

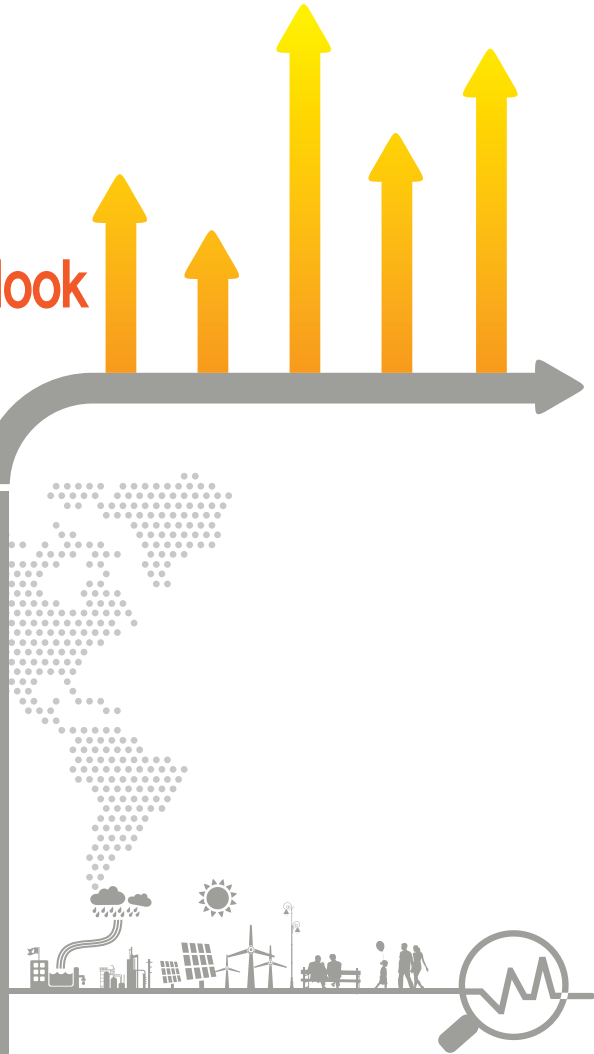


KEEI Korea Energy Demand Outlook

KEEI
VIEW OF ENERGY
DEMAND



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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.

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1. Energy consumption trends

□ In Q1 2016, Total Primary Energy Supply (TPES) is estimated to have risen 3.0% Year on Year (YoY) to 77.5 Mtoe

- Despite continued sluggish industrial production, TPES increased on greater consumption of oil due to sliding oil prices.
- Even though the decline in coal consumption quickened pace, TPES picked up after growing less than 1% for three quarters in a row as gas consumption turned upward after recent steep declines.

□ Consumption growth for most energy sources slowed Quarter on Quarter (QoQ), but gas consumption turned upward after recent steep declines

- **Oil (6.2%)** Oil consumption growth slowed QoQ, as naphtha consumption faltered due to dissipation of the effects of benzene and para-xylene capacity additions in 2014. Still, oil consumption recorded sharp growth at the 6% level on the back of a surge in LPG consumption (due to propylene capacity expansion in August 2015) as well as bearish oil prices.
- **Coal (-4.6%)** Amid the downturn in the steel industry, consumption of coking coal for steel-making stagnated. Coal-fired power generation also plunged 13.5% with the downward revision of maximum power generation capacity for coal-fired generators. As such, coal consumption, especially for power generation, continued to decline.
- **Gas (2.2%)** The pace of decline in gas consumption for power generation slowed markedly thanks to reduced coal-fired power generation. Consumption of city gas also picked up, boosted by increased heating degree days and city gas price cuts in accordance with the material cost linkage system. Accordingly, total gas consumption swung to growth.
- **Nuclear (12.2%)** Nuclear power generation growth slowed QoQ, as reactor unit 1 at Hanwool Nuclear Power Plant (PP) shut down due to a problem with its control rods. Still, nuclear power consumption continued to grow over 10% for the second consecutive quarter, as reactor unit 1 at Wolsung Nuclear PP got an approval for a 10-year life extension in late June 2015 and reactor unit 2 at Wolsung Nuclear PP kicked off in July 2015.
- **Electricity (1.8%)** Electric power consumption, which had declined in Q4 2015, swung to growth, as consumption for buildings picked up due to an upturn in heating demand. However, the growth rate was below 2% as industrial consumption stagnated (growing less than 2%) due to weakness in the iron and steel and fabricated metal sectors.

□ **In Q1 2016, Total Final Consumption (TFC) increased 3.3% YoY to 59.8 Mtoe**

- **Industry (2.7%)** The pace of growth in energy consumption for feedstock slowed, especially for naphtha, but energy consumption for fuel, led by LPG, soared QoQ thanks to the propane dehydrogenation capacity additions in the petrochemical industry.
- **Transport (3.9%)** Energy consumption for transportation lost steam on high base effects, but still maintained strong growth at about 4% on a rapid surge in consumption of most petroleum products except for LPG amid the oil price slump.
- **Buildings (4.4%)** Major energy consumption for heating spiked due to a 6.2% rise in heating degree days, pushing up TFC.

Energy demand outlook

□ **In 2016, energy demand is projected to increase more than 1% due to new PPs and low oil prices**

- TPES is expected to rise 1.6% YoY to 289.6 Mtoe, aided by bearish oil prices and new nuclear power plants, moving up above the 0% growth that has been characteristic of the past four years.
- TFC is also expected to rise 2.3% YoY to 222.6 Mtoe, as the domestic economy is expected to pick up, driven by domestic demand, and energy prices are expected to remain low.

□ **Oil and nuclear power should drive growth in energy demand, while demand for coal and gas is expected to decline**

- In 2016, oil demand is projected to maintain robust growth on continued soft oil prices.
- Coal demand is expected to decrease, despite the planned entry of new coal-fired PPs, as coal demand for power generation should shrink on lower utilization at power generation facilities.
- Nuclear power generation should grow at a rapid pace, due to an increase in utilization rate of nuclear PPs, restart of operations at some nuclear PPs, and the entry of new ones.
- Gas demand should continue to decline in 2016 on shrinking demand for power generation, but at a much slower pace.
- Electric power demand for industries should pick up modestly, boosted by growth in domestic demand, while demand for buildings should slow down due to the dissipation of high base effects of 2014. As a result, overall electric power demand should grow at a similar rate as the previous year. However, if the unusual heat wave persists, electric power demand for buildings may grow faster than expected.

Growth in demand for major energy sources

	2012	2013	2014	2015p	2016e
TPES	0.7	0.6	0.9	0.8	1.6
Coal	- 2.1	1.1	2.9	- 0.1	- 2.9
Oil	3.2	- 0.3	- 0.5	4.2	3.8
Gas	8.1	4.8	- 9.2	- 8.7	- 3.9
Nuclear	- 2.8	- 7.7	12.7	5.3	9.3
Electricity	2.5	1.8	0.6	1.3	1.3

□ **Growth in industrial energy demand is projected to recover somehow, while the growth in the transport and buildings sectors should slow**

- In 2016, energy demand should swing to growth (about 2%) for industry on the back of better demand for coking coal in the steel industry coupled with an upturn in LPG demand in the petrochemical industry.
- For transportation, energy demand growth should slow YoY due to a significantly muted effect from the oil price plunge, but should still be strong (above 3%) on continued oil price weakness.
- For buildings, despite the increase in gas demand, energy demand growth should slow YoY, especially for electricity.

Key features & implications

□ **In Q1 2016, TPES grew at the sharpest rate since 2011 on increased consumption of oil and energy for power generation**

- For oil, naphtha consumption growth slowed, but amid sliding oil prices, major petroleum products maintained their rapid consumption growth, acting as a driver of TPES growth since 2015.
- It was due to energy consumption for transformation converting from a decrease to an increase that TPES growth was able to increase to 3.0% in Q1 2016 from less than 1% for three straight quarters.
- Energy consumption for transformation increased as energy consumption for power generation turned upward after dropping for two quarters in a row, in spite of a sharper decline in coal consumption, due to rapid growth in nuclear power generation and oil, as well as a slowed decline in gas-fired power generation.
- Notably, the decline in coal consumption for power generation was smaller than the decline in coal-fired power generation, due to inventory depletion in the previous year. This is believed to have resulted in growth in total energy consumption for power generation.

- **In 2016, coal-fired power generation is expected to fall on lower utilization at power generation facilities, despite the entrance of new PPs**
 - Total capacity of bituminous coal-fired PPs will reach 5.1 GW due to the entry of new PPs by late 2016, but this should not significantly raise the amount of coal-fired power generation.
 - On the other hand, the utilization of coal power generation facilities has declined sharply this year, and is likely to stay low in the future.

- **In 2016, energy demand is projected to be driven by oil and nuclear power, and industrial usage**
 - TPES should expand as oil demand rises on low prices and nuclear power generation should increase with the entry of new nuclear power plants.
 - TFC should continue to be driven by demand from the transport and buildings sectors, and the demand from industry should pick up to some extent on the back of capacity expansion in the petrochemical industry.

2. The Main Indicator and Energy Outlook Result

Main Economic and Energy Indicators

	2012	2013	2014			2015			2016		
			1H	2H		1H	2H		1H	2H	
Economy and Population											
GDP (2010 trillion won)	1 342.0	1 380.8	694.7	732.2	1 427.0	710.7	753.6	1 464.2	730.9	770.9	1 501.8
Industrial Production(2010=100)	107.4	108.2	108.4	108.5	108.4	107.1	108.3	107.7	107.4	109.4	108.4
Crude Oil Price (Dubai, USD/bbl)	109.1	105.3	105.3	88.1	96.7	56.3	45.2	50.8	36.8	45.5	41.1
Working Days	276.0	274.5	133.5	138.0	271.5	135.5	138.5	274.0	133.5	139.5	273.0
Population (million)	50.0	50.2	50.4	50.4	50.4	50.6	50.6	50.6	50.8	50.8	50.8
Average Temperature (°C)	12.3	12.5	10.9	15.8	13.4	10.4	16.8	13.6	10.2	16.0	13.1
Cooling Degree days	870	909	219	604	823	223	638	861	232	589	820
Heating Degree days	2,968	2,893	1,501	1,001	2,502	1,593	866	2,459	1,654	960	2,614
Energy Indicators											
Total Primary Energy Demand (Mtoe)	278.5	280.3	141.0	142.0	282.9	142.3	142.8	285.2	145.4	144.2	289.6
Energy Intensity (toe/million won)	0.208	0.203	0.203	0.194	0.199	0.201	0.190	0.195	0.200	0.187	0.193
TPED/capita (toe/capita)	5.570	5.582	2.796	2.816	5.611	2.812	2.822	5.634	2.863	2.839	5.701
Electricity Generation (TWh)	509.6	517.7	257.8	264.2	522.0	260.6	262.6	523.2	261.3	265.4	526.6
Electricity Generation/capita (MWh/capita)	10.2	10.3	5.1	5.2	10.4	5.1	5.2	10.3	5.1	5.2	10.4
Electricity Demand/capita (MWh/capita)	9.3	9.5	4.8	4.7	9.5	4.8	4.7	9.6	4.9	4.8	9.6

Energy Demand

	2012	2013	2014		2015p			2016e			
			1H	2H	1H	2H	1H	2H			
Total Primary Energy Supply											
Coal (Mton)	128.1	129.6	65.0	68.4	133.3	66.7	66.5	133.2	62.7	66.6	129.3
Oil (Mbbbl)	827.7	825.2	404.6	416.8	821.5	417.5	438.7	856.2	441.3	447.7	889.0
Gas (Bm ³)	38.5	40.3	19.4	17.3	36.6	18.2	15.2	33.4	18.4	13.8	32.1
Hydro (TWh)	7.7	8.4	3.6	4.2	7.8	2.8	3.1	5.9	2.6	3.3	5.9
Nuclear (TWh)	150.3	138.8	77.9	78.5	156.4	78.5	86.3	164.8	87.6	92.5	180.1
Other Renewables (Mtoe)	8.0	9.0	5.4	5.5	11.0	5.6	5.9	11.5	6.1	6.6	12.7
Total (Mtoe)	278.5	280.3	141.0	142.0	282.9	142.3	142.8	285.2	145.4	144.2	289.6
Coal	81.0	82.0	41.3	43.3	84.6	42.3	42.2	84.4	39.8	42.2	82.1
Oil	106.2	105.8	51.8	53.2	104.9	53.5	56.1	109.6	56.6	57.2	113.8
Gas	50.0	52.5	25.2	22.5	47.8	23.8	19.8	43.6	23.9	17.9	41.8
Nuclear	1.6	1.8	0.8	0.9	1.6	0.6	0.7	1.2	0.5	0.7	1.2
Hydro	31.7	29.3	16.4	16.6	33.0	16.6	18.2	34.8	18.5	19.5	38.0
Other Renewables	8.0	9.0	5.4	5.5	11.0	5.6	5.9	11.5	6.1	6.6	12.7
Total Final Consumption											
Coal (Mton)	48.4	49.5	26.2	26.8	53.1	25.6	26.7	52.3	25.3	26.7	52.0
Oil (Mbbbl)	796.5	799.1	396.1	412.4	808.5	410.2	431.3	841.6	430.6	441.4	872.0
Gas (Bm ³)	23.8	23.9	12.5	9.6	22.1	12.1	8.8	20.9	12.2	8.8	21.1
Electricity (TWh)	466.6	474.8	240.1	237.4	477.6	244.5	239.2	483.7	248.0	241.8	489.8
Heat (TWh)	1.8	1.7	0.9	0.7	1.6	1.0	0.6	1.5	1.1	0.6	1.7
Other Renewables (Mtoe)	7.1	7.9	4.7	4.7	9.5	4.8	5.2	10.1	5.1	5.5	10.6
Total (Mtoe)	208.1	210.3	107.5	106.4	213.9	109.1	108.5	217.6	112.4	110.2	222.6
Coal	32.0	32.7	17.6	17.8	35.4	17.1	17.8	34.9	17.0	17.8	34.8
Oil	101.7	101.8	50.4	52.5	103.0	52.4	55.0	107.3	54.9	56.2	111.1
Gas	25.4	25.3	13.2	10.2	23.4	12.9	9.4	22.2	12.9	9.4	22.3
Electricity	40.1	40.8	20.7	20.4	41.1	21.0	20.6	41.6	21.3	20.8	42.1
Heat	1.8	1.7	0.9	0.7	1.6	1.0	0.6	1.5	1.1	0.6	1.7
Other Renewables	7.1	7.9	4.7	4.7	9.5	4.8	5.2	10.1	5.1	5.5	10.6
Industry	128.3	130.9	67.8	68.3	136.1	66.9	69.1	135.9	68.6	70.0	138.6
Transportation	37.1	37.3	18.3	19.3	37.6	19.5	20.7	40.2	20.4	21.1	41.5
Buildings	42.7	42.0	21.4	18.7	40.2	22.7	18.7	41.5	23.4	19.1	42.5

Energy Demand

(YoY, %)

	2012	2013	2014		2015p			2016e			
			1H	2H	1H	2H		1H	2H		
Total Primary Energy Supply											
Coal (Mton)	-2.1	1.1	1.5	4.3	2.9	2.6	-2.7	-0.1	-6.0	0.2	-2.9
Oil (Mbbbl)	3.3	-0.3	-0.2	-0.7	-0.5	3.2	5.2	16.8	5.7	2.1	3.8
Gas (Bm3)	8.1	4.8	-9.8	-8.4	-9.2	-5.8	-12.0	-33.0	0.7	-9.3	-3.9
Hydro (TWh)	-2.3	9.7	-8.3	-5.6	-6.8	-22.3	-26.6	-98.3	-8.4	7.1	-0.3
Nuclear (TWh)	-2.8	-7.7	14.3	11.2	12.7	0.7	9.9	21.5	11.6	7.2	9.3
Other Renewables (Mtoe)	21.4	11.8	21.8	22.1	21.9	3.8	7.0	21.5	8.6	12.0	10.3
Total (Mtoe)	0.7	0.6	0.6	1.2	0.9	1.0	0.6	3.1	2.2	1.0	1.6
Coal	-3.2	1.2	2.0	4.5	3.2	2.3	-2.6	-0.6	-5.8	0.2	-2.8
Oil	1.0	-0.3	-0.4	-1.2	-0.8	3.3	5.4	17.4	5.8	2.0	3.8
Gas	8.4	5.0	-9.6	-8.4	-9.0	-5.8	-12.0	-33.0	0.5	-9.6	-4.1
Nuclear	-4.1	9.7	-8.3	-5.6	-6.8	-22.3	-26.6	-98.3	-8.4	7.1	-0.3
Hydro	-4.7	-7.7	14.3	11.2	12.7	0.7	9.9	21.5	11.6	7.2	9.3
Other Renewables	21.4	11.8	21.8	22.1	21.9	3.8	7.0	21.5	8.6	12.0	10.3
Total Final Consumption											
Coal (Mton)	-3.0	2.3	9.4	4.9	7.1	-2.5	-0.2	-5.3	-1.0	-0.2	-0.6
Oil (Mbbbl)	2.3	0.3	1.0	1.3	1.2	3.6	4.6	16.3	5.0	2.3	3.6
Gas (Bm3)	9.7	0.5	-10.3	-3.7	-7.5	-3.1	-8.5	-21.7	1.1	0.4	0.8
Electricity (TWh)	2.5	1.8	0.5	0.6	0.6	1.8	0.7	5.1	1.5	1.1	1.3
Heat (TWh)	2.9	-3.2	-14.0	3.2	-7.6	6.1	-13.9	-1.6	8.7	7.1	8.2
Other Renewables (Mtoe)	22.1	10.7	20.3	19.9	20.1	2.4	10.1	25.0	6.4	4.4	5.3
Total (Mtoe)	1.1	1.0	1.3	2.1	1.7	1.5	2.0	7.0	3.0	1.6	2.3
Coal	-4.7	2.4	10.5	6.0	8.2	-2.8	-0.1	-5.7	-0.7	-0.1	-0.4
Oil	-0.3	0.1	1.0	1.3	1.1	3.8	4.7	16.9	4.9	2.3	3.6
Gas	7.5	-0.4	-10.5	-3.8	-7.7	-2.5	-8.3	-19.9	0.7	-0.1	0.4
Electricity	2.5	1.8	0.5	0.6	0.6	1.8	0.7	5.1	1.5	1.1	1.3
Heat	2.9	-3.2	-14.0	3.2	-7.6	6.1	-13.9	-1.6	8.7	7.1	8.2
Other Renewables	22.1	10.7	20.3	19.9	20.1	2.4	10.1	25.0	6.4	4.4	5.3
Industry	1.1	2.0	5.2	2.7	4.0	-1.4	1.1	-0.5	2.6	1.4	2.0
Transportation	0.7	0.5	0.2	1.4	0.8	6.8	7.0	27.8	4.3	2.1	3.2
Buildings	1.3	-1.4	-8.7	0.8	-4.5	6.2	0.0	13.9	2.9	1.9	2.5

Energy Demand by Sector

(Mtoe)

	2012	2013	2014			2015p			2016e		
			1H	2H		1H	2H		1H	2H	
Industry	128.3	130.9	67.8	68.3	136.1	66.9	69.1	135.9	68.6	70.0	138.6
Coal	31.1	31.8	17.3	17.3	34.7	16.8	17.4	34.2	16.8	17.4	34.2
Oil	59.7	60.1	30.2	31.0	61.2	30.3	31.9	62.2	31.9	32.7	64.6
Gas	10.2	10.4	4.9	4.5	9.4	4.2	4.0	8.3	4.1	3.9	8.0
Electricity	21.4	22.1	11.4	11.4	22.8	11.5	11.4	22.8	11.6	11.5	23.0
Heat	-	-	-	-	-	-	-	-	-	-	-
Other Renewables	5.8	6.5	4.0	4.0	8.1	4.0	4.4	8.4	4.3	4.5	8.8
Transportation	37.1	37.3	18.3	19.3	37.6	19.5	20.7	40.2	20.4	21.1	41.5
Coal	-	-	-	-	-	-	-	-	-	-	-
Oil	35.3	35.5	17.4	18.4	35.8	18.6	19.7	38.4	19.5	20.1	39.6
Gas	1.2	1.3	0.6	0.7	1.3	0.6	0.7	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	0.2	0.2	0.4	0.2	0.2	0.4
Buildings*	42.7	42.0	21.4	18.7	40.2	22.7	18.7	41.5	23.4	19.1	42.5
Coal	0.8	0.9	0.3	0.5	0.7	0.3	0.4	0.7	0.2	0.4	0.6
Oil	6.6	6.2	2.9	3.1	6.0	3.4	3.3	6.8	3.6	3.4	7.0
Gas	14.0	13.7	7.7	5.0	12.7	8.0	4.7	12.7	8.2	4.8	13.0
Electricity	18.5	18.6	9.2	8.9	18.1	9.5	9.1	18.6	9.7	9.2	18.8
Heat	1.8	1.7	0.9	0.7	1.6	1.0	0.6	1.5	1.1	0.6	1.7
Other Renewables	1.0	1.0	0.5	0.5	1.0	0.6	0.7	1.3	0.6	0.8	1.4
Transformation	137.4	137.8	68.2	66.8	135.1	68.0	64.8	132.8	68.4	64.7	133.1
Coal	49.0	49.2	23.7	25.5	49.2	25.2	24.4	49.5	22.9	24.4	47.3
Oil	4.5	4.0	1.3	0.7	2.0	1.1	1.1	2.2	1.6	1.0	2.6
Gas	49.7	52.4	25.3	22.5	47.7	23.7	19.8	43.5	23.9	17.9	41.8
Nuclear	31.7	29.3	16.4	16.6	33.0	16.6	18.2	34.8	18.5	19.5	38.0
Hydro	1.6	1.8	0.8	0.9	1.6	0.6	0.7	1.2	0.5	0.7	1.2
Renewables	0.9	1.1	0.7	0.8	1.5	0.8	0.7	1.5	1.0	1.2	2.1

* include residential, commercial, public-etc. usage

Coal

(Mton)

	2012	2013	2014			2015p			2016e		
			1H	2H		1H	2H		1H	2H	
Coal	128.1	129.6	65.0	68.4	133.3	66.7	66.5	133.2	62.7	66.6	129.3
Transformation	79.7	80.0	38.7	41.5	80.3	41.1	39.8	80.9	37.3	39.9	77.3
Power Generation	79.7	80.0	38.7	41.5	80.3	41.1	39.8	80.9	37.3	39.9	77.3
Heat	-	-	-	-	-	-	-	-	-	-	-
Gas Manufacture	-	-	-	-	-	-	-	-	-	-	-
Total Final Consumption	48.4	49.5	26.2	26.8	53.1	25.6	26.7	52.3	25.3	26.7	52.0
Industry	46.6	47.6	25.7	25.7	51.4	25.0	25.8	50.9	24.9	25.9	50.7
Transportation	-	-	-	-	-	-	-	-	-	-	-
Buildings	1.8	1.9	0.6	1.1	1.6	0.5	0.9	1.5	0.5	0.8	1.3
Consumption by products											
Anthracite	10.5	10.7	4.7	5.5	10.2	5.0	5.6	10.7	4.6	5.4	10.0
Bituminous	117.7	118.8	60.3	62.8	123.1	61.6	60.9	122.5	58.1	61.2	119.3
Iron making	31.5	32.1	18.8	18.8	37.6	18.0	18.7	36.8	18.2	18.8	36.9
Cement	4.6	4.6	2.5	2.4	4.9	2.3	2.4	4.7	2.3	2.4	4.7
Power Generation	79.1	79.7	37.8	40.4	78.2	40.0	38.7	78.7	36.4	39.0	75.4

Oil

(Mbbbl)

	2012	2013	2014			2015p			2016e		
			1H	2H		1H	2H		1H	2H	
Oil	827.7	825.2	404.6	416.8	821.5	417.5	438.7	856.2	441.3	447.7	889.0
Transformation	31.2	26.1	8.6	4.4	13.0	7.3	7.3	14.6	10.7	6.4	17.0
Power Generation	22.4	23.0	7.5	3.5	11.0	6.3	6.6	12.8	9.7	5.5	15.2
Heat	1.3	1.3	0.6	0.4	1.0	0.6	0.2	0.8	0.4	0.3	0.8
Gas Manufacture	7.5	1.9	0.5	0.4	0.9	0.5	0.6	1.0	0.5	0.5	1.0
Total Final Consumption	796.5	799.1	396.1	412.4	808.5	410.2	431.3	841.6	430.6	441.4	872.0
Industry	478.0	482.0	242.4	249.5	491.8	243.8	257.2	501.0	257.2	264.2	521.4
Transportation	266.0	267.4	130.7	138.1	268.8	139.4	147.6	287.1	145.0	150.5	295.5
Buildings	52.6	49.7	23.0	24.9	47.9	27.0	26.5	53.5	28.4	26.7	55.1
Consumption by products											
Gasoline	71.8	73.4	35.5	38.0	73.5	37.1	39.5	76.6	38.0	40.0	78.0
Diesel (including Transformation)	136.7	143.0	70.5	74.3	144.8	76.0	80.4	156.4	80.6	81.8	162.4
Kerosene (including Transformation)	22.0	18.8	7.1	8.4	15.4	8.2	8.0	16.2	10.2	8.3	18.4
B-C (including Transformation)	54.5	46.4	18.9	14.4	33.3	19.3	19.0	38.3	23.6	18.8	42.4
Jet Oil	30.2	30.3	15.7	16.3	32.0	17.1	17.3	34.4	18.1	18.0	36.1
LPG (including Transformation)	95.5	93.1	44.0	45.6	89.6	41.5	48.4	89.9	48.2	50.9	99.1
Naphtha	384.6	384.2	194.7	201.7	396.3	203.1	207.7	410.8	205.7	211.1	416.8
Other Non-Energy	32.4	36.0	18.3	18.2	36.6	15.4	18.3	33.7	16.9	18.8	35.7

Gas

	2012	2013	2014			2015p			2016e		
			1H	2H		1H	2H		1H	2H	
Gas (Mton)	38.5	40.3	19.4	17.3	36.6	18.2	15.2	33.4	18.4	13.8	32.1
Transformation	37.9	40.0	19.2	17.1	36.4	18.1	15.0	33.1	18.2	13.6	31.8
Power Generation	16.1	17.6	7.8	8.1	15.9	7.0	6.4	13.4	6.8	5.1	11.9
Heat	2.0	2.6	1.5	0.7	2.2	1.4	1.3	2.7	1.6	0.9	2.6
Gas Manufacture	19.8	19.8	10.0	8.3	18.3	9.7	7.3	17.0	9.8	7.5	17.4
Industry	0.6	0.4	0.1	0.2	0.3	0.2	0.2	0.3	0.2	0.2	0.3
City Gas (Bm³)	23.8	23.9	12.5	9.6	22.1	12.1	8.8	20.9	12.2	8.8	21.1
Industry*	9.1	9.5	4.6	4.1	8.7	3.8	3.7	7.5	3.7	3.6	7.3
Transportation	1.2	1.2	0.6	0.6	1.3	0.6	0.6	1.2	0.6	0.6	1.2
Buildings	13.4	13.1	7.3	4.8	12.2	7.7	4.5	12.2	7.9	4.6	12.5

* exclude industrial LNG usage

Electricity

(TWh)

	2012	2013	2014			2015p			2016		
			1H	2H		1H	2H		1H	2H	
Electricity	509.6	517.7	257.8	264.2	522.0	260.6	262.6	523.2	261.3	265.4	526.6
Own use and Losses	43.0	42.9	17.6	26.7	44.4	16.2	23.4	39.5	13.3	23.6	36.9
Total Final Consumption	466.6	474.8	240.1	237.4	477.6	244.5	239.2	483.7	248.0	241.8	489.8
Industry	249.1	256.8	132.1	132.6	264.6	133.3	132.4	265.6	134.4	133.6	268.0
Transportation	2.3	2.2	0.9	1.1	2.0	1.1	1.2	2.2	1.3	1.3	2.6
Buildings	215.2	215.8	107.1	103.8	211.0	110.1	105.7	215.8	112.3	106.9	219.2
Installed Electrical Capacity (GW)*	78.8	83.7	88.0	92.4	92.4	95.6	97.6	97.6	99.0	104.9	104.9
Coal	24.5	24.5	25.5	26.7	26.7	27.0	27.3	27.3	27.5	31.2	31.2
Oil	4.7	4.9	4.7	4.3	4.3	4.3	4.2	4.2	4.2	4.2	4.2
Gas	20.1	23.6	26.7	29.8	29.8	31.9	32.2	32.2	32.5	32.5	32.5
Nuclear	20.7	20.7	20.7	20.7	20.7	20.7	21.7	21.7	21.7	23.1	23.1
Hydro	6.4	6.5	6.5	6.5	6.5	6.5	6.5	6.5	6.5	6.5	6.5
Other Renewables	2.3	3.5	3.9	4.5	4.5	5.2	5.6	5.6	6.5	7.4	7.4
Electricity Generation of Power Plants*	509.6	517.7	257.8	264.2	522.0	260.6	262.6	523.2	261.3	265.4	526.6
Coal	198.8	200.4	97.9	105.6	203.4	102.6	102.8	205.4	88.9	104.6	193.5
Oil	15.2	15.8	13.6	11.4	25.0	15.7	11.1	26.8	20.4	11.9	32.3
Gas	114.0	128.3	57.7	56.9	114.7	51.7	49.9	101.5	51.2	41.2	92.5
Nuclear	150.3	138.8	77.9	78.5	156.4	78.5	86.3	164.8	87.6	92.5	180.1
Hydro	7.7	8.5	3.6	4.2	7.8	2.8	3.1	5.9	2.6	3.3	5.9
Other Renewables	10.6	11.3	7.1	7.6	14.7	9.4	9.4	18.8	10.6	11.8	22.4
Fuel Consumption of Power Plants (Mtoe)*	108.2	108.3	53.1	55.0	108.1	53.5	53.4	106.9	53.4	53.5	106.8
Coal	49.0	49.2	23.7	25.5	49.2	25.2	24.4	49.5	22.9	24.4	47.3
Oil	3.5	3.6	1.2	0.6	1.7	1.0	1.0	2.0	1.5	0.9	2.4
Gas	21.4	23.3	10.3	10.7	21.0	9.3	8.5	17.8	9.0	6.8	15.8
Nuclear	31.7	29.3	16.4	16.6	33.0	16.6	18.2	34.8	18.5	19.5	38.0
Hydro	1.6	1.8	0.8	0.9	1.6	0.6	0.7	1.2	0.5	0.7	1.2
Other Renewables	0.9	1.1	0.7	0.8	1.5	0.8	0.7	1.5	1.0	1.2	2.1

* District Heat is classified by fuel type since 2014

Heat and Other Renewables

(Mtoe)

	2012	2013	2014			2015p			2016		
			1H	2H		1H	2H		1H	2H	
Heat	1.8	1.8	0.9	0.7	1.6	1.0	0.6	1.5	0.9	0.6	1.6
Own use and Losses	0.1	0.1	-0.0	0.0	-0.0	-0.0	0.0	0.0	-0.1	0.0	-0.1
Total Final Consumption	1.8	1.7	0.9	0.7	1.6	1.0	0.6	1.5	1.1	0.6	1.7
Industry	-	-	-	-	-	-	-	-	-	-	-
Transportation	-	-	-	-	-	-	-	-	-	-	-
Buildings	1.8	1.7	0.9	0.7	1.6	1.0	0.6	1.5	1.1	0.6	1.7
Heat Production by fuel											
Coal	-	-	-	-	-	-	-	-	-	-	-
Oil	1.1	1.2	0.6	0.4	1.0	0.6	0.4	1.0	0.7	0.4	1.1
Gas	0.7	0.6	0.3	0.2	0.5	0.3	0.2	0.5	0.2	0.2	0.4
Nuclear	-	-	-	-	-	-	-	-	-	-	-
Hydro	-	-	-	-	-	-	-	-	-	-	-
Other Renewables	-	-	-	-	-	-	-	-	-	-	-
Fuel Consumption of District Heat											
Coal	-	-	-	-	-	-	-	-	-	-	-
Oil	0.2	0.2	0.1	0.1	0.2	0.1	0.0	0.1	0.1	0.1	0.1
Gas	2.7	3.3	1.9	0.9	2.8	1.8	1.7	3.5	2.1	1.2	3.3
Nuclear	-	-	-	-	-	-	-	-	-	-	-
Hydro	-	-	-	-	-	-	-	-	-	-	-
Other Renewables	-	-	-	-	-	-	-	-	-	-	-
Other Renewables	9.7	10.8	6.2	6.4	12.6	6.2	6.6	12.8	6.7	7.3	14.0
Hydro	1.6	1.8	0.8	0.9	1.6	0.6	0.7	1.2	0.5	0.7	1.2
Transformation	0.9	1.1	0.7	0.8	1.5	0.8	0.7	1.5	1.0	1.2	2.1
Total Final Consumption	7.1	7.9	4.7	4.7	9.5	4.8	5.2	10.1	5.1	5.5	10.6
Industry	5.8	6.5	4.0	4.0	8.1	4.0	4.4	8.4	4.3	4.5	8.8
Transportation	0.4	0.4	0.2	0.2	0.4	0.2	0.2	0.4	0.2	0.2	0.4
Buildings	1.0	1.0	0.5	0.5	1.0	0.6	0.7	1.3	0.6	0.8	1.4

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