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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.

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Summary

Energy Trends

□ **TPES in 1H 2018 increased to 153.0Mtoe, up 3.1% year-on-year.**

- The recovery of energy consumption in the industrial sector remained sluggish due to the stagnant industrial production, however, the rapid consumption growth in the buildings sector driven by temperature effect, price effect and growing wholesale and retail businesses drove TPES growth
- Excluding the feedstock energy use (non-energy oil and bituminous coal for steelmaking), TPES in 1H 2018 went up by 3.7% on a year-on-year basis.

□ **Gas consumption in 1H 2018 soared on a year-on-year basis and coal and gas consumption marked a modest increase while the use of nuclear energy continued its sharp downward trend.**

- **Petroleum (↑2.0%)** Despite the sluggish naphtha consumption due to the increased maintenance of naphtha cracking centers (NCC), the overall growth rate of petroleum showed a modest increase driven by the rising LPG consumption for industrial use as LPG prices remained low.
- **Coal (↑5.1%)** Coal consumption for steelmaking remained stagnant as the key iron & steel industries that had driven demand weakened and furnace improvements increased the furnace efficiency. However, the overall coal consumption posted a rapid growth, prompted by soaring coal use for generation along with the introduction of new large-scale bituminous coal power plants
- **Nuclear energy (↓23.3%)** A number of nuclear power plants extended the preventive maintenance period due to strengthened safety requirements and their capacity factor hit record low which led to a dramatic year-on-year decrease in nuclear energy consumption.
- **Gas (↑18.9%)** Gas consumption for power generation showed a sharp increase driven by the increased electricity consumption and plunged nuclear power generation, and that for city gas production also grew rapidly as its price competitiveness recovered thanks to temperature effect and rising oil prices.
- **Electricity (↑4.1%)** Despite the sluggish manufacturing industry, electricity consumption growth for industrial use increased driven by the power-intensive fabricated metal product manufacturing industry and that for buildings rose rapidly due to temperature effect.

□ **TFC in 1H 2018 marked 119.6Mtoe, 3.0% up on a year-on-year basis.**

- **Industry (↑2.9%)** Despite the stagnant growth rate of feedstock energy use, energy consumption for industrial use went up by nearly 3%, led by the increased LPG and electricity consumption.
- **Transport (↑0.9%)** Despite rising oil prices, the growth rate of energy consumption in the transport sector maintained its upward trend thanks to the surge in aviation energy use.
- **Buildings (↑5.4%)** Energy consumption in the buildings sector expanded rapidly and drove TFC, driven by falling energy prices and lower temperatures compared to the previous year.

Energy Outlook

□ **In 2019, TPED will increase by 2.0% to 316.2Mtoe and TFD is expected to be up by 2.1% to 243.1Mtoe.**

- TPED is forecasted to grow further in 2018, driven by increasing energy input for power generation, however, such upward trend will slow down in 2019 along with the declining economic growth rate.

□ **Demand for petroleum increased modestly while that of coal and gas plummeted significantly, and the use of nuclear energy is expected to grow and rebound.**

- The growth rate of coal demand, driven by feedstock energy, is anticipated to elevate due to stagnant international oil prices, fuel tax reduction, expansion of petrochemical facilities, etc.
- With the diminishing effect of the expanded capacity of coal-fired power plants, the growth rate of coal demand is projected to slow down dramatically, led by decreasing demand for generation due to increased preventative maintenance.
- In 2018, nuclear energy demand is expected to maintain its sharp downward movement as it did in the previous year until it will rebound in 2019, prompted by base effect and the likelihood of introducing new nuclear power plants.
- The growth rate of gas demand for both generation and city gas use will plunge as surging electricity demand, increased number of heating degree days, and reduced gas rates that drove gas demand in 2018 will no longer be applicable.
- The growth of electricity demand will slow down, taking into account the sluggish exports and private consumption and the base effect of the surge in 2018.

Energy demand growth rates by major energy source

	2014	2015	2016	2017p	2018e	2019e
TPES	0.9	1.6	2.4	2.2	2.9	2.0
Coal	2.9	1.2	- 4.3	7.9	3.8	0.6
Petroleum	- 0.5	4.2	7.9	1.6	1.4	1.7
Gas	- 9.0	- 8.7	4.4	3.5	12.4	1.6
Nuclear	12.7	5.3	- 1.7	- 8.4	- 9.1	5.2
Electricity	0.6	1.3	2.8	2.2	3.9	2.2

- ☐ **The growth of energy demand in the industrial sector will show a modest year-on-year increase while that for buildings is predicted to mark a sharp decrease.**
 - The growth rate of energy demand in the industrial sector, despite the declining economic growth rate, is anticipated to show a slight year-on-year increase (0.1%p), thanks to the expansion of naphtha demand in the petrochemical industry.
 - Energy demand in the transport sector is projected to rise further due to stagnant oil prices, temporary fuel tax reduction, etc.
 - The growth rate of energy demand in the buildings sector is expected to jump due to the heat and cold waves in 2018 but show a sharp decline in 2019 as the temperature will return to the average level.

Key Features and Implications

- ☐ **In 2018, triggered by a more rapid increase in electricity demand compared to other energy sources, TPED is expected to mark a more sharp elevation than TFD.**
 - In 2018, electricity demand is projected to show the most rapid growth since 2010, driven by heat and cold waves and the growth of the highly-electricity intensive fabricated metal product manufacturing industry, which will lead the declining share of electricity in TFC to rebound in five years.
 - Increasing electricity consumption is anticipated to drive a rapid rise in energy input for generation and conversion loss.
 - With the soaring conversion loss, the growth rate of TPED is expected to exceed that of TFD for the first time in 2018 since 2010.

- **Energy intensity will deteriorate in 2018 but make a turnaround and continue its recovery trend in 2019.**
 - In 2018, along with rapidly rising input for power generation, energy intensity is predicted to show a year-on-year increase (deterioration) for the first time since 2011, however, it will return to its declining trend (improvement) in 2019.
- **Fuel tax reduction is expected to increase the growth rate of petroleum demand by nearly 0.5%p.**
 - Assuming that the fuel tax reduction announced by the government is applied, petroleum consumption for the transport sector, driven by the reduced fuel tax, will go up by 0.2%p and 0.4%p in 2018 and 2019, respectively.
- **TPED and TFD will increase in 2019, led by petroleum and nuclear energy, and the industrial sector, respectively.**
 - As the driving force (contribution level) of coal and gas are expected to show a dramatic year-on-year decrease, the contribution of respective energy sources will be more balanced than any other years in the past.
 - The driving force of the industrial sector is expected to remain similar to the previous year whereas that of the buildings sector will decline significantly.

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	734.9	774.8	1 509.8	755.8	800.2	1 556.0	777.0	820.3	1 597.3	1 638.3
Industrial Production(2010=100)	100.0	100.3	104.3	102.3	103.8	104.6	104.2	102.3	105.4	103.9	104.5
Crude Oil Price (Dubai, USD/bbl)	50.8	36.8	45.7	41.2	51.5	54.9	53.2	68.0	71.9	70.0	68.4
Working Days	274.0	133.5	139.5	273.0	134.0	135.5	269.5	133.0	137.0	270.0	273.5
Population (million)	51.0	51.3	51.3	51.3	51.4	51.4	51.4	51.6	51.6	51.6	51.8
Average Temperature (°C)	13.6	10.2	16.9	13.6	10.2	15.9	13.0	9.5	16.3	12.9	12.8
Cooling Degree days	151.8	10.2	227.9	238.1	18.2	169.9	188.1	7.7	278.5	286.2	147.0
Heating Degree days	2 459.1	1 654.1	935.6	2 589.7	1 626.1	1 061.5	2 687.6	1 724.3	1 059.2	2 783.5	2 690.0
Energy Indicators											
Total Primary Energy Demand (Mtoe)	287.7	146.1	148.5	294.6	148.5	152.6	301.1	153.0	156.9	309.9	316.2
Energy Intensity (toe/million won)	0.197	0.199	0.192	0.196	0.197	0.191	0.194	0.198	0.191	0.194	0.193
TPED/capita (toe/capita)	5.640	2.850	2.897	5.747	2.887	2.967	5.853	2.964	3.038	6.002	6.102
Electricity Generation (TWh)	528.1	266.1	274.4	540.4	270.4	283.1	553.5	279.1	292.6	571.7	583.0
Electricity Generation/capita (MWh/capita)	10.4	5.2	5.4	10.5	5.3	5.5	10.8	5.4	5.7	11.1	11.3
Electricity Demand/capita (MWh/capita)	9.5	4.8	4.8	9.7	4.9	5.0	9.9	5.1	5.2	10.2	10.4

Energy Demand

	2015	2016			2017p			2018e			2019e
		1H	2H		1H	2H		1H	2H		
Total Primary Energy Supply											
Coal (Mton)	135.2	62.1	67.4	129.4	66.5	73.2	139.6	69.8	75.0	144.9	145.8
Oil (Mbbbl)	856.2	451.4	472.7	924.2	458.6	479.9	938.6	467.6	483.8	951.5	967.2
Gas (Bm ³)	33.4	17.9	17.0	34.9	18.5	17.6	36.1	22.0	18.6	40.6	41.2
Hydro (TWh)	5.8	3.0	3.6	6.6	3.2	3.8	7.0	3.4	3.4	6.8	8.1
Nuclear (TWh)	164.8	86.5	75.5	162.0	78.1	70.3	148.4	60.0	74.9	134.9	142.0
Other Renewables (Mtoe)	12.8	6.8	6.8	13.6	7.5	7.5	15.0	8.3	8.1	16.4	17.7
Total (Mtoe)	287.7	146.1	148.5	294.6	148.5	152.6	301.1	153.0	156.9	309.9	316.2
Coal	85.7	39.3	42.5	81.9	41.1	45.2	86.3	43.0	46.3	89.4	90.0
Oil	109.6	57.8	60.3	118.1	58.4	61.2	119.6	59.5	61.5	120.9	122.6
Gas	43.6	23.3	22.2	45.5	24.1	23.0	47.2	28.7	24.3	53.0	53.9
Nuclear	1.2	0.6	0.8	1.4	0.7	0.8	1.5	0.7	0.7	1.5	1.7
Hydro	34.8	18.3	15.9	34.2	16.6	15.0	31.6	12.8	16.0	28.7	30.2
Other Renewables	12.8	6.8	6.8	13.6	7.5	7.5	15.0	8.3	8.1	16.4	17.7
Total Final Consumption											
Coal (Mton)	52.7	23.2	25.9	49.1	24.8	25.4	50.2	25.4	25.6	51.0	51.7
Oil (Mbbbl)	841.6	438.7	463.7	902.4	452.7	475.4	928.1	460.7	479.2	939.9	957.1
Gas (Bm ³)	20.8	12.3	9.0	21.3	12.8	9.8	22.6	13.6	10.3	23.9	24.5
Electricity (TWh)	483.7	248.5	248.5	497.0	251.4	256.3	507.7	261.7	266.0	527.7	539.5
Heat (Mtoe)	1.6	1.0	0.7	1.7	1.1	0.8	1.8	1.3	0.8	2.1	2.1
Other Renewables (Mtoe)	10.6	5.5	5.4	10.9	5.9	5.9	11.8	6.4	6.1	12.5	13.3
Total (Mtoe)	218.4	112.4	113.1	225.5	116.1	116.4	232.5	119.6	118.5	238.1	243.1
Coal	35.1	15.5	17.2	32.7	16.6	16.9	33.5	16.8	17.1	33.8	34.3
Oil	107.3	55.9	58.9	114.8	57.6	60.5	118.1	58.5	60.8	119.3	121.2
Gas	22.1	13.1	9.6	22.7	13.4	10.3	23.7	14.2	10.8	25.0	25.7
Electricity	41.6	21.4	21.4	42.7	21.6	22.0	43.7	22.5	22.9	45.4	46.4
Heat	1.6	1.0	0.7	1.7	1.1	0.8	1.8	1.3	0.8	2.1	2.1
Other Renewables	10.6	5.5	5.4	10.9	5.9	5.9	11.8	6.4	6.1	12.5	13.3
Industry	135.7	67.3	71.0	138.3	70.8	73.1	143.8	72.8	74.8	147.6	151.7
Transport	40.3	20.8	21.9	42.7	21.0	22.0	43.0	21.2	22.0	43.2	43.8
Buildings	42.4	24.3	20.2	44.5	24.3	21.4	45.7	25.6	21.7	47.3	47.7

Energy Demand

	(yoy, %)										
	2015	2016			2017p			2018e			2019e
		1H	2H		1H	2H		1H	2H		
Total Primary Energy Supply											
Coal (Mton)	1.2	- 7.3	- 1.4	- 4.3	7.1	8.6	7.9	5.1	2.6	3.8	0.6
Oil (Mbbbl)	4.2	8.1	7.8	7.9	1.6	1.5	1.6	2.0	0.8	1.4	1.7
Gas (Bm ³)	- 8.7	- 2.0	11.9	4.4	3.4	3.5	3.5	18.9	5.7	12.4	1.5
Hydro (TWh)	- 25.9	7.3	21.1	14.5	7.0	4.0	5.4	5.8	- 9.3	- 2.4	18.8
Nuclear (TWh)	5.3	10.2	- 12.5	- 1.7	- 9.7	- 6.9	- 8.4	- 23.3	6.6	- 9.1	5.2
Other Renewables (Mtoe)	17.2	5.9	5.5	5.7	10.5	9.9	10.2	11.4	7.6	9.5	8.1
Total (Mtoe)	1.6	2.0	2.8	2.4	1.6	2.8	2.2	3.1	2.8	2.9	2.0
Coal	1.1	- 7.4	- 1.7	- 4.5	4.7	6.1	5.4	4.7	2.5	3.6	0.7
Oil	4.4	8.2	7.4	7.8	1.0	1.5	1.3	1.8	0.5	1.1	1.4
Gas	- 8.7	- 2.0	11.9	4.4	3.6	3.6	3.6	18.9	5.7	12.4	1.5
Nuclear	- 25.9	7.3	21.1	14.5	8.0	5.0	6.4	5.8	- 9.3	- 2.4	18.8
Hydro	5.3	10.2	- 12.5	- 1.7	- 8.8	- 6.0	- 7.5	- 23.3	6.6	- 9.1	5.2
Other Renewables	17.2	5.9	5.5	5.7	10.5	9.9	10.2	11.4	7.6	9.5	8.1
Total Final Consumption											
Coal (Mton)	- 1.1	- 9.7	- 4.1	- 6.8	7.0	- 2.0	2.2	2.3	0.6	1.5	1.4
Oil (Mbbbl)	4.1	7.0	7.5	7.2	3.2	2.5	2.8	1.8	0.8	1.3	1.8
Gas (Bm ³)	- 5.9	1.1	4.1	2.3	4.3	8.8	6.2	6.0	5.3	5.7	2.6
Electricity (TWh)	1.3	1.7	3.9	2.8	1.2	3.1	2.2	4.1	3.8	3.9	2.2
Heat (Mtoe)	- 0.5	8.1	12.3	9.7	1.7	18.5	8.2	17.7	2.5	11.2	4.1
Other Renewables (Mtoe)	15.7	3.2	2.7	2.9	7.2	7.7	7.4	9.0	4.5	6.8	6.0
Total (Mtoe)	2.1	2.4	4.2	3.3	3.3	2.9	3.1	3.0	1.8	2.4	2.1
Coal	- 1.2	- 9.7	- 4.4	- 7.0	6.7	- 1.5	2.4	1.3	0.8	1.1	1.5
Oil	4.2	6.7	7.1	6.9	3.0	2.8	2.9	1.6	0.5	1.0	1.6
Gas	- 5.9	1.4	4.2	2.6	2.4	7.1	4.4	5.9	5.4	5.7	2.7
Electricity	1.3	1.7	3.9	2.8	1.2	3.1	2.2	4.1	3.8	3.9	2.2
Heat	- 0.5	8.1	12.3	9.7	1.7	18.5	8.2	17.7	2.5	11.2	4.1
Other Renewables	15.7	3.2	2.7	2.9	7.2	7.7	7.4	9.0	4.5	6.8	6.0
Industry	0.3	0.5	3.3	1.9	5.1	2.9	4.0	2.9	2.4	2.6	2.7
Transport	7.1	6.5	5.6	6.0	0.9	0.5	0.7	0.9	- 0.0	0.4	1.3
Buildings	3.6	4.5	5.7	5.1	0.2	5.5	2.6	5.4	1.6	3.6	0.7

Energy Demand by Sector

(Mtoe)

	2015	2016			2017p			2018e			2019e
		1H	2H		1H	2H		1H	2H		
Industry	135.7	67.3	71.0	138.3	70.8	73.1	143.8	72.8	74.8	147.6	151.7
Coal	34.5	15.3	16.8	32.1	16.4	16.6	33.0	16.6	16.8	33.4	33.9
Oil	62.2	32.3	34.6	66.9	33.9	35.9	69.8	34.5	36.5	71.0	72.9
Gas	8.1	4.2	3.9	8.0	4.3	4.1	8.4	4.8	4.6	9.5	10.0
Electricity	22.8	11.5	11.7	23.2	11.8	12.0	23.8	12.1	12.3	24.5	25.0
Heat	-	-	-	-	-	-	-	-	-	-	-
Other Renewables	8.1	4.0	4.1	8.1	4.4	4.4	8.8	4.7	4.6	9.3	9.9
Transport	40.3	20.8	21.9	42.7	21.0	22.0	43.0	21.2	22.0	43.2	43.8
Coal	-	-	-	-	-	-	-	-	-	-	-
Oil	38.4	19.9	20.9	40.8	20.1	21.0	41.0	20.1	21.0	41.1	41.6
Gas	1.3	0.6	0.6	1.3	0.6	0.6	1.3	0.6	0.6	1.3	1.3
Electricity	0.2	0.1	0.1	0.2	0.1	0.1	0.2	0.1	0.1	0.3	0.3
Heat	-	-	-	-	-	-	-	-	-	-	-
Other Renewables	0.4	0.2	0.2	0.4	0.2	0.2	0.5	0.3	0.2	0.6	0.6
Buildings*	42.4	24.3	20.2	44.5	24.3	21.4	45.7	25.6	21.7	47.3	47.7
Coal	0.7	0.2	0.4	0.6	0.2	0.3	0.5	0.2	0.3	0.4	0.4
Oil	6.8	3.7	3.4	7.1	3.6	3.6	7.2	3.8	3.4	7.2	6.7
Gas	12.7	8.3	5.1	13.4	8.5	5.5	14.0	8.8	5.6	14.3	14.5
Electricity	18.6	9.7	9.6	19.3	9.7	9.9	19.6	10.3	10.4	20.7	21.1
Heat	1.6	1.0	0.7	1.7	1.1	0.8	1.8	1.3	0.8	2.1	2.1
Other Renewables	2.1	1.3	1.2	2.4	1.3	1.2	2.5	1.4	1.3	2.6	2.8
Transform	134.2	69.0	66.8	135.7	68.3	69.1	137.4	71.2	72.6	143.8	146.8
Coal	50.6	23.8	25.4	49.2	24.6	28.2	52.8	26.3	29.3	55.5	55.7
Oil	2.2	2.0	1.4	3.3	0.9	0.7	1.5	1.0	0.7	1.7	1.4
Gas	43.2	23.0	22.0	45.0	23.9	22.8	46.7	28.5	24.1	52.6	53.4
Nuclear	34.8	18.3	15.9	34.2	16.6	15.0	31.6	12.8	16.0	28.7	30.2
Hydro	1.2	0.6	0.8	1.4	0.7	0.8	1.5	0.7	0.7	1.5	1.7
Renewables	2.2	1.3	1.4	2.6	1.6	1.6	3.2	1.9	1.9	3.8	4.4

* include residential, commercial, public-etc usage

Coal

(Mton)

	2015	2016			2017p			2018e			2019e
		1H	2H		1H	2H		1H	2H		
Total Coal Demand	135.2	62.1	67.4	129.4	66.5	73.2	139.6	69.8	75.0	144.9	145.8
Transform	82.5	38.9	41.4	80.3	41.6	47.8	89.4	44.4	49.5	93.9	94.1
Power Generation	82.5	38.9	41.4	80.3	41.6	47.8	89.4	44.4	49.5	93.9	94.1
Heat	-	-	-	-	-	-	-	-	-	-	-
Gas Manufacture	-	-	-	-	-	-	-	-	-	-	-
Total Final Consumption	52.7	23.2	25.9	49.1	24.8	25.4	50.2	25.4	25.6	51.0	51.7
Industry	51.3	22.7	25.1	47.9	24.5	24.7	49.2	25.1	25.0	50.0	50.9
Transport	-	-	-	-	-	-	-	-	-	-	-
Buildings	1.5	0.5	0.8	1.3	0.4	0.7	1.1	0.3	0.6	0.9	0.8
Consumption by products											
Anthracite	10.7	4.7	6.2	10.9	4.3	4.0	8.3	4.5	4.2	8.7	8.8
Bituminous	124.5	57.4	61.1	118.5	62.1	69.2	131.3	65.3	70.8	136.2	137.0
Iron making	36.8	16.2	17.3	33.5	17.7	18.4	36.1	18.0	18.7	36.7	37.3
Cement	4.7	2.1	2.5	4.6	2.2	2.0	4.2	1.8	1.8	3.6	3.3
Power Generation	80.4	37.6	40.1	77.8	40.9	47.4	88.3	44.1	49.1	93.2	93.6

Oil

(Mbbbl)

	2015	2016			2017p			2018e			2019e
		1H	2H		1H	2H		1H	2H		
Total Oil Demand	856.2	451.4	472.7	924.2	458.6	479.9	938.6	467.6	483.8	951.5	967.2
Transform	14.6	12.7	9.1	21.8	5.9	4.5	10.5	6.9	4.7	11.6	10.1
Power Generation	12.8	11.2	8.1	19.3	4.5	3.5	8.1	4.7	3.7	8.4	7.0
Heat	0.8	0.8	0.4	1.3	0.8	0.4	1.2	0.7	0.3	1.0	0.9
Gas Manufacture	1.0	0.7	0.6	1.2	0.6	0.6	1.2	1.5	0.6	2.1	2.2
Total Final Consumption	841.6	438.7	463.7	902.4	452.7	475.4	928.1	460.7	479.2	939.9	957.1
Industry	501.0	261.6	281.0	542.6	275.6	291.2	566.8	281.3	297.1	578.4	595.0
Transport	287.1	147.9	155.7	303.6	148.7	155.7	304.4	149.3	155.5	304.8	308.5
Buildings	53.5	29.2	27.1	56.3	28.4	28.5	56.9	30.1	26.6	56.7	53.6
Consumption by products											
Gasoline	76.6	38.2	40.8	78.9	38.5	41.2	79.6	39.0	41.4	80.4	81.6
Diesel (including Transformation)	156.4	81.3	85.2	166.6	82.2	86.7	168.9	82.2	85.8	168.1	168.2
Kerosene (including Transformation)	16.2	10.0	9.0	19.1	9.4	9.7	19.0	10.2	9.0	19.2	17.3
B-C (including Transformation)	38.3	25.4	22.1	47.5	18.5	17.3	35.8	17.8	15.4	33.2	29.8
Jet Oil	34.4	18.2	18.8	37.0	18.5	19.7	38.2	19.8	20.2	40.0	41.9
LPG (including Transformation)	89.9	50.0	58.9	109.0	52.7	52.4	105.1	56.3	55.6	111.9	113.8
Naphtha	410.8	210.7	219.4	430.1	222.9	235.5	458.4	226.5	238.9	465.4	483.1
Other Non-Energy	33.7	17.6	18.5	36.1	16.0	17.5	33.5	15.7	17.4	33.1	31.5

Gas

	2015	2016			2017p			2018e			2019e
		1H	2H		1H	2H		1H	2H		
Total Gas Demand (Mton)	33.4	17.9	17.0	34.9	18.5	17.6	36.1	22.0	18.6	40.6	41.2
Transform	33.1	17.7	16.8	34.5	18.3	17.5	35.8	21.8	18.4	40.2	40.9
Power Generation	14.6	7.0	8.5	15.5	7.3	8.1	15.4	9.4	8.9	18.3	18.5
Heat	1.5	0.9	0.7	1.6	0.9	0.9	1.9	1.2	0.9	2.1	1.9
Gas Manufacture	17.0	9.8	7.7	17.5	10.1	8.4	18.5	11.2	8.7	19.8	20.4
Industry	0.3	0.2	0.2	0.4	0.2	0.2	0.3	0.2	0.2	0.4	0.4
City Gas (Bm³)	20.8	12.3	9.0	21.3	12.8	9.8	22.6	13.6	10.3	23.9	24.5
Industry*	7.3	3.7	3.5	7.2	4.0	3.8	7.8	4.5	4.3	8.7	9.2
Transport	1.2	0.6	0.6	1.2	0.6	0.6	1.2	0.6	0.6	1.2	1.2
Buildings	12.2	8.0	4.9	12.8	8.2	5.4	13.6	8.5	5.4	13.9	14.1

* exclude industrial LNG usage

Electricity

(TWh)

	2015	2016			2017p			2018e			2019e
		1H	2H		1H	2H		1H	2H		
Net Electricity Demand	528.1	266.1	274.4	540.4	270.4	283.1	553.5	279.1	292.6	571.7	583.0
Own use and Losses	44.4	17.6	25.8	43.4	19.0	26.8	45.7	17.4	26.6	44.0	43.5
Total Final Consumption	483.7	248.5	248.5	497.0	251.4	256.3	507.7	261.7	266.0	527.7	539.5
Industry	265.6	134.1	135.8	270.0	136.9	139.8	276.7	140.8	143.5	284.3	291.0
Transport	2.2	1.3	1.4	2.7	1.3	1.5	2.8	1.4	1.6	3.0	3.2
Buildings	215.8	113.1	111.3	224.4	113.2	115.1	228.3	119.4	120.9	240.4	245.2
Installed Electrical Capacity (GW)*	384.5	197.5	205.2	402.7	219.5	230.6	450.1	233.8	236.6	470.4	480.0
Coal	108.4	54.9	60.5	115.4	66.0	72.8	138.8	73.5	74.1	147.6	147.1
Oil	17.0	8.4	8.3	16.6	8.3	8.3	16.6	8.3	8.6	16.9	17.1
Gas	127.2	65.0	65.2	130.2	70.3	74.1	144.4	75.1	76.0	151.1	154.7
Nuclear	84.9	43.4	43.9	87.3	46.0	45.1	91.1	44.8	43.7	88.5	87.4
Hydro	25.9	13.0	13.0	25.9	13.0	13.0	25.9	13.0	13.0	26.0	26.0
Other Renewables	21.2	12.9	14.3	27.2	16.0	17.4	33.3	19.1	21.3	40.3	47.7
Electricity Generation of Power Plants*	528.1	266.1	274.4	540.4	270.4	283.1	553.5	279.1	292.6	571.7	583.0
Coal	204.7	101.7	112.1	213.8	113.1	125.2	238.2	116.1	120.4	236.5	234.2
Oil	31.7	8.4	5.8	14.3	6.4	2.7	9.1	3.9	3.3	7.2	6.1
Gas	100.8	55.4	65.5	120.8	56.0	66.8	122.9	80.5	73.5	153.9	155.6
Nuclear	164.8	86.5	75.5	162.0	78.1	70.3	148.4	60.0	74.9	134.9	142.0
Hydro	5.8	3.0	3.6	6.6	3.2	3.8	7.0	3.4	3.4	6.8	8.1
Other Renewables	20.3	11.1	11.9	23.0	13.5	14.3	27.8	15.3	17.1	32.3	37.1
Fuel Consumption of Power Plants (Mtoe)*	109.8	54.8	55.8	110.6	53.8	56.7	110.5	54.7	60.0	114.8	117.3
Coal	50.6	23.8	25.4	49.2	24.6	28.2	52.8	26.3	29.3	55.5	55.7
Oil	2.0	1.8	1.3	3.0	0.7	0.5	1.2	0.7	0.6	1.3	1.1
Gas	19.0	9.1	11.1	20.2	9.6	10.6	20.1	12.3	11.6	23.9	24.2
Nuclear	34.8	18.3	15.9	34.2	16.6	15.0	31.6	12.8	16.0	28.7	30.2
Hydro	1.2	0.6	0.8	1.4	0.7	0.8	1.5	0.7	0.7	1.5	1.7
Other Renewables	2.2	1.3	1.4	2.6	1.6	1.6	3.2	1.9	1.9	3.8	4.4

* 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	1.3	0.9	2.2	1.6	1.2	2.8	1.8	1.0	2.8	2.5
Own use and Losses	0.5	0.3	0.2	0.5	0.5	0.4	0.9	0.5	0.2	0.7	0.4
Total Final Consumption	1.6	1.0	0.7	1.7	1.1	0.8	1.8	1.3	0.8	2.1	2.1
Industry	-	-	-	-	-	-	-	-	-	-	-
Transport	-	-	-	-	-	-	-	-	-	-	-
Buildings	1.6	1.0	0.7	1.7	1.1	0.8	1.8	1.3	0.8	2.1	2.1
Heat Production by fuel											
Coal	-	-	-	-	-	-	-	-	-	-	-
Oil	1.3	0.9	0.5	1.4	1.1	0.8	1.9	1.3	0.7	2.0	1.8
Gas	0.7	0.5	0.4	0.8	0.4	0.4	0.8	0.5	0.3	0.8	0.7
Nuclear	-	-	-	-	-	-	-	-	-	-	-
Hydro	-	-	-	-	-	-	-	-	-	-	-
Other Renewables	-	-	-	-	-	-	-	-	-	-	-
Fuel Consumption of District Heat											
Coal	-	-	-	-	-	-	-	-	-	-	-
Oil	0.1	0.1	0.1	0.2	0.1	0.1	0.2	0.1	0.1	0.2	0.1
Gas	2.0	1.1	0.9	2.0	1.2	1.2	2.4	1.6	1.1	2.8	2.5
Nuclear	-	-	-	-	-	-	-	-	-	-	-
Hydro	-	-	-	-	-	-	-	-	-	-	-
Other Renewables	-	-	-	-	-	-	-	-	-	-	-
Other Renewables	14.1	7.4	7.6	15.0	8.2	8.3	16.5	9.1	8.8	17.8	19.4
Hydro	1.2	0.6	0.8	1.4	0.7	0.8	1.5	0.7	0.7	1.5	1.7
Transform	2.2	1.3	1.4	2.6	1.6	1.6	3.2	1.9	1.9	3.8	4.4
Total Final Consumption	10.6	5.5	5.4	10.9	5.9	5.9	11.8	6.4	6.1	12.5	13.3
Industry	8.1	4.0	4.1	8.1	4.4	4.4	8.8	4.7	4.6	9.3	9.9
Transport	0.4	0.2	0.2	0.4	0.2	0.2	0.5	0.3	0.2	0.6	0.6
Buildings	2.1	1.3	1.2	2.4	1.3	1.2	2.5	1.4	1.3	2.6	2.8

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