

Competition in UK electricity markets

Introduction

This article includes information relating to competition in the UK electricity market, formerly published as part of UK Energy Sector Indicators. The article examines the two parts of the industry where there is competition for provision: generation and sales. For both markets, the article describes the number of companies operating, and the market concentrations. The Herfindahl-Hirschman measure (see explanation at the end of this article) is used to provide the market concentration as it provides extra emphasis on the contribution of participants with the largest shares. For electricity sales, this article covers the major suppliers surveyed by BEIS comprising approximately 95% of the market.

Key points

- Major electricity suppliers⁽¹⁾ increased in number from 16 in 1989 before privatisation to 35 in 2016.
- Since 2010, electricity market concentration has slowly declined year-on-year across the domestic, commercial and industrial sectors, as more companies entered the market.
- The market share of smaller suppliers (outside the top nine) rose from 2.7% in 2010 to 14.2% in 2016, as new and smaller suppliers took market share from the large companies.
- Major power producers (MPPs) increased in number from 6 in 1989 to 57 in 2016.
- The top nine MPPs' share of generation decreased from 87% in 2012 to 75% in 2016. Their share of capacity decreased from 82% in 2012 to 65% in 2016 as new smaller generators entered the market.

Background to changes in the electricity market

Electricity generation

Following the restructuring of the electricity supply industry in 1990, the former nationalised companies were classified as major generating companies to distinguish them from autogenerators and the new companies set up to generate electricity. However over the next few years, some new independent companies were beginning to make significant contribution to the electricity supply and therefore a new terminology "Major Power Producers" (MPPs) was introduced to signify those companies whose prime purpose is the generation of electricity. The breakup of the nationalised power suppliers into smaller privatised companies immediately increased market competitiveness, with new companies beginning to build their own Combined Cycle Gas Turbine (CCGT) stations from 1992. Major wind farm companies and major solar photovoltaic (PV) operators are now also included in the MPP definition.

Electricity supply

Competition was introduced to the electricity markets in three phases. First the upper tier of the non-domestic market (customers with a maximum demand of over 1 MW, comprising 30 per cent of the market) was opened up to competition in March 1990. Next, the 100 kW to 1 MW tier (15 per cent of the market) was opened up to competition in April 1994. Full competition for the remaining 55 per cent of the market (below 100 kW peak load) was introduced in stages between September 1998 and June 1999. This final phase covered domestic consumers who account for almost a third of electricity consumed in the UK.

Competition in electricity sales

The number of electricity suppliers⁽¹⁾ rapidly increased, from 16 before privatisation in 1989 to 26 in 2005. The concentration measure levelled off between 2000 and 2008 as although new power producers entered the market, others were either taken over or bought additional power stations to add to their portfolios. There were 35 electricity suppliers in 2016.

(1) In this article electricity supplier refers to major suppliers surveyed by BEIS, covering approximately 95% of all UK electricity sales in 2016. Please see the [BEIS Electricity statistics data sources and methodologies](#) for more details.

Table 1 shows the number of supplying companies to the domestic, commercial and industrial sectors, 1996 to 2016.¹

Table 1: Number of companies supplying electricity⁽¹⁾

	1996	1998	2000	2002	2004	2006	2008	2010	2012	2014	2015	2016
Domestic Sector	1	1	11	7	11	10	11r	13r	17r	23r	22	20
Commercial Sector	17	16	14	14	18	15r	15r	15	21	28r	27r	26
Industrial Sector	18	22	20	18	30	22r	20r	20r	24r	27r	28r	26

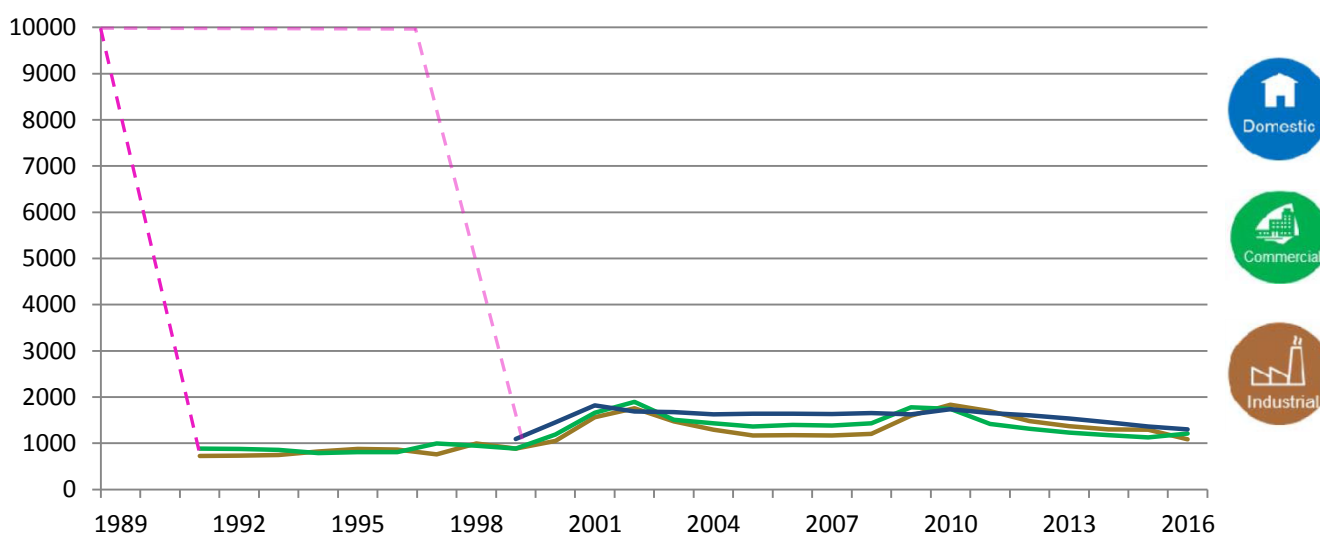
(1) Companies can supply into more than one market and are counted in each market they supply to.

Source: BEIS

Chart 1 below shows the market concentration as expressed through the Herfindahl-Hirschman index. In the chart, higher numbers show more concentration while lower numbers indicate a more diverse market.

There was an initial sharp decrease in market concentration following privatisation, then a rise between 1998 and 2002, mainly due to a spate of mergers. The market concentration subsequently fell as the number of industrial and commercial suppliers increased but by 2010 it had increased again as a result of a number of closures. Since 2010, electricity market concentration has slowly declined year-on-year across the domestic, commercial and industrial sectors, as the market became more competitive. This was due to increasing numbers of smaller suppliers entering the market and taking share from bigger companies. Overall, however, market concentration in 2016 is similar to that seen in 1999,

Chart 1: Herfindahl-Hirschman Index for electricity sales market concentration, 1989 to 2016



The domestic market was a regional monopoly before 1998, dominated by the Regional Electricity Company (REC). From 1999 to 2002 electricity sales to the domestic sector, as with industry and commercial sales, became more concentrated, with mergers between former RECs, and with other suppliers/generators. Since 2002, there has been less merger activity and the concentration measure has been fairly constant. In 2013 though there were five entrants to the market; however, the low level of customers acquired had little impact on the index.

In 2016, two suppliers to the domestic sector exited the market, decreasing the total to 20. The commercial market had 18 commercial electricity suppliers in 2004/05 but this fell to 15 in 2010, causing an increase in market concentration. Since 2010 the number of suppliers has increased to

¹ Following a review (principally relating to the rules of ownership of companies) we have made some revisions to this table this year. Details of the impact are shown in the Annex.

26 in 2016, with an accompanying decrease in concentration. With 26 industrial electricity suppliers in 2016, the industrial market has become less concentrated than in 2010 when there were 20 industrial electricity suppliers.

Electricity supplied to all consumers by aggregated shares

Table 2 shows how the market shares of the largest companies have changed over the last five years. The market share of the top nine suppliers peaked in 2009 and 2010 but since has steadily fallen to 85.8% in 2016. The share of those outside of the top nine rose from 4.0% in 2010 to 14.2% in 2016, due to the addition of new suppliers and other small suppliers taking market share from the large companies.

Table 2: Percentage of total electricity supplied to all consumers

Electricity Suppliers	Market Share (%)						
	2010	2011	2012	2013	2014	2015	2016
Aggregated share of top 3 suppliers	50.9%	48.9%	47.2%	46.3%	37.0%	45.1%	43.1%
Aggregated share of next 3 suppliers	36.4%	35.2%	36.7%	35.4%	27.0%	32.7%	31.7%
Aggregated share of next 3 suppliers	8.8%	8.5%	8.0%	8.1%	21.0%	10.1%	10.9%
Aggregated share of top 9 suppliers	96.0%	92.6%	91.8%	89.8%	85.0%	87.8%	85.8%
Other suppliers	4.0%	7.4%	8.2%	10.2%	14.9%	12.2%	14.2%

Source: BEIS

Electricity generation competition

Table 3 shows the number of companies that are counted as MPPs. The number of companies increased rapidly, from six before privatisation up to a peak of 36 in 2001, before mergers caused numbers to fall back to 29 in 2006. Starting in 2007, several renewable generators were reclassified as MPPs and the addition of new generators saw the number of companies increase to 57 in 2016.

Table 3: Number of Major Power Producers (1)

Year	Number	Year	Number	Number producing at least 5% of total generation
1989	6	2000	34	7
1990	6	2001	36	6
1991	11	2002	36	7
1992	14	2003	34	6
1993	20	2004	32	7
1994	23	2005	30	7
1995	25	2006	29	7
1996	26	2007	34	8
1997	27	2008	34	9
1998	29	2009	34	8
1999	30	2010	39	8
		2011	41	7
		2012	44	7
		2013	44	7
		2014	47	7
		2015	53	7
		2016	57	6

Source: BEIS

Table 4 shows the MPPs aggregated share of generation and aggregated share of capacity for 2012 to 2016. The market share of the top 9 generators in this period peaked in 2013 at 87% but has since declined to 75% in 2016 as new companies entered the market and increased generation. The top 9 generators held a lower share of capacity (65% in 2016) compared to generation. This indicates a greater proportion of their generation is from non-renewable sources, which have higher load factors i.e. they operate closer to full capacity.

Table 4: Percentage of total generation and total capacity by Major Power Producers

	Share in Generation (%)					Share in Capacity ⁽¹⁾ (%)				
	2012	2013	2014	2015	2016	2012	2013	2014	2015	2016
Aggregated share of top 3 companies	51.7	50.9	48.5	48.6	48.9	46.7	41.9	43.5	32.5	32.4
Aggregated share of next 3 companies	23.8	24.0	25.6	21.6	15.5	23.4	24.9	24.2	27.8	18.1
Aggregated share of next 3 companies	11.1	11.8	10.7	12.7	10.5	12.1	12.6	13.1	15.2	14.6
Aggregated share of top 9 companies	86.6	86.7	84.8	83.0	74.9	82.2	79.4	80.9	75.5	65.1
Other major power producers	13.4	13.3	15.2	17.0	25.1	17.8	20.6	19.1	24.5	34.9

(1) Of the same companies in each band in generation terms
Source: BEIS

User feedback

We welcome all feedback from users; therefore, if you have any comments or queries regarding this analysis, please contact either Stephen Ashcroft or Nick Jesson using the contact details below.

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Annex

Herfindahl-Hirschman

The Herfindahl-Hirschman measure attempts to measure market concentration. It places extra emphasis on the contributions of participants with the largest shares. The measure is commonly used to assess whether mergers should go ahead and whether they will significantly affect the balance of the market in a particular sector.

It is expressed by the following equation: Herfindahl-Hirschman measure = the square of each participant's market share added together across all participants in the market.

Values vary between zero, which signifies a perfectly competitive industry, and ten thousand, for a pure monopoly.

Table 5: Revisions to the 2015 number of companies supplying electricity as reported in 2016

	1996	1998	2000	2002	2004	2006	2008	2010	2012	2014	2015
Domestic Sector	0	0	0	0	0	0	1	2	2	3	0
Commercial Sector	0	0	0	0	0	-2	1	0	0	2	-1
Industrial Sector	0	0	0	0	0	1	1	-1	-1	1	-1

Table 6: Revisions to the 2015 percentage of total electricity supplied to all consumers as reported in 2016

Electricity Suppliers	Market Share (%)				
	2011	2012	2013	2014	2015
Aggregated share of top 3 suppliers	-2.4%	-1.9%	-1.4%	-10.4%	0.0%
Aggregated share of next 3 suppliers	-0.8%	0.0%	0.0%	-6.5%	0.0%
Aggregated share of next 3 suppliers	1.9%	1.8%	1.5%	12.1%	0.0%
Aggregated share of top 9 suppliers	-1.2%	-0.2%	0.1%	-4.8%	0.0%
Other suppliers	1.2%	0.2%	-0.1%	4.7%	0.0%