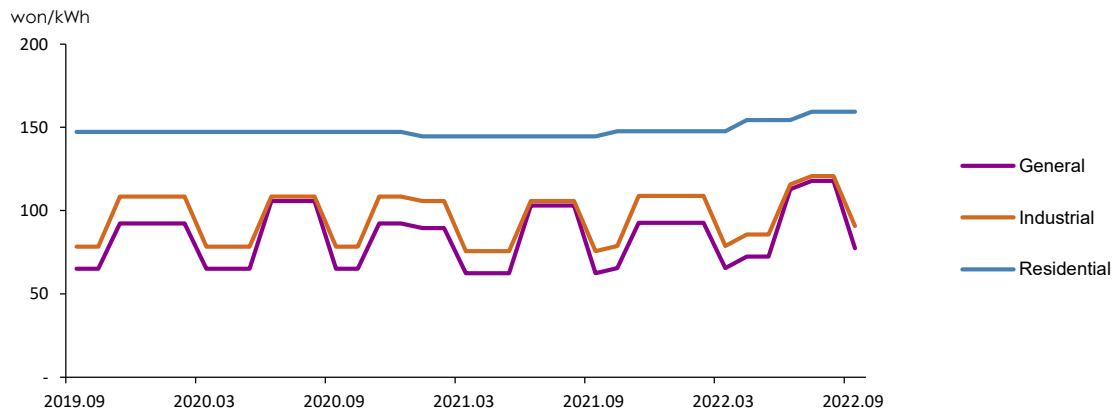
- Electric rates for general and industrial customers went down by 34.4% and 24.9% respectively, as a result of the seasonal rate adjustment for spring·winter from summer.
- The base fuel cost is set to be raised by 9.8 won/kWh in total in 2023, of which 4.9 won/kWh was applied in April, and the rest will be applied later in October.
- The fuel cost pass-through adjustment rate was raised to 5.0 won/kWh, as the quarterly adjustment cap was set higher from ± 3 won/kWh to ± 5 won/kWh, and it remained the same in 3Q.

► **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 fell by 3.0% year-on-year in September, as the import volume of petroleum products and bituminous coal dropped sharply.**
 - The import volume of crude oil posted a year-on-year growth of 7.6% amid the decline in global oil prices for the last three months (July-September).
 - The import volume of petroleum products decreased by 23.3% year-on-year, led by a drop in naphtha imports as a result of the slowdown in the petrochemical sector.
 - The import volume of bituminous coal was down 17.5% year-on-year, owing to the weak performance of the industries that are major source of demand and falling demand from the power generation sector.
 - The gas import volume has increased for two consecutive months, which seems to be the result of stockpiling for the upcoming winter season, even though global natural gas price stayed higher than in the past (113.6% yoy, based on JKM).

► Import and domestic production of energy

	2021p			2022p			
		M1~9	M9	M1~9	M7	M8	M9
Import volume							
Crude oil (Mbbbl)	960.1	707.7	78.6	781.2	98.2	96.9	84.6
	(-2.1)	(-4.9)	(-1.5)	(10.4)	(25.8)	(17.0)	(7.6)
Petroleum product (Mbbbl)	392.4	289.0	34.9	273.9	34.1	28.4	26.7
	(13.0)	(5.1)	(17.6)	(-5.2)	(-7.4)	(-18.2)	(-23.3)
Bituminous coal (Mton)	119.6	90.3	12.3	91.6	11.4	11.8	10.2
	(1.7)	(2.6)	(9.8)	(1.4)	(-14.5)	(14.1)	(-17.5)
Anthracite (Mton)	6.5	4.8	0.5	4.4	0.4	0.5	0.4
	(3.0)	(2.4)	(-15.4)	(-8.0)	(-26.6)	(-32.9)	(-10.1)
LNG (Mton)	45.9	34.3	3.7	34.0	3.3	3.8	4.2
	(14.9)	(21.3)	(26.2)	(-0.9)	(-19.1)	(9.0)	(13.9)
Import volume (Mtoe)	324.3	240.9	28.4	249.5	29.8	30.0	27.5
	(3.9)	(2.6)	(8.0)	(3.6)	(1.1)	(8.7)	(-3.0)
Import value (billion US\$, CIF)	137.2	93.4	12.3	164.4	21.0	20.8	20.0
	(58.5)	(39.9)	(88.9)	(76.1)	(72.9)	(73.0)	(62.3)
Energy share of total import value (%)	22.1	21.0	23.9	29.6	32.2	31.4	32.6
Foreign energy dependence (%)	94.6	94.3	94.7	94.3	94.8	94.3	93.8
Domestic production							
Hydropower (TWh)	3.1	2.5	0.3	2.9	0.4	0.7	0.5
	(-21.2)	(-23.6)	(-52.7)	(16.0)	(8.3)	(141.2)	(63.8)
Anthracite (Mton)	0.9	0.7	0.1	0.6	0.1	0.1	0.1
	(-11.9)	(-13.9)	(-26.7)	(-7.2)	(-13.9)	-	(-1.6)
Natural gas (Mton)	0.0	0.0	0.0	-	-	-	-
	(-70.3)	(-70.5)	(241.7)	(-100.0)	(-100.0)	(-100.0)	(-100.0)
Renewable energy (Mtoe)	14.6	10.9	1.2	10.9	1.1	1.2	1.2
	(15.3)	(17.5)	(10.7)	(-0.4)	(-7.3)	(1.6)	(4.0)

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

4. Energy Consumption

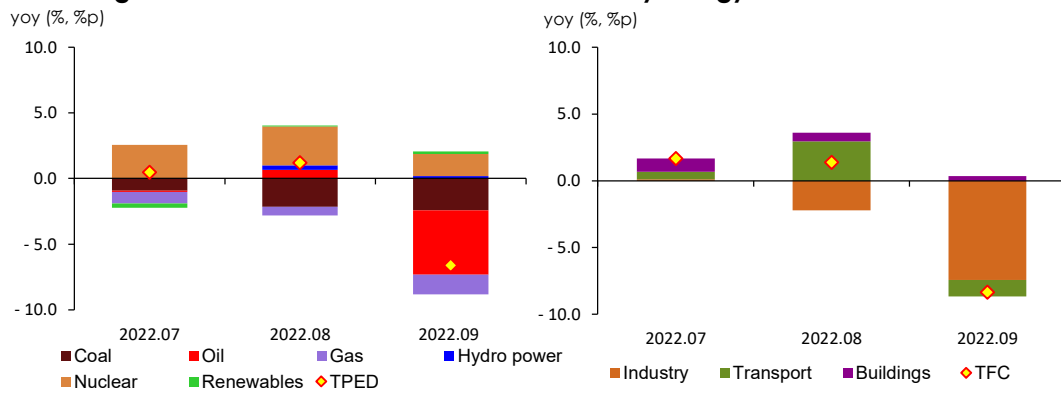
- **The Total Primary Energy Demand (TPED) decreased by 6.6% year-on-year in September, as almost all energy use declined except nuclear energy.**
 - Coal use dropped by 9.3%, as its use for power generation continuously decreased due to higher unit cost of power generation and growing nuclear & renewable generation, and as its industrial use also decreased amid the economic slowdown and the shutdown of some steel plants hit by Typhoon Hinnamnor.
 - Petroleum use decreased by 10.8% year-on-year, as its industrial use plunged (-12.1%), especially naphtha, due to the slump in the petrochemical industry, and it also declined in the transport sector as a result of lower stockpiling demand amid a decline in global oil prices.
 - Gas use dropped by 9.5% year-on-year, as it decreased more rapidly in the industrial and power generation sectors, owing to the global economic slowdown, higher unit cost of generation fuel and increased nuclear generation, although gas use grew in the building sector, affected by recovery of the service sector.
- **Total Final Consumption (TFC) fell by 8.3% year-on-year in September, with the industrial and transport sectors leading the decline, while it slightly increased in the building sector.**
 - Industrial energy use fell sharply by 11.3% despite more work days (+0.5 day), as it steadily dropped in the petrochemical and primary metals sectors, owing to the domestic and global economic recession and damages caused by Typhoon Hinnamnor, and as it started to fall in the fabricated metals sector.
 - Transport energy use went down by 7.0% year-on-year, led by the road transport sector, as gas stations' stockpiling demand decreased due to falling oil prices, even though mobility demand was higher.
 - Energy use in buildings increased by 2.1% year-on-year, mostly in the commercial sector, partly because of the service sector recovery (production index +5.9%).

► Energy consumption

	2021p			2022p			
		M1~9	M9	M1~9	M7	M8	M9
TPED (Mtoe)	303.7	224.9	24.0	225.8	25.8	25.7	22.4
	(5.3)	(4.6)	(5.4)	(0.4)	(0.5)	(1.2)	(-6.6)
TFC (Mtoe)	215.3	159.4	17.1	159.9	17.5	17.6	15.7
	(5.7)	(5.1)	(6.4)	(0.3)	(1.7)	(1.4)	(-8.3)
- Feedstock exclude	140.5	103.8	10.6	104.8	10.9	11.5	10.2
	(3.8)	(4.2)	(2.2)	(0.9)	(1.3)	(5.5)	(-4.0)

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 decreased by 9.3% year-on-year in September, as its use steadily declined in the industrial and power generation sectors.**

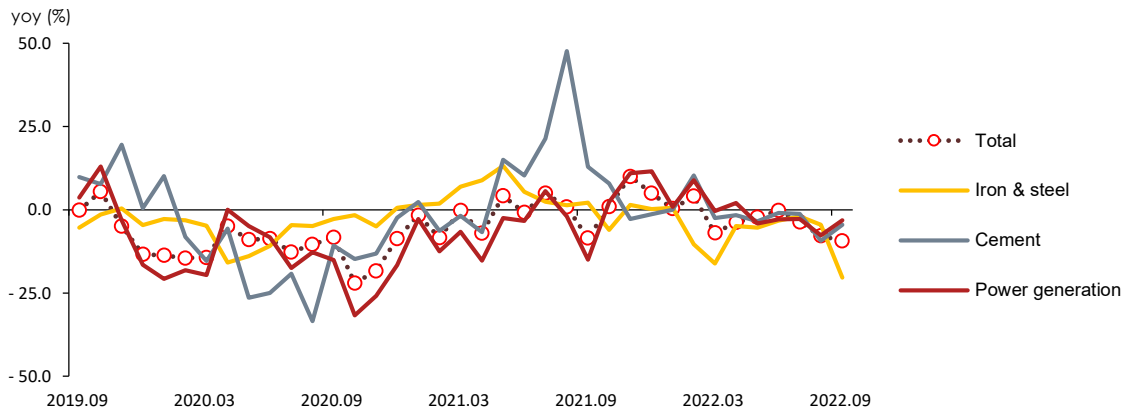
- Industrial coal use has been steadily down since July due to the lower production in the iron & steel and cement industries.
- Coal use dropped in the power generation sector, despite the eased voluntary cap on coal power plants, as coal-fired generation has been falling since May, affected by higher unit cost of generation fuel and growing nuclear and renewable energy.

► Coal consumption

	2021p			2022p			
		M1~9	M9	M1~9	M7	M8	M9
Coal (Mton)	119.8	89.5	10.0	86.4	11.1	10.8	9.0
	(-0.1)	(-1.8)	(-8.5)	(-3.4)	(-3.7)	(-7.8)	(-9.3)
Industry	50.4	37.5	4.2	35.2	4.0	4.0	3.5
	(3.6)	(4.3)	(2.0)	(-6.2)	(-5.3)	(-8.2)	(-17.7)
-Coking-coal	25.5	19.2	2.1	17.6	2.1	2.1	1.7
	(3.0)	(4.9)	(2.2)	(-8.4)	(-2.5)	(-5.2)	(-21.5)
Buildings	0.4	0.2	0.0	0.1	0.0	0.0	0.0
	(-12.0)	(-15.1)	(-11.1)	(-25.5)	(50.0)	(12.8)	(3.1)
Power generation	68.9	51.8	5.7	51.0	7.1	6.7	5.5
	(-2.5)	(-5.7)	(-15.0)	(-1.4)	(-2.8)	(-7.7)	(-3.2)

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

□ **Petroleum use was down 10.8% year-on-year in September, as it dropped in nearly all sub sectors except for power generation.**

- Industrial petroleum use went down by 12.1% year-on-year, because its use as feedstock plunged due to a slump in the petrochemical sector.
- Petroleum use dropped by 7.1% year-on-year in the transport sector, as stockpiling demand decreased at gas stations in line with the downward move in global oil prices.
- Petroleum use in buildings fell by 18.3%, as its use decreased in the residential (-25.8%), commercial (-16.9%) and public (-7.6%) sectors all together.

► Petroleum product consumption by end-use sectors

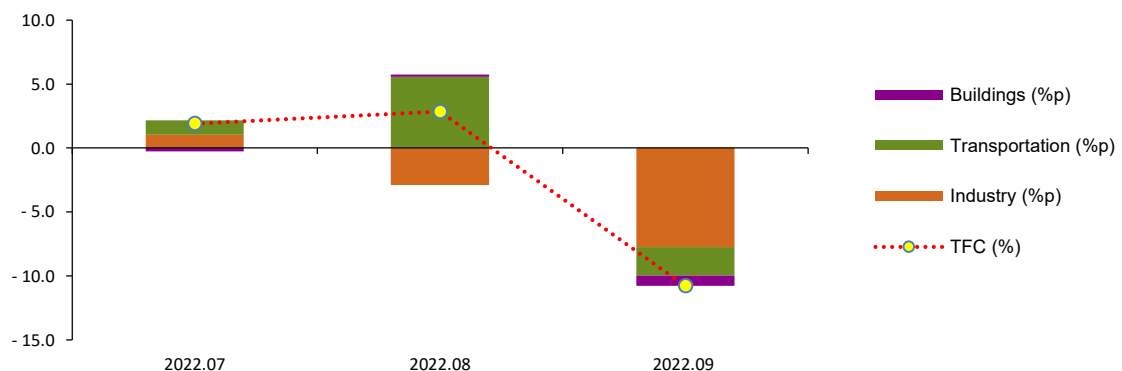
	2021p			2022p			
		M1~9	M9	M1~9	M7	M8	M9
TFC (Mbbbl)	808.3	597.4	68.4	599.2	68.9	69.4	61.1
	(7.5)	(5.4)	(12.3)	(0.3)	(1.9)	(2.8)	(-10.8)
Industry	505.8	374.3	43.7	378.8	43.8	41.7	38.4
	(9.4)	(5.8)	(15.9)	(1.2)	(1.6)	(-4.5)	(-12.1)
- Naphtha	372.5	275.5	32.5	274.0	32.6	30.8	27.8
	(11.6)	(6.1)	(19.3)	(-0.6)	(3.8)	(-6.3)	(-14.4)
Transport	256.5	190.5	21.6	189.2	22.7	25.1	20.1
	(4.5)	(4.8)	(6.3)	(-0.7)	(3.4)	(17.6)	(-7.1)
Buildings	46.1	32.6	3.1	31.2	2.4	2.6	2.5
	(3.0)	(4.7)	(8.6)	(-4.3)	(-6.7)	(4.7)	(-18.3)
Power generation (Mbbbl)	4.08	2.96	0.47	4.02	0.46	0.45	0.32
	(6.6)	(20.6)	(-20.1)	(36.0)	(-20.0)	(108.2)	(-30.8)

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

Source: Korea Energy Economics Institute

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

yoy(% , %p)



7. Gas

□ Gas use decreased by 9.5% year-on-year in September, as it dropped faster in the power generation and industrial sectors.

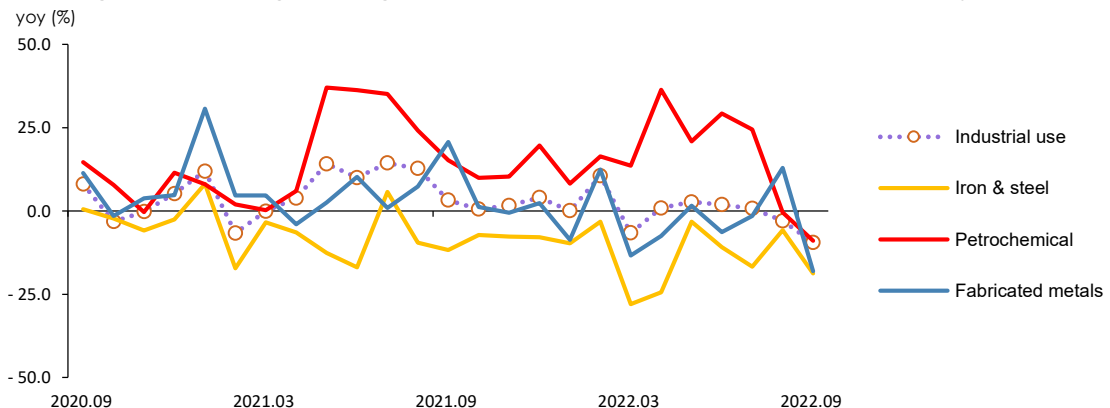
- Gas use for power generation fell more sharply, despite the growth in power use (1.3%), as the unit cost of generation fuel surged (140.8%), and power generation from nuclear and renewable & other energy also drastically increased (15.8%, 28.1%).
- Industrial gas use has been down for two consecutive months, as it dropped faster in the petrochemical and fabricated metals sectors due to the slowdown in domestic and global economies, and as some steel makers suspended operations at their plants, including Posco's steel plant in Pohang, after they were damaged by Typhoon Hinnamnor.
- Gas use in buildings jumped more than 13%, led by the commercial sector, which was contributed to higher travel demand and the recovery of the service sector, including food and accommodation.

► Natural gas and city gas consumption

	2021p			2022p			
		M1~9	M9	M1~9	M7	M8	M9
Natural gas (Mton)	45.9	33.5	2.9	33.0	3.2	3.0	2.6
	(10.6)	(14.7)	(4.3)	(-1.5)	(-4.9)	(-4.0)	(-9.5)
Power generation	23.2	17.6	1.7	16.7	2.0	1.8	1.5
	(16.4)	(22.7)	(6.0)	(-4.8)	(-6.6)	(-5.9)	(-11.0)
City gas production	19.1	13.3	0.9	13.9	1.0	0.9	0.9
	(5.9)	(7.7)	(1.2)	(4.1)	(6.5)	(2.8)	(-1.2)
Industry (Direct private importer)	1.6	1.2	0.1	1.2	0.1	0.1	0.1
	(-0.2)	(-1.8)	(16.5)	(-0.6)	(-10.0)	(1.5)	(-21.1)
City gas (Bm³)	24.8	18.0	1.2	18.6	1.4	1.3	1.2
	(3.0)	(4.2)	(0.2)	(3.5)	(3.2)	(0.3)	(-1.1)
Industry (including directly imported)	9.7	7.2	0.7	7.1	0.8	0.7	0.7
	(5.4)	(6.5)	(3.2)	(-0.2)	(0.7)	(-3.0)	(-9.5)
Buildings	14.1	10.1	0.4	10.7	0.5	0.5	0.5
	(2.0)	(3.2)	(-3.8)	(6.6)	(8.6)	(6.1)	(13.2)

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

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



8. Electricity

- Electricity use grew by mere 1.3% year-on-year in September, even though it grew rapidly in the building sector, owing to the drop in industrial electricity use.
 - Industrial electricity use decreased by 2.7% year-on-year, as it plunged in major industries such as petrochemical and iron & steel.
 - Electricity use in buildings grew by more than 5%, as it kept growing fast in the commercial sector, and it also increased in the residential sector because of higher cooling demand.

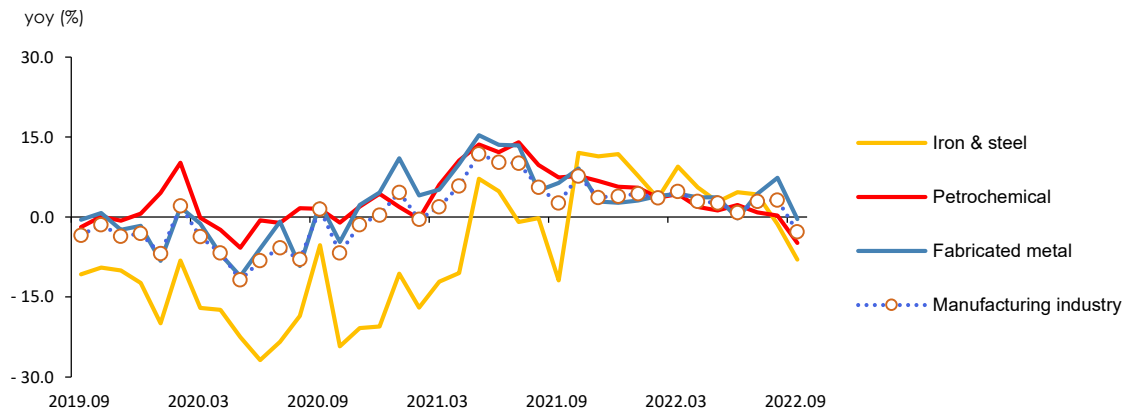
► Electricity consumption by end-use sectors

	2021p			2022p			
		M1~9	M9		M1~9	M7	M8
Electricity (TWh)	521.0	392.3	43.8	406.8	47.4	49.1	44.3
	(4.8)	(4.6)	(-0.8)	(3.7)	(5.7)	(2.6)	(1.3)
Industry	269.6	201.7	22.6	207.1	24.0	23.3	22.0
	(5.8)	(6.0)	(2.9)	(2.7)	(3.1)	(2.6)	(-2.7)
Transport	3.4	2.5	0.3	3.0	0.4	0.4	0.3
	(6.2)	(5.4)	(5.9)	(19.4)	(21.6)	(14.9)	(18.2)
Buildings	248.1	188.1	20.9	196.7	23.1	25.4	22.0
	(3.6)	(3.2)	(-4.6)	(4.6)	(8.3)	(2.4)	(5.4)
Residential	77.6	59.4	6.9	60.5	7.3	8.7	7.2
	(4.7)	(5.3)	(-9.3)	(1.7)	(8.4)	(-3.3)	(3.6)
Commercial	139.9	105.6	11.5	112.3	13.0	13.9	12.3
	(2.7)	(1.4)	(-2.6)	(6.4)	(8.9)	(6.0)	(7.1)

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

Source: Korea Energy Economics Institute

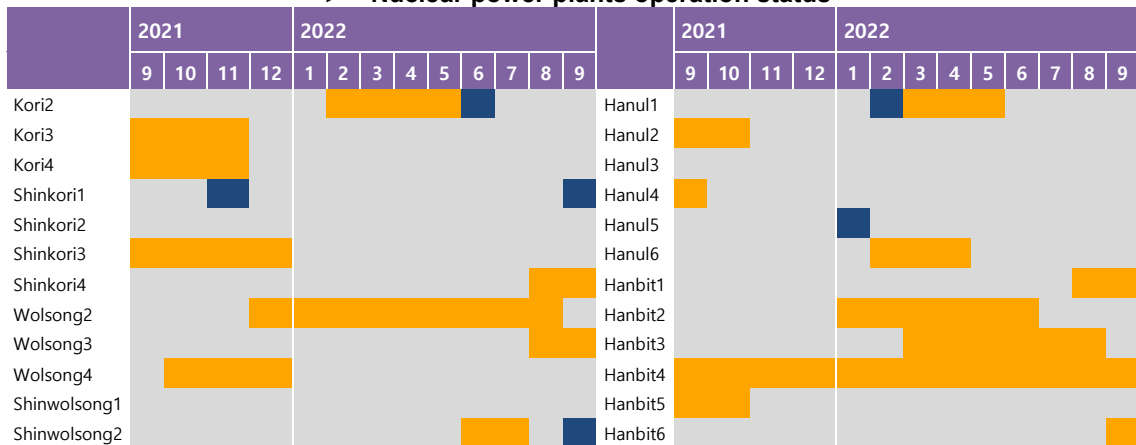
► The growth rate of electricity consumption in manufacturing industry



9. Nuclear

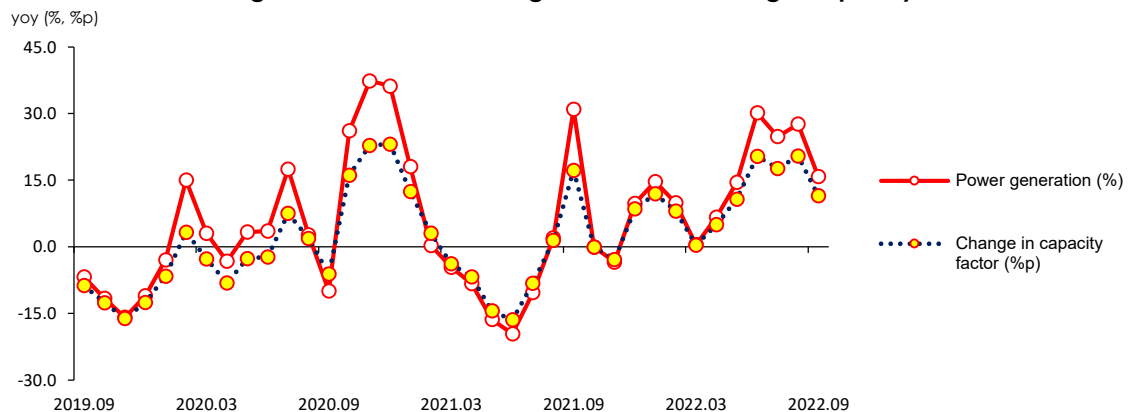
- The total nuclear generation was up 15.8% year-on-year in September, as its capacity factor increased due to a drop in daily average preventive maintenance.
 - The nuclear capacity factor increased by 12%p to 84% from the same month last year, as the number of reactors under planned preventive maintenance fell by two, although the number of unplanned shutdown cases increased by two.
 - Nuclear energy's share of the total power generation rose by 4%p year-on-year to 30.4%.

► Nuclear power plants operation status



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

► The growth rate of nuclear generation & average capacity factor

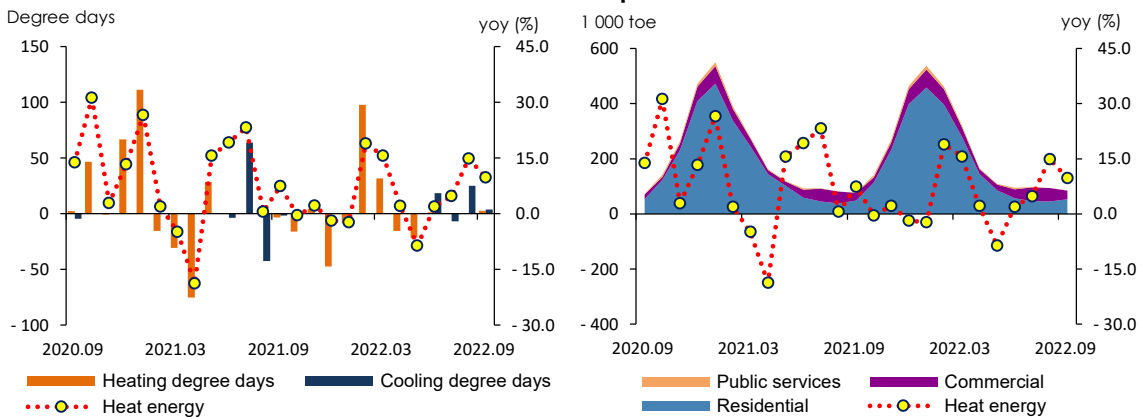


Note: Capacity factor = Ratio of actual power generated to possible power generation when utilizing 100% of available facility. Facility capacity values are based on end-of-the-month data

10. Heat and Renewable energy

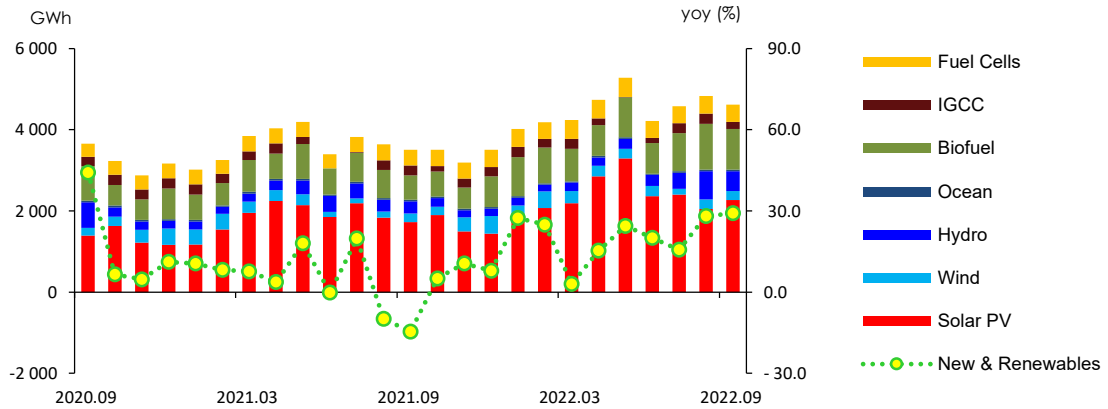
- **Heat energy use posted a year-on-year growth of 9.8% in September, after it has increased in all sectors for three consecutive months.**
 - Heat energy use rose by 9.1% in the residential sector, which accounts for a large share of the total heat energy use, owing to the steady increase in the deployment of district heating and low base effect of the same month last year (-7.0%).
 - Heat energy use increased by 10.4% in the commercial sector, as production increased in the service industry including food and accommodation, driven by growing travel demand.
- **Renewable & other energy use increased by 4.0% year-on-year in September, with the power generation sector leading the growth.**
 - Renewable & other energy generation² jumped 29.1% year-on-year, led by solar PV, bioenergy and hydropower.
 - The final use of renewable & other energy decreased by 2.5% year-on-year, as it was down 0.3% and 11.0% respectively in the industrial and building sectors, though it grew by 1.3% year-on-year in the transport sector.

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



² The power generation from and installed capacity of renewable & other energy sources are based on the data from KEPCO's 'The Monthly Report on Electric Power Statistics'. In the current Energy Balance report, renewable & other energy and hydropower (including pumped storage) data are collected in separate categories, and therefore, hydropower is not included in the renewable & other energy category.

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



11. Industry

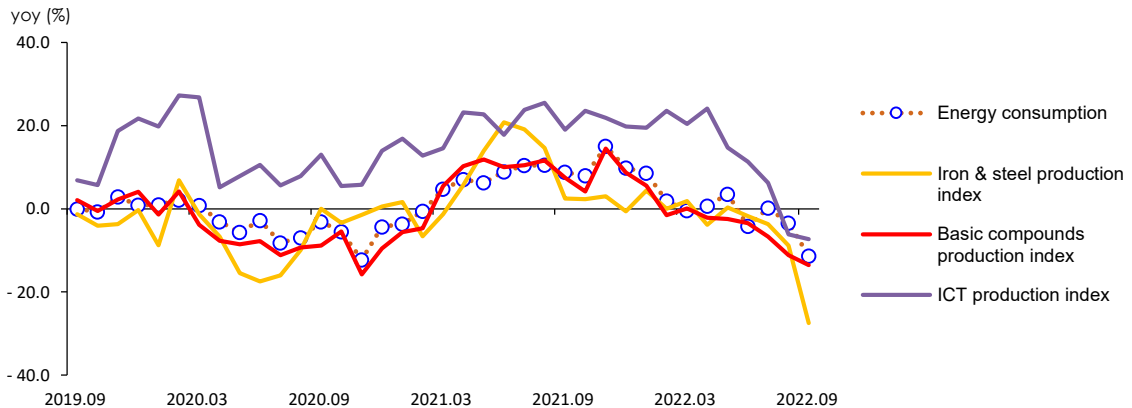
- Industrial energy use dropped by 11.3% year-on-year in September, as it declined in the petrochemical, primary metals and fabricated metals sectors all together.
 - Energy use decreased in the three largest energy consuming industries amid an overall slowdown in the manufacturing sector and damages caused by typhoons, even though the number of work days increased by 0.5 day compared to the same month last year.

► Industrial energy consumption

	2021p			2022p			
		M1~9	M9	M1~9	M7	M8	M9
Industry (Mtoe)	132.6	98.4	11.2	97.9	11.3	10.9	9.9
	(6.9)	(5.7)	(8.8)	(-0.5)	(0.2)	(-3.4)	(-11.3)
Petrochemical	66.2	49.1	5.7	50.1	5.9	5.5	5.0
	(9.6)	(5.9)	(14.4)	(2.0)	(3.8)	(-4.6)	(-11.3)
- Naphtha	45.7	33.8	4.0	33.6	4.0	3.8	3.4
	(11.6)	(6.1)	(19.3)	(-0.6)	(3.8)	(-6.3)	(-14.4)
Iron & Steel	27.9	20.9	2.3	19.4	2.3	2.3	1.9
	(1.7)	(2.7)	(-0.3)	(-7.0)	(-2.7)	(-4.2)	(-19.1)
- Coking coal	17.8	13.4	1.5	12.2	1.5	1.4	1.2
	(3.0)	(4.9)	(2.2)	(-8.4)	(-2.5)	(-5.2)	(-21.5)
Fabricated metal	12.8	9.5	1.1	9.7	1.1	1.1	1.0
	(8.3)	(9.6)	(7.7)	(1.9)	(3.2)	(8.0)	(-2.7)
Share of feedstock (%)	56.3	56.3	57.5	56.1	58.1	56.7	55.0

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 went down by 7.0% year-on-year in September, as it was down almost 8% in the road transport sector.

- In the road transport sector, energy use decreased by 7.8% year-on-year, despite growing mobility demand, due to a drop in stockpiling demand in the field of gas stations.
- In the domestic aviation sector, energy use increased by 1.0% year-on-year as a result of a steady growth in domestic travel demand since the removal of social distancing measures.
- In the domestic navigation sector, energy use grew by 23.3% year-on-year, mainly bunker-C oil, driven by increased coastal transport volume (8.4%, yoy).

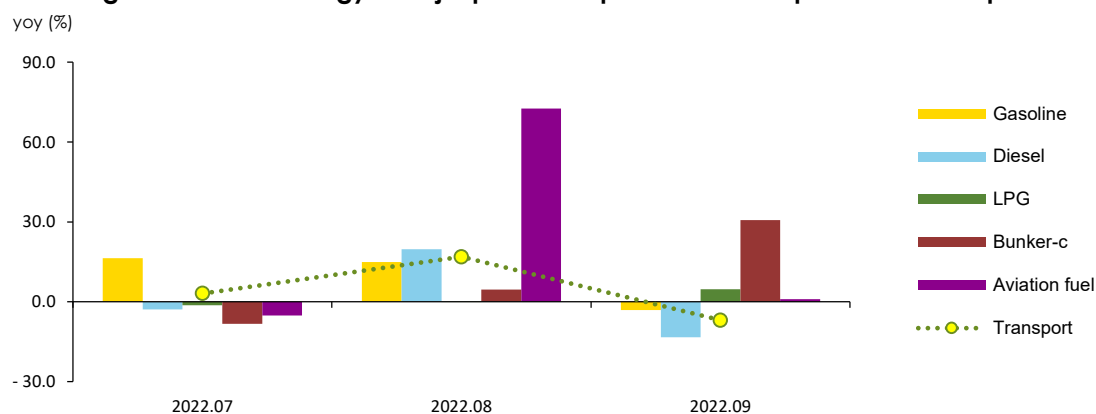
► The growth rate of petroleum consumption in the transport sector

	2021p			2022p			
		M1~9	M9	M1~9	M7	M8	M9
Transport (Mtoe)	36.25	26.97	3.07	26.80	3.21	3.56	2.85
	(4.4)	(4.7)	(5.9)	(-0.6)	(3.1)	(16.8)	(-7.0)
Road	33.94	25.28	2.86	24.93	3.02	3.31	2.64
	(1.5)	(2.0)	(1.8)	(-1.4)	(3.6)	(15.0)	(-7.8)
Domestic navigation	0.38	0.26	0.04	0.38	0.03	0.04	0.04
	(13.7)	(3.9)	(22.1)	(48.6)	(-6.8)	(12.3)	(23.3)
Domestic aviation	1.62	1.21	0.14	1.26	0.13	0.18	0.14
	(159.3)	(144.9)	(412.3)	(4.2)	(-5.1)	(72.4)	(1.0)
Rail	0.30	0.23	0.03	0.23	0.03	0.03	0.02
	(-5.4)	(-5.2)	(-8.2)	(-1.5)	(2.5)	(-2.0)	(-2.0)

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

Source: Korea Energy Economics Institute

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



13. Buildings

□ **Energy use in buildings rose by 2.1% year-on-year in September, led by the commercial sector, amid a recovery in the service industry.**

- In the residential sector, energy use went up by 0.7% (in September), driven by growing electricity use (3.6%), as electricity use surged in August due to scorching heat, and some of which were carried over to the following month in estimation.
- In the commercial sector, energy use increased by 4.4% year-on-year amid stronger production activities in the service sector, marking the eighth consecutive month of growth since January 2022, and it rose by more than 3% from the same month of 2019, which is prior to the COVID-19 pandemic.

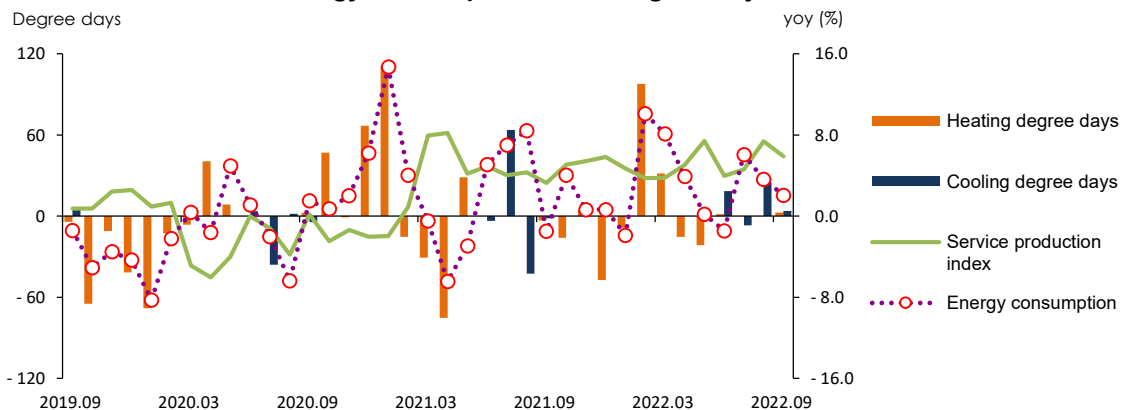
► Energy consumption in buildings

	2021p	2022p					
		M1~9	M9	M1~9	M7	M8	M9
Buildings (Mtoe)	46.4	33.9	2.8	35.2	3.0	3.2	2.9
	(3.1)	(3.7)	(-1.5)	(3.6)	(6.1)	(3.6)	(2.1)
Residential	22.8	16.4	1.1	16.8	1.0	1.1	1.1
	(2.2)	(3.6)	(-5.4)	(2.8)	(7.0)	(-0.9)	(0.7)
Commercial	18.5	13.8	1.4	14.5	1.6	1.7	1.5
	(4.3)	(3.8)	(1.8)	(5.1)	(4.6)	(6.8)	(4.4)
Public others	5.1	3.8	0.4	3.9	0.4	0.4	0.4
	(2.8)	(3.7)	(-1.6)	(1.4)	(9.2)	(4.0)	(-2.5)
Heating degree days	2 404.7	1 492.3	-	1 580.4	-	-	2.6
	(-1.8)	(1.1)	(-100.0)	(5.9)	-	-	-
Cooling degree days	101.3	101.3	-	141.9	60.6	59.0	3.8
	(18.9)	(18.9)	(-100.0)	(40.1)	(-10.0)	(73.5)	-
Service production index (2015=100)	110.9	108.9	110.5	114.6	116.1	116.6	117.0
	(4.3)	(4.0)	(3.3)	(5.2)	(4.6)	(7.4)	(5.9)

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

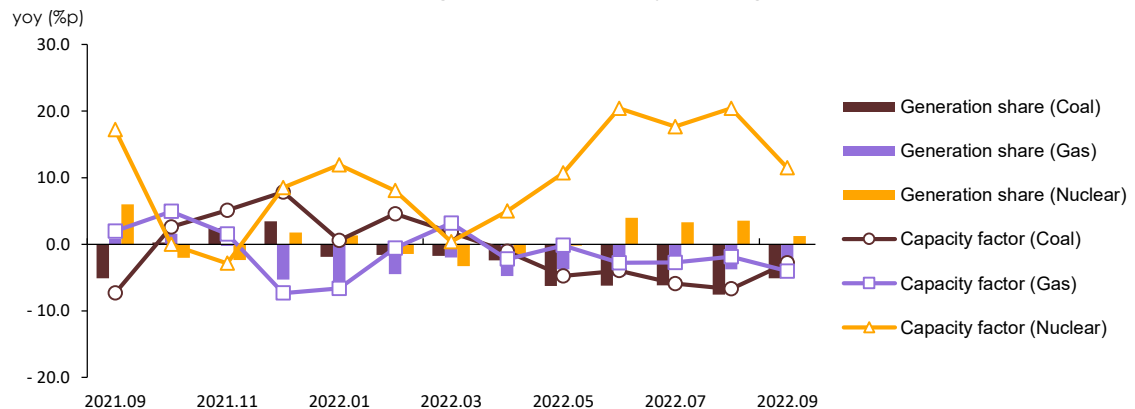
- The total power generation and fuel input rose by no more than 2.0% and 0.9% respectively on a year-on-year basis, owing to the slower growth in electricity use.
 - Nuclear and renewable & other energy generation grew by double digits, while coal and gas-fired generation decreased.
 - In the power generation mix, coal accounted for the largest share (33.6%), followed by nuclear (30.4%), gas (24.6%) and renewable & other energy (11.1%, including pumped storage).

► Power generation by energy sources

	2021p	2022p		2022p			
		M1~9	M9	M1~9	M7	M8	M9
Power Generation (TWh)	576.7	430.3	45.4	446.9	55.0	54.0	46.3
	(4.5)	(4.3)	(1.8)	(3.8)	(1.6)	(4.2)	(2.0)
Coal	198.0	148.1	16.4	144.8	19.7	18.9	15.6
	(0.8)	(-2.4)	(-10.7)	(-2.2)	(-8.0)	(-9.3)	(-5.0)
Oil	2.4	1.7	0.3	1.5	0.1	0.1	0.1
	(4.4)	(20.1)	(-22.2)	(-11.1)	(-65.1)	(3.6)	(-56.6)
Gas	168.3	127.7	12.6	122.4	14.8	13.2	11.4
	(15.4)	(21.6)	(4.9)	(-4.1)	(-5.3)	(-4.1)	(-9.4)
Nuclear	158.0	114.5	12.2	132.4	15.4	16.3	14.1
	(-1.4)	(-2.7)	(31.0)	(15.7)	(24.8)	(27.6)	(15.8)
Renewables	50.1	38.3	4.0	45.6	5.1	5.4	5.1
	(5.5)	(4.7)	(-13.2)	(19.2)	(13.4)	(26.5)	(28.1)
Baseload	356.0	262.6	28.6	277.3	35.0	35.2	29.7
	(-0.2)	(-2.5)	(3.3)	(5.6)	(4.0)	(4.8)	(3.9)

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			
			M1~9	M7	M8	M9	M1~9	M7	M8	M9
GDP (trillion won)	1 839.5 (-0.7)	1 915.8 (4.1)	1 410.2 (4.1)	-	-	478.2 (4.0)	1 452.6 (3.0)	-	-	493.1 (3.1)
Private consumption	851.0 (-4.8)	882.5 (3.7)	654.1 (2.9)	-	-	221.3 -	684.5 (4.7)	-	-	233.9 -
Facilities investment	166.6 (7.2)	181.6 (9.0)	135.7 (10.8)	-	-	42.4 -	131.5 (-3.1)	-	-	44.1 -
Construction investment	269.3 (1.5)	265.0 (-1.6)	193.2 (-1.6)	-	-	65.8 -	186.1 (-3.7)	-	-	64.4 -
Consumer price index (2015=100)	105.4	102.5	102.1	102.3	102.8	103.2	107.2	108.7	108.6	108.9
USD to KRW exchange rate (won)	1 180.3	1 144.0	1 130.9	1 144.0	1 160.3	1 169.5	1 267.8	1 307.4	1 318.4	1 391.6
Benchmark rate (%)	0.7	0.6	0.6	0.5	0.8	0.8	1.8	2.3	2.5	2.5
Coincident composite index (2015=100)	112.5	116.9	116.3	117.3	117.6	117.8	121.5	122.2	123.1	123.4
Mining & manufacturing production index (2015=100)	106.4	114.3	112.3	116.6	110.5	111.1	116.1	118.4	112.2	111.9
Manufacturing operation ratio index (2015=100)	95.3	99.8	98.2	102.1	95.8	96.6	101.1	102.2	98.0	97.9
Average temperature	13.0	13.3	15.0	26.0	24.8	21.3	14.8	25.9	25.3	21.0
- year-on-year difference	-0.4	0.3	0.1	3.5	-1.7	1.2	-0.2	-0.1	0.5	-0.4
Heating degree days	2 448.0 (3.3)	2 404.7 (-1.8)	1 492.3 (1.1)	-	-	- (-100.0)	1 580.4 (5.9)	-	-	2.6 -
Cooling degree days	85.2 (-29.2)	101.3 (18.9)	101.3 (18.9)	67.3 (1822.9)	34.0 (-55.6)	- (-100.0)	141.9 (40.1)	60.6 (-10.0)	59.0 (73.5)	3.8 -
Energy intensity	0.16 (-2.8)	0.16 (1.1)	0.16 (0.5)	-	-	0.16 (2.8)	0.16 (-2.5)	-	-	0.15 (-4.5)
Per capita consumption										
Oil (bbl)	15.0 (-4.2)	16.1 (7.4)	11.9 (5.2)	1.4 (10.1)	1.3 (11.1)	1.4 (10.3)	11.9 (-0.2)	1.4 (-0.2)	1.4 (2.0)	1.2 (-12.3)
Electricity (MWh)	9.6 (-2.2)	10.1 (5.0)	7.6 (4.8)	0.9 (9.5)	0.9 (10.1)	0.8 (-0.6)	7.9 (3.9)	0.9 (6.0)	1.0 (2.8)	0.9 (1.5)
City gas (1 000 m ³)	0.4 (-2.1)	0.4 (3.5)	0.3 (4.9)	0.0 (5.6)	0.0 (2.5)	0.0 (-2.0)	0.3 (4.1)	0.0 (5.6)	0.0 (0.4)	0.0 (2.6)
Total energy (toe)	5.6 (-3.6)	5.9 (5.5)	4.3 (4.8)	0.5 (9.6)	0.5 (5.8)	0.5 (5.6)	4.4 (0.6)	0.5 (0.7)	0.5 (1.4)	0.4 (-6.4)

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

	2020	2021					2022			
			M1~9	M7	M8	M9	M1~9	M7	M8	M9
Industrial production index										
All industry	107.4 (-1.0)	112.7 (4.9)	110.5 (4.6)	111.9 (4.6)	108.7 (6.0)	111.3 (1.5)	115.1 (4.1)	116.1 (3.8)	113.9 (4.8)	114.9 (3.2)
Mining & manufacturing	106.4 (-0.3)	114.3 (7.4)	112.3 (7.8)	116.6 (8.5)	110.5 (10.8)	111.1 (-1.0)	116.1 (3.4)	118.4 (1.5)	112.2 (1.5)	111.9 (0.7)
Semiconductor	230.7 (22.7)	298.6 (29.4)	285.3 (27.9)	307.0 (34.6)	325.2 (36.9)	330.2 (30.5)	340.1 (19.2)	360.1 (17.3)	324.9 (-0.1)	318.4 (-3.6)
Iron & steel	92.1 (-6.3)	97.4 (5.8)	97.2 (7.3)	102.3 (19.1)	98.7 (14.6)	95.3 (2.5)	93.0 (-4.3)	98.5 (-3.7)	90.0 (-8.8)	69.1 (-27.5)
Cement	87.2 (-7.5)	91.6 (5.0)	89.3 (5.9)	94.2 (15.3)	84.5 (15.6)	82.9 (-7.7)	87.9 (-1.6)	94.2 -	86.8 (2.7)	85.4 (3.0)
Basic compound	101.1 (-7.1)	107.9 (6.7)	108.5 (6.0)	113.0 (10.5)	115.9 (11.7)	110.6 (7.5)	104.1 (-4.1)	105.4 (-6.7)	103.0 (-11.1)	95.6 (-13.6)
Transport equipment	84.4 (-9.6)	88.2 (4.5)	87.2 (7.9)	90.1 (-3.7)	73.4 (6.8)	73.9 (-24.7)	93.0 (6.6)	100.1 (11.1)	89.9 (22.5)	97.1 (31.4)
Electric & electronic	108.5 (-1.0)	115.2 (6.1)	112.1 (6.8)	118.8 (6.4)	110.1 (10.0)	109.2 (-8.6)	114.7 (2.3)	119.2 (0.3)	111.5 (1.3)	114.3 (4.7)
Service	106.2 (-2.0)	110.9 (4.3)	108.9 (4.0)	111.0 (4.0)	108.6 (4.3)	110.5 (3.3)	114.6 (5.2)	116.1 (4.6)	116.6 (7.4)	117.0 (5.9)
Wholesale and retail	101.9 (-2.6)	106.0 (4.0)	104.5 (4.0)	105.9 (5.4)	101.8 (5.3)	106.3 (0.3)	107.6 (3.0)	106.9 (0.9)	108.4 (6.5)	109.4 (2.9)
Food & Accommodation	79.6 (-18.4)	80.7 (1.4)	77.1 (-4.1)	83.2 (-8.0)	80.1 (-5.3)	80.6 (11.3)	93.7 (21.5)	108.0 (29.8)	105.5 (31.7)	97.8 (21.3)
Production output										
Iron & steel - Pig iron	45 359.6 (-4.5)	46 440.5 (2.4)	34 830.7 (4.2)	4 015.3 (2.8)	4 022.7 (-1.7)	3 818.2 (-3.7)	32 440.5 (-6.9)	3 955.1 (-1.5)	3 853.9 (-4.2)	3 169.0 (-17.0)
Iron & steel - Crude steel	67 078.8 (-6.1)	70 418.0 (5.0)	52 866.9 (6.7)	6 124.3 (10.8)	6 103.8 (5.7)	5 440.8 (-5.3)	50 648.8 (-4.2)	6 275.7 (2.5)	5 933.5 (-2.8)	4 607.7 (-15.3)
Petrochemical - Basic petrochemicals	30 542.7 (-4.0)	34 434.5 (12.7)	25 545.5 (8.7)	3 099.1 (19.3)	3 130.6 (21.0)	3 021.5 (19.9)	25 348.8 (-0.8)	2 912.4 (-6.0)	2 764.3 (-11.7)	2 552.8 (-15.5)
Petrochemical - Intermediate raw material	15 369.0 (-4.0)	15 764.6 (2.6)	11 945.7 (1.6)	1 337.5 (3.9)	1 445.4 (14.5)	1 395.8 (11.0)	10 636.7 (-11.0)	1 156.0 (-13.6)	1 195.2 (-17.3)	1 116.8 (-20.0)
Petrochemical - 3 major products	21 268.9 (-1.5)	23 197.8 (9.1)	17 277.5 (7.6)	2 062.1 (18.0)	2 061.2 (14.0)	1 987.5 (14.8)	17 118.6 (-0.9)	1 876.7 (-9.0)	1 820.9 (-11.7)	1 674.2 (-15.8)
The number of cars	3 506.8 (-11.2)	3 462.4 (-1.3)	2 576.6 (1.1)	297.6 (-13.9)	234.9 (0.7)	229.4 (-33.0)	2 695.8 (4.6)	324.7 (9.1)	284.4 (21.1)	307.7 (34.1)

Note: p means provisional

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

International Energy Prices

	2020	2021					2022			
			M1~9	M7	M8	M9	M1~9	M7	M8	M9
Crude oil (USD/bbl)										
WTI	39.4 (-30.9)	67.9 (72.4)	64.8 (69.2)	72.4 (77.7)	67.7 (59.7)	71.5 (80.5)	98.1 (51.3)	99.4 (37.2)	91.5 (35.1)	83.8 (17.1)
Dubai	42.2 (-33.6)	69.3 (64.1)	66.2 (59.9)	72.9 (68.4)	69.5 (58.0)	72.6 (75.0)	100.2 (51.3)	103.1 (41.4)	96.6 (39.0)	91.0 (25.2)
Brent	43.2 (-32.7)	70.8 (63.8)	67.8 (59.4)	74.3 (71.9)	70.5 (56.6)	74.9 (78.8)	102.3 (51.0)	105.1 (41.5)	97.7 (38.6)	90.6 (21.0)
Unit value of import (C&F)	44.8 (-31.7)	70.2 (56.9)	66.9 (48.7)	73.9 (88.5)	73.6 (64.9)	73.9 (66.1)	104.3 (56.0)	115.9 (56.7)	108.2 (47.0)	105.2 (42.4)
LNG										
TTF (USD/MMBTU)	3.2 (-32.5)	16.1 (396.9)	10.7 (314.5)	12.5 (594.6)	15.4 (438.5)	22.8 (477.4)	41.4 (285.8)	51.3 (310.0)	69.9 (353.2)	59.0 (159.1)
JKM (USD/MMBTU)	4.2 (-25.4)	17.8 (324.9)	12.2 (289.5)	13.6 (479.5)	16.2 (384.9)	22.7 (397.0)	35.0 (187.6)	39.5 (189.7)	52.2 (223.1)	48.4 (113.6)
Import price(Japan) (USD/MMBTU)	8.3 (-21.3)	10.8 (29.5)	9.6 (9.0)	10.4 (33.0)	10.8 (70.3)	11.4 (94.4)	17.7 (84.6)	18.9 (82.3)	21.2 (96.4)	23.7 (107.5)
Unit value of import (USD/ton, CIF)	390.2 (-22.8)	550.7 (41.2)	471.3 (13.6)	498.1 (29.7)	535.0 (68.5)	571.0 (116.8)	986.7 (109.3)	1 032.4 (107.3)	1 198.8 (124.1)	1 470.5 (157.5)
Bituminous coal (USD/ton)										
From Australia	60.3 (-22.8)	136.0 (125.8)	119.9 (105.6)	145.9 (179.3)	167.2 (231.2)	184.1 (254.0)	348.4 (190.7)	408.4 (179.9)	404.9 (142.2)	439.4 (138.7)
Unit value of import (CIF)	77.7 (-22.9)	115.1 (48.1)	97.2 (21.7)	102.8 (49.4)	114.8 (62.4)	126.2 (84.5)	230.6 (137.3)	254.6 (147.8)	242.5 (111.2)	203.1 (60.9)
Petroleum product (USD/bbl)										
Gasoline	46.7 (-35.7)	80.3 (72.2)	75.8 (65.0)	85.4 (83.0)	81.0 (67.9)	84.1 (78.0)	122.2 (61.1)	121.7 (42.6)	110.9 (37.0)	97.8 (16.4)
Kerosene	44.7 (-42.1)	75.1 (67.9)	70.6 (60.6)	77.3 (75.9)	74.1 (71.0)	79.9 (103.1)	129.5 (83.3)	134.9 (74.6)	132.2 (78.5)	120.9 (51.3)
Diesel	49.4 (-36.8)	77.6 (57.2)	73.2 (47.7)	79.9 (59.3)	76.5 (54.8)	83.0 (87.7)	138.3 (89.0)	145.3 (81.9)	139.7 (82.5)	129.1 (55.7)
Bunker-C	39.2 (-31.9)	64.4 (64.3)	62.0 (65.1)	66.2 (68.3)	65.2 (54.3)	73.5 (85.4)	88.9 (43.4)	79.4 (20.0)	78.2 (20.0)	66.2 (-9.9)
Propane	397.1 (-8.6)	647.9 (63.2)	590.0 (51.3)	620.0 (72.2)	660.0 (80.8)	665.0 (82.2)	777.2 (31.7)	725.0 (16.9)	670.0 (1.5)	650.0 (-2.3)
Butane	403.8 (-8.6)	629.6 (55.9)	575.6 (45.3)	620.0 (82.4)	655.0 (89.9)	665.0 (87.3)	776.7 (34.9)	725.0 (16.9)	660.0 (0.8)	630.0 (-5.3)
Naphtha	40.5 (-28.9)	70.6 (74.6)	66.9 (69.2)	75.5 (73.6)	70.7 (64.8)	75.0 (74.5)	87.4 (30.8)	81.6 (8.1)	72.0 (1.8)	67.1 (-10.6)

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

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

Domestic Energy Prices

	2020	2021					2022			
			M1~9	M7	M8	M9	M1~9	M7	M8	M9
Petroleum product										
Gasoline (won/liter)	1 381.6 (-6.1)	1 590.5 (15.1)	1 554.4 (11.4)	1 629.3 (19.8)	1 645.8 (20.9)	1 642.7 (21.5)	1 874.2 (20.6)	2 030.0 (24.6)	1 792.2 (8.9)	1 730.0 (5.3)
Diesel (won/liter)	1 189.8 (-11.2)	1 391.3 (16.9)	1 351.9 (12.1)	1 425.5 (22.6)	1 440.5 (23.8)	1 437.2 (24.5)	1 844.6 (36.4)	2 084.9 (46.3)	1 889.3 (31.2)	1 850.2 (28.7)
Bunker-C (won/liter)	573.6 (-22.9)	731.7 (27.6)	693.4 (17.5)	728.4 (38.8)	750.1 (35.5)	768.2 (33.6)	1 133.7 (63.5)	1 405.7 (93.0)	1 305.3 (74.0)	1 128.6 (46.9)
Propane (won/kg)	1 850.7 (-1.0)	2 092.6 (13.1)	2 025.0 (9.1)	2 036.4 (12.8)	2 114.5 (17.1)	2 160.1 (18.6)	2 486.7 (22.8)	2 531.2 (24.3)	2 522.4 (19.3)	2 471.2 (14.4)
Butane (won/liter)	791.1 (-1.9)	931.9 (17.8)	895.5 (12.7)	906.3 (19.3)	952.3 (25.2)	980.5 (27.1)	1 097.5 (22.6)	1 100.2 (21.4)	1 088.8 (14.3)	1 051.4 (7.2)
City gas(won/MJ)										
Residential	15.1 (-3.6)	14.2 (-5.7)	14.2 (-7.4)	14.2 -	14.2 -	14.2 -	15.6 (9.4)	17.0 (19.5)	17.0 (19.5)	17.0 (19.5)
General(1)	14.9 (-4.7)	13.9 (-6.5)	13.9 (-8.6)	13.8 (-0.0)	13.8 (-0.0)	13.8 (-0.0)	15.3 (9.9)	16.6 (20.2)	16.6 (20.2)	16.6 (20.2)
Commercial	15.1 (-6.4)	17.2 (14.2)	15.9 (0.6)	16.2 (10.7)	17.2 (15.7)	18.1 (32.2)	26.3 (65.9)	24.9 (54.0)	30.9 (79.4)	34.0 (87.9)
Industry	12.6 (-8.4)	14.4 (14.2)	13.1 (-2.0)	12.9 (9.9)	14.0 (16.0)	14.8 (36.9)	23.5 (79.9)	21.8 (69.1)	27.9 (99.3)	30.9 (108.4)
Heat(won/Mcal)										
Residential	66.2 (0.7)	65.2 (-1.4)	65.2 (-1.9)	65.2 -	65.2 -	65.2 -	68.9 (5.6)	74.5 (14.2)	74.5 (14.2)	74.5 (14.2)
Commercial	85.9 (0.7)	84.7 (-1.4)	84.7 (-1.9)	84.7 -	84.7 -	84.7 -	89.5 (5.6)	96.7 (14.2)	96.7 (14.2)	96.7 (14.2)
Public	75.1 (0.7)	74.0 (-1.4)	74.0 (-1.9)	74.0 -	74.0 -	74.0 -	78.1 (5.6)	84.5 (14.2)	84.5 (14.2)	84.5 (14.2)
Electricity(won/kWh)										
Residential	147.3 -	142.3 (-3.4)	142.3 (-3.4)	142.3 (-3.4)	142.3 (-3.4)	142.3 (-3.4)	145.6 (2.3)	147.2 (3.4)	147.2 (3.4)	147.2 (3.4)
General	84.4 -	79.4 (-5.9)	79.7 (-5.9)	100.7 (-4.7)	100.7 (-4.7)	60.2 (-7.7)	83.0 (4.1)	105.6 (4.9)	105.6 (4.9)	65.1 (8.1)
Industry	96.0 -	91.0 (-5.2)	90.2 (-5.3)	103.5 (-4.6)	103.5 (-4.6)	73.5 (-6.4)	93.4 (3.6)	108.4 (4.7)	108.4 (4.7)	78.4 (6.7)

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	2021p					2022p			
			M1~9	M7	M8	M9	M1~9	M7	M8	M9
Coal (Mton)	119.9 (-12.3)	119.8 (-0.1)	89.5 (-1.8)	11.5 (5.0)	11.7 (0.9)	10.0 (-8.5)	86.4 (-3.4)	11.1 (-3.7)	10.8 (-7.8)	9.0 (-9.3)
- Coking coal excluded	95.1 (-14.0)	94.3 (-0.9)	70.3 (-3.5)	9.4 (5.6)	9.5 (0.8)	7.8 (-11.1)	68.8 (-2.1)	9.0 (-4.0)	8.7 (-8.4)	7.4 (-6.0)
Oil (Mbbl)	775.7 (-4.0)	831.8 (7.2)	614.9 (5.0)	70.1 (10.0)	69.6 (10.9)	70.7 (10.1)	612.0 (-0.5)	69.8 (-0.4)	70.9 (1.8)	61.9 (-12.5)
LNG (Mton)	41.5 (1.2)	45.9 (10.6)	33.5 (14.7)	3.4 (32.4)	3.1 (4.3)	2.9 (4.3)	33.0 (-1.5)	3.2 (-4.9)	3.0 (-4.0)	2.6 (-9.5)
Hydro (TWh)	3.9 (39.0)	3.1 (-21.2)	2.5 (-23.6)	0.4 (-1.9)	0.3 (-64.1)	0.3 (-52.7)	2.9 (16.0)	0.4 (8.3)	0.7 (141.2)	0.5 (63.8)
Nuclear (TWh)	160.2 (9.8)	158.0 (-1.4)	114.5 (-2.7)	12.3 (-10.3)	12.8 (2.0)	12.2 (31.0)	132.4 (15.7)	15.4 (24.8)	16.3 (27.6)	14.1 (15.8)
Others (Mtoe)	12.6 (9.4)	14.6 (15.3)	10.9 (17.5)	1.2 (27.7)	1.2 (16.4)	1.2 (10.7)	10.9 (-0.4)	1.1 (-7.3)	1.2 (1.6)	1.2 (4.0)
TPED (Mtoe)	288.4 (-3.4)	303.7 (5.3)	224.9 (4.6)	25.7 (9.4)	25.3 (5.6)	24.0 (5.4)	225.8 (0.4)	25.8 (0.5)	25.7 (1.2)	22.4 (-6.6)

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

Share of TPED by Sources

(unit: %)

	2020	2021p					2022p			
			M1~9	M7	M8	M9	M1~9	M7	M8	M9
Coal	25.2	24.0	24.2	27.2	27.8	25.2	23.2	26.2	25.4	24.4
- Coking coal excluded	19.2	18.1	18.2	21.3	21.9	18.9	17.8	20.4	19.8	19.1
Oil	39.3	40.1	40.0	39.9	40.3	43.0	39.6	39.7	40.5	40.8
LNG	18.8	19.7	19.5	17.4	15.9	15.9	19.1	16.5	15.1	15.4
Hydro	0.3	0.2	0.2	0.3	0.2	0.3	0.3	0.3	0.6	0.5
Nuclear	11.8	11.1	10.8	10.2	10.7	10.8	12.5	12.7	13.5	13.4
Others	4.4	4.8	4.9	4.7	4.7	4.8	4.8	4.3	4.7	5.4
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)

	2020	2021p					2022p			
			M1~9	M7	M8	M9	M1~9	M7	M8	M9
Industry	124.0 (-4.1)	132.6 (6.9)	98.4 (5.7)	11.2 (10.4)	11.2 (10.5)	11.2 (8.8)	97.9 (-0.5)	11.3 (0.2)	10.9 (-3.4)	9.9 (-11.3)
Transport	34.7 (-6.6)	36.3 (4.4)	27.0 (4.7)	3.1 (5.3)	3.0 (1.9)	3.1 (5.9)	26.8 (-0.6)	3.2 (3.1)	3.6 (16.8)	2.9 (-7.0)
Residential	22.4 (4.2)	22.8 (2.2)	16.4 (3.6)	1.0 (4.5)	1.1 (11.8)	1.1 (-5.4)	16.8 (2.8)	1.0 (7.0)	1.1 (-0.9)	1.1 (0.7)
commercial	17.7 (-5.3)	18.5 (4.3)	13.8 (3.8)	1.5 (9.2)	1.6 (7.1)	1.4 (1.8)	14.5 (5.1)	1.6 (4.6)	1.7 (6.8)	1.5 (4.4)
Public	5.0 (-3.4)	5.1 (2.8)	3.8 (3.7)	0.4 (5.3)	0.4 (4.1)	0.4 (-1.6)	3.9 (1.4)	0.4 (9.2)	0.4 (4.0)	0.4 (-2.5)
TFC	203.8 (-3.8)	215.3 (5.7)	159.4 (5.1)	17.2 (8.9)	17.4 (8.5)	17.1 (6.4)	159.9 (0.3)	17.5 (1.7)	17.6 (1.4)	15.7 (-8.3)
Coal (Mton)	49.2 (-5.3)	50.8 (3.4)	37.7 (4.1)	4.3 (3.9)	4.4 (6.0)	4.3 (1.9)	35.4 (-6.2)	4.0 (-5.2)	4.0 (-8.1)	3.5 (-17.6)
Oil (Mbbbl)	752.3 (-5.5)	808.3 (7.5)	597.4 (5.4)	67.6 (10.8)	67.5 (10.0)	68.4 (12.3)	599.2 (0.3)	68.9 (1.9)	69.4 (2.8)	61.1 (-10.8)
- Non-energy oil excluded	336.2 (-5.3)	347.2 (3.3)	255.9 (4.1)	27.9 (4.7)	26.8 (1.9)	28.4 (6.0)	250.4 (-2.2)	27.6 (-1.2)	31.0 (15.8)	26.2 (-7.7)
Electricity (TWh)	497.3 (-2.0)	521.0 (4.8)	392.3 (4.6)	44.9 (9.3)	47.8 (9.9)	43.8 (-0.8)	406.8 (3.7)	47.4 (5.7)	49.1 (2.6)	44.3 (1.3)
City gas (Bm³)	22.0 (-2.0)	22.7 (3.3)	16.5 (4.7)	1.1 (5.4)	1.1 (2.3)	1.1 (-2.2)	17.1 (3.9)	1.2 (5.4)	1.1 (0.1)	1.1 (2.4)
Heat:others (1 000 toe)	9.3 (3.1)	9.9 (6.4)	7.2 (7.6)	0.7 (8.3)	0.6 (10.3)	0.6 (5.6)	7.3 (1.9)	0.7 (1.9)	0.7 (2.4)	0.6 (-1.0)

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	2021p					2022p			
			M1~9	M7	M8	M9	M1~9	M7	M8	M9
Industry	60.9	61.6	61.8	65.4	64.7	65.5	61.2	64.4	61.6	63.3
Transport	17.0	16.8	16.9	18.1	17.5	17.9	16.8	18.4	20.2	18.2
Residential	11.0	10.6	10.3	5.6	6.6	6.2	10.5	5.9	6.5	6.8
Commercial	8.7	8.6	8.6	8.7	9.0	8.2	9.0	8.9	9.5	9.3
Public	2.4	2.4	2.4	2.2	2.2	2.2	2.4	2.4	2.3	2.3
TFC	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0
Coal	15.3	14.9	15.0	15.8	15.8	15.7	14.0	14.8	14.4	14.2
Oil	47.0	47.8	47.7	49.9	49.2	51.1	47.6	49.9	50.4	49.5
- Non-energy oil excluded	22.0	21.4	21.3	21.5	20.4	22.1	20.8	20.9	23.6	22.1
Electricity	21.0	20.8	21.2	22.5	23.7	22.0	21.9	23.4	24.0	24.3
City gas	12.1	11.8	11.6	8.0	7.6	7.4	12.0	8.1	7.5	8.0
Heat:others	4.5	4.6	4.5	3.8	3.7	3.7	4.6	3.8	3.7	4.0

Note: p means provisional
Source: Korea Energy Economics Institute

Statistics on Energy Production Facilities

	2019	2020	2021	2022			M7	M8	M9
				M7	M8	M9			
Total capacity (GW)	125.3 (5.2)	129.2 (3.1)	134.0 (3.7)	131.3 (2.7)	131.6 (2.8)	132.1 (2.8)	134.3 (2.3)	134.7 (2.3)	134.8 (2.0)
Nuclear	23.3 (6.4)	23.3 -	23.3 -	23.3 -	23.3 -	23.3 -	23.3 -	23.3 -	23.3 -
Bituminous coal	36.4 (0.1)	36.5 (0.1)	36.9 (1.3)	36.4 (-0.2)	36.4 (-0.2)	36.4 (-0.2)	36.3 (-0.4)	36.3 (-0.4)	36.3 (-0.4)
Gas	39.6 (4.5)	41.2 (4.1)	41.2 (0.1)	41.2 -	41.2 -	41.2 -	41.2 (0.1)	41.2 (0.1)	41.2 (0.1)
Refinery capacity (mil BPSD)	3.2 -	3.2 -	3.2 -	3.2 -	3.2 -	3.2 -	3.2 -	3.2 -	3.2 -

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

Source: Korea Electric Power Corporation, Korea National Oil Corporation

Statistics on Energy Consumption

	2019	2020	2021	2022			M7	M8	M9
				M7	M8	M9			
The number of household demanding city gas (mil)	19.7 (2.8)	20.1 (2.3)	20.5 (2.0)	20.2 (1.9)	20.1 (1.6)	20.2 (1.7)	20.6 (2.0)	20.6 (2.3)	20.7 (2.2)
Registered cars (mil)	23.7 (2.0)	24.4 (2.9)	24.9 (2.2)	24.7 (2.5)	24.7 (2.5)	24.8 (2.4)	25.3 (2.3)	25.3 (2.3)	25.4 (2.3)
- gasoline	11.0 (3.1)	11.4 (4.1)	11.8 (3.1)	11.6 (3.4)	11.7 (3.4)	11.7 (3.3)	12.0 (2.7)	12.0 (2.6)	12.0 (2.6)
- diesel	10.0 (0.3)	10.0 (0.3)	9.9 (-1.2)	9.9 (-0.4)	9.9 (-0.6)	9.9 (-0.8)	9.8 (-1.1)	9.8 (-1.1)	9.8 (-1.2)
- LPG	2.0 (-1.5)	2.0 (-1.3)	1.9 (-1.7)	2.0 (-2.0)	2.0 (-2.0)	2.0 (-1.9)	1.9 (-1.9)	1.9 (-1.9)	1.9 (-1.9)
- hybrid	0.5 (26.1)	0.6 (33.1)	0.9 (34.0)	0.8 (37.0)	0.8 (37.7)	0.8 (37.0)	1.0 (31.7)	1.0 (31.0)	1.1 (30.2)

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

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