

22 April 2024

To : DefaultTariffs@energysecurity.gov.uk

Retail Energy Markets and Consumers Team
Department of Energy Security & Net Zero

Dear DESNZ team

Future Default Tariffs – response to DESNZ call for evidence

Sustainability First is a charity and think-tank focused on social and environmental issues in the energy and water sectors. We have published and engaged extensively over many years on policy, regulatory and consumer issues for the household electricity demand-side, including on what fair approaches to tariff development could look like. We were members of the former BEIS / Ofgem Smart Systems Forum and shaped both the ESO's Power Responsive programme and the ENA Open Networks project. For RIIO-2, we were on the Ofgem Challenge Group and a DNO customer engagement group.

We therefore see the DESNZ call for evidence on how default tariffs might evolve in future as an important step in development of the electricity consumer demand-side. We are supportive of the proposed principles to guide fair and credible approaches to supplier offers of default tariffs for different household segments, and in particular of Principle 3¹.

Key points

With increasing EV uptake in the coming decade, the CfE gives welcome recognition to how household electricity consumption patterns will likely substantially diverge across the consumer base. DESNZ clarification that one-size for default tariffs no longer 'fits all' is therefore most welcome.

A growing disparity in household electricity consumption profiles – whether for energy (kWh) and / or for capacity (kW) – introduces new complexities into how best to shape overall electricity system efficiency while at the same time promoting customer outcomes that are broadly fair. Supported by internal analysis, the DESNZ document starts to unpack this challenge – in particular on the comparative impact of EV charging at off-peak or at peak times. This initial DESNZ analysis

¹ 'Principle 1 – The market should be free to reward households for using energy smarter.

Principle 2 – Default tariffs should protect consumers from unnecessary complexity and costs.

Principle 3 - Households should not be exposed to excessive costs from the inefficient use of high-consuming items by other consumers'.

underscores how the successful evolution of new default tariffs will require detailed distributional analysis and impact assessment.

In developing appropriate ToU default tariffs based on time-related and / or technology-type, better insight is needed into the half-hourly electricity usage profiles of disadvantaged and vulnerable customer groups. This must inform how far these customer groups might be able to respond in practice to sharper price-signals - i.e. to reward electricity-use at lower-priced times, or to penalise electricity-use at higher-priced times. Introducing ToU default tariffs must not disadvantage these customer groups, already struggling with energy costs. This better understanding of winners and losers will also be a critical factor in paving the way towards appropriately targeted support for disadvantaged and vulnerable customers.

Above all, we agree with DESNZ that we would not wish to see disadvantaged or vulnerable customer groups pick up additional system costs that may result from inefficient operation of new types of large domestic electrical load – especially EV loads – which they have not created². We therefore particularly welcome that DESNZ wish to better understand which customer groups should or should not in the future default to a ToU tariff.

With imminent adoption of market-wide half-hourly settlement we conclude that there is a strong case for DESNZ, Ofgem and retailers to focus first on development of future default tariffs for two customer groups:

(1) EV customers: a static ToU default tariff for EV households

- EV customers should of course be very actively encouraged - both by the EV supply chain and by energy retailers - to opt for smart-tariffs that support system efficiency and which also suit their personal needs, be that off-peak static ToU or dynamic.
- Where an existing EV customer does not extend or change their EV tariff at the point that their tariff expires, suppliers should move those EV customers onto a default static ToU EV tariff – and not to the single-rate standard variable default tariff. This would support system efficiency and also be consistent with Principle 3.
- DESNZ, Ofgem and suppliers should also have a clearly-stated goal longer-term to mandate a static ToU EV tariff as the default tariff for all household EV charging (with the option for customers to choose a dynamic tariff if they prefer). We do not underestimate the challenge of implementation nor of getting all parties on board. However, we see this as an important enabling step in future retail market development, producing fairer outcomes for the majority of electricity consumers who may not have an EV, while at the same time better supporting whole system efficiency. By protecting consumers in general this step accords with Principle 3.
- Last, very many households charge their EVs at public and private charge-points outside the home. In moving to a mandated static ToU default tariff for household EV charging, logic suggests that all other charge points as a minimum expectation would also need to offer a comparable tariff.

² We note that among the bottom quintile of households 40% do not currently have access to a car compared to only 12% in the top two quintiles (ref government statistics – [here](#)). As well as being slower to take up EVs, because of the up-front cost, low-income households are also less likely to ever own one.

(2) A static storage-heater default tariff for existing and future storage heater customers to ensure storage heater tariffs are 'future-fit'.

By comparison, we regard development of a heat-pump default tariff as still some way off, pending better insight into flexible household heat-pump operation and ensuring household comfort levels.

Despite its shortcomings, we also expect that the single-rate standard variable default tariff will remain an important safeguard for the majority customers who presently do not have much by way of flexible load. Even once half-hourly settlement is in place - alongside ensuring both eventual successful smart-meter roll-out and operation - very many consumers will still need access to a single-rate standard variable regulated tariff until such time as some of the key challenges in today's retail markets are adequately addressed. In particular, the affordability and debt problems experienced by such a high proportion of energy consumers reinforce the extremely urgent need, highlighted by Citizens Advice, to adopt a satisfactory approach to targeted price-support for the many customers who are fuel poor, disadvantaged and vulnerable.

We are responding to the five specific questions posed by DESNZ to consumer groups at the DESNZ/Ofgem workshop on 18 April 2024 (rather than to all 17 consultation questions). These answers are attached in the Annex.

Yours faithfully

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Annex - Future Default Tariffs

Sustainability First Response to DESNZ Call for Evidence

Answers to the five questions posed by DESNZ to consumer groups at the DESNZ/Ofgem workshop on 18 April 2024

Q1. Are our principles the right ones for ensuring that consumers are protected?

Yes. The three principles should help support protection for consumers in adopting new default tariffs from suppliers where these are more explicitly related to time- and technology-type.

In particular, we support Principle 3 – *‘Households should not be exposed to excessive costs from the inefficient use of high-consuming items by other consumers’*.

Principle 3 addresses our longstanding concern that households can own or operate new high-using electric technologies – especially EVs (which tend to be owned by more affluent households) - and charge these up at higher-cost times without being given any clear price-signal that charging at times of peak or scarcity is inefficient for the electricity system as a whole and creates a higher cost system for everybody.

Importantly, this point is well-illustrated by Figure 1 from DESNZ’s own analysis (p 11 CfE). This estimates that if all EV charging in 2030 takes place at peak times, then the single rate electricity tariff might be around 5% higher than otherwise³. By contrast, the DESNZ analysis indicates that if 75% of EV charging is off-peak, then the 2030 single rate tariff could be unchanged or possibly marginally lower.

For the near-to-medium term the main change implied by Principle 3 would most likely be to introduce a static ToU EV default tariff which we welcome. We also believe it should eventually become mandatory for households with an EV to have some form of ToU tariff. In practice, a major question for Principle 3 will therefore relate to deliverability. (see Q 2 below)

For heat pump ownership and operation, Principle 3 could ideally also apply but it is likely that approaches other than a default static ToU tariff will need exploring (see question 2 below).

Air-conditioning, which is likely to become more prevalent with climate change, is another example that requires more thought in this context.

One practical and helpful example of how adoption of Principle 3 already works well in practice and supports a more efficient electricity system is the group of 1 million-plus Economy 7 customers who heat their homes with storage heaters. Storage heater customers have large electrical loads of 3-7 kW that charge over-night for a 7-hour period. Collectively, Economy 7 customers consumed ~16% of all household electricity in 2021, typically having comparatively high individual annual average consumption. If these customers were instead to use direct electric heating at peak-times, then, as per Principle 3, this would cause other households to be exposed to excessive costs from the inefficient use of a high-consuming technology.

³ with an error range of up to 10% more

Q2. Are different default tariffs required for different types of consumer?

For the long run we agree that different approaches to supplier default tariff offers may be needed for different types of consumer and also for different technology types.

As both EV and heat-pump ownership gather pace, we agree that a flat single-rate standard variable tariff will become increasingly less suitable as the sole default tariff on offer. As noted, in the first instance this is particularly the case for EV charging – and on which DESNZ, Ofgem and retailers should focus as a priority.

Customers with flexible loads

EVs

For the coming decade EVs will remain the largest driver of significant new household load, whether the EVs are directly household-owned or employer-owned and home-charged. We agree, as per Principle 3, that so far as practicable, it is desirable for at least some of the costs of additional system capacity driven by EV load to be covered by future approaches to EV retail tariffs.

New EV household customers should of course be very actively encouraged - both by the EV supply chain and by energy retailers - to opt for smart-tariffs that support flexible charging and system efficiency and which also suit their personal needs, whether via tariffs that are ToU off-peak (static) or more dynamic.

For EV customers who do not choose a specific EV tariff, a ToU default tariff for EVs makes sense. This would provide sharper price signals than the current single-rate standard variable default tariff – and so encourage charging at lower-priced times and help to curb additional system impact. Our thinking is as follows:

- **Customers already with an EV tariff** - where a customer for whatever reason fails to renew an existing EV tariff when that term ends, then suppliers should move those EV customers onto a static ToU EV default tariff. This would support system efficiency and also be consistent with Principle 3. These customers should not default to a single-rate standard variable tariff.
- **New EV customers not on an EV tariff:** DESNZ, Ofgem and suppliers should also have a **clearly-stated goal to mandate a static ToU EV tariff longer term as the default tariff for all household EV charging.**

We do not underestimate the challenge this measure represents, nor of getting all parties on board. Mandation implies a deep knowledge by suppliers of their customers and the ability to segment customers by specific technology-type. For EVs, practical and acceptable ways to achieve this will be needed – likely some agreed form of asset registration - whether at point of EV purchase or (perhaps more likely) upon installing a household EV charger. Absent these steps, suppliers may well struggle to identify customers with EVs.

Implementation challenges notwithstanding, we nevertheless see eventual mandation of an EV default tariff as an important enabling step in future retail market development, producing fairer outcomes for the majority of electricity consumers who may not have an EV, while at the same time better supporting whole system efficiency. By protecting consumers in general this step accords with Principle 3.

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- **Households who charge their EVs at public and private charge-points outside the home.** In any future move to mandate a static ToU default tariff for household EV charging, all other charge points would need to offer a comparable tariff as a minimum.
- **Individual EV customers must be extremely well-informed on what an EV static ToU default tariff means for them** - beneficial outcomes from an EV default ToU tariff (whether for individuals or for the electricity system) will require EV customers to become very well informed about the economic impact to them of their electricity tariff. These customers will need a very clear grasp that (1) in certain time periods they pay more to use all of their electricity, including charging their EV, than other customers who may be on a single-rate standard variable tariff and that (2) outside of those time periods the EV ToU tariff should cost them comparatively less and result in a lower bill overall - *provided a high percentage of their electricity is used during the designated off-peak lower-priced periods*. This is a very complex calculation, and we have already seen how hard this precise calculation has proved for many Economy 7 customers. If a default EV ToU tariff is to deliver savings to them, EV owners would need access to much clearer advice to ensure that they are aware of the benefits of using more of their electricity in lower-priced periods.
- **In time, a single-rate standard variable default tariff would no longer be available to EV-households.** Customers with EVs would of course remain free to opt for other smart or dynamic EV tariffs offered by suppliers and which might better serve their needs. In particular if type-of-use tariffs were to evolve (with EV charging separately metered) then customers could still retain a single rate tariff for their other usage if that was beneficial.

Heat

Heat Pumps – at 3-4kW for a standard heat-pump connection, and very largely designed for continuous running, heat pumps by the late 2020's are expected to add significantly to overall electricity demand throughout the winter months. Heat pumps may be able to switch down (or off) for short periods with thermal storage or by relying on the building fabric to retain heat, and so respond to dynamic price signals for flexibility. But without a dedicated storage tank (which takes up space⁴) it is hard to envisage, even with full automation, how heat pumps could be expected to be responsive to a static ToU default tariff in the way an EV can. There is ongoing research into flexible heat-pump operation⁵. Findings from these projects need to very substantially inform how far heat pumps might be suited in the future to a dedicated ToU default tariff – most likely dynamic - and how this would also work alongside an EV static ToU default tariff as many households will have both. Given current lack of insight around the many complexities of flexible heat-pump operation, including maintaining household comfort levels, a default tariff expressly for heat pump households could well be a desirable long-term goal, but presently seems a considerable way off.

Storage Heaters – despite their many and very well-understood shortcomings, Sustainability First has long been an advocate of modern electric storage heaters in well-insulated smaller homes to remain

⁴ And hence again will represent an additional challenge for low-income households who typically live in smaller properties

⁵ eg DESNZ Heat Pump Readiness Programme, the Equinox NGED network innovation project

part of the future for net-zero electric-heat and to offer choice alongside heat-pumps. This first necessitates fixing the problems associated with legacy storage heaters and Economy 7 and Economy 10 metering and tariffs⁶. As noted, in terms of default tariff evolution current Economy 7 / Economy 10 customers are already in effect on a ToU default tariff (and which the DESNZ CfE acknowledges). Given the shortcomings in the current approach to Economy 7 price-cap calculation, (set out in the recent Grid Edge Policy report “It’s a Lottery: How Ofgem’s Price Cap Fails Economy 7 Customers” and discussed further below) it is vital to develop a new default tariff that will support storage heater operation in the future, able to optimise cost-efficiency for the individual and for the electricity system more generally. To date, storage heater households have been extremely poorly-served in tariff terms both by Ofgem and retailers. In considering the evolution of future default tariffs, storage heater customers should be regarded by DESNZ and Ofgem as a priority group in order (1) to address current tariff shortcomings and (2) to ensure storage heater tariffs are ‘future-fit’ – able to be a cornerstone of future electric storage-heater delivery. Tackling the issues associated with a basic default ToU tariff like Economy 7 should also provide valuable learning which can be built on in thinking about other default tariffs. We return to this issue in our response to question 5.

Default tariff evolution for customers who do not have large single-point flexible loads

Default tariff customers today

Despite over 25-years of a competitive retail market, DESNZ and Ofgem note that 86% of energy customers in October 2023 were on the default standard variable tariff offered by their supplier – i.e. on a regulated retail tariff subject to the Ofgem price-cap.

Many reasons stand behind this headline statistic – lack of alternative attractive retail offers, a continued customer-wish for price-protection – particularly given recent price-hikes, millions of households in deep debt, general customer inertia, continued market mistrust etc.

DESNZ and Ofgem continue to stress the need for greater retail competition including through tariff innovation to keep a downward pressure on price. Despite this, we welcome acceptance by both DESNZ and Ofgem of a continued need for suppliers to offer customers a single-rate standard variable default tariff for the foreseeable future. Aside from Economy 7 customers, the vast majority of electricity customers on a single-rate standard default tariff today are far less likely to have large single-point loads able to respond to price signals to operate flexibly (i.e. EVs, heat pumps, batteries, air conditioning, swimming pools). Unless or until switching offers a major price advantage, or suppliers offer more by way of attractive time- and type-related tariffs, most customers are extremely likely to remain on their current single-rate standard variable default tariff.

Accordingly, in terms of evolving the present single-rate standard default tariff both DESNZ and Ofgem must first turn their attention to fixing the wider challenges in current retail markets including:

- The affordability and debt problems experienced by an extremely high proportion of energy customers;
- The extremely urgent need, highlighted by Citizens Advice, to agree a satisfactory approach to targeted price-support for the very many customers classed as fuel poor, disadvantaged and vulnerable;

⁶ See the Grid Edge Policy report for SSEN: [An Electric Heat Pathway: Looking beyond heat pumps](#)

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- Shortcomings in the current price cap calculation (Ofgem in particular);
- Inadequacies of the smart-meter roll-out (installation, smart operation);
- Consumer protections in the face of new competitive tariff-offers from suppliers following market-wide half-hourly settlement;
- Approaches to inclusion in uptake of low-carbon technologies (EVs, heat-pumps, PV).

This is a huge agenda. Until these retail price matters are sufficiently resolved, retention of a single-rate standard variable default tariff will be essential to the vast majority of customers without ready-access to flexible load.

Default tariff customers in the future

DESNZ indicate that following the introduction of half-hourly settlement, and over time, with far greater household electrical load on the system it is possible to foresee a time where the requirements of system efficiency point towards mandation of a simple static ToU tariff as the universal standard default tariff.

We agree with this line of thinking. Our earlier Sustainability First work for the GB Electricity Demand project led us to conclude that unless every customer is eventually mandated onto a static ToU tariff as default, retailers and customers would simply 'cherry pick' / revert to the tariffs that are most attractive either commercially or individually. For example, some EV owners may see no personal advantage in charging mostly at off-peak times (given price insensitivity and convenience considerations) and, given the choice, would then opt for a single-rate standard variable tariff at lower cost to them - so adding to system inefficiency and also adding to peak-related costs of customers in general (and counter to Principle 3).

As DESNZ note, there is already experience of mandated static ToU tariffs as default elsewhere (e.g Spain). Italy also has experience of a mandated ToU tariff. There are also long established ToU default tariffs in parts of the US – targeted particularly in some instances at air-conditioning load. Looking ahead at the longer-term pros- and cons of a possible mandated universal ToU default tariff for all GB households, DESNZ should consider major lessons from experience elsewhere.

The ESO's Demand-Side Flexibility Service gives the most comprehensive experience to date of a GB dynamic household time-related tariff involving over 1.5 million customers, mostly without large single-point loads, responding to a series of price-related dynamic notifications correlated to times of acute system stress. In practice, the vast majority of household customers made very modest individual reductions in their electricity usage but produced a significant impact overall. From the standpoint of household customers however, a major question remains as to how far this level of dynamic flexible response, could be consistently achieved via a dynamic default tariff unless mainly automated.

Other tariff approaches to support system efficiency

A household capacity charge could perhaps also be explored as a further tool to support both overall customer and system efficiency as electricity demand radically grows. This could be alongside a ToU default tariff – either for EV owners – or eventually for every household. The Norway energy regulator has introduced a new household capacity charge to address the increased network cost of connecting EV households. Italy and France also have long-standing 'stepped' household capacity

charges. To date there has been little relevant research on the pros- and cons- of introducing a household capacity charge in GB. In considering how best to evolve the flat-rate standard variable tariff for different customers and different technologies DESNZ and Ofgem could usefully explore whether household capacity charges have a part to play. A household capacity charge would also support Principle 3.

Q3. What potential detriments do you believe it will be most important for regulations to protect consumers from in a more flexible energy system?

Principle 3 should be a basic safeguard in protecting consumers in a more flexible energy system.

Not highlighted by the DESNZ paper is a point around rewarding customers who already have a relatively flat demand profile / low peak use. The emphasis in Principle 1 is on suppliers offering TOU tariffs to customers who are able to offer flexibility. Suppliers will not go out of their way to reward disengaged customers who have a profile that is relatively cheap to serve which, in our view, they should do (in particular where those customers are lower income). There is some very limited evidence⁷ that lower income households on average have slightly flatter profiles but the variations within demographic groups are much greater than the variations between groups. Further work is needed to properly understand these distributional impacts. In particular, our PIAG project⁸ highlighted the need for Ofgem / DESNZ to have access to granular smart meter data linked to socio-demographic data in order to be able to look at key distributional questions like this – which really need to be better understood to inform a decision on default tariffs under MHHS and to identify the scale of potential price increases some individual customers might face and the scale of detriment if customers are not on a suitable tariff for their needs.

Work by Torriti et al - together with other more recent half-hourly data sets (e.g. UCL SERL) may offer further insight into electricity profiles by different demographics⁹.

Q4. Are protections required to ensure that certain groups of consumers e.g. vulnerable consumers, are not placed on costly/ complex tariff?

Sustainability First has long made the case, as smart tariffs develop, for suitable protections for consumers, including vulnerable consumers.

⁷ See Grid Edge Policy [report](#) on the distributional impacts of MHHS drawing on earlier Sustainability First research using CLNR data.

⁸ PIAG – Follow-up Project Report 2023 - https://www.sustainabilityfirst.org.uk/images/Sustainability_First_-_PIAG_-_Follow_Up_Report_-_Final_070223.pdf

PIAG Snapshot -

https://www.sustainabilityfirst.org.uk/images/publications/piag/PIAG_Snapshot_Report_2017-2021.pdf

⁹ Torriti et al - Distributional effects of Time of Use tariffs based on smart meter electricity demand and time use activities https://research.reading.ac.uk/sbe-news-and-events/wp-content/uploads/sites/122/Unorganized/Distributional_effects_of_tou-

UCL SERL - FINAL_v2.pdf <https://serl.ac.uk/key-documents/reports/>

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We cover this in our answers above about protecting consumers who lack large single point flexible loads. In particular this necessitates continuation of the single-rate standard default tariff and ensuring that this does not reflect higher costs imposed by EVs or other large loads which more affluent customers may have (Principle 3).

Transparency and lack of complexity are also vital. This will require suitable approaches to tariff advice and tariff comparison – including ToU tariffs. The evidence from the two Grid Edge Policy reports referenced above is that there is still relatively low understanding among Economy 7 (and other similar tariff) customers about how their tariff works – the hours to which it applies, whether it covers all their usage or just heating etc. This reinforces the need for a stronger emphasis on the information and support that suppliers have to offer.

We have also seen, in our recent work on Economy 7, strong evidence of customers being left on Economy 7 tariffs even when they no longer have storage heating so they are paying potentially hundreds of pounds more than they would on a single rate tariff. Suppliers do already have an obligation to ensure that tariffs are suitable for the customer’s needs and Ofgem has reminded suppliers of that obligation in the context of Economy 7. However, with a greater prevalence of ToU tariffs Ofgem needs both better data and to be more proactive in ensuring that suppliers are treating customers fairly (in particular those who are in vulnerable situations).

We see moving to a universal mandated static ToU tariff as some way off regardless of half-hourly settlement. As per our answer to question 2 above, an essential precondition would first be to tackle other challenges in today’s retail markets. Namely, the affordability and debt problems experienced by an extremely high proportion of energy customers and alongside this is the extremely urgent need, highlighted by Citizens Advice, to agree a satisfactory approach to targeted price-support for the very many customers classed as fuel poor, disadvantaged and vulnerable.

Longer term there may be options to think more creatively about the sort of support that could be offered to vulnerable households in the context of a flexible energy system. For example, supporting heat-pump installations together with improved energy efficiency or providing battery storage to certain low-income households would enable them to access cheaper rates even if they have limited other options for flexibility.

Q5. Does the price cap need to be reformed or replaced as we transition to MHHS?

The need for reform is reinforced by our recent work on Economy 7. While the CfE briefly mentions Economy 7, it is positioned as being used by a “small minority” of customers. However, our report highlighted that at around 3 million households, typically disengaged or low income, this is a group that cannot simply be ignored. We have highlighted some flaws in the current price cap methodology in relation to Economy 7 which mean these customers are not adequately protected. Addressing these issues now would both help tackle an existing injustice and also provide valuable insights on how best to evolve default tariffs for a ToU world.

Two particular issues that we have highlighted to Ofgem as needing to be addressed for Economy 7 as they start to think about future price protection are:

- Understanding how the wholesale cost allowance should be set for Economy 7 and in particular the assumptions made about the peak / baseload split (where currently the same split is assumed for single rate and Economy 7 despite Economy 7 customers using a much higher proportion of their electricity at night when costs should be lower);

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- Reflecting on how best to define a price cap for a basic ToU tariff and whether the cap should explicitly set the maximum rates to apply in each period rather than a weighted average (as now) which leaves a lot of discretion to suppliers as set out in the Grid Edge Policy report. We are aware that the use of a weighted average is currently prescribed in the price cap approach set by government. It is clear that reform is needed in this area and the setting of separate rates for the different time periods would seem an obvious option to explore.

We have also highlighted the need for better demand side data (linking smart meter data with demographic data as proposed in our Sustainability First / CSE smart-meter data PIAG project, referenced above).

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This Sustainability First response draws upon recent Grid Edge Policy reports (authored by Sustainability First Associate, Maxine Frerk) as well as our practical experience of a number of household demand-side innovation projects as well as our earlier project ‘GB Electricity Demand-Side – realising the resource’¹⁰. Although now somewhat historic, the principles and issues addressed in that project remain very relevant to how best to evolve today’s single-rate standard variable default tariff into smarter time- or type-related tariffs.

¹⁰ Sustainability First. ‘GB Electricity Demand – Realising the Resource’. Overview Report. 2014
<https://www.sustainabilityfirst.org.uk/images/publications/gbelec/Sustainability%20First%20-%20Paper%2013%20-%20Realising%20the%20Resource%20-%20GB%20Electricity%20Demand%20Project%20-%20Overview%20-%20October%202014.pdf>

Report 12 – The household electricity demand-side & participation in the GB electricity markets. 2014
<https://www.sustainabilityfirst.org.uk/images/publications/gbelec/Sustainability%20First%20-%20Paper%2012%20-%20Household%20Electricity%20Demand-Side%20%20Participation%20in%20the%20GB%20Electricity%20Markets%20-%2031%20July%202014%20-%20FINAL.pdf>

Report 8 - Electricity demand and household consumer issues. 2013
<https://www.sustainabilityfirst.org.uk/images/publications/gbelec/Sustainability%20First%20-%20Paper%208%20-%20Electricity%20demand%20and%20household%20consumer%20issues%20-%20July%202013.pdf>