

## **Response to Senate Inquiry – UK experience**

### **Note prepared by Dr Gill Owen**

This note covers three separate issues of relevance: enabling consumers to make effective energy market choices; social tariffs; the impact of demand side response measures on low income households.

### **1. Enabling consumers to make effective energy market choices**

#### **Background**

Concerns about the effectiveness of retail competition in delivering benefits to household customers in the UK began to surface around 2006 (price control was removed in 2002). Ofgem (the GB energy market regulator) launched an Energy Supply Probe in 2008, following which it introduced a number of measures to improve competition. In 2010-11 Ofgem reviewed how well the measures they had put in place following the Probe were working. The review found competition was being stifled by a combination of tariff complexity, poor supplier behaviour, lack of transparency and the degree of influence the big six energy suppliers had on the energy market.

Ofgem found that pricing structures make comparison difficult. Some retailers offer a standing charge and then a flat rate for the energy used. Others do not have a standing charge but operate a two tier structure - one price for the first block of consumption and then a different, typically lower rate, for additional consumption. The prices at which the two tiers are charged differs between companies as does the level at which consumers switch from the first to the second tier. This makes it hard for consumers to work out the unit price they are paying and compare it with the unit price offered by another supplier.

The number of tariffs on offer grew from just under 200 in January 2008 to more than 300 at the beginning of 2011. Ofgem's research found that 70 per cent of consumers were confused by the number of tariffs available.<sup>1</sup> Ofgem concluded that less than 20% of customers are "active customers" who regularly shop around. 40-60% of customers are categorised as "sticky" (never switched and reluctant or unable to do so for various reasons).

Almost all consumers say that they switch supplier in order to save money. Ofgem's analysis however found that on average around one third of switchers may not achieve a price reduction. This proportion was even higher for consumers who switch as

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<sup>1</sup> Ofgem. Retail markets : review and remedies. Factsheet 98. 25.03.11  
[http://www.ofgem.gov.uk/Media/FactSheets/Documents1/RMRfactsheet\\_energy%20prices%20update%20FS.pdf](http://www.ofgem.gov.uk/Media/FactSheets/Documents1/RMRfactsheet_energy%20prices%20update%20FS.pdf)

a result of a direct sales approach (48 per cent for gas, 42 per cent electricity). Consumers therefore often switch on the basis of poor or partial information and fail to achieve a better deal.<sup>2</sup>

### **Ofgem's 2012 proposals for tariff reform**

As noted above, Ofgem has concluded that many consumers see the energy market as complex and hard to navigate. Only a small number actively seek out better deals. Ofgem and most consumer groups believe that tariffs need to be simpler to help consumers to compare and switch. Ofgem now plans to :

- reduce the number of standard tariffs,
- introduce a single unit price so consumers can choose the cheapest standard tariff more easily, and
- ensure suppliers make information for consumers a lot clearer and easy to understand.

**Standard tariffs** are any tariff that doesn't have a fixed end date. The supplier normally has the right to alter the price – although Ofgem now requires suppliers to write to consumers at least 30 days before their prices rise. Ofgem proposes:

- Each supplier can only have one standard tariff per payment method, per fuel. The three payment methods are direct debit, pre-payment meter, and standard credit, (where customers pay on receipt of a quarterly bill).
- The standard tariff will consist of a fixed standing charge set by Ofgem (this will vary by region but will be the same for all retailers in a region) and a single unit price set by the retailer (i.e. market based).

These changes are designed to enable consumers to choose the cheapest standard tariff more easily. They will enable people to tell at a glance whether they can save money by switching supplier or moving to a new deal.

**More innovative tariffs** – Ofgem has proposed that all other tariffs must have a specified end date and fixed terms and conditions. The proposals for these tariffs:

- No restrictions on the number, type, structure or duration of fixed term contracts, including exit penalties.
- Terms and conditions, including price, set at the start of the contract and cannot change for the duration of the fixed term. (Although price would not be fixed for tracker-type tariffs).
- Automatic roll-over at the end of the contract will be banned. So customers who do not sign up to a new deal when their fixed term ends will default to the standard tariff. They will also be free to switch.

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<sup>2</sup> Ofgem. Energy Supply Probe : Initial Findings Report. October 2008.

<http://www.ofgem.gov.uk/Markets/RetMkts/ensuppro/Documents1/Energy%20Supply%20Probe%20-%20Initial%20Findings%20Report.pdf>

- Strict rules on clear information and ensuring the customer understands the terms.

The fixed term tariffs proposals are designed to enable suppliers to continue to innovate – particularly in the area of time of use and other new tariffs that may be introduced with smart meters (which are being rolled out to all customers in the UK by 2019).

**Making comparisons and choices** - Ofgem proposes:

- Displaying all energy prices in pounds and pence, for example *£/month* as well as *p/kWh*. Ofgem's research found that consumers relate better to information presented this way. It will be the equivalent of an 'APR' comparison for gas and electricity.
- Suppliers will have to publish the price of all their tariffs in the same way so consumers can compare between standard and fixed term tariffs.

## 2. Social tariffs

In response to encouragement from the Government and Ofgem (and pressure from consumer groups) energy retailers voluntarily introduced a number of social tariffs from around 2005 onwards. These were designed to deliver lower prices to vulnerable and low income households. Ofgem published an annual review of the tariffs to aid transparency. It was found however, that the tariffs on offer varied widely in terms of who was eligible, how well they were taken up, and the level of benefit. In a number of cases the social tariff was a less good deal than other tariffs that the retailers offered to some customers (notably internet only tariffs). The retailers also found that it was often difficult to identify customers in need. As a result, in 2009, the then Government decided to legislate to make some of this assistance mandatory .

The Warm Homes Discount (WHD) was introduced in 2010. This provides a £130 a year discount off electricity bills for qualifying households (retirement pensioners on low incomes). Primary legislation was passed to enable data sharing between the energy retailers and the Department of Work and Pensions (because this would otherwise have been prohibited under data protection laws), which means that eligible customers receive the discounts automatically and do not have to claim them. The electricity retailers have also agreed to give a £130 discount to some other customers in vulnerable groups (called the broader group). Each electricity retailer has different eligibility criteria they use to decide who may get this discount.

One criticism of the WHD has been that some customers getting the discount may be on a tariff that is more expensive and therefore that the benefit will be lower than it could be. There have been calls for the retailers to switch households who get the

WHD to their best tariff to ensure that the discount delivers the maximum benefit. One retailer (EDF Energy) currently does this.

### **3. Demand side response measures – impacts on low income and vulnerable households**

Interest in demand side response (DSR) measures has been increasing worldwide for a number of years as a means of reducing peak demand and thus avoiding or deferring some of the costs of network infrastructure and electricity generation peaking plant. Interest is also increasing because of new challenges for electricity distribution networks in accommodating distributed generation (including solar PV) and new loads such as electric vehicles, heat pumps and increasing penetration and usage of air conditioning. DSR measures can be aimed at reducing peak demand day in day out or only at critical peak periods (e.g. the times of highest demand on very hot days).

DSR measures can include various forms of tariffs designed to provide an incentive to customers to reduce their usage at peak periods; forms of automatic control that switch off or cycle down certain appliances for short periods at peak times (typically air conditioning units) ; or a combination of both. Some trials have also experimented with providing information only (no economic incentive or automatic control) to test consumer willingness to reduce their demand at peak times.

A recent in depth review, for the UK's Department of Energy and Climate Change, of 30 DSR trials in the household sector in Europe, the US and Australia<sup>3</sup>, reached the following conclusions :

- Consumers do shift electricity demand in response to economic incentives (such as higher prices during peak periods) even if these incentives are accompanied by only basic information, however the size of the shift can vary significantly. Basic information may include fridge magnets displaying peak hours and/or prices, information sheets, and basic bill inserts. This finding applies to both day-in day-out reductions in peak demand and reductions at times of critical peaks
- Interventions to automate responses deliver the greatest and most sustained household shifts in demand where consumers have certain flexible loads, such as air conditioners or electric heating.
- After automation, a combination of economic incentives and enhanced information delivers the greatest demand response. Enhanced information includes billing which breaks consumption down into different tariff periods, and technologies that provide real-time interactive information (such as in-home displays - IHDs).

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<sup>3</sup> Frontier Economics and Sustainability First. Demand side response in the domestic sector : a literature review of major trials. DECC. August 2012

- Evidence on the impact of DSR measures on large households is mixed. The *California State-Wide Pricing Pilot* and found that smaller households were more responsive to price changes than larger households. Similarly the UK EdF *EDRP trial* found that smaller households reduced peak demand more than larger households. There is no conclusive explanation for this, but it may be that households with children have less flexibility to reduce demand during peak hours. In the *Ontario Smart Price Pilot*, some families with small children said they found it difficult to reduce laundry use during peak periods. In contrast, the *Ireland Electricity Smart Metering Trials* found that households with children under the age of 15 reduced peak demand by more than the average. Focus group evidence suggested that this was due to educational initiatives, which may result in children driving behaviour change.
- Evidence on the impact on low-income consumers of DSR is also mixed.. The US *Institute for Electric Efficiency (IEE)*<sup>4</sup> notes that flatter initial loads for low-income consumers (that is, electricity use spread more evenly across the day) mean that, before any behaviour change, low-income consumers may see a reduction in bills in a move from a flat rate tariff to a ToU or a CPP tariff. This is because, compared to the average consumer, low-income consumers already consume a higher proportion of their electricity at off peak times, when prices are lower under ToU or CPP tariffs. Faruqui and Palmer simulated the impact on electricity bills of CPP tariffs and found that 65% of low-income consumers were better off on the CPP rate than on a flat tariff, before any behaviour change.
- Evidence on responsiveness to economic incentives by income group in the UK is limited. Studies covered in the IEE paper generally found that low-income consumers in the US do respond to incentives to shift load, but that their responses tend to be smaller than the responses for average consumers.

There are several possible reasons why low-income consumers may have different peak use reductions relative to non-low-income consumers.

- Lower overall electricity use may mean less discretionary<sup>5</sup> load than an average consumer, limiting the extent to which they can reduce demand at any time of day (including peaks). On average low-income households have lower electricity consumption than high income households in the UK, therefore it is plausible that they may have less discretionary load to shift, although this has not been tested.
- Flatter load shapes may reduce the scope to shift peak demand, as they are already consuming less in peak periods (assuming peak periods are late afternoon/early evening and breakfast-time). Low income consumers are more likely to be at home during the daytime (for example due to being unemployed, retired or disabled). In the *Northern Ireland Powershift trial*, consumers in the trial group, who mostly had low incomes, were found to benefit from the lower off-peak prices in the ToU tariff passively (that is, without having to change their

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<sup>4</sup> “The Impact of Dynamic Pricing on Low Income Customers” (2010)

<sup>5</sup> “Discretionary” load is electricity use that consumers are likely to be willing to shift or reduce. Laundry and dishwashing tend to be discretionary whilst cooking and TV watching tend not to be. Heating and air conditioning can be discretionary depending upon the interaction of price and comfort factors.

- behaviour), as a lot of their electricity use was already at off-peak times (peak period in this trial was 5–7 pm when household and commercial sector loads overlap).
- Low-income consumers may have different standards of housing and different appliance ownership to average consumers. In the US *PG&E Trial*, the difference between low-income and average consumers was fully accounted for by differences in appliances used by these groups. Appliance use varies by income in the UK. For example, use of on-peak electric heating is more prevalent amongst low-income than better off households. Of the 560,000 households in Great Britain whose primary heating source is on-peak electricity, 53% are in the bottom two income quintiles. However, the effect of different appliance use by income on DSR has not been tested in the UK.
  - Response to automation and information. In the *OG&E (Oklahoma and Arkansas) Trial*, the IHD or web portal along with a CPP tariff led to smaller percentage reductions from low-income consumers than for higher income consumers. In contrast when the CPP tariff was combined with a smart thermostat, which allows an automated response to tariff rates, peak demand reductions were higher for low-income than high-income consumers. It is noted that other factors which may be correlated with income, such as the age of participants, may also have driven this result. This suggests that automation might work better for some low income households, than tariffs that they are expected to respond to through the provision of information.

### **Dr Gill Owen**

Dr Owen has recently moved to Australia from the United Kingdom where she has been leading a number of major research projects on electricity demand response, smart meters and energy efficiency. She is co-author of a newly published review of demand side response trials worldwide for the UK's Department of Energy and Climate Change (DECC).<sup>6</sup> She was also Vice Chair of the UK Government's Fuel Poverty Advisory Group and has been, a member of DECC's Smart Meters Consumer Advisory Group and a non-executive member of the boards of the UK's energy and water regulators (Ofgem and Ofwat) and is also a former Commissioner of the UK's Competition Commission.

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<sup>6</sup> Frontier Economics and Sustainability First. Demand side response in the domestic sector : a literature review of major trials. DECC. August 2012