

KEEI

MONTHLY KOREA ENERGY TRENDS

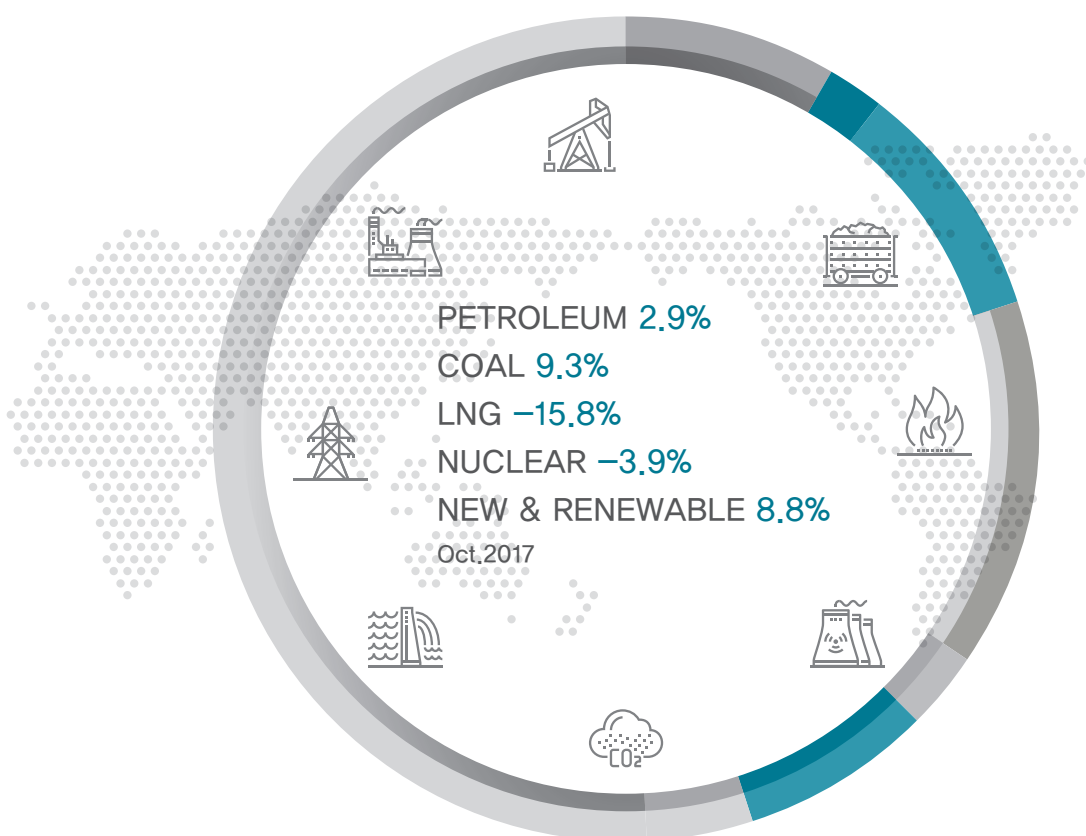


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1. The Economy and the Industry

- **The total export value rose by 6.7% year-on-year in October with continuously robust export demand, although the growth was slower partly due to fewer working days.**
 - There were 4.5 fewer working days (18 working days) in October 2017, compared to the same period last year, and it slashed export growth rate to single digit for the first time in ten months.
 - The export value of semi-conductors jumped by 69.6%, marking seven consecutive months of over 50% growth, which is attributable to ever-increasing memory price and the launch of a new smart phone.
 - The export value of petrochemical products went up by 6.2%, as the unit price rose due to higher oil price and lower supply, which was resulted from the temporary shutdown of production facilities in Texas, the U.S., hit by hurricane Harvey and Chinese government's environmental regulation.
- **The production index of mining and manufacturing industries declined by 6.1% year-on-year in October, partly because of fewer working days, while the service production index fell by 0.3%**
 - The mining and manufacturing production index decreased for the first time in three months, as fewer working days led to the sharp output reduction in the cement and automobile industries (-16.6%, -16.7%) and less output in the iron & steel industry (-3.3%) as well, although the index increased in the basic chemical materials and ICT industries (10.5%, 5.1%).
 - The service production index fell slightly in overall, as the index declined in the wholesale & retail business (-3.5%), restaurant & accommodations business (-4.6%) and real estate & leasing business (-5.7%) after the upward march in the previous month and grew more slowly in the health & social welfare service (2.8%).

► Trend in major economic and industrial indicators

	2015	2016	2017			2017		
			M8	M9	M10	M8	M9	M10
GDP (trillion won)	1 466.8 (2.8)	1 508.3 (2.8)	-	378.2 (2.6)	-	-	392.0 (3.6)	-
Total export (\$billion, customs clearance basis)	526.8 (-8.0)	495.4 (-5.9)	40.1 (2.6)	40.8 (-6.0)	42.0 (-3.2)	47.1 (17.4)	55.1 (34.9)	44.8 (6.7)
Semi-conductors	62.9 (0.4)	62.2 (-1.1)	5.6 (2.5)	5.7 (-2.6)	5.6 (1.7)	8.8 (56.7)	9.7 (69.9)	9.5 (69.6)
Petrochemicals	37.8 (-21.6)	36.2 (-4.3)	3.2 (4.2)	3.1 (-0.3)	3.0 (0.1)	3.7 (17.8)	4.3 (41.6)	3.1 (6.2)
Mining and manufacturing production index (2010=100)	108.1 (-0.3)	109.2 (1.0)	104.0 (2.2)	104.8 (-2.0)	111.5 (-1.2)	106.4 (2.3)	113.9 (8.7)	104.7 (-6.1)
ICT production index	113.1 (1.4)	118.7 (4.9)	123.6 (8.2)	124.9 (-1.2)	129.0 (-0.9)	129.9 (5.1)	133.2 (6.6)	135.6 (5.1)
Service industry performance index (2010=100)	112.1 (2.9)	115.5 (3.0)	115.8 (4.4)	115.7 (2.9)	116.3 (2.0)	118.2 (2.1)	121.8 (5.3)	115.9 (-0.3)

Note: Figures are based on the real price of 2010, P means provisional, () is year-on-year growth rates (%)
Source: Korea International Trade Association, Korea Statistical Information Service

2. Energy Prices

Global energy prices

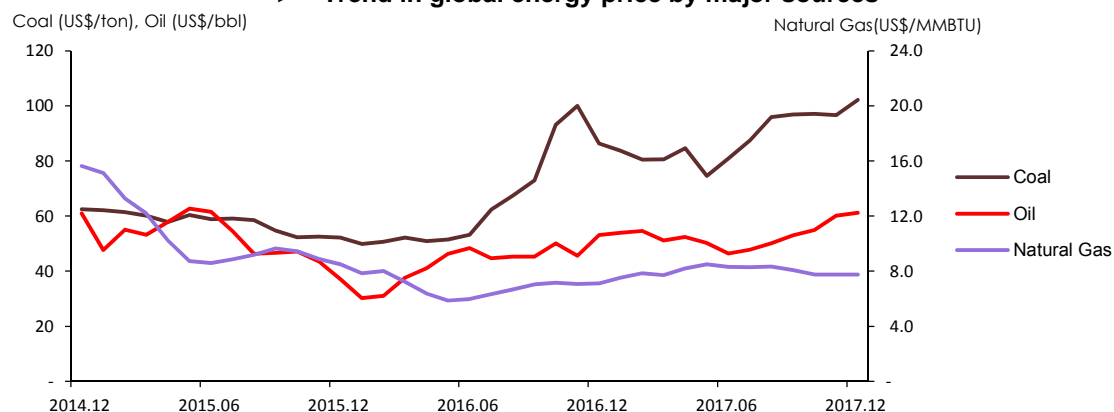
- **Global oil price increased by 1.8% in December than a month earlier, influenced by the shutdown of oil pipelines in the North Sea, the smaller U.S. crude inventory and the explosion of oil pipelines in Libya.**
 - Crude oil production was disrupted in the UK, as the Forties crude pipelines in the North Sea were shut down for the repair of recently discovered cracks (2017.12.7).
 - According to the U.S. Energy Information Administration (EIA), the nation's crude inventory decreased from 4.537Mbbbl on November 24 to 4.245Mbbbl on December 29, driving up the oil prices.
 - There was an explosion on Libya's oil pipelines that carry crude oil to its major export terminal (2017.12.26), for which ISIS militants are presumed to be responsible. Accordingly, the nation's crude oil production was cut by 70,000 to 100,000b/d.

► Trend in global energy prices

	2015	2016				2017		
		M10	M11	M12	M10	M11	M12	
Crude oil (US\$/bbl)	51.0	43.2	50.1	45.6	53.1	54.9	60.1	61.2
	(-47.0)	(-15.2)	(6.3)	(4.8)	(43.2)	(9.6)	(31.9)	(15.4)
Natural gas (US\$/MMBTU)	10.2	6.9	7.2	7.1	7.1	7.8	7.8	7.8
	(-36.3)	(-32.5)	(-24.3)	(-20.5)	(-16.5)	(8.4)	(9.6)	(9.2)
Coal (US\$/ton)	57.5	65.9	93.2	100.0	86.3	97.1	96.6	102.2
	(-18.0)	(14.6)	(78.1)	(90.2)	(65.6)	(4.3)	(-3.4)	(18.4)

Note: Global oil price is the average of the three benchmarks; Brent, Dubai, WTI. Natural gas and coal prices are based on Japan's LNG importing price from Indonesia (CIF) and the price of Australian coal. () is year-on-year growth rates (%)
Source: www.petronet.co.kr, World Bank(Commodity Markets)

► Trend in global energy price by major sources



Domestic energy prices

□ **Gasoline and diesel prices maintained its upward trend in December on a year-on-year basis in line with steadily rising global oil prices.**

- Gasoline and diesel prices have been rising since August 2017, as global oil prices have increased for six months in a row since July 2017, and compared to last year's lowest price level (July), the prices went up by 7.1% and 8.3% respectively.

□ **The prices of propane and butane were flat in December compared to the previous month in line with the stagnant global prices.**

- The global price of propane rose by 2.6% in November from a month earlier while butane price fell by 1.7%, and based on those prices, the domestic prices were set in December.

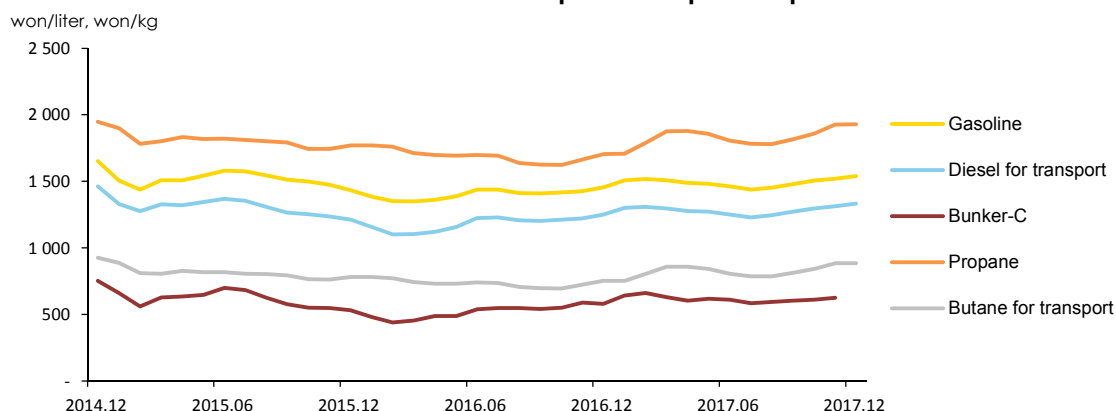
► Trend in domestic energy prices

	2015	2016				2017		
			M10	M11	M12	M10	M11	M12
Gasoline (won/liter)	1 510.4 (-17.3)	1 402.7 (-7.1)	1 416.6 (-5.5)	1 427.0 (-3.2)	1 454.6 (1.5)	1 504.5 (6.2)	1 521.1 (6.6)	1 540.3 (5.9)
Diesel for transport (won/liter)	1 299.5 (-20.6)	1 182.7 (-9.0)	1 211.1 (-3.3)	1 222.7 (-1.0)	1 249.7 (3.2)	1 295.6 (7.0)	1 313.0 (7.4)	1 332.4 (6.6)
Bunker-C (won/liter)	612.5 (-31.9)	520.8 (-15.0)	551.3 (0.0)	589.2 (7.6)	579.8 (9.1)	610.5 (10.7)	624.3 (5.9)	- -
Propane (won/kg)	1 801.5 (-14.8)	1 689.8 (-6.2)	1 624.2 (-6.8)	1 664.4 (-4.5)	1 705.0 (-3.7)	1 857.9 (14.4)	1 926.7 (15.8)	1 929.8 (13.2)
Butane for transport (won/liter)	806.5 (-23.3)	734.1 (-9.0)	694.3 (-9.1)	724.9 (-4.9)	751.6 (-3.9)	841.2 (21.2)	884.6 (22.0)	885.1 (17.8)

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

Source: www.opinet.co.kr

► Trend in domestic petroleum product prices



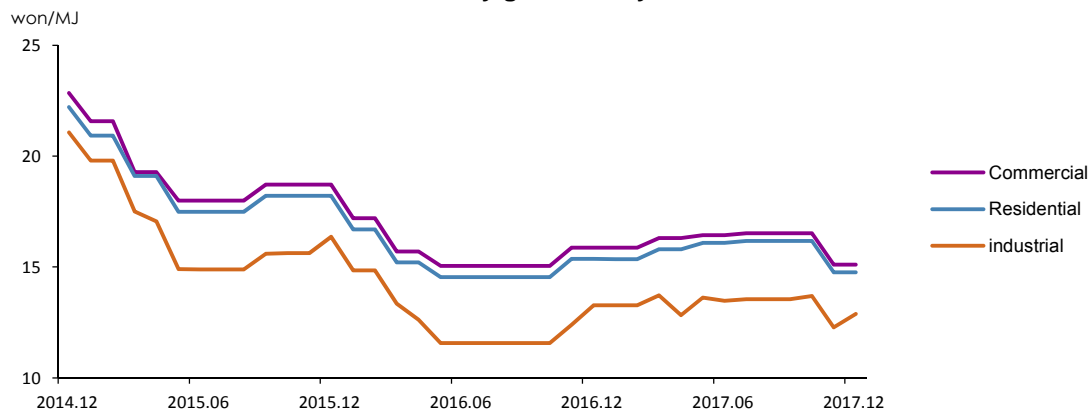
□ **City gas rates were stagnant in December compared to the previous month, when the rates plunged after Korea Gas Corporation (“KOGAS”) collected all accounts receivable.**

- The accounts receivable was accumulated after KOGAS suspended the raw material cost pass-through scheme (2008.3~2013.2) at a time of high oil price, and after KOGAS completed the collection of all accounts receivable through rate increase that started from September 2010, the rates declined again.
- Industrial city gas rate increased by 4.9% in December, after the rate was adjusted for winter (Dec-Mar) from spring/autumn (Apr, Oct-Nov).

□ **Heat energy rates for each end-use fell slightly in November and were flat in December.**

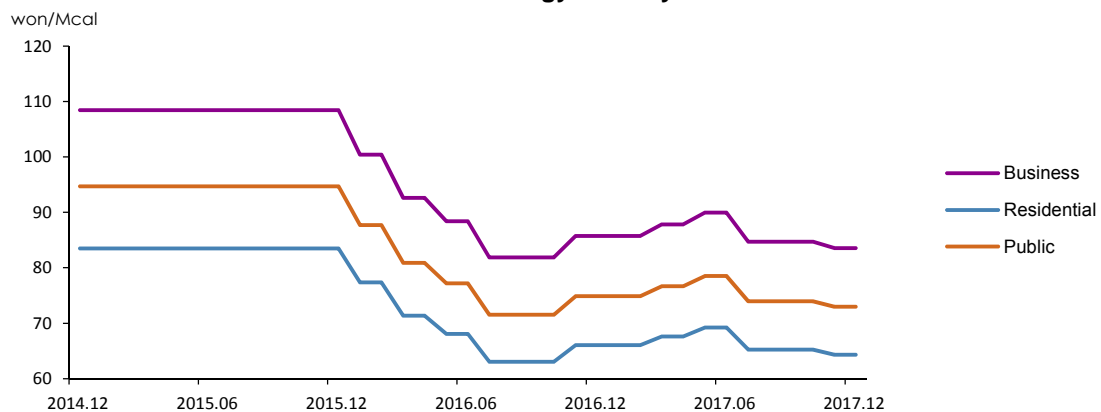
- Korea District Heating Corporation’s heat energy rates are linked to city gas rates based on the fuel cost pass-through scheme, and November’s heat energy rates reflect the influence of KOGAS’s collection of accounts receivable and the resultant city gas rate change.

► **Trend in city gas rates by end-use sectors**



Note: Instead of volume(M³), calorie(MJ) has been used as the unit of measurement in the city gas rate system since July 2012. Figures before that are converted based on standard calorie(additional tax, base charge excluded)

► **Trend in heat energy rates by end-use sectors**



Note: The rates are based on flat rate for heating (additional tax, base charge excluded)
Source: Korea District Heating Corporation.

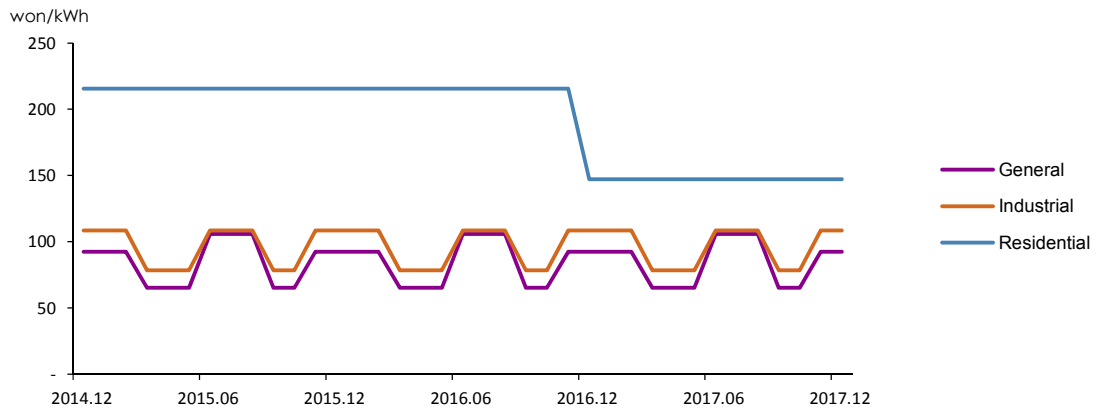
□ **Electricity rates for each end-use were unchanged in December ¹from the previous month, when the rates for the industrial and general use were adjusted for the winter season.**

- The industrial and general electricity rates went up by 38.2% and 41.6% respectively in November after the seasonal rate change from spring/autumn (Mar-May, Sep-Oct) to winter (Nov-Feb).
- The residential electricity rate is not changed seasonally, but the rate declined sharply (-31.7%) after the progressive power rate system was reformed in the wake of the scorching summer heat (2016.12). Since then, there was no significant rate change.

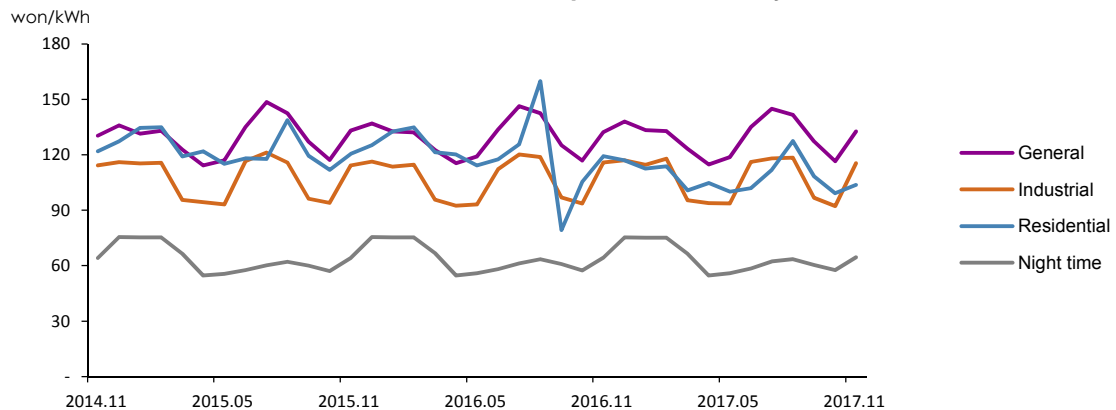
□ **Unit price of electricity for general, industrial and residential use rose by 14.0%, 25.0% and 4.5% respectively in November from a month earlier.**

- The unit price of electricity for general and industrial customers dramatically increased after the seasonal rate adjustment in November, and the unit price for residential customers increased due to bigger power demand for heating and the characteristics of the progressive power rate system.

► Trend in electricity rates by end-use sectors



► Trend in unit price of electricity



¹ The electricity rates by end use sectors refer to the rates for residential use ([high voltage], the 2nd stage electricity rates), general use ([A], low voltage) and Industrial use ([B], high voltage B middle load).

3. Energy Supply

□ The total energy import value increased by 24.0% year-on-year in October due to expanded import of crude oil and bituminous coal in addition to the higher unit prices.

- The amount of energy imported (petrochemical products, coal, LNG) increased, especially bituminous coal, although the import of LNG and petrochemical products declined.
- Crude oil import rose by near 10% due to bigger input to refineries (11.8%), affected by the restart of refineries owned by Hyundai Oilbank (2017.8.25-9.27), expanded installed capacity and increased refinery utilization rates due to stronger refining margins.
- Foreign energy dependency ²fell by 0.7%p to 83.3%, owing to the increased hydropower and renewable energy generation.

► Trend in energy trade and domestic production

	2015	2016p	2017p				
			M1~10	M1~10	M8	M9	M10
Import volume							
Crude oil (Mbbl)	1 026.2 (10.6)	1 078.1 (5.1)	886.7 (4.8)	923.6 (4.2)	101.5 (17.8)	93.1 (-1.1)	92.8 (9.7)
Petroleum product (Mbbl)	307.9 (-5.7)	334.6 (8.7)	278.1 (12.0)	263.6 (-5.2)	24.9 (-17.8)	27.4 (-5.4)	26.6 (-3.2)
Bituminous coal (Mton)	119.4 (1.3)	118.5 (-0.8)	95.8 (-4.1)	110.5 (15.4)	11.4 (15.8)	13.2 (19.2)	9.8 (6.1)
Anthracite (Mton)	8.9 (7.8)	9.4 (5.4)	7.8 (3.0)	5.7 (-26.5)	0.5 (-42.5)	0.5 (-44.7)	0.3 (-67.9)
LNG (Mton)	33.4 (-10.1)	33.5 (0.3)	26.0 (-4.0)	30.1 (15.5)	2.6 (32.0)	2.4 (5.8)	2.8 (-15.3)
Import volume (Mtoe)	314.8 (1.7)	323.1 (2.7)	264.0 (1.7)	280.1 (6.1)	27.8 (4.7)	28.2 (6.6)	27.9 (3.8)
Import value (billion US\$, CIF)	102.7 (-41.0)	80.9 (-21.2)	63.6 (-26.9)	88.9 (39.8)	8.5 (30.8)	9.0 (30.3)	8.9 (24.0)
Domestic production							
Hydropower (TWh)	5.8 (-25.9)	6.6 (14.5)	5.7 (12.2)	6.1 (6.1)	1.0 (38.8)	0.7 (7.2)	0.6 (19.7)
Anthracite (Mton)	1.8 (0.9)	1.7 (-2.2)	1.4 (-2.3)	1.2 (-12.4)	0.1 (-18.0)	0.1 (-11.7)	0.1 (-36.3)
Natural gas (Mton)	0.1 (-41.5)	0.1 (-18.0)	0.1 (-41.3)	0.2 (201.3)	0.0 n.a	0.0 n.a	0.0 (-4.6)
Renewable energy (Mtoe)	12.8 (17.2)	13.6 (5.7)	11.3 (5.3)	12.5 (10.6)	1.3 (8.6)	1.3 (14.1)	1.2 (8.8)

Note: p means provisional, () is year-on-year growth rates (%)
Source: Monthly Energy statistics

² This foreign energy dependency (the share of imported energy in TPES) excludes nuclear energy, and when it's included, the foreign energy dependency fell by 0.4%p year-on-year to 94.1% due to bigger import of nuclear energy (4.9%).

4. Energy Consumption

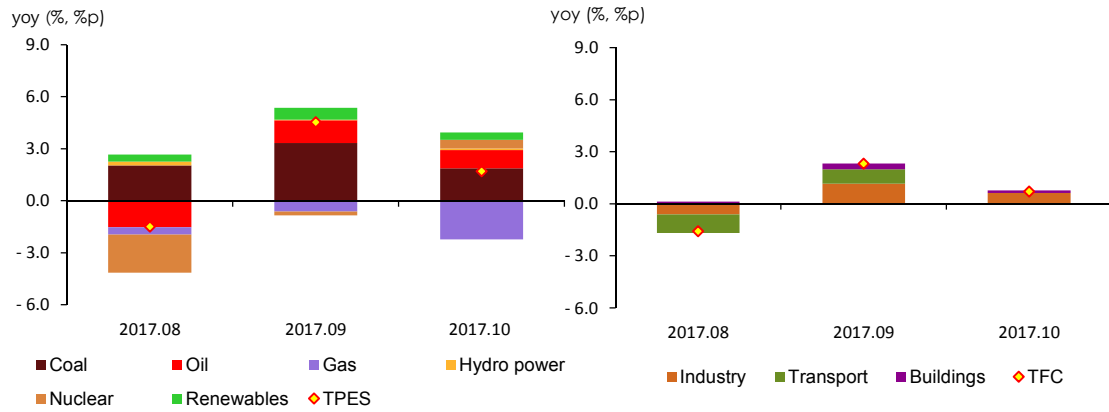
- **Total Primary Energy Supply (“TPES”) rose by 1.7% year-on-year in October despite less use of gas, as coal, petroleum and nuclear energy were more used.**
 - Gas consumption declined by 15.8%, as the consumption plunged in the power generation sector (-30.9%) due to increased baseload (coal + nuclear) generation (9.5%).
 - Coal consumption rose by 9.3%, led by the power generation sector (25.5%) with much expanded installed capacity, although industrial coal consumption declined (-12.6%) due to less use of anthracite and coal for cement production.
 - Petroleum consumption went up by 2.9%, as naphtha use increased following the commissioning of new petrochemical facilities, though LPG consumption decreased with no more effect from the construction of new PDH facilities, and higher oil prices led to lower petroleum consumption in the transport, buildings and power generation sectors.
 - Nuclear generation rebounded for the first time in 15 months (3.9%) despite increased planned preventive maintenance (71.6%, 2.9GW), owing to the base effect from the temporary shutdown of Wolsong unit1-4 during the same month last year and the commissioning of Shinkori unit3.
- **Total Final Consumption recorded a year-on-year growth of 0.7% in October, led by the industrial and buildings sectors, although transport energy use declined.**
 - Industrial energy consumption rose by 1.0% in October, posting two consecutive months of growth, despite a sharp decline in the auto industry’s power consumption (-14.0%), as bigger outputs of electric furnace steel and basic petrochemicals contributed to the energy consumption growth in the primary metals and petrochemical industries.
 - Transport energy use fell by 0.3% because of less demand in the road transport and domestic navigation sectors, despite the increased number of cars.
 - Energy consumption in buildings was up 0.9%, especially city gas and electricity, while coal and petroleum consumption declined.
 - Electricity consumption declined by 0.5%, as the buildings sector recorded just a small increase in power use (1.1%) due to lower heating degree days and a downturn in the service industry, and as the industrial power use fell (-1.7%), affected by a slowdown in the iron & steel and automobile industries.

► Energy consumption trend

	2015	2016p	2017p				
			M1~10	M1~10	M8	M9	M10
Total energy (Mtoe)	287.7	294.7	241.7	246.6	24.8	23.9	24.0
	(1.6)	(2.4)	(2.2)	(2.0)	(-1.5)	(4.5)	(1.7)
Final energy (Mtoe)	218.4	225.7	184.9	189.0	18.5	18.2	18.4
	(2.1)	(3.4)	(2.8)	(2.2)	(-1.6)	(2.3)	(0.7)

Note: p means provisional, () is year-on-year growth rates
Source: Monthly Energy statistics (KEEI)

► The growth rates of TPES and TFC & energy consumption trend by energy source and end-use sectors



5. Coal

☐ **Coal consumption increased by 9.3% year-on-year in October, led by the power generation sector, while the industrial coal consumption decreased.**

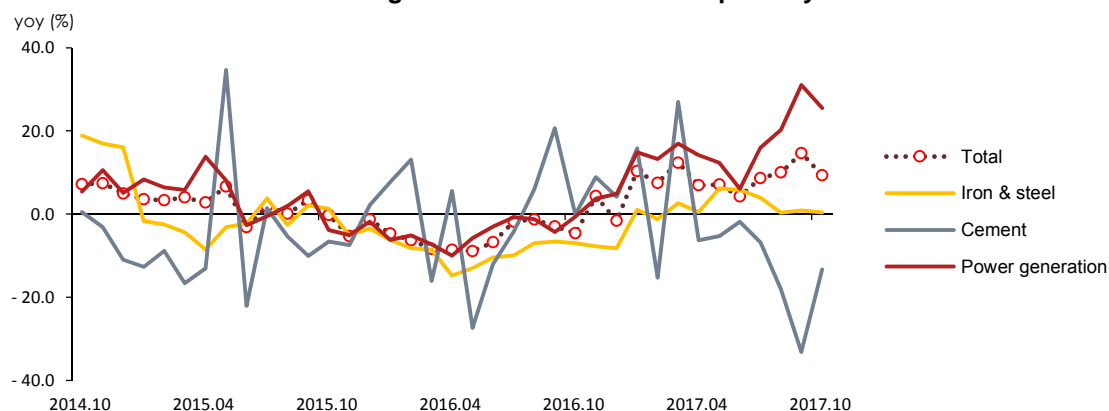
- Coal consumption for power generation rose dramatically in October, marking 11 consecutive months of growth, backed by expanded installed capacity (5.8GW, 18.8%) and decreased preventive maintenance on daily average (-2.2GW, -30.7%), and coal-fired generation increased by 13.4%.
- The industrial sector witnessed the largest drop in coal consumption since May, 2016 (-13.5%), because the use of anthracite and coal for cement production dropped by 13.3% and 67.9% respectively, although the steelmaking industry, the largest coal consumer, used slightly more amount of coal (0.4%).

► Coal consumption trend

	2015	2016p		2017p			
			M1~10	M1~10	M8	M9	M10
Coal (Mton)	135.2	129.4	106.4	116.1	12.8	12.1	11.5
	(1.2)	(-4.3)	(-5.4)	(9.2)	(10.0)	(14.7)	(9.3)
Industry	51.3	48.1	39.9	38.5	3.8	3.8	3.7
	(-0.8)	(-6.1)	(-6.7)	(-3.3)	(-7.9)	(-9.7)	(-12.6)
Buildings	1.5	1.3	0.8	0.7	0.0	0.1	0.2
	(-9.6)	(-14.8)	(-14.4)	(-15.6)	(-50.0)	(12.9)	(-14.4)
Power generation	82.5	80.0	65.7	76.9	8.9	8.2	7.6
	(2.8)	(-3.0)	(-4.4)	(17.0)	(20.3)	(31.0)	(25.5)

Note: p means provisional, () is year-on-year growth rates (%)
Source: Monthly energy statistics

► The growth rate of coal consumption by use



6. Petroleum

□ **Petroleum consumption made a year-on-year growth of 2.9% in October despite less consumption in the transport, buildings and transformation sectors, as the industrial sector consumed more.**

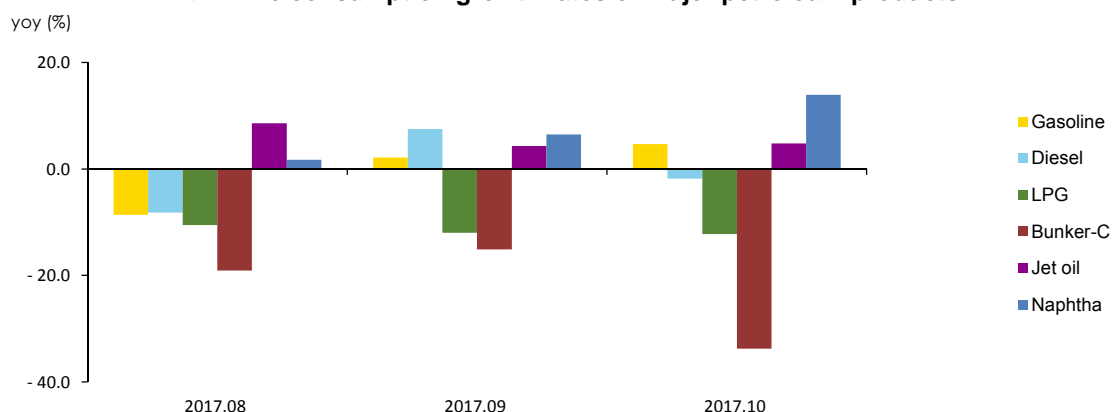
- Industrial petroleum consumption rose for two months in a row, with the help of rapidly growing naphtha use, leading the growth of total petroleum consumption.
- Transport petroleum consumption decreased, especially in the road transport and domestic navigation sectors, although the consumption increased in the aviation sector.
- Petroleum consumption declined in the buildings sector partly because of higher petroleum product prices and decreased heating degree days (-7.2degree days).
- Petroleum consumption continued to decline in the transformation sector due to increased baseload generation and decreased oil-fired generation, with the latter affected by higher bunker-C oil price.

► Trend in petroleum product consumption by end-use sectors

	2015	2016p	2017p				
			M1~10	M1~10	M8	M9	M10
Petroleum (Mbbbl)	856.2	924.2	758.4	772.8	78.0	77.1	80.1
	(4.2)	(7.9)	(7.9)	(1.9)	(-3.6)	(2.8)	(2.9)
Industry	501.0	542.6	445.1	468.1	47.5	46.6	50.1
	(1.9)	(8.3)	(7.8)	(5.2)	(-1.0)	(3.2)	(7.6)
Transport	287.1	303.6	251.6	253.6	26.5	26.2	25.1
	(6.8)	(5.7)	(5.7)	(0.8)	(-6.1)	(3.4)	(-0.4)
Buildings	53.5	56.3	43.4	43.2	3.5	3.9	4.4
	(11.7)	(5.2)	(4.3)	(-0.5)	(1.2)	(6.3)	(-0.6)
Power generation	14.6	21.8	18.2	7.8	0.6	0.4	0.4
	(13.0)	(48.7)	(87.0)	(-57.1)	(-58.7)	(-53.4)	(-74.8)

Note: p means provisional, () is year-on-year growth rates (%)
Source: Monthly Energy Statistics

► The consumption growth rates of major petroleum products



7. Gas

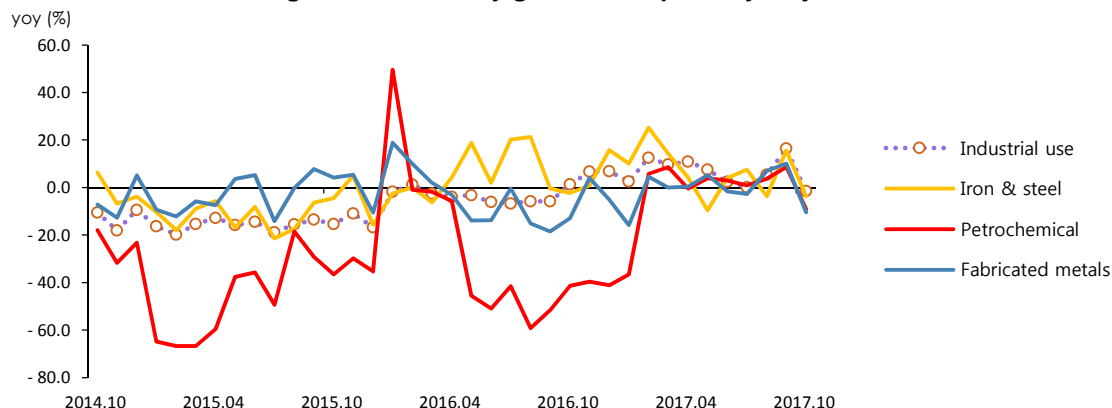
- **Gas consumption decreased by 15.8% in October on a year-on-year basis, as gas-fired generation plunged because of increased baseload generation.**
 - Gas use for power generation fell dramatically, as the capacity factor posted a sharp year-on-year decline (-17.2%p) due to less power demand (-0.5%) and more baseload (coal + nuclear) generation (9.5%)
- **City gas consumption rose by 0.7% year-on-year in October, led by the buildings sector, while the consumption fell slightly in the industrial sector.**
 - Industrial city gas consumption declined, especially in the primary metals, fabricated metals and petrochemical industries, partly affected by 4.5 fewer working days and higher prices.
 - City gas consumption in commercial buildings increased despite a drop in the service production index (-0.3%), and the consumption rose by 5.4% in the residential buildings for hot water & heating. As a result, overall city gas use in buildings increased by 4.1%.

► Trend in natural gas and city gas consumption

	2015	2016p	2017p				
			M1~10	M1~10	M8	M9	M10
LNG (Mton)	33.4	34.9	27.3	27.5	2.3	2.0	2.2
	(-8.9)	(4.4)	(1.0)	(0.5)	(-3.6)	(-5.3)	(-15.8)
Power generation	14.6	15.5	12.4	12.2	1.3	1.0	0.9
	(-8.2)	(6.4)	(0.7)	(-2.2)	(-8.7)	(-16.8)	(-30.9)
City gas production	16.9	17.4	13.3	13.7	0.8	0.9	1.1
	(-6.9)	(2.7)	(0.9)	(2.6)	(4.4)	(11.9)	(-1.1)
City gas (bm³)	20.8	21.3	16.7	17.4	1.1	1.1	1.3
	(-5.9)	(2.3)	(0.5)	(4.1)	(3.7)	(11.6)	(0.7)
Industry	7.3	7.2	5.8	6.2	0.5	0.6	0.6
	(-15.5)	(-1.4)	(-3.2)	(6.6)	(5.3)	(16.4)	(-1.5)
Buildings	12.2	12.8	9.8	10.1	0.4	0.4	0.6
	(0.5)	(5.0)	(3.0)	(3.1)	(2.9)	(7.9)	(4.1)

Note: p means provisional, () is year-on-year growth rates (%)
Source: Monthly energy statistics

► The growth rate of city gas consumption by major industries



8. Electricity

□ Electricity consumption decreased by 0.5% year-on-year in October, as the industrial sector consumed less, though the buildings sector consumed more.

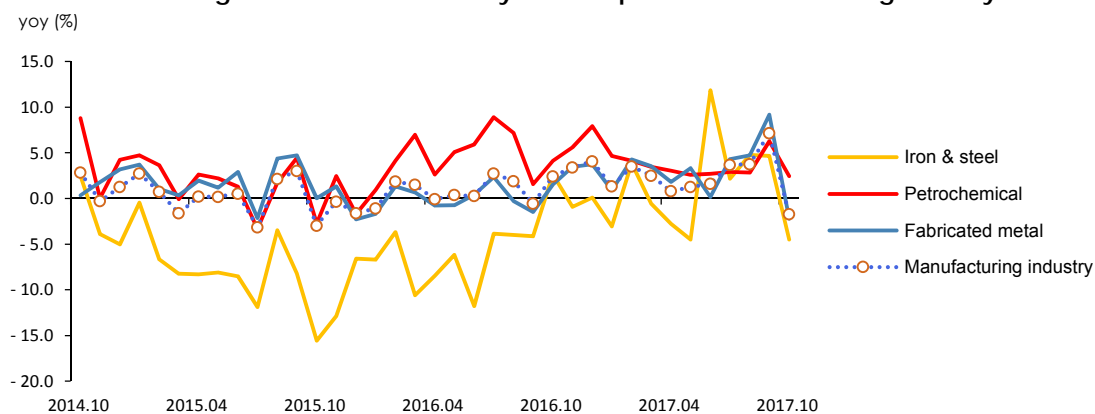
- Industrial electricity consumption declined for the first time since January, 2016, because the consumption grew more slowly in the petrochemical industry and declined in the primary metals and fabricated metals industries due to fewer working days (-4.5days).
- Electricity consumption posted a small increase in all of the residential, commercial and public buildings, influenced by higher average temperature.

► Trend in electricity consumption by end-use sectors

	2015	2016p	2017p				
			M1~10	M1~10	M8	M9	M10
Electricity (TWh)	483.7	497.0	413.2	420.7	45.4	42.3	38.4
	(1.3)	(2.8)	(2.5)	(1.8)	(2.1)	(2.7)	(-0.5)
Industry	265.6	270.0	223.7	229.1	23.4	23.3	21.8
	(0.4)	(1.6)	(1.2)	(2.4)	(3.2)	(6.2)	(-1.7)
Transport	2.2	2.7	2.3	2.3	0.3	0.2	0.2
	(10.7)	(21.3)	(22.5)	(3.4)	(2.2)	(4.7)	(5.6)
Buildings	215.8	224.4	187.3	189.3	21.7	18.7	16.4
	(2.3)	(4.0)	(4.0)	(1.1)	(1.0)	(-1.2)	(1.1)

Notes: p means provisional, () is year-on-year growth rates (%)
Source: Monthly energy statistics

► The growth rate of electricity consumption in manufacturing industry

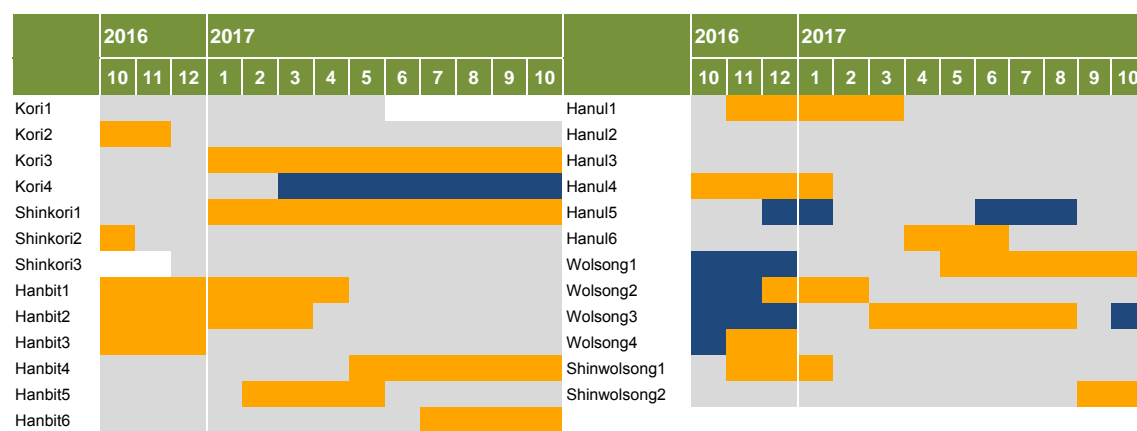


9. Nuclear

☐ Nuclear generation was up 3.9% year-on-year in October, supported by expanded installed capacity, although planned preventive maintenance increased.

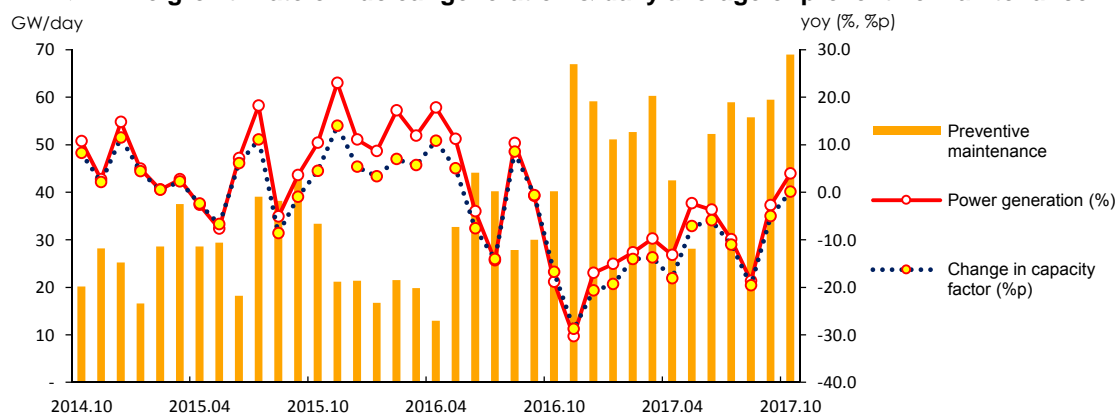
- Nuclear generation rose for the first time in 15 months, influenced by the commissioning of Shinkori unit3 (2016.12, 1.4GW) and with no more disturbance from the earthquake in Gyeongju area, which caused the shutdown of plants previously, though the planned preventive maintenance increased (2.9GW, 71.6%) with delayed power plant restart.
- The average capacity factors at nuclear power plants increased by 0.1%p to 72.2% due to the base effect from a safety inspection during the same month last year, and nuclear's share of the total power generation went up by 1.3%p to 28.6%.

► Nuclear power plants operation status



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

► The growth rate of nuclear generation & daily average of preventive maintenance



10. Heat and renewable energy

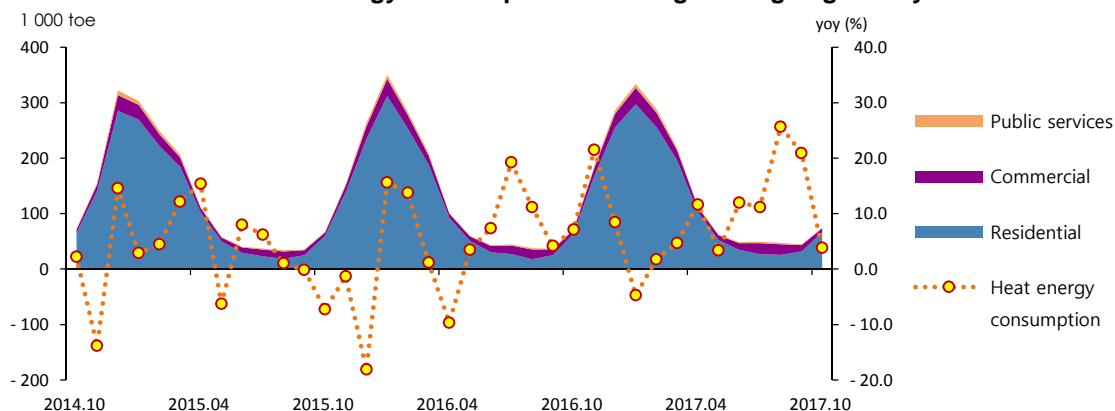
☐ **Heat energy consumption posted a year-on-year rise of 3.8% in October despite the higher price and lower heating degree days.**

- Heat energy consumption increased even with the higher price (3.4%) and lower heating degree days (-7.2degree days), and by end-use sectors, the residential and commercial sectors consumed 3.9% and 4.1% more, while the public sector consumed 5.8% less due to decreased number of working days.

☐ **Renewable and other energy consumption rose by 9.8% in October on a year-on-year basis amid rapidly growing hydropower and renewable energy generation.**

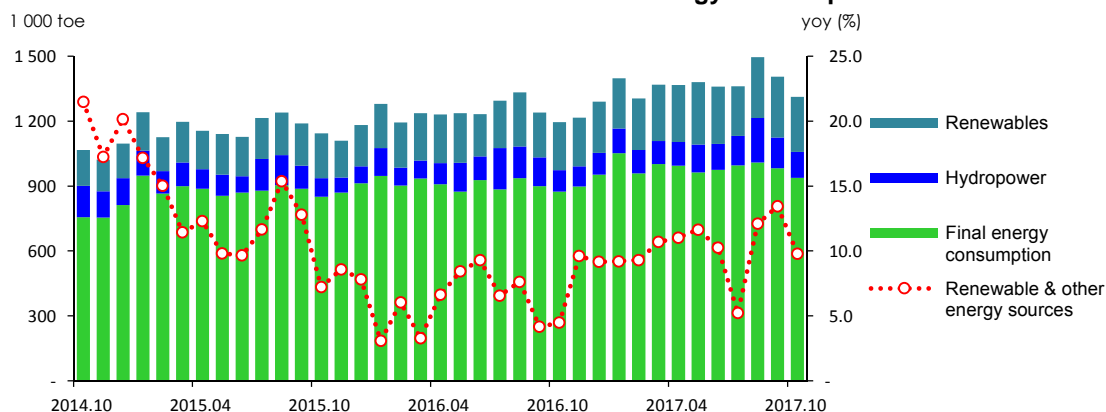
- Renewable energy generation (hydropower excluded) increased by 15.0% despite the shutdown of IGCC, boosted by the fast growth in solar PV, wind and bioenergy generation. Renewable's share of TFC increased by 7.2%.
- Hydropower generation jumped by 20.9% (564.9GWh) thanks to the bigger amount of rainfall than the average (67.6mm),

► Heat energy consumption & heating/cooling degree days-



Note: The heat energy consumption is based on the supply of KDHC, GS Power, SH Corp. In accordance with the heating/cooling degree days of the meteorological agency, base temperature of heating degree days is set at 18°C and that of cooling degree days was revised from 18°C to 24°C.

► Trend in renewable and other energy consumption



11. Industry.

□ Industrial energy consumption made only a small year-on-year increase (1.0%) in October, even though the naphtha consumption rose dramatically in the petrochemical industry.

- Energy use in the petrochemical industry rose by 8.7%, as naphtha consumption returned to the double-digit growth (14.0%).
- Energy use in the primary metals industry declined by 0.2% due to the slower growth in electric furnace steel production, though the production of converter steel decreased at slower pace.
- Energy use in the fabricated metals industry went down by 4.0%, affected by a drop in both the number of working days and automobile export.
- Energy use in the non-metallic industry maintained a downward trend with the 13.3% drop in October, though the pace of decline was slower.

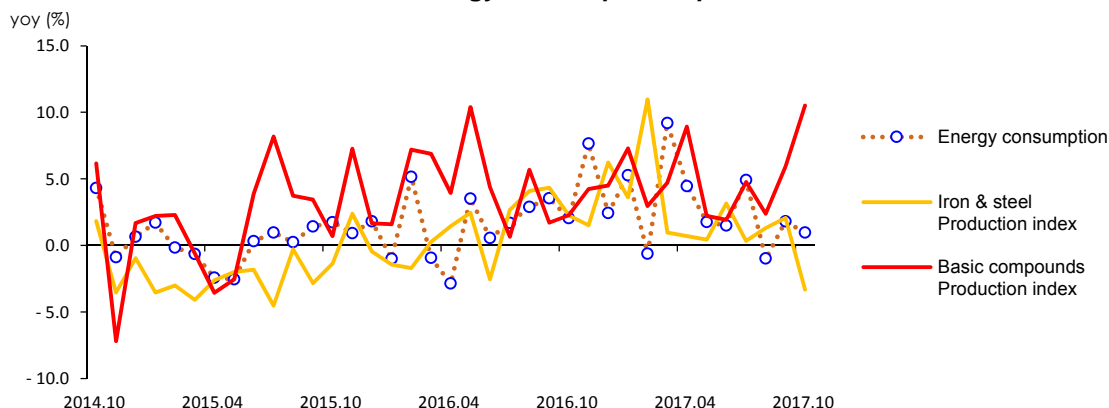
► Trend in the industrial energy consumption

	2015	2016p		2017p			
			M1~10	M1~10	M8	M9	M10
Industry (Mtoe)	135.7	138.5	114.0	117.2	11.7	11.7	11.9
	(0.3)	(2.0)	(1.4)	(2.8)	(-1.0)	(1.8)	(1.0)
Petrochemical	61.7	65.9	54.3	56.8	5.8	5.6	6.1
	(-0.6)	(6.8)	(6.6)	(4.5)	(-1.9)	(2.9)	(8.7)
- Naphtha	50.4	52.7	43.4	46.4	4.7	4.6	5.0
	(3.7)	(4.7)	(4.2)	(6.9)	(1.7)	(6.5)	(14.0)
Iron & Steel	30.6	28.1	23.4	23.8	2.4	2.4	2.4
	(-3.2)	(-8.0)	(-8.2)	(1.7)	(0.6)	(1.4)	(-0.2)
Fabricated metal	10.6	10.6	8.7	9.0	0.9	0.9	0.8
	(-1.1)	(0.4)	(-0.1)	(3.2)	(5.0)	(8.9)	(-4.0)
Share of feedstock (%)	59.5	58.6	58.7	59.7	61.0	60.1	62.5

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

Source: Monthly energy statistics

► Industrial energy consumption & production index



12. Transport

□ **Transport energy use declined by 0.3% year-on-year in October, as higher oil prices caused a decline in energy use for road transport and domestic navigation.**

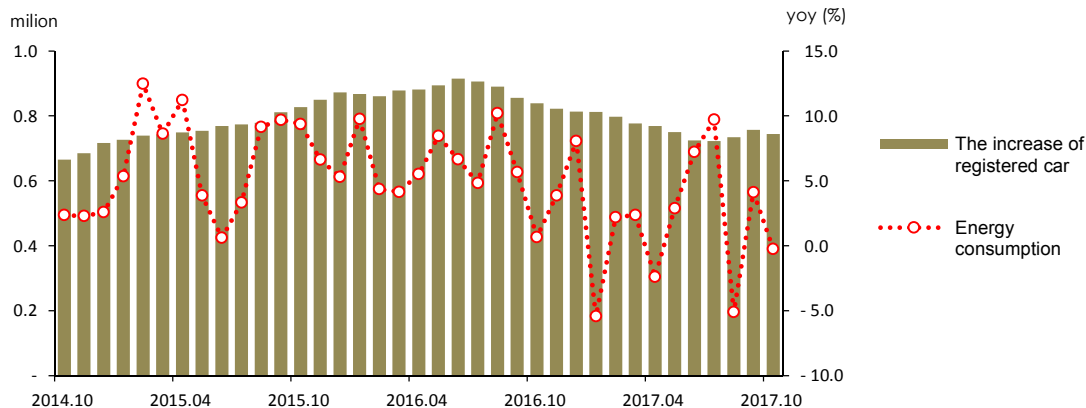
- Energy use for road transport decreased despite the increased number of registered cars (3.4%), as a result of higher petroleum product prices.
- Energy use for domestic navigation has decreased for two consecutive months due to the increased bunker-C oil price and decreased cargo volume at ports (export -6.8%, coastal transport -27.0%).
- Energy use for aviation increased by 7.9%, as the number of flights rose by 3.5% due to the expanded domestic air routes and growing air travelling demand during Chuseok holiday, known as Korean Thanksgiving, although less Chinese tourists visited Korea in the wake of the Terminal High Altitude Area Defense ("THAAD") issue, and the number of flights from/to Jeju island also declined.

► The growth rate of petroleum consumption in the transport sector

	2015	2016p		2017p			
			M1~10	M10	M8	M9	M10
Transport (Mtoe)	40.3	42.7	35.4	3.5	3.7	3.7	3.5
	(7.1)	(6.0)	(6.0)	(-0.3)	(-5.1)	(4.1)	(-0.3)
Road	32.8	34.4	28.5	2.8	3.0	3.0	2.8
	(5.6)	(4.9)	(4.8)	(-1.3)	(-8.2)	(4.9)	(-1.3)
Navigation	2.9	3.4	2.8	0.3	0.3	0.3	0.3
	(27.0)	(13.8)	(16.1)	(-1.9)	(4.8)	(-3.3)	(-1.9)
Aviation	4.3	4.7	3.9	0.4	0.5	0.4	0.4
	(7.5)	(9.1)	(8.1)	(7.9)	(12.6)	(3.6)	(7.9)
Rail	0.3	0.3	0.3	0.0	0.0	0.0	0.0
	(2.2)	(8.3)	(10.3)	(13.4)	(-0.9)	(2.0)	(13.4)

Note: p means provisional, () is year-on-year growth rates (%)
Source: Monthly energy statistics

► The growth rate of energy consumption in the transport sector & registered car status



13. Buildings

□ **Energy use in buildings slightly increased (0.9%) in October on a year-on-year basis due to the slower consumption growth in the residential sector and a decline in the public sector.**

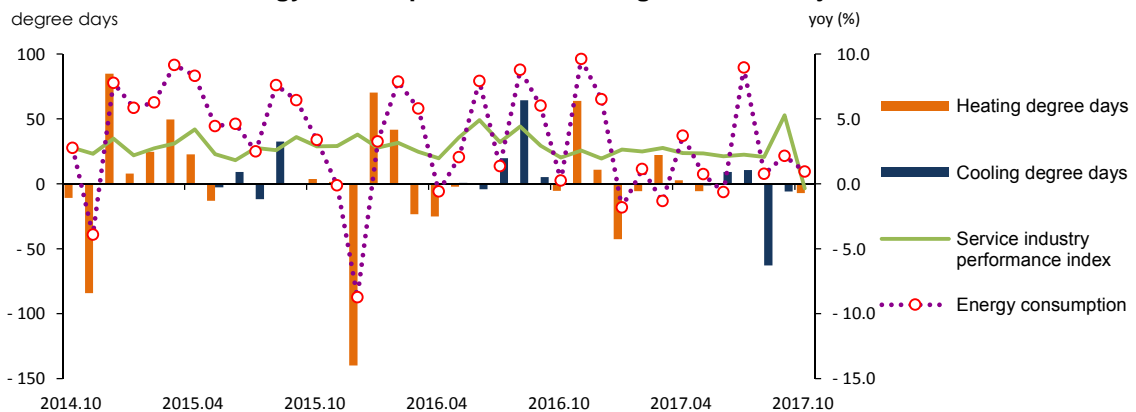
- Energy use in residential buildings rose by 1.2%, backed by more use of electricity, heat energy and city gas (0.9%, 3.9%, 5.4%), although LPG and diesel were consumed less (-5.0%, -2.1%).
- Energy use in commercial buildings maintained its upward trend, backed by decent growth in electricity, LPG and city gas consumption (1.2%, 4.0%, 2.3%), while the production index of the wholesale & retail business and restaurant & accommodations business fell by 3.5% and 4.6% respectively.
- Meanwhile, energy use in public buildings was down 1.7% despite bigger power demand (1.3%), as petroleum, city gas and heat energy consumption decreased (-11.3%, -5.2%, -5.8%) during the Korean Thanksgiving holiday and thus having fewer working days.

► Energy consumption trend in the buildings sector

	2015	2016p		2017p			
			M1~10	M1~10	M8	M9	M10
Buildings (Mtoe)	42.4	44.5	35.5	35.8	3.0	2.9	2.9
	(3.6)	(5.1)	(4.4)	(1.0)	(0.8)	(2.2)	(0.9)
Residential	20.1	21.3	16.4	16.5	1.0	1.1	1.3
	(2.2)	(5.6)	(4.4)	(0.4)	(0.5)	(2.7)	(1.2)
Commercial	16.5	17.0	13.9	14.2	1.5	1.3	1.2
	(4.0)	(3.3)	(2.8)	(1.7)	(1.8)	(1.7)	(1.7)
Public+others	5.8	6.2	5.1	5.2	0.5	0.5	0.5
	(7.8)	(8.4)	(8.7)	(1.1)	(-1.6)	(2.0)	(-1.7)

Note: p means provisional, () is year-on-year growth rates (%)
Source: Monthly energy statistics

► Energy consumption in the buildings sector & major indicators



14. Transformation

- Total energy input for power generation recorded a year-on-year growth of 2.8% in October despite less use of gas for power generation, because coal-fired and nuclear generation increased.
 - More energy was consumed to generate power, though the total generated power declined (-0.7%), this was largely because of the increased baseload generation, which has lower efficiency compared to gas-fired generation.

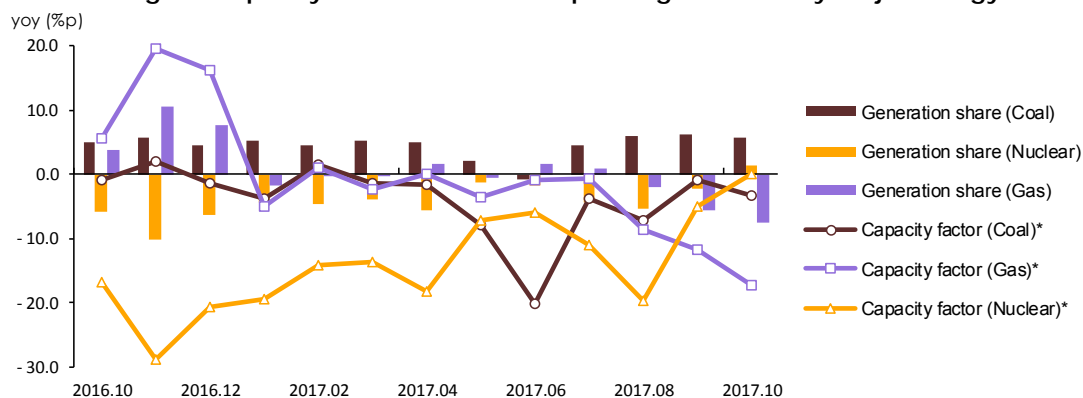
► Energy consumption in the power generation sector

	2015	2016p	2017p				
			M1~10	M1~10	M8	M9	M10
Input (Mtoe)	110.1	110.8	92.0	93.4	10.1	9.3	8.7
	(1.6)	(0.6)	(0.9)	(1.5)	(-0.1)	(8.4)	(2.8)
Coal	50.6	49.0	40.3	45.4	5.3	4.8	4.5
	(2.7)	(-3.0)	(-4.5)	(12.8)	(16.0)	(26.4)	(21.2)
Oil	2.0	3.0	2.5	0.9	0.1	0.0	0.0
	(16.6)	(50.1)	(96.7)	(-63.0)	(-61.9)	(-61.4)	(-80.5)
Gas	19.3	20.5	16.4	16.2	1.8	1.4	1.3
	(-8.1)	(6.3)	(0.6)	(-1.6)	(-8.1)	(-16.0)	(-30.0)
Nuclear	34.8	34.2	29.3	27.0	2.5	2.6	2.6
	(5.3)	(-1.7)	(3.2)	(-8.0)	(-17.9)	(-1.8)	(4.9)
Hydro/other renewables	3.4	4.0	3.4	3.9	0.5	0.4	0.4
	(0.4)	(17.4)	(15.4)	(14.8)	(22.6)	(24.9)	(16.9)

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

Source: Monthly energy statistics

► Change in capacity factor and share of power generation by major energy sources



*Capacity factor is the ratio of actual energy produced to the amount of energy produced from continuous operation at full rated power

<Appendix> Major Indicators & Statistics of Energy Supply and Demand

Major Statistics & Indicators of the Economy

	2014	2015	2016				2017		
				1Q	2Q	3Q	1Q	2Q	3Q
GDP (trillion won)	1 427.0 (3.3)	1 080.2 (2.6)	1 508.3 (2.8)	355.5 (2.9)	378.6 (3.4)	378.2 (2.6)	365.8 (2.9)	388.8 (2.7)	392.0 (3.6)
Private consumption	692.2 (1.7)	525.6 (1.8)	725.0 (2.5)	181.9 (2.3)	176.6 (3.5)	181.9 (2.7)	185.6 (2.0)	180.7 (2.3)	186.3 (2.4)
Facilities investment	134.0 (6.0)	104.2 (5.2)	137.0 (-2.3)	31.9 (-4.6)	35.2 (-2.9)	33.1 (-3.9)	36.5 (14.4)	41.3 (17.3)	38.8 (17.0)
Construction investment	198.5 (1.1)	153.4 (5.5)	234.2 (10.7)	44.7 (9.0)	62.4 (10.6)	62.2 (11.2)	49.7 (11.3)	67.4 (8.0)	66.9 (7.6)
Consumer price index (2010=100)	99.3	100.0	101.0	100.6	100.8	101.0	102.7	102.7	103.3
USD to KRW exchange rate (won)	1 052.8	1 122.1	1 160.8	1 202.4	1 163.2	1 121.1	1 154.9	1 129.4	1 132.3
Benchmark rate (%)	2.3	1.7	1.4	1.5	1.4	1.3	1.3	1.3	1.3
Coincident composite index (2010=100)	113.6	116.6	121.1	119.5	120.5	122.0	124.2	125.2	126.1
Mining & manufacturing production index (2010=100)	108.4	106.9	109.2	105.6	109.7	106.5	109.5	110.3	110.2
Manufacturing operation ratio index (2010=100)	94.3	91.9	90.4	89.1	92.3	86.9	88.2	91.2	89.5
Average temperature	13.3	15.2	13.6	1.3	19.1	25.8	1.4	18.9	25.0
- year-on-year difference	0.9	- 0.2	- 0.0	- 0.8	0.5	0.9	0.1	- 0.2	- 0.8
Heating degree days	2 501.6 (-13.5)	1 593.0 (6.1)	2 589.7 (5.3)	1 513.2 (6.2)	140.9 (-16.2)	0.3 n.a	1 487.5 (-1.7)	138.6 (-1.6)	0.6 (100.0)
Cooling degree days	125.4 (-35.6)	151.8 (21.1)	238.1 (56.9)	- n.a	10.2 (-24.4)	227.9 (64.8)	- n.a	18.2 (78.4)	169.9 (-25.5)
Energy intensity	0.20 (-2.4)	0.20 (-0.8)	0.20 (0.0)	0.22 (0.4)	0.18 (-1.7)	0.19 (0.9)	0.22 (-1.1)	0.18 (-0.5)	0.19 (-0.5)
Per capita consumption									
oil (bbl)	16.2 (-1.1)	12.3 (2.7)	18.0 (7.5)	4.5 (7.2)	4.3 (8.0)	4.5 (7.8)	4.6 (1.0)	4.3 (1.3)	4.6 (1.8)
Electricity (MWh)	9.4 (-0.1)	7.2 (1.5)	9.7 (2.3)	2.5 (1.4)	2.3 (1.0)	2.5 (3.8)	2.6 (0.9)	2.3 (0.6)	2.5 (3.3)
City gas (1 000 m ³)	0.4 (-8.1)	0.3 (-4.4)	0.4 (1.8)	0.2 (2.7)	0.1 (-3.2)	0.1 (-2.6)	0.2 (1.9)	0.1 (3.5)	0.1 (3.5)
Total energy (toe)	5.6 (0.3)	4.2 (1.3)	5.8 (2.4)	1.5 (2.8)	1.3 (1.2)	1.4 (3.0)	1.5 (1.4)	1.4 (1.8)	1.4 (2.8)

Note: Figures are based on the real price of 2010, p means provisional, () is year-on-year growth rates (%)
Source: BOA Economic statistics system, Monthly energy statistics

The Index of Production & Operating Ratio by Sectors

(2010=100)

2010=100

	2015	2016					2017			
			M1~10	M8	M9	M10	M1~10	M8	M9	M10
Industrial production index										
All industry	110.0 (1.9)	113.3 (3.0)	111.6 (2.7)	110.3 (4.5)	112.4 (1.3)	113.8 (1.8)	114.8 (2.9)	113.2 (2.6)	120.7 (7.4)	111.1 (-2.4)
Mining & manufacturing	108.1 (-0.3)	109.2 (1.0)	107.7 (0.2)	104.0 (2.2)	104.8 (-2.0)	111.5 (-1.2)	109.5 (1.7)	106.4 (2.3)	113.9 (8.7)	104.7 (-6.1)
Iron & steel	110.9 (-2.0)	112.7 (1.6)	112.0 (1.2)	114.2 (4.1)	110.9 (4.3)	117.3 (2.3)	114.1 (1.9)	115.7 (1.3)	113.2 (2.1)	113.4 (-3.3)
Cement	125.8 (19.4)	134.3 (6.8)	130.8 (5.1)	135.6 (9.4)	126.0 (-4.0)	146.1 (1.0)	134.0 (2.5)	121.9 (-10.1)	149.1 (18.3)	121.8 (-16.6)
Basic compound	115.5 (2.2)	120.5 (4.4)	120.1 (4.4)	126.3 (5.7)	119.3 (1.7)	117.1 (2.3)	126.2 (5.1)	129.3 (2.4)	126.4 (6.0)	129.4 (10.5)
Transport equipment	120.8 (1.2)	117.4 (-2.8)	113.6 (-4.8)	84.0 (-12.3)	93.9 (-13.9)	116.8 (-8.0)	115.3 (1.5)	95.8 (14.0)	119.7 (27.5)	97.3 (-16.7)
Electric & electronic	95.6 (-3.3)	96.6 (1.1)	95.0 (0.0)	89.4 (4.6)	96.1 (-0.1)	102.4 (2.8)	93.2 (-1.9)	90.2 (0.9)	100.6 (4.7)	86.5 (-15.5)
Service	112.1 (2.9)	115.5 (3.0)	114.4 (3.1)	115.8 (4.4)	115.7 (2.9)	116.3 (2.0)	117.1 (2.4)	118.2 (2.1)	121.8 (5.3)	115.9 (-0.3)
Operating ratio index										
Manufacturing	92.4 (-2.0)	90.4 (-2.1)	89.6 (-2.9)	83.7 (-3.0)	84.8 (-4.7)	91.1 (-4.6)	89.0 (-0.6)	85.2 (1.8)	92.0 (8.5)	83.2 (-8.7)
Iron & steel	100.2 (-2.4)	103.4 (3.2)	102.7 (2.9)	107.1 (4.8)	102.3 (5.8)	108.9 (4.2)	105.7 (3.0)	109.0 (1.8)	102.5 (0.2)	106.5 (-2.2)
Cement	108.8 (8.3)	129.8 (19.4)	126.4 (17.6)	130.4 (26.7)	122.0 (14.0)	140.6 (15.2)	129.2 (2.2)	117.8 (-9.7)	144.2 (18.2)	118.1 (-16.0)
Basic compound	91.1 (-1.8)	94.1 (3.3)	94.0 (3.4)	98.3 (4.8)	92.7 (0.7)	90.4 (2.3)	96.8 (3.0)	99.2 (0.9)	97.2 (4.9)	98.2 (8.6)
Transport equipment	105.0 (1.5)	97.2 (-7.4)	93.1 (-10.2)	58.2 (-28.3)	70.0 (-24.6)	95.9 (-14.8)	95.7 (2.8)	75.5 (29.7)	99.1 (41.6)	77.4 (-19.3)
Electric & electronic	91.4 (1.0)	92.2 (0.8)	90.7 (-0.5)	83.7 (-0.9)	94.6 (2.0)	98.6 (0.7)	89.2 (-1.6)	88.1 (5.3)	94.3 (-0.3)	84.4 (-14.4)

Note: p means provisional
Source: Monthly energy statistics

International Energy Prices

	2015	2016					2017			
			M1~12	M10	M11	M12	M1~12	M10	M11	M12
Crude oil (USD/bbl)										
WTI	48.8 (-47.5)	43.3 (-11.2)	43.3 (-11.2)	49.9 (7.9)	45.8 (6.6)	52.2 (39.8)	51.0 (17.6)	51.6 (3.3)	56.7 (23.8)	58.0 (11.1)
Dubai	50.8 (-47.5)	41.2 (-18.8)	41.2 (-18.8)	49.0 (6.9)	43.9 (5.5)	52.1 (49.1)	53.2 (28.9)	55.5 (13.4)	60.8 (38.5)	61.6 (18.3)
Brent	53.6 (-46.1)	45.0 (-16.0)	45.0 (-16.0)	51.4 (4.3)	47.1 (2.5)	54.9 (41.2)	54.8 (21.7)	57.7 (12.2)	62.9 (33.5)	64.1 (16.7)
Unit value of import (C&F)	53.3 (-47.5)	41.0 (-23.0)	41.0 (-23.0)	45.7 (-2.5)	47.5 (4.7)	48.0 (19.5)	48.1 (17.3)	54.6 (19.7)	57.9 (21.8)	- -
LNG										
From Indonesia (USD/MMBTU)	10.2 (-36.3)	6.9 (-32.6)	6.9 (-32.6)	7.2 (-24.3)	7.1 (-20.5)	7.1 (-16.5)	8.0 (16.1)	7.8 (8.4)	7.8 (9.6)	7.8 (9.2)
Unit value of import (USD/ton, CIF)	549.1 (-35.3)	356.9 (-35.0)	356.9 (-35.0)	379.0 (-24.9)	388.3 (-21.6)	379.0 (-16.4)	416.2 (16.6)	421.6 (11.2)	400.3 (3.1)	429.6 (13.4)
Bituminous coal (USD/ton)										
From Australia	57.5 (-18.0)	65.9 (14.5)	65.9 (14.5)	93.2 (78.1)	100.0 (90.2)	86.3 (65.6)	88.4 (34.2)	97.1 (4.3)	96.6 (-3.4)	102.2 (18.4)
Unit value of import (CIF)	73.9 (-19.8)	68.8 (-6.8)	68.8 (-6.8)	74.9 (9.2)	95.1 (45.3)	99.9 (55.1)	104.4 (51.7)	102.6 (37.0)	107.1 (12.6)	101.2 (1.3)
Petroleum product (USD/bbl)										
Gasoline	69.4 (-37.4)	56.2 (-19.1)	56.2 (-19.1)	63.0 (-1.9)	59.0 (-0.4)	66.6 (20.4)	68.1 (21.2)	70.1 (11.3)	75.7 (28.2)	75.4 (13.1)
Kerosene	64.7 (-42.5)	52.8 (-18.3)	52.8 (-18.3)	60.9 (3.6)	56.6 (-0.3)	64.1 (33.6)	65.3 (23.6)	68.3 (12.1)	74.0 (30.9)	75.5 (17.7)
Diesel	66.6 (-41.6)	53.0 (-20.4)	53.0 (-20.4)	61.6 (1.1)	57.0 (-2.1)	64.2 (32.5)	66.4 (25.1)	70.3 (14.0)	73.2 (28.3)	75.9 (18.2)
Bunker-C	45.2 (-47.7)	35.4 (-21.6)	35.4 (-21.6)	43.9 (17.1)	42.6 (22.0)	50.2 (77.7)	49.7 (40.2)	51.9 (18.3)	56.7 (33.1)	56.4 (12.2)
Propane	416.3 (-47.4)	323.3 (-22.3)	323.3 (-22.3)	340.0 (-5.6)	390.0 (-1.3)	380.0 (-17.4)	468.8 (45.0)	575.0 (69.1)	590.0 (51.3)	590.0 (55.3)
Butane	436.7 (-46.1)	355.8 (-18.5)	355.8 (-18.5)	370.0 (1.4)	440.0 (1.1)	420.0 (-11.6)	500.8 (40.7)	580.0 (56.8)	570.0 (29.5)	570.0 (35.7)
Naphtha	52.5 (-44.3)	42.5 (-19.0)	42.5 (-19.0)	47.5 (-1.2)	46.5 (-2.6)	51.3 (13.9)	53.8 (26.6)	57.6 (21.1)	64.4 (38.4)	65.0 (26.9)

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: www.petronet.co.kr, IMF (primary commodity price), Monthly energy statistics

Total Primary Energy Supply (TPES)

	2015	2016p					2017p			
			M1~10	M8	M9	M10	M1~10	M8	M9	M10
Coal (Mton)	135.2 (1.2)	129.4 (-4.3)	106.4 (-5.4)	11.6 (-1.3)	10.5 (-3.0)	10.5 (-4.6)	116.1 (9.2)	12.8 (10.0)	12.1 (14.7)	11.5 (9.3)
- Coking coal excluded	98.5 (2.6)	96.0 (-2.5)	78.6 (-4.0)	8.7 (0.8)	7.7 (-1.5)	7.6 (-3.7)	87.8 (11.7)	9.8 (13.2)	9.2 (19.8)	8.5 (12.7)
Oil (Mbbl)	856.2 (4.2)	924.2 (7.9)	758.4 (7.9)	81.0 (9.5)	75.1 (8.7)	77.8 (6.0)	772.8 (1.9)	78.0 (-3.6)	77.1 (2.8)	80.1 (2.9)
- Non-energy oil excluded	411.7 (6.0)	458.0 (11.2)	374.7 (11.7)	40.0 (16.6)	37.2 (11.4)	38.7 (6.8)	367.1 (-2.0)	36.6 (-8.5)	37.0 (-0.5)	36.5 (-5.7)
LNG (Mton)	33.4 (-8.9)	34.9 (4.4)	27.3 (1.0)	2.4 (3.7)	2.1 (1.0)	2.6 (8.6)	27.5 (0.5)	2.3 (-3.6)	2.0 (-5.3)	2.2 (-15.8)
Hydro (TWh)	5.8 (-25.9)	6.6 (14.5)	5.7 (12.2)	0.7 (4.4)	0.6 (22.7)	0.5 (15.0)	6.1 (6.1)	1.0 (38.8)	0.7 (7.2)	0.6 (19.7)
Nuclear (TWh)	164.8 (5.3)	162.0 (-1.7)	139.1 (3.2)	14.7 (10.3)	12.7 (-0.8)	11.7 (-18.8)	126.7 (-8.9)	11.9 (-18.7)	12.3 (-2.8)	12.1 (3.9)
Others (Mtoe)	12.8 (17.2)	13.6 (5.7)	11.3 (5.3)	1.2 (8.0)	1.1 (2.3)	1.1 (3.6)	12.5 (10.6)	1.3 (8.6)	1.3 (14.1)	1.2 (8.8)
TPES (Mtoe)	287.7 (1.6)	294.7 (2.4)	241.7 (2.2)	25.2 (5.3)	22.9 (2.4)	23.6 (-0.2)	246.6 (2.0)	24.8 (-1.5)	23.9 (4.5)	24.0 (1.7)
- Non-energy oil excluded	232.4 (1.4)	236.6 (1.8)	194.0 (1.6)	20.1 (5.8)	18.2 (1.5)	18.7 (-1.5)	196.2 (1.1)	19.6 (-2.1)	18.9 (4.1)	18.5 (-0.7)
- Non-energy oil&coal excluded	206.7 (1.8)	213.2 (3.2)	174.5 (3.0)	18.0 (7.4)	16.2 (2.6)	16.6 (-0.8)	176.4 (1.1)	17.6 (-2.4)	16.9 (4.6)	16.5 (-0.8)

Note: p means provisional, () is year-on-year growth rates (%)
Source: Monthly energy statistics

Share of TPES by Sources

(unit: %)

	2015	2016p					2017p			
			M1~10	M8	M9	M10	M1~10	M8	M9	M10
Coal	29.8	27.8	27.9	29.2	29.2	28.2	29.0	31.7	31.1	29.5
- Coking coal excluded	20.8	19.8	19.8	21.1	20.4	19.5	21.0	23.5	22.7	21.0
Oil	38.1	40.1	40.1	40.9	41.7	42.1	39.9	40.0	41.1	42.4
- non-energy oil excluded	18.9	20.4	20.3	20.7	21.0	21.4	19.5	19.2	20.2	19.9
LNG	15.2	15.4	14.7	12.3	12.1	14.2	14.6	12.0	11.0	11.8
Hydro	0.4	0.5	0.5	0.6	0.6	0.4	0.5	0.8	0.6	0.5
Nuclear	12.1	11.6	12.1	12.3	11.7	10.4	10.9	10.2	11.0	10.8
Others	4.5	4.6	4.7	4.7	4.8	4.7	5.1	5.2	5.3	5.0
TPES	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: Monthly energy statistics

Total Final Consumption (TFC)

(Unit: Mtoe)

	2015	2016p					2017p			
			M1~10	M8	M9	M10	M1~10	M8	M9	M10
Industry	135.7 (0.3)	138.5 (2.0)	114.0 (1.4)	11.9 (2.9)	11.5 (3.5)	11.8 (2.0)	117.2 (2.8)	11.7 (-1.0)	11.7 (1.8)	11.9 (1.0)
Transport	40.3 (7.1)	42.7 (6.0)	35.4 (6.0)	4.0 (10.2)	3.6 (5.7)	3.6 (0.7)	35.9 (1.4)	3.7 (-5.1)	3.7 (4.1)	3.5 (-0.3)
Residential-commercial	36.6 (3.0)	38.3 (4.5)	30.4 (3.7)	2.5 (7.6)	2.3 (5.7)	2.4 (-0.9)	30.7 (1.0)	2.5 (1.3)	2.4 (2.2)	2.4 (1.4)
Public	5.8 (7.8)	6.2 (8.4)	5.1 (8.7)	0.5 (14.6)	0.5 (7.4)	0.5 (6.6)	5.2 (1.1)	0.5 (-1.6)	0.5 (2.0)	0.5 (-1.7)
TFC	218.4 (2.1)	225.7 (3.4)	184.9 (2.8)	18.8 (5.3)	17.8 (4.3)	18.2 (1.5)	189.0 (2.2)	18.5 (-1.6)	18.2 (2.3)	18.4 (0.7)
Coal (Mton)	52.7 (-1.1)	49.4 (-6.3)	40.7 (-6.9)	4.2 (-1.5)	4.3 (-0.9)	4.5 (-9.6)	39.2 (-3.5)	3.8 (-8.2)	3.9 (-9.3)	3.9 (-12.7)
Oil (Mbbbl)	841.6 (4.1)	902.4 (7.2)	740.2 (6.8)	79.6 (8.6)	74.2 (8.4)	76.3 (5.2)	764.9 (3.3)	77.5 (-2.7)	76.7 (3.4)	79.7 (4.4)
Electricity (TWh)	483.7 (1.3)	497.0 (2.8)	413.2 (2.5)	44.4 (5.9)	41.2 (3.7)	38.5 (2.9)	420.7 (1.8)	45.4 (2.1)	42.3 (2.7)	38.4 (-0.5)
City gas (Bm ³)	20.8 (-5.9)	21.3 (2.3)	16.7 (0.5)	1.0 (-2.5)	1.0 (-3.0)	1.2 (1.1)	17.4 (4.1)	1.1 (3.7)	1.1 (11.6)	1.3 (0.7)
Heat-others (1 000 toe)	12.2 (13.4)	12.6 (3.8)	10.3 (3.4)	1.0 (4.0)	0.9 (1.6)	0.9 (3.2)	11.1 (8.0)	1.1 (8.4)	1.0 (9.6)	1.0 (6.9)

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

Source: Monthly energy statistics

Share of the Total Final Consumption by Sources

(unit: %)

	2015	2016p					2017p			
			M1~10	M8	M9	M10	M1~10	M8	M9	M10
Industry	62.2	61.4	61.7	63.1	64.3	64.7	62.0	63.4	64.0	64.9
Transport	18.5	18.9	19.2	21.0	20.0	19.5	19.0	20.3	20.4	19.3
Residential-commercial	16.8	17.0	16.4	13.1	13.0	13.2	16.2	13.5	12.9	13.3
Public	2.6	2.8	2.8	2.8	2.7	2.5	2.7	2.8	2.7	2.5
Final energy	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0
Coal	16.1	14.6	14.7	14.9	16.0	16.1	13.8	14.0	14.2	14.1
Oil	49.1	50.9	50.9	53.7	52.8	53.2	51.5	53.1	53.7	55.1
Electricity	19.0	18.9	19.2	20.3	19.9	18.2	19.1	21.1	20.0	18.0
City gas	10.1	10.1	9.6	5.9	6.1	7.3	9.7	6.1	6.5	7.3
Heat-others	5.6	5.6	5.6	5.2	5.3	5.2	5.9	5.7	5.6	5.5

Note: p means provisional

Source: Monthly energy statistics

Statistics on Energy Production Facilities

	2014	2015	2016				2017p		
				M8	M9	M10	M8	M9	M10
Total capacity (GW)	93.2 (7.2)	97.6 (4.8)	105.9 (13.6)	101.0 (12.1)	102.0 (13.1)	103.1 (13.0)	114.2 (17.9)	115.2 (19.0)	115.9 (18.9)
Nuclear	20.7 -	21.7 (4.8)	23.1 (11.6)	21.7 (4.8)	21.7 (4.8)	21.7 (4.8)	22.5 (3.7)	22.5 (3.7)	22.5 (3.7)
Bituminous coal	25.9 (10.7)	26.2 (1.1)	30.9 (19.3)	27.9 (11.7)	28.8 (15.4)	29.9 (19.4)	35.3 (36.3)	36.2 (39.8)	36.2 (39.1)
Gas	30.3 (27.2)	32.2 (6.5)	32.6 (7.7)	32.6 (13.5)	32.6 (15.3)	32.6 (11.9)	36.7 (15.1)	36.6 (15.0)	37.1 (15.0)
Refinery capacity (mil BPSD)	2.9 -	3.1 (3.7)	3.1 (3.7)	3.1 (3.7)	3.1 (3.7)	3.1 (3.7)	3.1 -	3.1 -	3.1 -

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

Source: The monthly report on major electric power statistics

Statistics on Energy Consumption

	2014	2015	2016				2017p		
				M8	M9	M10	M8	M9	M10
The number of household demanding city gas (mil)	16.9 (3.1)	17.4 (3.0)	18.0 (3.4)	17.6 (3.4)	17.7 (3.4)	17.8 (3.4)	18.2 (3.3)	18.2 (3.3)	18.3 (3.1)
Registered cars (mil)	20.1 (3.7)	21.0 (4.3)	21.8 (3.9)	21.6 (4.3)	21.6 (4.1)	21.7 (4.0)	22.3 (3.4)	22.4 (3.5)	22.4 (3.4)
- gasoline	9.6 (2.0)	9.8 (2.3)	10.1 (2.9)	10.0 (2.8)	10.0 (2.8)	10.0 (2.8)	10.3 (2.9)	10.3 (2.9)	10.3 (2.9)
- diesel	7.9 (7.3)	8.6 (8.6)	9.2 (6.4)	9.0 (7.6)	9.0 (7.2)	9.1 (6.9)	9.4 (4.8)	9.5 (4.8)	9.5 (4.7)
- LPG	2.3 (-2.3)	2.3 (-3.4)	2.2 (-4.0)	2.2 (-3.7)	2.2 (-3.8)	2.2 (-3.9)	2.1 (-3.3)	2.1 (-3.1)	2.1 (-3.0)
- hybrid	0.1 (40.0)	0.2 (31.3)	0.2 (37.6)	0.2 (36.4)	0.2 (36.7)	0.2 (37.3)	0.3 (35.4)	0.3 (36.4)	0.3 (36.2)

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

Source: Monthly energy statistics

KEEI

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KEEI Monthly Korea Energy Trends is designed to be used for energy policy and market strategy in the government and industrial sector by analyzing and providing energy economic indicators in Korea.

This report is written by the Energy Demand and Supply Division of the Center for Energy Information and Statistics in cooperation with the Energy Statistics Research Division of KEEI and other related research divisions.

The energy economic indicators included in this report will be constantly updated until further confirmation.

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