



TCR: MINDED TO DECISION: OVO response

Introduction to OVO Group and Kaluza

OVO is the UK's largest independent energy technology company and supplier. Across the group, OVO serves 1.5 million customers with intelligent energy services. Founded in 2009 by Stephen Fitzpatrick, OVO redesigned the energy experience to be fairer, greener and simpler for all. Today OVO is no longer simply a energy retail business: it is group of innovative, dynamic companies, all striving to harness technological advances with great consumer propositions to create more abundant clean energy for everyone.

Kaluza is part of OVO Group and was launched to accelerate the transition to a zero carbon energy grid. Kaluza provides tech-enabled solutions to support the integration of electric vehicles, battery storage and renewable energy onto the grid. Kaluza's intelligent platform unlocks the value of connected devices, harnessing flexibility to help balance the system and create returns for businesses and their customers.

While we agree that the cost of using the grid should be fair, the blanket fixed cost on residual charges takes policy change in the wrong direction, particularly when not aligned to changes proposed by the Access and Forward Looking Charges SCR. The proposal undermines the potential benefits of a flexible energy market and will have a detrimental effect on the cost of upgrading our system to 100% renewable electricity. For that reason, we do not support the minded to decision.

The Government and Ofgem have made clear that flexibility is part of future energy system. In its own commissioned analysis, the Government outlines that the potential saving of a smart, flexible electricity grid could save the UK up to £40bn¹. If this is a legitimate ambition, before these changes should happen, clarity should be given on how Ofgem's intends to provide price signals strong enough to support the flexibility market. Reform should not take place before clarity is provided on how the Government and Regulator intend to introduce price signals that sustain flexibility services.

1. Do you agree that residual charges should be levied on final demand only?

In principle, all final demand users should pay for the network's upkeep on the basis of an effective substitute being found for the proposed fixed or capacity charging mechanisms.

Given that changes to residual charges alongside other reform options (removal of the TGR and BSUoS reform) may well generate a windfall for some participants on the system, Ofgem, should monitor how costs are filtered through the energy system so that these savings are felt by consumers.

We would stress that there are significant changes proposed in network charging that, especially in this case, go against the policy direction outlined by Government in its Smart Systems and Flexibility Plan. We continue to ask for consistency on

¹ BEIS, [Smart Systems and Flexibility Plan](#), July 2017



implementation and direction of network charging reform so that inconsistent investment signals are not given through piecemeal reform and implementation.

2. Do you agree with how we have assessed the impacts of the changes we have considered against the principles? If you disagree with our assessment, please provide evidence for your reasoning.

Harmful distortions - impact on flexibility services

We do not believe the impact assessment has properly considered the distorting impact that flattening the residual charges will have on flexibility and the benefits that flexibility could bring to the system.

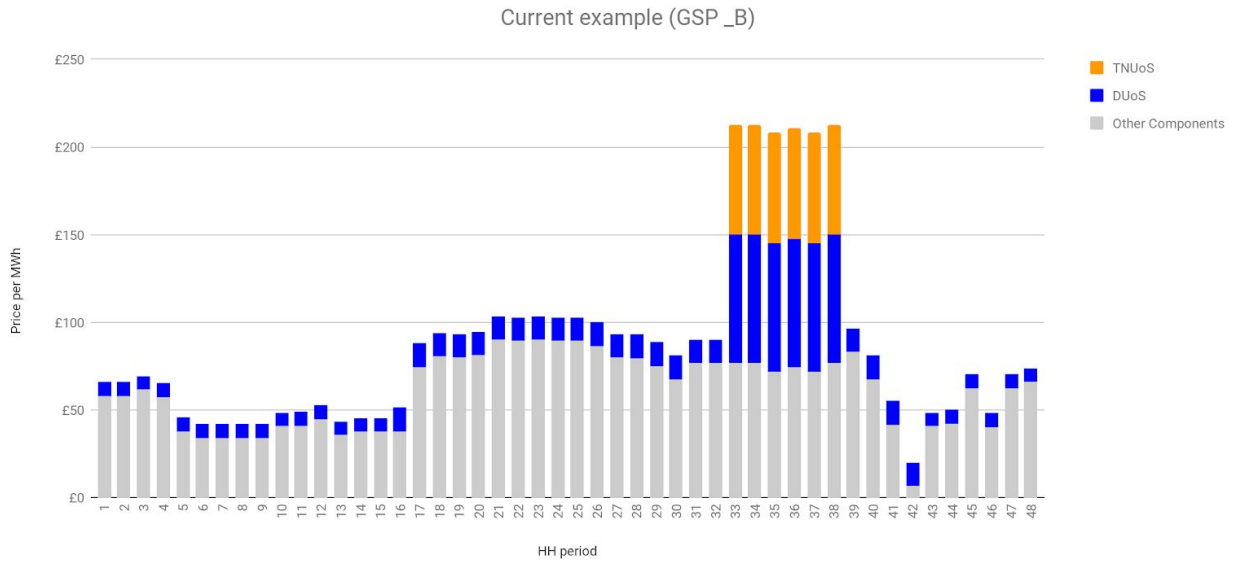
The 'minded to' decision outlines that Ofgem's principal objective is to protect the interests of existing and future energy consumers. Flexibility is key to securing the least cost-pathway to decarbonisation and studies by Imperial College London² have shown that customers could benefit by the sum of £6.9bn a year if regulation and policy enable the full benefits of residential flexibility onto the energy system. These savings are achieved by reducing the investment required in network infrastructure, and from using cheaper renewables like wind and solar instead of more expensive low carbon generation.

In the current UK market, HH electricity price fluctuations throughout a day play a very important role in enabling residential flexibility to be used for capturing value from load shifting and import/export management. This is achieved using technologies like smart chargers, vehicle-to-grid chargers and home energy storage. While ancillary services markets are still presenting a lot of uncertainty and barriers for residential flexibility, the HH wholesale price signals enable players like Kaluza to create a well defined business case for smart and green residential energy technology. The TCR proposed change would dampen the known price signal components while providing no indication how this could be addressed with the forward looking charges

HH price structure and illustrative example of the impact from proposed change to residual charges:

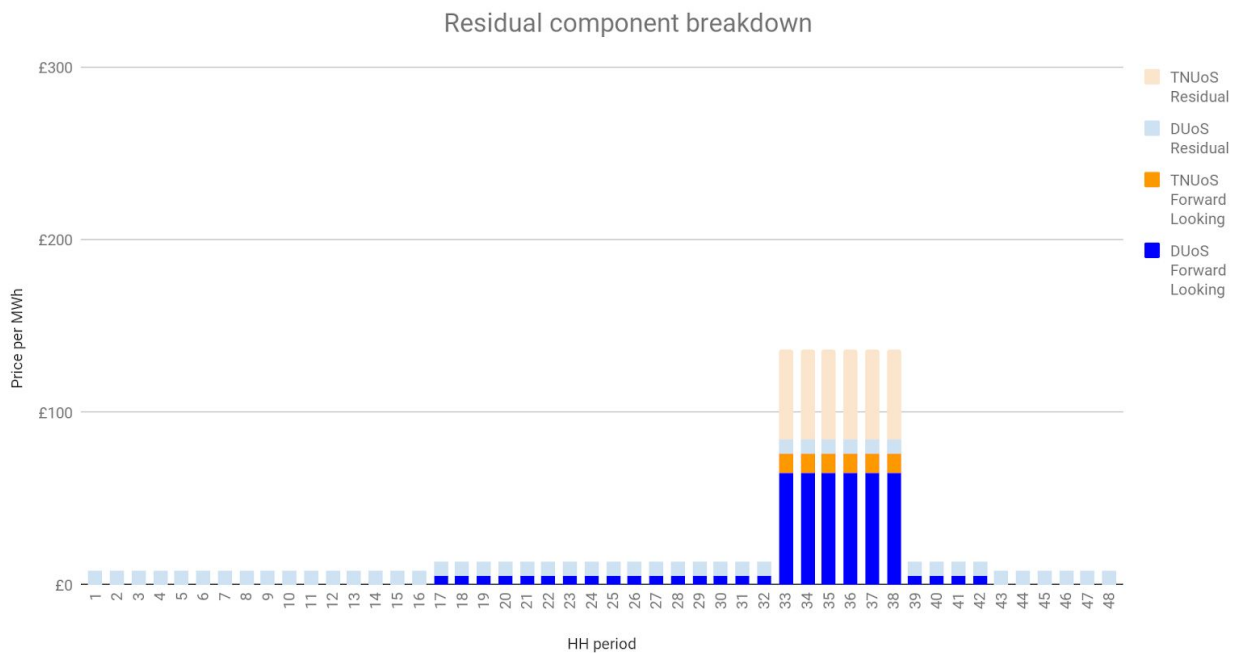
1. The chart below illustrates a price curve for a day in April 2018 for GSP region _B, splitting out DUoS and TNUoS charges from the other price components for a HH settled domestic customer (commodity, fixed charges, CM, BSUoS, etc.). From this you can see that DUoS as well as TNUoS have significant impacts on the 'peak' price signal strength and are the key components that create value to the residential flexibility through load shifting. The magnitude of the impact varies by GSP but all regions are affected similarly.

² Imperial College London, [Blueprint for a Post Carbon Society](#) 2018



2. Based on assumptions used by Ofgem and Frontier Economics (a link to reference material [here](#)) the chart below focuses on showing further breakdown of TNUoS and DUoS charge residual and forward looking components.

The DUoS residual component tends to be a smaller part of overall DUoS charges and (based on the assumptions in Ofgem's analysis) is evenly distributed throughout the day which means that the proposed TCR change would have little impact on the price differences throughout the day. As you can see from the chart below, more significant change would come from fixing the TNUoS residual component as this only applies to the peak hours and is a significantly bigger component of the overall TNUoS charge.





3. Based on the data provided by Ofgem for the proposed fixed scenario, these changes would affect the overall price curve shape in the selected day. There will be a considerable decrease in prices over the 3 peak hours of the day (between 4PM and 7PM) which is mainly caused by the removal of the residual component in TNUoS charge. **Based on our modelling, the impact of these changes on the value of flexibility could be the removal of up to 50% of the technologies' value in some cases.**

We are concerned that Ofgem may consider action through the Access and Forward Looking Charges consultation could compensate for the value lost through this change, the assessment carried out in this decision was not made jointly with SCR analysis.

Currently, the forward-looking aspects of network charges are not sufficiently cost-reflective and networks are not sufficiently encouraged to pursue flexible solutions. The impact assessment does not take due consideration of the combined impact of the TCR and the SCRs on the potential outcomes for the industry and these issues cannot be separated, particularly when the reviews are happening in parallel.

The TCR minded to proposals should not be pursued until the changes in the Access and Forward Looking Charges are clear so the full impact of change can be assessed. **We would be happy to meet with BEIS to discuss this further but did not wish to share commercially sensitive data in this submission.**

Fairness - encouraging more electricity usage and penalising early adopters

By moving to a fixed or capacity based charge, this will reward those who use more electricity rather than less at peak times. This is a harmful distortion as it could profligate energy consumption and increase carbon emissions through increased fuel consumption.

It is concerning too that those homes and customers who have sought to effectively manage and reduce their electricity consumption and help decarbonise the grid will be penalised with higher bills as a result of these proposals.

The proposed bandings and charges for different types of domestic customer under agreed capacity users is unfair and sets a disincentive for the adoption of storage and electric vehicles. We do not believe the 10% figure for domestic electric vehicles and heat pumps is realistic given the government's 2040 EV targets and we would suggest in general, domestic customers will be moving towards electric vehicles as the norm in the coming years. We would suggest these banding are not forward looking and would not be fit for purpose.

3. For each user, residual charges are currently based on the costs of the voltage level of the network to which a user is connected and the higher voltage levels of the network, but not from lower voltage levels below the user's connection. At this stage, we are not proposing changes to this aspect of the current arrangements. Are there other approaches that would better meet our TCR



principles reducing harmful distortions, fairness and proportionality and practical considerations?

4. As explained in paragraphs 4.41, 4.43, 4.46, 4.49, 4.80, we think we should prioritise equality within charging segments and equity across all segments. Do you agree that it is fair for all users in the same segment to pay the same charge, and the manner in which we have set the segments? If not, do you know of another approach with available data which would address this issue? Please provide evidence to support your answer.

By moving to fixed or capacity based charge there will be less incentive for domestic customers to install on-site generation and storage, and will penalise those that have. This is a harmful distortion as it could lead to profligate energy consumption and increases carbon emissions.

Those homes and customers who have sought to effectively manage and reduce their electricity consumption and help decarbonise the grid will be penalised with higher bills as a result of this change.

This is a disincentive to the adoption of management technologies, electric vehicles and renewable energy. In essence, it penalises those who have spent money on becoming more efficient.

The proposed bandings and charges for different types of domestic customer under agreed capacity users is unfair and sets a disincentive for the adoption of storage and electric vehicles. In general, domestic customers will be moving towards electric vehicles as the norm in the coming years, particularly given Government targets. As such, these banding are not future-proof and would not be fit for purpose.

5. Do you agree that similar customers with and without on-site generation should pay the same residual charges? Should both types of users face the same residual charge for their Line Loss Factor Class (LLFC)?

The Government and Ofgem have previously indicated their support of flexibility services, and companies like Kaluza have invested heavily in the technology required to better enable decarbonisation of the grid and support the integration of EVs and storage.

Domestic customers who have been forward looking in their decision to install on-site generation and storage should not be penalised for demonstrating behaviours the government has previously encouraged. Forward-looking domestic customers should not be more negatively affected by price changes than those who have not engaged with the market.

Regarding LLFC, while we understand the use of LLFC categories for ease of classification, we would note that LLFC was not designed for this policy area in mind. It should be reviewed in the future to ensure it's fit for purpose.



6. Do you know of any reasons why the expected consumer benefits from our leading options might not materialise?

As recognised in Ofgem's own impact assessment, there are scenarios in which forward looking domestic customers, like those who have ownership of EVs and those who are on tariffs that help ease congestion on the grid, like Economy 7, will not see customer benefit from these changes.

Ofgem's modelling has explicitly ignored the network impacts which could cause a significant deviation in consumer benefits as a result of removing the incentives for a smart flexible network - the Imperial College report "Blueprint for a post Carbon Society³" shows the whole system benefit of residential flexibility could be up to £6.9billion. Therefore, the £8 customer benefit suggested by Ofgem is not being considered against the negative impact this could have on the flexibility market.

There will be a significant impact on the willingness to invest in the provision of local flexibility resulting from residual reform and it is important that Ofgem understands how this regulatory development will negatively impact the investment environment for flexibility projects. Please see answer to question 2.

Ofgem has said it does not consider that the TCR 'minded to' proposal poses increased risk to the industry (and that there is therefore no increase to investment risk/capital cost) - however, the outcome of the TCR conflicts with BEIS' policy direction on flexibility and, concluding ahead of the forward-looking charges review, provides no confidence that this will be rectified.

7. Do you agree that our leading options will be more practical to implement than other options?

The implementation on domestic customers of this policy change in the context of market-wide Half Hourly settlement, price cap and other domestic market reform may not be as simple as modelled.

We would suggest that a more pressing policy requirement is to introduce HH settlement for all users.

8. Do you agree with the approaches set out for banding (either LLFC or deeming for agreed capacity)? If not please provide evidence as why different approaches to banding would better facilitate the TCR principles.

Domestic customers who have been forward looking in their decision to install on-site generation and storage should not be penalised for demonstrating behaviours the government has previously encouraged. Forward-looking domestic customers should not be more negatively affected by price changes than those who have not engaged with the market and have sought to reduce their consumption. Ofgem should mitigate this by ensuring sufficiently strong forward-looking signals are in place ahead of or alongside changes to residual charges.

³[Blueprint for a post carbon society](#)



If capacity-based allocation was adopted, we have concerns about the suggested bandings 4KVA, 6KVA, and 8KVA for domestic customers. Given the Government EV targets and the greater uptake of electrified devices and heat pumps, we do not think this assessment is fit for purpose. With these charges, we believe the majority of domestic customers could end up paying more, or that the higher charges could act as a disincentive for EV and heat pump uptake. This appears in stark contrast to the headline government targets set to fight climate change.

Categorising customers on demand capacity alone, rather than taking into account the electricity customers can export back to the grid takes policy in the wrong direction. Using gross capacity rather than volumetric or net capacity disincentives flexibility at a residential level.

Given the opportunity flexibility and smart grid offer to optimise this load, a "smarter" approach should be devised. The proposal is too simplistic and creates further distortion.

9. Do you agree that LLFCs are a sensible way to segment residual charges? If not, are there other existing classifications that should be considered in more detail?

Regarding LLFC, while we understand the use of LLFC categories for ease of classification, we would note that LLFC was not designed for this policy area in mind. It should be reviewed in the future to ensure it's fit for purpose.

10. Do you agree with the conclusions we have drawn from our assessment of the following?

- a) distributional modelling**
- b) the distributional impacts of the options**
- c) our wider system modelling**
- d) how we have interpreted the wider system modelling? Please be specific which assessment you agree/disagree with.**

A primary role of the impact assessment should be to examine, provide evidence to, and determine the value of net demand reduction on the long-term costs of the network. Ofgem's approach appears to instead focus on a few smaller elements of the charging regime, without analysing and revealing that value of residential flexibility.

We don't disagree that business models based on a known defect shouldn't be protected, but by considering a minded-to position in isolation of the strong signals needed for the smart, flexible system that BEIS and Ofgem have been working towards, investor confidence in a smart, flexible grid is not maintained. In addition, ignoring network/infrastructure costs in the modelling is a significant shortfall - the impact assessment ignores the impact on the likelihood and efficiency of a smart grid rollout and therefore the conclusions are limited.

Regarding system modelling for residual reform, there is likely to be a significant impact on the willingness to invest in the provision of local flexibility resulting from the proposed residual reform. In the modelling, we are concerned that this understated the



value of local flexibility. The localised nature of some types of flexibility, such as that situated behind-the-meter, means that these may well be especially well-suited to providing services to avoid unnecessary network reinforcement.

We would highlight that in the modelling conducted in the above mentioned Imperial College London Report, in all scenarios projected, residential flexibility led to energy system cost savings of up to £6.9bn annually by displacing distribution network infrastructure costs and enabling greater utilisation of low-cost, low-carbon generation such as wind and solar. This minded-to decision, if not adequately compensated for elsewhere, risks undermining this nascent industry and greatly increasing the cost of the energy transition for all customers.

11. Do you agree with our proposed approach to the reform of the remaining non locational Embedded Benefits?

12. Do you agree with our proposal not to address any other remaining Embedded Benefits at this stage? Which of the embedded benefits do you think should be removed as outlined in xx? Please state your reasoning and provide evidence to support your answer.

13. Are there any reasons we have not included that mean that the remaining Embedded Benefits should be maintained?

14. Do you agree with our proposed approach to transitional arrangements for reforms to:

a) transmission and distribution residual charges

b) non-locational Embedded Benefits?

Please provide evidence to indicate why different arrangements would be more appropriate.

Ofgem and the Government should ensure market arrangements allow flexibility providers to realise the full value they provide. Cost-reflective, forward-looking charges are part of this, as are reforms under RIIO2 and particularly the next Electricity Distribution Price Control.

To avoid the risk of stalling the development of local flexibility, these residual reforms should be implemented alongside the other changes necessary.

By providing clarity on where the Government and Ofgem see strong price signals for flexibility emerging, this will avoid unnecessary instability in network charges and improve investor confidence.

15. Do you agree with our minded to decision set out? If not please state your reasoning and provide evidence to support your answer.

While we agree that the cost of existing grid should be collected fairly, the blanket fixed cost on residual charges takes reform in the wrong direction, particularly when not aligned to changes proposed under the Access and Forward Looking Charges SCR. The



proposal undermines the flexibility market and will have a detrimental impact on the flexibility industry. For that reason, we do not support the minded to decision.

The Government and Ofgem have made clear that flexibility is part of future energy system. If this is a legitimate ambition, before these changes should happen, clarity should be given on how Ofgem's intends to provide price signals strong enough to support the flexibility market. Reform should not take place before clarity is provided on how the Government and Regulator intend to introduce price signals that sustain flexibility services.

Ofgem's own impact assessment demonstrates that domestic adopters of balancing technologies and storage have minimal impact on the overall amount recovered through residual charges, yet the changes proposed by Ofgem would see customers demonstrating positive behaviour for the energy system (in terms of reducing congestion and contributing to the decarbonisation effort) economically punished by these reforms. We would recommend that any changes to residual charges should not take place for domestic customers until the market signals are in place so they are appropriately rewarded for helping balance the system through energy flexibility.

16. For our preferred option do you think there are practical considerations or difficulties that we have not taken account of? Please provide evidence to support your answer

The impact analysis piece is not accurate without the reforms to the Access and Forward Looking Charges included. The impact assessment highlights HHS reform and the consumer benefit of load shifting as a positive, but ignores the dampening effect this proposal will have on that behaviour. In addition, ignoring network impacts further limits the usefulness of the analysis, especially when comparing the potential benefits of reform (£0.8 - £3.2bn cumulatively to 2040) with the Imperial College London report (£6.9bn per year)

We urge Ofgem to ensure that TCR decisions are not made in isolation but with a wider market context and other existing reform.