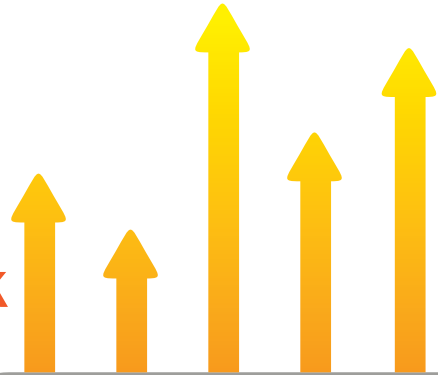


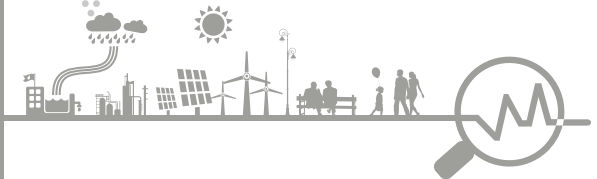


KEEI

Korea Energy Demand Outlook



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Published by the Korea Energy Economics Institute (KEEI), Energy Demand Outlook takes a closer look at the global energy market and supply and demand trends in domestic energy and examines the outlook for short-term energy demand.

This report outlines the recent changes in the supply and demand of energy and provides important data and policy implications in an effort to contribute to the establishment and adjustment of a series of energy policies by the government.

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.

Cherl-Hyun Kim (Electricity) wrote the report with the participation and support of Seungmoon Lee (Oil), Byunguk Kang (Coal and Gas), SungJae Lee (Heat and Renewables), Sungeun Kim, and Bora Nam. Also, the report was reviewed carefully by Soo-il Kim, and Gwang-su Park.

If you have any further inquiries, please send an email to EnergyOutlook@keei.re.kr or call +82-52-714-2102.

Summary

Energy consumption trends

- **In the Q3 of 2016, total primary energy supply (TPES) was estimated to be 71.7 Mtoe, 2.9% increase from the same period of the previous year**
 - Despite the tepid economic recovery, TPES grew at the fastest rate in five years due to abnormal heat wave and capacity expansion in the petrochemical industry.
 - The consumption of feedstock energy (including non-energy oil and coking coal for steel-making) declined 0.3% Year on Year (YoY) due to the decrease in coking coal for steel-making, despite increase in naphtha.

- **In the Q3, oil and gas consumption rose YoY, while coal and nuclear power declined**
 - **Oil (7.6%)** Oil consumption continued to increase at a pace of around 7% for two consecutive quarters, as LPG and naphtha consumption spiked in line with the expanding capacity of the petrochemical industry and higher exports of para-xylene. In addition, the consumption of oil for transportation and power generation soared on sliding oil prices.
 - **Coal (-3.1%)** Amid the continued downturn in major domestic downstream industries for steel, including the automobile and shipbuilding industries, consumption of coking coal for steel-making continued its sharp decline, falling by 7.8%. Moreover, with the downward revision of the maximum power output of coal-fired generators in January 2016, coal-fired power generation declined, pushing down the consumption of coal for power generation by 3.2%. As a result, overall coal consumption declined continuously over four consecutive quarters.
 - **Gas (6.3%)** Consumption of city gas for manufacturing dropped as industrial consumption slowed, due to the increase in replacement demand for oil products on bearish oil prices. However, consumption for power generation reversed its downward trend, increasing by 11.0%, driven by the rise in electricity consumption, increase in peak load power generation during the summer, and decline in base load power generation (coal-fired and nuclear). Accordingly, total gas consumption picked up.
 - **Nuclear (-2.4%)** With a thorough safety inspection of reactors No. 1 through 4 at Wolsong Nuclear Power Plant (PP) having been launched in the wake of the earthquakes that occurred in Gyeongju, the utilization rate of nuclear PPs (85.3%) dropped by 2.1%p YoY, causing the consumption of nuclear energy to turn downward in five quarters.

- **Electricity (4.3%)** A production slowdown in the iron & metal and fabricated metal sectors impeded the recovery of the industrial consumption of electricity; however, consumption by buildings soared, driven by the abnormal heat wave and electricity rate cuts. As a result, overall electricity consumption grew rapidly.
- **In the Q3 2016, total final energy consumption (TFC) was recorded as 54.3 Mtoe, up 4.1% YoY**
 - **Industry (3.3%)** Consumption of feedstock energy decreased, mainly due to the drop in coking coal consumption for steel-making. However, energy consumption for fuel surged on capacity expansion in the petrochemical industry. Accordingly, the growth of industrial energy consumption rose to the 3% level for the first time in the last two years.
 - **Transport (6.2%)** Consumption growth in the transportation sector slowed YoY, but still remained strong at over 6% due to low oil prices.
 - **Buildings (5.3%)** Consumption in the building sector rose sharply, driven by consumption for air conditioning due to the record high temperatures over the summer.

Energy demand outlook

- **In 2017, TPES and TFC are projected to rise by 2.2% (to 299.4 Mtoe) and 2.4% (to 230.5 Mtoe), respectively**
 - In 2016, TPES is forecast to increase 2.0%, led by sliding oil prices and capacity expansion in the petrochemical industry. In 2017, this growth is expected to pick up pace, as coal demand enters a growth phase with the launch of new large-scale bituminous-coal-fired power plants.
 - In 2016, TFC is estimated to rise by 3.0%, buoyed by a surge in energy demand from the transport and building sectors affected by low oil prices and an abnormal heat wave. In 2017, industrial energy demand is expected to mark a partial recovery from its sluggishness in the previous year, driven by an upward turn in exports. However, as energy demand for air conditioning falters with the expected return to typical summer temperatures, TFC growth will likely slow to the 2% level.
- **Oil demand growth would slow down; coal demand would rebound; nuclear power generation would soar; and gas demand would plummet**
 - In 2016, oil demand is forecast to climb by a mid-6% level thanks to bearish oil prices as well as expansion of petrochemical capacity, but in 2017, growth should fall to the 2% level, led by growing demand for fuel, on a moderate rise in oil prices.

- In 2016, coal demand should plunge about 5% due to sharp decline in demand for power generation and steel-making. However, in 2017, it should bounce back nearly 6%, as demand for both power generation and steel-making reverses its decline.
- In 2016, even though new nuclear power plants entered the electricity market, nuclear power generation should be little changed, as 4 reactor units suspended operation due to a safety inspection. However, in 2017, nuclear power generation should see robust growth at the 7% level thanks to the effects of new nuclear power plants.
- In 2016, gas demand growth is projected to recover to the mid 2% level, boosted by an upturn in demand for power generation and gas production as well as local heating. However, in 2017, gas demand is expected to plunge over 12%, as demand for power generation tumbles back.
- In 2016, electricity demand should rise 2.6% on greater demand from buildings, but in 2017, growth should slow to the mid 1% level due to lackluster recovery of industrial demand as well as a slowdown in demand from buildings.

Growth in demand for key energy sources (Unit: %)

	2013	2014	2015	2016e	2017e
TPES	0.6	1.0	1.6	2.0	2.2
Coal	1.1	2.9	1.1	- 5.0	6.0
Oil	- 0.3	- 0.5	4.2	6.7	2.2
Gas	4.8	- 9.2	- 8.7	2.5	- 12.1
Nuclear	- 7.7	12.7	5.3	0.0	7.4
Electricity	1.8	0.6	1.3	2.6	1.5

□ In 2017, energy demand in the industrial sector would partially recover, while energy demand in the transport and building sectors would slow down

- In 2016, industrial energy demand is expected to rise over 2%, in spite of shrinking demand for feedstock, due to a surge in demand for fuel. However, in 2017, it should expand more than 3%, as demand for feedstock swings to growth.
- In 2016, transport energy demand is estimated to jump nearly 5% on an oil price plunge. But in 2017, growth should slip to below 2% on an oil price rise, slowing YoY.
- In 2016, building energy demand is projected to increase nearly by 4% due to the unusual summer heat wave. But in 2017, growth should slow down to around 1% level, assuming the return to yearly average temperature and high base effect.

Key features and implications

□ In the Q3 2016, TFC growth outpaced GDP due to the capacity expansion and heat wave

- Industrial energy consumption growth surpassed economic growth in 2 years, aided by the expansion of petrochemical capacity.
- Energy consumption in the building and transport sectors rose sharply due to abnormal heat wave, significantly contributing to TFC growth.
- Accordingly, TFC increased by over 4%, showing the strongest growth over the past five years.

□ In the Q3 2016, the power generation mix changed drastically due to a decline in coal-fired and nuclear power generation plant utilization rates

- The proportion of total power generation occupied by base load power generation dropped by nearly 8%p YoY, falling to 64%, as base load (coal-fired and nuclear) power generation fell by 9.8%, due to a decline in the utilization rate of coal-fired and nuclear power generation plants.
- As peak load power generation, or gas and oil power generation, replaced the decline in base load power generation, the share of gas and oil power generation in total power generation increased accordingly.
- The composition of total power generation by energy source for the Q3 2016 was: coal (33.7%), nuclear (30.7%), gas (20.4%), and oil (10.4%).

□ In 2017, the growth of TPES is expected to increase due to the increase in portion of power plants with relatively low efficiency in power generation mix

- With the introduction of large-scale bituminous coal-fired power plants, coal demand for power generation is projected to surge in 2017, following the decline in the previous year, ending up with the growth in energy demand for power generation.
- Gas power generation, which is one type of peak load power generation, and gas demand for power generation is projected to decline sharply, as the share of base load power generation surges.
- Growth in energy demand for power generation should rise YoY on a surge in low efficiency coal-fired power generation, although the growth of total power generation will slow. Accordingly, TPES growth should accelerate YoY.

- **In 2017, on the other hand, TFC growth is expected to slow down YoY mainly in the building and transportation sectors**
 - TFC growth is forecast to slow down YoY, as energy demand for transportation and buildings falls YoY with the increase in oil prices and return to average summer temperatures.
 - Industrial energy demand is expected to continue growing at a rate similar to that of the previous year, driven by the expansion of petrochemical capacity, thus driving up TFC.

The Main Indicator and Energy Outlook Result

Main Economic and Energy Indicators

	2013	2014	2015		2016		2017		2018	2019	
			1H	2H	1H	2H	1H	2H			
Economy and Population											
GDP (2010 trillion won)	1 380.8	1 427.0	710.7	753.6	1 464.2	732.2	770.5	1 502.7	748.3	789.7	1 538.0
Industrial Production(2010=100)	108.2	108.4	107.1	108.3	107.7	107.5	109.0	108.2	107.8	109.3	108.6
Crude Oil Price (Dubai, USD/bbl)	105.3	96.7	56.3	45.2	50.8	36.8	45.6	41.2	49.6	53.8	51.7
Working Days	274.5	271.5	135.5	138.5	274.0	133.5	139.5	273.0	136.0	136.5	272.5
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Population (million)	50.2	50.4	50.6	50.6	50.6	50.8	50.8	50.8	51.0	51.0	51.0
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Average Temperature (°C)	12.5	13.4	10.4	16.8	13.6	10.2	16.9	13.6	10.0	16.0	13.0
Cooling Degree days	908.9	822.7	223.0	638.1	861.1	239.1	737.3	976.4	184.2	606.6	790.9
Heating Degree days	2 911.2	2 519.6	1 611.0	866.1	2 477.1	1 654.1	935.6	2 589.7	1 641.0	970.1	2 611.0
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Energy Indicators											
Total Primary Energy Demand (Mtoe)	280.2	282.9	143.1	144.3	287.4	145.5	147.5	293.0	147.8	151.6	299.4
Energy Intensity (toe/million won)	0.203	0.199	0.202	0.192	0.197	0.199	0.192	0.195	0.198	0.192	0.195
TPED/capita (toe/capita)	5.579	5.610	2.827	2.851	5.678	2.864	2.904	5.769	2.900	2.974	5.874
Electricity Generation (TWh)	517.7	522.0	260.6	267.5	528.1	266.1	272.7	538.8	270.1	277.0	547.1
Electricity Generation/capita (MWh/capita)	10.3	10.4	5.1	5.3	10.4	5.2	5.4	10.6	5.3	5.4	10.7
Electricity Demand/capita (MWh/capita)	9.5	9.5	4.8	4.7	9.6	4.9	4.9	9.8	4.9	4.9	9.9

Energy Demand

	2013	2014	2015		2016e		2017e				
			1H	2H	1H	2H	1H	2H			
Total Primary Energy Supply											
Coal (Mton)	129.6	133.3	66.7	68.1	134.8	61.8	66.3	128.0	63.8	72.0	135.8
Oil (Mbbbl)	825.2	821.5	417.5	438.7	856.2	445.6	468.3	913.9	455.5	478.7	934.2
Gas (Bm ³)	40.3	36.6	18.2	15.2	33.4	17.9	16.4	34.3	16.8	13.3	30.1
Hydro (TWh)	8.4	7.8	2.8	3.0	5.8	2.9	3.6	6.5	3.1	3.6	6.8
Nuclear (TWh)	138.8	156.4	78.5	86.3	164.8	86.4	78.4	164.8	88.1	88.8	176.9
Other Renewables (Mtoe)	9.0	11.0	6.4	6.4	12.8	7.2	7.1	14.3	8.1	8.2	16.3
Total (Mtoe)	280.2	282.9	143.1	144.3	287.4	145.5	147.5	293.0	147.8	151.6	299.4
Coal	81.9	84.6	42.3	43.2	85.5	39.1	41.9	81.0	40.4	45.4	85.8
Oil	105.8	104.9	53.5	56.1	109.6	57.1	59.9	117.0	58.3	61.1	119.4
Gas	52.4	47.7	23.7	19.8	43.5	23.2	21.4	44.6	21.8	17.4	39.2
Nuclear	1.8	1.6	0.6	0.6	1.2	0.6	0.8	1.4	0.7	0.8	1.4
Hydro	29.3	33.0	16.6	18.2	34.8	18.2	16.5	34.8	18.6	18.7	37.3
Other Renewables	9.0	11.0	6.4	6.4	12.8	7.2	7.1	14.3	8.1	8.2	16.3
Total Final Consumption											
Coal (Mton)	49.5	53.1	25.5	26.8	52.4	23.1	25.4	48.5	23.3	25.4	48.7
Oil (Mbbbl)	799.1	808.5	410.2	431.3	841.6	433.5	457.0	890.5	444.2	470.2	914.4
Gas (Bm ³)	23.9	22.1	12.2	8.6	20.8	12.3	8.6	21.0	12.4	8.7	21.2
Electricity (TWh)	474.8	477.6	244.5	239.2	483.7	248.5	247.8	496.3	252.3	251.7	503.9
Heat (TWh)	1.7	1.6	1.0	0.6	1.6	1.0	0.6	1.7	1.1	0.6	1.7
Other Renewables (Mtoe)	7.9	9.5	5.6	5.5	11.1	6.5	6.4	12.8	7.0	7.3	14.3
Total (Mtoe)	210.2	213.8	109.8	108.7	218.5	112.6	112.4	225.0	114.9	115.6	230.5
Coal	32.7	35.4	17.1	17.8	34.9	15.5	16.9	32.3	15.5	16.9	32.5
Oil	101.8	103.0	52.4	55.0	107.3	55.2	58.1	113.4	56.5	59.8	116.3
Gas	25.3	23.3	12.9	9.2	22.0	13.0	9.2	22.2	13.1	9.3	22.4
Electricity	40.8	41.1	21.0	20.6	41.6	21.4	21.3	42.7	21.7	21.6	43.3
Heat	1.7	1.6	1.0	0.6	1.6	1.0	0.6	1.7	1.1	0.6	1.7
Other Renewables	7.9	9.5	5.6	5.5	11.1	6.5	6.4	12.8	7.0	7.3	14.3
Industry	130.8	136.0	67.4	69.2	136.6	68.4	71.2	139.6	70.2	73.8	144.0
Transport	37.3	37.6	19.6	20.7	40.3	20.5	21.7	42.2	20.9	22.1	42.9
Buildings	42.0	40.1	22.8	18.8	41.6	23.7	19.6	43.2	23.9	19.7	43.6

Energy Demand

(yoy, %)

	2013	2014	2015		2016e		2016e		2017e		
			1H	2H	1H	2H	1H	2H			
									1H	2H	
Total Primary Energy Supply											
Coal (Mton)	1.1	2.9	2.7	-0.4	1.1	-7.5	-2.7	-5.0	3.3	8.6	6.0
Oil (Mbbbl)	-0.3	-0.5	3.2	5.2	4.2	6.7	6.8	6.7	2.2	2.2	2.2
Gas (Bm ³)	4.8	-9.2	-5.8	-11.9	-8.7	-2.1	8.0	2.5	-6.0	-18.8	-12.1
Hydro (TWh)	9.7	-6.8	-22.3	-29.0	-25.9	2.2	21.2	12.0	9.6	0.1	4.3
Nuclear (TWh)	-7.7	12.7	0.7	9.9	5.3	10.1	-9.2	0.0	1.9	13.3	7.4
Other Renewables (Mtoe)	11.8	21.9	17.6	16.8	17.2	12.6	10.1	11.3	12.7	15.9	14.3
Total (Mtoe)	0.6	1.0	1.5	1.7	1.6	1.7	2.2	2.0	1.6	2.8	2.2
Coal	1.2	3.3	2.4	-0.3	1.0	-7.5	-2.9	-5.2	3.1	8.4	5.9
Oil	-0.3	-0.8	3.3	5.4	4.4	6.8	6.7	6.8	2.0	2.0	2.0
Gas	5.1	-9.0	-5.9	-12.0	-8.8	-2.1	8.0	2.5	-6.0	-18.8	-12.2
Nuclear	9.7	-6.8	-22.3	-29.0	-25.9	2.2	21.2	12.0	9.6	0.1	4.3
Hydro	-7.7	12.7	0.7	9.9	5.3	10.1	-9.2	0.0	1.9	13.3	7.4
Other Renewables	11.8	21.9	17.6	16.8	17.2	12.6	10.1	11.3	12.7	15.9	14.3
Total Final Consumption											
Coal (Mton)	2.3	7.1	-2.7	0.1	-1.3	-9.4	-5.4	-7.3	0.6	0.2	0.4
Oil (Mbbbl)	0.3	1.2	3.6	4.6	4.1	5.7	6.0	5.8	2.5	2.9	2.7
Gas (Bm ³)	0.5	-7.5	-2.7	-10.1	-5.9	1.4	0.0	0.8	0.6	1.4	1.0
Electricity (TWh)	1.8	0.6	1.8	0.7	1.3	1.7	3.6	2.6	1.5	1.6	1.5
Heat (TWh)	-3.2	-7.6	6.1	-9.7	-0.5	8.1	2.2	5.9	3.1	4.9	3.8
Other Renewables (Mtoe)	10.7	20.1	17.7	16.7	17.2	16.4	14.7	15.5	7.9	14.8	11.3
Total (Mtoe)	1.0	1.7	2.2	2.2	2.2	2.5	3.4	3.0	2.1	2.8	2.4
Coal	2.2	8.4	-2.9	0.1	-1.4	-9.5	-5.6	-7.5	0.6	0.4	0.5
Oil	0.1	1.1	3.8	4.6	4.2	5.5	5.8	5.6	2.4	2.9	2.6
Gas	-0.3	-7.8	-2.3	-9.8	-5.6	1.3	-0.0	0.8	0.6	1.4	1.0
Electricity	1.8	0.6	1.8	0.7	1.3	1.7	3.6	2.6	1.5	1.6	1.5
Heat	-3.2	-7.6	6.1	-9.7	-0.5	8.1	2.2	5.9	3.1	4.9	3.8
Other Renewables	10.7	20.1	17.7	16.7	17.2	16.4	14.7	15.5	7.9	14.8	11.3
Industry	2.0	4.0	-0.4	1.3	0.5	1.4	2.9	2.2	2.6	3.7	3.1
Transport	0.5	0.8	6.9	7.2	7.1	5.0	4.5	4.7	1.5	1.9	1.7
Buildings	-1.6	-4.5	6.6	0.2	3.6	3.7	4.2	3.9	1.2	0.7	1.0

Energy Demand by Sector

(Mtoe)

	2013	2014	2015		2016e			2017e			
			1H	2H		1H	2H		1H	2H	
Industry	130.8	136.0	67.4	69.2	136.6	68.4	71.2	139.6	70.2	73.8	144.0
Coal	31.8	34.7	16.8	17.4	34.2	15.2	16.5	31.7	15.3	16.6	31.9
Oil	60.1	61.2	30.3	31.9	62.2	32.1	34.0	66.1	33.1	35.4	68.6
Gas	10.3	9.3	4.2	3.8	8.0	4.1	3.7	7.7	4.1	3.7	7.8
Electricity	22.1	22.8	11.5	11.4	22.8	11.5	11.6	23.2	11.7	11.9	23.5
Heat	-	-	-	-	-	-	-	-	-	-	-
Other Renewables	6.5	8.1	4.7	4.7	9.4	5.4	5.4	10.8	5.9	6.2	12.1
Transport	37.3	37.6	19.6	20.7	40.3	20.5	21.7	42.2	20.9	22.1	42.9
Coal	-	-	-	-	-	-	-	-	-	-	-
Oil	35.5	35.8	18.6	19.7	38.4	19.5	20.6	40.2	19.8	21.0	40.8
Gas	1.3	1.3	0.6	0.7	1.3	0.6	0.6	1.3	0.6	0.7	1.3
Electricity	0.2	0.2	0.1	0.1	0.2	0.1	0.1	0.2	0.1	0.1	0.2
Heat	-	-	-	-	-	-	-	-	-	-	-
Other Renewables	0.4	0.4	0.2	0.2	0.4	0.3	0.3	0.5	0.3	0.3	0.6
Buildings*	42.0	40.1	22.8	18.8	41.6	23.7	19.6	43.2	23.9	19.7	43.6
Coal	0.9	0.7	0.2	0.4	0.7	0.2	0.4	0.6	0.2	0.3	0.5
Oil	6.2	6.0	3.4	3.3	6.8	3.6	3.5	7.1	3.6	3.4	6.9
Gas	13.7	12.7	8.1	4.7	12.7	8.3	4.8	13.2	8.4	4.9	13.3
Electricity	18.6	18.1	9.5	9.1	18.6	9.7	9.5	19.3	9.9	9.7	19.6
Heat	1.7	1.6	1.0	0.6	1.6	1.0	0.6	1.7	1.1	0.6	1.7
Other Renewables	1.0	1.0	0.7	0.6	1.3	0.8	0.7	1.5	0.8	0.8	1.6
Transform	137.8	135.1	68.1	65.9	134.0	68.3	66.2	134.5	68.7	67.5	136.2
Coal	49.2	49.2	25.2	25.3	50.6	23.7	25.0	48.7	24.8	28.5	53.3
Oil	4.0	2.0	1.1	1.1	2.2	1.9	1.7	3.6	1.7	1.3	3.0
Gas	52.4	47.7	23.7	19.8	43.5	23.2	21.4	44.6	21.8	17.3	39.1
Nuclear	29.3	33.0	16.6	18.2	34.8	18.2	16.5	34.8	18.6	18.7	37.3
Hydro	1.8	1.6	0.6	0.6	1.2	0.6	0.8	1.4	0.7	0.8	1.4
Renewables	1.1	1.5	0.8	0.9	1.7	0.7	0.7	1.5	1.1	0.9	2.1

* include residential, commercial, public-etc usage

Coal

(Mton)

	2013	2014	2015		2016e			2017e			
			1H	2H		1H	2H		1H	2H	
Total Coal Demand	129.6	133.3	66.7	68.1	134.8	61.8	66.3	128.0	63.8	72.0	135.8
Transform	80.0	80.3	41.2	41.3	82.5	38.6	40.9	79.5	40.5	46.5	87.0
Power Generation	80.0	80.3	41.2	41.3	82.5	38.6	40.9	79.5	40.5	46.5	87.0
Heat	-	-	-	-	-	-	-	-	-	-	-
Gas Manufacture	-	-	-	-	-	-	-	-	-	-	-
Total Final Consumption	49.5	53.1	25.5	26.8	52.4	23.1	25.4	48.5	23.3	25.4	48.7
Industry	47.6	51.4	25.0	25.9	50.9	22.7	24.6	47.2	22.8	24.7	47.6
Transport	-	-	-	-	-	-	-	-	-	-	-
Buildings	1.9	1.6	0.6	0.9	1.5	0.5	0.8	1.3	0.4	0.7	1.2
Consumption by products											
Anthracite	10.7	10.2	5.1	5.6	10.7	4.6	5.8	10.3	4.5	5.6	10.1
Bituminous	118.8	123.1	61.7	62.5	124.2	57.2	60.5	117.7	59.3	66.4	125.7
Iron making	32.1	37.6	18.0	18.7	36.8	16.2	17.2	33.4	16.3	17.4	33.7
Cement	4.6	4.9	2.3	2.3	4.7	2.1	2.3	4.4	2.1	2.3	4.4
Power Generation	79.7	78.2	40.1	40.3	80.4	37.6	39.8	77.5	39.6	45.6	85.2

Oil

(Mbbbl)

	2013	2014	2015p		2016e		2017e				
			1H	2H	1H	2H	1H	2H			
Total Oil Demand	825.2	821.5	417.5	438.7	856.2	445.6	468.3	913.9	455.5	478.7	934.2
Transform	26.1	13.0	7.3	7.3	14.6	12.2	11.2	23.4	11.3	8.5	19.8
Power Generation	23.0	11.0	6.3	6.6	12.8	11.2	10.4	21.6	10.2	7.6	17.9
Heat	1.3	1.0	0.6	0.2	0.8	0.4	0.2	0.5	0.4	0.2	0.6
Gas Manufacture	1.9	0.9	0.5	0.6	1.0	0.7	0.6	1.3	0.7	0.6	1.3
Total Final Consumption	799.1	808.5	410.2	431.3	841.6	433.5	457.0	890.5	444.2	470.2	914.4
Industry	482.0	491.8	243.8	257.2	501.0	259.6	275.9	535.5	268.6	287.3	555.8
Transport	267.4	268.8	139.4	147.6	287.1	145.5	153.7	299.2	147.4	156.4	303.8
Buildings	49.7	47.9	27.0	26.5	53.5	28.3	27.5	55.8	28.2	26.6	54.8
Consumption by products											
Gasoline	73.4	73.5	37.1	39.5	76.6	38.1	40.6	78.7	38.6	41.3	80.0
Diesel (including Transformation)	143.0	144.8	76.0	80.4	156.4	81.3	84.7	166.0	82.3	85.9	168.1
Kerosene (including Transformation)	18.8	15.4	8.2	8.0	16.2	10.0	8.8	18.8	9.8	8.4	18.1
B-C (including Transformation)	46.4	33.3	19.3	19.0	38.3	24.8	24.3	49.2	24.0	22.0	46.0
Jet Oil	30.3	32.0	17.1	17.3	34.4	18.2	18.4	36.6	19.0	18.8	37.8
LPG (including Transformation)	93.1	89.6	41.5	48.4	89.9	50.4	55.8	106.2	53.1	55.8	108.9
Naphtha	384.2	396.3	203.1	207.7	410.8	205.1	216.7	421.8	211.5	227.8	439.3
Other Non-Energy	36.0	36.6	15.4	18.3	33.7	17.6	19.0	36.6	17.3	18.7	36.0

Gas

	2013	2014	2015		2016e			2017e			
			1H	2H		1H	2H		1H	2H	
Total Gas Demand (Mton)	40.3	36.6	18.2	15.2	33.4	17.9	16.4	34.3	16.8	13.3	30.1
Transform	40.0	36.4	18.1	15.0	33.1	17.7	16.3	33.9	16.6	13.2	29.8
Power Generation	17.6	15.9	7.6	7.0	14.6	6.9	8.2	15.1	5.8	4.9	10.7
Heat	2.6	2.2	0.9	0.7	1.5	0.9	0.7	1.7	1.0	0.8	1.7
Gas Manufacture	19.8	18.3	9.7	7.3	17.0	9.8	7.4	17.2	9.9	7.5	17.3
Industry	0.4	0.3	0.2	0.2	0.3	0.2	0.2	0.3	0.2	0.2	0.3
City Gas (Bm³)	23.9	22.1	12.2	8.6	20.8	12.3	8.6	21.0	12.4	8.7	21.2
Industry*	9.5	8.7	3.8	3.5	7.3	3.7	3.4	7.1	3.8	3.4	7.2
Transport	1.2	1.3	0.6	0.6	1.2	0.6	0.6	1.2	0.6	0.6	1.2
Buildings	13.1	12.2	7.7	4.5	12.2	8.0	4.6	12.6	8.0	4.7	12.8

* exclude industrial LNG usage

Electricity

(TWh)

	2013	2014	2015		2016e			2017e			
			1H	2H		1H	2H		1H	2H	
Net Electricity Demand	517.7	522.0	260.6	267.5	528.1	266.1	272.7	538.8	270.1	277.0	547.1
Own use and Losses	42.9	44.4	16.2	28.3	44.4	17.6	25.0	42.5	17.8	25.4	43.2
Total Final Consumption	474.8	477.6	244.5	239.2	483.7	248.5	247.8	496.3	252.3	251.7	503.9
Industry	256.8	264.6	133.3	132.4	265.6	134.1	135.4	269.6	135.9	137.8	273.7
Transport	2.2	2.0	1.1	1.2	2.2	1.3	1.4	2.7	1.4	1.5	2.8
Buildings	215.8	211.0	110.1	105.7	215.8	113.1	110.9	224.0	115.0	112.4	227.4
Installed Electrical Capacity (GW)*	327.2	357.5	190.1	194.4	384.5	197.5	204.9	402.4	218.6	231.8	450.4
Coal	98.1	103.6	54.1	54.3	108.4	54.8	60.3	115.1	65.8	74.0	139.8
Oil	19.5	18.5	8.5	8.5	17.0	8.5	8.3	16.8	8.3	8.3	16.6
Gas	89.1	110.6	63.1	64.1	127.2	64.8	65.2	130.0	69.2	72.0	141.3
Nuclear	82.9	82.9	41.4	43.4	84.9	43.4	43.9	87.3	46.0	46.0	92.0
Hydro	25.8	25.8	12.9	12.9	25.9	13.0	13.0	25.9	13.0	13.0	25.9
Other Renewables	11.8	16.1	10.0	11.1	21.2	13.0	14.3	27.3	16.3	18.6	34.8
Electricity Generation of Power Plants*	517.7	522.0	260.6	267.5	528.1	266.1	272.7	538.8	270.1	277.0	547.1
Coal	200.4	203.4	102.6	102.1	204.7	101.6	93.9	195.6	111.3	117.6	228.9
Oil	15.8	25.0	15.7	16.0	31.7	8.6	27.8	36.3	7.9	20.3	28.1
Gas	128.3	114.7	51.7	49.1	100.8	55.3	60.0	115.3	46.3	36.0	82.4
Nuclear	138.8	156.4	78.5	86.3	164.8	86.5	78.4	164.9	88.2	88.8	177.0
Hydro	8.5	7.8	2.8	3.0	5.8	3.0	3.6	6.6	3.1	3.6	6.8
Other Renewables	11.3	14.7	9.4	10.9	20.3	11.0	8.5	19.5	13.2	10.7	23.9
Fuel Consumption of Power Plants (Mtoe)*	108.3	108.1	54.2	55.4	109.6	54.2	55.5	109.7	54.5	56.7	111.1
Coal	49.2	49.2	25.2	25.3	50.6	23.7	25.0	48.7	24.8	28.5	53.3
Oil	3.6	1.7	1.0	1.0	2.0	1.8	1.6	3.4	1.6	1.2	2.8
Gas	23.3	21.0	10.0	9.3	19.3	9.2	10.8	20.0	7.7	6.5	14.2
Nuclear	29.3	33.0	16.6	18.2	34.8	18.2	16.5	34.8	18.6	18.7	37.3
Hydro	1.8	1.6	0.6	0.6	1.2	0.6	0.8	1.4	0.7	0.8	1.4
Other Renewables	1.1	1.5	0.8	0.9	1.7	0.7	0.7	1.5	1.1	0.9	2.1

* District Heat is classified by fuel type since 2014

Heat and Other Renewables

(Mtoe)

	2013	2014	2015		2016e		2017e				
			1H	2H	1H	2H	1H	2H			
Net Heat Demand	1.8	1.6	1.0	0.6	1.6	0.9	0.6	1.6	1.0	0.7	1.6
Own use and Losses	0.1	-0.0	-0.0	0.0	0.0	-0.1	0.0	-0.1	-0.1	0.0	-0.1
Total Final Consumption	1.7	1.6	1.0	0.6	1.6	1.0	0.6	1.7	1.1	0.6	1.7
Industry	-	-	-	-	-	-	-	-	-	-	-
Transport	-	-	-	-	-	-	-	-	-	-	-
Buildings	1.7	1.6	1.0	0.6	1.6	1.0	0.6	1.7	1.1	0.6	1.7
Heat Production by fuel											
Coal	-	-	-	-	-	-	-	-	-	-	-
Oil	1.2	1.0	0.6	0.4	1.0	0.7	0.4	1.1	0.7	0.4	1.1
Gas	0.6	0.5	0.3	0.2	0.5	0.2	0.2	0.5	0.2	0.2	0.5
Nuclear	-	-	-	-	-	-	-	-	-	-	-
Hydro	-	-	-	-	-	-	-	-	-	-	-
Other Renewables	-	-	-	-	-	-	-	-	-	-	-
Fuel Consumption of District Heat											
Coal	-	-	-	-	-	-	-	-	-	-	-
Oil	0.2	0.2	0.1	0.0	0.1	0.1	0.0	0.1	0.1	0.0	0.1
Gas	3.3	2.8	1.1	0.9	2.0	1.2	1.0	2.2	1.3	1.0	2.3
Nuclear	-	-	-	-	-	-	-	-	-	-	-
Hydro	-	-	-	-	-	-	-	-	-	-	-
Other Renewables	-	-	-	-	-	-	-	-	-	-	-
Other Renewables	10.8	12.6	7.0	7.1	14.1	7.8	7.9	15.7	8.8	9.0	17.8
Hydro	1.8	1.6	0.6	0.6	1.2	0.6	0.8	1.4	0.7	0.8	1.4
Transform	1.1	1.5	0.8	0.9	1.7	0.7	0.7	1.5	1.1	0.9	2.1
Total Final Consumption	7.9	9.5	5.6	5.5	11.1	6.5	6.4	12.8	7.0	7.3	14.3
Industry	6.5	8.1	4.7	4.7	9.4	5.4	5.4	10.8	5.9	6.2	12.1
Transport	0.4	0.4	0.2	0.2	0.4	0.3	0.3	0.5	0.3	0.3	0.6
Buildings	1.0	1.0	0.7	0.6	1.3	0.8	0.7	1.5	0.8	0.8	1.6



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405-11, Jongga-ro, Jung-gu, Ulsan, Korea, 44543
Phone: (052)714-2270
Fax: (052)714-2025
E-mail : webmaster@keei.re.kr
Homepage : <http://www.keei.re.kr>



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