Making a positive difference
for energy consumers

To: Domestic electricity and gas suppliers, price comparison websites, consumer groups and other interested parties

Direct Dial: 0207 901 7000
Email: market.monitoring@ofgem.gov.uk

Date: 22 June 2017

Dear Colleague,

Ofgem's proposal to revise the Typical Domestic Consumption Values for gas and electricity, including additional information on the peak and off-peak split for Economy 7 meters, and on the mean consumption for restricted meter customers.

This letter sets out our proposal to revise down our estimates of the Typical Domestic Consumption Values (TDCVs) for gas and electricity to reflect continued falls in consumption, as part of Ofgem's routine consumption review process. The TDCVs are commonly, but not exclusively, used to derive the typical bills quoted by suppliers and price comparison websites when the actual annual consumption may not be known. They are also used by Ofgem, government, media and industry to provide a common basis for comparing energy prices across suppliers, regions and over time.

The TDCVs represent annual consumption by a typical household; however, there are significant differences in energy use between households depending on the region of the country, number of occupants, the type and age of the property. For this reason, we recommend that where possible consumers use their own consumption figures for the purposes of comparing suppliers or estimating their bills.

TDCVs used to be a key component for the calculation of the Tariff Comparison Rate. In our decision letter published on 27 April 2017,[1] we set out our modification to remove the requirements for suppliers to include on bills and other communications the Tariff Comparison Rate (TCR). The Tariff Information Labels (TIL) are to be amended in line with changes to the tariff rules and the removal of the TCR and Ofgem annual consumption figures from the licence conditions[2]. Nevertheless, the TDCVs remain the industry standard annual consumption values.

This letter also includes our proposal for the average peak / off-peak split, which is used to calculate the typical bill for an Economy 7 customer. Our revised estimate indicates that more consumption is used during peak times. The consumption split reflects the proportion of consumption that is assumed to take place in peak periods (which covers daytime usage), and off-peak periods (which covers night-time usage). This allows the estimation of

[1] https://www.ofgem.gov.uk/system/files/docs/2017/04/slc_25_decision_document_0.pdf
[2] https://www.ofgem.gov.uk/publications-and-updates/final-decision-enabling-consumers-make-informed-choices

a typical bill for an Economy 7 customer that does not know their actual energy consumption pattern.

Objectives and methodology

In 2013, we put a framework in place for future updates to the TDCVs.[3] Following that review we decided to revise the TDCVs every two years, if the latest consumption data results in materially[4] different values. We calculate the typical low, medium and high TDCVs for gas and electricity by calculating the lower quartile, median and upper quartile[5] of household consumption using the two most recent years of available data, and then taking the average. In this update, we have included additional information on the distribution across households in addition to the lower and upper quartile and median consumption values.

The Economy 7 peak / off-peak consumption split was last updated in 2010[6]. We have calculated an updated average GB split using settlement data for Economy 7, including meters with an 8 or 8.5 hour off-peak period, known as white meters, from September 2016.

Mean consumption values for customers with restricted electricity meters

Around 4 million out of a total of 28 million domestic electricity customers in Great Britain have restricted (or 'profile class 2') meters. These are meters that record consumption separately at certain times or for certain purposes, typically to allow customers to be charged lower rates for electricity used during off-peak periods. Households that do not have access to gas and/or use electricity to heat their homes are more likely to have meters of this type.

Profile class 2 encompasses a large number of differing meter types. The majority are Economy 7 meters, which record consumption separately in a 7-hour night time period, during which customers are charged a reduced rate for the electricity they use. A material number of customers have other arrangements, such as Dynamically Teleswitched (DTS) meters or Economy 10.

While our TDCVs for profile class 2 electricity customers show the median consumption across all customers with restricted meters, the consumption patterns of customers with different metering arrangements are likely to vary significantly within this. Therefore, to provide more transparency on the energy consumption patterns for customers with different types of restricted meter, we have calculated mean annual consumption values for Economy 7, DTS and Economy 10 meters. This is based on settlement data collected from suppliers and Elexon. The results of our analysis are provided in the Annex.

[3] https://www.ofgem.gov.uk/sites/default/files/docs/decisions/tdcv_decision_letter_final_2.pdf
[4] Material in this context means changes to the TDCVs of at least 100 kWh for electricity and 500 kWh for gas when rounded.
[5] Most consumers consume relatively small amounts of energy, while few consume large amounts. The median or second quartile is a more representative of the typical "medium" usage. We use the first and third quartiles to represent the typical "low" and typical "high" usage respectively. In real terms, if consumers were ranked in order of energy consumption, the lower quartile reflects the annual consumption that only 25% of all consumers use less than. The higher quartile reflects the annual consumption that only 25% of all consumers use more than.
[6] https://www.gov.uk/government/uploads/system/uploads/attachment_data/file/295244/Revisions_to_DECC_domestic_energy_bill_estimates.pdf

Our proposal

	kWh	Current TDCVs	Revised TDCVs
Gas	Low	8,000	8,000
	Medium	12,500	12,000
	High	18,000	17,000
Electricity: Profile Class 1	Low	2,000	1,900
	Medium	3,100	3,100
	High	4,600	4,600
Electricity: Profile Class 2	Low	2,500	2,500
	Medium	4,300	4,200
	High	7,200	7,100

The table presents the proposed revised TDCVs. The TDCVs are calculated using the meter level data, which underlies the Department for Business, Energy and Industrial Strategy's (BEIS) sub-national energy consumption statistics. More information can be found in the Annex. To provide time for implementation and to ensure a coordinated approach, we propose that these new values be used from 1 September 2017.

Profile class 2 predominantly consists of Economy 7 meters which have two rates, peak and off-peak. We have calculated a consumption split for Economy 7 meters for consumers to better estimate a typical bill.

	2010 consumption split (GB) - BEIS	2017 consumption split (GB) - Ofgem
Peak (day time usage)	45%	58%
Off-peak (night time usage)	55%	42%

The table above presents the proposed Economy 7 peak / off-peak consumption split. More information on how this has been calculated can be found in the annex. In line with the TDCV changes, we propose that these new values be used from 1 September 2017.

We are also considering whether these updated values might be used for the purposes of assessing compliance with the prepayment price cap for customers with Economy 7 or similar metering arrangements (replacing the current split of 62% peak to 38% off-peak, set by the CMA). We would be grateful for your views on the suitability of using these estimates for this purpose. If we do take the decision to direct suppliers to use a revised split based on this analysis, we will also consider the timings and logistics – and particularly whether such a direction would be issued in the context of the August 2017 update to the level of the cap, or the subsequent update in February 2018. Please note that, as per 28A.27 of the supply licence, representations would be sought from suppliers before any such direction were issued.

Next steps

We will consider any feedback from stakeholders and aim to announce a final decision on our revised TDCVs in July.

The revised TDCVs and the implementation period set out in this letter represents our minded-to position and may change. As such, please ensure that any further information, which is relevant to our decision, is reported to us before the **13 July 2017** by contacting Sophie Adams at marketmonitoring@ofgem.gov.uk.

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Yours faithfully,

Neil Barnes
Associate Partner
Consumers and Competition

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Annex

This annex summarises the background to the TDCVs, the impact our proposed changes would have on an estimate of a "typical" bill, the data and analysis underlying the TDCVs and our additional work on the consumption of customers with different types of restricted meters.

1. Background

The TDCVs are used by most participants in the energy market for comparison of typical energy bills. They are used by suppliers, government, consumer groups, the media and third party intermediaries. The TDCVs also allow energy consumers who are unsure[7] of their own consumption to have an indication of how much energy they might typically expect to use in a year.

Representative domestic consumption values are also important when assessing whether changes in how we regulate serve consumers' interests. These indicative consumption figures are a key input for analyses setting out costs and benefits to consumers - particularly models or estimates of bill values or price calculations. Analysis using the TDCVs informs policy development and helps with monitoring and evaluation of the electricity and gas markets.

2. Data and analysis

The TDCVs are calculated using the meter level data that underlies BEIS' sub-national energy consumption statistics[8]. These statistics[9] are primarily used by local authorities for targeting and monitoring energy efficiency and carbon reduction policies. They are classed as National Statistics.

The domestic electricity consumption data is based on non-half hourly (NHH) meters in profile classes 1 and 2[10]. Households with profile class 2 meters are more likely to use electricity to heat their homes. They typically have higher consumption as well as a greater range of consumption, so we present these households' typical annual consumption separately. In 2016, 78% of domestic electricity consumption was on profile class 1 and 22% was on profile class 2. Around 14% of all electricity meter points are in profile class 2. There is only one meter type for domestic gas consumption data.

The distribution of consumption levels across domestic customers for both gas and electricity is positively skewed – the mean is greater than the median. Since the small number of customers who use very high volumes of gas and electricity disproportionately influence the mean, we use median consumption values to calculate the TDCVs. This provides a more representative measure of the consumption of a typical customer as it is not affected by extreme values at either end of the distribution. As well as medium TDCVs, we also provide low and high values based on the first and third quartiles.

An issue that may contribute to the skewed profiles is the lack of reliable markers to indicate whether an individual meter is used by a household or small business customer:

- For gas, BEIS uses the industry standard "Annual Quantity" (AQ) cut-off point of 73,200 kWh and classifies all consumers using under that annual consumption as domestic consumers.

[7] According to Ipsos Mori 2011, 38% of energy consumers are unsure about their energy consumption.
[8] https://www.gov.uk/government/statistics/regional-energy-data-guidance-note
[9] https://www.gov.uk/government/collections/sub-national-electricity-consumption-data
[10] Profile 1 is standard domestic. Profile 2 is mainly derived from domestic customers with Economy 7 metering. However, it is applied to any domestic customers with switched storage heating and immersion loads. So as well as customers with Economy 7, domestic customers on other switched load tariffs, such as Economy 10, 8.5 hour Weathercall and Budget Warmth are also assigned to Profile Class 2.

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- For electricity, the cut-off point for non-domestic consumption is 100,000 kWh per year.

The data shows spikes at particular discrete consumption levels, especially for gas. This is because when actual readings are not available, the meter readings used are estimates. For example, there are regular instances where households of the same size in a particular area are given the same consumption estimate.

	kWh	**Current TDCVs**	**Revised TDCVs (including additional distribution)**
Gas	5th percentile	-	2,500
	10th percentile	-	4,500
	Low (25th percentile)	8,000	8,000
	Medium (median)	12,500	12,000
	High (75th percentile)	18,000	17,000
	90th percentile	-	23,500
	95th percentile	-	29,000
Electricity: Profile Class 1	5th percentile	-	600
	10th percentile	-	1100
	Low (25th percentile)	2,000	1,900
	Medium (median)	3,100	3,100
	High (75th percentile)	4,600	4,600
	90th percentile	-	6600
	95th percentile	-	8400
Electricity: Profile Class 2	5th percentile	-	1,000
	10th percentile	-	1,500
	Low (25th percentile)	2,500	2,500
	Medium (median)	4,300	4,200
	High (75th percentile)	7,200	7,100
	90th percentile	-	11,000
	95th percentile	-	14,000

All three datasets contain spikes in the 0-10 kWh band; this is believed to be due to vacant properties and second homes. As we are interested in consumers rather than properties, these have been excluded from our analysis.

The meter-level data we use does not include any information about the type of property or the occupants. However, the National Energy Efficiency Data-Framework (NEED) has been set up by BEIS to provide a better understanding of energy use and energy efficiency in domestic and non-domestic buildings in Great Britain[11]. NEED is a data framework that matches this gas and electricity consumption data with information on energy efficiency measures installed in homes. It also includes data about property attributes and household characteristics.

The TDCVs are calculated using an average of the latest two years of sub-national consumption data available (2014 and 2015 for this review). Gas and electricity data are gathered over different dates:

- For both electricity meter profile 1 and profile 2 data the dates covered are 27 January to 26 January. This means that the updates set out in this letter are based

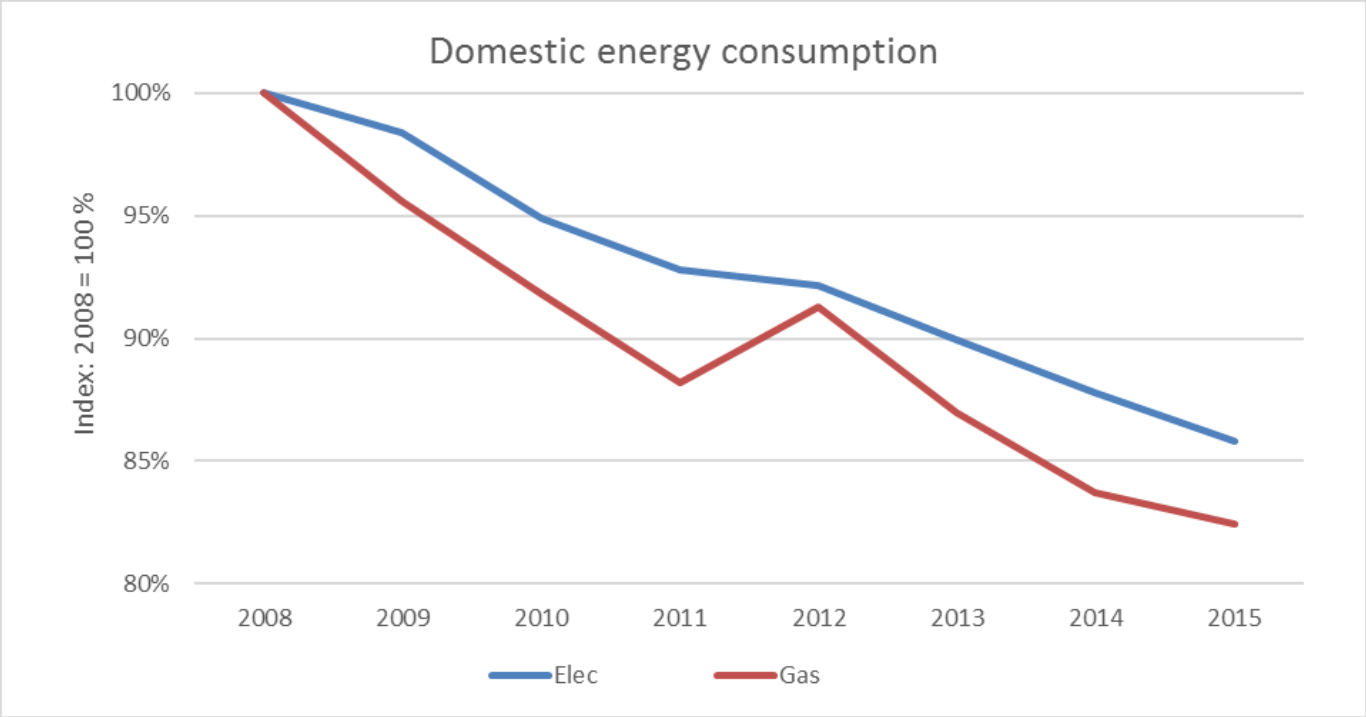
[11] Datasets and further information about NEED can be accessed from: https://www.gov.uk/government/collections/national-energy-efficiency-data-need-framework

on data from 27 January 2014 to 26 January 2016. The data is collected by BEIS from data aggregators (on behalf of electricity suppliers).

- For gas, the data is based on the gas year from 1 October to 30 September. The updates in this letter are therefore based on the period 1 October 2013 to 30 September 2015. The data is sourced from Xoserve and independent gas transporters.

The gas data is weather corrected at source[12]. The electricity meter profile 1 data is not temperature corrected. This is because temperature has less of an effect on standard domestic electricity consumption. For profile 2 customers, we adjust BEIS' profile 2 consumption data using temperature correction factors sourced from Elexon, which is consistent with the previous TDCV update in 2015. We do not have sufficient data to generate temperature correction factors based on the quartiles, which are the basis for the TDCV, but apply temperature correction factors sourced from Elexon, which are based on mean data. If there are any views on this, please let us know.

Domestic energy consumption has shown a declining trend in recent years, which may be partly explained by energy efficiency initiatives (see chart below), and increased use of renewables on a localised scale.



Source: BEIS, ECUK table 3.03
Note: this data is mean UK temperature corrected consumption

3. *Impact of our proposed revisions on typical bills*

Typical bill values, calculated using TDCVs, are frequently cited by consumer groups and the media, and influence consumers' perception of the cost of electricity and gas. Based on our proposed new TDCVs, we would estimate an annual bill for a medium usage customer on a dual fuel standard variable tariff paying by direct debit to be around £1,100. This is

[12] Estimates are adjusted by Xoserve using a weather correction factor based on a Met Office model, which uses historic data and also forecasts ten years into the future. More information is available here: http://www.nationalgrid.com/NR/rdonlyres/71CFD0F6-3607-474B-9F37-0952404976FB/52071/GasDemandForecastingMethodologyFeb12.pdf

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around £20 lower than a 'typical' bill calculated using current TDCVs. The table below sets out further information about the impact on the 'typical' bill of updating the consumption values that are used to define the consumption of a low, medium and high user.

Table 1. Change in typical bills due to update to TDCVs	*kWh*	**Current TDCVs**	**Revised TDCVs**	**Difference in the typical bill***
Gas	Low	8,000	8,000	£0
	Medium	12,500	12,000	-£20
	High	18,000	17,000	-£29
Electricity: Profile Class 1	Low	2,000	1,900	-£16
	Medium	3,100	3,100	£0
	High	4,600	4,600	£0
Electricity: Profile Class 2	Low	2,500	2,500	£0
	Medium	4,300	4,200	-£13
	High	7,200	7,100	-£13

* Note: annual bill for a typical customer on a standard variable tariff as of 28 March 2017 paying by direct debit. The standard tariff we use is the average of the six largest energy suppliers' standard tariffs.

4. Further insight: Economy 7, Economy 10 and DTS meter mean consumption values

Restricted meters within profile class 2 vary across supplier, region and can be bespoke to a few households across GB. There are approximately 500 different standard settlement configurations (SSCs)[13] in profile class 2 alone. The most common restricted meters are Economy 7, Economy 10 and DTS meters that together cover around 90% of the meter points in profile class 2. Despite the large variety of restricted meter types, many suppliers bill consumers on an Economy 7 or generic 'two rate' tariff arrangement irrespective of the exact configuration of their meter. Here we have considered consumption on different types of metering arrangements, not billing arrangements.

Economy 7 meters provide cheaper electricity for 7 hours during the night and electricity that is more expensive during the day. In the vast majority of cases, the off-peak period is set at the same time every day (although the exact hours can vary by region). Economy 7 metering arrangements are more prominent in the East of England, East Midlands and the South East, accounting for 60% of all Economy 7 meters installed.

Economy 10 meters provide cheaper electricity for 10 hours during the night (and in some cases during parts of the afternoon) and electricity that is more expensive during the day. As with Economy 7, the off-peak periods are generally set at the same time every day. Economy 10 metering arrangements are more prominent in the East of England, Northern Scotland and Southern England, accounting for around 40% of all customers on Economy 10 meters.

DTS meters are designed for electric heating customers, most often with no access to mains gas, allowing remote control of the heating load by suppliers. Unlike with standard Economy 7 and Economy 10 meters, heating loads can be activated at different times every day, typically depending on weather conditions. DTS meters are mainly located in Scotland.

Using the SSCs, we have assigned the metering arrangement to categories based on supplier information and the number of off-peak hours associated with that settlement code. Our classification of Economy 7 meters includes meters with an 8 or 8.5 hour off-

[13] Elexon definition of Standard Settlement Class (SSC): A definition of how a NHH meter is configured for settlement. Defines how many registers (TPRs) and the times that the registers record consumption.

peak, and Economy 7 meters that are teleswitched[14]. Our classification of teleswitched meters includes any meter that is teleswitched and which is not categorised as Economy 7 or Economy 10. This category includes DTS, heating and off-peak metering arrangements. Off-peak meters include those with a single Time Pattern Regime (TPR).

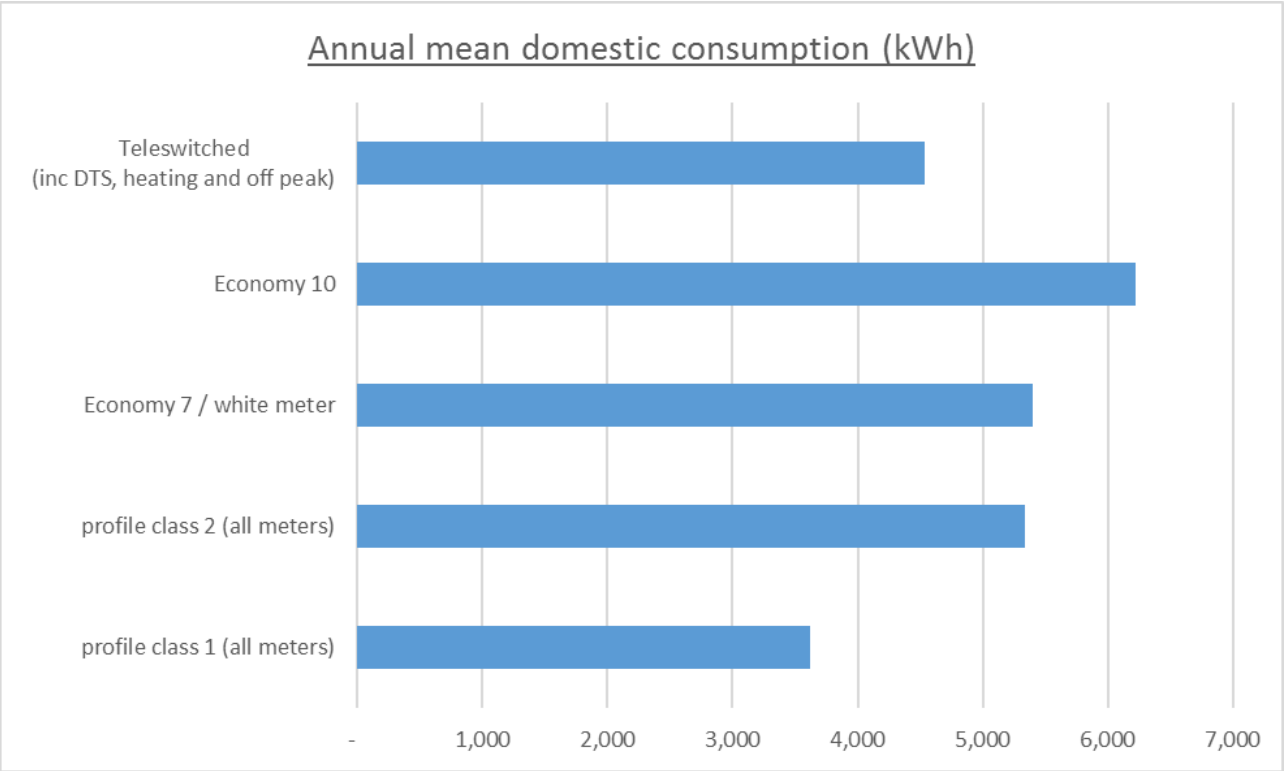
The below table shows our estimates of the number of meter points per category of restricted meter in each regional distribution area, excluding meter points connected with independent distribution networks.

Meter point counts	Economy 7 / white meter	Economy 10	Teleswitched (including DTS, off-peak and heating)	Other
East England	902,677	55,265	24,534	59
East Midlands	850,350	10,734	25,441	2
Northern Scotland	49,032	14,147	90,738	1
London	155,384	3,912	6,470	4,986
North Wales	94,168	1,475	2,446	6
Midlands	287,152	3,821	9,369	-
North East	86,044	1,841	16,379	-
North West	179,176	5,236	4,290	8
South East	448,173	8,520	25,135	12,379
Southern	247,237	12,786	54,810	12
Southern Scotland	168,616	7,530	110,110	3,234
South Wales	51,743	3,037	894	-
South West	213,075	7,742	9,473	151
Yorkshire	132,116	2,444	8,420	-
Total GB	**3,879,213**	**144,743**	**388,720**	**20,838**

*Based on meter point data as of September 2016. Classified using the methodology explained above. Total GB also includes independent network operator regions, which are not shown here.

While our TDCVs for profile class 2 electricity customers show the median consumption across all customers with restricted meters, the consumption patterns of customers with different metering arrangements varies within this. The table below provides estimates of mean annual consumption values by meter type. It is based on Elexon settlement data showing total estimated annual consumption for Economy 7, Economy 10 and teleswitched meters as of September 2016, split by region, metering arrangement and supplier. Because we use aggregated data, we are unable to break down consumption to meter point level, and so to derive the median consumption level, or to understand the distribution of consumption among customers with these different meter types. Nevertheless, these averages illustrate the consumption patterns that we observe between different groups of restricted meter customers. The disaggregated meter arrangements are included in the annual profile class 2 consumption values.

[14] https://assets.publishing.service.gov.uk/media/5773de34e5274a0da3000113/final-report-energy-market-investigation.pdf , p.519



	Annual mean consumption (kWh)
Profile Class 1	3,618
Profile Class 2	5,342
Economy 7 / white meter	5,395
Economy 10	6,226
Teleswitched (including DTS, heating and off-peak)	4,533

*Based on meter point data as of September 2016. Classified using the below methodology.

Please note that the values are calculated per meter and not per household. In some cases there will be 2 meters within a property, recording electricity consumption at different times (or being used for different purposes). As a result, the averages presented above may underestimate the annual consumption of customers on restricted meters, as the true consumption of the household will be split across two meters (this is particularly likely to be the case for the 'teleswitched' category). This also provides another reason why, wherever possible, we would encourage customers to use actual energy consumption.

We have published these statistics with a view to providing additional information about the consumption of those with restricted meters, rather than with the intention of replacing the profile class 2 TDCVs. This should help provide greater granularity and better insight into the data underlying our consumption statistics.

5. Economy 7 peak / off-peak consumption split

We have used the same information from Elexon to estimate the average proportion of Economy 7 customers' consumption that takes place in peak and off-peak periods. Our classification of Economy 7 meters is consistent with the approach set out above, including meters with an 8 or 8.5 hour off-peak period, known as white meters, and Economy 7 meters that are teleswitched.

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The information provides total estimated annual consumption as of September 2016, split by region and supplier for each SSC. The consumption information is further broken down between the different time pattern regimes associated with each settlement configuration. We have identified total estimated consumption at peak and off-peak periods by classifying each of those time pattern regimes as peak or off-peak, using the average number of hours per day associated with the regime. For teleswitched meters, these designations are confirmed using the switched load indicators. Again, the consumption data that the values are based on relate to meter points, not households.

	2010 consumption split (GB) - BEIS	**2017 consumption split (GB) - Ofgem**
Peak (day time usage)	45%	58%
Off-peak (night time usage)	55%	42%

*based on Elexon data for September 2016 data using Economy 7 / white meter metering arrangements. GB average across suppliers.

We have also looked at regional variation in these averages. The proportion of usage that takes place in peak periods ranges from 46% up to 67%. There are a total of six regions where average annual off-peak consumption exceeds peak consumption.

We have published these statistics with a view to providing additional information about the consumption split of with Economy 7 meters, to replace the previous values published in 2010, which were based on data from BEIS. This should allow a better estimation for a typical bill for an Economy 7 customer who does not know their actual energy consumption. Where possible, the actual energy consumption should be used.

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