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Welsh household electricity prices

A Paper for Consumer Focus Wales

Prepared by:
Cornwall Energy

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Consumer Focus was formed through the merger of three organisations – energywatch, Postwatch and the National Consumer Council (including the Scottish and Welsh Consumer Councils). We are an organisation that works in a devolved setting, with work priorities varying across different parts of the country, but all working to common strategic goals.

Through campaigning, advocacy and research, we champion consumers’ interests in private and public sectors by working to secure fairer markets, greater value for money, and improved customer service. We have a particular focus on the interests of consumers in markets that are designated by Government as requiring additional consumer advocacy. Currently these include energy and postal service consumers.

We also have a commitment to work on behalf of vulnerable consumers, and a duty to work on issues of sustainable development.

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I Executive summary

I.1 Purpose

1. Consumer Focus Wales asked Cornwall Energy in early 2010 to review current household electricity prices in Wales and compare them with levels elsewhere in Great Britain. This review updates a similar exercise undertaken two years ago for energywatch Wales, Consumer Focus Wales's predecessor as statutory consumer advocate for householders in electricity and gas markets. Both organisations have had long-standing concerns that suppliers may be earning greater, perhaps unreasonably high, profits from the electricity they provide to Welsh households compared with households elsewhere in Great Britain.

I.2 Approach

2. Using data on price offers by the Big Six energy suppliers¹ from Consumer Focus's pricing factsheet current at 17 February 2010 for medium household electricity users on a single rate electricity supply, we have:
 - a. compared average annual electricity costs including VAT for the two electricity supply regions covering Wales and for those covering the rest of Great Britain;
 - b. reviewed whether suppliers in the two supply regions in Wales² are charging a greater premium compared with competitor rates than suppliers in the other 12 electricity supply regions of Great Britain;
 - c. estimated the costs faced by suppliers in servicing electricity users for the two Welsh electricity supply regions and by those in the rest of Great Britain; and
 - d. compared the differences in average annual electricity costs with the differences in assessed supply chain costs.

We have also compared our findings with those calculated in our previous review, which had a date point of prices current at 2 April 2008.

3. The purpose of this approach is two-fold:
 - a. to consider whether the home area suppliers might be seeking greater or lesser margins from the Welsh supply regions compared with elsewhere in Great Britain; and
 - b. to assess the extent to which supply chain costs faced by electricity suppliers in Wales might differ compared with elsewhere in Great Britain.
4. We note that, since we undertook our 2008 review, Ofgem has concluded its *Energy supply probe*³ which mandated changes to the way the Big Six balance their pre-payment and single fuel electricity charges especially to legacy in-area customers to be sure that they are cost-reflective.

I.3 Findings

I.3.1 Electricity price differentials

5. Welsh householders continue to pay more than their Scottish and English counterparts for electricity. But, compared with 2008, the differential has narrowed. At £427 (2008: £408), Welsh consumers on direct debit terms typically now pay £6 (1.6%) more than the £421 (2008: £396) charged to their Scottish counterparts and £21 (5.3%) more than the average £406 (2008: £381) paid in England. In 2008 the extra amounts paid by Welsh consumers were £11 compared with Scotland and £26 compared with England, indicating that the premiums levied on them relative to users elsewhere in Great Britain have narrowed. Similar premiums exist currently for standard credit and prepayment terms as for direct debit, but the premiums for online direct debit terms are higher at £9 compared with Scotland and £25 compared with England.
6. Table I:1 summarises this information.

¹ British Gas, EDF Energy, RWE Npower, E.ON UK, Scottish Power and Scottish and Southern Energy

² Scottish Power Manweb in North Wales and Scottish and Southern Energy (Swalec) in South Wales

³ <http://www.ofgem.gov.uk/Markets/RetMkts/ensuppro/Pages/Energysupplyprobe.aspx>

Table 1.1: Average electricity bills 2010 and 2008—direct debit terms

£/year	2010	2008	Change
North Wales	421	399	22
South Wales	433	417	16
Wales	427	408	19
Scotland	421	396	24
England	406	381	25
England and Scotland	408	384	25

7. The three reasons that we ascribed in our 2008 review for higher electricity costs in Wales compared with the rest of Great Britain continue to apply:
 - a. delivered costs in South Wales are higher than North Wales by about £12/year for offline offerings. Online the average premium is £21/year. There have also been two important changes in the balance of prices between North and South Wales since 2008: the overall premium has reduced for offline offerings from about £20/year to about £12/year, while the premium for prepayment consumers in South Wales against North Wales has narrowed from £24/year to £12/year;
 - b. delivered costs in North Wales are typically around average levels for Scotland and 2-3%—equivalent to around £5-£10/year depending on payment terms—above those for the rest of Great Britain. The differential against prices in the rest of Great Britain has narrowed marginally from about £10-15/year in 2008; and
 - c. offline delivered costs in South Wales are now typically 3% greater than average levels for Scotland and 5%—equivalent to around £20/year—above those for the rest of Great Britain. The premiums paid by consumers in South Wales has narrowed from 6% of bills in 2008 to about 3% now for all but online offerings where the 6% premium continues.
8. These findings reflect lower increases in delivered costs to householders in Wales during the period 2008-10 compared with other electricity supply regions in England and Scotland. Bills in both North and South Wales rose by less than the £25/year average for the rest of Great Britain—by amounts of £22/year and £16/year respectively.

1.3.2 Home area supplier profit margin aspirations

9. One of the consequences of Ofgem's *Energy supply probe* was changes to the way the Big Six set their in-area and pre-payment electricity tariffs. This was in response to fears that suppliers might be levying premium rates on consumers that exceeded any extra costs they incurred in providing these services.
10. Our analysis suggests that any premiums levied on in-area and pre-payment electricity customers have reduced between 2008 and 2010. Where it continues to exist, the home area premium appears to be a factor driven by individual suppliers rather than a regional or national characteristic. One group of consumers served by its home supplier in Wales does appear to be paying a premium. This group is standard credit consumers in North Wales, where rates for such terms levied by Scottish Power are 13% above the average of the rest of the Big Six. A similar premium is also visible in Scottish Power's other home area of the South of Scotland, suggesting that this is a commercial choice that that company has made. We also found this premium at a similar level of 12% in our 2008 report.

1.3.3 Supply chain cost differentials

11. Costs incurred by suppliers of electricity that are broadly consistent regardless of where their customers are located in Great Britain include:
 - a. their cost-to-serve, including metering; and

- b. the costs of funding non-market policy objectives for renewables generation, social tariffs and energy efficiency.
12. Costs incurred by suppliers of electricity that are not broadly consistent regardless of where their customers are located in Great Britain are charges for network use and system losses (both transmission and distribution), which are to a degree intended to be cost-reflective. Here average costs faced by consumers in Wales are higher than elsewhere in Great Britain. South Wales consumers pay £29/year (2008: £20/year) more on average than their counterparts elsewhere in Great Britain for grid charges and North Wales consumers pay £21/year (2008: £4/year) more on average than their counterparts elsewhere in Great Britain. The main reason for the rise in grid charges in Wales relative to elsewhere in Great Britain is cost increases implemented by Wales's two distribution network operators at both 1 April 2009 and 1 April 2010.
13. The £14-£24 extra (2008: £23-£27) paid on average by Welsh consumers compared with elsewhere in Great Britain masks a picture where the premium paid by consumers in South Wales is £21-£35/year (2008: £32-£39/year) and that paid by consumers in North Wales is £8-£13/year (2008: £14-£17/year). The cost-to-serve of consumers in South Wales is around £25/year higher than the average in England and Scotland, while in North Wales it is around £20/year higher as Table 1:2 shows.

Table 1:2: Cost premiums against average England and Scotland levels

Supply region	Total bill	Cost-to-serve	Residual (wholesale energy and supplier profit)
South Wales	£21 to £35	£25 to £26	£-5 to £7
North Wales	£8 to £13	£19 to £20	£-12 to £-7
Wales	£14 to £24	£22 to £22	£-9 to £0
Scotland	£9 to £14	£21 to £22	£-13 to £-8
England	£-5 to £-3	£-4 to £-4	£-1 to £2

14. Our review leads us to conclude that:
- the premium paid by consumers for electricity in Wales relative to the rest of Great Britain has narrowed between 2008 and 2010;
 - suppliers' cost-to-serve accounts for the majority of the premium paid by consumers in 2010 in South Wales, especially if they are served on offline direct debit, standard credit or prepayment terms; and
 - suppliers' cost-to-serve accounts for an amount greater than the premium paid by consumers in 2010 in North Wales compared with average levels in England and Scotland.
15. The primary cause of higher cost-to-serve estimates for suppliers in Wales is higher than Great Britain average charges for using the transmission and distribution networks together with higher than average electrical losses in North Wales.

2 Approach

This Section briefly summaries the approach we have adopted in this work.

2.1 Approach

This report takes the price and supply chain charging position at 1 April 2010 as its baseline.

In order to undertake this analysis, we have taken the following approach:

- we have used Consumer Focus information on prices to “medium” household consumers with 3,300 kWh annual requirements on standard/single unit rate supply terms current at 17 February 2010. Although there have been changes to standard gas prices in February and March 2010, there have been no changes to offline standard credit, direct debit and prepayment rates levied by the Big Six for electricity;
- we have then used information on network charges and other supply chain costs that is current at 1 April 2010 to estimate annualised supply chain costs for serving users of this type in all 14 supply regions of Great Britain; and
- we finally averaged these results to derive figures at the national level—with Wales being represented by the average of the results for the Merseyside and North Wales and South Wales electricity supply regions—and commented on headline differences.

2.2 About Cornwall Energy

The Cornwall Energy team are independent energy market specialists who have experience of liberalised energy markets since their inception in Great Britain and elsewhere in the late 1980s. Specific areas of our expertise include:

- regulation and public policy within both electricity and gas markets;
- electricity and gas design, market governance and business processes; and
- energy trading and competitive supply.

3 Electricity price differentials

Below we summarise the analysis we have undertaken on pricing data collated for Consumer Focus Wales on typical household bills with the purpose of comparing levels of spend for consumers in Wales against those in the rest of Great Britain.

3.1 Approach

In order to undertake this analysis in a time-efficient way, we have made six assumptions including:

- as the boundaries between electricity supply regions and the nations of England and Wales are not contiguous, Wales is represented by the South Wales (sometimes known as Swalec after the former home area supplier) and Merseyside and North Wales (sometimes known as Manweb after the former home area supplier) electricity supply regions. There are two supply regions that cover Scotland and a further 10 that cover the bulk of England;
- we consider prices of electricity including VAT which is charged at 5% on domestic electricity supply consistently throughout the United Kingdom;
- Consumer Focus's 17 February 2010 data on annualised offer costs to typical medium household users with a standard (single rate) electricity supply forms a reliable baseline from which comparisons can be drawn on regional price differentials throughout Great Britain at April 2010;
- the medium user defined by this source as consuming 3,300kWh each year is broadly representative of consumers as a wider group;
- assessments of regional electricity costs should compare offers from the local supplier and the **average** of the offers for the other five major suppliers;
- assessments of national costs are the averages of the appropriate regional costs. Therefore, for Wales the national cost is the average of the appropriate figures for the South Wales and North Wales regions. The figures for North and South Wales have also been assessed separately to understand if the cost drivers for suppliers may be different in each region.

3.2 Comparative delivered prices

As well as considering regional levels for North and South Wales, to compare electricity costs in absolute terms between Wales and the rest of Great Britain, we have calculated average levels for Wales, Scotland, England and England and Scotland together. The results, which are inclusive of VAT, are shown in Table 3:1 below for each of the four terms of payment—standard credit, prepayment, direct debit and online direct debit—offered by the major suppliers.

They show that, at £427, Welsh consumers on direct debit terms typically pay 1.6% (£7 after rounding) more than the £421 charged to their Scottish counterparts and 5.3% (£21) more than the £406 paid in England. Similar premiums exist for standard credit and prepayment terms and equate to around £20 against average levels elsewhere in Great Britain. The premium for Welsh online direct debit customers is higher at around £25 compared with the rest of Great Britain.

Comparing the figures by Welsh region it can be seen:

- offline prices in South Wales are around 3% higher than North Wales—equivalent to around £12/year. But for online direct debit the premium is £22/year (6%);
- prices in North Wales are typically around average levels for Scotland and 2-3%—equivalent to around £10-15/year (2-4%) depending on payment terms—above those for the rest of Great Britain; and
- prices in South Wales are typically £10-£15/year (3%) higher than average levels for Scotland and 5%—equivalent to around £25/year—above those for the rest of Great Britain.

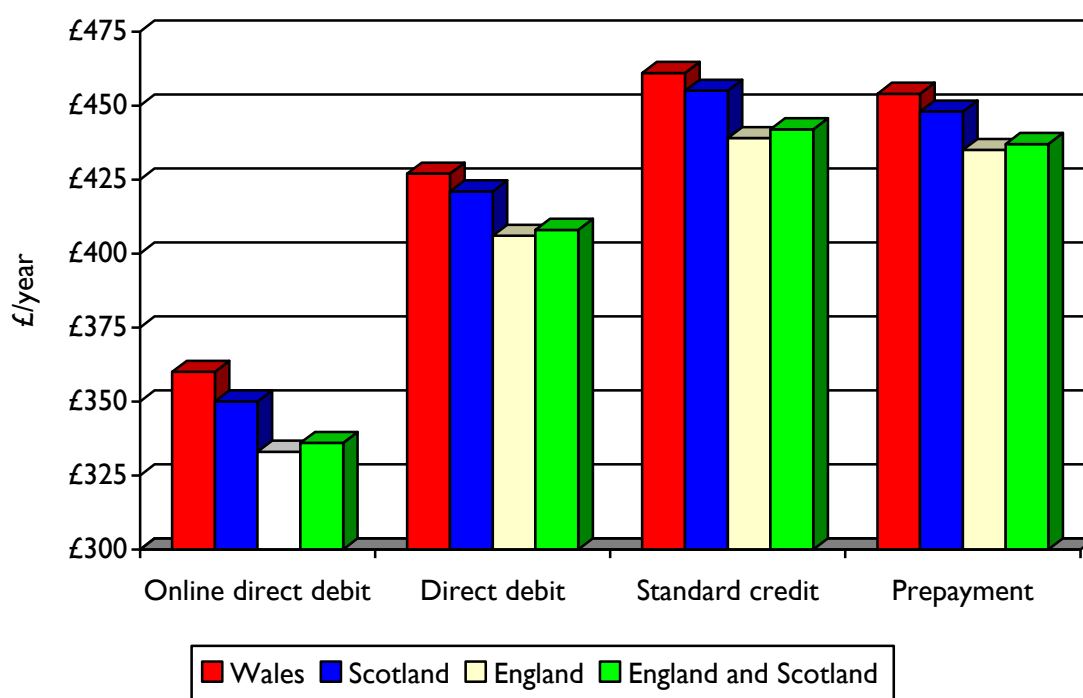
As we noted in our 2008 report, these points suggest that, on a national basis, electricity prices in Wales are high compared with elsewhere in Great Britain mainly because of higher charges levied on consumers in South Wales.

Table 3:1: Typical electricity costs in Wales and elsewhere in Great Britain (including VAT)

	Online direct debit			Direct debit			Standard credit			Prepayment		
	Bill	Prem	Prem (%)	Bill	Prem	Prem (%)	Bill	Prem	Prem (%)	Bill	Prem	Prem (%)
North Wales and Merseyside	349	-11	-3.2%	421	-6	-1.4%	455	-6	-1.3%	447	-6	-1.4%
South Wales	371	11	3.0%	433	6	1.4%	467	6	1.3%	460	6	1.4%
Wales	360	0	0.0%	427	0	0.0%	461	0	0.0%	454	0	0.0%
Scotland	350	-10	-2.7%	421	-7	-1.6%	455	-7	-1.5%	448	-5	-1.2%
England	333	-27	-8.0%	406	-21	-5.3%	439	-22	-5.1%	435	-19	-4.4%
England and Scotland	336	-24	-7.1%	408	-19	-4.6%	442	-20	-4.5%	437	-17	-3.8%

Figure 3:1 plots graphically the information on costs shown in Table 3:1.

Figure 3:1: Annual average electricity costs in Wales, Scotland and England (including VAT)



Source: Consumer Focus data current at 17 February 2010

4 Electricity supply chain cost assessments

In the previous Section we estimated that the typical Welsh householder is spending up to £25 more each year on their electricity than their counterparts elsewhere in Great Britain. In this Section, after consideration of whether this might be because local supply margins are higher, we review supply chain costs to establish if they may contain explanatory factors.

This Section consists of two parts:

- consideration of whether the home area suppliers, who have the greatest individual market shares in each region, might be seeking greater or lesser premiums from the Welsh supply regions compared with elsewhere in Great Britain; and
- a review of the supply chain costs for providing electricity to households to establish how they might differ in Wales compared with elsewhere in Great Britain.

4.1 Home area supplier profit margin aspirations

We use the term “home area” to describe electricity sold by suppliers to consumers located in regions where companies they now own previously held monopoly supply rights. Table 4:1 shows the home areas supplied by five major supply companies. The other of the six, British Gas, does not have a “home area” in the electricity market. Scottish Power and Scottish and Southern Energy are the home suppliers for the two Welsh supply regions—the former for Merseyside and North Wales and the latter for South Wales where they have acquired the local home supply business—as well as the two Scottish supply regions. The English supply regions provide a total of 10 home areas for four suppliers as the industry has consolidated through takeovers and mergers.

Table 4:1: Home area regions by major supplier

	EDF Energy	E.ON UK	RWE Npower	Scottish and Southern Energy	Scottish Power
In area/home	London, South Eastern, South Western	Eastern, East Midlands, North West	West Midlands, Yorkshire, North East	Northern Scotland, Southern England, South Wales	Southern Scotland, Merseyside and North Wales

As markets were first opened, competitors to the home area suppliers typically offered electricity at a discount to encourage consumers to switch to them. The supply price controls that applied from 1998 to 2002 had “headroom” built into them by the regulator to allow a price differential to encourage competitive activity. In the wake of its *Energy supply probe*—which occurred after our 2008 review—Ofgem developed new rules designed to cut out perceived unfair pricing differentials, particularly concerning in-area electricity and prepayment consumers⁴. In anticipation of them several of the Big Six made changes to their prices during winter 2008-09 as Figure 4:1 illustrates.

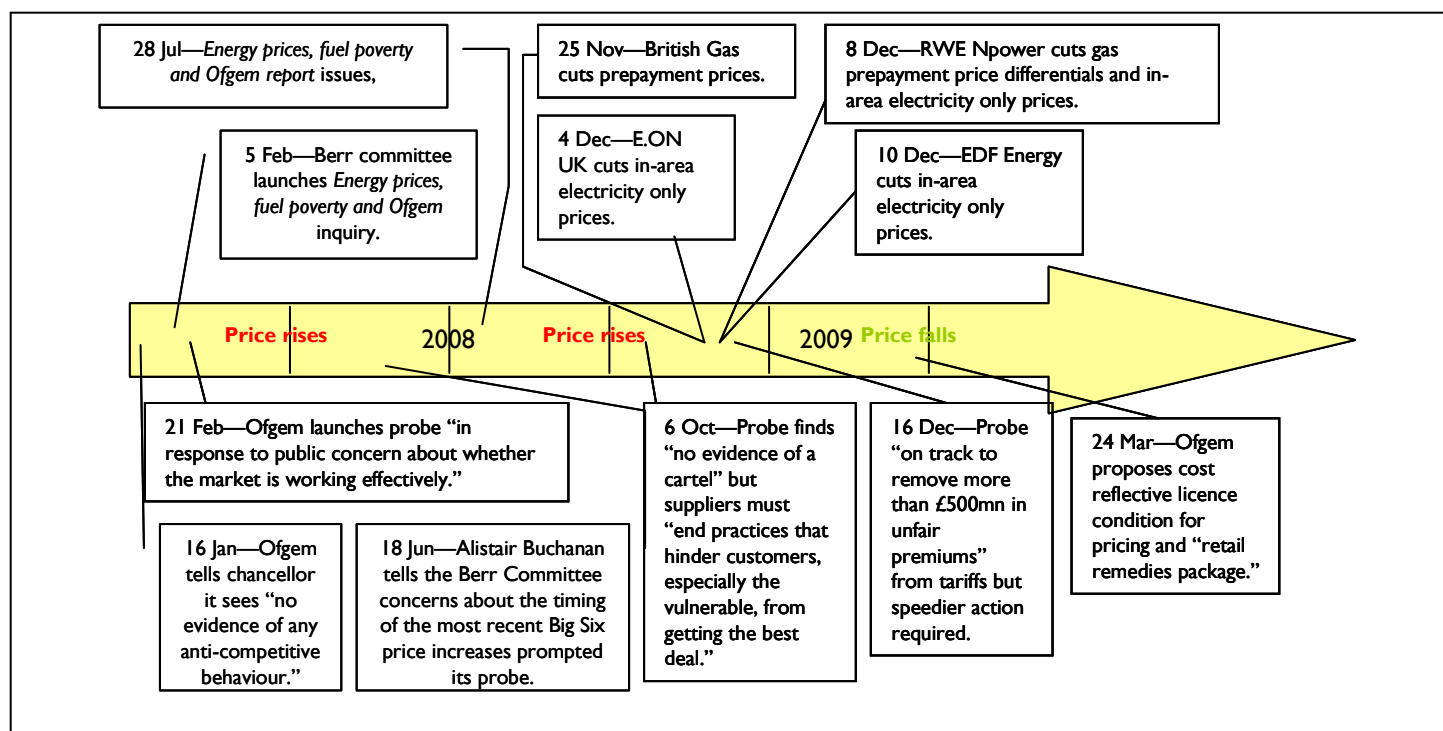
As with our 2008 analysis we have reviewed whether any premiums charged by home area suppliers in Wales may be higher than those levied by home area suppliers elsewhere in Great Britain. The purpose of doing this is to understand whether Welsh home suppliers might be seeking higher margins from their consumers than home suppliers in other areas as this may be a possible factor behind the higher average price levels in Wales.

In order to do this, we calculated for each of the 14 supply regions in Great Britain and for each payment term the level above which the home area supplier’s price stood against the average of the other five major suppliers

The results of this analysis are shown in Table 4:2 and graphically in Figure 4:2.

⁴ <http://www.ofgem.gov.uk/Pages/MoreInformation.aspx?docid=49&refer=Markets/RetMkts/ensuppro>

Figure 4:1: Ofgem's Energy supply probe and changes to Big Six energy prices winter 2008-09



From this analysis, we concluded home area premiums:

- have generally reduced between 2010 and 2008; and most importantly in our opinion
- appeared to be set tactically by individual suppliers rather than demonstrating any regional characteristic.

Scottish and Southern Energy’s home area 2010 prices for the North of Scotland and South Wales regions are within 6% of the average levels charged by its five major competitors for all four payment terms. This was a similar position to that recorded for 2008.

Scottish Power’s home area premiums are consistent by payment term in both its South of Scotland and Merseyside and North Wales home areas. For direct debit and prepayment terms, the premiums are both around 2-4% higher against average competitor prices, but for standard credit terms the equivalent figure is around 13%. The consistency of these figures in both regions suggests to us that the higher differential for standard credit may be one that has been designed and specifically applied by the company. This is especially as our 2008 review found a similar balance of charges for this company with a 12% premium sought from home-area standard credit customers in the South of Scotland and North Wales.

The three suppliers with home areas in England saw different trends:

- EDF Energy’s offline charges were within a very close range of the average of its five major competitors as we had found in 2008. But its online direct debit charges—not available in 2008—were a fifth higher;
- E.ON UK charged a premium of around 5-7% (2008: 8-12%) on average competitor rates to consumers it supplied on a home area basis; and
- as it had in 2008 RWE Npower charged the highest premiums—of 8-12% against 2008’s 16-20%—on average competitor rates to consumers it supplied on a home area basis.

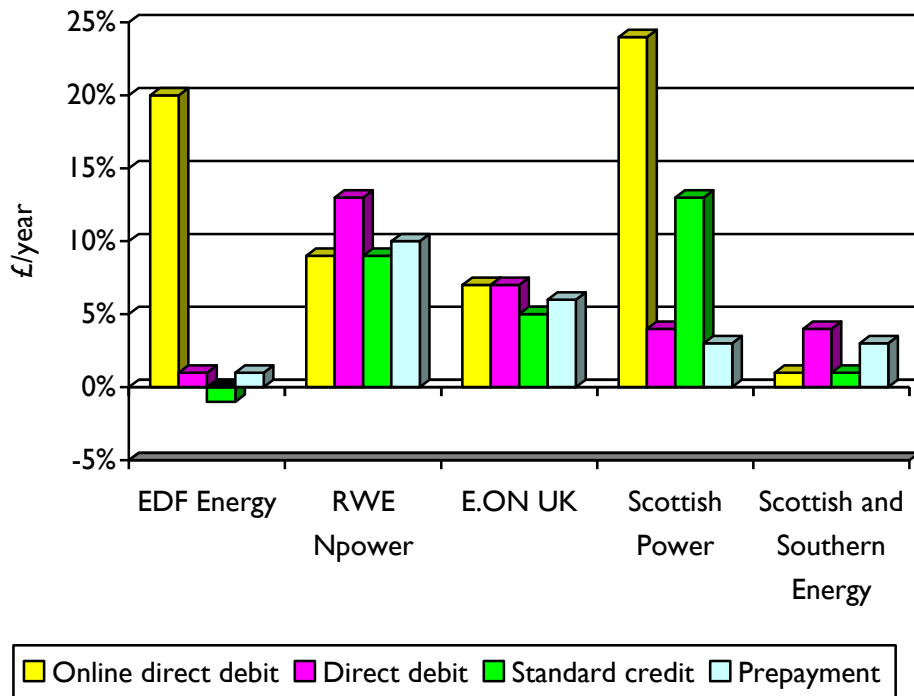
This updated analysis confirms our 2008 finding that, with the potential exception of one consumer group, any extra electricity costs borne by Welsh consumers are not necessarily caused by home area suppliers taking higher profits. The potential exception is consumers in the Merseyside and North Wales area opting to pay by standard credit terms. Their higher relative prices appear to be a commercial choice by Scottish Power, the home area supplier in question, as a similar premium exists for its offer prices on these terms in the south of Scotland.

Table 4:2: Home area premiums against average prices of major competitors

(%)	Supply Term	EDF Energy	RWE Npower	E.ON UK	Scottish Power	Scottish and Southern Energy
Wales	OLDD				25%	2%
	DD				4%	3%
	SC				13%	0%
	PPM				2%	2%
Scotland	OLDD				24%	5%
	DD				4%	6%
	SC				13%	3%
	PPM				3%	4%
England	OLDD	20%	9%	7%		-2%
	DD	1%	13%	7%		4%
	SC	-1%	9%	5%		0%
	PPM	1%	10%	6%		1%
Great Britain	OLDD	20%	9%	7%	24%	1%
	DD	1%	13%	7%	4%	4%
	SC	-1%	9%	5%	13%	1%
	PPM	1%	10%	6%	3%	3%

OLDD=on-line direct debit, DD=direct debit, SC=standard credit, PPM=prepayment

Figure 4:2: Home area premiums against average prices by supplier—Great Britain



4.2 Supply chain cost differentials

In order to establish if suppliers might face higher costs in arranging their services for consumers in Wales, we have reassessed supply chain costs for a Consumer Focus medium user consuming 3,300kWh through a standard, single rate meter on an annualised basis current at 1 April 2010 in each of the 14 charging regions of Great Britain. These charging regions coincide with the 14 home areas referenced in the previous paragraphs. Examples of our approach are shown at Appendix A.

4.2.1 Overview

Irrespective of how a tariff to provide electricity to a householder is presented, in preparing it suppliers will assess separately the different costs in the supply chain, namely:

- what the supplier pays for wholesale energy. Wholesale trading arrangements have been consistent throughout Great Britain since April 2005;
- the suppliers' costs of servicing the customer, including metering;
- charges for using the delivery networks of transmission and distribution, from power station to consumer meter;
- the costs of complying with regulated obligations to stimulate renewables and energy efficiency activity;
- value added tax (VAT); and
- the supplier's profits.

Suppliers' wholesale costs and their profits are commercial and confidential.

There is public domain information on costs for the other four elements. Below we outline these four elements and the information sources we have referenced to assess them.

4.2.2 Suppliers' costs

Suppliers' incur costs for metering equipment and meter reading. Some suppliers carry out these activities themselves, while others procure them from external sources. Our understanding—which we have verified through research with active suppliers and others—is that these charges do not vary substantially within Great Britain for the Big Six.

Suppliers also incur costs for billing and account management that vary by terms of supply, but again the costs are similar per customer by the different account types. Based on updated figures researched originally for analysis we undertook for the National Right to Fuel⁵ and recently updated for Consumer Focus we have assumed:

- £11/year for asset provision and management for a standard meter and £32/year for similar services for a prepayment meter;
- £9/year for meter reading for all types of meter; and
- service costs to cover account management and billing of £15/year for online direct debit consumers, £25/year for consumers on offline direct debit terms, £35/year for those on standard credit terms and £52/year for those on prepayment terms.

Table 4:3 summarises this information and shows that in aggregate these costs range from £35/year (1.06p/kWh) for an online direct debit user consuming 3,300kWh to £93/year (2.82p/kWh) for a prepayment householder with a similar demand requirement.

⁵ <http://www.unison.org.uk/acrobat/B3726b.pdf>

Table 4:3: Suppliers' cost-to-serve

	Online direct debit		Direct debit		Standard credit		Prepayment	
	£/year	p/kWh	£/year	p/kWh	£/year	p/kWh	£/year	p/kWh
Meter reading	9	0.27	9	0.27	9	0.27	9	0.27
Meter asset	11	0.33	11	0.33	11	0.33	32	0.97
Customer service	15	0.45	25	0.76	35	1.06	52	1.58
Total	35	1.06	45	1.36	55	1.67	93	2.82

4.2.3 Grid charges

The delivery of energy through the electricity transmission and distribution grids to consumer meters is not competitive, and a number of companies operate localised or regional monopoly services providing these functions. National Grid owns and operates the transmission system in England and Wales, while two distribution network operators (DNOs), Western Power Distribution (in South Wales) and Scottish Power Distribution (in Merseyside and North Wales) serve Wales. Network use at both transmission and distribution levels is provided on a non-discriminatory, open access basis according to charges that are published.

We have applied the charges current at 1 April 2010 as follows:

- for transmission network use of system charges (TNUoS) we have applied the appropriate p/kWh regional charges set by National Grid for the year commencing 1 April 2010⁶. We have assumed that the average consumer uses 14.3% (472kWh of 3,300kWh) of its electricity during the period specified by National Grid over which charges are set⁷. This proportion is consistent with the assumption made for our 2008 analysis;
- for balancing services use of system charges (BSUoS) we have assumed a charge of 0.13p/kWh consistent with realised charges expected for the 2009-10 charging year as calculated from National Grid information⁸;
- for distribution use of system charges (DUoS) we have calculated a total cost from charging information for each region according to information collated by the Energy Networks Association⁹; and
- for the regulated charge for assistance for areas with high electricity distribution costs (HDCA)¹⁰ we have assumed a consistent on-cost of 0.01p/kWh.

Table 4:5 shows that grid charges vary considerably by region for the sample user. The low of £67/year (2.04p/kWh) in Southern England is barely two thirds of the highest. The highest, at £110/year (3.34p/kWh), is for the North of Scotland, which has low TNUoS but high DUoS charges.

The level for South Wales (also £110/year but 3.33p/kWh) is the second highest in Great Britain, due to the combination of the fifth-highest TNUoS charges and second-highest DUoS charges of all 14 supply regions.

2010 grid charges for Merseyside and North Wales at £101/year (3.07p/kWh) are the fourth-highest overall, being exceeded by those for South West England, South Wales and the North of Scotland. They are also £17/year (0.54p/kWh) above the average for England and Scotland. This marks a notable change on 2008 when at £76 grid charges for North Wales were almost the same as the overall average for England and Scotland.

These findings suggest that higher grid charges are likely to be a significant factor that contributes to at least some of the premium paid by Welsh electricity consumers.

⁶ http://www.nationalgrid.com/NR/rdonlyres/5A82B165-D300-4E23-8774-8F8656463242/39556/FinalTariffs2010_2012.xls

⁷ The transmission network use of system tariff for small, non half hourly metered consumption is based on the annual energy consumption during the period 16:00 hrs to 19:00 hrs over the relevant financial year.

⁸ <http://www.nationalgrid.com/uk/Electricity/Balancing/bsuos/>

⁹ <http://2010.energynetworks.org/use-of-system-charges/>

¹⁰ This charge levied on all consumers in Great Britain provides revenues which are used to offset high distribution costs in the North of Scotland.

Table 4:4: Grid charge assessments (p/kWh)

Distribution region	TNUoS	BSUoS	DUoS	HDCA	Total Grid	
					p/kWh	£/year
East Midlands	0.35	0.13	1.79	0.01	2.28	75
West Midlands	0.39	0.13	2.00	0.01	2.52	83
East of England	0.36	0.13	1.67	0.01	2.17	72
London	0.43	0.13	1.79	0.01	2.36	78
South east England	0.44	0.13	1.78	0.01	2.35	78
North of Scotland	0.07	0.13	3.14	0.01	3.34	110
North Wales and Merseyside	0.29	0.13	2.64	0.01	3.07	101
North of England	0.23	0.13	1.79	0.01	2.16	71
Southern England	0.43	0.13	1.47	0.01	2.04	67
Southern Scotland	0.16	0.13	2.69	0.01	2.99	99
North west England	0.30	0.13	2.36	0.01	2.80	92
South west England	0.46	0.13	2.55	0.01	3.14	104
South Wales	0.42	0.13	2.77	0.01	3.33	110
Yorkshire	0.30	0.13	1.79	0.01	2.23	74
South Wales	0.42	0.13	2.77	0.01	3.33	110
North Wales	0.29	0.13	2.64	0.01	3.07	101
Wales	0.36	0.13	2.71	0.01	3.20	106
Scotland	0.11	0.13	2.91	0.01	3.17	104
England	0.37	0.13	1.90	0.01	2.41	79
England and Scotland	0.33	0.13	2.07	0.01	2.53	84

4.2.4 Regulated obligations

Suppliers also face three specific additional on-costs from regulated obligations:

- the Renewables Obligation (RO) is intended to support power generation from renewables technologies;
- the Carbon Emissions Reduction Target (CERT) applies to the Big Six operators with in excess of 50,000 domestic customers. It is a mechanism intended to fund investment in energy savings measures for households that indirectly result in lower carbon emissions; and
- the Community Energy Savings Programme (CESP) applies to the Big Six and is designed to underwrite energy savings investments in vulnerable communities.

All three obligations have consistent rules throughout Great Britain. The RO obliges suppliers to buy a specified amount of the electricity they sell on to consumers from qualifying renewable power sources or pay a “buy-out” charge. Suppliers have to demonstrate they have implemented relevant measures to comply with the CERT and CESP.

Additionally the Big Six have an agreement with the Government to offer specially discounted arrangements to vulnerable consumers through social tariffs, and again the costs are incurred similarly between these suppliers.

Suppliers endeavour to pass-on to consumers their costs in complying with the RO, CERT, CESP and social tariffs. Table 4:6 presents our estimates of the maximum costs to suppliers of these obligations at 1 April 2010 on an annualised

basis. It shows we estimate these costs at £35/year (1.05p/kWh). These have been derived through official assessments or—in the case of social tariffs—from our own estimates for Consumer Focus¹¹.

Table 4:5: Costs of regulatory obligations

	£/year	p/kWh
Carbon emissions reduction target	16	0.49
Renewables obligation	14	0.41
Community energy savings programme	3	0.09
Social tariffs	2	0.06
Total	35	1.05

4.2.5 Network losses

Consumers are charged for the physical losses of electricity that occur between power stations and their meters.

For charging purposes losses from the transmission system operated by National Grid are estimated on a Great Britain-wide basis and costed to suppliers and generators in the ratio 55:45. In aggregate losses are around 2% of total volumes through the transmission network.

Losses from the distribution system are assessed regionally by the DNOs and vary by time and connection voltage.

We have made a combined assessment of the shares of transmission and distribution losses borne by suppliers. Table 4:7 shows these loss factor assessments with levels of 8.2% for South Wales and 10.3% for Merseyside and North Wales falling either side of the England and Scotland average of 8.9%.

Table 4:6 Assessments of regional grid losses

Charging region	Loss factor assessment (%)	Charging region	Loss factor assessment (%)
East Midlands	7.7	North of England	9.7
West Midlands	7.7	Southern England	9.2
East of England	9.3	Southern Scotland	8.4
London	9.6	North west England	7.0
South east England	9.3	South west England	8.1
North of Scotland	11.1	South Wales	8.2
North Wales and Merseyside	10.3	Yorkshire	9.6

Levels of physical losses do not vary according to the payment terms under which a consumer is supplied. But as we have tried to mirror as far as possible our understanding of the logic customarily used by suppliers in developing their prices, our analysis shows differential costs of losses within region by payment term to a maximum of £8/year (approximately 2% of the typical bill).

This is because we believe suppliers account for the energy that does not make it to the consumer meter at the same rate as that which it does and that these rates therefore vary by payment term within region. We have assessed losses by applying the appropriate regional loss factor assessments shown in Table 4:7 to the residual cost figure yielded from deducting networks, balancing services use of system, suppliers' cost-to-serve and obligation costs from the pre-VAT spend estimated by supplier for prices under each of the payment terms they make available.

¹¹ <http://www.consumerfocus.org.uk/assets/1/files/2010/02/Whats-the-deal-2010.pdf>

Reflecting the average levels shown in Table 4:7, the costs of network losses are higher on average in Wales than in the rest of Great Britain as Table 4:8 illustrates. This uplift is accounted for by levels in North Wales, where the cost of losses to consumers is typically £2/year more than the £15-£22 range typically seen elsewhere in Great Britain.

Table 4:7: Assessments of system losses (averages by region)

Distribution Region	Online direct debit		Direct debit		Standard credit		Prepayment	
	£/year	p/kWh	£/year	p/kWh	£/year	p/kWh	£/year	p/kWh
East Midlands	11	0.34	16	0.50	18	0.54	15	0.45
West Midlands	11	0.33	16	0.47	17	0.52	14	0.43
East of England	14	0.44	20	0.61	22	0.66	18	0.55
London	17	0.51	21	0.63	23	0.69	19	0.57
South east England	15	0.45	19	0.59	21	0.64	18	0.53
North of Scotland	15	0.47	21	0.64	23	0.71	19	0.58
North Wales and Merseyside	15	0.46	21	0.62	23	0.69	18	0.56
North of England	15	0.46	20	0.62	22	0.68	19	0.57
Southern England	17	0.51	21	0.64	23	0.69	19	0.58
Southern Scotland	13	0.39	17	0.52	19	0.58	16	0.47
North west England	9	0.28	13	0.40	15	0.44	12	0.36
South west England	12	0.38	17	0.51	18	0.56	15	0.46
South Wales	13	0.40	17	0.51	19	0.56	15	0.46
Yorkshire	14	0.43	19	0.58	21	0.64	17	0.53
South Wales	13	0.40	17	0.51	19	0.56	15	0.46
North Wales	15	0.46	21	0.62	23	0.69	18	0.56
Wales	14	0.43	19	0.57	21	0.62	17	0.51
Scotland	14	0.43	19	0.58	21	0.64	17	0.52
England	14	0.41	18	0.55	20	0.61	17	0.50
England and Scotland	14	0.41	18	0.56	20	0.61	17	0.51

4.2.6 Comments on regional differentials in supply chain costs

From our research we conclude that the following costs to suppliers are broadly consistent throughout Great Britain:

- suppliers' own cost-to-serve, including metering; and
- obligations to fund the non-market costs such as generation from renewables, energy efficiency and social tariffs.

On the other hand the following costs vary by region throughout Great Britain:

- grid charges where South Wales consumers pay £26/year more on average than their counterparts elsewhere in Great Britain and those in North Wales who pay £17/year more; and
- network losses where North Wales consumers pay £2/year more on average than their counterparts elsewhere in Great Britain.

We quantify these differentials and assess their scale and regional variations in consumers' bills in the next section.

5 Findings and comment

Building on the cost breakdowns set out in the previous Section, we review the supply chain costs and overall costs faced by household consumers in Wales compared with the rest of Great Britain.

This Section consists of our consideration of aggregate levels of current 2010 supply chain costs for serving consumers in Wales and elsewhere in Great Britain with comment where relevant on notable differences against our 2008 estimates.

5.1 Supply chain costs—aggregate

Comment is made separately on costs assessed to be consistent across Great Britain and those which vary by region. The costs on which the comments are made are those assessed as being in pounds/year as borne by the electricity medium user of 3,300kWh with a single rate supply based on rates current at 1 April 2010.

5.1.1 Consistent GB-wide costs

These costs are suppliers' assessed cost-to-serve, including their customer service costs, metering and obligations to fund the non-market costs of renewable generation. They range from £70/year for an online direct debit user to £128/year for a prepayment user (2.11p/kWh to 3.87 p/kWh) as Table 5:1 shows.

Table 5:1: Overview of consistent GB-wide supply chain costs

	Online direct debit		Direct debit		Standard credit		Prepayment	
	£/year	p/kWh	£/year	p/kWh	£/year	p/kWh	£/year	p/kWh
Suppliers' costs to serve	35	1.06	45	1.36	55	1.67	93	2.82
Obligations	35	1.05	35	1.05	35	1.05	35	1.05
Total	70	2.11	80	2.42	90	2.72	128	3.87

5.1.2 Cost with regional variations

Electricity supply chain costs where there are regional variations are related to networks. They consist of grid charges and system losses. Although they vary regionally, the methodology we have used also means they also vary by payment terms. This is because we have assessed system losses as a residual figure by deducting all other known charges from offer costs, which vary by terms of supply. But the maximum extent of this variation is not significant.

Table 5:2 therefore focuses on the levels of cost that vary by region for standard credit terms. It can be seen that at £126/year (3.81p/kWh) these costs for Wales are very similar to those for Scotland at £125/year (3.79p/kWh) but a quarter above the £99/year (3.00p/kWh) for England.

In our 2008 review these charges were 3% lower in Wales—at £106/year (3.22p/kWh)—than in Scotland (£110/year—3.32p/kWh), but 16% (£14) higher than the average £92 level for England. This indicates that at £20/year charges to suppliers where there is regional variation have increased by more in Wales than Scotland (where the increase is £15) and England (where the increase is £4) during the period between 2008 to 2010. We believe the primary reason for this is higher distribution use of system (DUoS) charges for our sample user:

- Scottish Power Distribution increased its DUoS charges by around 14% for the year commencing 1 April 2009 and 18% for the year commencing 1 April 2010. The two-year cumulative increase is equivalent to £22/year; and
- WPD South Wales increased its DUoS charges by around 5% for the year commencing 1 April 2009 and 10% for the year commencing 1 April 2010. The two-year cumulative increase is equivalent to £12/year.

Table 5:2: Overview of electricity supply costs where there is regional variation (direct debit terms)—1 April 2010

Supply region	Grid charges		Grid losses		Total	
	£/year	p/kWh	£/year	p/kWh	£/year	p/kWh
South Wales	110	3.33	17	0.51	127	3.84
North Wales	101	3.07	21	0.62	122	3.70
Wales	106	3.20	19	0.57	124	3.77
Scotland	104	3.17	19	0.58	124	3.75
England	79	2.41	18	0.55	98	2.96
England and Scotland	84	2.53	18	0.56	102	3.09

Table 5:2 also shows the regional variation within Wales in total grid costs. These costs in South Wales are £127/ year (2008: £114/year) for an individual household consumer compared with £122/year (2008: £98/year) in North Wales.

5.1.3 Total supply chain costs

In total it is estimated that the electricity supply chain costs for consumers in Wales are similar to those in Scotland, at a little over £200/year as Table 5:3 shows, again referencing figures for direct debit supply. But they are £27 and £22 respectively above levels for England alone and England and Scotland together. The differentials between regions and countries for other supply terms are very similar to those for direct debit.

Our 2008 analysis found that supply chain costs for Wales were £3/year or so lower than for Scotland, but £15/year above those for England. This indicates that suppliers' cost-to-serve Welsh consumers has increased by more than in Scotland and, most notably, England. We attribute this primarily to the rises in grid charges noted above.

Table 5:3: Overview of electricity supply chain costs (direct debit terms)—1 April 2010

	Consistent charges		Varying charges		Total	
	£/year	p/kWh	£/year	p/kWh	£/year	p/kWh
South Wales	80	2.42	127	3.84	206	6.26
North Wales	80	2.42	122	3.70	202	6.11
Wales	80	2.42	124	3.77	204	6.18
Scotland	80	2.42	124	3.75	203	6.16
England	80	2.42	98	2.96	177	5.38
England and Scotland	80	2.42	102	3.09	182	5.51

5.2 Bills and supply chain cost differentials

In Section 3 we estimated that at £427/year Welsh direct debit electricity consumers typically pay around £20 more than average levels elsewhere in Great Britain, but these national average figures mask a picture where the premium paid by consumers in South Wales is higher than that paid by consumers in North Wales.

We have estimated above that the costs of supplying Welsh household consumers are around £22/year higher than in the rest of Great Britain due to higher network costs. There is a small variation within Wales, as the cost-to-serve of consumers in South Wales is around £5/year higher than those in North Wales. Table 5:4 compares the differences between bills against average levels in England and Scotland for all payment terms in the regions of Wales, the country as a whole and Scotland and England separately. It shows:

- differentials in suppliers' cost-to-serve accounts for more than the premium in bills paid by consumers in North Wales compared with average levels in England and Scotland; and
- differentials in suppliers' cost-to-serve accounts for the majority of the premium in bills paid by consumers in South Wales compared with average levels in England and Scotland. For standard credit, direct debit and prepayment the cost-to-serve premium for this region exceeds the premium in prices paid by consumers.

This conclusion is effectively that suppliers are not passing through in full the higher cost-to-serve in Wales to consumers, and this position is different to our 2008 finding that cost-to-serve accounted for around a half of the premium in total bills paid by consumers on average in Wales compared with England and Scotland.

Table 5:4: Cost premiums against average England and Scotland levels

Supply region	Total bill	Cost-to-serve	Residual (wholesale energy and supplier profit)
South Wales	£21 to £35	£25 to £26	£-5 to £7
North Wales	£8 to £13	£19 to £20	£-12 to £-7
Wales	£14 to £24	£22 to £22	£-9 to £0
Scotland	£9 to £14	£21 to £22	£-13 to £-8
England	£-5 to £-3	£-4 to £-4	£-1 to £2

The residual element shown in Table 5:4 will cover the suppliers' costs for wholesale energy and their profits. While there may be other costs which we have not assessed separately, we do not believe these to be significant. This 2010 residual element is, on our estimates, lower in Wales (averaging 5.84p/kWh across the four payment terms) and Scotland (average 5.66p/kWh) than it is in England (average 6.01p/kWh). In our 2008 analysis we had found the residual element in Welsh bills (average 6.52p/kWh compared with 6.07p/kWh and 6.12p/kWh respectively) to be higher, indicating that there has been a shift in the balance of charges levied by suppliers.

The factors that give rise to the differentials in the residual element cannot be ascertained from this review. But amongst other factors, they may include:

- the averaging approach we have used not being fully representative of the costs actually paid by Welsh consumers;
- suppliers taking a dual-fuel view in their pricing including gas which is not reflected in this analysis; and/or
- commercial choices made by at least some suppliers in the price levels they set for Welsh supply regions compared with other regions in Great Britain. In particular suppliers have been under pressure from the regulator to address pricing differentials for single fuel electricity and prepayment customers that Ofgem found might be unfair in its *Energy supply probe*.

Tables 5:5 to 5:8 show segmented bill data by cost element and payment terms.

Table 5:5: Average electricity bills and supply chain costs (offline direct debit terms)

	Billed (incl VAT)		Billed (excl VAT)		Supply chain costs		Residual (Energy + profit)	
	£/year	p/kWh	£/year	p/kWh	£/year	p/kWh	£/year	p/kWh
South Wales	433	13.13	413	12.51	206	6.26	206	6.25
North Wales	421	12.76	401	12.15	202	6.11	199	6.04
Wales	427	12.95	407	12.33	204	6.18	203	6.15
Scotland	421	12.75	401	12.14	203	6.16	197	5.98
England	406	12.30	387	11.71	177	5.38	209	6.34
England and Scotland	411	12.45	391	11.86	182	5.51	210	6.35

Table 5:6: Average electricity bills and supply chain costs (standard credit terms)

	Billed (incl VAT)		Billed (excl VAT)		Supply chain costs		Residual (Energy + profit)	
	£/year	p/kWh	£/year	p/kWh	£/year	p/kWh	£/year	p/kWh
South Wales	467	14.16	445	13.48	218	6.61	227	6.87
North Wales	455	13.80	434	13.14	214	6.48	220	6.66
Wales	461	13.98	439	13.31	216	6.55	223	6.77
Scotland	455	13.77	433	13.12	215	6.53	218	6.59
England	439	13.30	418	12.67	189	5.73	229	6.94
England and Scotland	444	13.46	423	12.82	194	5.86	230	6.96

Table 5:7: Average electricity bills and supply chain costs (prepayment terms)

	Billed (incl VAT)		Billed (excl VAT)		Supply chain costs		Residual (Energy + profit)	
	£/year	p/kWh	£/year	p/kWh	£/year	p/kWh	£/year	p/kWh
South Wales	460	13.94	438	13.28	253	7.66	185	5.62
North Wales	447	13.55	426	12.91	248	7.50	178	5.40
Wales	454	13.74	432	13.09	250	7.58	182	5.51
Scotland	448	13.58	427	12.94	249	7.56	177	5.38
England	435	13.17	414	12.54	224	6.78	190	5.76
England and Scotland	439	13.31	418	12.68	228	6.91	190	5.77

Table 5:8: Average electricity bills and supply chain costs (online direct debit terms)

	Billed (incl VAT)		Billed (excl VAT)		Supply chain costs		Residual (Energy + profit)	
	£/year	p/kWh	£/year	p/kWh	£/year	p/kWh	£/year	p/kWh
South Wales	371	11.24	353	10.71	183	5.54	171	5.17
North Wales	349	10.57	332	10.07	176	5.34	156	4.73
Wales	360	10.91	343	10.39	179	5.44	163	4.95
Scotland	350	10.62	334	10.11	178	5.40	155	4.71
England	333	10.10	317	9.62	153	4.63	165	4.99
England and Scotland	336	10.18	320	9.70	157	4.76	163	4.94

Example of electricity supply chain cost breakdown—North Wales

Customer type:	Consumer Focus medium user	3,300 kWh/year
Supply terms:	Standard Credit	SC
Supply region:	North Wales and Merseyside	13
Supplier:	5 Scottish Power	6

Base cost and VAT	£/year	p/kWh	p/day
Cost charged to customer	£ 504	15.27	138.08
VAT	£ 24	0.73	6.58

Grid charges	£/year	p/kWh	p/day
<u>Distribution charges</u>			
Fixed charge	£ 11	0.35	3.15
kWh charge	£ 76	2.30	20.75
Total distribution	£ 87	2.64	23.90
<u>Transmission charges</u>			
472 kWh @ 2.03 p/kWh	£ 10	0.29	2.62
<u>Balancing services use of system charges</u>			
kWh cost	£ 4	0.13	1.13
<u>High distribution cost area charges</u>			
kWh cost	£ 0	0.01	0.12
Total grid charges	£ 101	3.07	27.77

Supplier obligations	£/year	p/kWh	p/day
Renewables obligation	£ 14	0.41	3.71
Carbon emissions reduction target	£ 19	0.58	5.25
Social tariffs	£ 2	0.06	0.55
Total Supplier obligations	£ 35	1.05	9.51

Suppliers' cost to serve	£/year	p/kWh	p/day
Meter reading	£ 9	0.27	2.47
Meter asset	£ 11	0.33	3.01
Customer service	£ 35	1.06	9.59
Total Suppliers' cost to serve	£ 55	1.67	15.07

System losses	£/year	p/kWh	p/day
Residual before losses	£ 289	8.76	79.16
<u>Losses</u> 10.3 %	£ 27	0.82	7.42

Supplier's cost of energy and margin **£ 262** **7.93** **71.74**