Electricity generation and supply figures for Scotland, Wales, Northern Ireland and England, 2013 to 2016

Introduction

This article shows how generation and consumption of electricity varies across the four countries of the United Kingdom. It updates and extends a previous version published in December 2016¹. The UK figures shown in this article are taken from chapters 5 and 6 of the Digest of United Kingdom Energy Statistics (DUKES) 2017² and so the definitions used are identical to those in the Digest. Tables 1 and 2 are included at the end of the main text and cover the last four years, with revised data for 2004 to 2016 available in the accompanying Excel spreadsheet.

Key points

- As in previous years, England had the largest share of total generation at 71 per cent, while Scotland's share fell from 15 per cent to 14 per cent. Wales saw an increase from 11 per cent to 13 per cent and Northern Ireland's share of generation remained stable at 3 per cent.
- The share of UK electricity generation from coal fell sharply in 2016 across all four nations (down 13.3 percentage points), while gas generation increased (up 12.8 pp).
- Autogenerators supplied a rising share of UK public electricity, at 7.2 per cent in 2016 (up 2.7 pp since 2013), particularly from non-MPP renewable sources. Autogenerators provide a particularly large proportion of public electricity consumption in Scotland and Northern Ireland with shares of 12.8 per cent and 11.3 per cent respectively in 2016.
- The share of renewable generation in 2016 was stable at 25 per cent (down 0.1 pp from 2015). Scotland maintained the highest share at a record high 43 per cent (up 0.5 pp), whilst England increased its share the most, to 23 per cent (up 0.6 pp). In Wales and Northern Ireland the share of generation from renewables decreased slightly in 2016 from record highs in 2015, to 12 per cent (down 1.4 pp), and 25 per cent (down 0.2 pp) respectively. These small movements were due to poor weather conditions for renewables generation despite increases in capacity.
- The 2015 closure of the Wylfa nuclear power station in Wales means that England and Scotland are now the only countries generating nuclear power. However this closure did not decrease the overall share of generation from nuclear energy because outages had curtailed generation at existing English and Scottish nuclear plants in 2015.

Revisions to previously published figures

In previous versions of this article some Major Power Producer (MPP) Wales gas generation was incorrectly allocated to England in all years back to 2012, as Severn Power CCGT and Pembroke CCGT were incorrectly classified as generation from England. This has been corrected and consequently around 12.5 TWh has been reallocated from Wales to England for 2015, with similar reallocations back to 2012.

MPP thermal renewables generation for 2014 and 2015 have been increased by 270 GWh and 330 GWh respectively due to the addition of Markinch to the MPP survey.

Previous versions of the figures remain available online for comparison at: www.gov.uk/government/collections/energy-trends-articles

 ¹ Electricity generation and supply figures for Scotland, Wales, Northern Ireland and England, 2012 to 2015:
 <u>www.gov.uk/government/publications/energy-trends-december-2016-special-feature-articles</u>
 ² Digest of UK Energy Statistics (DUKES) 2017:

www.gov.uk/government/collections/digest-of-uk-energy-statistics-dukes

Generation and trade

Chart 1 shows total generation of electricity in each UK country between 2013 and 2016.



Chart 1: Total generation by country (all generating companies) 2013-2016

Between 2015 and 2016 England's share of total generation remained broadly stable at 71 per cent (up 0.2 pp) while Scotland's share fell from 15 per cent to 14 per cent, mostly due to the closure of Longannet but also due to a drop in renewables generation following a year of poor weather conditions for renewables. For Wales, there was an increase in the share from 11 per cent to 13 per cent, mainly due to increased generation from gas. Northern Ireland's share of generation remained stable at 3 per cent. On average, over the last four years, 72 per cent of UK electricity generation has taken place in England, 15 per cent in Scotland, 11 per cent in Wales and 2 per cent in Northern Ireland.

England is a net importer of electricity from Scotland, Wales and from continental Europe (via the France and Netherlands interconnectors). Total net imports from Europe made up 6.1 per cent of consumption from the public supply in the UK, down from a record high 7.2 per cent in 2015. This was due to a fall in net imports from France of 30 per cent to 9.7 TWh following nuclear outages in France. Net imports from the Netherlands were 7.3 TWh, 8.7 per cent down on 2015³.

In 2016, Scotland exported 20 per cent of the electricity generated there to consumers elsewhere in the UK, the lowest proportion since 2008; this has decreased from 29 per cent in 2015 due to a reduction in generation in Scotland (down 11 per cent) along with steady total consumption. Transfers from Scotland to England fell by 34 per cent between 2015 and 2016, following a record high in 2015.

In 2016, Wales exported a record high 43 per cent of total generation to England. This was due to Wales experiencing a 12 per cent increase in generation, mostly due to a rise in generation from gas, but just a 6 per cent increase in total consumption. Wales started trading with the Republic of Ireland in 2012 and was a net importer from them for the first time in 2016. However, this accounted for only 2 per cent of consumption from the public supply in Wales.

³ Energy Trends: electricity – Table 5.6:

www.gov.uk/government/statistics/electricity-section-5-energy-trends

Northern Ireland trades electricity with the Republic of Ireland and has been a net importer since 2014. Northern Ireland usually imports electricity from Scotland via the Moyle interconnector but was a net exporter to Scotland for the first time in 2016.

Generation by fuel

For each of the four UK countries, Table A shows the percentage shares of the generation of electricity by fuel category for 2015 and 2016. Because the mix of generating plants is not the same in each country, the overall percentage for each fuel type in individual years will change according to the fuels and stations that are available and the most advantageous to use. The data for 2016 is also shown in Chart 2.

| 2015 | Scotland | Wales | Northern Ireland | England | UK Total |
|---------------|----------|-------|------------------|---------|----------|
| Coal | 16.1 | 21.5 | 24.4 | 23.8 | 22.4 |
| Gas | 3.7 | 46.2 | 49.1 | 31.6 | 29.5 |
| Nuclear | 34.6 | 10.2 | 0.0 | 20.2 | 20.8 |
| Renewables | 42.4 | 13.7 | 25.5 | 22.5 | 24.6 |
| Oil and Other | 3.2 | 8.3 | 0.9 | 1.9 | 2.8 |
| 2016 | | | | | |
| Coal | 3.9 | 17.2 | 23.3 | 8.0 | 9.0 |
| Gas | 6.8 | 62.9 | 50.0 | 45.0 | 42.2 |
| Nuclear | 42.8 | 0.0 | 0.0 | 21.5 | 21.1 |
| Renewables | 42.9 | 12.3 | 25.3 | 23.1 | 24.5 |
| Oil and Other | 3.5 | 7.6 | 1.3 | 2.2 | 3.1 |

| Table / | A : | Percentage | shares | of | each | country's | generation, | by | fuel | type, | 2015 | and |
|---------|------------|------------|--------|----|------|-----------|-------------|----|------|-------|------|-----|
| 2016 | | | | | | | | | | | | |

Coal's share of UK generation had been steadily falling since 2012 before a large drop to a record low 9 per cent in 2016. The largest falls were in England (down 15.8 pp) and Scotland (down 12.2 pp) due to reduced capacity after the closure or partial closure of multiple coal plants that were opted out of the Large Combustion Plant Directive $(LCPD)^4$ and its successor, the Industrial Emissions Directive. This includes the closures of Ferrybridge C in England, and Longannet in Scotland, both in March 2016. Another factor in the steady reduction of coal generation in England was the conversion of two units of Drax from coal to biomass, one in 2013 and one in 2014, and one unit from coal to high range co-firing (85% to <100% biomass) in 2015. The decrease in the share of coal generation in Wales, from 21 per cent to 17 per cent, is due to market conditions leading to production favouring gas. Whilst fuel costs for coal-fired generation are lower than for gas, emissions from coal are higher so generators must pay a greater carbon price per GWh produced. Coal generation in Northern Ireland remained broadly stable at 23 per cent (down 1.1 pp).

There was an increase in the share of gas generation between 2015 and 2016 in all countries as gas replaced coal in the energy mix, due to favourable market conditions as noted above. The largest increases were seen in Wales (up 16.6 pp) and England (up 13.4 pp), with the overall UK share increasing from 29 per cent to 42 per cent. Gas generation in Northern Ireland remained stable at 50 per cent.

The share of generation from nuclear plants remained steady despite the closure of Wylfa in December 2015 resulting in no nuclear generation in Wales. In Scotland, the share of nuclear

⁴ Large Combustion Plant Directive (LCPD): Running hours during winter 2014/15 and capacity for 2015/16, page 71: www.gov.uk/government/statistics/energy-trends-september-2015-special-feature-articles

Special feature – Sub national electricity figures

generation increased from 35 per cent to 43 per cent between 2015 and 2016, due to both increased nuclear generation, and lower overall Scottish generation. In England the share from nuclear generation remained relatively stable at 22 per cent in 2016 (up 1.3 pp).

Renewables' share of generation had been continually increasing in the UK, reaching a record high of 24.6 per cent in 2015. Despite increases in capacity for wind and solar (wind capacity up by 13.3 percent, solar capacity up by 25 per cent)⁵, the generation share from renewables fell marginally to 24.5 per cent in 2016 due to poor weather conditions for renewables generation (wind speeds down by 11 per cent, sun hours down by 4 per cent and rainfall down by 20 per cent)⁶.

Conversions at Drax from coal to biofuel increased England's renewables share of generation to 22.5 per cent in 2015 and 23.1 per cent in 2016. Of Scotland's generation in 2016, a record high of 43 per cent was from renewables, up from 42 per cent in 2015. This was mainly due to the large fall in coal generation following the closure of Longannet; absolute renewable generation decreased by 3.3 TWh in Scotland as a result of unfavourable weather conditions despite increasing capacity (a 17 per cent increase in wind capacity and a 23 per cent increase in solar capacity). The share of generation from renewables fell slightly in Wales, down 1.4 pp to 12 per cent, due to increased total generation with renewable generation remaining broadly stable. Renewables generation remained stable in Northern Ireland at 25 per cent.

 ⁵ Capacity of, and electricity generated from, renewable sources (Energy Trends 6.1):
 <u>www.gov.uk/government/statistics/energy-trends-section-6-renewables</u>
 ⁶ Energy Trends: weather:

www.gov.uk/government/statistics/energy-trends-section-7-weather

Chart 2: Generation by fuel type for each country in 2016 (all generating companies)



Special feature – Sub national electricity figures

Combined heat and power (CHP) forms around half of "Other generators" generation, although some major power producers (MPPs) also operate generating plants that are partially CHP. CHP statistics for 2016 on a sub-national and regional basis were published in the September 2017 issue of Energy Trends⁷.

The share of generation accounted for by generators other than major power producers has steadily increased since 2013 and reached a high of 13.7 per cent in 2016 (up 4.3 pp since 2013). In Scotland, in 2016, other generators had a 16.9 per cent share (up 1.9 pp), while in England the share was 13.9 per cent (up 1.4 pp), in Wales 7.7 per cent (down 1.9 pp) and in Northern Ireland 20 per cent (down 0.5 pp). These larger shares were due to increases in smaller-scale renewables capacity and reductions in larger-scale fossil fuel capacity, with the decrease in Wales due to a 13.9 per cent increase in MPP gas generation.

Overall the UK saw a small increase in total generation (up 0.1 per cent), despite a 1.0 per cent fall in MPP generation, due to an 8.2 per cent increase in autogeneration. The largest reduction in generation share was experienced by coal, with coal fired plants closing throughout 2015 and 2016 due to the LCPD/IED, along with conversions of coal units to biomass units at Drax. Adverse market conditions also led to a reduction in the use of coal for generation. The largest increase in generation share came from gas (up 12.8 pp) due to favourable market conditions. Thermal renewables also showed a large increase, (up 5.4 pp) partially due to the unit conversion at Drax.

Renewables

The share of renewables in electricity generation or sales is measured in two different ways in the UK⁸. First, there is the "headline" overall measure that shows the percentage of electricity generation accounted for by all renewables. Secondly, there is the measure that is based on the Renewables Obligation (RO) (and the analogous Renewables Obligation (Scotland) - ROS) which shows the percentage of electricity sales accounted for by renewables eligible under these obligations. The main differences are the exclusion from the RO of large-scale hydro and non-biodegradable wastes⁹. Table B shows the "headline" overall measure for 2013 to 2016.

| | UK | Scotland | Wales | Northern Ireland | England |
|------|------|----------|-------|------------------|---------|
| 2013 | 14.9 | 32.1 | 6.6 | 19.5 | 12.4 |
| 2014 | 19.1 | 38.1 | 9.6 | 21.6 | 16.5 |
| 2015 | 24.6 | 42.4 | 13.7 | 25.5 | 22.5 |
| 2016 | 24.5 | 42.9 | 12.3 | 25.3 | 23.1 |

Table B: Renewables percentages

With its large capacity of natural flow hydro and rapidly increasing wind capacity, as well as the closure of the Longannet coal plant in March 2016, renewables' share in Scotland under the headline measure increased by 0.5 percentage points to stand at 43 per cent in 2016, despite poor weather conditions for renewables generation. In 2016 Wales (down 1.4 pp) and Northern Ireland

www.gov.uk/government/publications/energy-trends-september-2017-special-feature-articles

⁷ Combined Heat and Power in Scotland, Wales, Northern Ireland and the regions of England in 2016 – Energy Trends September 2017, page 89:

⁸ There is also a third method used by the EU – a Renewables Directive basis – see Chapter 6 of the Digest of UK Energy Statistics 2017, table 6.7 and paragraph 6.45:

www.gov.uk/government/statistics/renewable-sources-of-energy-chapter-6-digest-of-united-kingdom-energy-statisticsdukes

⁹ Specific exclusions from eligibility for the RO are existing hydro plants over 20 MW; all plants using renewable sources built before 1990 (unless re-furbished); and energy from mixed waste combustion unless the waste is first converted to fuel using advanced conversion technology.

(down 0.2 pp) saw small falls in the percentage of electricity generated from renewables, while England (up 0.6 pp) saw a small increase.

On a RO basis, the percentage measure for the UK (15 per cent in 2013, 18 per cent in 2014, 23 per cent in 2015, and 23 per cent in 2016) is not meaningful at a sub-national level because electricity generated in one part of the UK can be sold in a different part of the UK.

In Scotland, the renewables target to reach 100 per cent by 2020 is expressed as generation as a proportion of gross electricity consumption (defined as generation plus transfers into Scotland less transfers out of Scotland). This measure increased from 44 per cent in 2013 to 60 per cent in 2015, surpassing the interim target of 50 per cent by 2015. However in 2016 due to both lower renewable generation, and a reduction in net imports, this measure dropped to 54 per cent.

The amount of electricity from renewable sources transferred from Scotland or Wales to England, or from Scotland to Northern Ireland, cannot be disaggregated from other sources of electricity transferred. What is known from Table 2 is that the amount of ROs eligible electricity generated in Scotland in 2016 was 11 per cent lower than in 2015, while the amount of RO eligible electricity generated in Wales in 2016 was 0.6 per cent lower than in 2015. In England, the decrease was 1.2 per cent. These falls are due to poor weather conditions for renewables generation. In Northern Ireland RO eligible electricity generated was 0.9 per cent higher. In the UK as a whole, RO eligible electricity production fell by 3.6 per cent between 2015 and 2016. Over the four years shown in Table 2, the increases in RO eligible electricity production have been substantial across all countries, namely 47 per cent for Northern Ireland, 9 per cent for Scotland, 99 per cent for Wales and 61 per cent for England.

Renewables statistics for 2016 on a sub-national and regional basis were published in the September 2017 issue of Energy Trends¹⁰.

¹⁰ Renewable energy in Scotland, Wales, Northern Ireland and the regions of England in 2016 – Energy Trends September 2017, page 64:

www.gov.uk/government/publications/energy-trends-september-2017-special-feature-articles

Special feature – Sub national electricity figures





Consumption and sales

Transmission and distribution losses are not separately available for Scotland, Wales, Northern Ireland and England so estimates have been made using the UK proportions for generation and sales. Consumption figures have then been calculated by deducting net transfers, own use, and losses figures from the electricity generated figures shown in Table 1. Chart 3 shows that in 2016, 10 per cent of electricity consumption in the UK was in Scotland, 6 per cent in Wales, 3 per cent in Northern Ireland and 81 per cent in England. These remain similar to the average percentage shares for each country for the period 2013 to 2016, namely 82 per cent for England, 10 per cent for Scotland, 5 per cent for Wales and 3 per cent for Northern Ireland.

Separate data is collected for sales of electricity from the public supply system in Scotland, England and Wales, and Northern Ireland. This is published in monthly table ET 5.5 on the BEIS Energy Statistics website¹¹, but for this article the breakdown between England and Wales has been estimated. Because of definitional and other differences set out in the technical notes to Chapter 5 of DUKES 2017, there is a statistical difference between the calculated consumption and the sales data in Table 1.

As part of its commitment to improving the quality of its statistics, BEIS continues to examine this statistical difference (-0.2 per cent for the UK in 2016) and look further at the component series to see where the differences might be arising and thus where improvements to the data might be made.

Chart 4 shows the relationship between generation and consumption of electricity in each of the countries by means of a flow diagram.

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¹¹ Energy Trends monthly table 5.5:

www.gov.uk/government/statistics/electricity-section-5-energy-trends

References:

Digest of UK Energy Statistics 2017 (DUKES); available on BEIS's energy statistics website at: www.gov.uk/government/statistics/electricity-chapter-5-digest-of-united-kingdom-energy-statistics-dukes

Electricity generation and supply figures for Scotland, Wales, Northern Ireland and England, 2012 to 2015:

www.gov.uk/government/publications/energy-trends-december-2016-special-feature-articles

Large Combustion Plant Directive (LCPD): Running hours during winter 2014/15 and capacity for 2015/16, page 71:

www.gov.uk/government/statistics/energy-trends-september-2015-special-feature-articles

Capacity of, and electricity generated from, renewable sources (Energy Trends 6.1): www.gov.uk/government/statistics/energy-trends-section-6-renewables

Combined Heat and Power in Scotland, Wales, Northern Ireland and the regions of England in 2016 – Energy Trends September 2017, page 89: www.gov.uk/government/publications/energy-trends-september-2017-special-feature-articles

Renewable energy in Scotland, Wales, Northern Ireland and the regions of England in 2016 – Energy Trends September 2017, page 64: www.gov.uk/government/publications/energy-trends-september-2017-special-feature-articles

Energy Trends monthly table 5.5: www.gov.uk/government/statistics/electricity-section-5-energy-trends



Chart 4: Electricity generation and consumption flow chart, 2016

| Table 1: 0 | Generation and supply of elec | ctricity in | Scotland 2016 | l, Wales | s, North | ern Irel <mark>an</mark> | d and Eng | land, 201 | 3 to | | GWh | | |
|---|------------------------------------|-------------|------------------|----------|----------|--------------------------|-----------|-----------|--------|---------|---------|--|--|
| | | | | 2013 | | | | | | | | | |
| | | | | 1 | Northern | | | Northern | | | | | |
| | | UK total | Scotland | Wales | Ireland | England | UK total | Scotland | Wales | Ireland | England | | |
| Generated by | Major power producers | 324,623 | 46,882 | 36,780 | 6,702 | 234,258 | 300,822 | 43,164 | 32,338 | 6,661 | 218,659 | | |
| | Other generators | 33,661 | 6,142 | 2,951 | 1,080 | 23,488 | 37,274 | 6,878 | 2,982 | 1,220 | 26,195 | | |
| Total generated | | 358,284 | 53,024 | 39,731 | 7,782 | 257,747 | 338,096 | 50,042 | 35,319 | 7,880 | 244,854 | | |
| Own use by Oth | ner generators | 2,191 | 283 | 209 | 32 | 1,667 | 2,522 | 342 | 219 | 39 | 1,922 | | |
| Electricity suppl | ied (net) by Other generators | 31,470 | 5,858 | 2,742 | 1,048 | 21,821 | 34,752 | 6,535 | 2,763 | 1,180 | 24,273 | | |
| Used in pumping at pumped storage and other own use by MPPs | | 19,588 | 3,143 | 4,766 | 195 | 11,484 | 17,842 | 2,758 | 4,360 | 180 | 10,544 | | |
| Electricity suppl | ied (net) by MPPs | 305,035 | 43,740 | 32,013 | 6,507 | 222,775 | 282,980 | 40,406 | 27,978 | 6,481 | 208,116 | | |
| Electricity transferred to England (net of receipts) | | 0 | 13,275 | 14,671 | 0 | -27,946 | 0 | 10,770 | 11,186 | 0 | -21,956 | | |
| receipts) | | 0 | 1,541 | 0 | -1,541 | 0 | 0 | 1,044 | 0 | -1,044 | 0 | | |
| Electricity transf | ferred to Europe (net of receipts) | -14,431 | 0 | 2,161 | 45 | -16,637 | -20,520 | 0 | 2,408 | -121 | -22,807 | | |
| Transfers from | other generators to public supply | 13,719 | 2,554 | 1,195 | 457 | 9,513 | 15,084 | 2,837 | 1,199 | 512 | 10,536 | | |
| Transmission lo | sses | 6,351 | 575 | 302 | 159 | 5,315 | 6,509 | 613 | 308 | 164 | 5,423 | | |
| Distribution loss | es | 21,375 | 2,012 | 1,052 | 543 | 17,768 | 22,142 | 2,195 | 1,094 | 566 | 18,287 | | |
| Consumption fro | om public supply [A] | 305,458 | 28,891 | 15,022 | 7,757 | 253,788 | 289,934 | 28,621 | 14,180 | 7,429 | 239,704 | | |
| Consumption by | / autogenerators | 17,751 | 3,304 | 1,547 | 591 | 12,309 | 19,668 | 3,699 | 1,563 | 668 | 13,737 | | |
| Total Electricity | consumption | 323,209 | 32,195 | 16,569 | 8,348 | 266,096 | 309,601 | 32,319 | 15,744 | 8,097 | 253,442 | | |
| Electricity sales | (public supply) [B] | 306,747 | 28,879 | 15,094 | 7,791 | 254,985 | 291,153 | 28,863 | 14,379 | 7,438 | 240,473 | | |
| Statistical different | ence | -1,289 | 12 | -71 | -34 | -1,197 | -1,220 | -243 | -199 | -9 | -769 | | |
| between calculated consumption [A] and sales [B] | | | | | | | | | | | | | |

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| I able 1 col | ntinued: Generation and supp | Diy of elect 20 | 2013 to 20 | Scotiai | nd, wal | es, Northe | ern ireland | n Ireland and England, | | | | | |
|---|------------------------------------|--------------------|------------|---------|----------|------------|-------------|------------------------|--------|----------|---------|--|--|
| | | | | 2015 | | | | | 2016 | | | | |
| | | | | I I | Northern | | | | | Northern | | | |
| | | UK total | Scotland | Wales | Ireland | England | UK total | Scotland | Wales | Ireland | England | | |
| Generated by | Major power producers | 295,991 | 43,652 | 34,442 | 7,066 | 210,831 | 292,944 | 38,119 | 39,232 | 7,358 | 208,235 | | |
| | Other generators | 42,926 | 7,700 | 3,491 | 1,696 | 30,039 | 46,453 | 7,726 | 3,290 | 1,823 | 33,613 | | |
| Total generated | | 338,917 | 51,351 | 37,933 | 8,762 | 240,870 | 339,397 | 45,845 | 42,522 | 9,182 | 241,848 | | |
| Own use by Oth | ner generators | 2,836 | 375 | 274 | 58 | 2,130 | 2,933 | 382 | 210 | 88 | 2,253 | | |
| Electricity suppl | ied (net) by Other generators | 40,090 | 7,325 | 3,217 | 1,638 | 27,910 | 43,520 | 7,345 | 3,080 | 1,736 | 31,360 | | |
| Used in pumping at pumped storage and other own use by MPPs | | 17,529 | 2,800 | 4,439 | 185 | 10,105 | 16,354 | 2,622 | 4,276 | 194 | 9,262 | | |
| Electricity suppl | ied (net) by MPPs | 278,462 | 40,852 | 30,003 | 6,881 | 200,726 | 276,590 | 35,497 | 34,957 | 7,164 | 198,972 | | |
| Electricity transferred to England (net of receipts) | | 0 | 14,598 | 13,349 | 0 | -27,947 | 0 | 9,639 | 18,419 | 0 | -28,058 | | |
| receipts) | | 0 | 191 | 0 | -191 | 0 | 0 | -252 | 0 | 252 | C | | |
| Electricity transf | ferred to Europe (net of receipts) | -20,938 | 0 | 1,065 | -167 | -21,837 | -17,546 | 0 | -313 | -199 | -17,034 | | |
| Transfers from o | other generators to public supply | 19,113 | 3,492 | 1,534 | 781 | 13,306 | 20,613 | 3,479 | 1,459 | 822 | 14,853 | | |
| Transmission lo | sses | 7,395 | 644 | 385 | 179 | 6,187 | 7,395 | 656 | 424 | 179 | 6,136 | | |
| Distribution loss | es | 20,065 | 1,834 | 1,081 | 515 | 16,635 | 19,905 | 1,890 | 1,165 | 508 | 16,341 | | |
| Consumption fro | om public supply [A] | 291,054 | 27,077 | 15,657 | 7,327 | 240,994 | 287,449 | 27,042 | 16,720 | 7,247 | 236,440 | | |
| Consumption by | y autogenerators | 20,977 | 3,833 | 1,684 | 857 | 14,604 | 22,907 | 3,866 | 1,621 | 914 | 16,507 | | |
| Total Electricity | consumption | 312,031 | 30,909 | 17,341 | 8,184 | 255,597 | 310,356 | 30,908 | 18,341 | 8,161 | 252,946 | | |
| Electricity sales | (public supply) [B] | 290,007 | 26,505 | 15,621 | 7,445 | 240,435 | 288,129 | 27,356 | 16,870 | 7,357 | 236,546 | | |
| Statistical difference | | 1,047 | 571 | 36 | -119 | 558 | -680 | -315 | -149 | -110 | -107 | | |
| between calcula | ated consumption [A] and sales [B] | | | | | | | | | | | | |

| | | | | Ċ | 7777 | | | | | | |
|----------------|-------------------------------|------------|----------|--------|-----------|----------|-----------|----------|--------|----------|----------|
| | | | | 2013 | | | | | 2014 | | |
| | | | | | Northern | | | | | Northern | |
| | | UK total S | Scotland | Wales | Ireland I | England | UK total | Scotland | Wales | Ireland | England |
| Major power | Coal | 130,175 | 10,761 | 11,339 | 2,596 | 105,479 | 100,167 | 10,157 | 7,368 | 2,160 | 80,482 |
| producers: | Oil | 745 | 206 | 244 | 26 | 268 | 530 | 192 | 148 | 24 | 166 |
| | Gas | 82,891 | 3,497 | 17,212 | 3,458 | 58,725 | 88,871 | 880 | 18,564 | 3,817 | 65,610 |
| | Nuclear | 70,607 | 18,498 | 4,325 | 0 | 47,784 | 63,748 | 16,633 | 1,953 | 0 | 45,162 |
| | Thermal renewables | 9,212 | 395 | 0 | 0 | 8,816 | 12,698 | 645 | 0 | 0 | 12,053 |
| | Other thermal | 522 | 0 | 0 | 0 | 522 | 528 | 0 | 0 | 0 | 528 |
| | Hydro natural flow | 3,609 | 3,414 | 175 | 0 | 20 | 4,635 | 4,393 | 213 | 0 | 28 |
| | Hydro pumped storage | 2,904 | 620 | 2,284 | 0 | 0 | 2,883 | 494 | 2,389 | 0 | 0 |
| | Non thermal renewables | 23,958 | 9,492 | 1,200 | 622 | 12,644 | 26,762 | 9,769 | 1,702 | 660 | 14,632 |
| | Total | 324,623 | 46,882 | 36,780 | 6,702 | 234,258 | 300,822 | 43,164 | 32,338 | 6,661 | 218,659 |
| Other | Coal | 83 | 9 | 0 | 39 | 35 | 72 | 0 | 0 | 39 | 33 |
| Generators: | Oil | 1,321 | 433 | 49 | 38 | 801 | 1,390 | 639 | 43 | 39 | 668 |
| | Gas | 12,952 | 1,942 | 1,043 | 102 | 9,865 | 12,021 | 1,843 | 853 | 101 | 9,224 |
| | Thermal renewables | 8,888 | 977 | 623 | 135 | 7,154 | 9,921 | 1,071 | 577 | 168 | 8,105 |
| | Other thermal | 1,389 | 61 | 594 | 7 | 727 | 1,440 | 135 | 621 | 0 | 683 |
| | Hydro natural flow | 1,092 | 956 | 53 | 22 | 62 | 1,253 | 1,090 | 64 | 27 | 72 |
| | Non thermal renewables | 6,454 | 1,757 | 588 | 738 | 3,371 | 9,253 | 2,076 | 824 | 844 | 5,509 |
| | Wastes | 1,481 | 8 | 0 | 0 | 1,473 | 1,923 | 22 | 0 | 0 | 1,901 |
| | Total | 33,661 | 6,142 | 2,951 | 1,080 | 23,488 | 37,274 | 6,878 | 2,982 | 1,220 | 26,195 |
| Total generati | ion by fuel | 358,284 | 53,024 | 39,731 | 7,782 | 257,747 | 338,096 | 50,042 | 35,319 | 7,880 | 244,854 |
| within which: | Renewables Hydro | 4,701 | 4,369 | 229 | 22 | 82 | 5,888 | 5,484 | 277 | 27 | 100 |
| | Wind, wave, solar | 30,412 | 11,248 | 1,788 | 1,361 | 16,015 | 36,016 | 11,845 | 2,526 | 1,504 | 20,140 |
| | Other | 18,100 | 1,372 | 623 | 135 | 15,971 | 22,619 | 1,716 | 577 | 168 | 20,158 |
| | Total | 53,213 | 16,990 | 2,639 | 1,517 | 32,067 | 64,522 | 19,045 | 3,380 | 1,699 | 40,398 |
| Renewables e | eligible under the renewables | | | | | <u> </u> | · · · · · | | • | | <u> </u> |
| obligation | 0 | 44,996 | 13,979 | 2,107 | 1,452 | 27,458 | 53,207 | 15,096 | 2,628 | 1,602 | 33,881 |
| Percentage | Coal | 36.4 | 20.3 | 28.5 | 33.9 | 40.9 | 29.6 | 20.3 | 20.9 | 27.9 | 32.9 |
| shares of | Oil | 0.6 | 1.2 | 0.7 | 0.8 | 0.4 | 0.6 | 1.7 | 0.5 | 0.8 | 0.3 |
| generation: | Gas | 26.8 | 10.3 | 45.9 | 45.7 | 26.6 | 29.8 | 5.4 | 55.0 | 49.7 | 30.6 |
| | Nuclear | 19.7 | 34.9 | 10.9 | 0.0 | 18.5 | 18.9 | 33.2 | 5.5 | 0.0 | 18.4 |
| | Hydro natural flow | 1.3 | 8.2 | 0.6 | 0.3 | 0.0 | 1.7 | 11.0 | 0.8 | 0.3 | 0.0 |
| | Other renewables | 13.5 | 23.8 | 6.1 | 19.2 | 12.4 | 17.3 | 27.1 | 8.8 | 21.2 | 16.5 |
| | Other | 1.8 | 1.3 | 7.2 | 0.1 | 1.1 | 2.0 | 1.3 | 8.5 | 0.0 | 1.3 |
| | Total | 100.0 | 100.0 | 100.0 | 100.0 | 100.0 | 100.0 | 100.0 | 100.0 | 100.0 | 100.0 |

Table 2: Generation of electricity by fuel in Scotland, Wales, Northern Ireland and England, 2013 to 2016 GWh

| | | | <u>., ., .,</u> | 2015 | | | | | 2016 | | |
|---------------|-------------------------------|----------|-----------------|--------|----------|---------|----------|----------|--------|----------|---------|
| | | | | | Northern | | | | 20.0 | Northern | |
| | | UK total | Scotland | Wales | Ireland | England | UK total | Scotland | Wales | Ireland | England |
| Major power | Coal | 75,812 | 8,275 | 8,153 | 2,102 | 57,283 | 30,655 | 1,806 | 7,316 | 2,107 | 19,427 |
| producers: | Oil | 683 | 188 | 163 | 42 | 290 | 555 | 157 | 182 | 69 | 147 |
| | Gas | 88,461 | 126 | 16,851 | 4,187 | 67,297 | 131,978 | 1.523 | 26,022 | 4,489 | 99,944 |
| | Nuclear | 70,345 | 17,763 | 3,887 | , 0 | 48,696 | 71,726 | 19,630 | , 0 | 0 | 52,096 |
| | Thermal renewables | 17,694 | 727 | 0 | 0 | 16,966 | 17,401 | 735 | 33 | 0 | 16,634 |
| | Other thermal | 689 | 0 | 0 | 0 | 689 | 968 | 0 | 0 | 0 | 968 |
| | Hydro natural flow | 4,907 | 4,605 | 273 | 0 | 28 | 3,951 | 3,692 | 235 | 0 | 25 |
| | Hydro pumped storage | 2,739 | 523 | 2,217 | 0 | 0 | 2,959 | 486 | 2,474 | 0 | 0 |
| | Non thermal renewables | 34,662 | 11,445 | 2,899 | 735 | 19,582 | 32,750 | 10,091 | 2,972 | 694 | 18,994 |
| | Total | 295,991 | 43,652 | 34,442 | 7,066 | 210,831 | 292,944 | 38,119 | 39,232 | 7,358 | 208,235 |
| Other | Coal | 66 | 0 | 0 | 38 | 28 | 56 | 0 | 0 | 36 | 20 |
| Generators: | Oil | 1,354 | 693 | 30 | 40 | 592 | 1,285 | 529 | 36 | 42 | 678 |
| | Gas | 11,415 | 1,793 | 693 | 115 | 8,814 | 11,384 | 1,606 | 706 | 106 | 8,966 |
| | Thermal renewables | 11,546 | 1,116 | 764 | 270 | 9,397 | 12,641 | 1,162 | 694 | 458 | 10,326 |
| | Other thermal | 1,364 | 207 | 594 | 0 | 562 | 1,864 | 407 | 430 | 7 | 1,019 |
| | Hydro natural flow | 1,392 | 1,210 | 78 | 29 | 75 | 1,444 | 1,272 | 73 | 24 | 75 |
| | Non thermal renewables | 13,203 | 2,655 | 1,199 | 1,205 | 8,144 | 15,037 | 2,725 | 1,237 | 1,151 | 9,925 |
| | Wastes | 2,586 | 26 | 132 | 0 | 2,428 | 2,742 | 25 | 113 | 0 | 2,603 |
| | Total | 42,926 | 7,700 | 3,491 | 1,696 | 30,039 | 46,453 | 7,726 | 3,290 | 1,823 | 33,613 |
| Total generat | tion by fuel | 338,917 | 51,351 | 37,933 | 8,762 | 240,870 | 339,397 | 45,845 | 42,522 | 9,182 | 241,848 |
| within which: | Renewables Hvdro | 6.298 | 5.815 | 352 | 29 | 103 | 5.395 | 4.963 | 308 | 24 | 100 |
| | Wind, wave, solar | 47.865 | 14,100 | 4.099 | 1.939 | 27.726 | 47,788 | 12.815 | 4.209 | 1.844 | 28,919 |
| | Other | 29.240 | 1.844 | 764 | 270 | 26,363 | 30.043 | 1.897 | 727 | 458 | 26,960 |
| | Total | 83,403 | 21,759 | 5,214 | 2,238 | 54,192 | 83,225 | 19,676 | 5,244 | 2,326 | 55,979 |
| Renewables | eligible under the renewables | | | | | | | | | | |
| obligation | | 68,134 | 17,078 | 4,212 | 2,116 | 44,728 | 65,696 | 15,189 | 4,187 | 2,135 | 44,185 |
| Percentage | Coal | 22.4 | 16.1 | 21.5 | 24.4 | 23.8 | 9.0 | 3.9 | 17.2 | 23.3 | 8.0 |
| shares of | Oil | 0.6 | 1.7 | 0.5 | 0.9 | 0.4 | 0.5 | 1.5 | 0.5 | 1.2 | 0.3 |
| generation: | Gas | 29.5 | 3.7 | 46.2 | 49.1 | 31.6 | 42.2 | 6.8 | 62.9 | 50.0 | 45.0 |
| 5 | Nuclear | 20.8 | 34.6 | 10.2 | 0.0 | 20.2 | 21.1 | 42.8 | 0.0 | 0.0 | 21.5 |
| | Hydro natural flow | 1.9 | 11.3 | 0.9 | 0.3 | 0.0 | 1.6 | 10.8 | 0.7 | 0.3 | 0.0 |
| | Other renewables | 22.8 | 31.1 | 12.8 | 25.2 | 22.5 | 22.9 | 32.1 | 11.6 | 25.1 | 23.1 |
| | Other | 2.2 | 1.5 | 7.8 | 0.0 | 1.5 | 2.5 | 2.0 | 7.1 | 0.1 | 1.9 |
| | Total | 100.0 | 100.0 | 100.0 | 100.0 | 100.0 | 100.0 | 100.0 | 100.0 | 100.0 | 100.0 |

Table 2 continued: Generation of electricity by fuel in Scotland, Wales, Northern Ireland and England, 2013 to 2016 GWh