

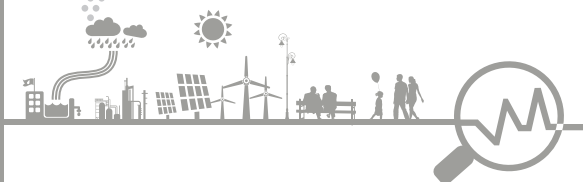


KEEI

Korea Energy Demand Outlook



KOREA ENERGY ECONOMICS INSTITUTE



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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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Summary

Energy Trends

☐ **TPES in Q3 2018 increased to 75.6Mtoe, up 2.1% year-on-year**

- Despite the stagnant energy consumption growth in the industrial sector due to declining economic growth rate, that for the buildings sector grew sharply thanks to temperature effect which drove a rise in TPES.
- In particular, naphtha consumption decreased as maintenance of petrochemical facilities increased on a year-on-year basis which resulted in the sluggish energy consumption growth.

☐ **Petroleum consumption in Q3 showed a slight year-on-year decrease while coal and nuclear energy use escalated, and gas consumption grew rapidly.**

- **Petroleum (↓ 1.1%)** Petroleum consumption marked a year-on-year decline due to the increased maintenance of naphtha cracking centers (NCC) and rising oil prices.
- **Coal (↑ 2.2%)** Coal consumption growth for steel making slowed down due to the sluggish key iron & steel industries, however, despite the increased preventive maintenance of coal-fired power plants, coal use for generation rose due to the introduction of new bituminous coal-fired power plants.
- **Nuclear energy (↑ 1.1%)** While the preventive maintenance period of multiple nuclear power plants were extended due to strengthened safety regulations, nuclear energy use posted a slight year-on-year increase due to base effect.
- **Gas (↑ 9.9%)** Amid sharp rise in electricity consumption, gas use for power generation increased rapidly due to stagnant base load power generation(nuclear + coal), and that for city gas production also marked a steep upward movement thanks to recovery of city gas prices led by rising oil prices.
- **Electricity (↑ 4.9%)** Electricity use for the industrial sector grew driven by the power-intensive fabricated metal product manufacturing industry, and that for the buildings sector also soared due to temperature effect, temporary reduction of residential progressive electricity tariffs, etc.

☐ **TFC in 3Q 2018 marked 56.9Mtoe, 1.3% up on a year-on-year basis.**

- **Industry (↑ 1.1%)** Energy consumption for the industrial use only showed a slight increase due to the sluggish manufacturing industry and expanded facilities of petrochemical plants.
- **Transport (↓ 1.1%)** Despite the increased number of vehicles and amount of goods transported, energy consumption in the transport sector reduced due to rising oil prices.

- **Buildings (↑ 5.2%)** Along with rapidly increasing energy consumption for air-conditioning prompted by the worst heat wave and falling energy prices, energy use in the buildings sector has driven TFC

Energy Outlook

- **TPED will increase by 1.6% to 313.3Mtoe and TFD is expected to be up by 1.6% to 242.6Mtoe in 2019.**
 - TPED and TFD growth will slow down due to declining economic growth rate and temperature effect.
 - In 2019, energy intensity is expected to recover (decrease) further and energy consumption per capita is projected to continue its upward trend.
- **In 2019, demand for petroleum and nuclear energy are forecasted to rebound and that for gas is expected to remain unchanged while the use of coal will start showing a downward movement.**
 - Petroleum demand will rebound from its declining trend in the previous year thanks to falling international oil prices, decreased fuel tax and expanded petrochemical facilities.
 - With the continued sluggish coal demand for industrial use, that for power generation is expected to start showing a descending movement which will drive down the overall call demand.
 - Despite strengthened safety requirements, demand for nuclear power is anticipated to rise thanks to the introduction of new nuclear power plants and base effect.
 - Gas demand will remain unchanged as that for power generation and city gas production are projected to reduce and slow down, respectively, taking into account that factors that drove gas demand in 2018, including soaring electricity demand, increasing number of heating degree days, lower tariffs, etc., are expected to be no longer valid.
 - Amid the decreasing economic growth rate, the growth rate of electricity demand is anticipated to decline as energy use for the buildings sector, which hiked due to abnormal heat wave in 2018, is expected to go down dramatically due to base effect.

Energy demand growth rates by major energy source

	2014	2015	2016	2017	2018e	2019e
TPES	1.3	1.4	2.4	2.8	2.1	1.6
Coal	4.0	1.3	- 4.3	8.1	2.7	- 0.8
Petroleum	- 0.5	4.2	8.0	1.7	- 0.7	1.0
Gas	- 9.0	- 8.7	4.4	4.3	13.9	- 0.3
Nuclear	12.7	5.3	- 1.7	- 8.4	- 10.1	9.0
Electricity	0.6	1.3	2.8	2.2	3.6	1.8

☐ **In 2019, the growth of energy demand in the industrial sector will mark a year-on-year increase while that for the transport and buildings sectors are expected to rebound and plunge, respectively.**

- Despite the decreasing economic growth rate, the growth of energy demand in the industrial sector is expected to mark a year-on-year increase due to recovery of naphtha demand.
- Energy demand in the transport sector will rebound in 2019, driven by declining oil prices and temporary reduction of fuel tax.
- The growth of energy demand in the buildings sector is forecasted to plummet as the temperature is expected to return to the average level, leading TFD to slow down.

Key Features and Implications

☐ **Energy consumption outlook has shown remarkable changes due to drastic changes in petroleum consumption and updated consumption plan for feedstock use in the petrochemical industry.**

- The petroleum consumption outlook in 2018 has been adjusted downward dramatically compared to the previous outlook (Fall 2018) as petroleum use in the industrial and transport sectors showed significant changes in October and November 2018.
- Petroleum consumption outlook in 2019 is down by 0.7%p compared to the previous outlook due to lower-than-expected performance and updated consumption plan for feedstock use in the petrochemical industry.

☐ **Coal and gas generation will switch from its upward movement in 2018 to downward movement in 2019 while nuclear generation is expected to rebound from its plummeting trend.**

- Coal generation in 2019 is projected to shrink due to the diminishing effects of expanded capacity of generation facilities and the government's fine dust countermeasures.

- Although the capacity factor of nuclear power plants is expected to be continuously low, nuclear generation will rebound from its sharp decreasing trend from 2016 to 2018 thanks to the introduction of two new nuclear power plants.
 - Gas generation will switch from its sharp upward movement in 2018 to downward movement in 2019 as the growth of electricity demand is expected to show a significant slowdown while nuclear generation is anticipated to rebound.
 - Accordingly, the share of coal generation is forecasted to reduce for three consecutive years, however, that of nuclear generation will rise for the first time since 2015.
- ☐ **TPED and TFD will increase in 2019, led by nuclear energy and the industrial sector, respectively.**
- The driving force (contribution level) of individual energy sources, gas and nuclear energy in particular, are expected to be quite different from the previous year.
 - Despite the declining economic growth rate, TFC will increase in 2019 thanks to increasing naphtha demand along with expansion of petrochemical facilities in the industrial sector.

The Main Indicator and Energy Outlook Result

Main Economic and Energy Indicators

	2015	2016	2017p			2018e			2019e		
			1H	2H		1H	2H		1H	2H	
Economy and Population											
GDP (2010 trillion won)	1 466.8	1 509.8	755.8	800.2	1 556.0	777.0	820.5	1 597.5	796.2	843.2	1 639.4
Industrial Production(2010=100)	100.0	102.3	103.8	104.6	104.2	103.0	103.8	103.4	103.4	104.3	103.9
Crude Oil Price (Dubai, USD/bbl)	50.8	41.2	51.5	54.9	53.2	68.0	70.9	69.4	63.7	69.1	66.4
Working Days	274.0	273.0	134.0	135.5	269.5	133.0	137.0	270.0	135.0	138.5	273.5
Population (million)	51.0	51.3	51.4	51.4	51.4	51.6	51.6	51.6	51.8	51.8	51.8
Average Temperature (°C)	13.6	13.6	10.2	15.9	13.0	9.5	16.4	13.0	10.0	16.0	13.0
Cooling Degree days	151.8	238.1	18.2	169.9	188.1	7.7	278.5	286.2	4.2	142.8	147.0
Heating Degree days	2 459.1	2 589.7	1 626.1	1 061.5	2 687.6	1 724.3	1 039.1	2 763.4	1 629.8	994.0	2 623.8
Energy Indicators											
Total Primary Energy Demand (Mtoe)	286.8	293.7	148.7	153.3	302.1	153.3	155.0	308.3	154.8	157.8	312.5
Energy Intensity (toe/million won)	0.196	0.195	0.197	0.192	0.195	0.198	0.189	0.193	0.195	0.187	0.191
TPED/capita (toe/capita)	5.623	5.729	2.891	2.980	5.872	2.969	3.002	5.971	2.987	3.045	6.032
Electricity Generation (TWh)	-	540.4	270.4	283.2	553.5	279.1	290.9	570.0	281.7	296.7	578.3
Electricity Generation/capita (MWh/capita)	-	10.5	5.3	5.5	10.8	5.4	5.6	11.0	5.4	5.7	11.2
Electricity Demand/capita (MWh/capita)	9.5	9.7	4.9	5.0	9.9	5.1	5.1	10.2	5.1	5.2	10.3

Energy Demand

	2015	2016	2017p			2018e			2019e		
			1H	2H		1H	2H		1H	2H	
Total Primary Energy Supply											
Coal (Mton)	135.1	129.3	66.5	73.3	139.8	70.0	73.5	143.5	69.1	73.3	142.4
Oil (Mbbl)	853.1	921.1	457.9	479.2	937.1	465.4	464.7	930.1	469.1	470.3	939.4
Gas (Bm ³)	33.4	34.9	18.6	17.8	36.4	22.1	19.3	41.5	21.7	19.6	41.3
Hydro (TWh)	5.8	6.6	3.2	3.8	7.0	3.4	3.1	6.6	1.9	2.7	4.6
Nuclear (TWh)	164.8	162.0	78.1	70.3	148.4	60.0	73.6	133.5	67.1	78.5	145.6
Other Renewables (Mtoe)	12.8	13.6	7.8	8.0	15.8	8.7	9.0	17.7	9.7	10.0	19.7
Total (Mtoe)	286.8	293.7	148.7	153.3	302.1	153.3	155.0	308.3	154.8	157.8	312.5
Coal	85.3	81.4	41.0	45.2	86.2	43.1	45.3	88.4	42.6	45.2	87.9
Oil	109.1	117.6	58.3	61.1	119.4	59.1	59.1	118.2	59.4	59.7	119.1
Gas	43.6	45.5	24.3	23.3	47.5	28.9	25.2	54.1	28.4	25.6	53.9
Nuclear	1.2	1.4	0.7	0.8	1.5	0.7	0.7	1.4	0.4	0.6	1.0
Hydro	34.8	34.2	16.6	15.0	31.6	12.8	15.7	28.4	14.3	16.7	31.0
Other Renewables	12.8	13.6	7.8	8.0	15.8	8.7	9.0	17.7	9.7	10.0	19.7
Total Final Consumption											
Coal (Mton)	52.6	49.0	24.8	25.5	50.4	25.4	26.1	51.5	25.8	26.3	52.1
Oil (Mbbl)	838.5	899.3	451.9	474.7	926.6	458.4	459.8	918.2	462.6	465.8	928.4
Gas (Bm ³)	20.8	21.3	12.8	9.8	22.6	14.0	10.6	24.6	14.1	10.8	24.9
Electricity (TWh)	483.7	497.0	251.4	256.3	507.7	261.7	264.5	526.2	265.3	270.5	535.9
Heat (Mtoe)	2.0	2.2	1.4	1.0	2.4	1.7	1.0	2.7	1.7	1.1	2.8
Other Renewables (Mtoe)	10.6	10.9	6.2	6.3	12.5	6.8	7.1	13.9	7.4	7.7	15.1
Total (Mtoe)	217.9	225.1	116.6	117.3	233.9	120.7	118.0	238.7	122.4	120.2	242.6
Coal	34.8	32.3	16.4	16.9	33.4	16.8	17.3	34.1	17.0	17.5	34.5
Oil	106.9	114.3	57.4	60.4	117.9	58.1	58.4	116.5	58.5	59.0	117.5
Gas	22.1	22.7	13.5	10.5	24.1	14.9	11.4	26.2	15.0	11.6	26.7
Electricity	41.6	42.7	21.6	22.0	43.7	22.5	22.7	45.2	22.8	23.3	46.1
Heat	2.0	2.2	1.4	1.0	2.4	1.7	1.0	2.7	1.7	1.1	2.8
Other Renewables	10.6	10.9	6.2	6.3	12.5	6.8	7.1	13.9	7.4	7.7	15.1
Industry	135.3	137.8	70.8	73.5	144.3	72.9	73.7	146.7	74.6	75.2	149.8
Transport	39.9	42.3	20.9	21.9	42.8	20.9	21.7	42.6	21.0	22.1	43.1
Buildings	42.8	45.0	24.9	21.9	46.8	26.9	22.5	49.4	26.8	22.9	49.7

Energy Demand

(yoy, %)

	2015	2016	2017p			2018e			2019e		
			1H	2H		1H	2H		1H	2H	
Total Primary Energy Supply											
Coal (Mton)	1.3	- 4.3	7.2	8.9	8.1	5.3	0.3	2.7	- 1.3	- 0.3	- 0.8
Oil (Mbbbl)	4.2	8.0	1.8	1.7	1.7	1.6	- 3.0	- 0.7	0.8	1.2	1.0
Gas (Bm ³)	- 8.7	4.4	4.0	4.6	4.3	19.2	8.4	13.9	- 2.0	1.4	- 0.4
Hydro (TWh)	- 25.9	14.5	7.0	4.2	5.5	5.8	- 16.7	- 6.3	- 43.4	- 14.3	- 29.5
Nuclear (TWh)	5.3	- 1.7	- 9.7	- 6.9	- 8.4	- 23.3	4.6	- 10.1	11.9	6.8	9.0
Other Renewables (Mtoe)	17.2	5.7	15.5	18.0	16.7	10.7	12.7	11.7	11.9	10.4	11.1
Total (Mtoe)	1.4	2.4	2.0	3.7	2.9	3.1	1.1	2.1	1.0	1.8	1.4
Coal	0.7	- 4.6	4.3	7.3	5.8	5.1	0.3	2.6	- 1.1	- 0.1	- 0.6
Oil	4.2	7.8	1.3	1.8	1.5	1.3	- 3.2	- 1.0	0.5	0.9	0.7
Gas	- 8.7	4.4	4.1	4.8	4.4	19.2	8.4	13.9	- 2.0	1.4	- 0.4
Nuclear	- 25.9	14.5	8.0	5.2	6.5	5.8	- 16.7	- 6.3	- 43.4	- 14.3	- 29.5
Hydro	5.3	- 1.7	- 8.8	- 6.0	- 7.5	- 23.3	4.6	- 10.1	11.9	6.8	9.0
Other Renewables	17.2	5.7	15.5	18.0	16.7	10.7	12.7	11.7	11.9	10.4	11.1
Total Final Consumption											
Coal (Mton)	- 0.8	- 6.8	7.3	- 1.3	2.7	2.4	2.3	2.3	1.5	0.8	1.1
Oil (Mbbbl)	4.1	7.3	3.4	2.7	3.0	1.4	- 3.1	- 0.9	0.9	1.3	1.1
Gas (Bm ³)	- 5.9	2.3	4.3	9.0	6.3	9.4	8.0	8.8	0.8	2.3	1.4
Electricity (TWh)	1.3	2.8	1.2	3.1	2.2	4.1	3.2	3.6	1.4	2.3	1.8
Heat (Mtoe)	39.9	11.0	5.0	22.5	11.8	17.7	- 1.0	9.8	0.6	7.0	3.0
Other Renewables (Mtoe)	15.7	2.9	12.8	16.2	14.5	9.6	12.5	11.0	9.1	8.1	8.6
Total (Mtoe)	2.1	3.3	3.7	4.1	3.9	3.5	0.6	2.0	1.4	1.9	1.6
Coal	- 2.1	- 7.2	5.7	1.3	3.4	2.0	2.3	2.1	1.5	1.0	1.2
Oil	4.0	6.9	3.2	3.1	3.1	1.1	- 3.3	- 1.1	0.6	1.0	0.8
Gas	- 5.9	2.6	3.3	9.7	6.0	10.1	7.9	9.1	0.9	2.4	1.6
Electricity	1.3	2.8	1.2	3.1	2.2	4.1	3.2	3.6	1.4	2.3	1.8
Heat	39.9	11.0	5.0	22.5	11.8	17.7	- 1.0	9.8	0.6	7.0	3.0
Other Renewables	15.7	2.9	12.8	16.2	14.5	9.6	12.5	11.0	9.1	8.1	8.6
Industry	- 0.1	1.9	5.2	4.2	4.7	3.0	0.3	1.7	2.3	2.0	2.1
Transport	7.0	6.1	1.4	1.1	1.2	- 0.1	- 0.8	- 0.5	0.8	1.6	1.2
Buildings	5.0	5.2	1.6	7.2	4.2	7.8	2.8	5.5	- 0.4	1.6	0.5

Energy Demand by Sector

(Mtoe)

	2015	2016	2017p			2018e			2019e		
			1H	2H		1H	2H		1H	2H	
Industry	135.3	137.8	70.8	73.5	144.3	72.9	73.7	146.7	74.6	75.2	149.8
Coal	34.1	31.7	16.2	16.6	32.8	16.6	17.0	33.6	16.9	17.2	34.1
Oil	62.2	66.8	33.9	36.0	69.8	34.5	34.5	69.0	35.0	34.9	69.9
Gas	8.1	8.0	4.5	4.3	8.8	5.1	5.0	10.0	5.3	5.2	10.5
Electricity	22.8	23.2	11.8	12.0	23.8	12.1	12.3	24.4	12.4	12.6	25.0
Heat	-	-	-	-	-	-	-	-	-	-	-
Other Renewables	8.1	8.1	4.4	4.5	9.0	4.7	4.9	9.6	5.1	5.2	10.3
Transport	39.9	42.3	20.9	21.9	42.8	20.9	21.7	42.6	21.0	22.1	43.1
Coal	-	-	-	-	-	-	-	-	-	-	-
Oil	37.9	40.3	19.9	20.9	40.9	19.8	20.6	40.4	19.9	20.9	40.9
Gas	1.3	1.3	0.6	0.6	1.3	0.6	0.6	1.2	0.6	0.6	1.3
Electricity	0.2	0.2	0.1	0.1	0.2	0.1	0.1	0.3	0.1	0.1	0.3
Heat	-	-	-	-	-	-	-	-	-	-	-
Other Renewables	0.4	0.4	0.2	0.2	0.4	0.3	0.4	0.7	0.4	0.4	0.7
Buildings*	42.8	45.0	24.9	21.9	46.8	26.9	22.5	49.4	26.8	22.9	49.7
Coal	0.7	0.6	0.2	0.3	0.5	0.2	0.3	0.4	0.1	0.2	0.4
Oil	6.8	7.1	3.6	3.5	7.2	3.8	3.3	7.1	3.5	3.2	6.7
Gas	12.7	13.4	8.5	5.5	14.0	9.2	5.8	15.0	9.1	5.8	14.9
Electricity	18.6	19.3	9.7	9.9	19.6	10.3	10.3	20.6	10.3	10.5	20.8
Heat	2.0	2.2	1.4	1.0	2.4	1.7	1.0	2.7	1.7	1.1	2.8
Other Renewables	2.1	2.4	1.5	1.6	3.1	1.8	1.8	3.6	2.0	2.1	4.0
Transform	134.2	135.7	68.3	69.2	137.5	71.2	71.7	142.9	71.4	73.1	144.4
Coal	50.6	49.2	24.6	28.2	52.8	26.4	28.0	54.3	25.6	27.8	53.4
Oil	2.2	3.3	0.9	0.7	1.5	1.0	0.7	1.7	0.9	0.7	1.6
Gas	43.2	45.0	23.9	22.8	46.7	28.5	24.7	53.2	27.9	25.1	52.9
Nuclear	34.8	34.2	16.6	15.0	31.6	12.8	15.7	28.4	14.3	16.7	31.0
Hydro	1.2	1.4	0.7	0.8	1.5	0.7	0.7	1.4	0.4	0.6	1.0
Renewables	2.2	2.6	1.6	1.7	3.3	1.9	1.9	3.8	2.3	2.3	4.6

* include residential, commercial, public-etc usage

Coal

(Mton)

	2015	2016	2017p			2018e			2019e		
			1H	2H		1H	2H		1H	2H	
Total Coal Demand	135.1	129.3	66.5	73.3	139.8	70.0	73.5	143.5	69.1	73.3	142.4
Transform	82.5	80.3	41.6	47.8	89.4	44.6	47.4	91.9	43.3	47.0	90.3
Power Generation	82.5	80.3	41.6	47.8	89.4	44.6	47.4	91.9	43.3	47.0	90.3
Heat	-	-	-	-	-	-	-	-	-	-	-
Gas Manufacture	-	-	-	-	-	-	-	-	-	-	-
Total Final Consumption	52.6	49.0	24.8	25.5	50.4	25.4	26.1	51.5	25.8	26.3	52.1
Industry	51.1	47.8	24.4	24.8	49.3	25.1	25.5	50.6	25.5	25.8	51.3
Transport	-	-	-	-	-	-	-	-	-	-	-
Buildings	1.5	1.3	0.4	0.7	1.1	0.3	0.6	0.9	0.3	0.5	0.8
Consumption by products											
Anthracite	10.5	10.8	4.3	3.9	8.3	4.5	4.8	9.3	4.5	4.6	9.1
Bituminous	124.5	118.5	62.1	69.4	131.5	65.5	68.7	134.1	64.5	68.7	133.3
Iron making	36.8	33.5	17.7	18.6	36.3	18.0	18.8	36.8	18.4	19.1	37.4
Cement	4.7	4.6	2.2	2.0	4.2	1.8	1.9	3.7	1.7	1.8	3.5
Power Generation	80.4	77.8	40.9	47.4	88.3	44.3	46.6	90.9	43.1	46.5	89.6

Oil

(Mbbbl)

	2015	2016	2017p			2018e			2019e		
			1H	2H		1H	2H		1H	2H	
Total Oil Demand	853.1	921.1	457.9	479.2	937.1	465.4	464.7	930.1	469.1	470.3	939.4
Transform	14.6	21.8	5.9	4.5	10.5	7.0	4.9	11.9	6.5	4.5	11.0
Power Generation	12.8	19.3	4.5	3.5	8.1	4.8	4.0	8.7	4.3	3.5	7.8
Heat	0.8	1.3	0.8	0.4	1.2	0.7	0.4	1.1	0.7	0.4	1.1
Gas Manufacture	1.0	1.2	0.6	0.6	1.2	1.5	0.6	2.1	1.5	0.6	2.1
Total Final Consumption	838.5	899.3	451.9	474.7	926.6	458.4	459.8	918.2	462.6	465.8	928.4
Industry	501.0	542.6	275.3	291.6	567.0	281.3	281.0	562.4	286.6	286.0	572.6
Transport	284.0	300.5	147.9	155.3	303.2	146.9	152.7	299.6	147.9	154.9	302.8
Buildings	53.5	56.3	28.7	27.8	56.4	30.1	26.1	56.2	28.1	25.0	53.0
Consumption by products											
Gasoline	76.6	78.9	38.5	41.2	79.6	39.0	40.7	79.7	39.5	41.5	81.0
Diesel (including Transformation)	153.3	163.5	80.7	85.2	165.9	79.9	84.3	164.3	80.4	84.4	164.8
Kerosene (including Transformation)	16.2	19.1	9.3	9.7	19.0	10.2	8.8	19.0	9.2	8.4	17.6
B-C (including Transformation)	38.3	47.5	18.5	17.3	35.8	17.9	15.6	33.5	16.1	14.6	30.6
Jet Oil	34.4	37.0	18.5	19.7	38.2	19.8	20.0	39.9	20.1	21.0	41.1
LPG (including Transformation)	89.9	109.0	52.7	52.5	105.1	56.3	53.4	109.7	60.0	57.7	117.7
Naphtha	410.8	430.1	222.9	235.5	458.4	226.5	224.5	450.9	228.9	226.5	455.4
Other Non-Energy	33.7	36.1	16.8	18.2	35.1	15.8	17.4	33.2	14.9	16.3	31.2

Gas

	2015	2016	2017p			2018e			2019e		
			1H	2H		1H	2H		1H	2H	
Total Gas Demand (Mton)	33.4	34.9	18.6	17.8	36.4	22.1	19.3	41.5	21.7	19.6	41.3
Transform	33.1	34.5	18.3	17.5	35.8	21.8	18.9	40.7	21.3	19.2	40.5
Power Generation	14.6	15.5	7.4	8.2	15.6	9.4	9.0	18.4	8.9	9.0	17.8
Heat	1.5	1.6	0.8	0.8	1.7	1.2	0.9	2.2	1.3	1.0	2.2
Gas Manufacture	17.0	17.5	10.1	8.4	18.5	11.1	9.0	20.2	11.2	9.3	20.5
Industry	0.3	0.4	0.3	0.4	0.6	0.4	0.4	0.7	0.4	0.4	0.8
City Gas (Bm³)	20.8	21.3	12.8	9.8	22.6	14.0	10.6	24.6	14.1	10.8	24.9
Industry*	7.3	7.2	4.0	3.8	7.8	4.5	4.3	8.8	4.7	4.5	9.2
Transport	1.2	1.2	0.6	0.6	1.2	0.6	0.6	1.2	0.6	0.6	1.2
Buildings	12.2	12.8	8.2	5.4	13.6	9.0	5.6	14.6	8.8	5.7	14.5

* exclude industrial LNG usage

Electricity

(TWh)

	2015	2016	2017p			2018e			2019e		
			1H	2H		1H	2H		1H	2H	
Net Electricity Demand	-	540.4	270.4	283.2	553.5	279.1	290.9	570.0	281.7	296.7	578.3
Own use and Losses	- 483.7	43.4	19.0	26.8	45.8	17.4	26.4	43.8	16.3	26.1	42.4
Total Final Consumption	483.7	497.0	251.4	256.3	507.7	261.7	264.5	526.2	265.3	270.5	535.9
Industry	265.6	270.0	136.9	139.8	276.7	140.8	142.9	283.7	143.8	146.7	290.4
Transport	2.2	2.7	1.3	1.5	2.8	1.4	1.5	3.0	1.5	1.6	3.1
Buildings	215.8	224.4	113.2	115.1	228.3	119.4	120.0	239.5	120.1	122.3	242.4
Installed Electrical Capacity (GW)*	110.7	409.8	223.1	234.2	457.3	237.4	239.9	477.3	245.3	250.3	495.6
Coal	-	115.4	66.0	72.8	138.8	73.5	73.9	147.5	73.5	73.2	146.7
Oil	-	16.6	8.3	8.3	16.6	8.3	8.6	16.9	8.6	8.5	17.1
Gas	-	130.2	70.3	74.1	144.4	75.1	75.7	150.8	75.7	78.0	153.8
Nuclear	84.9	87.3	46.0	45.1	91.1	44.8	43.7	88.5	46.0	47.0	93.0
Hydro	25.9	25.9	13.0	13.0	25.9	13.0	13.0	26.0	13.0	13.0	26.0
Other Renewables	-	34.3	19.5	20.9	40.5	22.6	25.0	47.7	28.4	30.6	59.0
Electricity Generation of Power Plants*	-	540.4	270.4	283.2	553.5	279.1	290.9	570.0	281.7	296.7	578.3
Coal	-	213.8	113.3	125.5	238.8	116.1	122.3	238.4	112.3	119.7	232.1
Oil	-	14.0	6.1	2.3	8.4	3.4	2.4	5.8	3.5	2.1	5.6
Gas	-	121.0	56.1	66.9	122.9	80.9	72.1	152.9	76.1	71.8	147.9
Nuclear	-	162.0	78.1	70.3	148.4	60.0	73.6	133.5	67.1	78.5	145.6
Hydro	-	3.8	2.1	2.1	4.2	1.8	2.1	3.9	1.9	2.7	4.6
Other Renewables	-	25.8	14.6	16.2	30.8	17.0	18.4	35.4	20.7	21.9	42.6
Fuel Consumption of Power Plants (Mtoe)*	109.8	110.6	53.9	56.9	110.8	54.7	58.6	113.3	54.8	59.6	114.4
Coal	50.6	49.2	24.6	28.2	52.8	26.4	28.0	54.3	25.6	27.8	53.4
Oil	2.0	3.0	0.7	0.5	1.2	0.7	0.6	1.3	0.7	0.5	1.2
Gas	19.0	20.2	9.7	10.7	20.4	12.3	11.7	24.0	11.6	11.7	23.3
Nuclear	34.8	34.2	16.6	15.0	31.6	12.8	15.7	28.4	14.3	16.7	31.0
Hydro	1.2	1.4	0.7	0.8	1.5	0.7	0.7	1.4	0.4	0.6	1.0
Other Renewables	2.2	2.6	1.6	1.7	3.3	1.9	1.9	3.8	2.3	2.3	4.6

* District Heat is classified by fuel type since 2014

Heat and Other Renewables

(Mtoe)

	2015	2016	2017p			2018e			2019e		
			1H	2H		1H	2H		1H	2H	
Net Heat Demand	2.0	2.2	1.4	1.1	2.4	1.6	1.0	2.6	1.6	1.1	2.7
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	2.0	2.2	1.4	1.0	2.4	1.7	1.0	2.7	1.7	1.1	2.8
Industry	-	-	-	-	-	-	-	-	-	-	-
Transport	-	-	-	-	-	-	-	-	-	-	-
Buildings	2.0	2.2	1.4	1.0	2.4	1.7	1.0	2.7	1.7	1.1	2.8
Heat Production by fuel											
Coal	-	-	-	-	-	-	-	-	-	-	-
Oil	1.3	1.4	0.9	0.6	1.5	1.0	0.6	1.6	1.0	0.7	1.7
Gas	0.7	0.8	0.5	0.4	1.0	0.6	0.4	1.0	0.6	0.5	1.0
Nuclear	-	-	-	-	-	-	-	-	-	-	-
Hydro	-	-	-	-	-	-	-	-	-	-	-
Other Renewables	-	-	-	-	-	-	-	-	-	-	-
Fuel Consumption of District Heat											
Coal	-	-	-	-	-	-	-	-	-	-	-
Oil	0.1	0.2	0.1	0.1	0.2	0.1	0.1	0.2	0.1	0.1	0.2
Gas	2.0	2.0	1.1	1.1	2.2	1.6	1.2	2.8	1.7	1.3	2.9
Nuclear	-	-	-	-	-	-	-	-	-	-	-
Hydro	-	-	-	-	-	-	-	-	-	-	-
Other Renewables	-	-	-	-	-	-	-	-	-	-	-
Other Renewables	14.1	15.0	8.5	8.8	17.3	9.4	9.7	19.1	10.1	10.6	20.6
Hydro	1.2	1.4	0.7	0.8	1.5	0.7	0.7	1.4	0.4	0.6	1.0
Transform	2.2	2.6	1.6	1.7	3.3	1.9	1.9	3.8	2.3	2.3	4.6
Total Final Consumption	10.6	10.9	6.2	6.3	12.5	6.8	7.1	13.9	7.4	7.7	15.1
Industry	8.1	8.1	4.4	4.5	9.0	4.7	4.9	9.6	5.1	5.2	10.3
Transport	0.4	0.4	0.2	0.2	0.4	0.3	0.4	0.7	0.4	0.4	0.7
Buildings	2.1	2.4	1.5	1.6	3.1	1.8	1.8	3.6	2.0	2.1	4.0

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