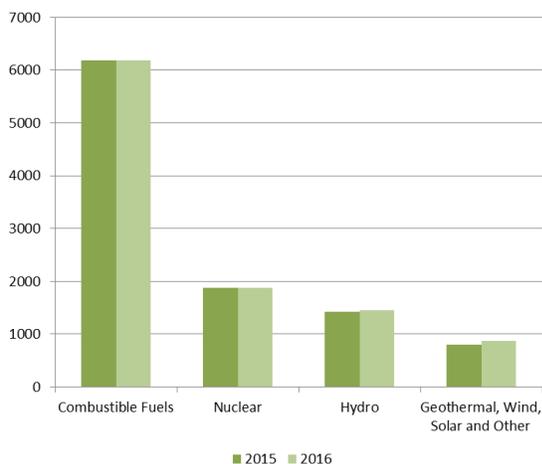


KEY ELECTRICITY TRENDS 2016 – BASED ON MONTHLY DATA¹

ELECTRICITY PRODUCTION²

An assessment of monthly data shows that in 2016, OECD net electricity production grew by 0.9% compared to 2015. Within this small overall change there was a large increase of 9.5% in Geothermal, Solar, Wind and Other renewables³ generation and a smaller, but still significant, increase of Hydro, 2.2%. Combustible Fuels⁴ and Nuclear fell by 0.2% and 0.1%, respectively.

Figure 1: Total OECD electricity production by fuel (TWh)



In the OECD, non-combustible renewables accounted for 22.4% of all generation compared to 21.6% in 2015. The share of production from combustible fuels

¹ All annual comparisons are based on monthly for data in 2016 compared to monthly data for 2015. Israel and Latvia are not included in this article.

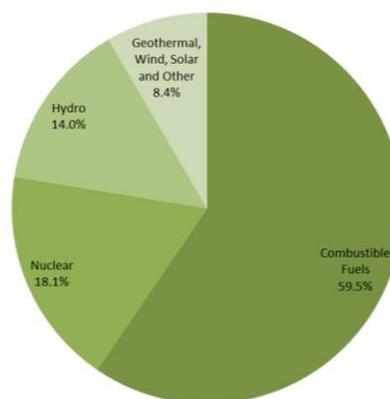
² For details about the monthly data, methodology, as well as definitions of OECD regions and other terminology throughout this document, please refer to the December 2016 edition of the [Monthly Electricity Statistics](#).

³ Geothermal, Solar, Wind and Other renewables include generation from geothermal, solar photovoltaic, solar thermal, wind, tide, wave, ocean and other non-combustible renewable sources.

⁴ Combustible Fuels includes coal, natural gas, oil products, combustible renewables and wastes, and other combustible fuels.

(including combustible renewables) fell by 0.7 ppt to 59.5%, with the remainder, 18.1%, made up from nuclear – virtually unchanged from 2015.

Figure 2: Shares of generation by source in the OECD for 2016

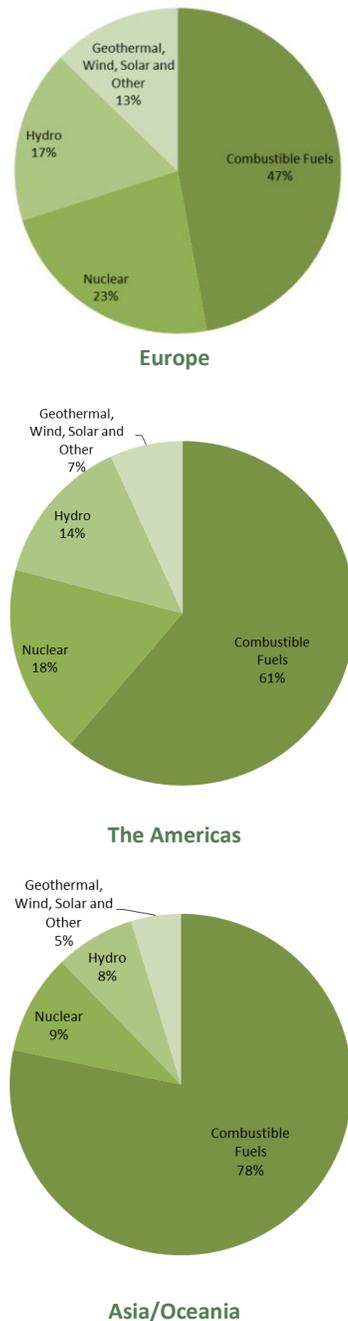


Overall production rose by about 0.9% in the OECD, but each OECD region saw different changes in production shares by fuel type during 2016. In OECD Americas (hereafter, “the Americas”), Combustible Fuels dropped by 1.5% while Nuclear increased 0.7%, Hydro increased by 3.2% and Geothermal, Wind, Solar and Other renewables increased significantly by 22.5%. OECD Asia/Oceania (hereafter, “Asia/Oceania”) showed the same trends, with Combustible Fuels dropping 0.5% but increases in Nuclear, 6.6%, Hydro, 1.4%, and Geothermal, Wind, Solar and Other renewables increasing the most, 12.6%. OECD Europe (hereafter, “Europe”) showed a different trend with the largest increase coming from Combustible Fuels, 2.6%, and a smaller increase in Hydro of 1.0%. Other non-combustible renewables remained virtually flat while the only decrease came from Nuclear, 2.4%.

In terms of shares of generation, non-combustible renewables accounted for 30% of generation in

Europe compared to 21% in the Americas and 12% in Asia/Oceania. Combustible Fuels remain the dominant source of electricity and accounted for 61% in the Americas, 78% in Asia/Oceania and 47% in Europe. Nuclear produced 23% in Europe, 18% in the Americas and 9.5% in Asia/Oceania.

Figure 3: Shares of generation by source in each OECD region



COMBUSTIBLE FUEL

Total OECD cumulative production of electricity from combustible fuels in 2016 was 6 174.3 TWh, which was 12.9 TWh, or 0.2%, lower than in 2015. This comprised reductions in Asia/Oceania and the Americas of 0.5% and 1.5% but an increase in Europe of 2.6%.

One element within Combustible Fuels was the switch from coal to natural gas in the United States and the United Kingdom, continuing the trend from within the last year (figures 4 and 5). In 2016, the United States reduced use of coal plants in favor of natural gas plants due to the low price of natural gas. The same trend was seen in the U.K., although the shift was larger with the added influence of carbon pricing in the U.K.

Figure 4: Natural Gas, Coal, and all other electricity production in the United States (TWh)

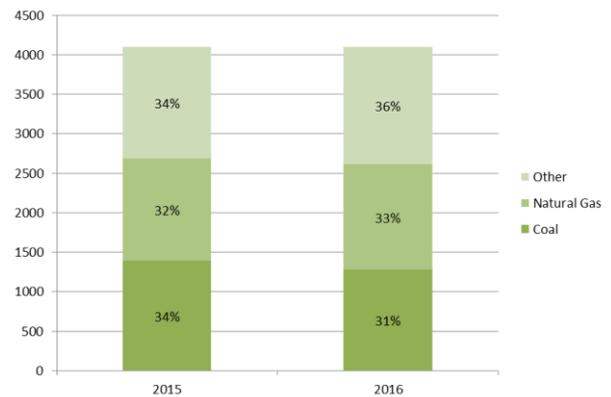
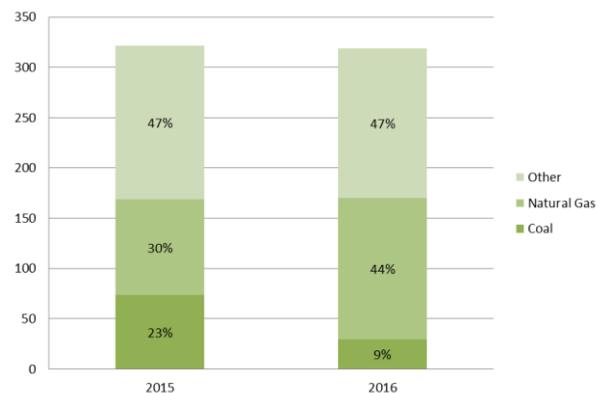


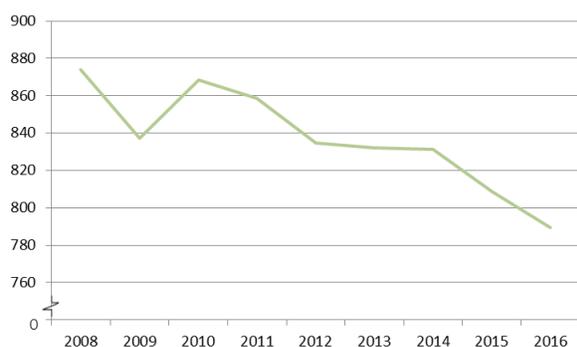
Figure 5: Natural Gas, Coal, and all other electricity production in the United Kingdom (TWh)



NUCLEAR ELECTRICITY

Total OECD cumulative production of nuclear electricity in 2016 was 1 873.6 TWh, 2.7 TWh, or 0.1% lower than in 2015. Europe was the only region which decreased its nuclear production, by 19.6 TWh, or 2.4%, to 790 TWh led by the continued phase out of nuclear electricity in Germany as well as decreases in the Czech Republic and France caused by extended outages. There were also operational outages in Slovenia and Switzerland.

Figure 6: Yearly nuclear production in Europe (TWh)



HYDRO ELECTRICITY

Total OECD production of hydroelectricity in 2016 was 1 451.6 TWh, which was 30.7 TWh, or 2.2%, higher than in 2015, and increased in each OECD region. From 2000 to 2015, Hydro production has only grown 0.8% because most of the available potential in OECD countries is already utilised. The increase in Hydro for 2016 was predominately a result of higher rainfall in many countries, especially in Canada, the United States and Norway, the top three Hydro producers in the OECD. These increases compensated for significant drops of Hydro production in Finland and Sweden.

The largest percentage increase throughout the OECD was seen in Portugal, 173% higher in 2016 than the average Hydro production during the 2005 - 2015 period and 73% higher in 2016 than in 2015. This allowed for the highest level of electricity exports to Spain since 2005. As Spain increased its use of electricity imports, from Portugal and other countries, it saw the lowest level of indigenous production in 2016 since 2005.

GEOTHERMAL, SOLAR, WIND AND OTHER OTHER RENEWABLES

Total OECD production of electricity from Geothermal, Solar, Wind and Other renewables was 873.9 TWh in 2016, which was 75.6 TWh, or 8.4%, higher than in 2015, with increases seen in all OECD regions. Europe had the smallest increase in this category of 1.9 TWh, or 0.4%. In Asia/Oceania, there was an increase of 9.6 TWh, or 12.6%. The Americas rose the most with 64.1 TWh, or 22.5%, driven by increases in U.S. Solar and Wind of 45% and 19%, respectively.

The European trend contrasts with last year, when Europe showed the highest increases of all of the OECD regions. Solar and Wind dominate, producing roughly 25% and 70%, respectively, of the electricity in this category for Europe and whilst it was a good year for European Solar production, which increased 4 337 TWh, or 4%, Wind production fell 1%. Germany, which produced roughly 28% of the European Solar and Wind for 2016, had decreases of 1% and 7%, respectively, due to weather conditions. With the aforementioned phase-out of Nuclear, this necessitated an increase in Combustible Fuels.

ELECTRICITY TRADE

Total OECD electricity trade is representative of trade in Europe and the Americas⁵ since there is no electricity trade in Asia/Oceania. Trade increased this year in the Americas by about 8% for Imports and Exports. In Europe, imported electricity in 2016 fell 8.7% to 386.1 TWh and electricity exports fell 9.8% to 378.4 TWh. Interestingly, several countries switched their trade balance from 2015 to 2016, with Portugal and Ireland switching from net importers to net exporters, and Spain, Switzerland and Poland switching from net exporters to net importers, which is shown in figures 7 and 8. France remained a net exporter, but decreased exports significantly due to Nuclear reductions. Sweden's low Hydro production caused its exports to decrease.

⁵ Note that OECD countries within Europe and Mexico trade electricity with countries outside of the OECD, so imports of the OECD regions do not have to equal exports.

Figure 7: Europe Electricity trade balance 2016 (MWh)

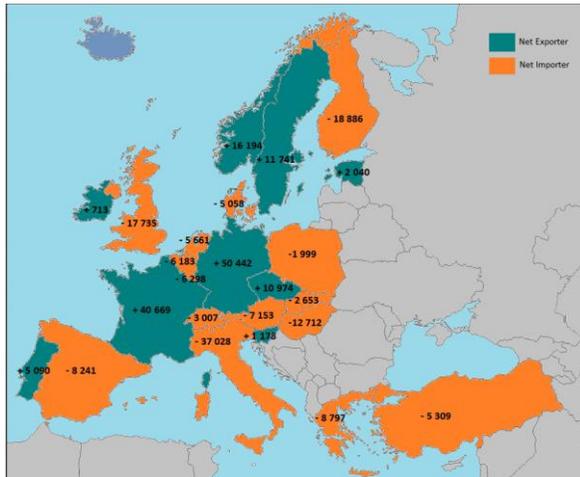
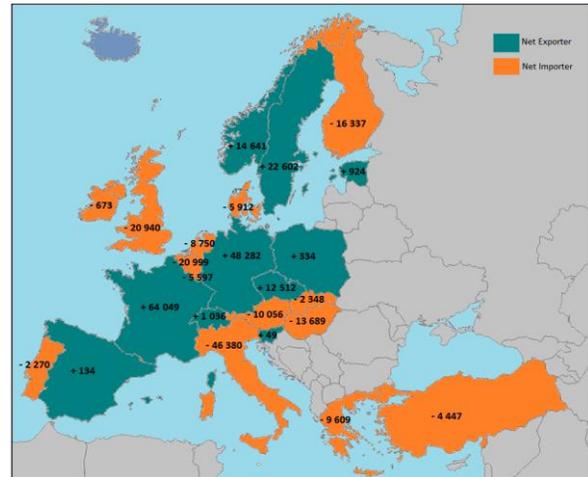


Figure 8: Europe Electricity trade balance 2015 (MWh)



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