

# The postcode lottery in energy profits

A regional update of Energy Consumers'  
Missing Billion



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# Introduction

Last year we found that energy networks - the monopoly companies that run the pipes and wires that take energy to our homes - are making excessive profits of £7.5bn, with consumers footing the bill<sup>1</sup>. This analysis note summarises the regional differences in energy networks' profits by Great Britain region.

Unlike for many other services, we can't expect competition to drive down costs for energy networks - it will never make sense for companies to build competing pipes and wires. As a result, the prices that energy networks charge has to be set by the regulator, Ofgem.

This price-setting is a negotiation between companies and regulators - the most recent price agreement is called RIIO, and lasts until 2021 (or 2023 for electricity distribution companies). Companies seek to maximise revenues while regulators seek to minimise the price consumers pay, while guaranteeing efficiency and security of supply. Because companies know more about their costs and can afford expensive lobbyists and consultants, there is a risk that these decisions lean in industry's favour.

This is what we found happened in energy. Since we published our last report, some companies have recognised they are making unjustified profits and given money back to consumers. Following our call for network companies to return money to consumers through a rebate on their bills, SGN have returned £145m<sup>2</sup> and Scottish and Southern Electricity Networks have returned £65.1m<sup>3</sup> which will lead to a direct reduction in bills. These are welcome and important steps.

Other companies have also taken steps to reduce pressure on consumers' bills. National Grid announced that they would be deferring £590m of their investment allowance until the next price agreement, £123m of which would have been paid by consumers in the current price agreement<sup>4</sup>. Cadent has also reduced their planned spending by £54m<sup>5</sup>.

Cumulatively, this has reduced consumers' bills by almost £390 million<sup>6</sup>.

But more action needs to be taken. While consumers shouldn't be paying any excessive profits, seven companies have taken no action to reduce consumers' bills at all, including all of the electricity distribution companies (SSEN have returned money relating to their transmission business, but not for their electricity distribution business):

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<sup>1</sup> Citizens Advice, [Energy Consumers' Missing Billions](#), 2017

<sup>2</sup> Ofgem, [Ofgem welcomes SGN's contribution to consumers](#), 2017

<sup>3</sup> Ofgem, [Ofgem welcomes SSE's contribution to consumers](#), 2017

<sup>4</sup> Ofgem, [Open letter: National Grid Electricity Transmission's deferral of £480m of RIIO-T1 allowances](#), 2017 (adjusted from 2009/10)

<sup>5</sup> Ofgem, [Ofgem reduces allowances for Cadent's gas distribution price control](#), 2017

<sup>6</sup> Compared to allowances agreed in the RIIO business plans.

- Electricity North West Limited
- Northern Powergrid
- Scottish Power Energy Networks<sup>7</sup>
- UK Power Networks
- Western Power Distribution
- Northern Gas Networks
- Wales and West Utilities

Ofgem must ensure that this situation does not happen again. It is consulting on the next set of price controls, called RII02, and in order to protect consumers it is vital that these deliver a better deal for consumers.

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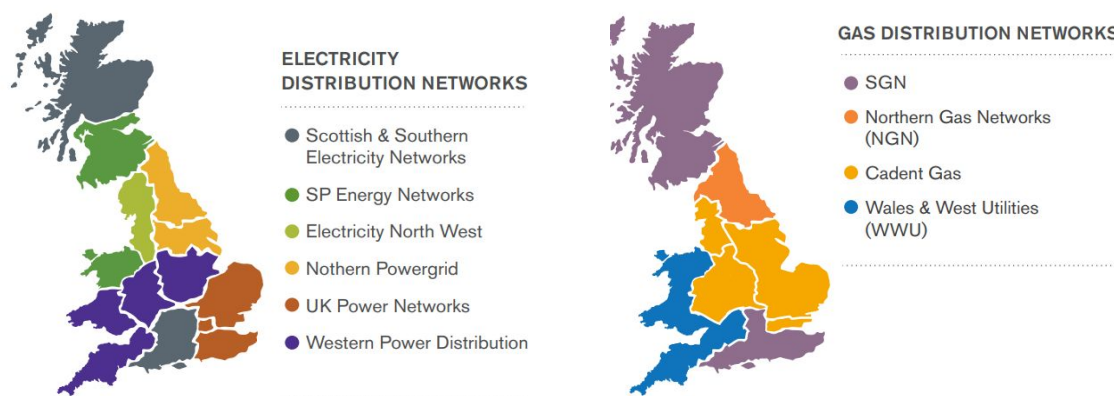
<sup>7</sup> SPEN have not taken any action for their electricity distribution business. For transmission SPEN announced £15m for a new Green Economy Fund although this will not directly reduce consumers' bills.

# Regional disparities in excess profits

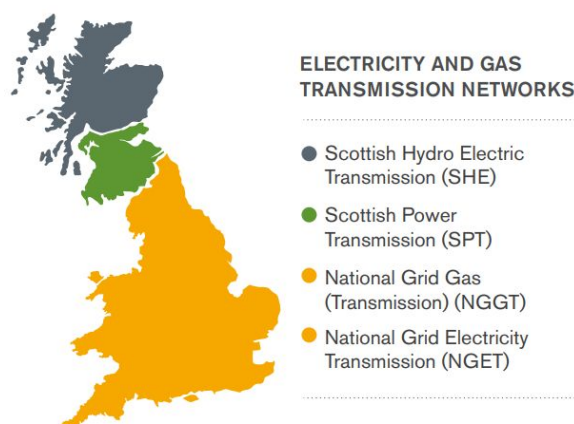
As well as being an unjustified driver of consumers' energy bills, there's a geographic unfairness to these excessive profits.

Gas and electricity distribution networks (the pipes and wires that transport energy from the transmission grid to our homes) operate in particular regions of Great Britain (as shown in Figure 1) and consumers in those regions pay for the total cost of those networks. The nationwide transmission costs are charged at a national level, but there can still be (and are) regional differences in average bills, due to differences in energy consumption patterns. In 2015, Ofgem found that regional differences in network charges are a significant driver of regional differences in energy bills<sup>8</sup>.

**Figure 1: Electricity<sup>9</sup> & gas<sup>10</sup> distribution map of the UK by region**



**Figure 2: Electricity & gas transmission map of the UK by region<sup>11</sup>**



<sup>8</sup> Ofgem, [Regional differences in network charges](#), 2015

<sup>9</sup> Ofgem, [Map: who operates the electricity distribution network?](#), Accessed: 10/04/2018

<sup>10</sup> Ofgem, [Map: who operates the gas distribution network?](#), Accessed: 10/04/2018

<sup>11</sup> Ofgem, [Map: who operates the gas and electricity transmission network?](#), Accessed 10/04/2018

There are reasons why there are regional differences in the cost of networks: it costs more to build energy infrastructure and transport energy in some parts of the country than others. Making bills reflect these differences in cost can improve efficiency and encourage better investment decisions.

But the excessive profits we've identified are not reflective of the underlying network costs - it's money that consumers shouldn't be paying in the first place. This is a regional inequality that we could fix without any cost to the overall economic efficiency of energy networks.

To illustrate these disparities, Figure 3 shows excessive profits by region and company, ordered by total excessive profits. Appendix 1 explains the methodology underpinning this calculation. As Figure 3 shows, this excessive profit ranges from £172m in North Scotland to £808m in Eastern England.

**Figure 3: RIIO1 excessive profits by region and company<sup>12</sup>**

Region	Electricity Distribution Company	(£,m)	Gas Distribution Company	(£,m)	Transmission Company <sup>13</sup>	(£,m)	Total (£,m)
North Scotland	SSE Hydro	£76	Scotia Gas Networks	£45	SSEN	£50	£172
South Scotland	Scottish Power Distribution	£163	Scotia Gas Networks	£116	SP Energy Networks	£129	£409
North East England	Northern Powergrid North East	£123	Northern Gas Networks	£97	National Grid	£133	£354
North West	Electricity Northwest	£163	Cadent	£231	National Grid	£259	£656
Yorkshire	Northern Power Grid Yorkshire	£164	Northern Gas Networks	£122	National Grid	£227	£515
Merseyside and N Wales	SP Manweb	£174	Wales and West Utilities	£76	National Grid	£181	£432
East Midlands	Western Power East	£228	Cadent	£129	National Grid	£259	£619

<sup>12</sup> Note: figures in total do not sum precisely due to the smearing of the Scottish Hydro Benefit over all electricity consumers.

<sup>13</sup> All gas consumers are served by National Grid Gas Transmission. Because all electricity transmission costs are recouped by National Grid through a single charging structure, the excess profits for the SSEN & SP Energy Networks run transmission companies are understated in this table.

	Midlands						
West Midlands	Western Power West Midlands	£230	Cadent	£182	National Grid	£258	£673
Eastern England	EPN	£242	Cadent	£188	National Grid	£375	£808
South Wales	Western Power South Wales	£106	Wales and West	£58	National Grid	£106	£271
Southern England	SSES	£215	Scotia Gas Networks	£187	National Grid	£374	£778
London	LPN	£153	Cadent	£199	National Grid	£271	£625
South East England	SPN	£158	Scotia Gas Networks	£132	National Grid	£264	£556
South West England	Western Power South West	£156	Wales and West Utilities	£87	National Grid	£195	£439

The raw excessive profit figures by region is partly explained by the fact that these raw figures are not weighted by the number of households in each region. Since network costs are obviously partly a function of the number of households served, this can overstate the regional disparities.

Figures 4 & 5 shows the per household value for excess profits by region. This ranges from £225 in the South of Scotland and a per-household value in South West England of £315 - a difference of £90 per household. See Appendix 1 for a methodological note on these allocations; and Energy Consumers Missing Billions for more information on the Citizens Advice Price Control Model.

**Figure 4: Regional breakdown of excess profits by household**

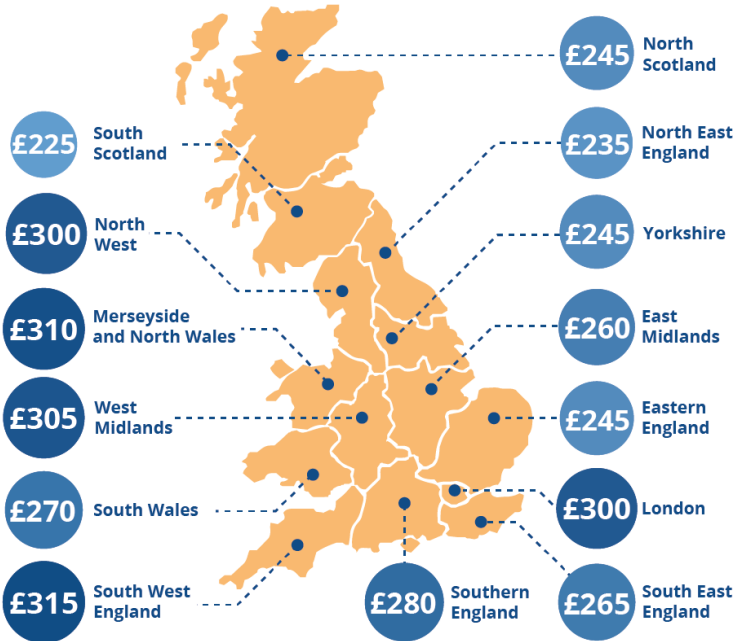
Region	8 year excess profit per household (£)
South Scotland	£225
North East England	£235
Yorkshire	£245
Eastern England	£245
North Scotland	£245

East Midlands	£260
South East England	£265
South Wales	£270
Southern England	£280
North West	£300
London	£300
West Midlands	£305
Merseyside and N Wales	£310
South West England	£315

Figure 5: Map of regional breakdown of excess profits by household

### Excess energy network profits per household

How excess profits vary by region over the current 8 year price control



Source: Citizens Advice analysis. All figures refer to the current 8 year price agreement ('RIIO').

Figure 6 shows the breakdown for electricity distribution companies specifically, as no electricity distribution company has returned money to consumers. The regions with



the lowest excess profit are London, Eastern England, North West, South East England & Southern England, compared to the highest in Merseyside and North Wales.

**Figure 6: Regional breakdown of excess electricity distribution profits by household**

Region	8 year excess profits per household	Electricity distribution company
Merseyside and North Wales	£125	Scottish Power Energy Networks
South West England	£110	Western Power Distribution
Northern Scotland	£110 <sup>14</sup>	Scottish and Southern Energy Networks
South Wales	£105	Western Power Distribution
West Midlands	£105	Western Power Distribution
East Midlands	£95	Western Power Distribution
Southern Scotland	£90	Scottish Power Energy Networks
North East England	£80	Northern Powergrid
Yorkshire	£80	Northern Powergrid
Southern England	£75	Scottish and Southern Energy Networks
South East England	£75	UK Power Networks
North West	£75	Electricity North West Limited
Eastern England	£75	UK Power Networks
London	£75	UK Power Networks

<sup>14</sup> Note, this includes the North Scotland Hydro subsidy, which is collected from all electricity consumers by National Grid (and is therefore accounted for in the figures we present in Figure 4).

# Recommendations

While this analysis underlines the unfair regional consequences of energy networks' unfair profits, our principal recommendations for fixing the problem remain unchanged from Energy Consumers' Missing Billions:

- 1. Most importantly, consumers need to get the rest of their money back.** While some network companies have taken action, all of the network companies should voluntarily return money to consumers through a rebate on their bills. Ofgem must continue working with network companies to make sure this happens.
- 2. If network companies fail to act, the government must act to make sure consumers get their money back.** At a time when many consumers are struggling to pay their bills, it is unacceptable for companies to be gifted billions in excess profits. If companies do not take action to return money, the government should act to implement a mandatory rebate through legislation.

We also propose changes to the next price controls known as "RIIO 2" to make sure this does not happen again:

- 3. Ofgem should, as far as possible, index costs to real world benchmarks.** For key financial metrics, such as the risk-free rate, Ofgem should use real market data to index network companies' costs. We welcome that Ofgem is consulting on this point since our report Energy Consumers' Missing Billions<sup>15</sup> and believe they should act to make sure price controls track real market prices.
- 4. Ofgem should adjust the equity beta, a financial measure of risk, to those observed for other utility companies.** The UK Regulators Network cost of capital study<sup>16</sup> found that the riskiness could be between 30-50% that of the average company - lower even than we argued in Energy Consumers' Missing Billions. Because the decision Ofgem makes about how risky a business is is a critical component of how much return for investors it allows (the riskier the investment, the greater the reward needs to be), action on this point could permanently reduce consumers' bills by billions.
- 5. Ofgem should set much tougher incentives for network companies.** Rather than providing mostly financial rewards and reputational penalties, companies' capital should be placed at risk. For some incentives rewards for the best performers should be matched by penalties for the poorest performers.
- 6. Consumer bodies should be given more power to request a review of a price control when financial returns are excessive.** Network companies currently have

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<sup>15</sup> Ofgem, [RIIO-2 Framework Consultation](#), 2018

<sup>16</sup> Wright et al, [Estimating the cost of capital for implementation of price controls by UK Regulators](#), 2018, equity beta finding attributable to Wright, Mason & Pickford only.

the power to request a review at any time during the price control, but consumers do not.

# Methodological Appendix 1: note on regional allocations

This appendix summarises the methodological approach for providing a regional breakdown of our 2017 Price Control Model. The methodology for our original £7.5bn in excessive profits is contained in Energy Consumers' Missing Billions<sup>17</sup>. To account for voluntary returns and investment deferrals by companies, we reduced this to £7.3bn, by applying companies' totex sharing factors to each of the announcements. We have not included the £150m invested in fuel poverty schemes as a consequence of Cadent's sale or the £15m SP Energy Networks have announced for a new Green Economy Fund, as this has not been reflected in price control methodologies and will not directly reduce consumers' bills.

This analysis takes as its inputs the forecast £7.5bn in excess profits we expect energy network companies to earn in the RIIO period, disaggregated by the excess returns earned by each individual energy network, summarised in Figure 4.

As we have argued that these excess profits should be returned to domestic consumers, we have focused on a per-household analysis. A proportion of these profits reflect charges levied on other users.

**Figure 7: Excess returns by energy network**

Company	Network	Model Profits by Network (£, m)
Electricity North West	Electricity Northwest	160
Northern Powergrid	Northern Powergrid North East	125
Northern Powergrid	Northern Power Grid Yorkshire	165
Western Power	Western Power West Midlands	230
Western Power	Western Power East Midlands	230
Western Power	Western Power South Wales	105
Western Power	Western Power South West	155

<sup>17</sup> Citizens Advice, [Energy Consumers' Missing Billions](#), 2017

UK Power Networks	LPN	155
UK Power Networks	SPN	160
UK Power Networks	EPN	240
SP Energy Networks	Scottish Power Distribution	165
SP Energy Networks	SP Manweb	175
SSE Networks	SSE Hydro	100
SSE Southern	SSES	215
Cadent	East	315
Cadent	London	230
Cadent	North West	230
Cadent	West Midlands	180
Northern Gas	Northern Gas Networks	220
SGN	Scotland	190
SGN	Southern	375
Wales and West	Wales & West	220
National Grid	NGET	1960
SSE Networks	SHET	330
SP Energy Networks	SPT	320
National Grid	NGGT	575

We then allocate these costs to specific regions, reflecting the methodology presented in Ofgem's [Regional differences in network charges](#) study, where electricity distribution areas are treated as primary, and then gas distribution networks are mapped on to this. This is likely to lead to errors in calculation for a small number of customers, but is the most feasible allocation.

**Figure 8: Mapping gas distribution networks & transmission costs to electricity distribution region**

Region	Electricity Distribution Company	Electricity Distribution Network	Gas Distribution Company	Gas Distribution Network	Electricity Transmission bill (£)	Gas Transmission (£)
North Scotland	SSEPD	SSE Hydro	Scotia Gas Networks	Scotland	£21	£5
South Scotland	SP Energy Networks	Scottish Power Distribution	Scotia Gas Networks	Scotland	£21	£5
North East England	Northern Powergrid	Northern Powergrid North East	Northern Gas Networks	Northern Gas Networks	£26	£6
North West	Electricity Northwest	Electricity Northwest	Cadent	North West	£30	£14
Yorkshire	Northern Powergrid	Northern Power Grid Yorkshire	Northern Gas Networks	Northern Gas Networks	£32	£7
Merseyside and N Wales	SP Energy Networks (Manweb)	SP Manweb	Wales and West Utilities	Wales & West	£34	£14
East Midlands	WPD	Western Power East Midlands	Cadent	East	£32	£7
West Midlands	WPD	Western Power West Midlands	Cadent	West Midlands	£33	£10
Eastern England	UK Power Networks	EPN	Cadent	East	£34	£7
South Wales	WPD	Western Power South Wales	Wales and West	Wales & West	£32	£6
Southern England	SSEPD	SSES	Scotia Gas Networks	Southern	£37	£12

<b>London</b>	UKPN	LPN	Cadent	London	£37	£10
<b>South East England</b>	UKPN	SPN	Scotia Gas Networks	Southern	£35	£11
<b>South West England</b>	WPD	Western Power South West	Wales and West Utilities	Wales & West	£35	£17

We followed Ofgem’s methodology in modelling for typical single rate electricity & typical gas consumption. We have not adjusted for regional demand shifts.

We then sum excess profits for the set of distribution networks & the proportion of transmission bill for each region. To calculate a figure for the excess profits per household, we divide this figure by the number of households in each region (Figure 6). Our analysis focuses on the value to domestic households.

**Figure 6: Household by electricity distribution region**

<b>Region</b>	<b>Households (million)</b>
<b>North Scotland</b>	0.7
<b>South Scotland</b>	1.8
<b>North East England</b>	1.5
<b>North West</b>	2.2
<b>Yorkshire</b>	2.1
<b>Merseyside and N Wales</b>	1.4
<b>East Midlands</b>	2.4
<b>West Midlands</b>	2.2
<b>Eastern England</b>	3.3
<b>South Wales</b>	1
<b>Southern England</b>	2.8
<b>London</b>	2.1
<b>South East England</b>	2.1
<b>South West England</b>	1.4

## **Hydro Benefit Replacement Scheme for North Scotland**

Consumers in North Scotland received a cross subsidy through the Hydro Benefit Replacement Scheme, so they face lower network charges than they otherwise would. This cost is recovered from electricity suppliers across Great Britain through a charge added to all units of electricity. In 2015, the cross subsidy was around £41 per annum per household in North Scotland.

We have included the effects of this cross-subsidy in our analysis, by netting off a proportion of the excess profits earned by SHEPD (the North Scotland Distribution Network Operator) in proportion to the value of the subsidy, and recouping the subsidy from every other region in the UK, in proportion to the number of households in each region.



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