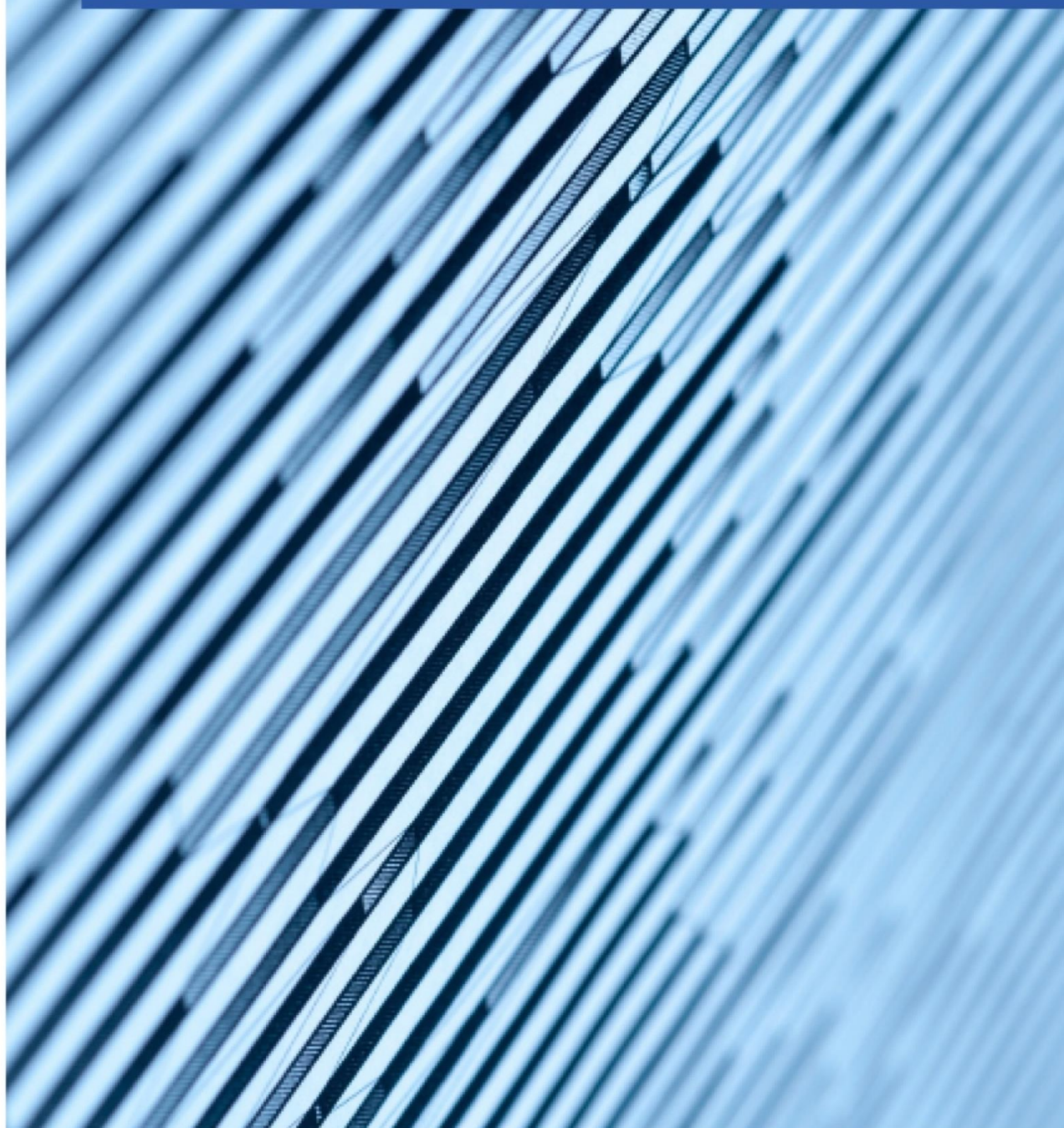


statistics

Monthly electricity statistics



iea

With data up to:
October 2019

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MONTHLY ELECTRICITY STATISTICS

October 2019

HIGHLIGHTS

OECD

- In October 2019, net electricity production was 847.3 TWh and fell by 2.2% compared to September 2019. Compared to October 2018, production was up by 0.5%.
- Renewable production increased by 4.9% compared to October 2018 and accounted for 27.5% of total net production, reaching 233.4 TWh. From January to October 2019, renewables production totalled 2,480.7 TWh and was up by 3.2% compared to the same period in 2018.
- From January to October 2019, conventional thermal production was 4,944.3 TWh and was down by 4.0% compared to the same period in 2018. Non-renewables production was 6,312.2 TWh, and its share of the total electricity mix was 71.8%. By comparison, non-renewables were 72.9% of the total electricity production in the first ten months of 2018.

OECD Americas

- Net production in October 2019 was 410.6 TWh, decreasing by 0.6% compared to October 2018. Renewables production was 100.2 TWh, reaching 24.4% of total net production. Wind production increased by 4.9 TWh compared to September 2019, reaching 33.0 TWh, and 8.0% of the total electricity production.
- In the United States, wind production was 28.2 TWh, up by 15.8% compared to September 2019 and by 33.0% compared to October 2018, highlighting the expansion of the wind energy sector. In the first three quarters of 2019, new added wind capacity was 3.7 GW. Consequently, wind production from January to October 2019 was 249.5 TWh, increasing by 9.7% compared to the same period in 2018.

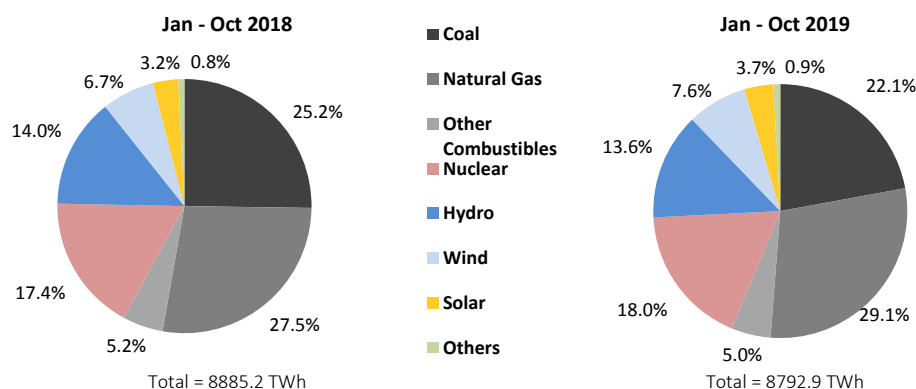
OECD Asia/Oceania

- Net electricity production was 148.0 TWh in October 2019, down by 0.5% compared to September 2019. Renewables production in the first ten months of 2019 was 265.1 GWh and increased by 3.2% compared to the same period in 2018, as a result of higher wind and solar productions. From January to October 2019, wind and solar productions rose respectively by 16.2% and 13.8% compared to the same months in 2018.
- Coal production in New Zealand was 61.2% higher in the first ten months of 2019 compared to the same period in 2018, reaching 5.1% of the total electricity mix. On the other hand, hydro production decreased 3.4%, as a result of drier weather conditions. The increase in coal production almost compensated the drop in hydro production.

OECD Europe

- In October 2019, OECD Europe produced 288.7 TWh of electricity. The total share of renewables accounted for 37.1% of the mix, with actual renewables production increasing 4.5% compared to October 2018. From January to October 2019 compared to the same period in 2018, geothermal production increased by 11.3%, reaching 16.3 TWh although it was still less than 0.6% of the total production mix.
- Natural gas production increased by 11.1% in OECD Europe compared to September 2019, reaching 22.6% of the total electricity mix. This is a consequence of continued record low gas prices. In the Netherlands, natural gas production has increased since July 2019 and was 62.1% of the total net production in October 2019 compared to 45.4% in October 2018. Similarly, in Austria natural gas production accounted for 24.1% of the total electricity production in October 2019 when it was 17.4% in October 2018.
- In October 2019, the Slovenian Krško nuclear power plant had its regular overhaul, causing total net production to decrease by 37.1% compared to October 2018. This drop in net production was partly compensated by an increase in coal production of 86.6% compared to September 2019 and in net electricity imports. Net imports were 411 GWh in October contrasting with the 58 GWh in September.
- In Finland, renewables production decreased by 15.0% compared to October 2018 partly because of lower wind production, down by 21.7%. Average windspeed decreased in Western Finland where the majority of the Finnish windmills are located. Hydro production was also down by 17.3% compared to October 2018. As a result, nuclear production increased by 264 GWh to compensate the drop in renewables production.

OECD Electricity Production by Fuel Type Year-to-Date Comparison

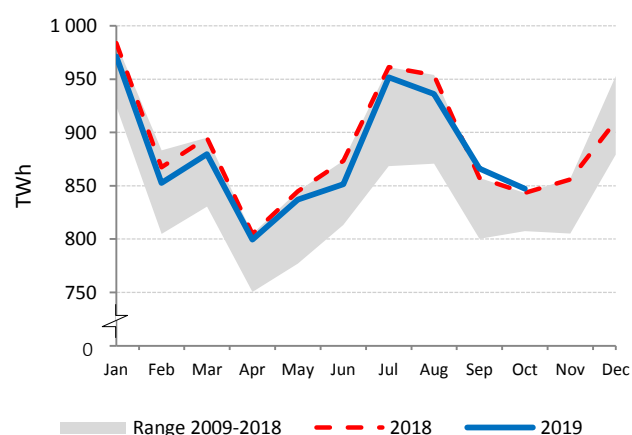


OECD Total

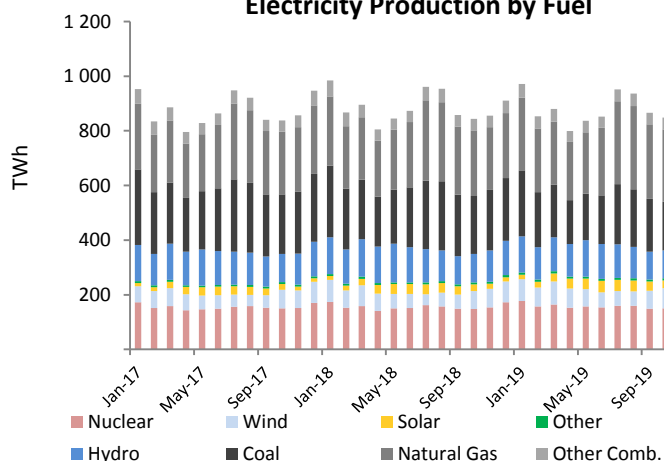
	Oct 2019				Year-to-Date			2018	
	TWh	change ¹	change ²	share	2019	2018	change ³	TWh	share
CONVENTIONAL THERMAL	484.8	-1.9%	-4.7%	57.2%	4 944.3	5 148.1	-4.0%	6 155.2	57.8%
Coal ⁵	177.2	-16.4%	-8.4%	20.9%	1 944.8	2 241.7	-13.2%	2 692.5	25.3%
Oil ⁵	15.5	15.6%	-2.7%	1.8%	157.1	176.0	-10.8%	204.4	1.9%
Natural Gas ⁵	264.2	10.1%	-3.0%	31.2%	2 560.2	2 446.4	4.7%	2 914.0	27.4%
Combustible Renewables ⁵	24.5	1.5%	4.1%	2.9%	245.1	238.3	2.9%	289.2	2.7%
Other Combustibles ⁵	3.3	-27.6%	6.2%	0.4%	37.1	45.7	-18.9%	55.1	0.5%
Nuclear	149.9	1.3%	0.2%	17.7%	1 579.9	1 543.1	2.4%	1 869.9	17.6%
Hydro	102.5	-1.8%	1.0%	12.1%	1 196.5	1 242.8	-3.7%	1 483.4	13.9%
Wind	73.6	12.1%	13.3%	8.7%	669.6	595.1	12.5%	739.1	6.9%
Solar	28.6	18.7%	-15.8%	3.4%	326.0	286.9	13.6%	319.7	3.0%
Geothermal	4.1	0.5%	1.3%	0.5%	42.5	40.3	5.4%	49.0	0.5%
Other Renewables	0.1	-2.2%	-	0.0%	1.0	1.0	-1.6%	1.2	0.0%
Non-Specified	3.8	28.7%	8.7%	0.4%	33.1	28.0	18.4%	34.4	0.3%
RENEWABLES	233.4	4.9%	2.3%	27.5%	2 480.7	2 404.3	3.2%	2 881.6	27.1%
NON-RENEWABLES	613.9	-1.1%	-3.8%	72.5%	6 312.2	6 480.9	-2.6%	7 770.4	72.9%
TOTAL NET PRODUCTION	847.3	0.5%	-2.2%		8 792.9	8 885.2	-1.0%	10 652.0	
+ Imports	39.5	1.9%	1.3%		406.0	406.6	-0.1%	490.2	
- Exports	39.4	-1.7%	-1.3%		395.7	390.4	1.3%	473.9	
= ELECTRICITY SUPPLIED	847.5	0.6%	-2.0%		8 803.2	8 901.4	-1.1%	10 668.3	
- Used for pumped storage ⁴	6.4	-15.4%	-10.8%		65.9	73.8	-10.6%	87.3	
- T&D Losses ⁴	47.3	-3.6%	-4.3%		554.8	569.9	-2.6%	689.3	
= ELECTRICITY CONSUMED	793.7	1.1%	-1.8%		8 182.5	8 257.8	-0.9%	9 891.7	

¹ current month to month of last year change² month-to-month change³ year-to-date compared to same period last year⁴ estimated for certain countries⁵ the breakdown of conventional thermal is estimated from annual data for Canada, Estonia and Italy

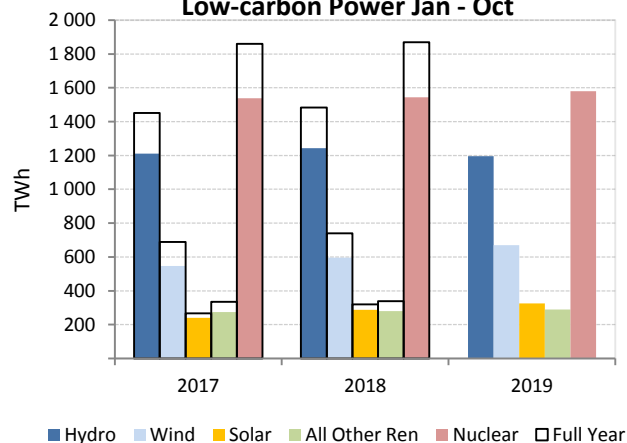
Electricity Production



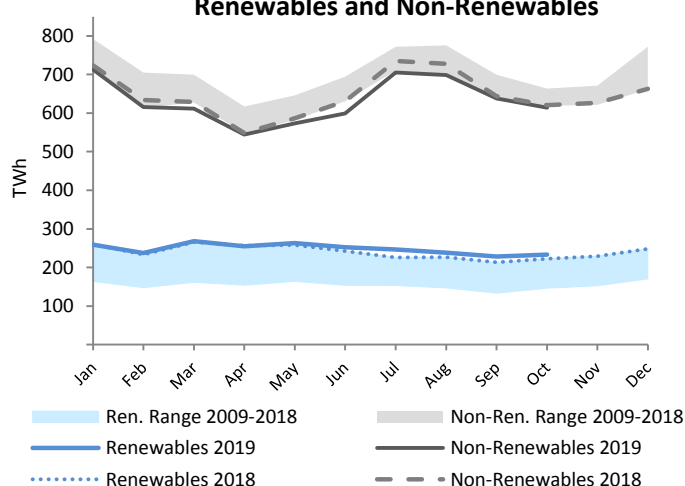
Electricity Production by Fuel



Low-carbon Power Jan - Oct



Renewables and Non-Renewables

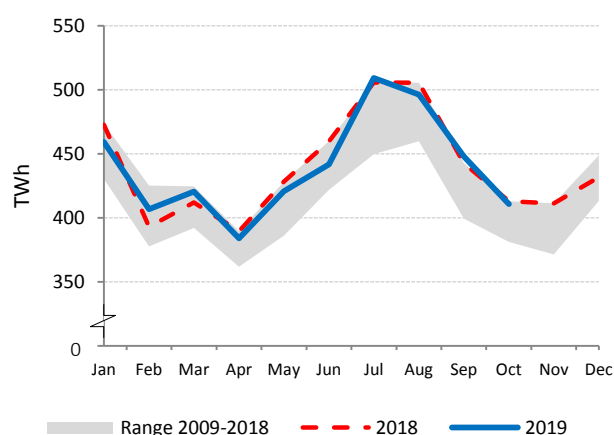


OECD Americas

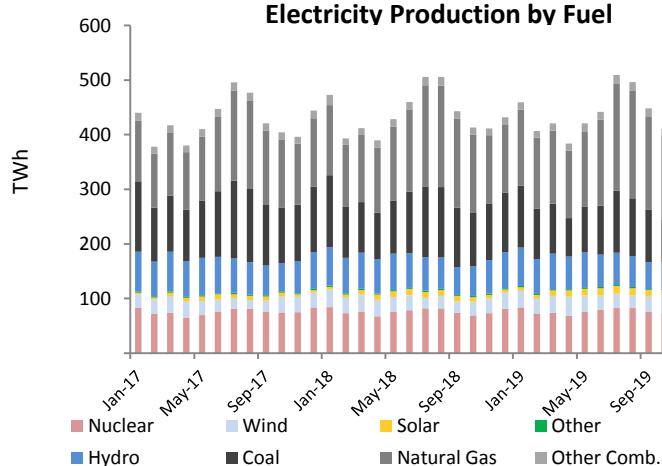
	Oct 2019				Year-to-Date			2018	
	TWh	change ¹	change ²	share	2019	2018	change ³	TWh	share
CONVENTIONAL THERMAL	243.9	-3.7%	-13.4%	59.4%	2 613.0	2 664.0	-1.9%	3 152.0	59.9%
Coal ⁵	77.1	-21.6%	-20.3%	18.8%	933.3	1 078.3	-13.5%	1 290.6	24.5%
Oil ⁵	6.2	8.9%	-17.2%	1.5%	69.5	67.8	2.6%	79.0	1.5%
Natural Gas ⁵	154.0	8.2%	-9.8%	37.5%	1 540.0	1 444.6	6.6%	1 694.8	32.2%
Combustible Renewables ⁵	5.7	-6.2%	-1.5%	1.4%	61.9	65.2	-5.0%	77.8	1.5%
Other Combustibles ⁵	0.9	2.7%	-2.2%	0.2%	8.2	8.2	0.7%	9.9	0.2%
Nuclear	71.8	4.2%	-4.9%	17.5%	764.4	761.5	0.4%	915.7	17.4%
Hydro	49.1	-10.5%	0.4%	12.0%	596.1	620.7	-4.0%	748.1	14.2%
Wind	33.0	30.3%	17.4%	8.0%	292.4	263.6	10.9%	320.3	6.1%
Solar	10.7	29.8%	-7.4%	2.6%	108.8	90.3	20.5%	102.3	1.9%
Geothermal	1.7	-4.3%	-6.1%	0.4%	18.0	17.6	2.1%	21.4	0.4%
Other Renewables	-	-	-	-	0.0	0.0	-94.3%	0.0	0.0%
Non-Specified	0.4	-9.5%	-4.9%	0.1%	4.3	4.2	2.0%	5.2	0.1%
RENEWABLES	100.2	4.1%	4.2%	24.4%	1 077.3	1 057.5	1.9%	1 270.0	24.1%
NON-RENEWABLES	310.4	-2.0%	-11.8%	75.6%	3 319.7	3 364.5	-1.3%	3 995.1	75.9%
TOTAL NET PRODUCTION	410.6	-0.6%	-8.4%		4 397.0	4 422.0	-0.6%	5 265.0	
+ Imports	4.9	8.5%	-20.3%		60.9	63.6	-4.3%	73.7	
- Exports	5.0	-12.5%	-31.9%		62.2	65.1	-4.4%	77.6	
= ELECTRICITY SUPPLIED	410.5	-0.3%	-8.1%		4 395.6	4 420.5	-0.6%	5 261.1	
- Used for pumped storage ⁴	1.8	-15.3%	-34.1%		22.7	24.0	-5.7%	27.6	
- T&D Losses ⁴	21.5	-6.5%	-16.1%		300.5	304.4	-1.3%	366.4	
= ELECTRICITY CONSUMED	387.3	0.2%	-7.5%		4 072.4	4 092.1	-0.5%	4 867.1	

¹ current month to month of last year change⁴ estimated for certain countries² month-to-month change⁵ the breakdown of conventional thermal is estimated from annual data for Canada³ year-to-date compared to same period last year

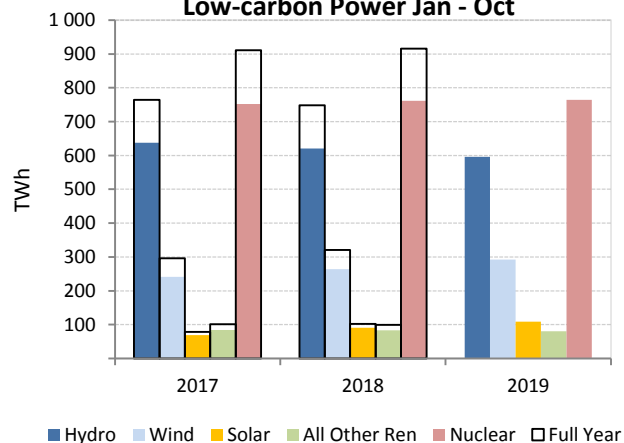
Electricity Production



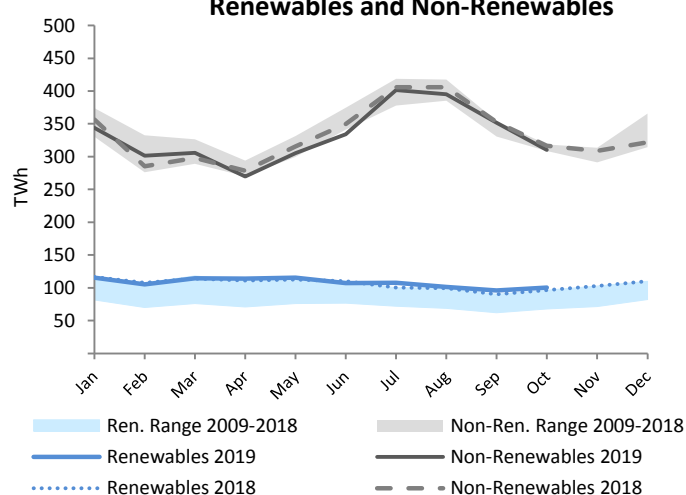
Electricity Production by Fuel



Low-carbon Power Jan - Oct



Renewables and Non-Renewables

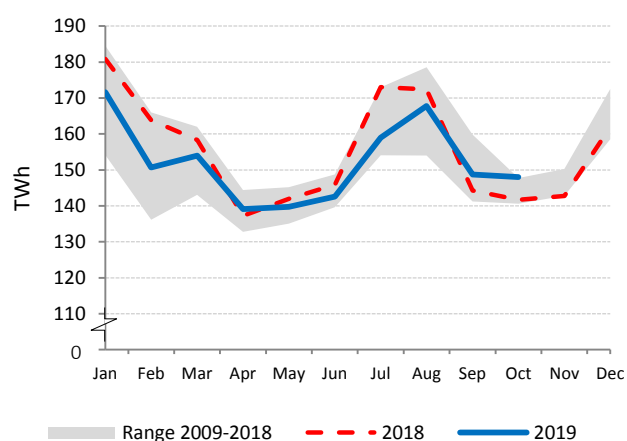


OECD Asia Oceania

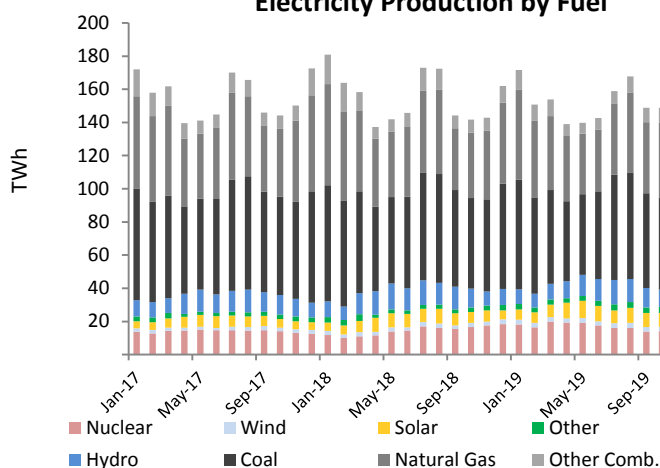
	Oct 2019				Year-to-Date			2018	
	TWh	change ¹	change ²	share	2019	2018	change ³	TWh	share
CONVENTIONAL THERMAL	108.8	6.8%	0.2%	73.5%	1 094.7	1 171.4	-6.5%	1 398.4	75.0%
Coal	54.9	0.3%	-4.1%	37.1%	570.7	597.4	-4.5%	716.4	38.4%
Oil	5.2	38.8%	12.7%	3.5%	48.8	69.2	-29.5%	78.4	4.2%
Natural Gas	44.9	14.2%	4.8%	30.3%	436.7	462.8	-5.6%	553.0	29.7%
Combustible Renewables	3.8	50.3%	-2.3%	2.6%	33.2	25.6	29.8%	30.8	1.7%
Other Combustibles	0.1	-96.1%	-3.2%	0.0%	5.4	16.5	-67.5%	19.8	1.1%
Nuclear	14.1	-15.7%	1.3%	9.5%	170.8	138.4	23.4%	174.4	9.4%
Hydro	10.4	-8.4%	-10.8%	7.0%	113.0	126.3	-10.6%	144.4	7.7%
Wind	2.8	17.8%	2.9%	1.9%	27.3	23.5	16.2%	28.7	1.5%
Solar	8.3	25.3%	-2.8%	5.6%	83.1	73.0	13.8%	85.3	4.6%
Geothermal	0.8	5.8%	4.6%	0.6%	8.1	8.0	2.0%	9.7	0.5%
Other Renewables	0.0	-	-	0.0%	0.4	0.4	-	0.5	0.0%
Non-Specified	2.8	44.2%	13.2%	1.9%	23.7	18.5	28.7%	22.8	1.2%
RENEWABLES	26.1	10.4%	-5.3%	17.6%	265.1	256.8	3.2%	299.3	16.1%
NON-RENEWABLES	122.0	3.3%	0.6%	82.4%	1 256.0	1 302.6	-3.6%	1 564.8	83.9%
TOTAL NET PRODUCTION	148.0	4.5%	-0.5%		1 521.2	1 559.5	-2.5%	1 864.1	
+ Imports	-	-	-		-	-	-	-	
- Exports	-	-	-		-	-	-	-	
= ELECTRICITY SUPPLIED	148.0	4.5%	-0.5%		1 521.2	1 559.5	-2.5%	1 864.1	
- Used for pumped storage ⁴	1.1	-12.7%	1.9%		10.2	13.6	-24.6%	16.4	
- T&D Losses ⁴	5.2	-11.5%	-2.6%		51.9	63.6	-18.4%	76.4	
= ELECTRICITY CONSUMED	141.7	5.4%	-0.4%		1 459.0	1 482.2	-1.6%	1 771.3	

¹ current month to month of last year change⁴ estimated for certain countries² month-to-month change³ year-to-date compared to same period last year

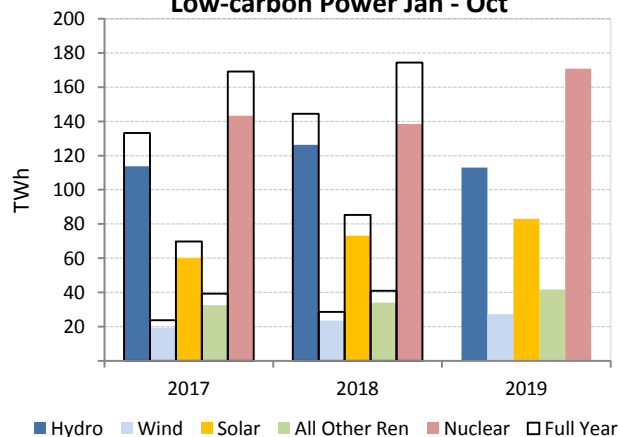
Electricity Production



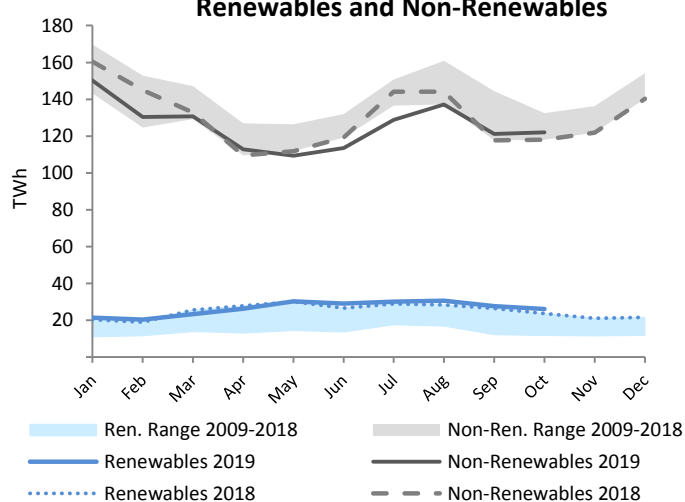
Electricity Production by Fuel



Low-carbon Power Jan - Oct



Renewables and Non-Renewables

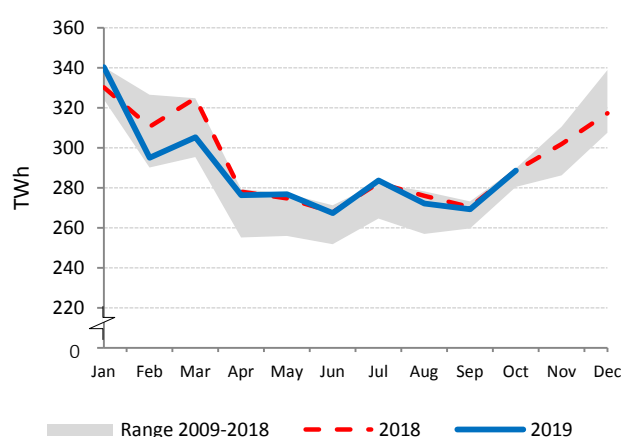


OECD Europe

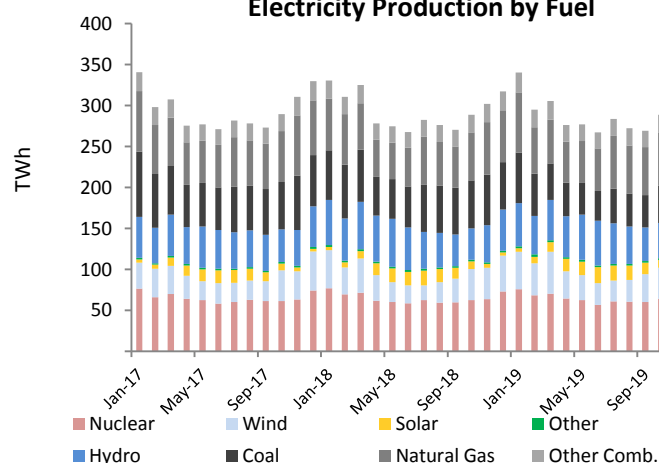
	Oct 2019				Year-to-Date			2018	
	TWh	change ¹	change ²	share	2019	2018	change ³	TWh	share
CONVENTIONAL THERMAL	132.0	-4.9%	11.8%	45.7%	1 236.6	1 312.7	-5.8%	1 604.9	45.6%
Coal ⁵	45.2	-23.1%	14.6%	15.7%	440.8	566.0	-22.1%	685.6	19.5%
Oil ⁵	4.1	3.5%	7.3%	1.4%	38.8	39.0	-0.6%	47.0	1.3%
Natural Gas ⁵	65.3	12.1%	11.1%	22.6%	583.5	539.1	8.2%	666.2	18.9%
Combustible Renewables ⁵	15.0	-3.4%	8.2%	5.2%	150.0	147.5	1.7%	180.6	5.1%
Other Combustibles ⁵	2.4	10.4%	9.9%	0.8%	23.5	21.1	11.6%	25.5	0.7%
Nuclear	64.0	2.5%	6.3%	22.2%	644.7	643.3	0.2%	779.9	22.1%
Hydro	43.0	12.7%	5.1%	14.9%	487.4	495.7	-1.7%	590.9	16.8%
Wind	37.8	-0.4%	10.8%	13.1%	349.9	307.9	13.6%	390.2	11.1%
Solar	9.6	4.1%	-30.7%	3.3%	134.1	123.6	8.5%	132.1	3.7%
Geothermal	1.6	3.3%	8.4%	0.6%	16.3	14.7	11.3%	17.9	0.5%
Other Renewables	0.1	-	-	0.0%	0.6	0.6	-	0.7	0.0%
Non-Specified	0.5	4.2%	-1.1%	0.2%	5.1	5.3	-4.2%	6.4	0.2%
RENEWABLES	107.1	4.5%	2.7%	37.1%	1 138.3	1 090.0	4.4%	1 312.3	37.3%
NON-RENEWABLES	181.5	-2.5%	10.0%	62.9%	1 736.4	1 813.8	-4.3%	2 210.5	62.7%
TOTAL NET PRODUCTION	288.7	0.0%	7.2%		2 874.8	2 903.8	-1.0%	3 522.9	
+ Imports	34.7	1.0%	5.4%		345.2	343.1	0.6%	416.5	
- Exports	34.4	0.1%	5.5%		333.4	325.4	2.5%	396.2	
= ELECTRICITY SUPPLIED	288.9	0.1%	7.2%		2 886.5	2 921.5	-1.2%	3 543.1	
- Used for pumped storage ⁴	3.5	-16.3%	3.6%		33.0	36.1	-8.6%	43.4	
- T&D Losses ⁴	20.6	2.0%	11.5%		202.3	201.9	0.2%	246.5	
= ELECTRICITY CONSUMED	264.8	0.2%	6.9%		2 651.2	2 683.5	-1.2%	3 253.3	

¹ current month to month of last year change⁴ estimated for certain countries² month-to-month change⁵ the breakdown of conventional thermal is estimated from annual data for Estonia and Italy³ year-to-date compared to same period last year

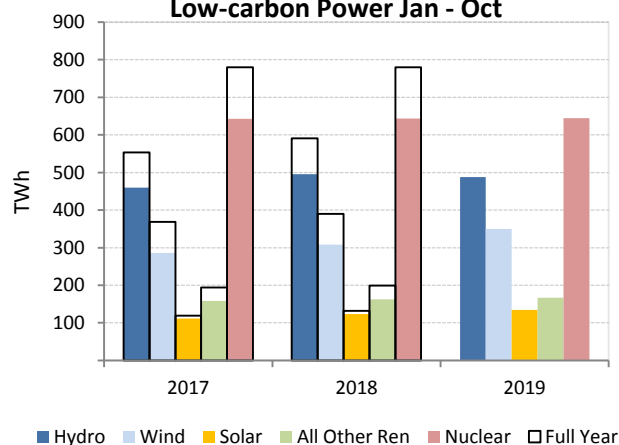
Electricity Production



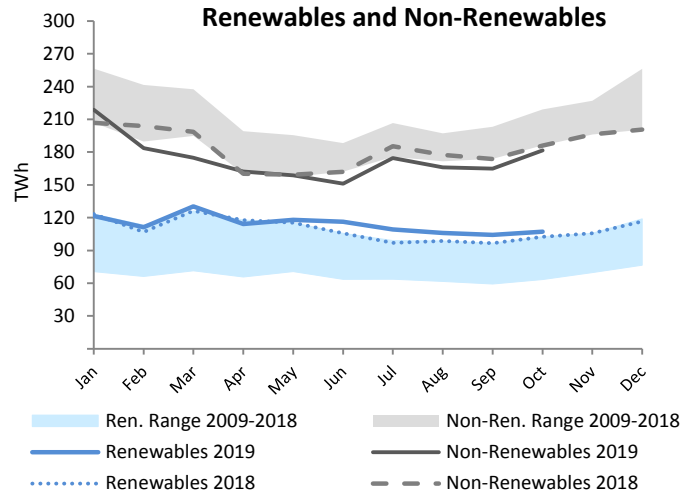
Electricity Production by Fuel



Low-carbon Power Jan - Oct



Renewables and Non-Renewables

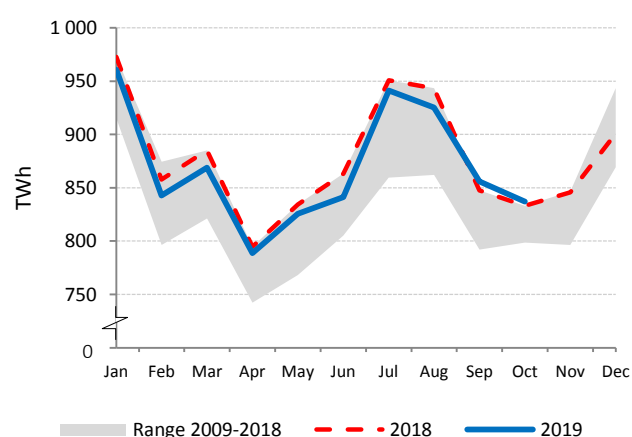


IEA Total

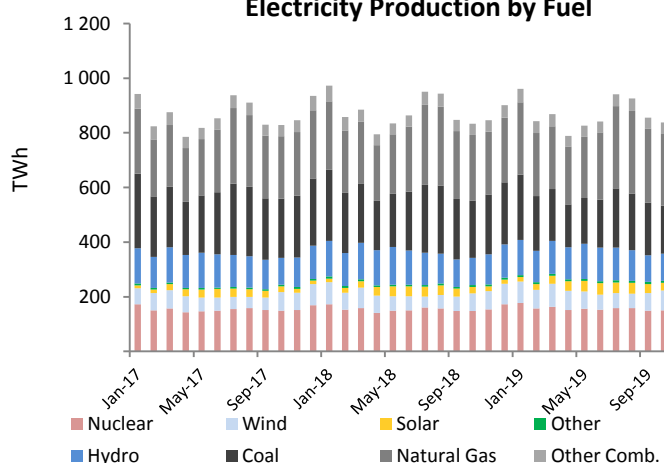
	Oct 2019				Year-to-Date			2018	
	TWh	change ¹	change ²	share	2019	2018	change ³	TWh	share
CONVENTIONAL THERMAL	479.9	-2.1%	-4.7%	57.3%	4 891.2	5 099.8	-4.1%	6 099.2	57.9%
Coal ⁵	174.8	-16.6%	-8.5%	20.9%	1 918.5	2 214.4	-13.4%	2 660.8	25.3%
Oil ⁵	14.7	10.6%	-3.1%	1.8%	151.8	174.8	-13.1%	202.9	1.9%
Natural Gas ⁵	263.0	10.0%	-3.0%	31.4%	2 544.0	2 432.8	4.6%	2 898.5	27.5%
Combustible Renewables ⁵	24.1	1.9%	4.1%	2.9%	239.8	232.1	3.3%	282.0	2.7%
Other Combustibles ⁵	3.3	-27.6%	6.3%	0.4%	37.0	45.7	-18.9%	55.1	0.5%
Nuclear	149.9	1.6%	0.5%	17.9%	1 575.4	1 538.6	2.4%	1 864.4	17.7%
Hydro	99.0	-1.2%	0.7%	11.8%	1 163.8	1 206.4	-3.5%	1 438.8	13.7%
Wind	72.9	11.9%	13.2%	8.7%	664.2	591.1	12.4%	734.3	7.0%
Solar	27.9	18.6%	-16.3%	3.3%	320.9	282.6	13.5%	314.3	3.0%
Geothermal	3.6	1.4%	0.5%	0.4%	37.4	35.2	6.2%	42.9	0.4%
Other Renewables	0.1	-2.2%	-	0.0%	1.0	1.0	-1.6%	1.2	0.0%
Non-Specified	3.8	29.6%	8.7%	0.4%	33.1	27.8	19.2%	34.2	0.3%
RENEWABLES	227.6	5.3%	2.1%	27.2%	2 427.2	2 348.5	3.4%	2 813.5	26.7%
NON-RENEWABLES	609.4	-1.2%	-3.7%	72.8%	6 259.9	6 434.1	-2.7%	7 715.8	73.3%
TOTAL NET PRODUCTION	837.0	0.5%	-2.2%		8 687.1	8 782.5	-1.1%	10 529.3	
+ Imports	37.2	2.0%	0.6%		383.2	384.5	-0.3%	463.3	
- Exports	38.4	-0.9%	-0.8%		381.6	376.3	1.4%	457.0	
= ELECTRICITY SUPPLIED	835.8	0.6%	-2.1%		8 688.6	8 790.6	-1.2%	10 535.7	
- Used for pumped storage ⁴	6.3	-15.2%	-10.6%		65.0	72.9	-10.8%	86.4	
- T&D Losses ⁴	46.8	-3.5%	-4.4%		549.5	564.3	-2.6%	682.6	
= ELECTRICITY CONSUMED	782.7	1.0%	-1.9%		8 074.1	8 153.5	-1.0%	9 766.7	

¹ current month to month of last year change² month-to-month change³ year-to-date compared to same period last year⁴ estimated for certain countries⁵ the breakdown of conventional thermal is estimated from annual data for Canada, Estonia, and Italy

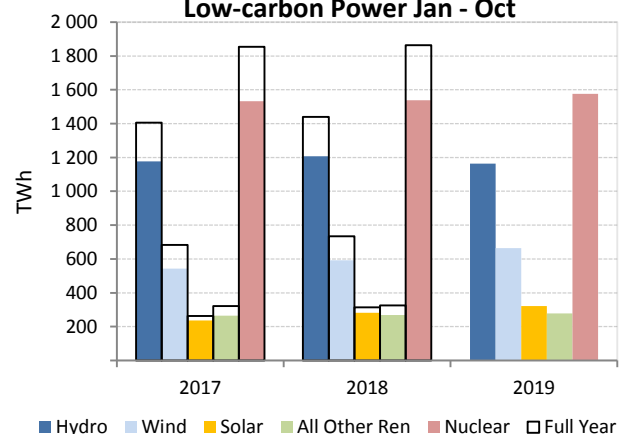
Electricity Production



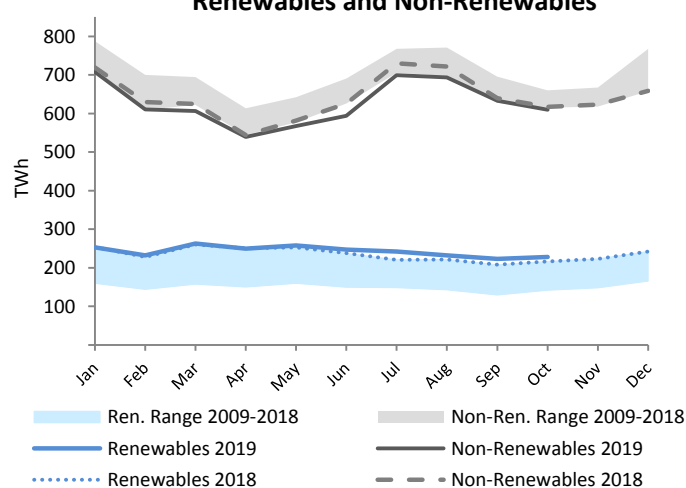
Electricity Production by Fuel



Low-carbon Power Jan - Oct



Renewables and Non-Renewables

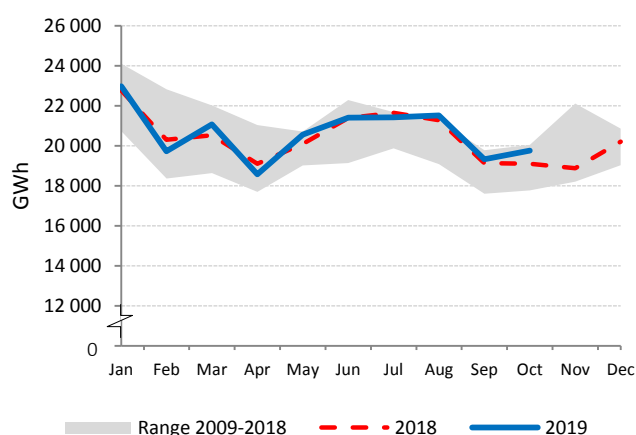


AUSTRALIA

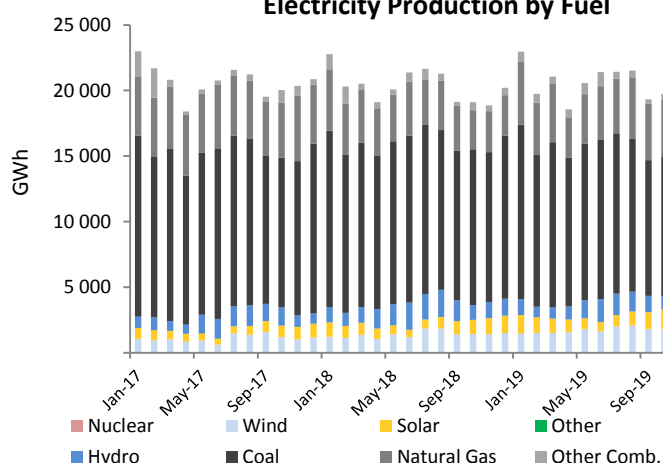
	Oct 2019				Year-to-Date			2018	
	GWh	change ¹	change ²	share	2019	2018	change ³	GWh	share
CONVENTIONAL THERMAL	15 419	-0.3%	2.9%	78.1%	165 774	167 527	-1.0%	198 606	81.3%
Coal	10 653	-10.3%	2.9%	53.9%	117 802	123 298	-4.5%	147 143	60.2%
Oil	239	-28.4%	69.3%	1.2%	4 072	3 983	2.2%	4 486	1.8%
Natural Gas	4 304	43.8%	0.5%	21.8%	41 649	37 552	10.9%	43 776	17.9%
Combustible Renewables	223	-14.7%	3.0%	1.1%	2 251	2 694	-16.4%	3 201	1.3%
Other Combustibles	-	-	-	-	-	-	-	-	-
Nuclear	-	-	-	-	-	-	-	-	-
Hydro	1 018	-9.9%	-18.6%	5.2%	12 419	15 272	-18.7%	17 819	7.3%
Wind	1 788	24.2%	-1.1%	9.0%	17 208	13 929	23.5%	16 871	6.9%
Solar	1 530	43.5%	18.8%	7.7%	10 947	8 622	27.0%	11 124	4.6%
Geothermal	-	-	-	-	-	-	-	-	-
Other Renewables	-	-	-	-	-	-	-	-	-
Non-Specified	-	-	-	-	-	-	-	-	-
RENEWABLES	4 559	17.0%	-0.1%	23.1%	42 826	40 517	5.7%	49 016	20.1%
NON-RENEWABLES	15 195	-0.1%	2.9%	76.9%	163 522	164 834	-0.8%	195 405	79.9%
TOTAL NET PRODUCTION	19 754	3.4%	2.2%		206 348	205 350	0.5%	244 421	
+ Imports	-	-	-	-	-	-	-	-	-
- Exports	-	-	-	-	-	-	-	-	-
= ELECTRICITY SUPPLIED	19 754	3.4%	2.2%		206 348	205 350	0.5%	244 421	
- Used for pumped storage ⁴	26	61.6%	-18.6%		241	220	9.5%	257	
- T&D Losses ⁴	1 077	10.2%	0.9%		10 810	11 583	-6.7%	13 582	
= ELECTRICITY CONSUMED	18 651	3.0%	2.3%		195 298	193 547	0.9%	230 582	

¹ current month to month of last year change⁴ estimated² month-to-month change³ year-to-date compared to same period last year

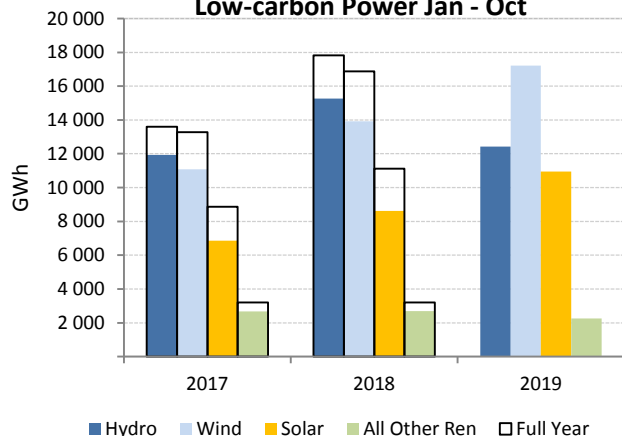
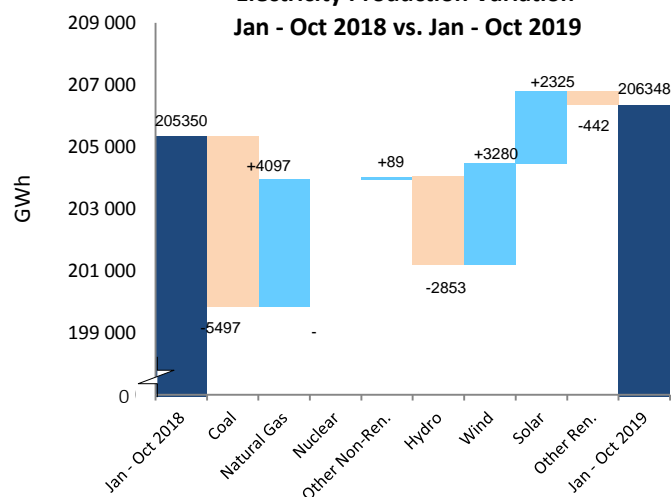
Electricity Production



Electricity Production by Fuel



Low-carbon Power Jan - Oct

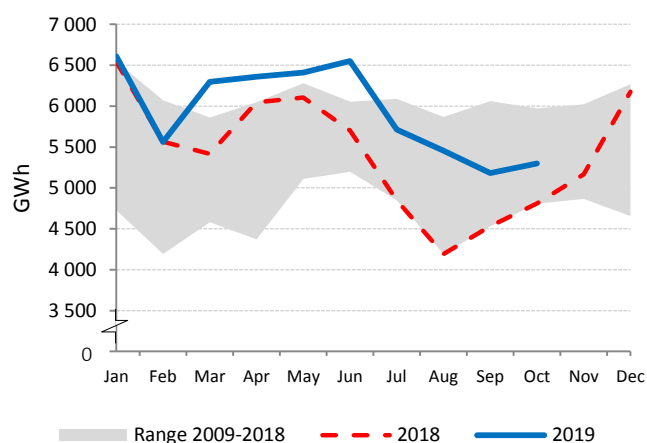
Electricity Production Variation
Jan - Oct 2018 vs. Jan - Oct 2019

AUSTRIA

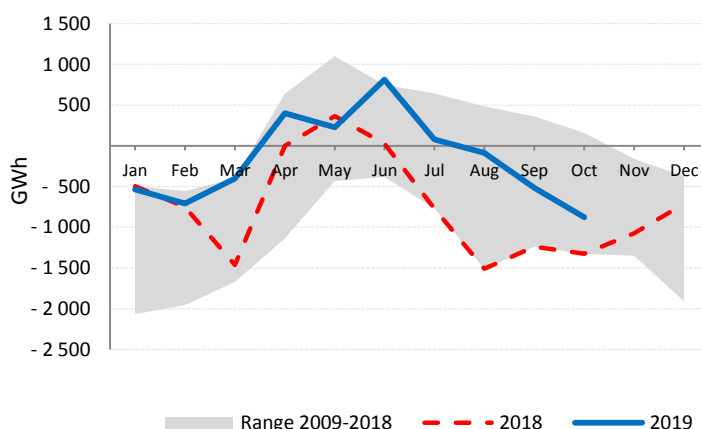
	Oct 2019				Year-to-Date			2018	
	GWh	change ¹	change ²	share	2019	2018	change ³	GWh	share
CONVENTIONAL THERMAL	2 005	18.9%	22.9%	37.8%	15 905	14 183	12.1%	18 884	29.0%
Coal	313	-22.1%	95.4%	5.9%	2 718	2 623	3.6%	3 436	5.3%
Oil	59	63.8%	60.9%	1.1%	557	551	1.2%	681	1.0%
Natural Gas	1 276	52.5%	27.4%	24.1%	8 215	6 612	24.2%	9 409	14.5%
Combustible Renewables	300	-17.4%	-20.5%	5.7%	3 800	3 819	-0.5%	4 656	7.2%
Other Combustibles	58	15.6%	3.4%	1.1%	616	578	6.5%	702	1.1%
Nuclear	-	-	-	-	-	-	-	-	-
Hydro	2 726	15.5%	-10.4%	51.4%	36 696	33 800	8.6%	39 115	60.1%
Wind	473	-28.8%	23.9%	8.9%	5 558	4 490	23.8%	5 723	8.8%
Solar ⁴	95	-	-24.5%	1.8%	1 275	1 275	-	1 364	2.1%
Geothermal	0	-	-	0.0%	0	0	-	0	0.0%
Other Renewables	-	-	-	-	-	-	-	-	-
Non-Specified	1	-6.9%	-6.4%	0.0%	10	11	-1.6%	12	0.0%
RENEWABLES	3 594	3.2%	-8.5%	67.8%	47 329	43 384	9.1%	50 859	78.1%
NON-RENEWABLES	1 706	28.8%	36.0%	32.2%	12 115	10 375	16.8%	14 241	21.9%
TOTAL NET PRODUCTION	5 300	10.2%	2.3%		59 444	53 759	10.6%	65 100	
+ Imports	2 861	-3.7%	28.6%		21 376	22 339	-4.3%	28 076	
- Exports	1 984	20.5%	16.1%		19 768	15 176	30.3%	19 129	
= ELECTRICITY SUPPLIED	6 177	0.7%	8.4%		61 053	60 922	0.2%	74 046	
- Used for pumped storage	465	-15.3%	18.6%		3 857	4 176	-7.6%	5 116	
- T&D Losses	280	1.9%	9.5%		2 734	2 735	0.0%	3 348	
= ELECTRICITY CONSUMED	5 432	2.3%	7.6%		54 462	54 011	0.8%	65 582	

¹ current month to month of last year change⁴ estimated by the IEA secretariat² month-to-month change³ year-to-date compared to same period last year

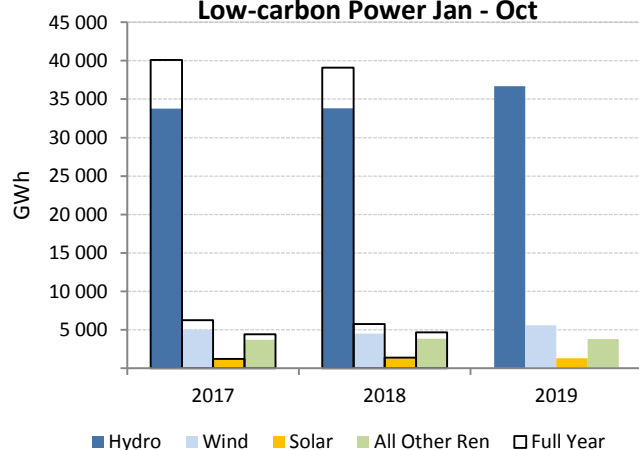
Electricity Production



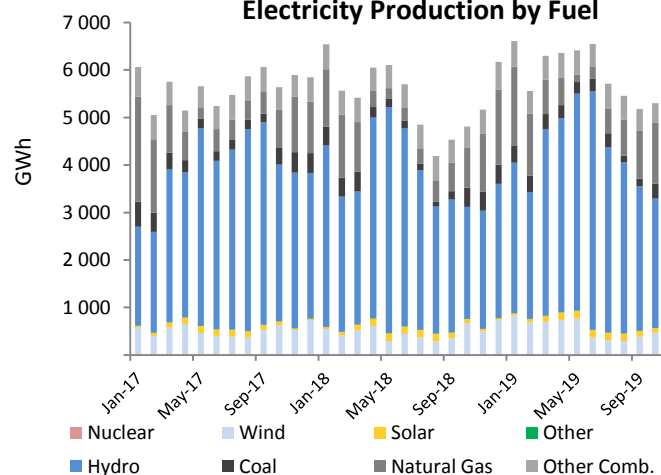
Net Electricity Exports



Low-carbon Power Jan - Oct



Electricity Production by Fuel

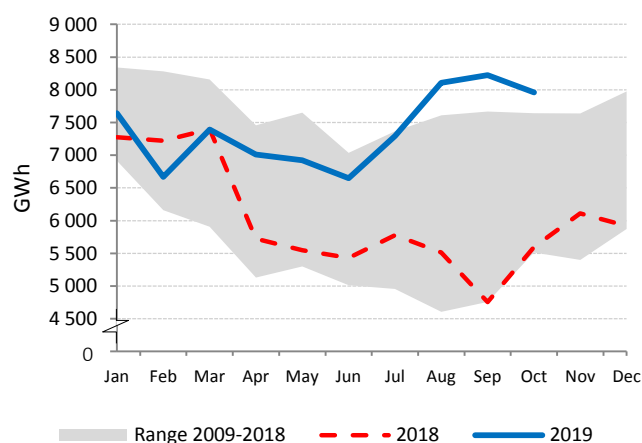


BELGIUM

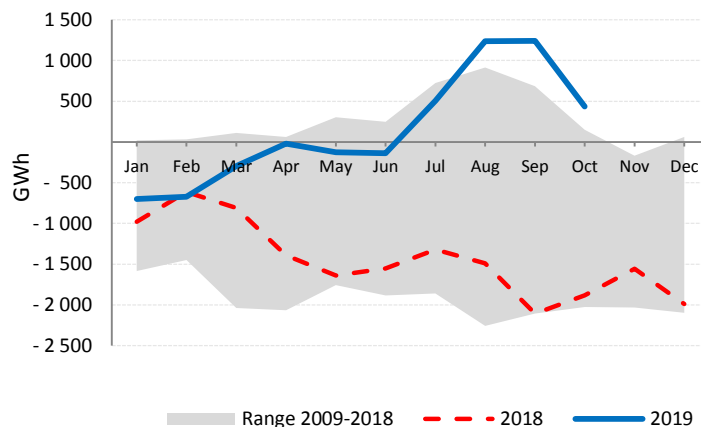
	Oct 2019				Year-to-Date			2018	
	GWh	change ¹	change ²	share	2019	2018	change ³	GWh	share
CONVENTIONAL THERMAL	3 422	-3.0%	22.7%	43.0%	27 006	24 979	8.1%	31 924	44.2%
Coal	225	15.1%	28.3%	2.8%	2 066	1 887	9.5%	2 257	3.1%
Oil	2	-60.2%	-1.7%	0.0%	22	105	-78.9%	159	0.2%
Natural Gas	2 702	-4.3%	29.1%	33.9%	19 788	17 557	12.7%	22 939	31.7%
Combustible Renewables	384	-3.3%	-6.1%	4.8%	4 015	4 354	-7.8%	5 274	7.3%
Other Combustibles	110	4.2%	-1.3%	1.4%	1 115	1 075	3.7%	1 295	1.8%
Nuclear	3 172	218.4%	-23.3%	39.8%	34 610	24 429	41.7%	27 198	37.6%
Hydro	98	-0.4%	64.3%	1.2%	891	1 070	-16.8%	1 284	1.8%
Wind	1 007	55.1%	26.6%	12.6%	7 179	5 548	29.4%	7 370	10.2%
Solar	222	-18.9%	-45.3%	2.8%	3 775	3 754	0.6%	3 943	5.5%
Geothermal	-	-	-	-	-	-	-	-	-
Other Renewables	-	-	-	-	-	-	-	-	-
Non-Specified	40	-28.2%	3.4%	0.5%	415	460	-9.6%	552	0.8%
RENEWABLES	1 710	20.6%	2.4%	21.5%	15 860	14 727	7.7%	17 871	24.7%
NON-RENEWABLES	6 250	49.5%	-4.6%	78.5%	58 016	45 513	27.5%	54 400	75.3%
TOTAL NET PRODUCTION	7 961	42.2%	-3.2%		73 875	60 240	22.6%	72 270	
+ Imports	641	-68.0%	91.3%		10 379	17 671	-41.3%	21 634	
- Exports	1 078	787.4%	-31.6%		11 839	3 889	204.4%	4 308	
= ELECTRICITY SUPPLIED	7 524	0.6%	7.7%		72 415	74 021	-2.2%	89 596	
- Used for pumped storage	108	-11.5%	49.4%		927	1 119	-17.2%	1 348	
- T&D Losses	310	0.8%	7.5%		2 986	3 045	-1.9%	3 686	
= ELECTRICITY CONSUMED	7 106	0.8%	7.3%		68 503	69 858	-1.9%	84 563	

¹ current month to month of last year change² month-to-month change³ year-to-date compared to same period last year

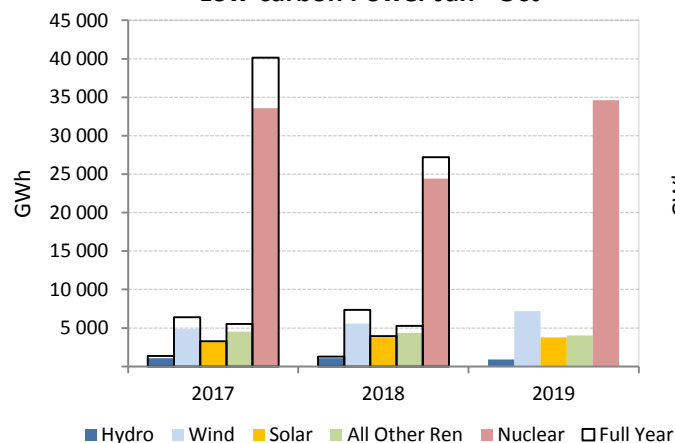
Electricity Production



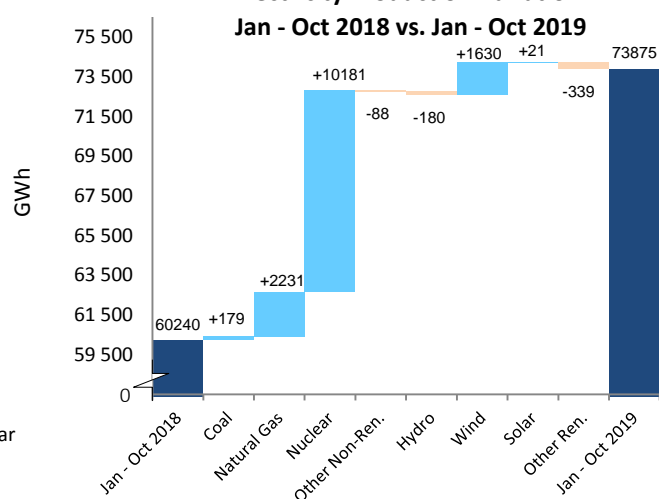
Net Electricity Exports



Low-carbon Power Jan - Oct



Electricity Production Variation Jan - Oct 2018 vs. Jan - Oct 2019

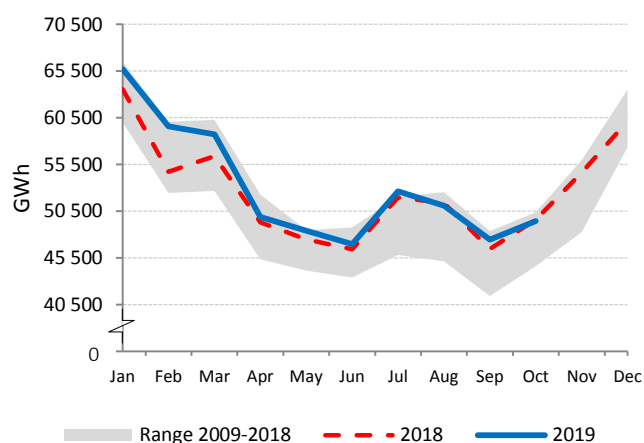


CANADA

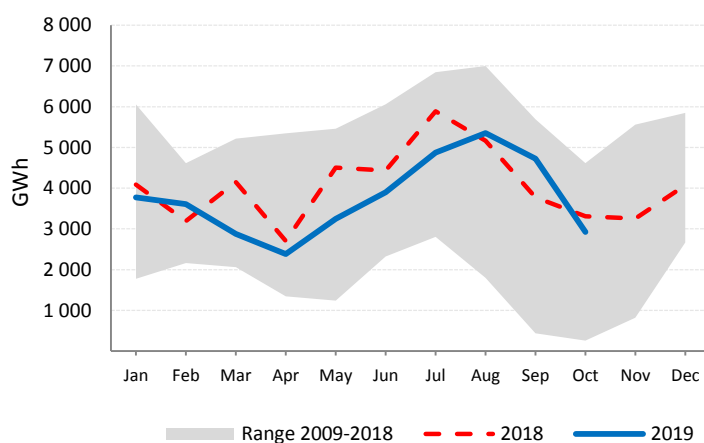
	Oct 2019				Year-to-Date			2018	
	GWh	change ¹	change ²	share	2019	2018	change ³	GWh	share
CONVENTIONAL THERMAL	10 540	9.8%	3.3%	21.3%	110 329	101 889	8.3%	123 978	19.6%
Coal ⁴	4 351	9.8%	3.3%	8.8%	45 539	42 055	8.3%	51 173	8.1%
Oil ⁴	582	9.8%	3.3%	1.2%	6 095	5 629	8.3%	6 849	1.1%
Natural Gas ⁴	5 021	9.8%	3.3%	10.2%	52 554	48 534	8.3%	59 056	9.3%
Combustible Renewables ⁴	579	9.8%	3.3%	1.2%	6 063	5 599	8.3%	6 813	1.1%
Other Combustibles ⁴	7	9.8%	3.3%	0.0%	78	72	8.3%	87	0.0%
Nuclear	8 899	6.8%	2.4%	18.0%	84 077	78 741	6.8%	95 037	15.0%
Hydro	27 159	-5.5%	4.3%	54.9%	307 248	309 610	-0.8%	379 691	60.1%
Wind	2 546	-4.3%	21.6%	5.1%	24 193	23 317	3.8%	29 358	4.6%
Solar	298	21.5%	-29.3%	0.6%	4 011	3 565	12.5%	3 816	0.6%
Geothermal	-	-	-	-	-	-	-	-	-
Other Renewables	-	-	-	-	1	16	-94.3%	20	0.0%
Non-Specified	15	-28.8%	36.6%	0.0%	153	190	-19.4%	231	0.0%
RENEWABLES	30 582	-4.9%	5.1%	61.8%	341 515	342 108	-0.2%	419 697	66.4%
NON-RENEWABLES	18 875	8.3%	2.9%	38.2%	188 496	175 220	7.6%	212 434	33.6%
TOTAL NET PRODUCTION	49 457	-0.3%	4.2%		530 011	517 328	2.5%	632 131	
+ Imports	878	-2.6%	-30.1%		11 954	10 828	10.4%	13 188	
- Exports	3 806	-9.6%	-36.3%		49 619	52 027	-4.6%	61 712	
= ELECTRICITY SUPPLIED	46 529	0.5%	8.9%		492 346	476 129	3.4%	583 606	
- Used for pumped storage ⁴	15	-5.5%	4.3%		170	171	-0.8%	210	
- T&D Losses ⁴	5 298	1.8%	3.3%		57 047	54 457	4.8%	66 538	
= ELECTRICITY CONSUMED	41 216	0.4%	9.6%		435 129	421 501	3.2%	516 858	

¹ current month to month of last year change⁴ estimated from annual data² month-to-month change³ year-to-date compared to same period last year

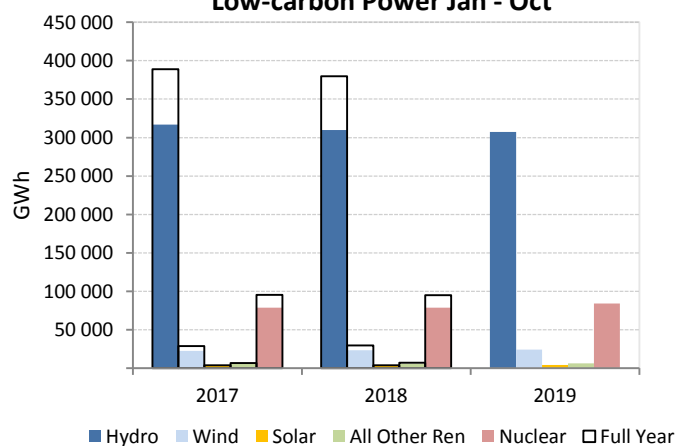
Electricity Production



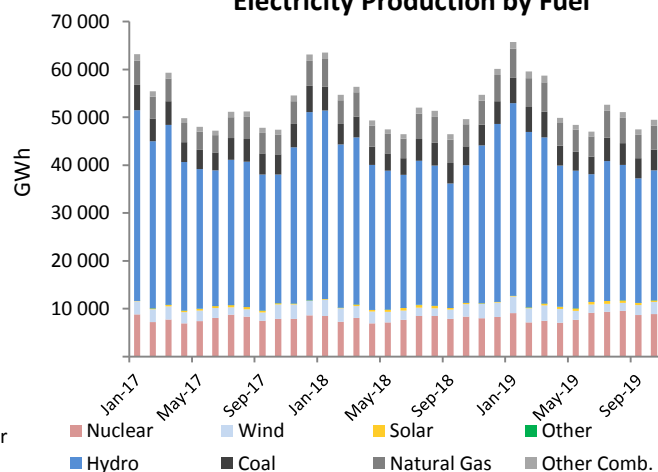
Net Electricity Exports



Low-carbon Power Jan - Oct



Electricity Production by Fuel

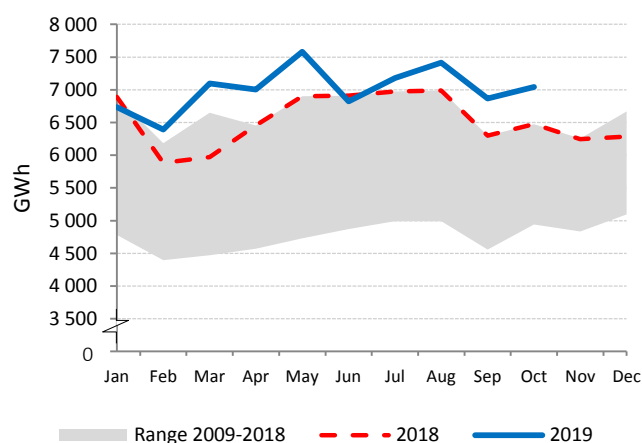


CHILE

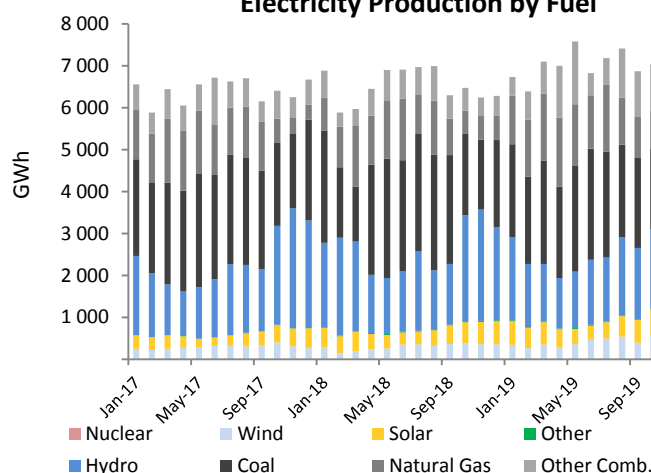
	Oct 2019				Year-to-Date			2018	
	GWh	change ¹	change ²	share	2019	2018	change ³	GWh	share
CONVENTIONAL THERMAL	3 940	29.6%	-6.5%	56.0%	45 177	40 807	10.7%	46 614	59.5%
Coal	1 915	-1.4%	-11.5%	27.2%	22 942	23 888	-4.0%	27 630	35.3%
Oil	784	608.1%	6.5%	11.1%	5 136	1 109	363.0%	1 343	1.7%
Natural Gas	904	62.8%	-6.2%	12.8%	13 085	10 867	20.4%	12 027	15.4%
Combustible Renewables	338	-21.8%	-3.7%	4.8%	4 015	4 944	-18.8%	5 614	7.2%
Other Combustibles	-	-	-	-	-	-	-	-	-
Nuclear	-	-	-	-	-	-	-	-	-
Hydro	1 897	-25.0%	11.6%	26.9%	15 975	17 960	-11.1%	22 842	29.2%
Wind	556	46.3%	40.5%	7.9%	4 049	2 871	41.0%	3 581	4.6%
Solar	633	26.1%	16.1%	9.0%	4 771	3 936	21.2%	5 027	6.4%
Geothermal	15	-32.2%	2.7%	0.2%	168	174	-3.6%	214	0.3%
Other Renewables	-	-	-	-	-	-	-	-	-
Non-Specified	-	-	-	-	-	-	-	-	-
RENEWABLES	3 438	-11.1%	14.4%	48.8%	28 978	29 884	-3.0%	37 278	47.6%
NON-RENEWABLES	3 602	38.1%	-6.8%	51.2%	41 162	35 863	14.8%	41 000	52.4%
TOTAL NET PRODUCTION	7 040	8.7%	2.5%		70 140	65 748	6.7%	78 278	
+ Imports	-	-	-		-	-	-	-	
- Exports	-	-	-		-	-	-	-	
= ELECTRICITY SUPPLIED	7 040	8.7%	2.5%		70 140	65 748	6.7%	78 278	
- Used for pumped storage	-	-	-		-	-	-	-	
- T&D Losses	261	-16.2%	2.6%		2 888	3 127	-7.7%	3 738	
= ELECTRICITY CONSUMED	6 780	10.0%	2.5%		67 252	62 621	7.4%	74 540	

¹ current month to month of last year change² month-to-month change³ year-to-date compared to same period last year

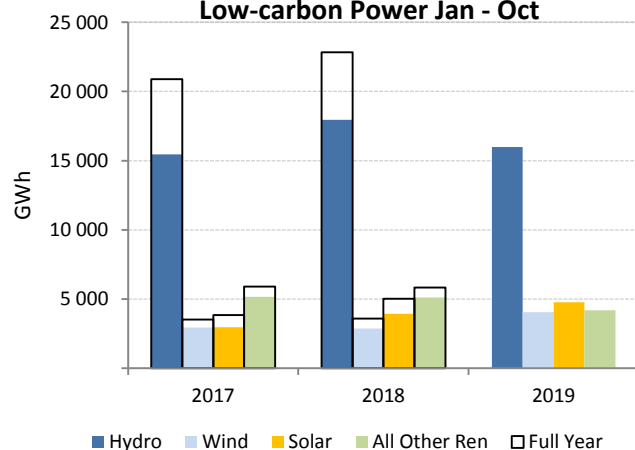
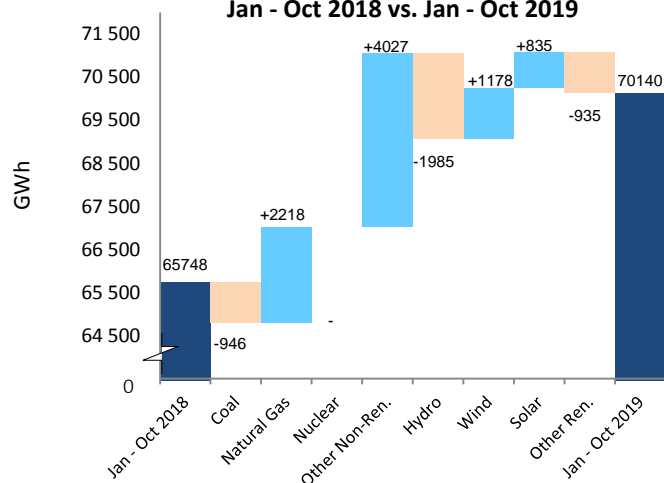
Electricity Production



Electricity Production by Fuel



Low-carbon Power Jan - Oct

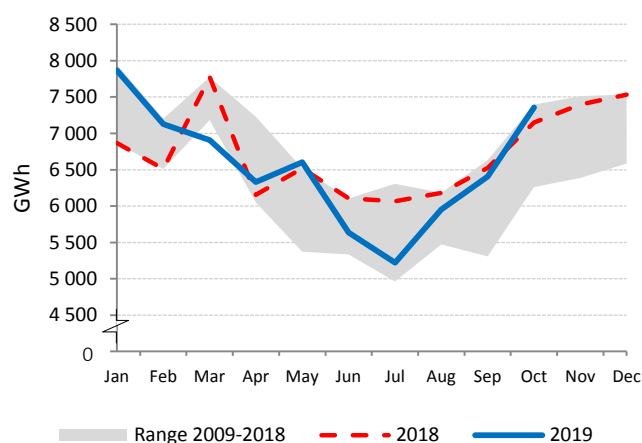
Electricity Production Variation
Jan - Oct 2018 vs. Jan - Oct 2019

CZECH REPUBLIC

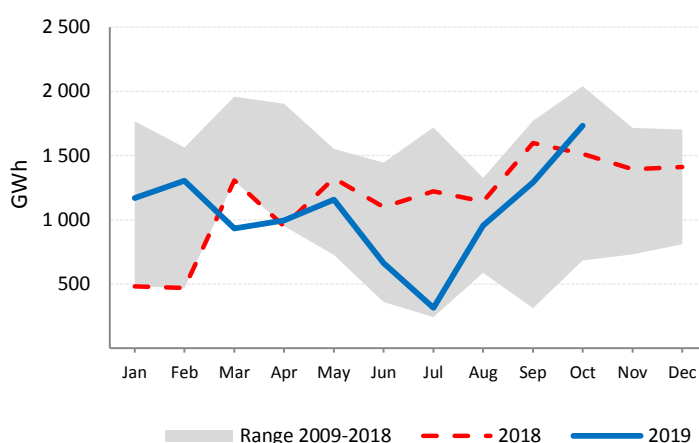
	Oct 2019				Year-to-Date			2018	
	GWh	change ¹	change ²	share	2019	2018	change ³	GWh	share
CONVENTIONAL THERMAL	4 048	-3.8%	9.5%	55.0%	36 737	37 838	-2.9%	46 878	58.0%
Coal	3 063	-12.2%	11.1%	41.6%	28 641	31 646	-9.5%	39 034	48.3%
Oil	10	11.2%	23.5%	0.1%	86	75	15.7%	94	0.1%
Natural Gas	588	66.4%	7.9%	8.0%	4 263	2 487	71.4%	3 356	4.2%
Combustible Renewables	381	7.9%	-0.1%	5.2%	3 684	3 569	3.2%	4 322	5.4%
Other Combustibles	6	20.6%	-11.0%	0.1%	62	61	1.5%	72	0.1%
Nuclear	2 813	11.6%	25.4%	38.2%	23 205	23 029	0.8%	28 245	35.0%
Hydro	268	55.7%	35.7%	3.6%	2 688	2 232	20.4%	2 651	3.3%
Wind	61	-9.4%	38.8%	0.8%	535	461	16.0%	599	0.7%
Solar	158	-8.5%	-27.1%	2.2%	2 150	2 213	-2.8%	2 316	2.9%
Geothermal	-	-	-	-	-	-	-	-	-
Other Renewables	-	-	-	-	-	-	-	-	-
Non-Specified	8	25.4%	-1.9%	0.1%	89	82	8.6%	98	0.1%
RENEWABLES	869	13.5%	3.4%	11.8%	9 057	8 475	6.9%	9 889	12.2%
NON-RENEWABLES	6 488	1.6%	16.5%	88.2%	56 346	57 380	-1.8%	70 898	87.8%
TOTAL NET PRODUCTION	7 357	2.9%	14.8%		65 403	65 855	-0.7%	80 787	
+ Imports	846	-30.6%	0.5%		9 235	9 190	0.5%	11 573	
- Exports	2 577	-5.7%	20.7%		19 745	20 294	-2.7%	25 481	
= ELECTRICITY SUPPLIED	5 626	-0.2%	10.0%		54 893	54 751	0.3%	66 880	
- Used for pumped storage	147	30.3%	9.7%		1 214	1 087	11.6%	1 373	
- T&D Losses	368	-0.3%	2.4%		3 396	3 302	2.9%	4 102	
= ELECTRICITY CONSUMED	5 111	-0.8%	10.6%		50 283	50 362	-0.2%	61 405	

¹ current month to month of last year change² month-to-month change³ year-to-date compared to same period last year

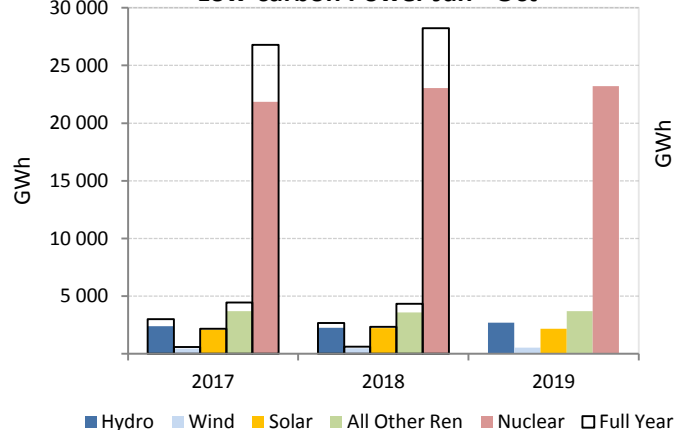
Electricity Production



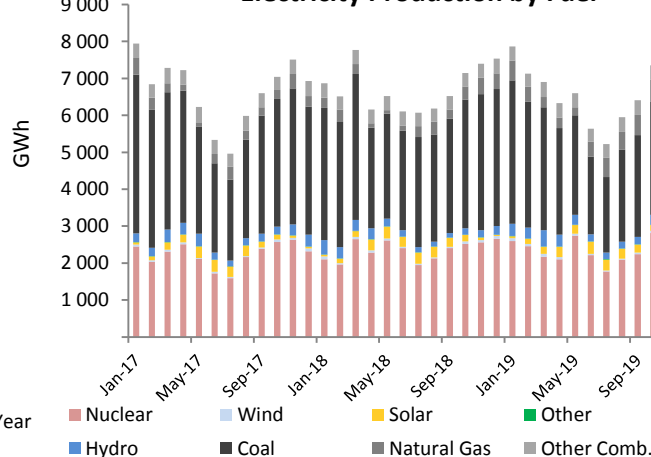
Net Electricity Exports



Low-carbon Power Jan - Oct



Electricity Production by Fuel

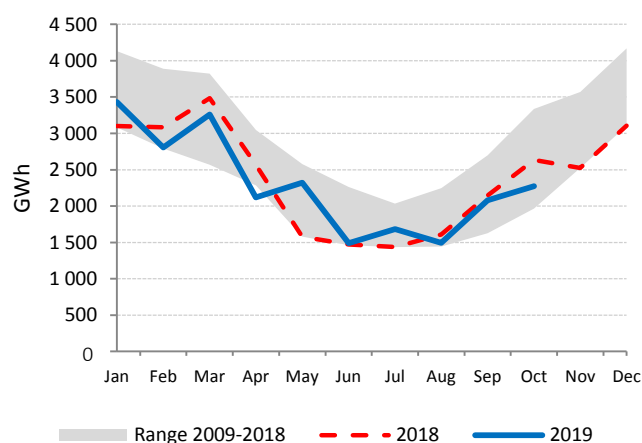


DENMARK

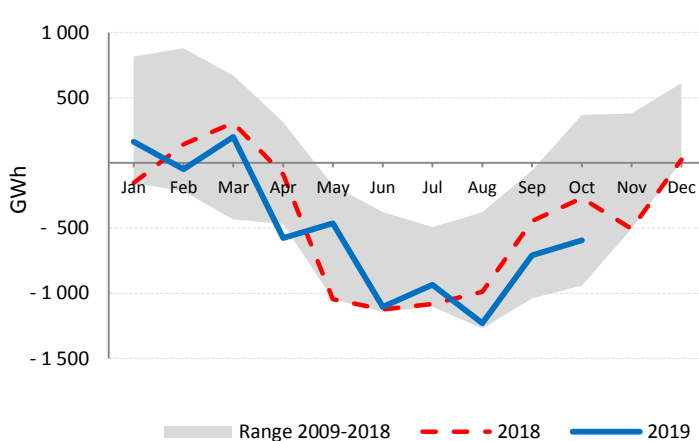
	Oct 2019				Year-to-Date			2018	
	GWh	change ¹	change ²	share	2019	2018	change ³	GWh	share
CONVENTIONAL THERMAL	956	-10.8%	98.6%	42.0%	8 909	10 860	-18.0%	13 879	48.3%
Coal	197	-49.6%	198.8%	8.6%	2 488	4 722	-47.3%	5 880	20.5%
Oil	25	23.2%	250.4%	1.1%	174	178	-1.8%	236	0.8%
Natural Gas	147	22.1%	104.6%	6.5%	1 247	1 289	-3.2%	1 711	6.0%
Combustible Renewables	515	7.7%	84.5%	22.7%	4 354	4 147	5.0%	5 422	18.9%
Other Combustibles	71	16.5%	25.1%	3.1%	645	525	22.9%	630	2.2%
Nuclear	-	-	-	-	-	-	-	-	-
Hydro	2	106.1%	63.4%	0.1%	12	12	1.7%	14	0.0%
Wind	1 271	-15.7%	-16.4%	55.9%	13 103	11 316	15.8%	13 899	48.4%
Solar	46	-20.1%	-42.5%	2.0%	938	926	1.3%	953	3.3%
Geothermal	-	-	-	-	-	-	-	-	-
Other Renewables	-	-	-	-	-	-	-	-	-
Non-Specified	-	-	-	-	-	-	-	-	-
RENEWABLES	1 834	-10.3%	-2.5%	80.6%	18 407	16 402	12.2%	20 288	70.6%
NON-RENEWABLES	440	-25.7%	118.1%	19.4%	4 555	6 713	-32.1%	8 458	29.4%
TOTAL NET PRODUCTION	2 274	-13.7%	9.2%		22 962	23 115	-0.7%	28 746	
+ Imports	1 164	-4.9%	-9.7%		12 917	12 949	-0.2%	15 634	
- Exports	570	-40.3%	-1.7%		7 621	8 203	-7.1%	10 409	
= ELECTRICITY SUPPLIED	2 868	-1.3%	2.8%		28 259	27 861	1.4%	33 970	
- Used for pumped storage	-	-	-		-	-	-	-	
- T&D Losses	177	12.6%	-1.2%		1 742	1 443	20.7%	1 790	
= ELECTRICITY CONSUMED	2 691	-2.1%	3.1%		26 517	26 418	0.4%	32 180	

¹ current month to month of last year change² month-to-month change³ year-to-date compared to same period last year

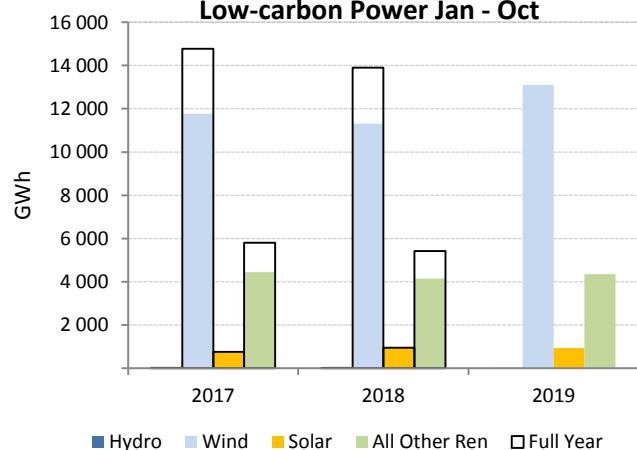
Electricity Production



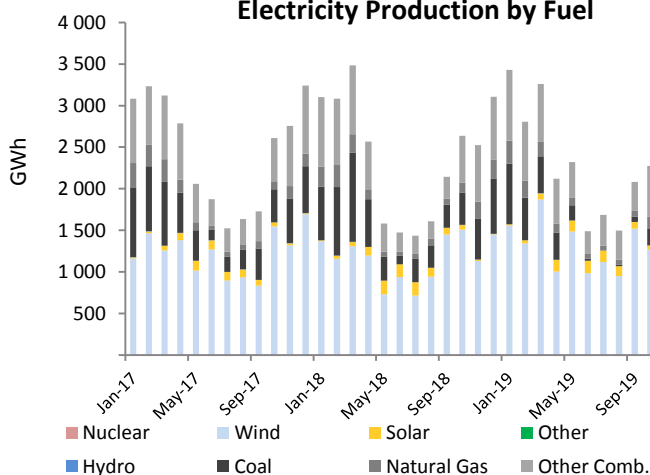
Net Electricity Exports



Low-carbon Power Jan - Oct



Electricity Production by Fuel

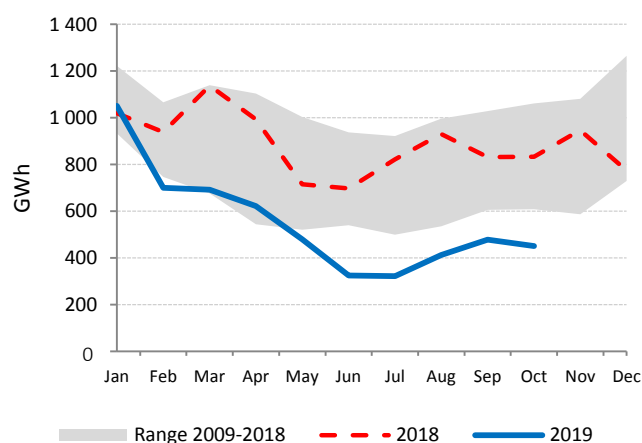


ESTONIA

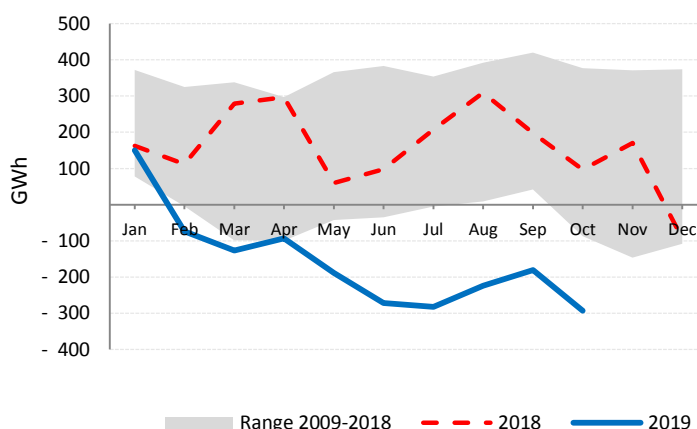
	Oct 2019				Year-to-Date			2018	
	GWh	change ¹	change ²	share	2019	2018	change ³	GWh	share
CONVENTIONAL THERMAL	397	-47.6%	-6.2%	87.9%	4 997	8 394	-40.5%	9 989	93.9%
Coal ⁴	344	-47.6%	-6.2%	76.1%	4 330	7 273	-40.5%	8 655	81.3%
Oil ⁴	4	-47.6%	-6.2%	0.9%	51	85	-40.5%	102	1.0%
Natural Gas ⁴	2	-47.6%	-6.2%	0.4%	25	42	-40.5%	50	0.5%
Combustible Renewables ⁴	43	-47.6%	-6.2%	9.5%	538	904	-40.5%	1 076	10.1%
Other Combustibles ⁴	4	-47.6%	-6.2%	0.9%	53	90	-40.5%	107	1.0%
Nuclear	-	-	-	-	-	-	-	-	-
Hydro	2	260.2%	260.2%	0.3%	12	12	-5.0%	16	0.1%
Wind	53	-29.8%	-3.4%	11.8%	528	515	2.6%	636	6.0%
Solar	-	-	-	-	-	-	-	-	-
Geothermal	-	-	-	-	-	-	-	-	-
Other Renewables	-	-	-	-	-	-	-	-	-
Non-Specified	-	-	-	-	-	-	-	-	-
RENEWABLES	98	-38.2%	-3.5%	21.6%	1 078	1 431	-24.7%	1 728	16.2%
NON-RENEWABLES	354	-47.6%	-6.2%	78.4%	4 459	7 490	-40.5%	8 914	83.8%
TOTAL NET PRODUCTION	452	-45.8%	-5.6%		5 537	8 921	-37.9%	10 641	
+ Imports	511	35.5%	46.8%		4 022	2 368	69.8%	3 053	
- Exports	218	-54.0%	30.5%		2 438	4 187	-41.8%	4 950	
= ELECTRICITY SUPPLIED	745	1.1%	12.9%		7 122	7 102	0.3%	8 745	
- Used for pumped storage	-	-	-		-	-	-	-	
- T&D Losses ⁴	49	-20.5%	16.5%		487	575	-15.3%	698	
= ELECTRICITY CONSUMED	695	3.1%	12.7%		6 635	6 527	1.7%	8 047	

¹ current month to month of last year change⁴ estimated from annual data² month-to-month change³ year-to-date compared to same period last year

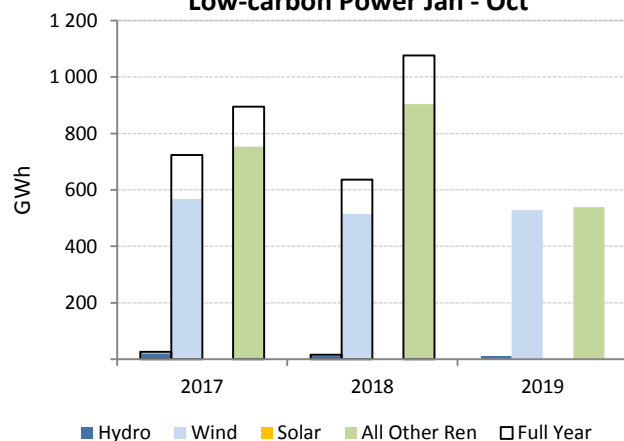
Electricity Production



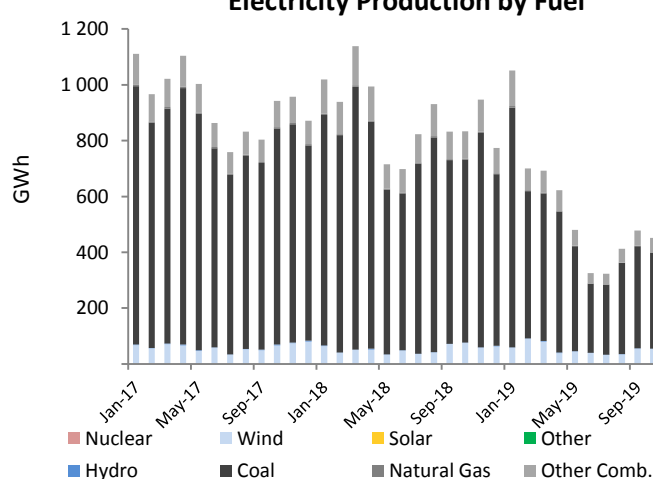
Net Electricity Exports



Low-carbon Power Jan - Oct



Electricity Production by Fuel

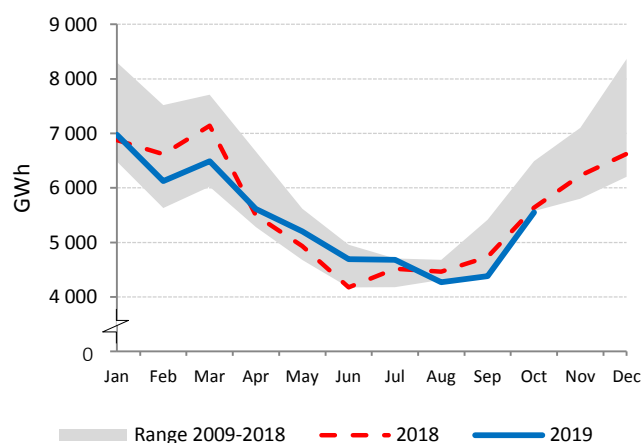


FINLAND

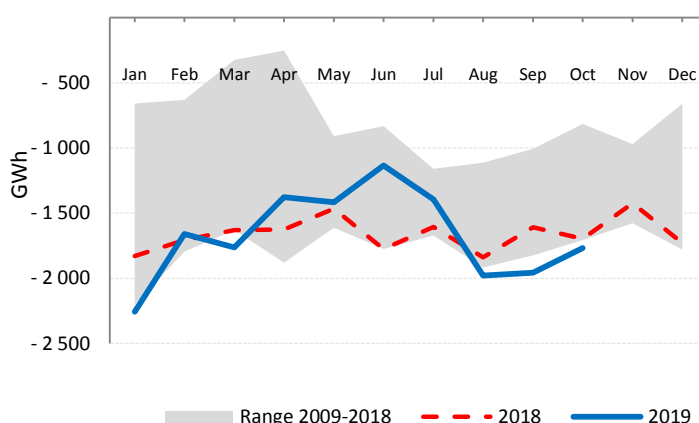
	Oct 2019				Year-to-Date			2018	
	GWh	change ¹	change ²	share	2019	2018	change ³	GWh	share
CONVENTIONAL THERMAL	2 138	-2.2%	41.7%	38.5%	19 713	20 464	-3.7%	26 091	38.7%
Coal	764	0.4%	53.1%	13.8%	6 532	7 352	-11.2%	9 418	14.0%
Oil	24	5.3%	33.3%	0.4%	218	192	13.7%	240	0.4%
Natural Gas	340	17.1%	46.2%	6.1%	3 079	3 036	1.4%	3 954	5.9%
Combustible Renewables	977	-9.1%	33.0%	17.6%	9 556	9 514	0.4%	12 020	17.8%
Other Combustibles ⁴	33	-8.1%	33.3%	0.6%	328	371	-11.7%	460	0.7%
Nuclear	2 072	14.6%	32.2%	37.3%	18 825	17 819	5.6%	21 885	32.4%
Hydro	827	-17.3%	1.0%	14.9%	9 985	11 194	-10.8%	13 146	19.5%
Wind	476	-21.7%	11.0%	8.6%	4 869	4 706	3.4%	5 857	8.7%
Solar⁵	11	-14.3%	-62.5%	0.2%	320	158	102.3%	162	0.2%
Geothermal	-	-	-	-	-	-	-	-	-
Other Renewables	-	-	-	-	-	-	-	-	-
Non-Specified	27	-	-	0.5%	265	265	-	318	0.5%
RENEWABLES	2 290	-15.0%	13.9%	41.3%	24 730	25 573	-3.3%	31 185	46.2%
NON-RENEWABLES	3 259	10.7%	37.6%	58.7%	29 247	29 034	0.7%	36 274	53.8%
TOTAL NET PRODUCTION	5 550	-1.6%	26.7%		53 977	54 607	-1.2%	67 459	
+ Imports	2 182	6.8%	-0.9%		20 026	18 750	6.8%	22 548	
- Exports	415	19.6%	68.7%		3 320	1 966	68.9%	2 612	
= ELECTRICITY SUPPLIED	7 317	-0.3%	15.5%		70 683	71 392	-1.0%	87 395	
- Used for pumped storage	-	-	-		-	-	-	-	
- T&D Losses	225	-0.4%	15.7%		2 171	2 194	-1.1%	2 686	
= ELECTRICITY CONSUMED	7 092	-0.3%	15.5%		68 512	69 198	-1.0%	84 709	

¹ current month to month of last year change⁴ includes generation from peat² month-to-month change³ year-to-date compared to same period last year

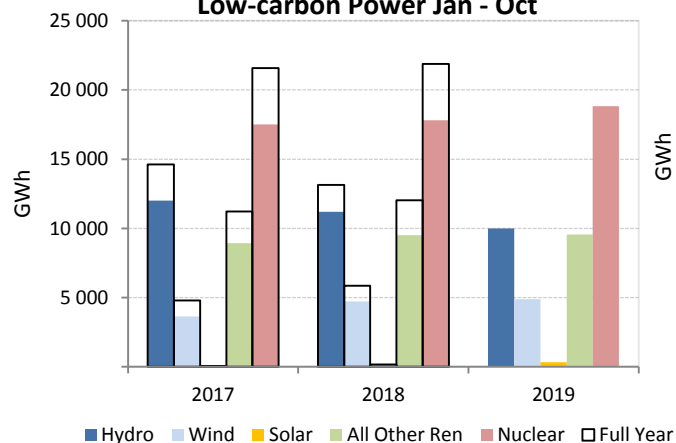
Electricity Production



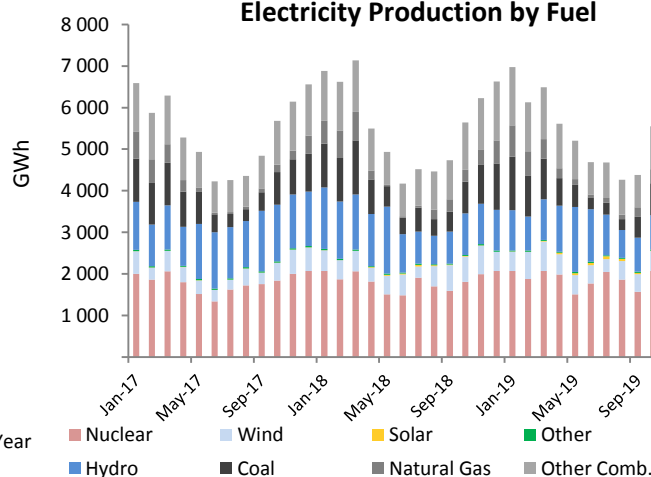
Net Electricity Exports



Low-carbon Power Jan - Oct



Electricity Production by Fuel

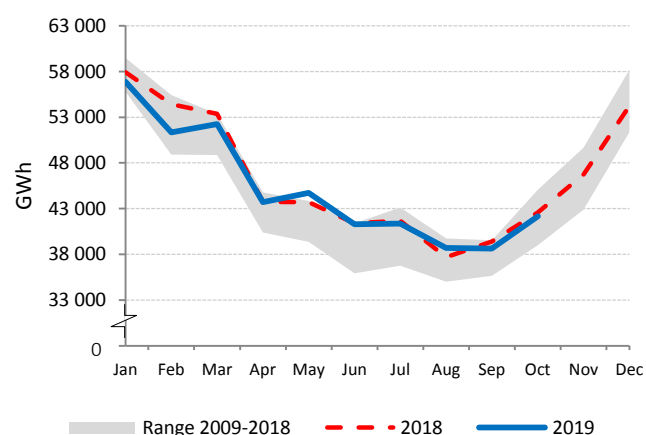


FRANCE

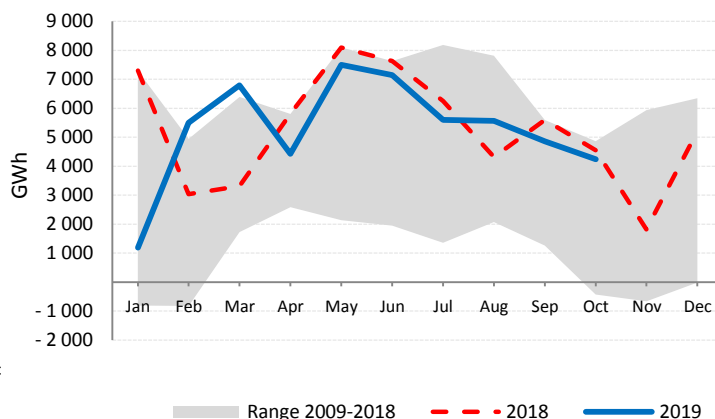
	Oct 2019				Year-to-Date			2018	
	GWh	change ¹	change ²	share	2019	2018	change ³	GWh	share
CONVENTIONAL THERMAL	4 296	-6.9%	7.1%	10.2%	44 600	41 575	7.3%	54 205	9.7%
Coal	141	-84.6%	1.9%	0.3%	2 172	7 541	-71.2%	8 746	1.6%
Oil	454	10.2%	-0.1%	1.1%	4 604	4 399	4.7%	5 277	0.9%
Natural Gas	3 116	16.9%	11.0%	7.4%	30 380	21 316	42.5%	30 058	5.4%
Combustible Renewables	393	-2.7%	-9.5%	0.9%	5 482	6 504	-15.7%	7 731	1.4%
Other Combustibles	193	-9.7%	8.7%	0.5%	1 961	1 815	8.0%	2 393	0.4%
Nuclear	29 171	-7.7%	5.9%	69.2%	317 431	321 709	-1.3%	393 261	70.6%
Hydro	4 054	34.8%	45.9%	9.6%	48 435	60 041	-19.3%	69 277	12.4%
Wind	3 721	48.9%	26.8%	8.8%	28 436	21 995	29.3%	28 501	5.1%
Solar	817	13.1%	-34.6%	1.9%	10 957	9 347	17.2%	10 196	1.8%
Geothermal⁴	13	33.4%	-	0.0%	133	100	33.4%	120	0.0%
Other Renewables	56	-	-	0.1%	559	559	-	671	0.1%
Non-Specified	56	-	-	0.1%	561	561	-	674	0.1%
RENEWABLES	9 054	35.2%	21.3%	21.5%	94 004	98 546	-4.6%	116 497	20.9%
NON-RENEWABLES	33 131	-7.7%	6.3%	78.5%	357 110	357 342	-0.1%	440 408	79.1%
TOTAL NET PRODUCTION	42 184	-0.9%	9.2%		451 114	455 888	-1.0%	556 905	
+ Imports	1 368	23.2%	19.9%		10 621	10 083	5.3%	13 576	
- Exports	5 603	-1.0%	-6.6%		63 440	65 967	-3.8%	76 488	
= ELECTRICITY SUPPLIED	37 949	-0.2%	12.4%		398 294	400 004	-0.4%	493 993	
- Used for pumped storage	519	-24.3%	-7.6%		5 055	6 057	-16.5%	7 392	
- T&D Losses	2 881	-0.8%	17.7%		30 950	30 813	0.4%	38 609	
= ELECTRICITY CONSUMED	34 549	0.3%	12.3%		362 289	363 134	-0.2%	447 993	

¹ current month to month of last year change² month-to-month change³ year-to-date compared to same period last year

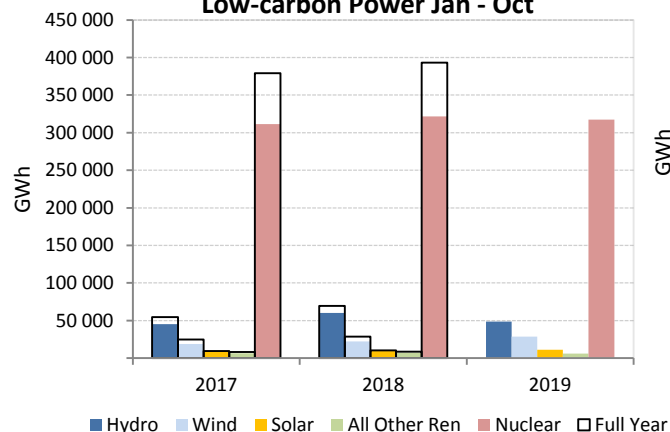
Electricity Production



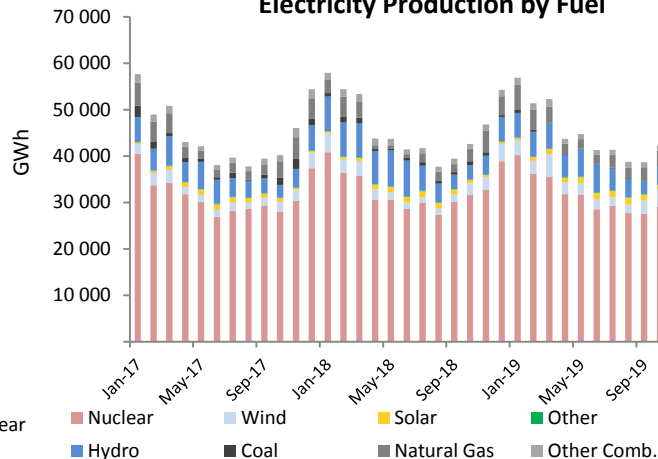
Net Electricity Exports



Low-carbon Power Jan - Oct



Electricity Production by Fuel

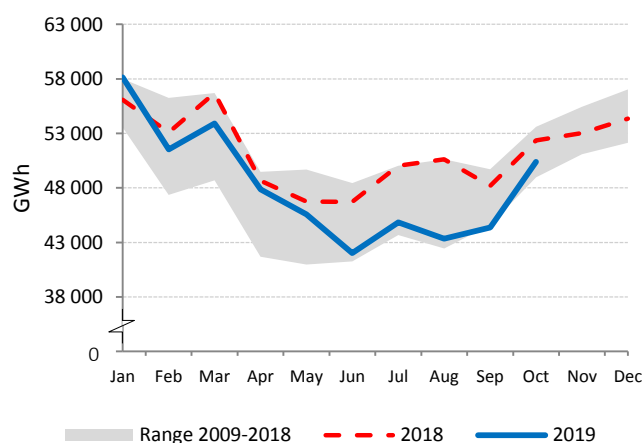


GERMANY

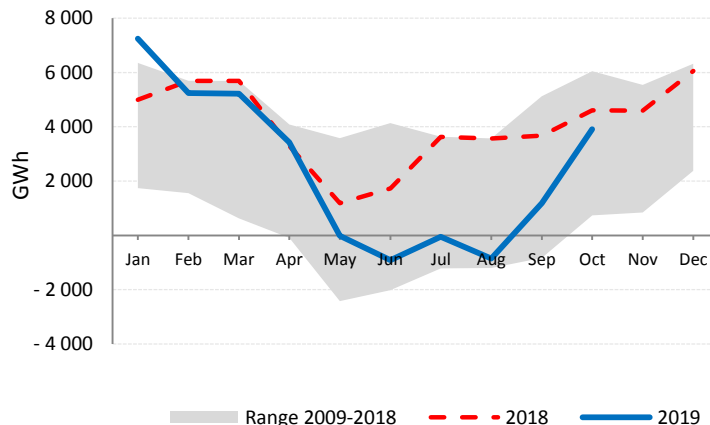
	Oct 2019				Year-to-Date			2018	
	GWh	change ¹	change ²	share	2019	2018	change ³	GWh	share
CONVENTIONAL THERMAL	26 987	-12.8%	17.0%	53.5%	257 640	298 419	-13.7%	362 120	58.7%
Coal	13 320	-30.9%	18.8%	26.4%	136 359	187 119	-27.1%	224 160	36.4%
Oil	449	6.2%	23.8%	0.9%	3 853	4 046	-4.8%	4 856	0.8%
Natural Gas	8 669	30.5%	19.3%	17.2%	73 091	62 296	17.3%	78 943	12.8%
Combustible Renewables	3 990	-1.2%	7.6%	7.9%	38 975	39 455	-1.2%	47 583	7.7%
Other Combustibles	559	-2.0%	9.4%	1.1%	5 363	5 504	-2.6%	6 578	1.1%
Nuclear	6 704	17.3%	16.4%	13.3%	57 684	58 615	-1.6%	71 859	11.7%
Hydro	2 235	40.4%	10.0%	4.4%	23 672	20 452	15.7%	23 952	3.9%
Wind	11 676	7.2%	27.9%	23.2%	98 660	85 997	14.7%	110 711	18.0%
Solar	2 651	-14.1%	-37.3%	5.3%	42 821	44 257	-3.2%	46 164	7.5%
Geothermal	14	60.0%	45.5%	0.0%	138	118	16.6%	144	0.0%
Other Renewables	-	-	-	-	-	-	-	-	-
Non-Specified	135	20.6%	-16.2%	0.3%	1 377	1 314	4.8%	1 585	0.3%
RENEWABLES	20 566	4.8%	7.6%	40.8%	204 266	190 279	7.4%	228 554	37.1%
NON-RENEWABLES	29 835	-8.9%	18.0%	59.2%	277 726	318 894	-12.9%	387 982	62.9%
TOTAL NET PRODUCTION	50 401	-3.7%	13.6%		481 992	509 172	-5.3%	616 536	
+ Imports	2 733	-4.0%	-32.3%		34 694	26 835	29.3%	31 727	
- Exports	6 643	-10.8%	27.2%		59 080	64 921	-9.0%	80 462	
= ELECTRICITY SUPPLIED	46 491	-2.6%	7.6%		457 606	471 086	-2.9%	567 801	
- Used for pumped storage	716	-11.1%	7.8%		6 710	6 891	-2.6%	8 348	
- T&D Losses	2 410	-2.5%	25.6%		21 295	21 025	1.3%	26 193	
= ELECTRICITY CONSUMED	43 365	-2.5%	6.8%		429 601	443 170	-3.1%	533 259	

¹ current month to month of last year change² month-to-month change³ year-to-date compared to same period last year

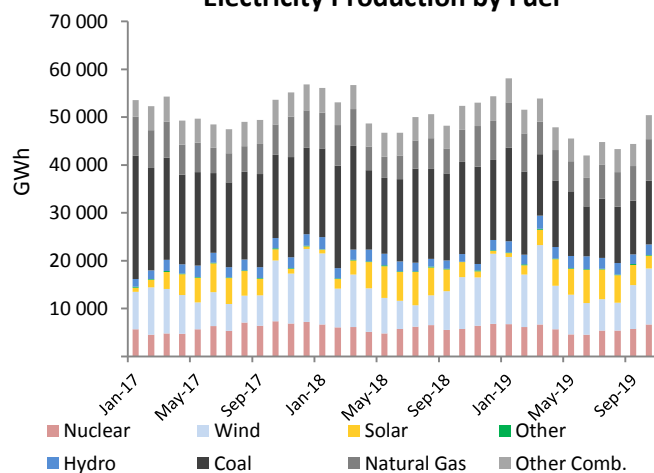
Electricity Production



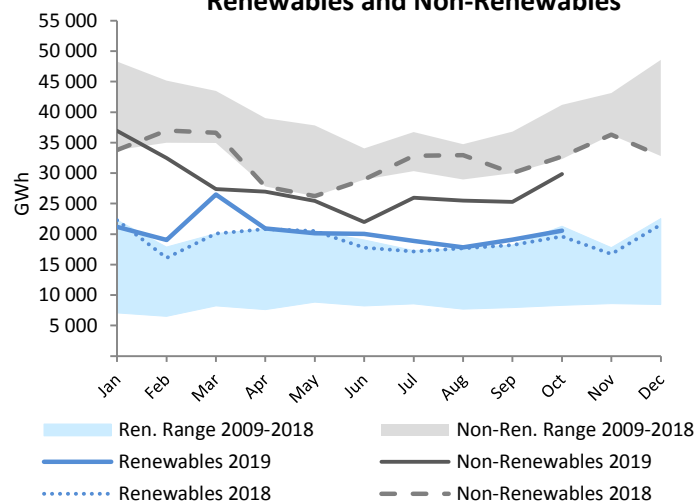
Net Electricity Exports



Electricity Production by Fuel



Renewables and Non-Renewables

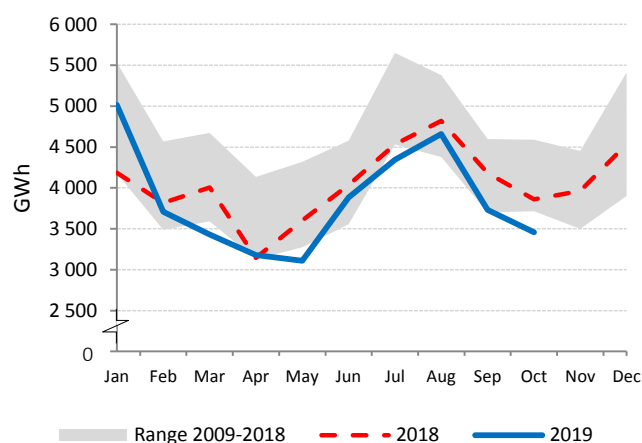


GREECE

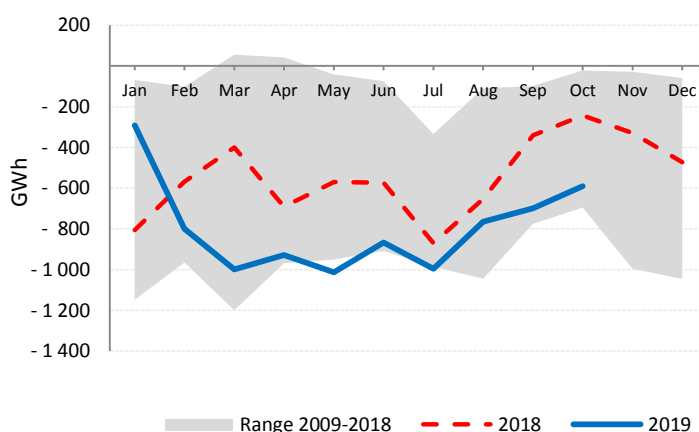
	Oct 2019				Year-to-Date			2018	
	GWh	change ¹	change ²	share	2019	2018	change ³	GWh	share
CONVENTIONAL THERMAL	2 407	-11.0%	-1.9%	69.6%	25 609	26 558	-3.6%	32 772	67.3%
Coal	706	-31.4%	11.5%	20.4%	8 976	13 030	-31.1%	16 004	32.9%
Oil	354	4.9%	-10.9%	10.2%	3 720	3 704	0.4%	4 279	8.8%
Natural Gas	1 321	0.6%	-5.5%	38.2%	12 669	9 580	32.2%	12 198	25.1%
Combustible Renewables	25	3.2%	9.3%	0.7%	244	244	0.0%	290	0.6%
Other Combustibles	-	-	-	-	-	-	-	-	-
Nuclear	-	-	-	-	-	-	-	-	-
Hydro	218	-21.4%	-24.6%	6.3%	3 438	5 174	-33.5%	5 813	11.9%
Wind	486	-14.7%	-17.5%	14.0%	5 925	5 069	16.9%	6 300	12.9%
Solar	349	13.3%	-13.4%	10.1%	3 550	3 380	5.0%	3 792	7.8%
Geothermal	-	-	-	-	-	-	-	-	-
Other Renewables	-	-	-	-	-	-	-	-	-
Non-Specified	-	-	-	-	-	-	-	-	-
RENEWABLES	1 078	-8.6%	-17.3%	31.2%	13 158	13 867	-5.1%	16 196	33.3%
NON-RENEWABLES	2 381	-11.2%	-2.0%	68.8%	25 365	26 314	-3.6%	32 482	66.7%
TOTAL NET PRODUCTION	3 459	-10.4%	-7.3%		38 523	40 180	-4.1%	48 677	
+ Imports	782	53.2%	-2.9%		9 037	7 388	22.3%	8 706	
- Exports	191	-28.6%	79.2%		1 086	1 672	-35.1%	2 187	
= ELECTRICITY SUPPLIED	4 050	-1.3%	-8.6%		46 474	45 897	1.3%	55 196	
- Used for pumped storage	2	972.7%	103.9%		32	26	23.2%	28	
- T&D Losses	240	-16.1%	4.9%		2 521	2 657	-5.1%	3 251	
= ELECTRICITY CONSUMED	3 809	-0.2%	-9.4%		43 921	43 214	1.6%	51 917	

¹ current month to month of last year change² month-to-month change³ year-to-date compared to same period last year

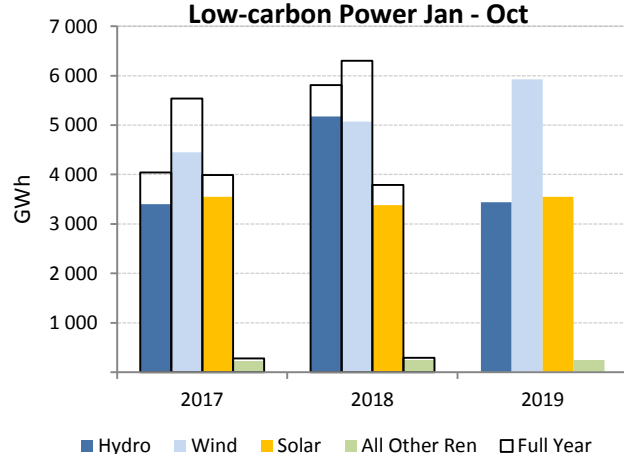
Electricity Production



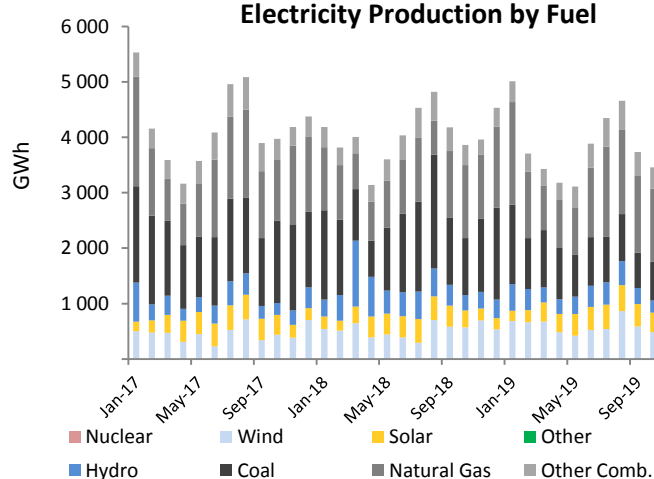
Net Electricity Exports



Low-carbon Power Jan - Oct



Electricity Production by Fuel

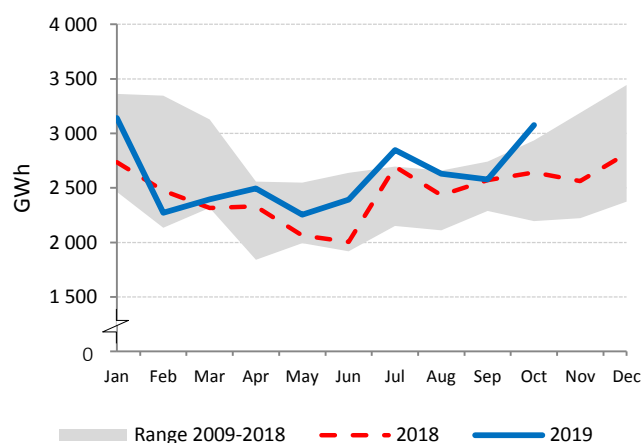


HUNGARY

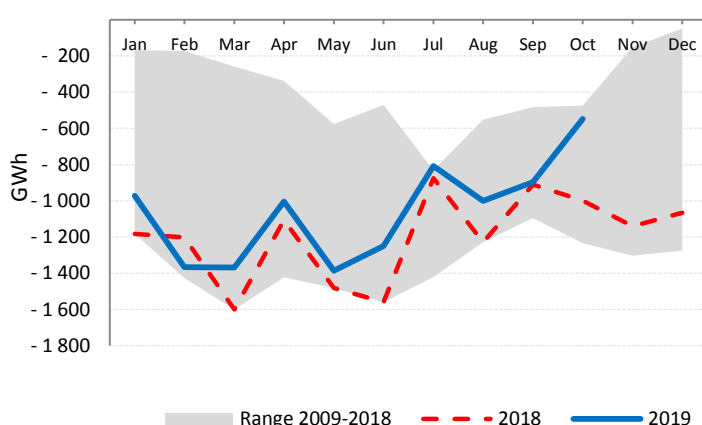
	Oct 2019				Year-to-Date			2018	
	GWh	change ¹	change ²	share	2019	2018	change ³	GWh	share
CONVENTIONAL THERMAL	1 446	20.2%	21.0%	47.0%	11 357	10 544	7.7%	13 238	44.7%
Coal	398	-8.6%	26.6%	12.9%	3 209	3 593	-10.7%	4 359	14.7%
Oil	4	22.6%	44.9%	0.1%	41	55	-25.6%	64	0.2%
Natural Gas	868	59.8%	24.5%	28.2%	6 268	5 027	24.7%	6 560	22.1%
Combustible Renewables	154	-24.7%	-5.1%	5.0%	1 623	1 701	-4.6%	2 056	6.9%
Other Combustibles	22	30.7%	23.4%	0.7%	215	168	28.3%	200	0.7%
Nuclear	1 422	10.2%	21.4%	46.2%	12 593	12 407	1.5%	14 860	50.1%
Hydro	10	-23.8%	7.2%	0.3%	168	183	-8.5%	216	0.7%
Wind	48	-23.2%	31.5%	1.5%	558	470	18.7%	589	2.0%
Solar	138	127.9%	-10.9%	4.5%	1 284	545	135.5%	600	2.0%
Geothermal	1	8.4%	22.2%	0.0%	14	10	37.4%	12	0.0%
Other Renewables	-	-	-	-	-	-	-	-	-
Non-Specified	11	-	-	0.3%	106	106	-	127	0.4%
RENEWABLES	351	2.7%	-3.5%	11.4%	3 647	2 910	25.3%	3 473	11.7%
NON-RENEWABLES	2 724	18.5%	23.1%	88.6%	22 432	21 356	5.0%	26 170	88.3%
TOTAL NET PRODUCTION	3 076	16.4%	19.3%		26 079	24 266	7.5%	29 643	
+ Imports	1 574	4.4%	-9.3%		16 880	15 215	10.9%	18 613	
- Exports	1 025	101.3%	22.2%		6 280	3 072	104.4%	4 265	
= ELECTRICITY SUPPLIED	3 625	-0.4%	4.3%		36 679	36 408	0.7%	43 991	
- Used for pumped storage	-	-	-		-	-	-	-	
- T&D Losses	270	0.5%	17.3%		2 755	2 762	-0.2%	3 428	
= ELECTRICITY CONSUMED	3 355	-0.5%	3.4%		33 924	33 647	0.8%	40 563	

¹ current month to month of last year change² month-to-month change³ year-to-date compared to same period last year

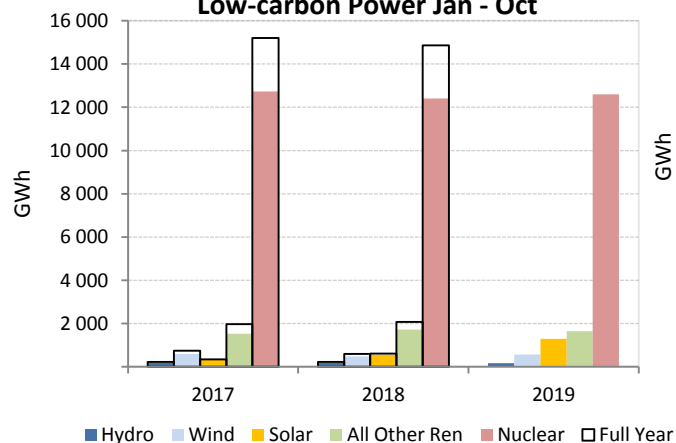
Electricity Production



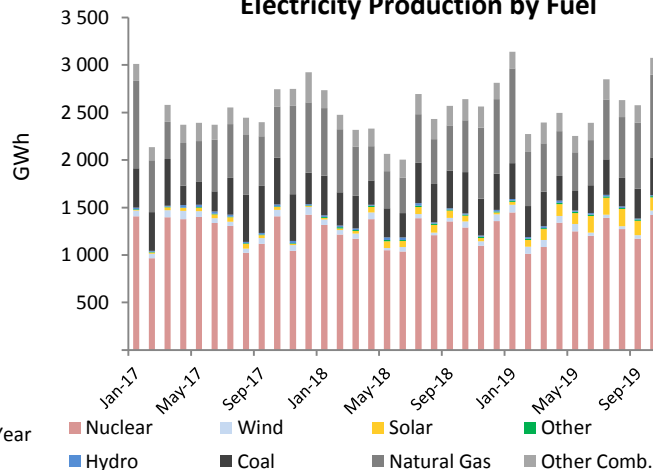
Net Electricity Exports



Low-carbon Power Jan - Oct



Electricity Production by Fuel

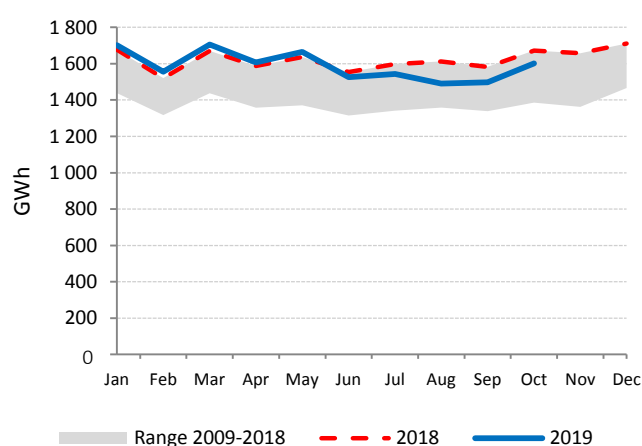


ICELAND

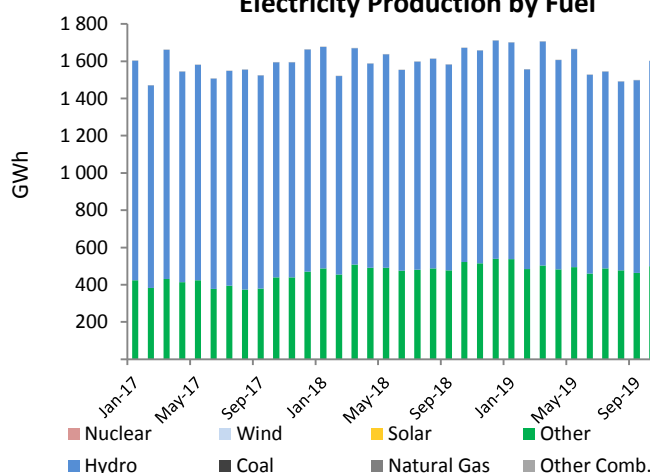
	Oct 2019				Year-to-Date			2018	
	GWh	change ¹	change ²	share	2019	2018	change ³	GWh	share
CONVENTIONAL THERMAL	0	224.6%	70.2%	0.0%	1	1	-9.4%	2	0.0%
Coal	-	-	-	-	-	-	-	-	-
Oil	0	224.6%	70.2%	0.0%	1	1	-9.4%	2	0.0%
Natural Gas	-	-	-	-	-	-	-	-	-
Combustible Renewables	-	-	-	-	-	-	-	-	-
Other Combustibles	-	-	-	-	-	-	-	-	-
Nuclear	-	-	-	-	-	-	-	-	-
Hydro	1 101	-4.3%	6.5%	68.8%	11 004	11 233	-2.0%	13 547	69.5%
Wind	1	247.7%	59.5%	0.1%	9	6	63.0%	8	0.0%
Solar	-	-	-	-	-	-	-	-	-
Geothermal	499	-4.2%	7.6%	31.1%	4 882	4 871	0.2%	5 922	30.4%
Other Renewables	-	-	-	-	-	-	-	-	-
Non-Specified	-	-	-	-	-	-	-	-	-
RENEWABLES	1 601	-4.2%	6.9%	100.0%	15 895	16 109	-1.3%	19 477	100.0%
NON-RENEWABLES	0	224.6%	70.2%	0.0%	1	1	-9.4%	2	0.0%
TOTAL NET PRODUCTION	1 602	-4.2%	6.9%		15 896	16 111	-1.3%	19 479	
+ Imports	-	-	-		-	-	-	-	
- Exports	-	-	-		-	-	-	-	
= ELECTRICITY SUPPLIED	1 602	-4.2%	6.9%		15 896	16 111	-1.3%	19 479	
- Used for pumped storage	-	-	-		-	-	-	-	
- T&D Losses	49	-	2.1%		487	482	1.0%	580	
= ELECTRICITY CONSUMED	1 553	-4.4%	7.1%		15 409	15 629	-1.4%	18 899	

¹ current month to month of last year change² month-to-month change³ year-to-date compared to same period last year

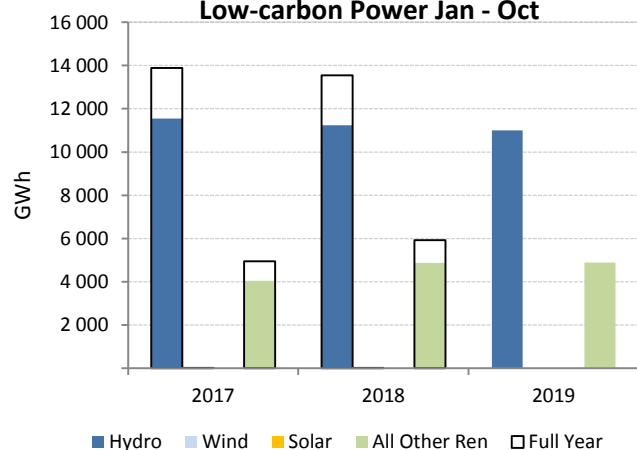
Electricity Production



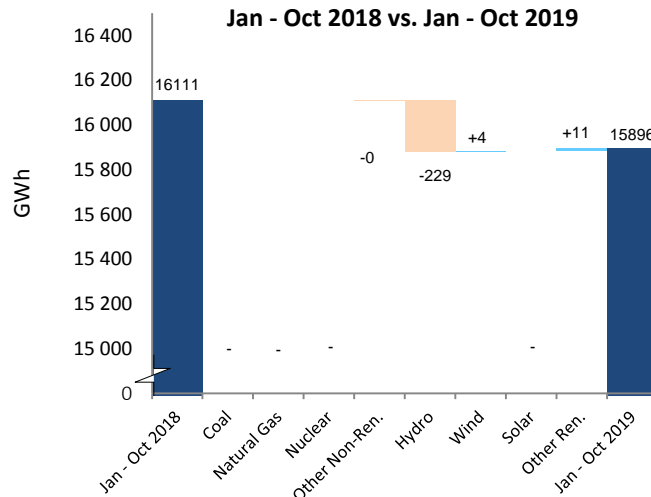
Electricity Production by Fuel



Low-carbon Power Jan - Oct



Electricity Production Variation Jan - Oct 2018 vs. Jan - Oct 2019

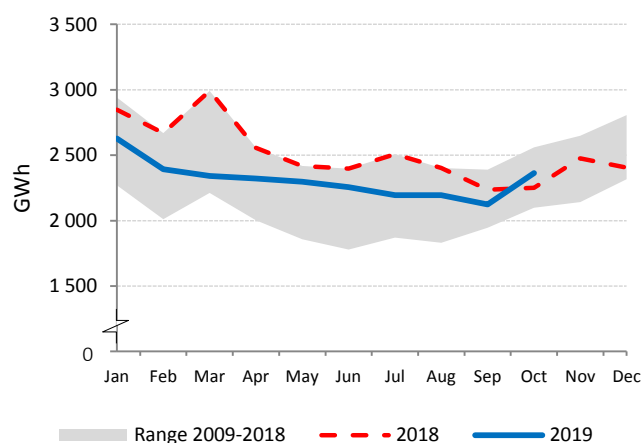


IRELAND

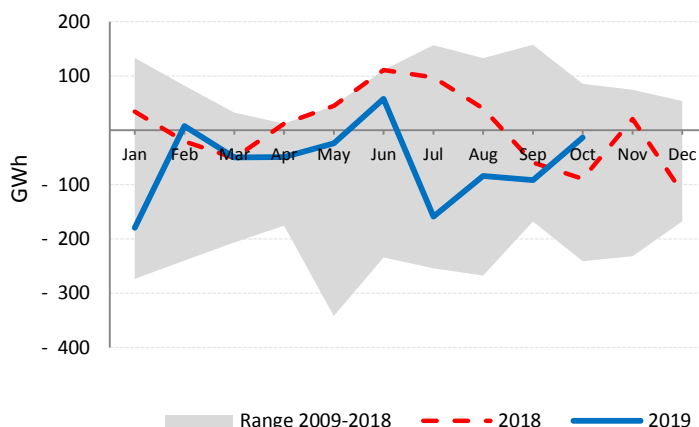
	Oct 2019				Year-to-Date			2018	
	GWh	change ¹	change ²	share	2019	2018	change ³	GWh	share
CONVENTIONAL THERMAL	1 402	-4.8%	5.2%	59.3%	14 814	18 122	-18.3%	20 766	68.9%
Coal	19	-	-76.3%	0.8%	836	4 100	-79.6%	4 100	13.6%
Oil	42	137.3%	123.1%	1.8%	281	86	226.4%	136	0.5%
Natural Gas	1 245	-7.9%	5.4%	52.7%	12 911	13 080	-1.3%	15 467	51.3%
Combustible Renewables	69	-3.5%	135.2%	2.9%	561	622	-9.9%	775	2.6%
Other Combustibles	27	-13.9%	16.4%	1.1%	225	234	-3.9%	288	1.0%
Nuclear	-	-	-	-	-	-	-	-	-
Hydro	144	209.7%	63.9%	6.1%	834	696	19.7%	922	3.1%
Wind	816	11.8%	16.2%	34.5%	7 453	6 445	15.7%	8 455	28.0%
Solar	1	-	-27.4%	0.0%	14	14	-	15	0.1%
Geothermal	-	-	-	-	-	-	-	-	-
Other Renewables	-	-	-	-	-	-	-	-	-
Non-Specified	-	-	-	-	-	-	-	-	-
RENEWABLES	1 031	21.3%	25.5%	43.6%	8 862	7 777	13.9%	10 167	33.7%
NON-RENEWABLES	1 333	-4.9%	2.3%	56.4%	14 253	17 500	-18.6%	19 991	66.3%
TOTAL NET PRODUCTION	2 364	5.0%	11.3%		23 115	25 277	-8.6%	30 158	
+ Imports	170	-10.9%	-14.1%		1 745	1 278	36.6%	1 622	
- Exports	157	53.7%	47.4%		1 160	1 399	-17.1%	1 649	
= ELECTRICITY SUPPLIED	2 377	1.6%	7.3%		23 700	25 156	-5.8%	30 131	
- Used for pumped storage	46	11.1%	8.0%		387	414	-6.5%	499	
- T&D Losses	178	-6.0%	9.1%		1 750	1 841	-4.9%	2 237	
= ELECTRICITY CONSUMED	2 152	2.1%	7.1%		21 563	22 901	-5.8%	27 394	

¹ current month to month of last year change² month-to-month change³ year-to-date compared to same period last year

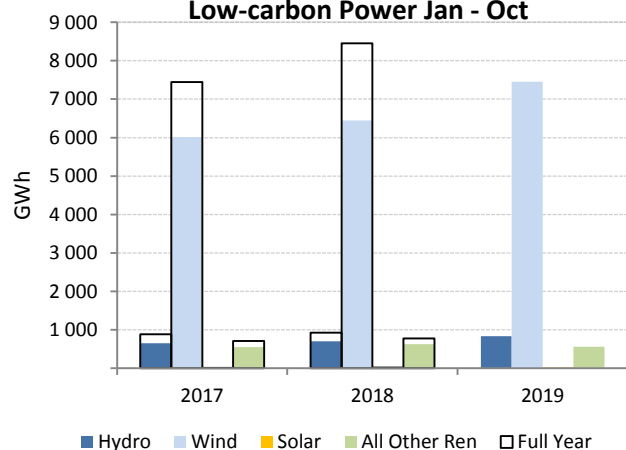
Electricity Production



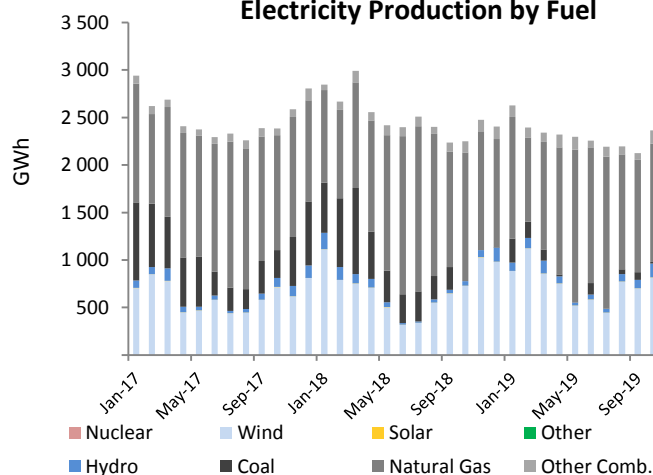
Net Electricity Exports



Low-carbon Power Jan - Oct



Electricity Production by Fuel

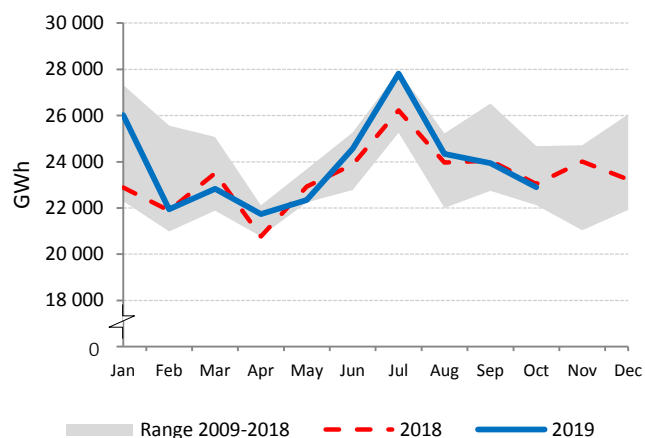


ITALY

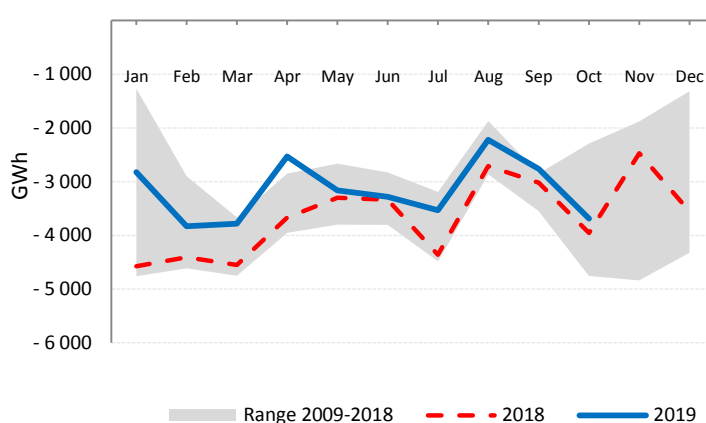
	Oct 2019				Year-to-Date			2018	
	GWh	change ¹	change ²	share	2019	2018	change ³	GWh	share
CONVENTIONAL THERMAL	16 582	-0.2%	1.7%	72.4%	157 074	151 262	3.8%	184 075	65.6%
Coal ⁵	2 628	-0.2%	1.7%	11.5%	24 894	23 973	3.8%	29 173	10.4%
Oil ⁵	926	-0.2%	1.7%	4.0%	8 772	8 447	3.8%	10 280	3.7%
Natural Gas ⁵	11 163	-0.2%	1.7%	48.7%	105 749	101 837	3.8%	123 928	44.2%
Combustible Renewables ⁵	1 654	-0.2%	1.7%	7.2%	15 665	15 085	3.8%	18 357	6.5%
Other Combustibles ⁵	210	-0.2%	1.7%	0.9%	1 994	1 920	3.8%	2 336	0.8%
Nuclear	-	-	-	-	-	-	-	-	-
Hydro	2 974	4.1%	-19.5%	13.0%	38 707	42 063	-8.0%	50 351	18.0%
Wind	1 044	-29.2%	-10.4%	4.6%	15 415	14 053	9.7%	17 325	6.2%
Solar	1 768	12.9%	-21.5%	7.7%	21 955	20 508	7.1%	22 306	8.0%
Geothermal	481	-0.2%	2.8%	2.1%	4 756	4 743	0.3%	5 702	2.0%
Other Renewables	-	-	-	-	-	-	-	-	-
Non-Specified	54	-	-	0.2%	536	536	-	644	0.2%
RENEWABLES	7 921	-1.5%	-13.9%	34.6%	96 498	96 451	0.0%	114 041	40.7%
NON-RENEWABLES	14 982	-0.2%	1.7%	65.4%	141 945	136 714	3.8%	166 361	59.3%
TOTAL NET PRODUCTION	22 903	-0.6%	-4.3%		238 443	233 165	2.3%	280 403	
+ Imports	4 183	2.9%	25.1%		36 430	40 441	-9.9%	47 179	
- Exports	495	341.3%	-14.8%		4 813	2 559	88.1%	3 270	
= ELECTRICITY SUPPLIED	26 591	-1.5%	-0.4%		270 060	271 047	-0.4%	324 312	
- Used for pumped storage	264	70.3%	71.4%		1 940	1 840	5.4%	2 233	
- T&D Losses ⁴	1 579	-0.1%	-0.7%		16 024	15 950	0.5%	19 097	
= ELECTRICITY CONSUMED	24 748	-2.0%	-0.8%		252 095	253 256	-0.5%	302 982	

¹ current month to month of last year change⁴ estimated² month-to-month change⁵ estimated from annual data³ year-to-date compared to same period last year

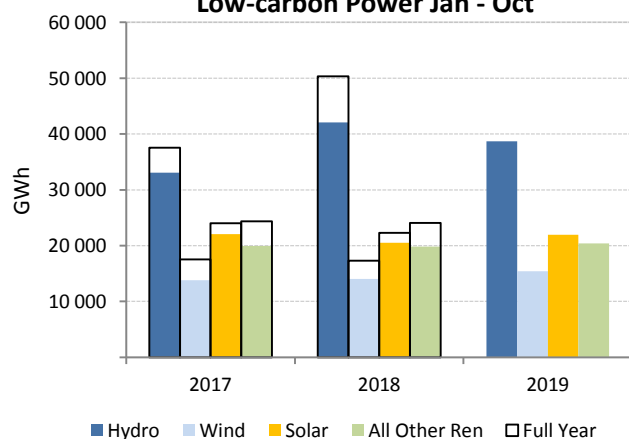
Electricity Production



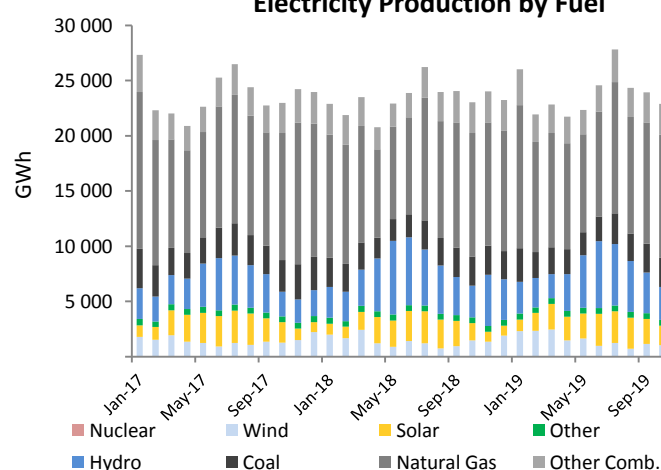
Net Electricity Exports



Low-carbon Power Jan - Oct



Electricity Production by Fuel



JAPAN

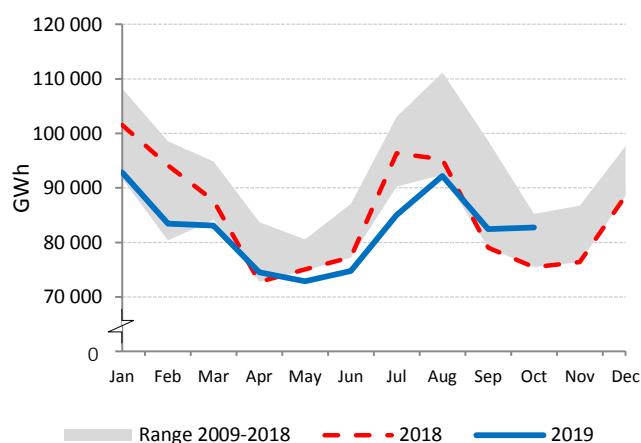
	Oct 2019				Year-to-Date			2018	
	GWh	change ¹	change ²	share	2019	2018	change ³	GWh	share
CONVENTIONAL THERMAL	62 690	13.3%	2.8%	75.8%	603 220	655 608	-8.0%	783 085	76.8%
Coal	24 119	0.0%	-3.0%	29.1%	251 467	264 737	-5.0%	318 066	31.2%
Oil	4 548	83.1%	10.5%	5.5%	36 866	54 463	-32.3%	61 919	6.1%
Natural Gas	31 003	21.2%	7.1%	37.5%	284 975	303 753	-6.2%	363 827	35.7%
Combustible Renewables	3 020	83.3%	-2.5%	3.6%	25 199	16 847	49.6%	20 297	2.0%
Other Combustibles ⁴	-	-	-	-	4 713	15 809	-70.2%	18 976	1.9%
Nuclear	4 004	-23.2%	-2.2%	4.8%	52 127	34 612	50.6%	47 201	4.6%
Hydro	6 525	-13.8%	-16.2%	7.9%	73 884	83 188	-11.2%	93 389	9.2%
Wind	571	7.0%	20.5%	0.7%	6 203	5 757	7.8%	7 281	0.7%
Solar	6 095	24.8%	-7.2%	7.4%	64 401	56 676	13.6%	65 395	6.4%
Geothermal	204	16.9%	0.6%	0.2%	1 939	1 853	4.6%	2 257	0.2%
Other Renewables	-	-	-	-	-	-	-	-	-
Non-Specified	2 659	48.4%	14.3%	3.2%	22 153	16 855	31.4%	20 907	2.1%
RENEWABLES	16 416	10.9%	-9.4%	19.8%	171 626	164 320	4.4%	188 618	18.5%
NON-RENEWABLES	66 333	9.3%	3.1%	80.2%	652 301	690 229	-5.5%	830 897	81.5%
TOTAL NET PRODUCTION	82 749	9.6%	0.4%		823 927	854 549	-3.6%	1 019 516	
+ Imports	-	-	-		-	-	-	-	
- Exports	-	-	-		-	-	-	-	
= ELECTRICITY SUPPLIED	82 749	9.6%	0.4%		823 927	854 549	-3.6%	1 019 516	
- Used for pumped storage ⁴	1 070	28.6%	2.6%		10 008	8 730	14.6%	10 558	
- T&D Losses ⁴	4 165	29.7%	2.6%		38 865	33 792	15.0%	40 847	
= ELECTRICITY CONSUMED	77 514	8.5%	0.2%		775 055	812 026	-4.6%	968 112	

¹ current month to month of last year change⁴ estimated from annual data² month-to-month change

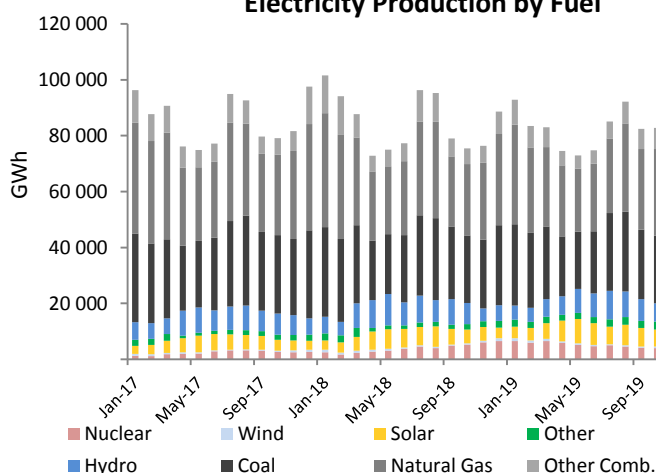
October 2019 is estimated by the IEA Secretariat

³ year-to-date compared to same period last year

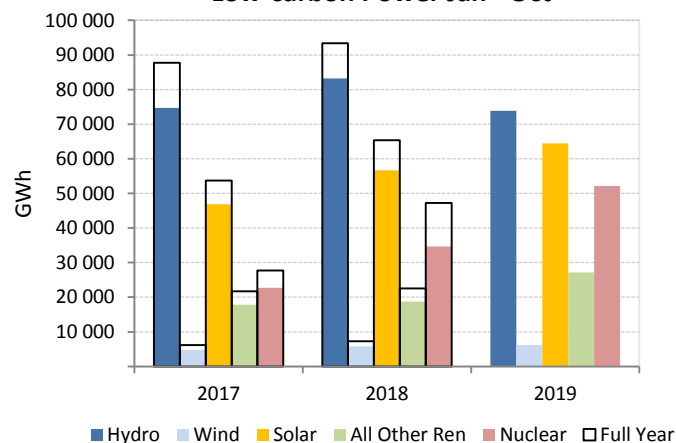
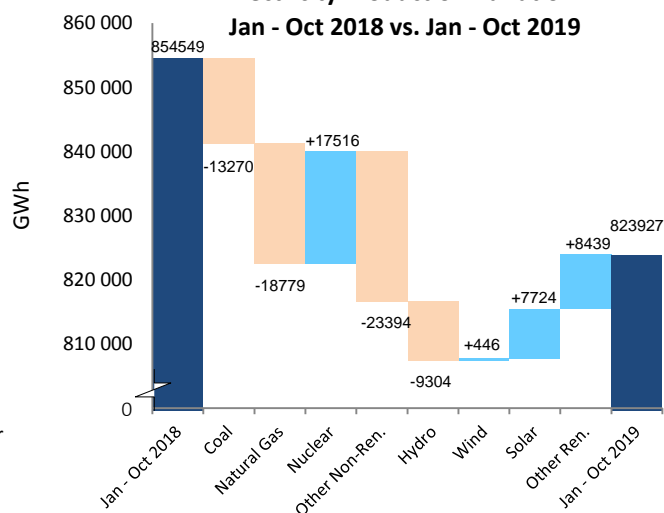
Electricity Production



Electricity Production by Fuel



Low-carbon Power Jan - Oct

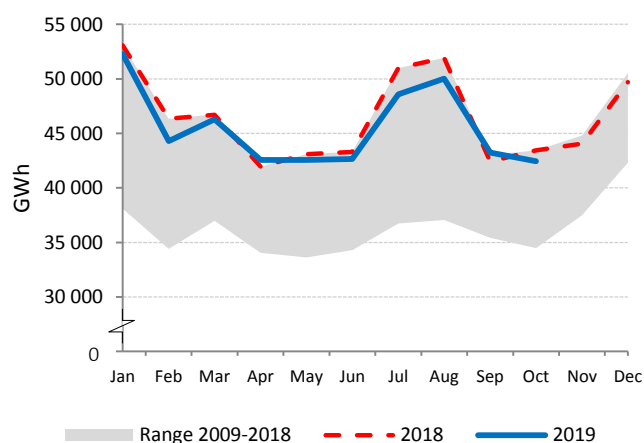
Electricity Production Variation
Jan - Oct 2018 vs. Jan - Oct 2019

KOREA

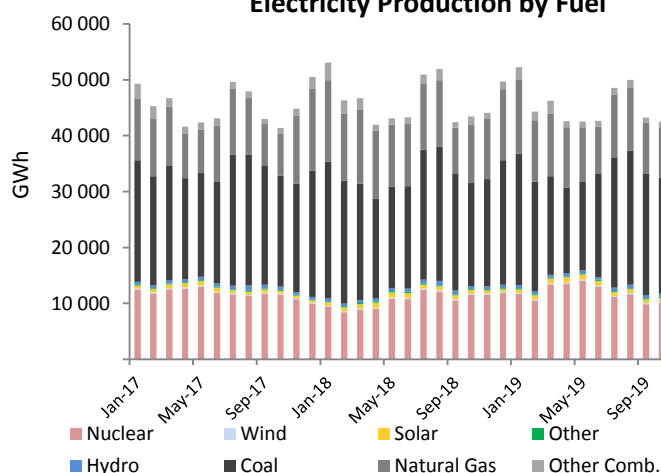
	Oct 2019				Year-to-Date			2018	
	GWh	change ¹	change ²	share	2019	2018	change ³	GWh	share
CONVENTIONAL THERMAL	30 724	1.3%	-3.2%	72.4%	319 088	341 823	-6.7%	409 208	73.5%
Coal	20 711	12.4%	-4.9%	48.8%	200 305	208 179	-3.8%	249 660	44.8%
Oil	369	-58.7%	16.2%	0.9%	7 827	10 754	-27.2%	11 976	2.1%
Natural Gas	9 077	-12.6%	0.2%	21.4%	105 065	116 595	-9.9%	140 019	25.1%
Combustible Renewables	506	-9.9%	-3.2%	1.2%	5 251	5 612	-6.4%	6 734	1.2%
Other Combustibles	62	-9.9%	-3.2%	0.1%	639	683	-6.4%	820	0.1%
Nuclear	10 097	-12.3%	2.7%	23.8%	118 652	103 746	14.4%	127 167	22.8%
Hydro	569	7.8%	-3.5%	1.3%	5 559	6 010	-7.5%	7 173	1.3%
Wind	205	-	-	0.5%	2 053	2 053	-	2 463	0.4%
Solar	669	-	-1.3%	1.6%	7 659	7 659	-	8 667	1.6%
Geothermal	-	-	-	-	-	-	-	-	-
Other Renewables	40	-	-	0.1%	404	404	-	485	0.1%
Non-Specified	156	-	-	0.4%	1 558	1 558	-	1 869	0.3%
RENEWABLES	1 990	-0.7%	-2.3%	4.7%	20 925	21 737	-3.7%	25 523	4.6%
NON-RENEWABLES	40 471	-2.3%	-1.8%	95.3%	434 046	441 514	-1.7%	531 511	95.4%
TOTAL NET PRODUCTION	42 460	-2.2%	-1.8%		454 971	463 252	-1.8%	557 034	
+ Imports	-	-	-		-	-	-	-	
- Exports	-	-	-		-	-	-	-	
= ELECTRICITY SUPPLIED	42 460	-2.2%	-1.8%		454 971	463 252	-1.8%	557 034	
- Used for pumped storage ⁴	-	-	-		-	4 641	-	5 539	
- T&D Losses ⁴	-	-	-		-	15 795	-	19 055	
= ELECTRICITY CONSUMED	42 460	2.2%	-1.8%		454 971	442 815	2.7%	532 439	

¹ current month to month of last year change⁴ estimated² month-to-month change³ year-to-date compared to same period last year

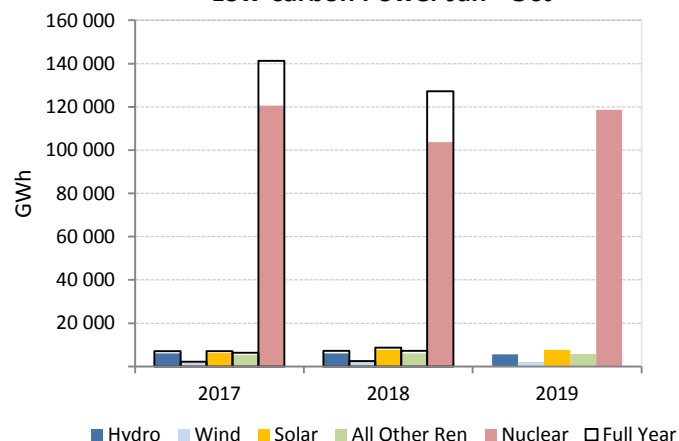
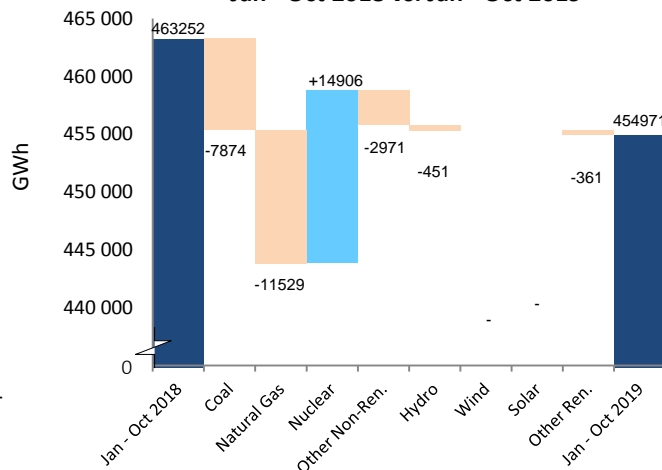
Electricity Production



Electricity Production by Fuel



Low-carbon Power Jan - Oct

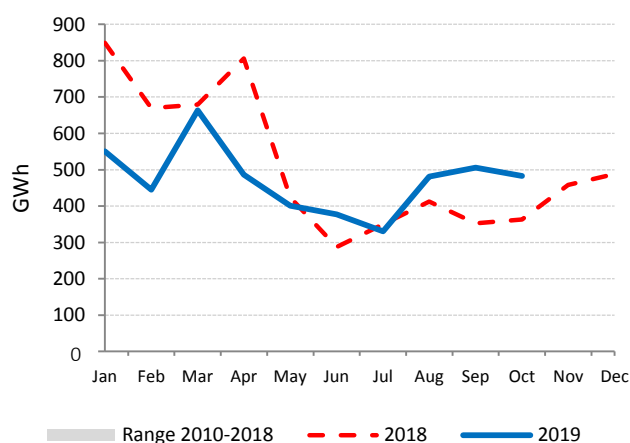
Electricity Production Variation
Jan - Oct 2018 vs. Jan - Oct 2019

LATVIA

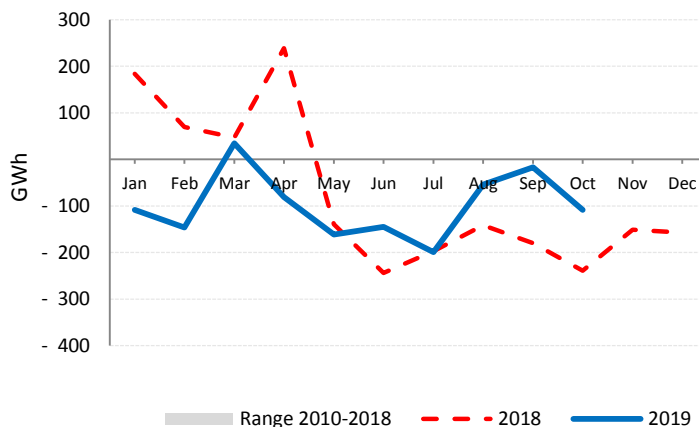
	Oct 2019				Year-to-Date			2018	
	GWh	change ¹	change ²	share	2019	2018	change ³	GWh	share
CONVENTIONAL THERMAL	315	8.7%	-24.2%	65.2%	3 052	2 831	7.8%	3 602	58.7%
Coal	0	-	-	-	0	0	-	7	0.1%
Oil	-	-	-	-	-	0	-	0	0.0%
Natural Gas	238	12.9%	-32.4%	49.3%	2 356	2 175	8.4%	2 780	45.3%
Combustible Renewables	77	-2.6%	21.0%	15.9%	696	656	6.1%	815	13.3%
Other Combustibles	-	-	-	-	-	-	-	-	-
Nuclear	-	-	-	-	-	-	-	-	-
Hydro	154	170.2%	100.0%	31.9%	1 549	2 259	-31.4%	2 416	39.4%
Wind	14	-12.5%	7.7%	2.9%	122	104	17.5%	121	2.0%
Solar	0	-	-38.8%	0.0%	1	1	-	1	0.0%
Geothermal	-	-	-	-	-	-	-	-	-
Other Renewables	-	-	-	-	-	-	-	-	-
Non-Specified	-	-	-	-	-	-	-	-	-
RENEWABLES	245	61.0%	59.3%	50.7%	2 368	3 020	-21.6%	3 354	54.6%
NON-RENEWABLES	238	12.9%	-32.4%	49.3%	2 356	2 175	8.3%	2 787	45.4%
TOTAL NET PRODUCTION	483	33.1%	-4.5%		4 725	5 194	-9.0%	6 141	
+ Imports	284	-44.4%	-8.4%		4 030	4 176	-3.5%	5 174	
- Exports	176	-35.3%	-39.9%		3 046	3 576	-14.8%	4 265	
= ELECTRICITY SUPPLIED	591	-1.8%	13.0%		5 709	5 795	-1.5%	7 050	
- Used for pumped storage	-	-	-		-	-	-	-	
- T&D Losses ⁴	34	-12.2%	-6.0%		388	416	-6.6%	502	
= ELECTRICITY CONSUMED	557	-1.1%	14.4%		5 321	5 380	-1.1%	6 548	

¹ current month to month of last year change⁴ estimated² month-to-month change³ year-to-date compared to same period last year

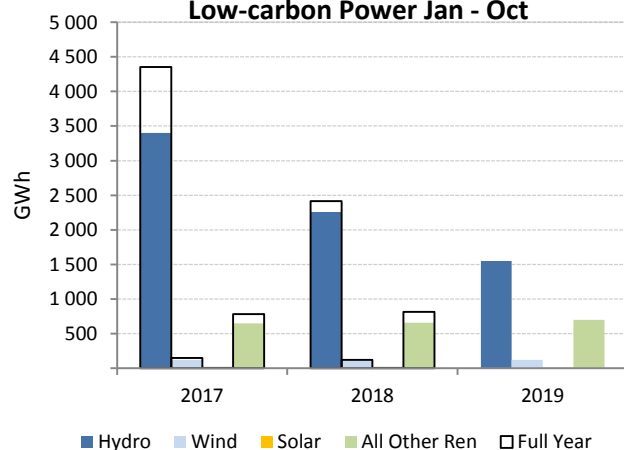
Electricity Production



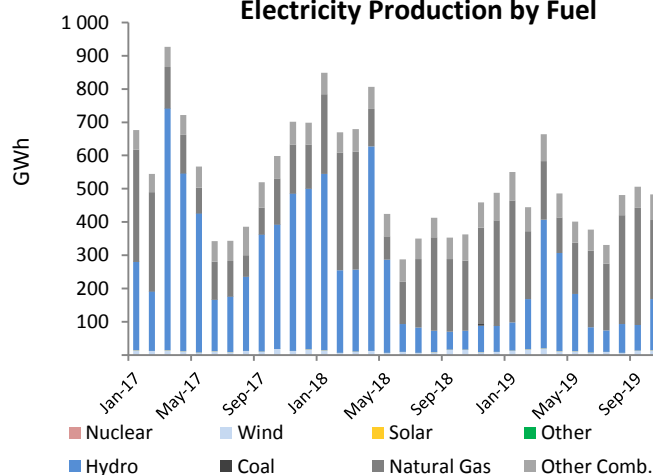
Net Electricity Exports



Low-carbon Power Jan - Oct



Electricity Production by Fuel

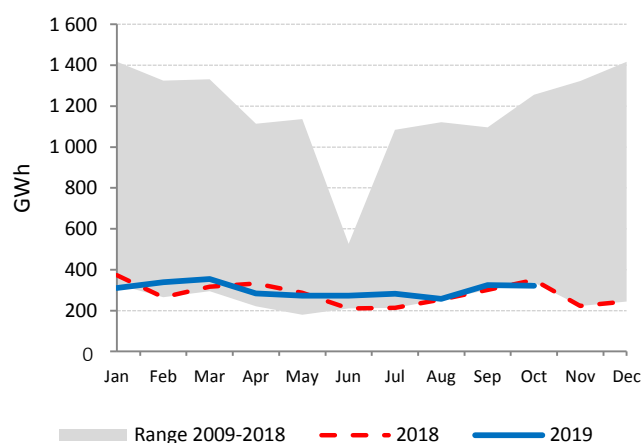


LITHUANIA

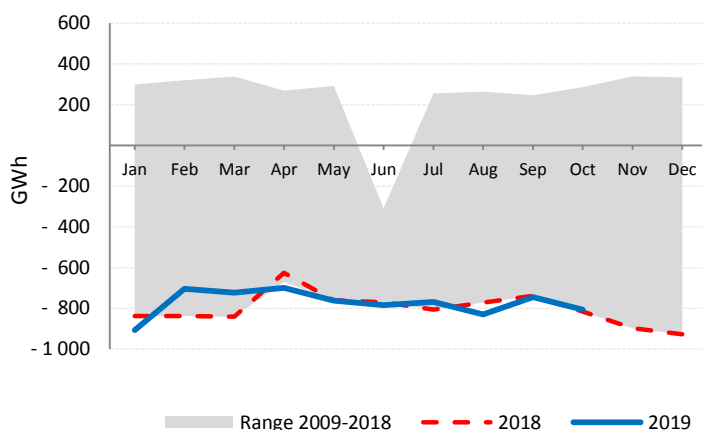
	Oct 2019				Year-to-Date			2018	
	GWh	change ¹	change ²	share	2019	2018	change ³	GWh	share
CONVENTIONAL THERMAL	116	47.0%	14.8%	36.0%	955	849	12.5%	978	29.0%
Coal	-	-	-	-	-	-	-	-	-
Oil	12	108.2%	22.6%	3.7%	73	101	-28.0%	118	3.5%
Natural Gas	49	124.0%	19.0%	15.2%	393	290	35.5%	296	8.8%
Combustible Renewables	50	14.9%	15.3%	15.6%	428	396	8.2%	487	14.5%
Other Combustibles	5	-37.3%	-27.0%	1.5%	61	62	-2.1%	76	2.2%
Nuclear	-	-	-	-	-	-	-	-	-
Hydro	81	-24.8%	-17.7%	25.1%	810	824	-1.8%	945	28.0%
Wind	121	-11.4%	3.1%	37.7%	1 175	958	22.7%	1 138	33.8%
Solar	4	-34.1%	-44.1%	1.3%	78	84	-7.2%	86	2.6%
Geothermal	-	-	-	-	-	-	-	-	-
Other Renewables	-	-	-	-	-	-	-	-	-
Non-Specified	-	-	-	-	-	188	-	224	6.7%
RENEWABLES	256	-12.8%	-3.8%	79.6%	2 491	2 262	10.1%	2 657	78.8%
NON-RENEWABLES	66	18.8%	14.5%	20.4%	527	642	-17.9%	714	21.2%
TOTAL NET PRODUCTION	322	-7.9%	-0.6%		3 018	2 904	3.9%	3 371	
+ Imports	1 139	7.0%	10.3%		10 986	10 537	4.3%	12 847	
- Exports	332	34.4%	15.6%		3 257	2 730	19.3%	3 215	
= ELECTRICITY SUPPLIED	1 128	-3.2%	5.6%		10 747	10 711	0.3%	13 004	
- Used for pumped storage	79	-33.8%	-31.9%		713	632	12.8%	726	
- T&D Losses	89	-4.4%	23.1%		857	860	-0.4%	1 020	
= ELECTRICITY CONSUMED	960	0.7%	9.1%		9 178	9 219	-0.5%	11 257	

¹ current month to month of last year change² month-to-month change³ year-to-date compared to same period last year

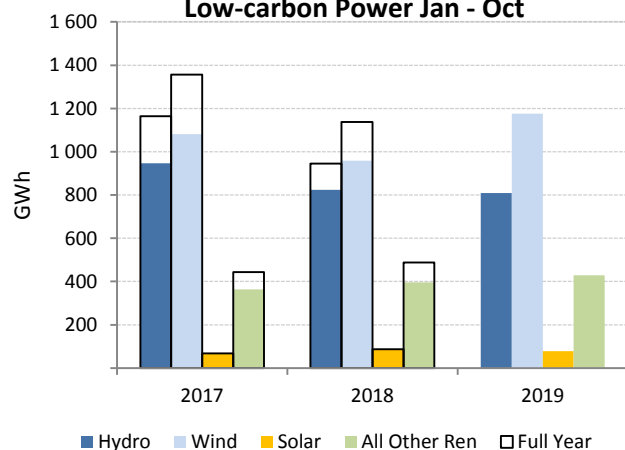
Electricity Production



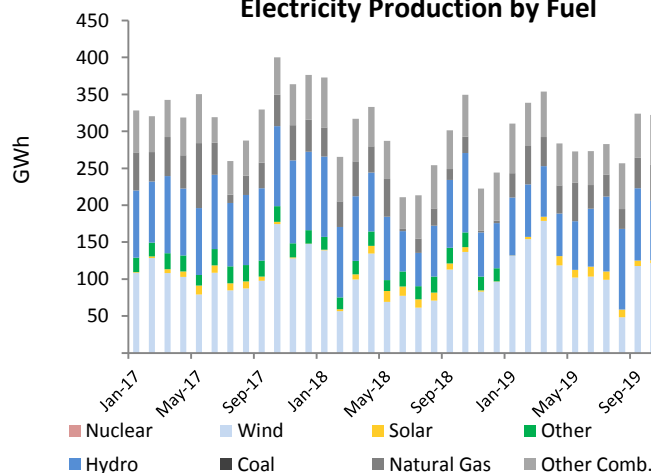
Net Electricity Exports



Low-carbon Power Jan - Oct



Electricity Production by Fuel



LUXEMBOURG

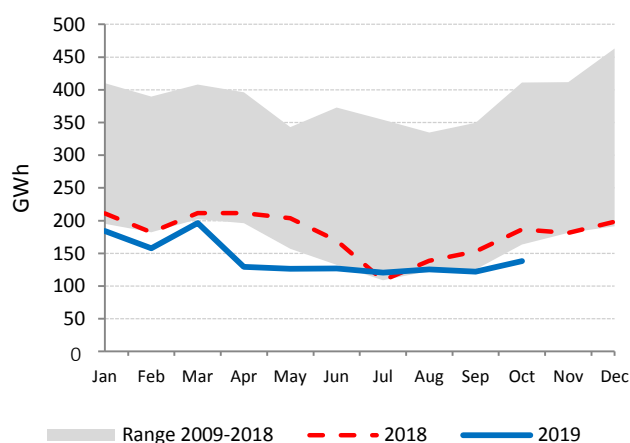
	Oct 2019				Year-to-Date			2018	
	GWh	change ¹	change ²	share	2019	2018	change ³	GWh	share
CONVENTIONAL THERMAL	46	13.0%	18.5%	33.3%	405	374	8.2%	472	21.9%
Coal	-	-	-	-	-	-	-	-	-
Oil	-	-	-	-	-	-	-	-	-
Natural Gas	11	-27.4%	41.4%	7.7%	135	142	-5.1%	188	8.7%
Combustible Renewables	28	49.8%	8.4%	20.5%	208	171	21.8%	210	9.7%
Other Combustibles	7	-1.6%	36.3%	5.1%	62	61	1.5%	74	3.5%
Nuclear	-	-	-	-	-	-	-	-	-
Hydro	61	-47.7%	12.0%	44.2%	714	1 104	-35.4%	1 326	61.5%
Wind	26	19.5%	43.9%	18.6%	200	190	5.5%	245	11.4%
Solar	5	-25.0%	-49.7%	3.9%	108	107	1.3%	112	5.2%
Geothermal	-	-	-	-	-	-	-	-	-
Other Renewables	-	-	-	-	-	-	-	-	-
Non-Specified	-	-	-	-	-	-	-	-	-
RENEWABLES	121	-26.7%	10.3%	87.2%	1 231	1 572	-21.7%	1 893	87.8%
NON-RENEWABLES	18	-19.0%	39.3%	12.8%	197	203	-3.1%	263	12.2%
TOTAL NET PRODUCTION	138	-25.8%	13.3%		1 428	1 775	-19.6%	2 155	
+ Imports	573	-12.8%	8.3%		5 699	6 316	-9.8%	7 553	
- Exports	75	-35.4%	40.8%		764	1 172	-34.8%	1 392	
= ELECTRICITY SUPPLIED	636	-12.5%	6.4%		6 363	6 919	-8.0%	8 316	
- Used for pumped storage	80	-49.7%	3.8%		934	1 430	-34.7%	1 718	
- T&D Losses	12	-4.2%	4.7%		124	126	-1.3%	151	
= ELECTRICITY CONSUMED	544	-2.0%	6.8%		5 305	5 364	-1.1%	6 448	

¹ current month to month of last year change

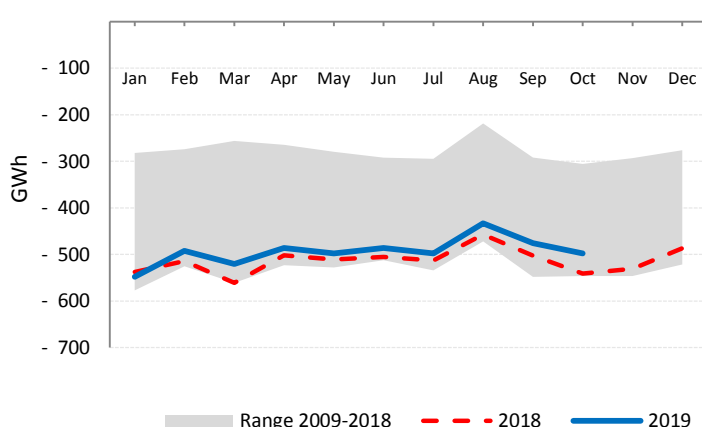
October 2019 is estimated by the IEA Secretariat

² month-to-month change³ year-to-date compared to same period last year

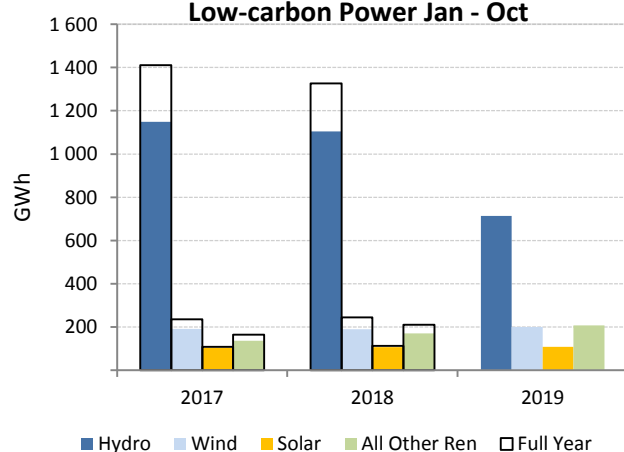
Electricity Production



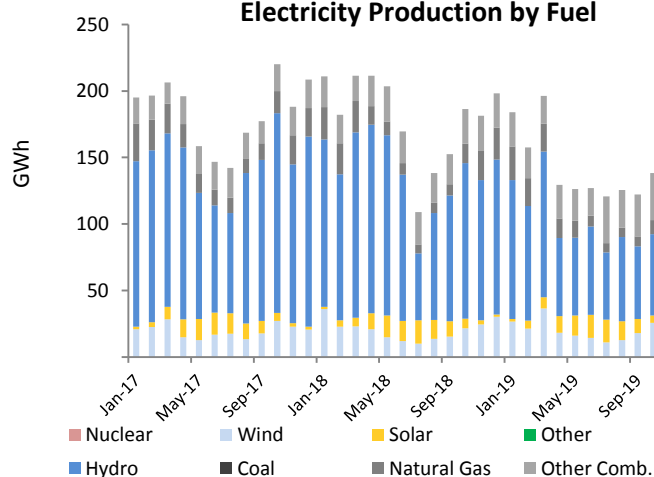
Net Electricity Exports



Low-carbon Power Jan - Oct



Electricity Production by Fuel



MEXICO

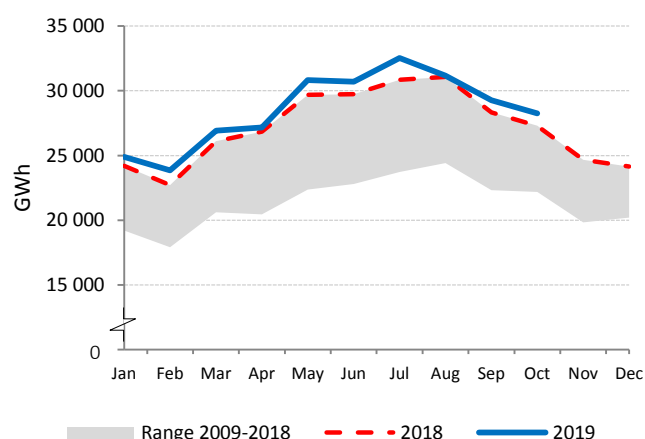
	Oct 2019				Year-to-Date			2018	
	GWh	change ¹	change ²	share	2019	2018	change ³	GWh	share
CONVENTIONAL THERMAL	21 630	2.1%	-4.5%	76.5%	224 286	220 831	1.6%	259 379	79.7%
Coal	1 382	-38.8%	-4.9%	4.9%	17 226	24 017	-28.3%	27 678	8.5%
Oil	2 580	1.9%	-19.8%	9.1%	30 918	29 964	3.2%	34 150	10.5%
Natural Gas	17 508	7.3%	-2.1%	62.0%	173 882	164 990	5.4%	195 299	60.0%
Combustible Renewables	108	197.8%	72.8%	0.4%	1 763	1 488	18.4%	1 792	0.6%
Other Combustibles	51	8.9%	6.7%	0.2%	496	371	33.6%	460	0.1%
Nuclear	842	-26.6%	-2.2%	3.0%	7 982	11 005	-27.5%	13 260	4.1%
Hydro	2 290	-26.7%	-15.2%	8.1%	23 321	28 352	-17.7%	32 036	9.8%
Wind	1 714	55.5%	32.6%	6.1%	14 662	10 008	46.5%	12 522	3.8%
Solar⁵	1 372	319.1%	1.5%	4.9%	11 107	2 293	384.5%	3 188	1.0%
Geothermal	410	1.2%	-1.1%	1.5%	4 267	4 199	1.6%	5 088	1.6%
Other Renewables	-	-	-	-	-	-	-	-	-
Non-Specified	-	-	-	-	-	128	-	154	0.0%
RENEWABLES	5 893	18.0%	1.2%	20.9%	55 119	46 340	18.9%	54 627	16.8%
NON-RENEWABLES	22 364	0.2%	-4.7%	79.1%	230 505	230 476	0.0%	271 001	83.2%
TOTAL NET PRODUCTION	28 258	3.5%	-3.5%		285 625	276 816	3.2%	325 628	
+ Imports	148	-31.0%	-18.8%		1 678	1 933	-13.2%	2 289	
- Exports	263	33.5%	-10.6%		2 522	1 675	50.6%	2 114	
= ELECTRICITY SUPPLIED	28 142	3.0%	-3.5%		284 781	277 074	2.8%	325 802	
- Used for pumped storage	-	-	-		-	-	-	-	
- T&D Losses ⁴	3 769	-0.2%	-4.9%		38 741	37 878	2.3%	44 587	
= ELECTRICITY CONSUMED	24 373	3.5%	-3.3%		246 040	239 196	2.9%	281 215	

¹ current month to month of last year change⁴ estimated² month-to-month change

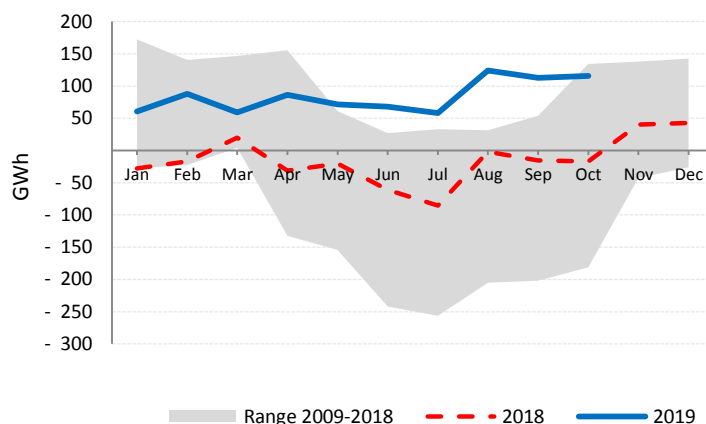
October 2019 is estimated by the IEA Secretariat

³ year-to-date compared to same period last year

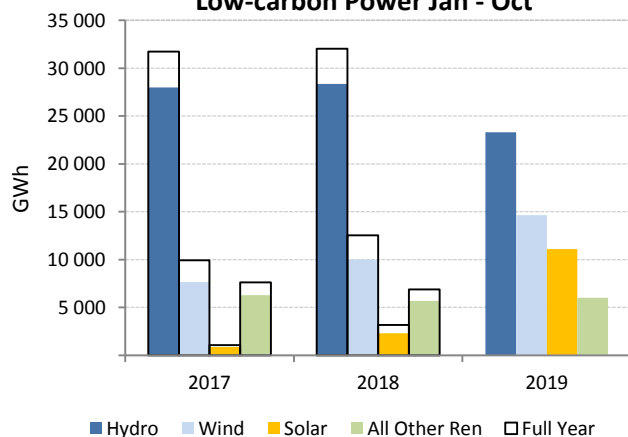
Electricity Production



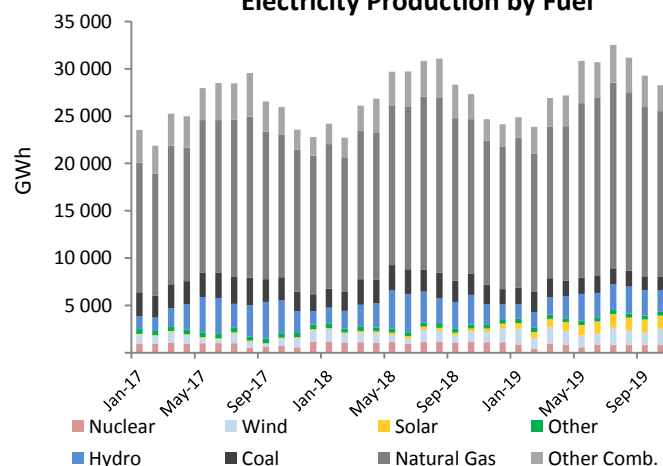
Net Electricity Exports



Low-carbon Power Jan - Oct



Electricity Production by Fuel

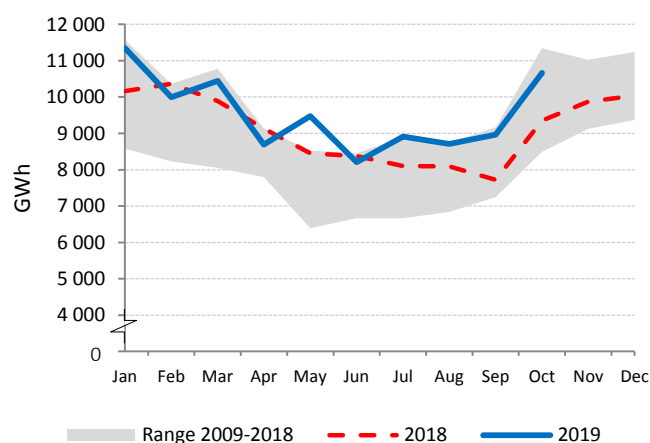


NETHERLANDS

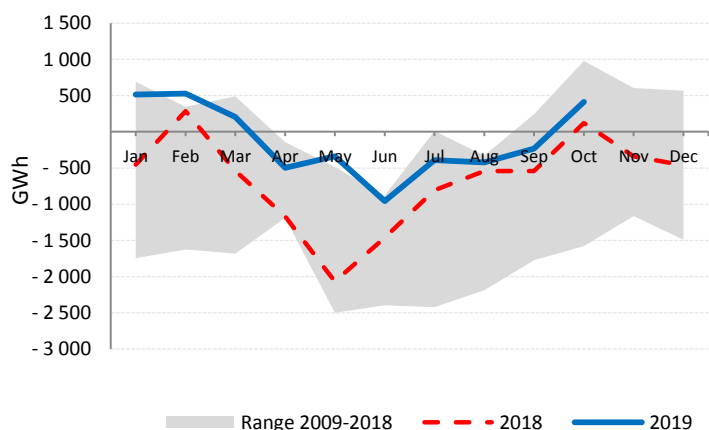
	Oct 2019				Year-to-Date			2018	
	GWh	change ¹	change ²	share	2019	2018	change ³	GWh	share
CONVENTIONAL THERMAL	8 946	18.6%	25.1%	83.9%	77 994	74 889	4.1%	91 682	83.7%
Coal	1 461	-47.6%	195.2%	13.7%	13 589	24 240	-43.9%	28 694	26.2%
Oil	352	466.3%	80.5%	3.3%	2 594	939	176.1%	1 241	1.1%
Natural Gas	6 623	56.1%	8.8%	62.1%	56 365	44 240	27.4%	55 246	50.4%
Combustible Renewables	357	14.1%	42.4%	3.4%	3 724	3 733	-0.2%	4 506	4.1%
Other Combustibles	152	11.5%	25.7%	1.4%	1 722	1 737	-0.8%	1 995	1.8%
Nuclear	358	6.1%	5.2%	3.4%	3 022	2 632	14.8%	3 346	3.1%
Hydro	4	58.8%	840.6%	0.0%	48	57	-16.0%	72	0.1%
Wind	963	-21.2%	19.5%	9.0%	7 374	8 470	-12.9%	10 549	9.6%
Solar	331	75.2%	-45.1%	3.1%	6 369	3 011	111.5%	3 201	2.9%
Geothermal	-	-	-	-	-	-	-	-	-
Other Renewables	-	-	-	-	-	-	-	-	-
Non-Specified	60	-	-	0.6%	599	599	-	719	0.7%
RENEWABLES	1 655	-4.2%	-0.3%	15.5%	17 514	15 272	14.7%	18 329	16.7%
NON-RENEWABLES	9 006	18.1%	23.4%	84.5%	77 893	74 388	4.7%	91 242	83.3%
TOTAL NET PRODUCTION	10 661	14.0%	19.0%		95 407	89 660	6.4%	109 571	
+ Imports	1 242	-32.0%	-23.4%		16 819	22 381	-24.9%	26 755	
- Exports	1 655	-15.1%	19.0%		15 647	15 212	2.9%	18 785	
= ELECTRICITY SUPPLIED	10 249	11.0%	11.5%		96 579	96 829	-0.3%	117 540	
- Used for pumped storage	-	-	-		-	-	-	-	
- T&D Losses ⁴	417	-8.5%	8.7%		4 024	4 616	-12.8%	5 340	
= ELECTRICITY CONSUMED	9 832	12.0%	11.6%		92 555	92 213	0.4%	112 201	

¹ current month to month of last year change⁴ estimated² month-to-month change³ year-to-date compared to same period last year

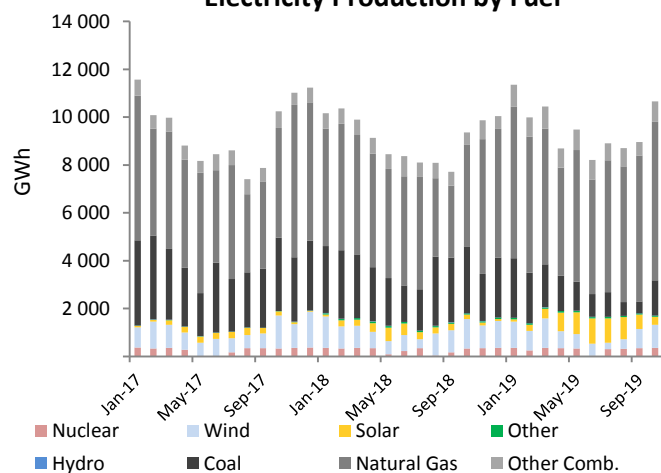
Electricity Production



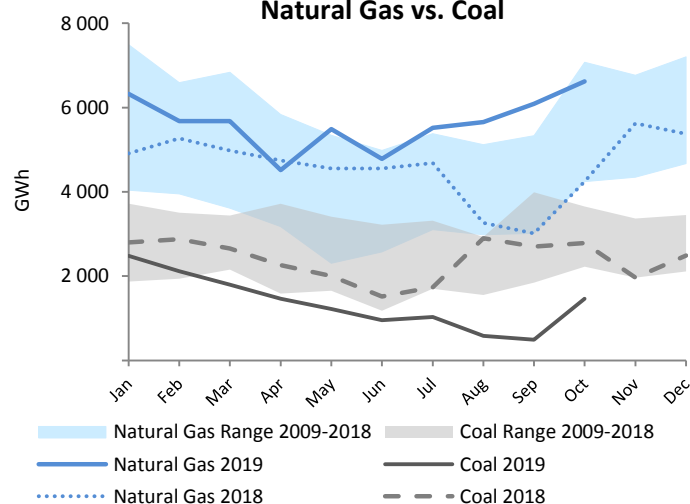
Net Electricity Exports



Electricity Production by Fuel



Natural Gas vs. Coal



NEW ZEALAND

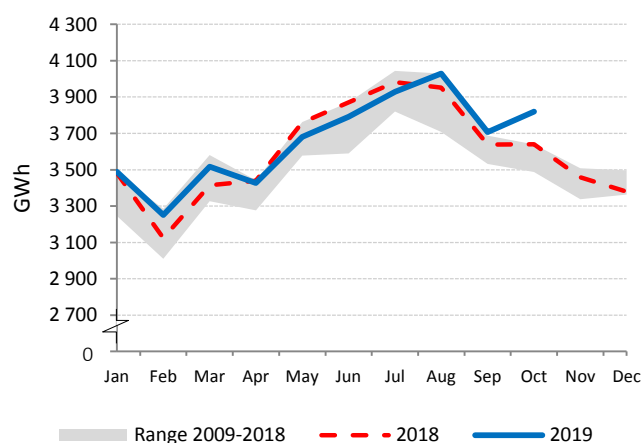
	Oct 2019				Year-to-Date			2018	
	GWh	change ¹	change ²	share	2019	2018	change ³	GWh	share
CONVENTIONAL THERMAL	738	-3.9%	-19.6%	19.3%	7 373	6 459	14.1%	7 460	17.3%
Coal	142	-53.9%	-42.7%	3.7%	1 854	1 150	61.2%	1 519	3.5%
Oil	0	-94.5%	94.0%	0.0%	3	8	-65.3%	11	0.0%
Natural Gas	547	36.9%	-11.5%	14.3%	5 004	4 861	3.0%	5 391	12.5%
Combustible Renewables	48	-13.7%	-6.7%	1.3%	512	440	16.1%	540	1.3%
Other Combustibles	-	-	-	-	-	-	-	-	-
Nuclear	-	-	-	-	-	-	-	-	-
Hydro	2 241	7.9%	13.3%	58.7%	21 123	21 870	-3.4%	26 048	60.4%
Wind	209	18.2%	0.2%	5.5%	1 824	1 742	4.7%	2 047	4.7%
Solar	11	27.0%	6.1%	0.3%	101	78	28.6%	96	0.2%
Geothermal	622	2.6%	6.0%	16.3%	6 188	6 115	1.2%	7 442	17.3%
Other Renewables	-	-	-	-	-	-	-	-	-
Non-Specified	-	-	-	-	34	37	-10.0%	45	0.1%
RENEWABLES	3 131	7.1%	10.4%	82.0%	29 748	30 245	-1.6%	36 174	83.9%
NON-RENEWABLES	689	-3.6%	-20.8%	18.0%	6 895	6 056	13.8%	6 965	16.1%
TOTAL NET PRODUCTION	3 821	5.0%	3.1%		36 642	36 302	0.9%	43 140	
+ Imports	-	-	-		-	-	-	-	
- Exports	-	-	-		-	-	-	-	
= ELECTRICITY SUPPLIED	3 821	5.0%	3.1%		36 642	36 302	0.9%	43 140	
- Used for pumped storage	-	-	-		-	-	-	-	
- T&D Losses	-	-	-		2 244	2 468	-9.1%	2 950	
= ELECTRICITY CONSUMED	3 821	12.4%	10.7%		34 398	33 834	1.7%	40 190	

¹ current month to month of last year change

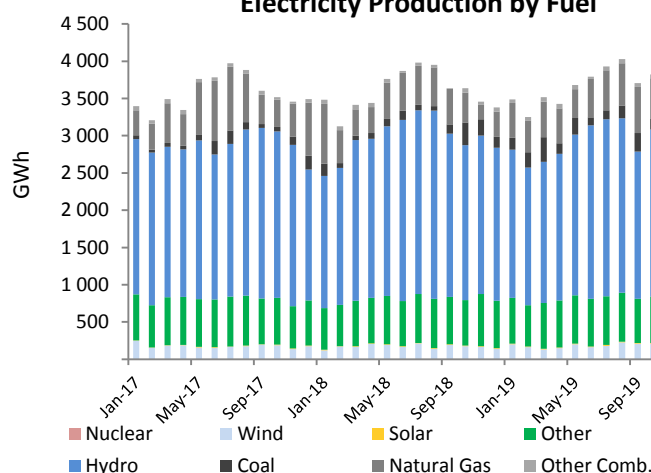
October 2019 is estimated by the IEA Secretariat

² month-to-month change³ year-to-date compared to same period last year

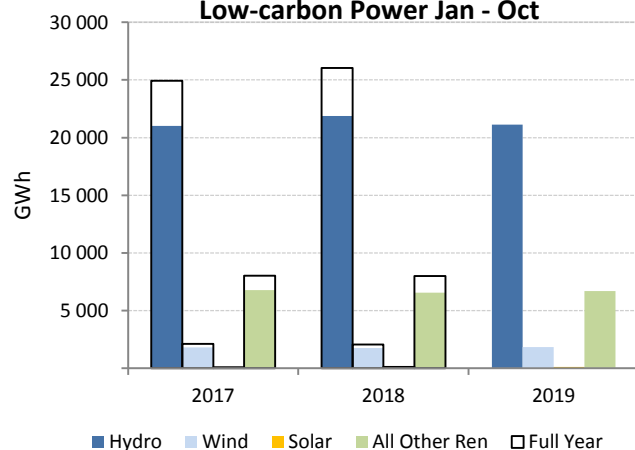
Electricity Production



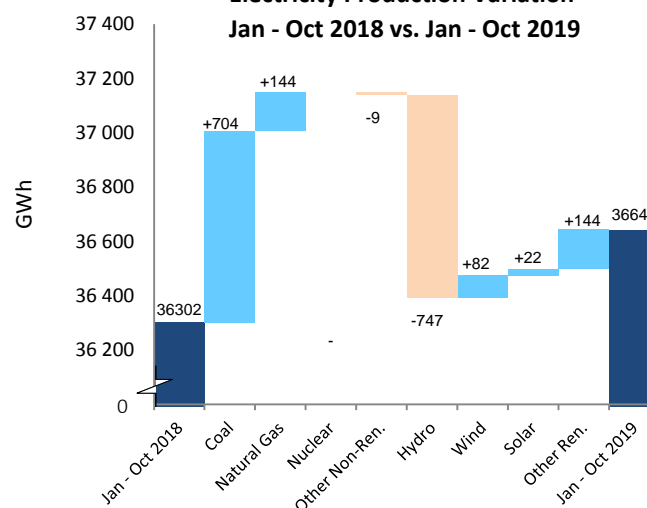
Electricity Production by Fuel



Low-carbon Power Jan - Oct



Electricity Production Variation Jan - Oct 2018 vs. Jan - Oct 2019

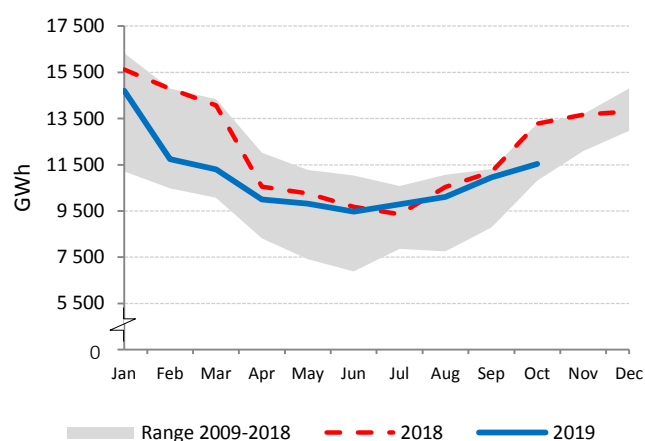


NORWAY

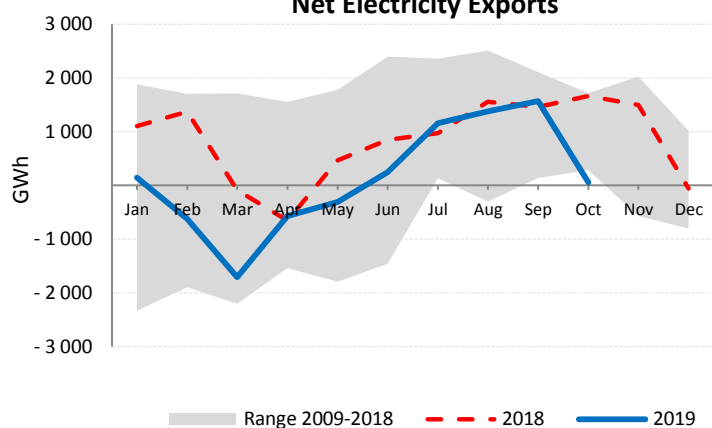
	Oct 2019				Year-to-Date			2018	
	GWh	change ¹	change ²	share	2019	2018	change ³	GWh	share
CONVENTIONAL THERMAL	259	1.3%	9.4%	2.2%	2 558	2 651	-3.5%	3 196	2.2%
Coal ⁴	14	-2.1%	7.4%	0.1%	142	148	-4.4%	179	0.1%
Oil ⁴	2	-2.1%	7.4%	0.0%	23	24	-4.4%	28	0.0%
Natural Gas	203	-0.6%	11.9%	1.8%	1 970	2 169	-9.2%	2 602	1.8%
Combustible Renewables	22	45.5%	5.0%	0.2%	203	156	29.9%	190	0.1%
Other Combustibles	18	-9.8%	-7.6%	0.2%	221	154	43.7%	196	0.1%
Nuclear	-	-	-	-	-	-	-	-	-
Hydro	10 798	-13.7%	6.1%	93.6%	102 405	113 590	-9.8%	139 477	95.0%
Wind	455	-8.4%	-12.3%	3.9%	4 226	2 888	46.3%	3 875	2.6%
Solar	-	-	-	-	-	-	-	-	-
Geothermal	-	-	-	-	-	-	-	-	-
Other Renewables	-	-	-	-	-	-	-	-	-
Non-Specified	23	-	-	0.2%	230	230	-	276	0.2%
RENEWABLES	11 274	-13.4%	5.2%	97.7%	106 833	116 634	-8.4%	143 542	97.8%
NON-RENEWABLES	260	-1.3%	8.9%	2.3%	2 585	2 724	-5.1%	3 282	2.2%
TOTAL NET PRODUCTION	11 534	-13.1%	5.3%		109 419	119 358	-8.3%	146 824	
+ Imports	772	133.7%	282.9%		9 360	6 538	43.2%	8 340	
- Exports	826	-58.6%	-53.4%		10 698	15 248	-29.8%	18 489	
= ELECTRICITY SUPPLIED	11 481	-1.2%	22.3%		108 081	110 648	-2.3%	136 675	
- Used for pumped storage	39	-81.0%	-75.1%		1 035	993	4.2%	1 018	
- T&D Losses	667	-13.2%	5.3%		6 336	6 913	-8.4%	8 504	
= ELECTRICITY CONSUMED	10 774	1.3%	25.4%		100 710	102 741	-2.0%	127 153	

¹ current month to month of last year change⁴ estimated from annual data² month-to-month change³ year-to-date compared to same period last year

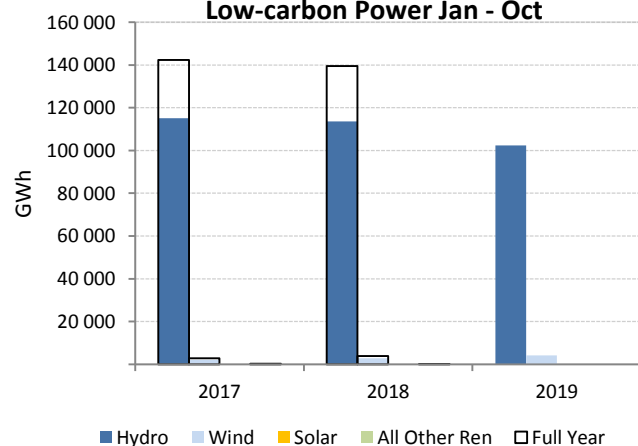
Electricity Production



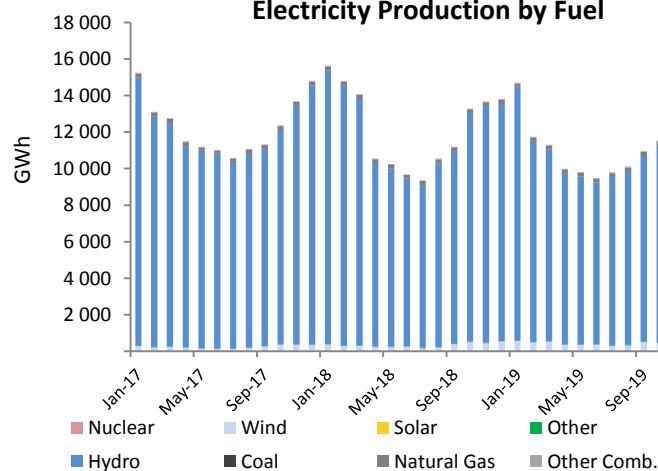
Net Electricity Exports



Low-carbon Power Jan - Oct



Electricity Production by Fuel

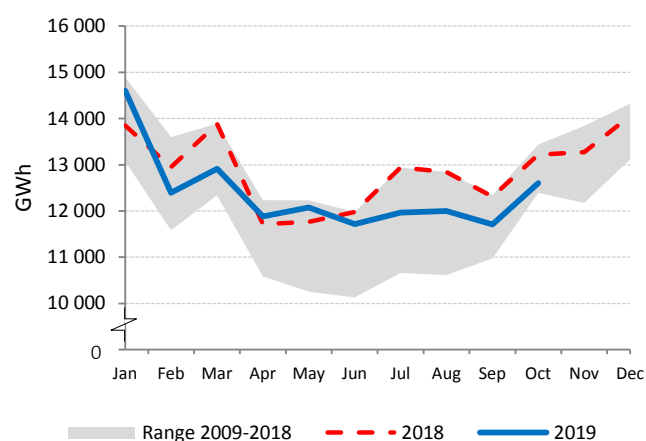


POLAND

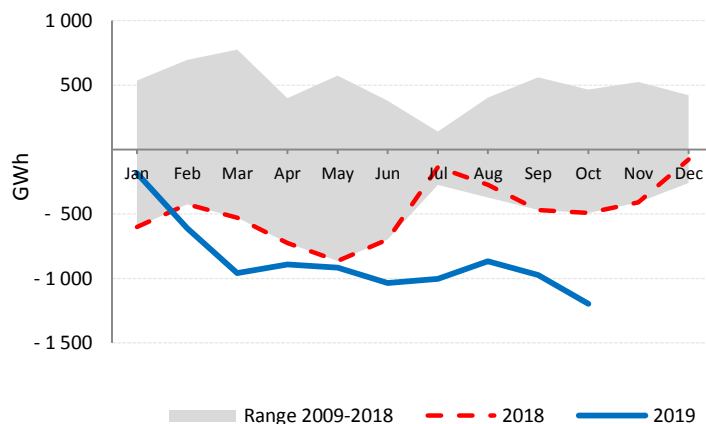
	Oct 2019				Year-to-Date			2018	
	GWh	change ¹	change ²	share	2019	2018	change ³	GWh	share
CONVENTIONAL THERMAL	11 215	-3.4%	8.9%	89.0%	109 197	114 977	-5.0%	139 470	90.1%
Coal	9 209	-7.9%	6.1%	73.1%	90 384	100 674	-9.0%	120 230	77.7%
Oil ⁴	-	-	-	-	-	-	-	1 685	1.1%
Natural Gas	1 145	29.1%	30.8%	9.1%	10 904	9 367	16.4%	11 431	7.4%
Combustible Renewables	597	10.1%	11.8%	4.7%	5 390	4 605	17.1%	5 723	3.7%
Other Combustibles	263	628.4%	28.7%	2.1%	2 519	330	662.6%	400	0.3%
Nuclear	-	-	-	-	-	-	-	-	-
Hydro	159	19.9%	12.4%	1.3%	2 229	2 040	9.3%	2 361	1.5%
Wind	1 160	-20.2%	-2.2%	9.2%	11 714	10 103	15.9%	12 592	8.1%
Solar	63	161.3%	-19.6%	0.5%	678	285	137.8%	301	0.2%
Geothermal	-	-	-	-	-	-	-	-	-
Other Renewables	-	-	-	-	-	-	-	-	-
Non-Specified	6	-	-	0.0%	55	55	-	66	0.0%
RENEWABLES	1 979	-8.1%	2.0%	15.7%	20 010	17 032	17.5%	20 978	13.6%
NON-RENEWABLES	10 623	-4.0%	8.8%	84.3%	103 863	110 427	-5.9%	133 813	86.4%
TOTAL NET PRODUCTION	12 602	-4.7%	7.6%		123 873	127 460	-2.8%	154 790	
+ Imports	1 743	40.4%	8.5%		14 733	11 689	26.0%	13 816	
- Exports	546	-27.2%	-13.9%		6 103	6 481	-5.8%	8 121	
= ELECTRICITY SUPPLIED	13 799	0.6%	8.8%		132 503	132 668	-0.1%	160 485	
- Used for pumped storage	83	41.2%	14.5%		799	519	53.9%	661	
- T&D Losses	1 290	43.1%	32.0%		9 641	8 212	17.4%	9 878	
= ELECTRICITY CONSUMED	12 426	-2.6%	6.8%		122 062	123 936	-1.5%	149 946	

¹ current month to month of last year change⁴ monthly figures are confidential² month-to-month change³ year-to-date compared to same period last year

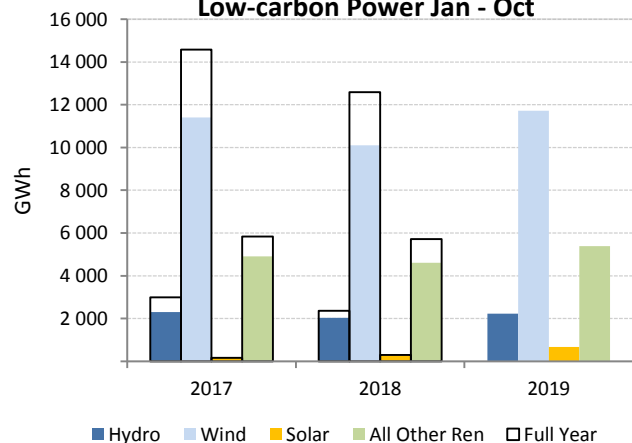
Electricity Production



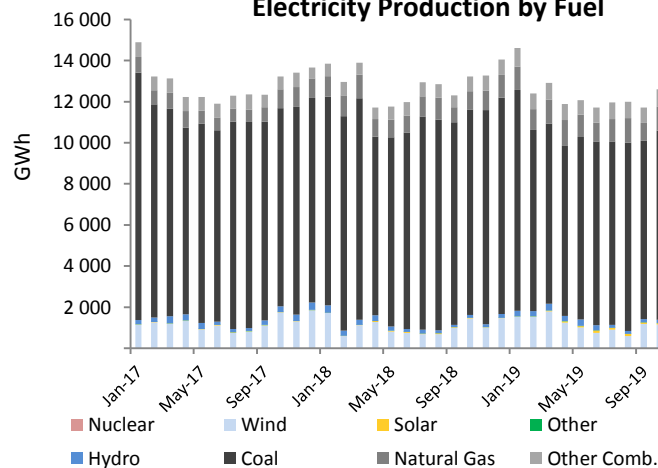
Net Electricity Exports



Low-carbon Power Jan - Oct



Electricity Production by Fuel

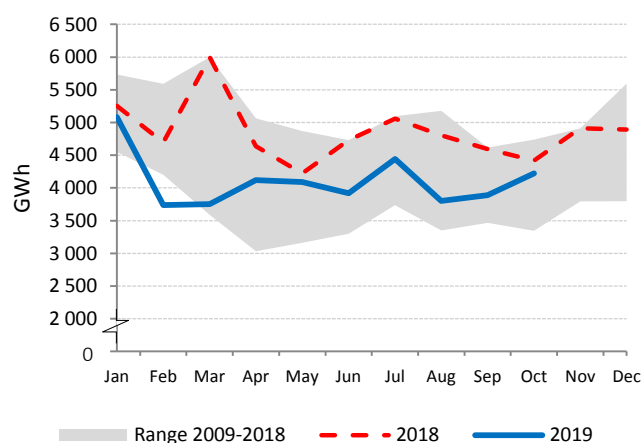


PORTUGAL

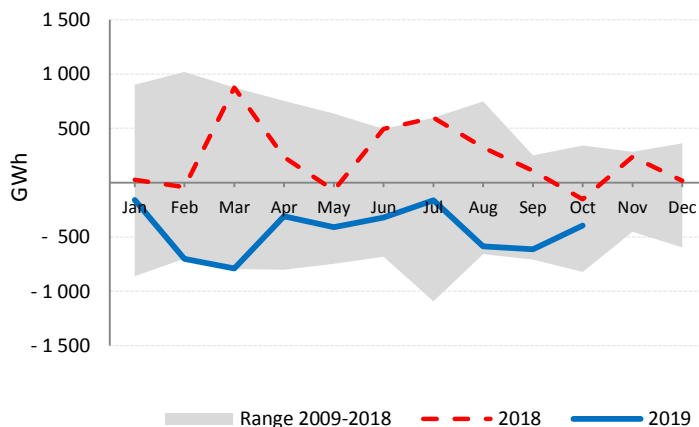
	Oct 2019				Year-to-Date			2018	
	GWh	change ¹	change ²	share	2019	2018	change ³	GWh	share
CONVENTIONAL THERMAL	2 452	-2.5%	14.7%	58.1%	22 608	25 894	-12.7%	30 863	53.0%
Coal	304	-67.6%	488.7%	7.2%	4 923	9 455	-47.9%	11 576	19.9%
Oil	106	4.0%	-12.5%	2.5%	942	931	1.1%	1 120	1.9%
Natural Gas	1 737	40.1%	4.5%	41.2%	13 890	12 696	9.4%	14 832	25.5%
Combustible Renewables	284	30.4%	1.6%	6.7%	2 633	2 580	2.1%	3 075	5.3%
Other Combustibles	21	17.2%	-4.6%	0.5%	220	232	-5.2%	260	0.4%
Nuclear	-	-	-	-	-	-	-	-	-
Hydro	596	-1.8%	-14.7%	14.1%	6 984	11 444	-39.0%	13 609	23.4%
Wind	1 055	-11.6%	16.5%	25.0%	10 082	10 008	0.7%	12 513	21.5%
Solar	102	21.3%	-24.1%	2.4%	1 223	889	37.5%	1 020	1.8%
Geothermal	16	-12.3%	8.1%	0.4%	162	170	-4.6%	204	0.3%
Other Renewables	-	-	-	-	-	-	-	-	-
Non-Specified	-	-	-	-	-	-	-	-	-
RENEWABLES	2 053	-3.2%	1.0%	48.6%	21 084	25 091	-16.0%	30 421	52.3%
NON-RENEWABLES	2 168	-5.6%	16.7%	51.4%	19 975	23 314	-14.3%	27 787	47.7%
TOTAL NET PRODUCTION	4 221	-4.4%	8.5%		41 059	48 404	-15.2%	58 208	
+ Imports	709	15.3%	-17.2%		7 222	4 522	59.7%	5 668	
- Exports	314	-32.1%	28.6%		2 778	6 922	-59.9%	8 325	
= ELECTRICITY SUPPLIED	4 615	1.0%	2.5%		45 502	46 004	-1.1%	55 551	
- Used for pumped storage	155	-5.7%	-11.8%		1 357	1 260	7.7%	1 564	
- T&D Losses	423	2.1%	2.7%		4 200	4 270	-1.6%	5 149	
= ELECTRICITY CONSUMED	4 038	1.2%	3.1%		39 946	40 474	-1.3%	48 838	

¹ current month to month of last year change² month-to-month change³ year-to-date compared to same period last year

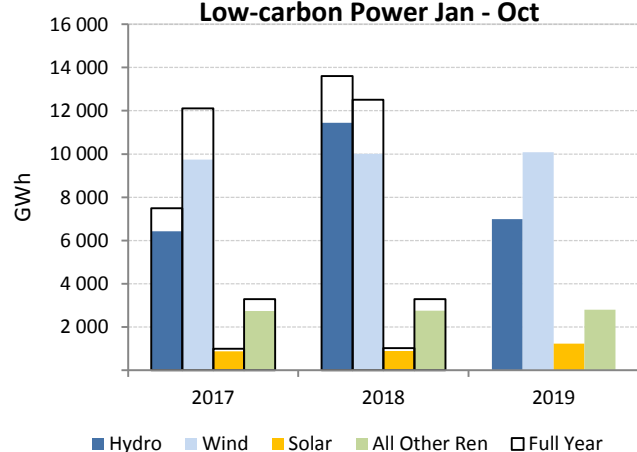
Electricity Production



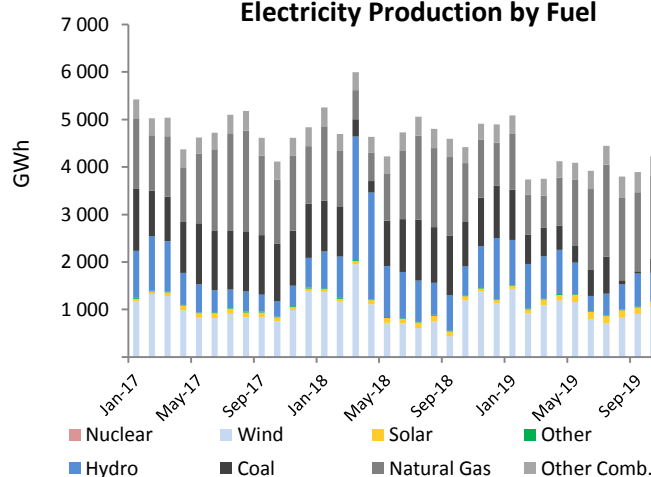
Net Electricity Exports



Low-carbon Power Jan - Oct



Electricity Production by Fuel

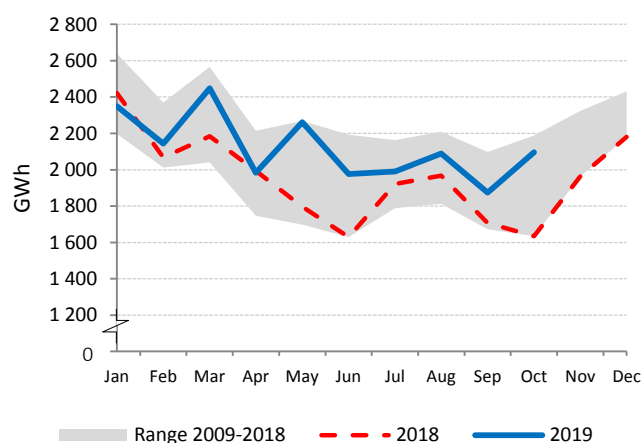


SLOVAK REPUBLIC

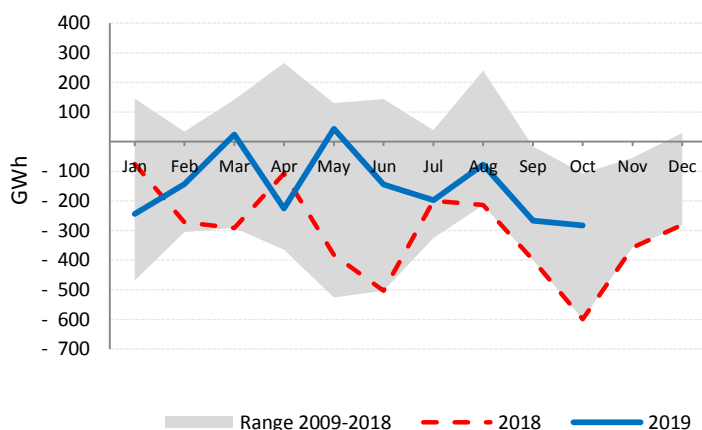
	Oct 2019				Year-to-Date			2018	
	GWh	change ¹	change ²	share	2019	2018	change ³	GWh	share
CONVENTIONAL THERMAL	524	27.0%	28.5%	25.0%	5 020	4 224	18.8%	5 189	22.1%
Coal	162	-14.4%	70.3%	7.7%	1 882	1 948	-3.4%	2 456	10.5%
Oil	42	96.0%	25.6%	2.0%	278	288	-3.3%	338	1.4%
Natural Gas	243	197.8%	15.1%	11.6%	1 986	933	112.9%	1 144	4.9%
Combustible Renewables	76	-36.0%	14.0%	3.6%	861	1 042	-17.4%	1 235	5.3%
Other Combustibles	1	-28.2%	-30.0%	0.0%	13	14	-3.1%	17	0.1%
Nuclear	1 288	31.9%	11.8%	61.4%	11 762	11 221	4.8%	13 797	58.8%
Hydro	229	16.8%	-9.0%	10.9%	3 827	3 282	16.6%	3 834	16.3%
Wind	-	-	-	-	1	4	-66.7%	6	0.0%
Solar	50	11.1%	-13.8%	2.4%	556	549	1.3%	585	2.5%
Geothermal	-	-	-	-	-	-	-	-	-
Other Renewables	-	-	-	-	-	-	-	-	-
Non-Specified	5	25.0%	25.0%	0.3%	42	49	-13.3%	60	0.3%
RENEWABLES	355	-1.7%	-5.7%	16.9%	5 245	4 877	7.6%	5 660	24.1%
NON-RENEWABLES	1 741	36.7%	16.3%	83.1%	15 964	14 451	10.5%	17 810	75.9%
TOTAL NET PRODUCTION	2 096	28.2%	11.9%		21 209	19 328	9.7%	23 470	
+ Imports	1 416	1.6%	6.2%		11 521	9 780	17.8%	12 427	
- Exports	1 133	42.5%	6.3%		10 007	6 737	48.5%	8 746	
= ELECTRICITY SUPPLIED	2 379	6.5%	11.1%		22 723	22 371	1.6%	27 151	
- Used for pumped storage	23	-32.4%	-11.5%		245	323	-24.1%	401	
- T&D Losses ⁴	112	16.1%	9.5%		1 042	927	12.4%	1 143	
= ELECTRICITY CONSUMED	2 244	6.7%	11.5%		21 436	21 121	1.5%	25 608	

¹ current month to month of last year change⁴ estimated² month-to-month change³ year-to-date compared to same period last year

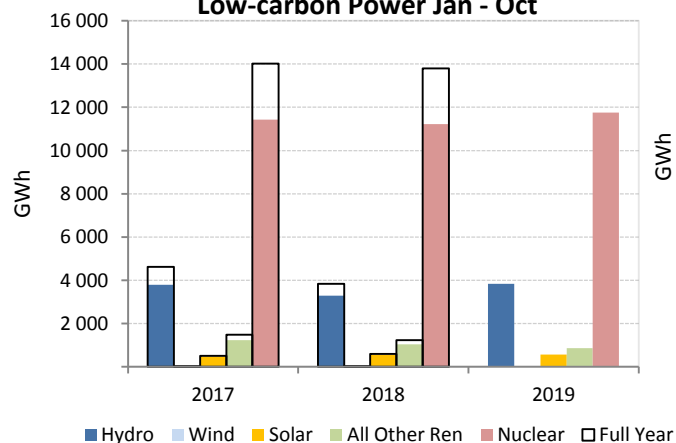
Electricity Production



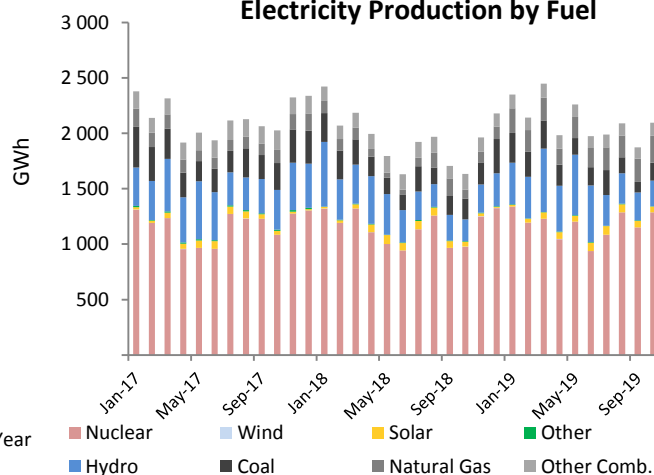
Net Electricity Exports



Low-carbon Power Jan - Oct



Electricity Production by Fuel

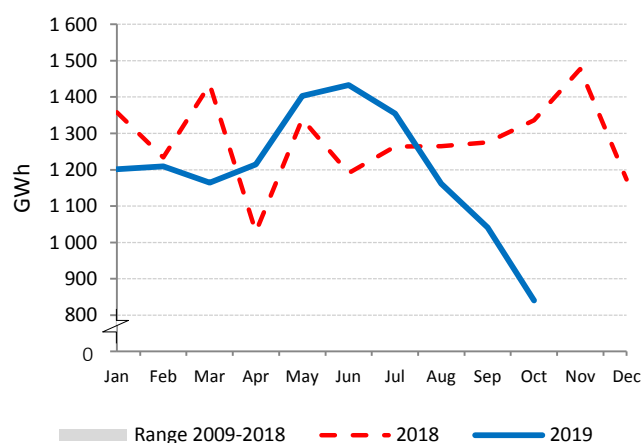


SLOVENIA

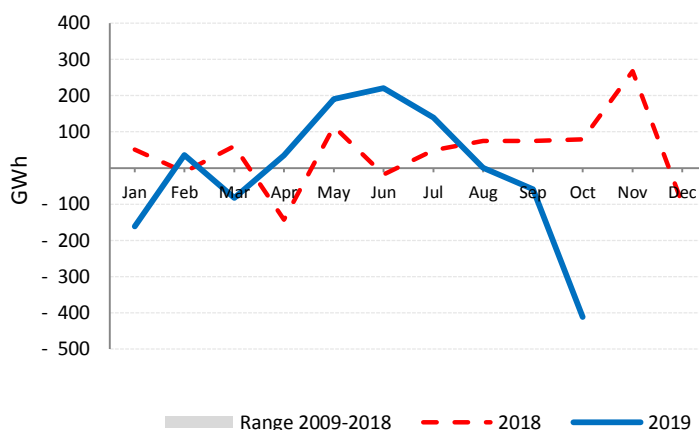
	Oct 2019				Year-to-Date			2018	
	GWh	change ¹	change ²	share	2019	2018	change ³	GWh	share
CONVENTIONAL THERMAL	537	4.5%	82.0%	63.9%	3 868	3 901	-0.8%	4 801	31.2%
Coal	471	3.6%	86.6%	56.0%	3 323	3 369	-1.4%	4 131	26.9%
Oil	0	-66.8%	301.4%	0.0%	4	13	-70.2%	15	0.1%
Natural Gas	46	28.9%	72.6%	5.5%	364	324	12.4%	413	2.7%
Combustible Renewables	20	-10.6%	27.3%	2.3%	170	188	-9.4%	233	1.5%
Other Combustibles	0	-72.6%	-61.4%	0.0%	7	8	-6.3%	9	0.1%
Nuclear	21	-95.8%	-95.6%	2.6%	4 524	4 472	1.2%	5 489	35.7%
Hydro	261	-10.1%	12.8%	31.1%	3 378	4 110	-17.8%	4 826	31.4%
Wind	0	-45.5%	-33.0%	0.1%	5	5	5.9%	6	0.0%
Solar	20	3.1%	-20.8%	2.4%	250	238	4.9%	255	1.7%
Geothermal	-	-	-	-	-	-	-	-	-
Other Renewables	-	-	-	-	-	-	-	-	-
Non-Specified	-	-	-	-	-	-	-	-	-
RENEWABLES	302	-9.5%	10.4%	35.9%	3 802	4 541	-16.3%	5 320	34.6%
NON-RENEWABLES	539	-46.3%	-29.8%	64.1%	8 222	8 186	0.4%	10 057	65.4%
TOTAL NET PRODUCTION	840	-37.1%	-19.3%		12 024	12 726	-5.5%	15 377	
+ Imports	909	24.3%	28.5%		7 848	7 465	5.1%	8 930	
- Exports	498	-38.6%	-23.3%		7 755	7 797	-0.5%	9 432	
= ELECTRICITY SUPPLIED	1 252	-0.4%	13.9%		12 117	12 394	-2.2%	14 875	
- Used for pumped storage	32	-5.5%	10.3%		200	250	-19.8%	252	
- T&D Losses	64	-11.7%	20.3%		674	686	-1.8%	889	
= ELECTRICITY CONSUMED	1 156	0.4%	13.6%		11 243	11 458	-1.9%	13 733	

¹ current month to month of last year change² month-to-month change³ year-to-date compared to same period last year

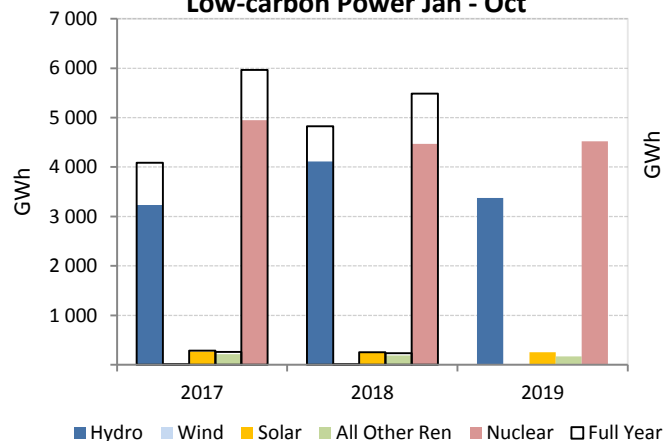
Electricity Production



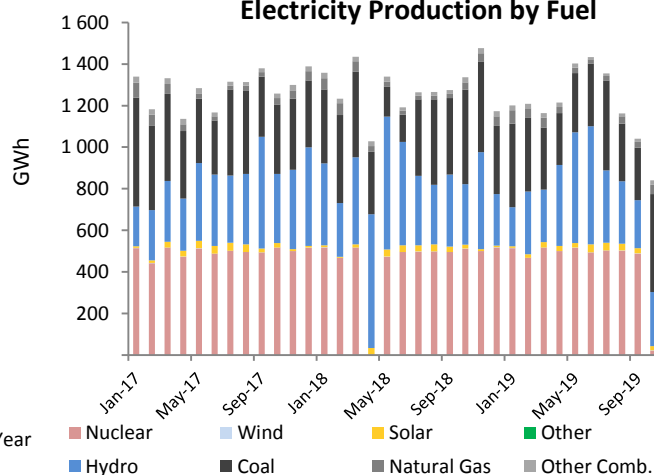
Net Electricity Exports



Low-carbon Power Jan - Oct



Electricity Production by Fuel

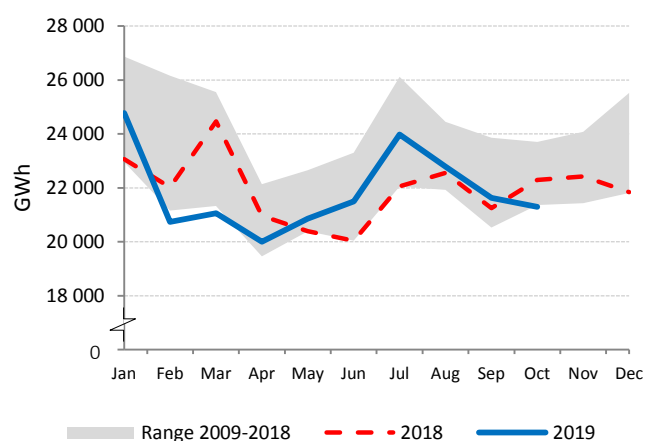


SPAIN

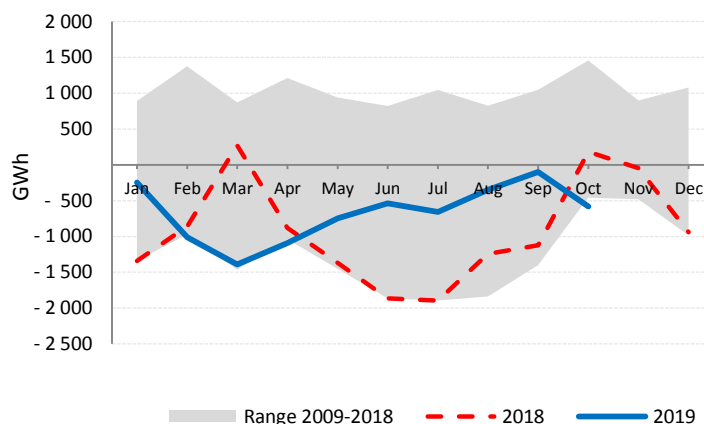
	Oct 2019				Year-to-Date			2018	
	GWh	change ¹	change ²	share	2019	2018	change ³	GWh	share
CONVENTIONAL THERMAL	10 634	3.4%	5.3%	49.9%	96 915	90 872	6.6%	112 196	42.6%
Coal	867	-75.6%	26.8%	4.1%	11 483	30 418	-62.2%	37 430	14.2%
Oil	1 104	-10.5%	1.7%	5.2%	10 668	11 512	-7.3%	13 750	5.2%
Natural Gas	8 089	64.2%	4.3%	38.0%	69 181	43 401	59.4%	54 356	20.6%
Combustible Renewables	520	2.4%	2.1%	2.4%	5 023	4 941	1.7%	5 941	2.3%
Other Combustibles	55	-14.5%	-8.6%	0.3%	559	600	-6.8%	719	0.3%
Nuclear	4 525	-12.0%	-9.3%	21.2%	47 985	45 096	6.4%	53 203	20.2%
Hydro	1 237	-26.2%	-7.1%	5.8%	18 603	31 187	-40.4%	36 116	13.7%
Wind	3 816	-11.8%	-2.1%	17.9%	41 780	40 639	2.8%	49 571	18.8%
Solar	1 077	25.4%	-17.6%	5.1%	13 247	11 222	18.0%	12 182	4.6%
Geothermal	-	-	-	-	-	-	-	-	-
Other Renewables	-	-	-	-	-	-	-	-	-
Non-Specified	10	-	-	0.0%	101	101	-	121	0.0%
RENEWABLES	6 650	-9.8%	-5.6%	31.2%	78 653	87 989	-10.6%	103 810	39.4%
NON-RENEWABLES	14 649	-1.9%	0.4%	68.8%	139 979	131 129	6.7%	159 578	60.6%
TOTAL NET PRODUCTION	21 298	-4.5%	-1.5%		218 632	219 118	-0.2%	263 389	
+ Imports	1 488	29.6%	19.8%		15 836	20 595	-23.1%	24 018	
- Exports	907	-31.8%	-20.7%		9 125	10 476	-12.9%	12 916	
= ELECTRICITY SUPPLIED	21 879	-1.1%	0.7%		225 342	229 236	-1.7%	274 491	
- Used for pumped storage	183	-47.8%	-13.4%		2 189	2 803	-21.9%	3 254	
- T&D Losses	2 127	-0.7%	0.8%		21 897	22 286	-1.7%	26 694	
= ELECTRICITY CONSUMED	19 569	-0.3%	0.8%		201 256	204 148	-1.4%	244 543	

¹ current month to month of last year change² month-to-month change³ year-to-date compared to same period last year

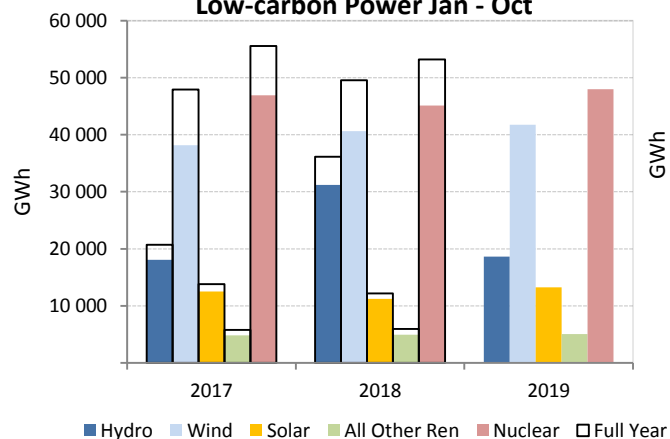
Electricity Production



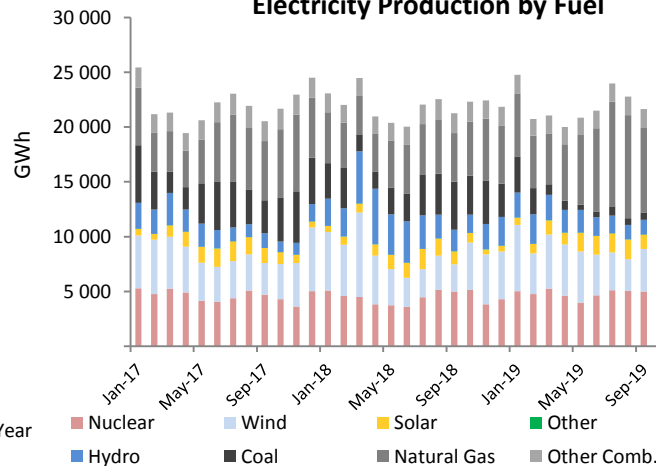
Net Electricity Exports



Low-carbon Power Jan - Oct



Electricity Production by Fuel

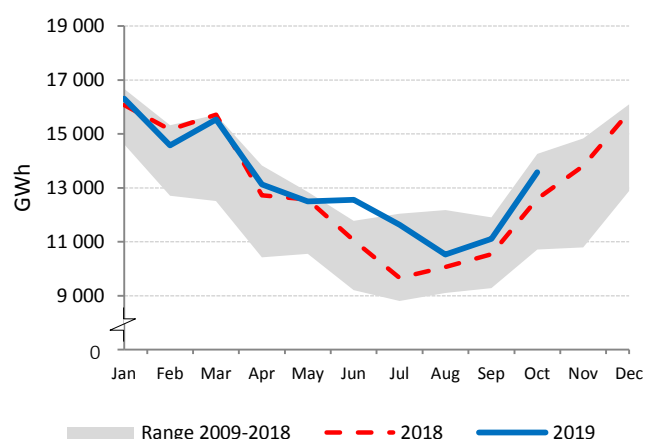


SWEDEN

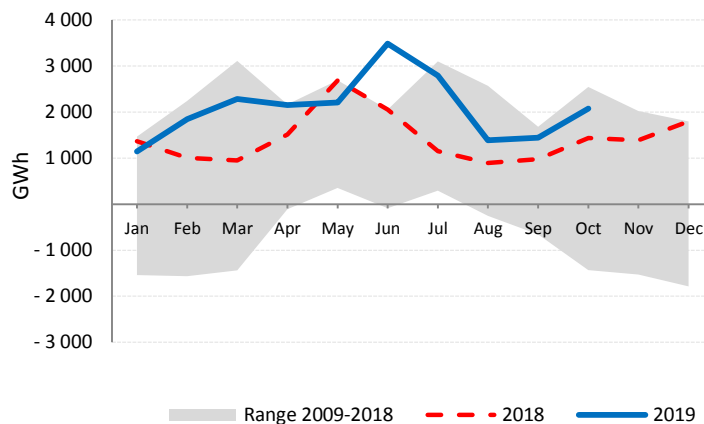
	Oct 2019				Year-to-Date			2018	
	GWh	change ¹	change ²	share	2019	2018	change ³	GWh	share
CONVENTIONAL THERMAL	999	1.8%	30.8%	7.4%	11 902	10 940	8.8%	14 335	9.2%
Coal	8	-82.9%	2953.7%	0.1%	1 224	1 432	-14.5%	1 964	1.3%
Oil	17	-9.7%	-60.7%	0.1%	336	322	4.2%	366	0.2%
Natural Gas	6	-56.8%	107.5%	0.0%	434	391	10.9%	544	0.3%
Combustible Renewables	864	8.1%	36.1%	6.4%	8 971	7 842	14.4%	10 269	6.6%
Other Combustibles	104	0.9%	26.4%	0.8%	938	954	-1.6%	1 193	0.8%
Nuclear	5 244	-6.9%	25.4%	38.6%	50 922	51 955	-2.0%	63 229	40.6%
Hydro	5 678	42.9%	26.8%	41.8%	52 332	49 538	5.6%	61 169	39.3%
Wind	1 636	-17.6%	-1.2%	12.0%	15 925	13 323	19.5%	16 623	10.7%
Solar⁴	23	-	-37.9%	0.2%	387	387	-	404	0.3%
Geothermal	-	-	-	-	-	-	-	-	-
Other Renewables	-	-	-	-	-	-	-	-	-
Non-Specified	-	-	-	-	-	-	-	-	-
RENEWABLES	8 200	20.9%	20.5%	60.4%	77 615	71 090	9.2%	88 465	56.8%
NON-RENEWABLES	5 380	-7.5%	24.8%	39.6%	53 853	55 054	-2.2%	67 295	43.2%
TOTAL NET PRODUCTION	13 580	7.8%	22.2%		131 468	126 144	4.2%	155 760	
+ Imports	706	-35.5%	-21.0%		7 286	10 231	-28.8%	12 202	
- Exports	2 782	10.1%	18.9%		28 109	24 274	15.8%	29 431	
= ELECTRICITY SUPPLIED	11 504	3.0%	19.0%		110 645	112 102	-1.3%	138 531	
- Used for pumped storage	-	-	-		23	56	-59.0%	56	
- T&D Losses	617	2.2%	33.9%		5 760	5 870	-1.9%	7 450	
= ELECTRICITY CONSUMED	10 887	3.1%	18.2%		104 862	106 176	-1.2%	131 025	

¹ current month to month of last year change⁴ estimated by the IEA secretariat² month-to-month change³ year-to-date compared to same period last year

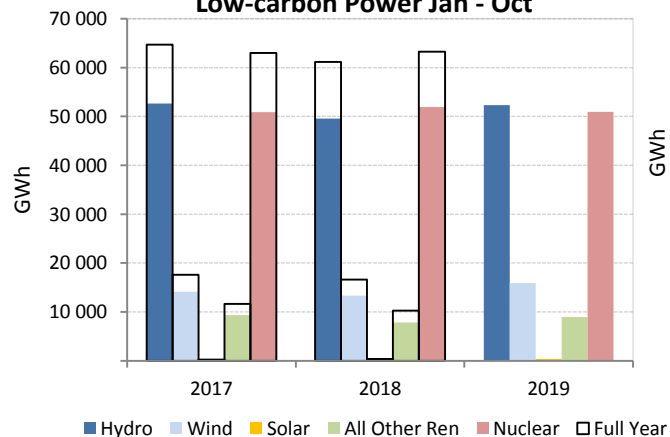
Electricity Production



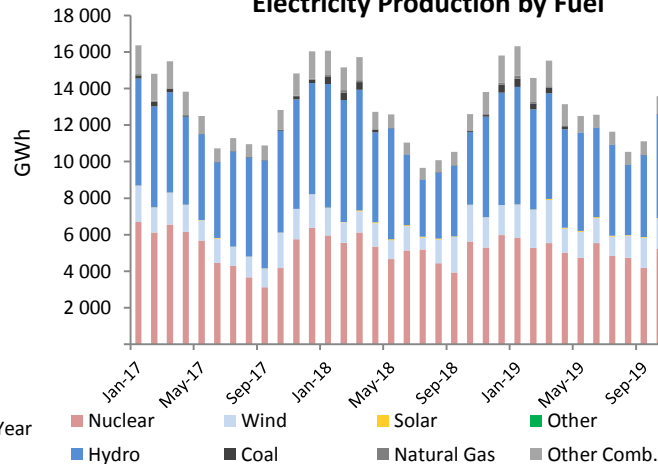
Net Electricity Exports



Low-carbon Power Jan - Oct



Electricity Production by Fuel

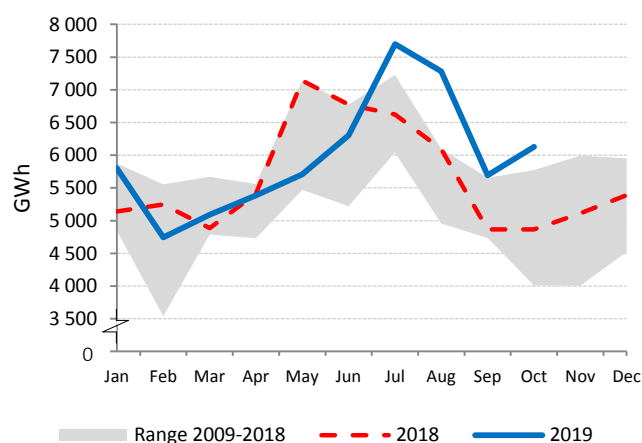


SWITZERLAND

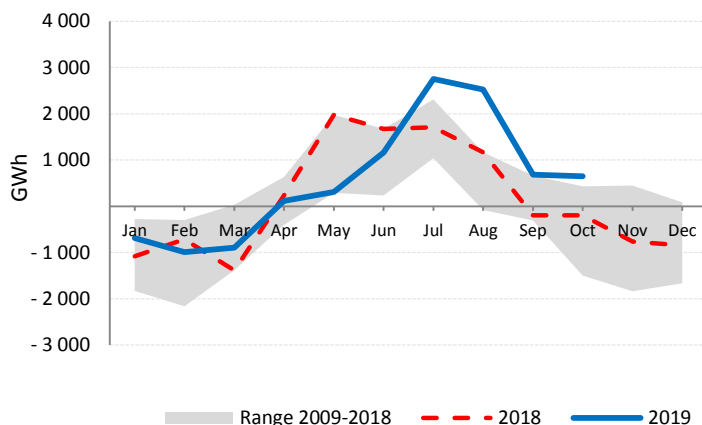
	Oct 2019				Year-to-Date			2018	
	GWh	change ¹	change ²	share	2019	2018	change ³	GWh	share
CONVENTIONAL THERMAL	324	4.2%	2.4%	5.3%	3 139	2 999	4.7%	3 701	5.5%
Coal	-	-	-	-	-	-	-	-	-
Oil	3	-	-	0.1%	30	28	8.6%	34	0.1%
Natural Gas	52	-10.0%	2.9%	0.8%	504	561	-10.2%	693	1.0%
Combustible Renewables	165	10.3%	2.2%	2.7%	1 595	1 439	10.9%	1 776	2.6%
Other Combustibles	104	3.4%	2.5%	1.7%	1 010	971	4.0%	1 198	1.8%
Nuclear	2 423	40.6%	12.9%	39.5%	20 504	19 839	3.4%	24 414	36.1%
Hydro	3 241	22.5%	6.7%	52.9%	34 145	32 323	5.6%	37 428	55.4%
Wind	14	100.0%	40.0%	0.2%	114	94	21.5%	121	0.2%
Solar	126	-30.0%	-31.1%	2.0%	1 929	1 794	7.5%	1 884	2.8%
Geothermal	-	-	-	-	-	-	-	-	-
Other Renewables	-	-	-	-	-	-	-	-	-
Non-Specified	-	-	-	-	-	-	-	-	-
RENEWABLES	3 546	18.9%	4.6%	57.9%	37 783	35 650	6.0%	41 209	61.0%
NON-RENEWABLES	2 582	37.0%	12.2%	42.1%	22 048	21 399	3.0%	26 339	39.0%
TOTAL NET PRODUCTION	6 128	25.9%	7.6%		59 831	57 049	4.9%	67 548	
+ Imports	2 907	27.5%	28.4%		24 814	24 270	2.2%	31 020	
- Exports	3 555	70.7%	20.6%		30 450	27 461	10.9%	32 607	
= ELECTRICITY SUPPLIED	5 480	8.2%	9.4%		54 194	53 857	0.6%	65 961	
- Used for pumped storage	378	-2.5%	2.1%		3 452	3 372	2.4%	3 987	
- T&D Losses	394	14.2%	14.6%		3 789	3 757	0.9%	4 574	
= ELECTRICITY CONSUMED	4 708	8.7%	9.6%		46 954	46 729	0.5%	57 399	

¹ current month to month of last year change² month-to-month change³ year-to-date compared to same period last year

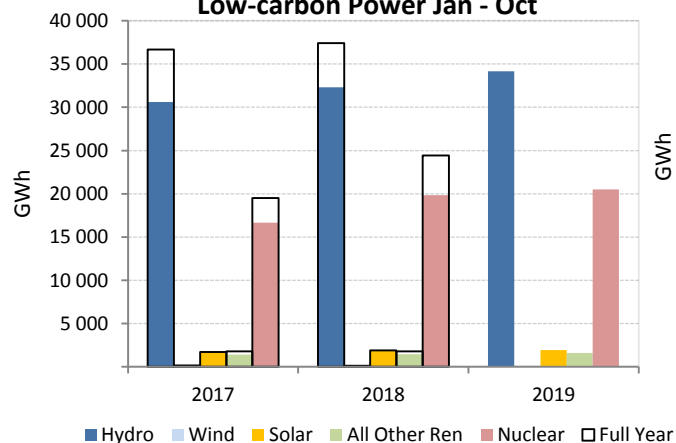
Electricity Production



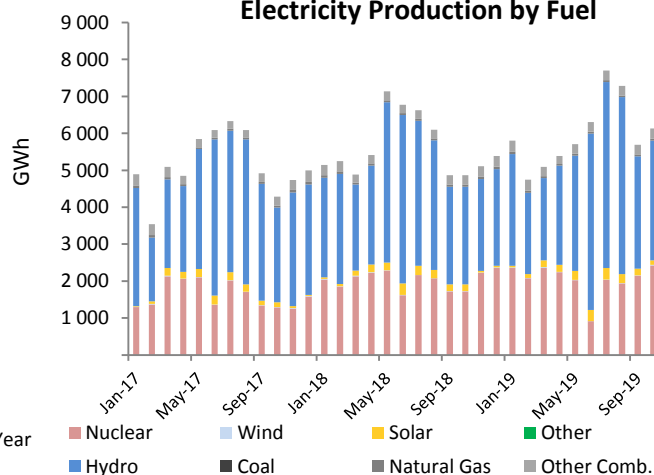
Net Electricity Exports



Low-carbon Power Jan - Oct



Electricity Production by Fuel

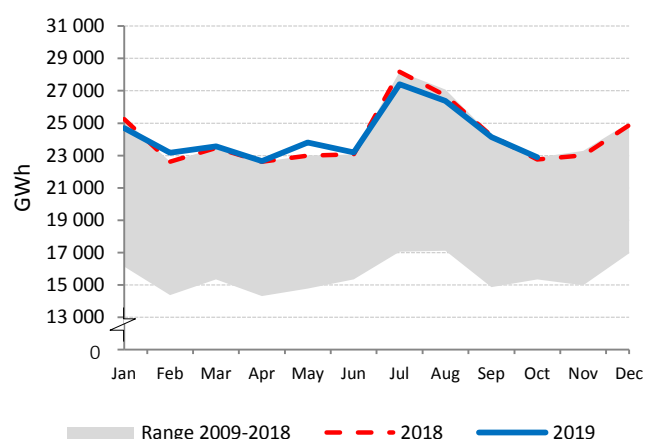


TURKEY

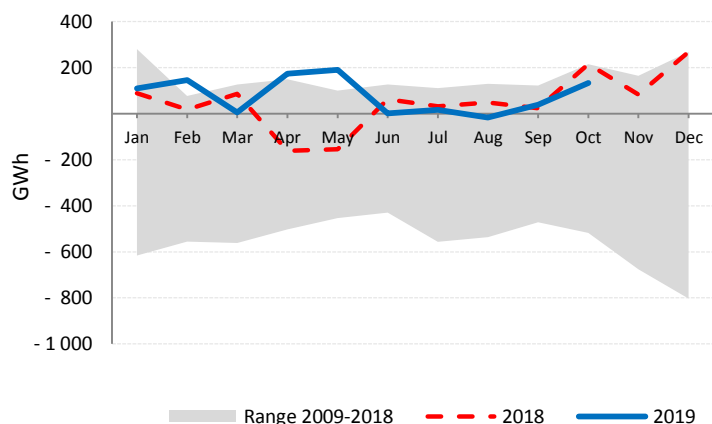
	Oct 2019				Year-to-Date			2018	
	GWh	change ¹	change ²	share	2019	2018	change ³	GWh	share
CONVENTIONAL THERMAL	15 156	-14.0%	0.6%	66.2%	130 988	164 256	-20.3%	196 932	68.0%
Coal	10 178	6.3%	2.3%	44.5%	86 023	88 023	-2.3%	106 878	36.9%
Oil	14	-50.2%	10.5%	0.1%	202	249	-18.8%	311	0.1%
Natural Gas	4 696	-39.2%	-2.9%	20.5%	42 178	73 932	-43.0%	87 234	30.1%
Combustible Renewables	268	-8.5%	-1.3%	1.2%	2 579	2 031	27.0%	2 488	0.9%
Other Combustibles	1	241.0%	131.7%	0.0%	5	21	-74.3%	22	0.0%
Nuclear	-	-	-	-	-	-	-	-	-
Hydro	5 009	109.2%	-10.1%	21.9%	77 689	49 594	56.6%	59 076	20.4%
Wind	1 252	-16.9%	-36.5%	5.5%	18 163	16 055	13.1%	19 748	6.8%
Solar	805	21.8%	-15.0%	3.5%	8 147	6 535	24.7%	7 305	2.5%
Geothermal	592	13.1%	13.8%	2.6%	6 261	4 674	33.9%	5 797	2.0%
Other Renewables	-	-	-	-	-	-	-	-	-
Non-Specified	82	60.3%	28.6%	0.4%	698	754	-7.4%	890	0.3%
RENEWABLES	7 926	47.4%	-14.6%	34.6%	112 839	78 889	43.0%	94 414	32.6%
NON-RENEWABLES	14 971	-13.9%	0.7%	65.4%	129 107	162 979	-20.8%	195 334	67.4%
TOTAL NET PRODUCTION	22 896	0.6%	-5.2%		241 947	241 868	0.0%	289 748	
+ Imports	127	-13.8%	-1.7%		1 603	2 088	-23.2%	2 466	
- Exports	260	-28.1%	54.8%		2 399	2 345	2.3%	3 074	
= ELECTRICITY SUPPLIED	22 763	1.0%	-5.6%		241 151	241 612	-0.2%	289 140	
- Used for pumped storage	-	-	-		-	-	-	-	
- T&D Losses ⁴	3 038	0.7%	-5.1%		32 142	32 200	-0.2%	38 564	
= ELECTRICITY CONSUMED	19 725	1.0%	-5.6%		209 009	209 412	-0.2%	250 576	

¹ current month to month of last year change⁴ estimated² month-to-month change³ year-to-date compared to same period last year

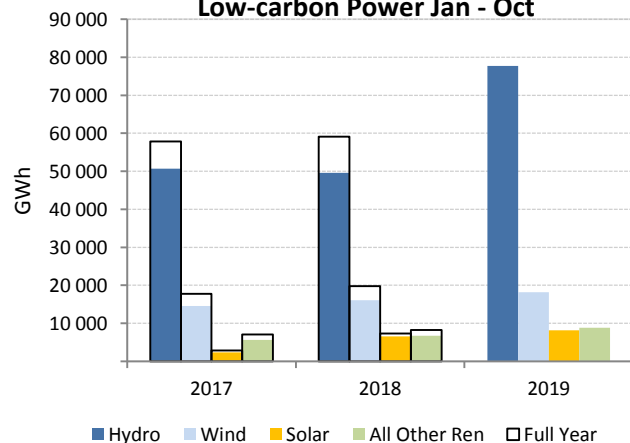
Electricity Production



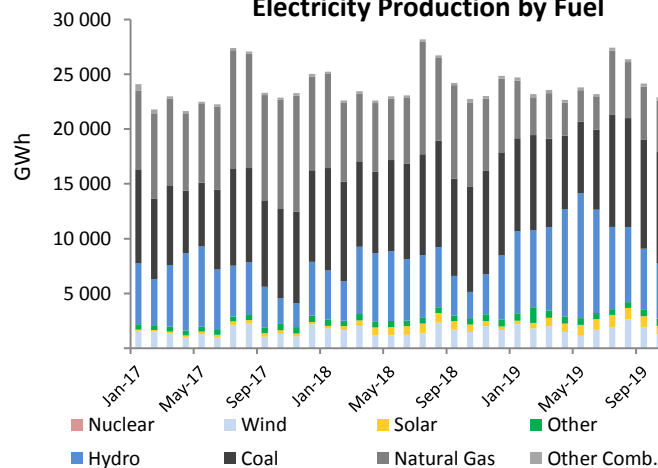
Net Electricity Exports



Low-carbon Power Jan - Oct



Electricity Production by Fuel

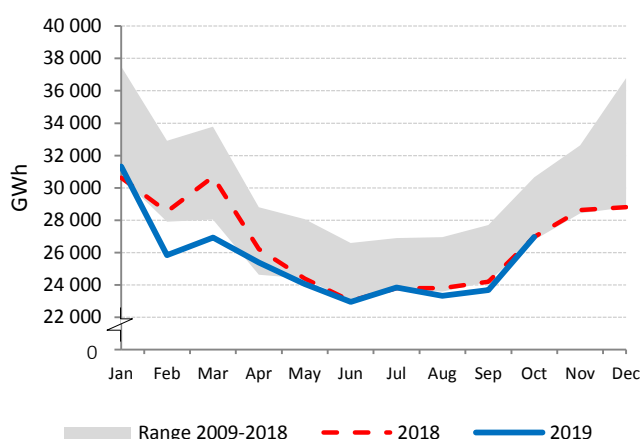


UNITED KINGDOM

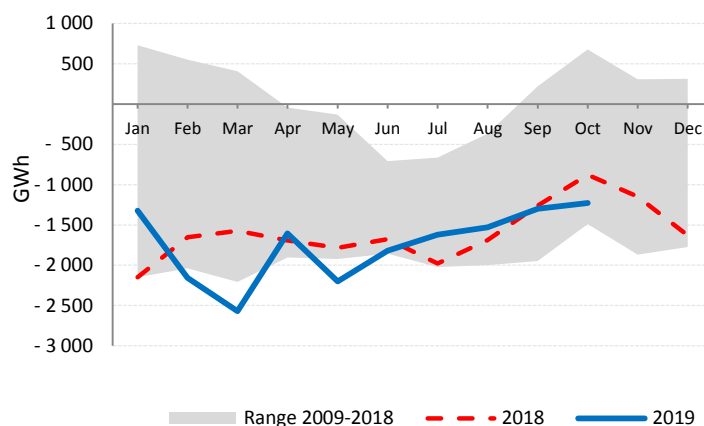
	Oct 2019				Year-to-Date			2018	
	GWh	change ¹	change ²	share	2019	2018	change ³	GWh	share
CONVENTIONAL THERMAL	14 421	-5.9%	21.1%	53.5%	143 655	149 846	-4.1%	182 651	57.1%
Coal	407	-61.8%	70.1%	1.5%	4 631	12 832	-63.9%	16 815	5.3%
Oil	125	-15.9%	4.4%	0.5%	1 251	1 299	-3.7%	1 610	0.5%
Natural Gas	10 717	2.3%	27.6%	39.7%	105 179	104 334	0.8%	125 839	39.4%
Combustible Renewables	2 810	-14.4%	0.5%	10.4%	29 007	27 801	4.3%	34 120	10.7%
Other Combustibles	361	1.2%	3.2%	1.3%	3 587	3 581	0.2%	4 268	1.3%
Nuclear	4 804	15.4%	6.8%	17.8%	41 650	50 051	-16.8%	59 098	18.5%
Hydro	826	-4.6%	15.4%	3.1%	6 192	6 227	-0.6%	7 902	2.5%
Wind	6 185	6.0%	17.6%	22.9%	50 792	44 033	15.3%	57 116	17.9%
Solar	732	-4.0%	-44.2%	2.7%	12 059	12 089	-0.2%	12 922	4.0%
Geothermal	-	-	-	-	-	-	-	-	-
Other Renewables	1	-	-	0.0%	7	7	-	8	0.0%
Non-Specified	-	-	-	-	-	-	-	-	-
RENEWABLES	10 555	-1.8%	4.6%	39.1%	98 057	90 156	8.8%	112 068	35.1%
NON-RENEWABLES	16 415	1.3%	20.6%	60.9%	156 297	172 095	-9.2%	207 629	64.9%
TOTAL NET PRODUCTION	26 970	0.0%	13.8%		254 355	262 252	-3.0%	319 697	
+ Imports	1 631	36.4%	-2.2%		20 056	17 976	11.6%	21 332	
- Exports	401	26.2%	8.8%		2 704	1 644	64.5%	2 225	
= ELECTRICITY SUPPLIED	28 200	1.3%	12.8%		271 707	278 584	-2.5%	338 804	
- Used for pumped storage	227	-7.0%	37.0%		1 943	2 880	-32.5%	3 391	
- T&D Losses	2 285	10.5%	32.7%		22 152	21 896	1.2%	26 894	
= ELECTRICITY CONSUMED	25 687	0.6%	11.2%		247 612	253 808	-2.4%	308 520	

¹ current month to month of last year change² month-to-month change³ year-to-date compared to same period last year

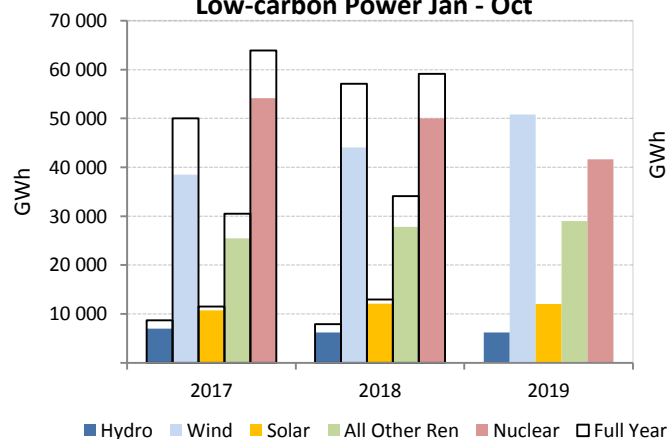
Electricity Production



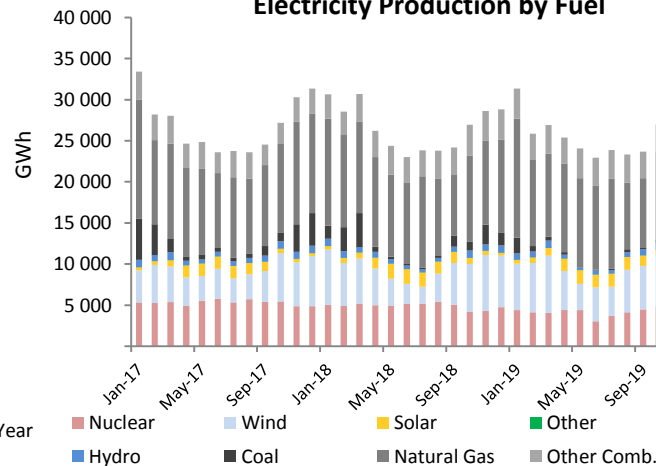
Net Electricity Exports



Low-carbon Power Jan - Oct



Electricity Production by Fuel

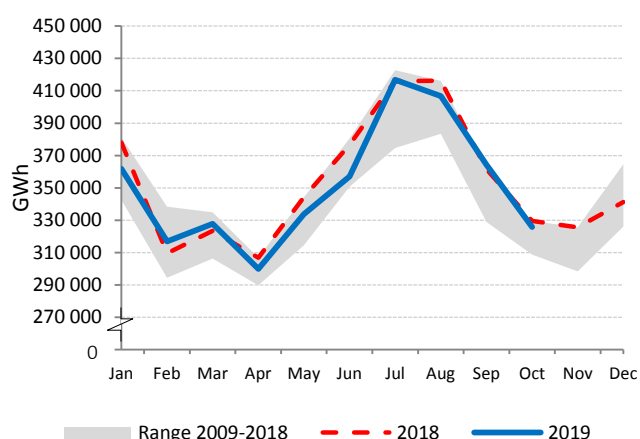


UNITED STATES

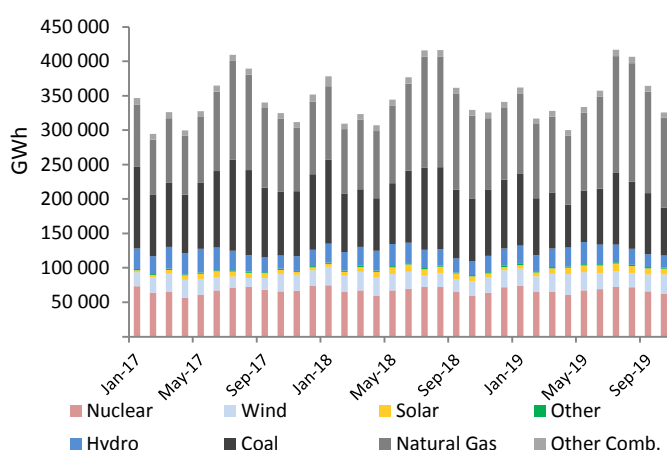
	Oct 2019				Year-to-Date			2018	
	GWh	change ¹	change ²	share	2019	2018	change ³	GWh	share
CONVENTIONAL THERMAL	207 791	-5.3%	-15.1%	63.8%	2 233 160	2 300 498	-2.9%	2 722 002	64.4%
Coal	69 502	-23.0%	-21.9%	21.3%	847 551	988 335	-14.2%	1 184 075	28.0%
Oil	2 257	-10.6%	-24.1%	0.7%	27 353	31 069	-12.0%	36 644	0.9%
Natural Gas	130 537	8.0%	-11.2%	40.1%	1 300 500	1 220 182	6.6%	1 428 406	33.8%
Combustible Renewables	4 704	-8.0%	-2.9%	1.4%	50 090	53 174	-5.8%	63 569	1.5%
Other Combustibles	792	2.2%	-2.8%	0.2%	7 666	7 737	-0.9%	9 308	0.2%
Nuclear	62 059	4.4%	-5.9%	19.0%	672 330	671 718	0.1%	807 381	19.1%
Hydro	17 789	-13.2%	-3.8%	5.5%	249 557	264 748	-5.7%	313 544	7.4%
Wind	28 174	33.0%	15.8%	8.6%	249 465	227 440	9.7%	274 819	6.5%
Solar	8 365	17.1%	-9.2%	2.6%	88 961	80 504	10.5%	90 286	2.1%
Geothermal	1 246	-5.6%	-7.7%	0.4%	13 569	13 257	2.4%	16 131	0.4%
Other Renewables	-	-	-	-	-	-	-	-	-
Non-Specified	416	-6.0%	-5.9%	0.1%	4 153	3 903	6.4%	4 813	0.1%
RENEWABLES	60 277	9.1%	3.5%	18.5%	651 642	639 123	2.0%	758 349	17.9%
NON-RENEWABLES	265 562	-3.2%	-13.3%	81.5%	2 859 553	2 922 945	-2.2%	3 470 627	82.1%
TOTAL NET PRODUCTION	325 839	-1.1%	-10.6%		3 511 194	3 562 068	-1.4%	4 228 976	
+ Imports	3 852	14.0%	-17.8%		47 228	50 808	-7.0%	58 274	
- Exports	889	-29.3%	-11.9%		10 092	11 367	-11.2%	13 804	
= ELECTRICITY SUPPLIED	328 803	-0.9%	-10.7%		3 548 330	3 601 509	-1.5%	4 273 445	
- Used for pumped storage	1 774	-15.4%	-34.3%		22 499	23 871	-5.7%	27 407	
- T&D Losses	12 131	-11.2%	-25.3%		201 871	208 896	-3.4%	251 569	
= ELECTRICITY CONSUMED	314 897	-0.3%	-9.8%		3 323 959	3 368 742	-1.3%	3 994 469	

¹ current month to month of last year change² month-to-month change³ year-to-date compared to same period last year

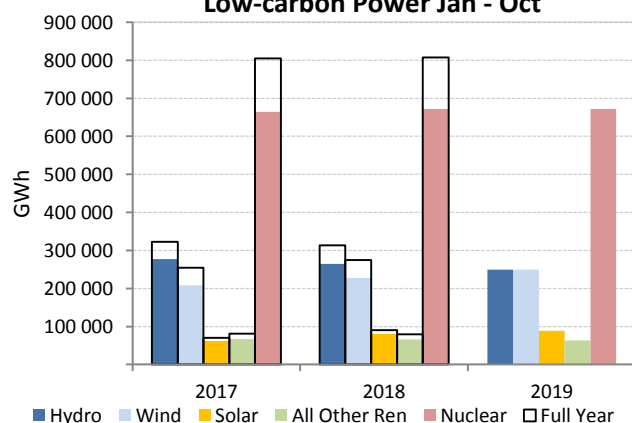
Electricity Production



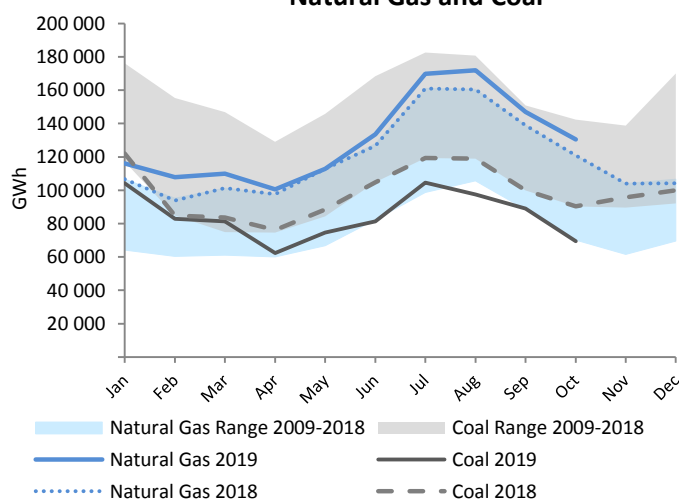
Electricity Production by Fuel



Low-carbon Power Jan - Oct

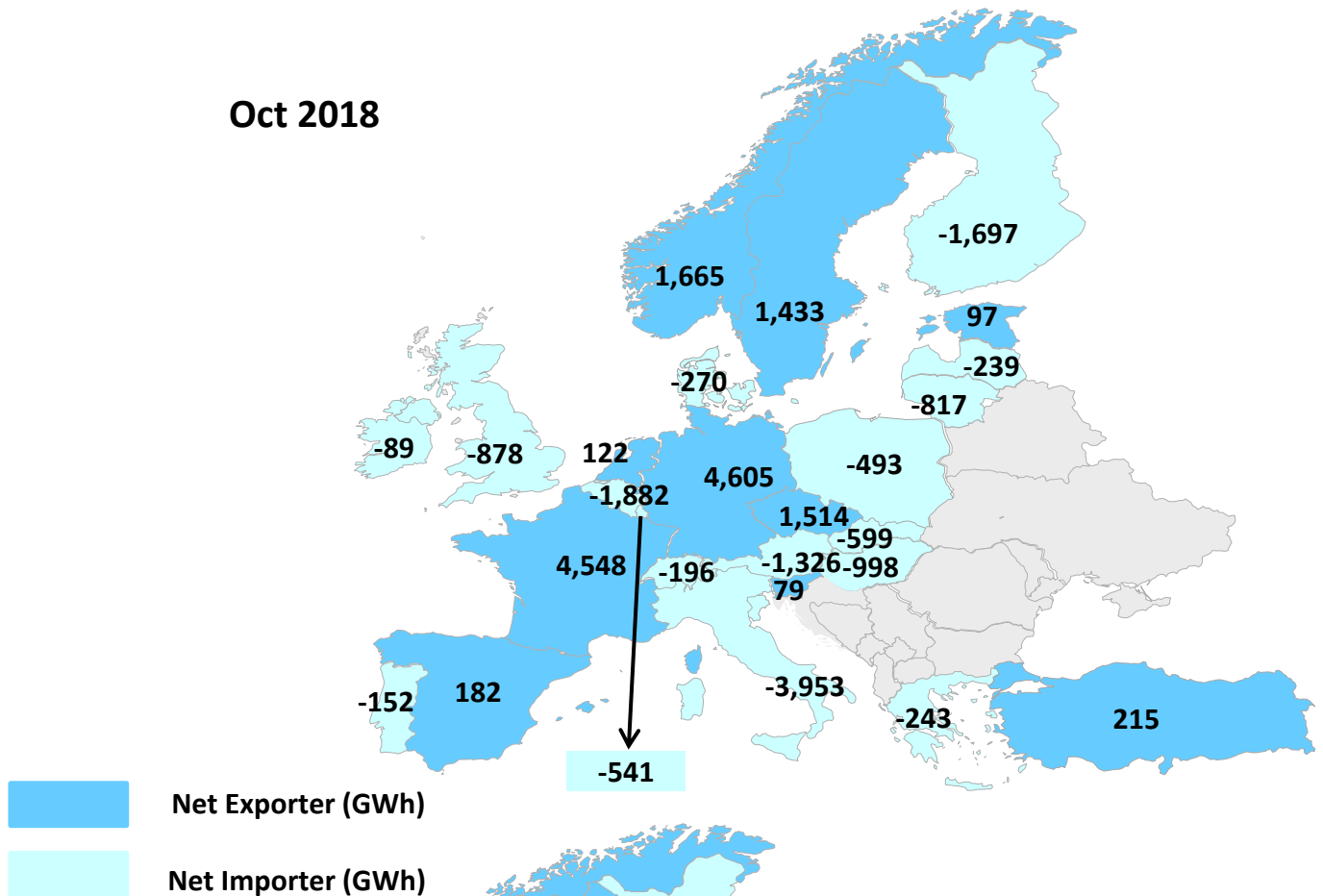


Natural Gas and Coal

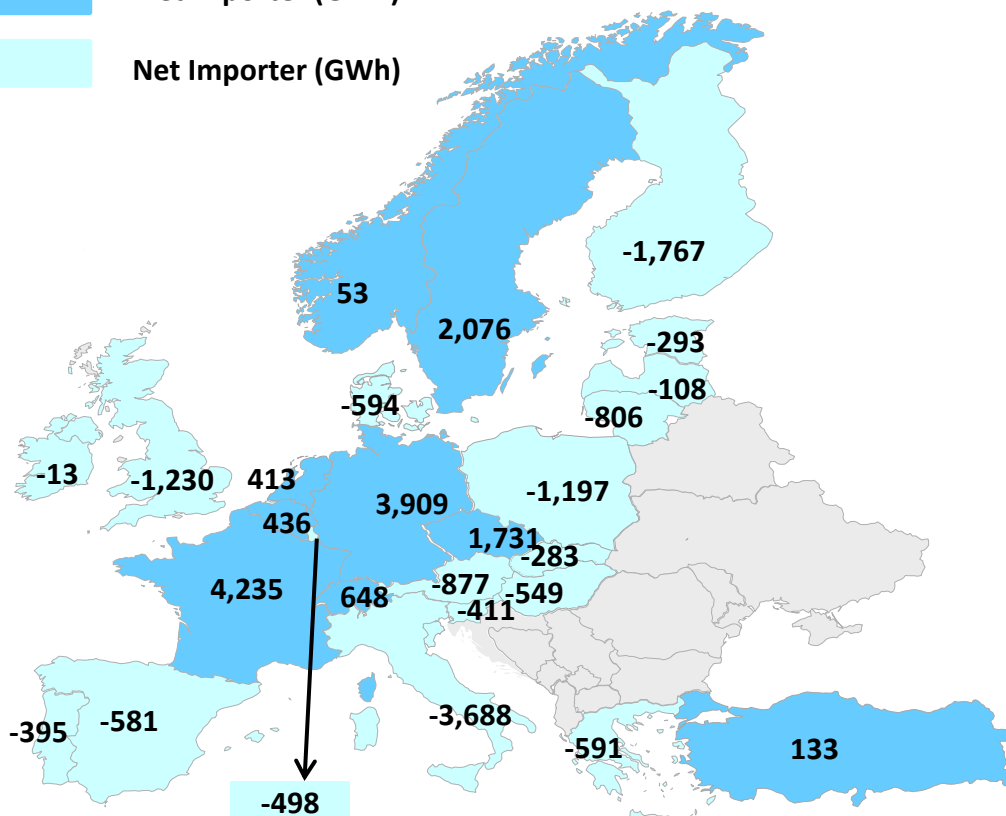


NET ELECTRICITY EXPORTS OECD EUROPE MAP 1

Oct 2018

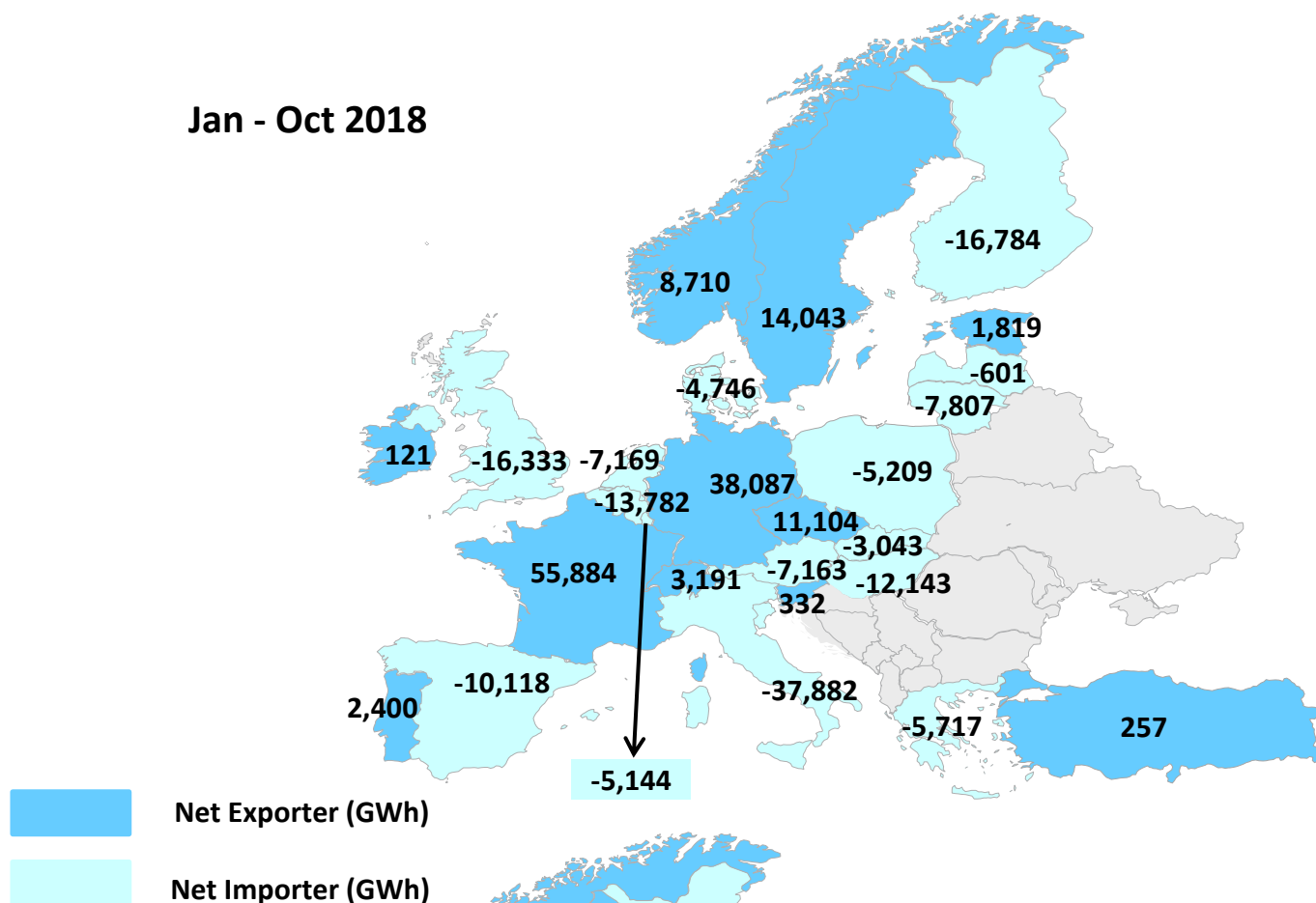


Oct 2019

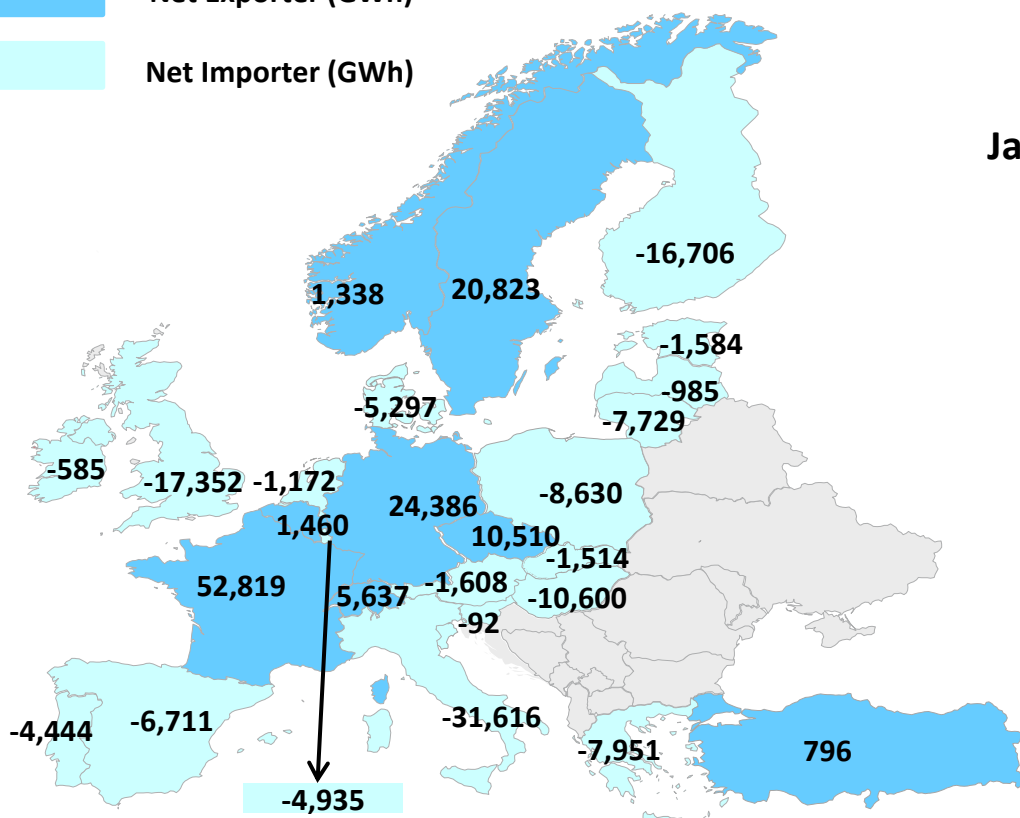


NET ELECTRICITY EXPORTS OECD EUROPE MAP 2

Jan - Oct 2018



Jan - Oct 2019



PRINCIPLES AND DEFINITIONS

The IEA's Monthly Electricity Statistics provides timely electricity production and trade data for member countries of the Organisation for Economic Co-operation and Development (OECD). It aims to report as up-to-date and consistent information as possible for the last three months. It also provides previous annual data and year-to-date indicators.

General notes

- Electricity production and trade data are reported at the individual country level as well as in organisational and regional groupings. These groupings include: OECD Total, OECD Americas, OECD Asia Oceania, OECD Europe and IEA Total.
- The units are terawatt hours (TWh) for the regional groupings and gigawatt hours (GWh) for the individual countries.
- The grouping of electricity generation by source reflects available monthly data and/or small individual quantities.
- Definitions are consistent with the IEA's "Electricity and Heat" annual questionnaire. Statistics are subject to revision on official receipt of the annual questionnaire from national administrations or on improved data becoming available.
- To enable timely publication, the IEA may supplement national statistics with data from other sources.
- Where adequate information is not available from external sources, estimates have been made by the IEA. Methodological notes are provided in individual country pages or the country notes section.
- Monthly data are consistent with those provided in the quarterly "Oil, Gas, Coal and Electricity" book published by the IEA.
- All figures for individual countries are reported to the nearest whole number and totals may not equal the sum of components due to rounding.
- Note that historic data are often recalculated. Therefore, the latest publication should be considered the most accurate. Regional and organisational summaries may also change based on country recalculations.
- Countries' submitted monthly data is adjusted proportionately to maintain consistency with the most recent annual data for each generation source.

Basic definitions

<i>Net Production</i>	Net generation excludes power station own use.
<i>Combustible Fuels/ Conventional Thermal</i>	Production from fossil fuels (primary coal, coal products, peat and peat products, oil shale and oil sands, crude oil, NGL, oil products, natural gas) and combustible renewables and wastes (solid biofuels, biogases, liquid biofuels, industrial and municipal waste).
<i>Coal</i>	Production from primary coal, coal products, peat and peat products, oil shale and oil sands, and manufactured gas (such as coke-oven gas, blast-furnace gas and gas works gas).
<i>Oil</i>	Production from crude oil, natural gas liquids, refinery feedstocks, and petroleum products (such as refinery gases and fuel oil).
<i>Natural Gas</i>	Production from natural gas (including gas distributed via the grid that may contain very little amounts of blended other gases).
<i>Combustible Renewables</i>	Production from combustible renewables (such as solid biofuels, biogases, liquid biofuels, municipal renewable waste).
<i>Other Combustible Fuels (non-renewables)</i>	Production from all other combustible fuels (such as industrial and non-renewable municipal solid waste).
<i>Nuclear</i>	Electricity produced using heat generated from nuclear fission.
<i>Hydro</i>	Net generation from hydro facilities including pumped storage production.
<i>Wind</i>	Electricity generated in on-shore and off-shore wind turbines using kinetic energy of wind.
<i>Solar</i>	Electricity generated using solar radiation. Includes thermal and photovoltaic.
<i>Geothermal</i>	Electricity generated using heat emitted from within the earth's crust, usually in the form of hot water or steam.
<i>Other Renewables</i>	Electricity generated from tide, wave, ocean and other non-combustible sources.
<i>Non-Specified</i>	Not elsewhere reported electricity generation.

<i>Renewables</i>	Includes electricity generation from Hydro, Wind, Solar, Geothermal, Other Renewables and Combustible Renewables
<i>Non-Renewables</i>	Includes electricity generation from Coal, Oil, Natural Gas, Other Combustibles, Nuclear and Non-specified sources.
<i>Total Net Production</i>	The sum of indigenous net electricity production by energy source.
<i>Imports/ Exports</i>	Amounts of electricity that have crossed political boundaries of the country, a.k.a. physical flows, whether customs clearance has taken place or not.
<i>Net Exports</i>	Exports minus imports
<i>Electricity supplied</i>	Indigenous production + Imports - Exports. It includes Transmission and Distribution losses.
<i>Used for Pumped Storage</i>	Electricity consumed by pumping water into a reservoir in mixed and pure pumped storage hydro plants.
<i>Transmission and Distribution Losses/ T&D Losses</i>	All losses due to transport and distribution of electrical energy. Losses in transformers which are not considered as integral parts of the power plants are also included.
<i>Electricity consumed</i>	Electricity available (calculated as: Indigenous production + Imports - Exports - used for pumped storage - Transmission and distribution losses)
<i>Low-carbon Power Generation</i>	Renewables plus Nuclear electricity generation.
<i>Year</i>	Calendar year (January to December) unless otherwise stated.
<i>Year-to-Date</i>	The sum of all months from the start of the calendar year to the latest month.

Regional Groupings

- OECD Total includes Australia, Austria, Belgium, Canada, Chile, the Czech Republic, Denmark, Estonia, Finland, France, Germany, Greece, Hungary, Iceland, Ireland, Italy, Japan, Korea, Latvia, Lithuania, Luxembourg, Mexico, the Netherlands, New Zealand, Norway, Poland, Portugal, Spain, Sweden, the Slovak Republic, Slovenia, Switzerland, Turkey, the United Kingdom and the United States.
- Israel is not included in this report.
- OECD Americas includes Canada, Chile, Mexico and the United States.
- OECD Asia Oceania includes Australia, Japan, Korea and New Zealand.
- OECD Europe includes Austria, Belgium, the Czech Republic, Denmark, Estonia, Finland, France, Germany, Greece, Hungary, Iceland, Ireland, Italy, Latvia, Lithuania, Luxembourg, the Netherlands, Norway, Poland, Portugal, the Slovak Republic, Slovenia, Spain, Sweden, Switzerland, Turkey and the United Kingdom.
- IEA includes all countries included in OECD Total except Chile, Iceland, Latvia, Lithuania and Slovenia.

Publication details and further information

- This publication is released in the middle of each month onto the IEA's Website:
<http://www.iea.org/statistics/topics/Electricity/>
- Subscriptions to this publication are available at <http://mailing.iea.org>
- Data should not be reproduced for publication without permission of the IEA.
- Please note that all IEA data are subject to the following Terms and Conditions found on the IEA's website:
<http://www.iea.org/t&c/termsandconditions/>

NOTES ON CHARTS AND MAPS

Tables

- The share of fuels in power generation for the previous year corresponds to the latest available year of annual data for the given granularity.

Chart Types

Electricity Production Chart

- Compares the evolution of total electricity production against the latest decade of historical data as well as the previous year.

Net Exports Chart

- Compares the evolution of net exports (exports - imports) of electricity against the latest decade of historical data as well as the previous year.

Electricity Production by Fuel Chart

- Shows the power fuel mix since January two years before the current year (25-36 months depending on the publication month).
- In this context, "Other Comb." includes Other Combustibles, Combustible Renewables and Oil.
- In this context, "Other" includes Geothermal, Other Renewables, Non Specified.
- Countries with an estimated combustibles' breakdown have a generic "Combustibles" category in this chart.

Low-carbon Power Chart

- Depicts low-carbon power generation for the year-to-date, the same period the last year as well as two years before. Also shows full year figures for the previous two years.
- When relevant, nuclear generation will be shown.
- In this context, "All Other Ren" includes Geothermal, Other Renewables and Combustible Renewables.

Electricity Production Variation Chart

- A waterfall chart showing how one can reach the electricity generation of the year-to-date having as a starting point the electricity generation of the same period in the previous year.
- In the case that coal and natural gas are only estimated, the waterfall chart for these categories will show no change and they will be aggregated under Other Non-Ren.

Fuel Switching Chart

- A chart comparing head-to-head two fuels (e.g. Natural Gas vs. Coal) or fuel categories (e.g. Renewables vs. Non-Renewables) and their 10 year ranges as well as the previous year.

Maps

- The maps in this report are solely for illustrative purposes and currently cover OECD Europe.
- No electricity trade takes place in OECD Asia Oceania countries.
- **Map 1:** Electricity Trade by country in the current month year versus the same month last year.
- **Map 2:** Electricity Trade by country Year-to-Date versus the same period last year.
- Iceland is not displayed in the OECD Europe maps as it does not trade electricity.

COUNTRY NOTES

Monthly Electricity Statistics is consistent with historical annual data.

Please refer to Principles and Definitions.

For certain countries the most recent data may be estimated. See below for details.

Please note that all IEA data are subject to the following Terms and Conditions found on the IEA's website: <http://www.iea.org/t&c/termsandconditions/>

AUSTRALIA

Excludes the overseas territories.

Monthly data are adjusted according to data submitted on a fiscal year basis beginning 1st of July and ending 31st of June.

Monthly reporting did not include production from other combustible fuels, therefore it is estimated by the IEA Secretariat based on annual submission since January 2009.

Monthly reporting did not include production from solar, therefore it is estimated by the IEA Secretariat based on annual submission since January 2004 until December 2015.

Monthly reporting did not include production from wind, therefore it was estimated by the IEA Secretariat based on annual submission from January until December 2004 until December 2015.

Annual data shown are the sum of months and may differ from publications referring to Australian fiscal year (July-June).

AUSTRIA

Monthly reporting does not include production from geothermal, therefore it is estimated by the IEA Secretariat based on annual submission since January 2003.

Monthly reporting does not include production from solar, therefore it is estimated by the IEA Secretariat based on annual submission since January 2003.

Monthly reporting does not include production from other non combustible fuels, therefore it is estimated by the IEA Secretariat based on annual submission since January 2003.

BELGIUM

Monthly reporting did not include production from solar, therefore it was estimated by the IEA Secretariat based on annual submission from January 2005 until December 2005.

Monthly reporting did not include production from other non combustible fuels, therefore it is estimated by the IEA Secretariat based on annual submission from January 2005 to December 2013.

CANADA

Monthly reporting did not include production from solar, therefore it was estimated by the IEA Secretariat based on annual submission from January 2000 until August 2011.

Monthly reporting did not include production from wind, therefore it was estimated by the IEA Secretariat based on annual submission from January 2000 until December 2007.

Monthly reporting did not include production from other non combustible fuels, therefore it was estimated by the IEA Secretariat based on annual submission from January 2000 until December 2007.

Continually increasing levels of wind and solar coverage since January 2017 until December 2018.

New methodology and higher coverage since April 2019 (starting with MES January 2019 publication). Reviewed data back to January 2016.

CHILE

Net production is estimated from monthly submission of gross production until December 2010.

Monthly reporting does not include trade data, therefore they are estimated by the IEA Secretariat based on annual submission.

Annual data for 2014 were estimated by the IEA Secretariat.

Chile was added to the MES report in February 2011. Historical data are available only from January 2006.

CZECH REPUBLIC

Monthly reporting did not include production from other non combustible fuels, therefore it was estimated by the IEA Secretariat based on annual submission from January 2004 until December 2008.

DENMARK

Excludes the Faroe Islands and Greenland.

Monthly reporting did not include production from solar, therefore it was estimated by the IEA Secretariat based on annual submission from January 2003 until December 2010.

Monthly reporting did not include production from other non combustible fuels, therefore it was estimated by the IEA Secretariat based on annual submission from January 2003 until December 2004.

ESTONIA

Net production is estimated from monthly submission of gross production by the IEA Secretariat.

Estonia was added to the MES report in April 2011. Historical data are available only from January 2006.

FINLAND

Monthly reporting does not include production from solar, therefore it is estimated by the IEA Secretariat based on annual submission since January 2000.

Monthly reporting does not include production from other non combustible fuels, therefore it is estimated by the IEA Secretariat based on annual submission from January 2000.

FRANCE

Includes Monaco. Since January 2018 it includes the French overseas territories: French Polynesia, Guadeloupe, Guyane, Martinique, New Caledonia, Reunion, Saint Pierre and Miquelon.

Monthly reporting does not include production from solar, therefore it is estimated by the IEA Secretariat based on annual submission since January 2000.

Monthly reporting does not include production from other non combustible fuels, therefore it is estimated by the IEA Secretariat based on annual submission since January 2000.

Monthly reporting did not include production from wind, therefore it was estimated by the IEA Secretariat based on annual submission from January 2000 until December 2004.

GERMANY

Combustible Fuels production is estimated from monthly submissions of production from main electricity producers.

Monthly reporting did not include production from solar, therefore it was estimated by the IEA Secretariat based on annual submission from January 2000 until December 2001.

Monthly reporting did not include production from solar, therefore it was estimated by the IEA Secretariat based on annual submission from January 2000 until December 2001.

Due to an increase in survey coverage since January 2017, the level of production and the growth rate shown may be different than actual.

GREECE

Monthly reporting did not include production from other combustible fuels, therefore it was estimated by the IEA Secretariat based on annual submission from January 2008 until December 2009.

Monthly reporting did not include production from solar, therefore it was estimated by the IEA Secretariat based on annual submission from January 2004 until December 2010.

Monthly reporting did not include production from wind, therefore it was estimated by the IEA Secretariat based on annual submission from January 2003 until December 2007.

HUNGARY

Net production was estimated from monthly submission of gross production through December 2015.

Monthly reporting does not include production from oil, therefore it is estimated by the IEA Secretariat based on annual submission since January 2009.

Monthly reporting did not include production from solar, therefore it was estimated by the IEA Secretariat based on annual submission from January 2008 until December 2010.

Monthly reporting did not include production from wind, therefore it was estimated by the IEA Secretariat based on annual submission from January 2003 until December 2005.

ICELAND

Net production has been estimated from monthly submission of gross production through December 2015 by the IEA Secretariat.

IRELAND

Monthly reporting did not include production from wind, therefore it was estimated by the IEA Secretariat based on annual submission from January until December 2001.

ITALY

Includes San Marino and the Vatican.

Monthly reporting does not include production from other non combustible fuels, therefore it is estimated by the IEA Secretariat based on annual submission since January 2005.

Monthly reporting did not include production from solar, therefore it was estimated by the IEA Secretariat based on annual submission from January 2005 until December 2009.

Monthly reporting did not include production from wind, therefore it was estimated by the IEA Secretariat based on annual submission from January 2005 until December 2009.

JAPAN

Monthly data are adjusted according to data submitted on a fiscal year basis beginning 1st of April and ending 31st of March.

Net production is estimated from monthly submission of gross production of main electricity producers.

Monthly reporting did not include production from solar, therefore it was estimated by the IEA Secretariat based on annual submission from January 2000 until December 2002.

Annual data shown are the sum of months and may differ from publications referring to Japanese fiscal year (April-March).

Since April 2017 electricity generation from biomass and was is reported in the coal category if it's co-fired with this fuel, and in combustible renewables if the combustion is mono-fuel.

Since April 2017 coal category included coal, bituminous mixture, natural gas (other than LNG), coke-oven gas and city gas.

Hydro generation includes plants with capacity of 1MW and over.

KOREA

Net production is estimated from monthly submission of gross production by the IEA Secretariat.

Monthly reporting of electricity production does not include autoproducers, therefore it is estimated by the IEA Secretariat based on annual submission.

Monthly reporting does not include production from wind, therefore it is estimated by the IEA Secretariat based on annual submission since January 2004.

Monthly reporting does not include production from solar, therefore it is estimated by the IEA Secretariat based on annual submission since January 2004.

Monthly reporting does not include production from other non combustible fuels, therefore it is estimated by the IEA Secretariat based on annual submission since January 2004.

LATVIA

Latvia was added to the MES report in January 2017. Historical data are available only from January 2010.

The strong hydro performance in 2017-2018 agrees with historical patterns and is due to environmental reasons, most notably the increased inflow in the Daugava River.

LITHUANIA

Monthly data available since January 2008.

LUXEMBOURG

Monthly reporting does not include production from solar, therefore it is estimated by the IEA Secretariat based on annual submission since January 2003.

Production data for March 2018 are estimated by the IEA Secretariat.

The Twinerg CCGT plant has been idle since April 2016 and was decommissioned in October 2016. This has caused decreased production from combustible fuels and, consequently, a decrease in exports.

MEXICO

Monthly reporting of electricity production does not include autoproducers, therefore it is estimated by the IEA Secretariat based on annual submission.

Monthly reporting does not include production from solar, therefore it is estimated by the IEA Secretariat based on annual submission from January 2003 - December 2013.

Monthly reporting does not include production from wind, therefore it is estimated by the IEA Secretariat based on annual submission from January 2003 - December 2013. Since December 2018 the data submission includes wind data, so it is no longer estimated.

Installations under 500 kW are not included in the reporting data, therefore it is estimated by the IEA Secretariat based on annual submission.

Electricity trade data is estimated by Mexico administration. It may be inconsistent with US data flows. This data is currently under review.

In December 2018 a new data source was used by Mexico and some data are under review and improvement, therefore 2017 and 2018 data may be inconsistent with previous publications.

Monthly reporting of electricity production has not been submitted since July 2019, and the Mexican electricity production has since been estimated by the IEA Secretariat. These estimations may become less reliable without further data submissions.

NETHERLANDS

Excludes Suriname and the territory of the Former Netherlands Antilles.

Monthly reporting does not include production from other non combustible fuels, therefore it is estimated by the IEA Secretariat based on annual submission since January 2000.

Monthly reporting did not include production from solar, therefore it was estimated by the IEA Secretariat based on annual submission from January 2000 until December 2009.

There was no nuclear production in May and June 2017 due to plant maintenance. The nuclear production resumed in July 2017.

NEW ZEALAND

Monthly submissions only include main electricity producers, which supposes a 95% coverage. The rest of the electricity generation is estimated by the IEA Secretariat based on the annual submissions.

Monthly reporting does not include production from other non combustible fuels, therefore it is estimated by the IEA Secretariat based on annual submission since January 2002.

NORWAY

Net production is estimated from monthly submission of gross production through December 2015 by the IEA Secretariat.

Monthly reporting does not include production from other non combustible fuels, therefore it is estimated by the IEA Secretariat based on annual submission since January 2003.

Natural gas figures for May and June 2018 are confidential.

POLAND

Monthly reporting does not include production from oil, therefore it is estimated by the IEA Secretariat based on annual submission since January 2009 until December 2016.

Oil figures are confidential since January 2017.

PORTUGAL

Includes the Açores and Madeira since January 2015.

Monthly reporting did not include production from geothermal, therefore it is estimated by the IEA Secretariat based on annual submission since January 2004 until December 2014.

Monthly reporting did not include production from solar, therefore it was estimated by the IEA Secretariat based on annual submission from January 2004 until December 2008.

Monthly reporting did not include production from wind, therefore it was estimated by the IEA Secretariat based on annual submission from January 2004 until December 2008.

SLOVAK REPUBLIC

Monthly reporting did not include production from solar, therefore it was estimated by the IEA Secretariat based on annual submission since January 2010 until December 2016.

Monthly reporting does not include production from wind, therefore it is estimated by the IEA Secretariat based on annual submission since January 2003.
 Monthly reporting does not include production from other non combustible fuels, therefore it is estimated by the IEA Secretariat based on annual submission since January 2003.

SLOVENIA

Slovenia was added to the MES report in April 2011. Historical data are available only from January 2009.

SPAIN

Includes the Canary Islands, Balear Islands, Ceuta and Melilla.

Monthly reporting did not include production from other non combustible fuels, therefore it was estimated by the IEA Secretariat based on annual submission since January 2004 until December 2015.

Monthly reporting did not include production from solar, therefore it was estimated by the IEA Secretariat based on annual submission from January 2004 until December 2008.

SWEDEN

Monthly reporting does not include production from solar, therefore it is estimated by the IEA Secretariat based on annual submission since January 2000.

SWITZERLAND

Excludes Liechtenstein.

Monthly reporting did not include production from solar, therefore it was estimated by the IEA Secretariat based on annual submission from January 2003 until December 2009.

Monthly reporting did not include production from wind, therefore it was estimated by the IEA Secretariat based on annual submission from January 2003 until December 2009.

In 2016 and 2017 a small nuclear power plant was out-of-order in the second half of the year, and restarted in March 2018. In addition, a big nuclear power plant had in the second half of 2016 and 2017 a longer revision period in contrast to the normal revision in 2018.

TURKEY

Monthly submission does not include production from other non combustible fuels, therefore it is estimated by the IEA Secretariat.

UNITED KINGDOM

Monthly reporting does not include production from other combustible fuels, therefore it is estimated by the IEA Secretariat based on annual submission since January 2001.

Monthly reporting did not include production from solar, therefore it is estimated by the IEA Secretariat based on annual submission from January 2001 until December 2009.

Monthly reporting did not include production from wind, therefore it was estimated by the IEA Secretariat based on annual submission from January 2001 until December 2006.

Monthly reporting did not include exports, therefore they were estimated by the IEA Secretariat based on annual submission from January 2001 until December 2002.

UNITED STATES

Includes the 50 States, the District of Columbia and Puerto Rico.

Monthly reporting did not include production from geothermal, therefore it was estimated by the IEA Secretariat based on annual submission from January 2003 until December 2005.

Monthly reporting did not include production from solar, therefore it was estimated by the IEA Secretariat based on annual submission from January 2003 until December 2005.

Monthly reporting did not include production from wind, therefore it was estimated by the IEA Secretariat based on annual submission from January 2003 until December 2005.

Monthly reporting did not include production from other non combustible fuels, therefore it was estimated by the IEA Secretariat based on annual submission from January 2003 until December 2005.

Electricity trade data has been estimated by the U.S. administration since July 2017. It may be inconsistent with the trade data from Mexico. This data is currently under review.

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