

UK Power Reserve consultation response | Targeted Charging Review

1. Executive Summary

- UKPR supports proposals for a holistic Charging Significant Code Review (SCR) which includes all further changes to the demand residual regime at a time of great flux and uncertainty in energy policy. The charging regime is complex and must be viewed in its entirety to ensure it remains fit to support the development of, and investment in, the kind of flexible energy system consumers need.
- A full SCR, based on data and analysis, is necessary to deliver a level playing field for all players and will create a more predictable framework over the long-term, promoting investor confidence. This work should focus on creating the conditions for a step-change from a linear system, comprised predominantly of transmission power shipped over long distances, to a system with a material increase in distribution and domestic scale generation, combined with sources of capacity like demand side response and battery storage. This will enable the energy system to effectively respond to the dynamic needs of the electrification of transport and heating.
- Storage changes should be implemented by industry through the standard code change process as far as possible, to ensure rapid outcomes. Delays in the development of the storage market must be avoided.
- In particular, Ofgem should prioritise a detailed analysis to understand the holistic value of distributed generation to the system both now and in future. Without this clear signal, investment in large and small generation may continue to be thwarted or a sub-optimal energy mix developed. Without this analysis, it will not be possible to decide which, if any, embedded benefits may need to be adjusted. The Targeted Charging Review should consider this work.

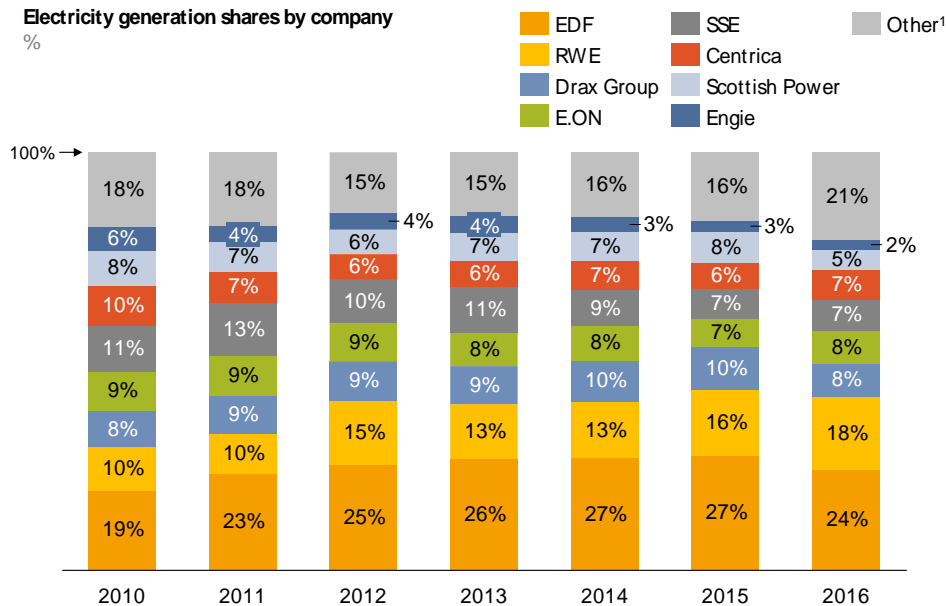
2. Context of UKPR response

UK Power Reserve is the leading provider of secure, flexible, low carbon electricity and services to the UK power market. With an 823MW portfolio of decentralised thermal power generation and battery storage assets, we help keep the country's electricity system balanced and resilient. Our fast-ramping, low-cost assets are located across England and Wales, improving competition, contributing to security of supply, and delivering better value to consumers. We are the largest newbuild capacity provider in the T-4 2014, T-4, 2015 CM auction for thermal DG assets and the largest newbuild energy storage provider in the T-4 2016 CM auction, making UKPR one of the largest investors and providers of smart flexible capacity globally.

With our growing portfolio, we are challenging the large incumbents which still dominate the market, as shown below.

Six suppliers continue to dominate, but the combined market share of small & medium suppliers is now 14%

AURORA
ENERGY RESEARCH



1. Other consists of smaller independent generators including Calson Energy, Dong, Intergen, Vattenfall and Vitrol.

Source: Aurora Energy Research

UKPR's fleet provides a critical contribution to the rapidly changing UK energy system. The Company has invested in innovative fast ramping gas reciprocating engine technology that can reach maximum output and efficiency in under two minutes. We are now building battery storage with immediate response times to (sub second) system requirements. This type of innovation is crucial to the effective and secure functioning of the called-for future flexible energy system in which a greater proportion of our energy is delivered by intermittent and low carbon generators.

UKPR supports a holistic Charging SCR, rather than only a TCR. It is crucial that the entire complex charging regime is holistically reviewed to ensure that it is fit to support the development of and investment in the flexible regime that consumers need. There are two main reasons that Ofgem should launch an SCR rather than simply a TCR:

Level-playing field for smaller generators and lower consumer costs

Transmission charging must not be considered in isolation. Ofgem must ensure a level playing field on market access for smaller generators, including those connected to the distribution system. If some revenue streams are removed from some parties, such as embedded generators, without creating different routes to market, it will not achieve the lowest cost solution for consumers.

Examples of how the current market architecture is focused on transmission generation (TG) are given below. The SCR must address these barriers.

Balancing Mechanism

It is more difficult for distributed generation (DG) to participate in the Balancing Mechanism (BM) because to do so a generator must be a registered Balancing and Settlement Code (BSC) party. Yet BSC charges can be uneconomical for smaller DG. An Ofgem-funded innovation project¹ stated: *“The cost of integrating a small generator to the Balancing Mechanism is exactly the same regardless of size and this represents a significant barrier to participation.”*

Ancillary Markets

The growing size and complexity of the ancillary services market favours larger TG over smaller DG as the associated fixed costs of participating in the markets creates diseconomies of scale for smaller participants. Many DGs are unable to participate in some of the ancillary services simply due to the design of the market, so are limited in the value they can offer to the system. This includes services such as constraint management payments, Black Start, and SBR. Project Evolution notes: *“Some DER [i.e. flexible distributed energy resources] do participate in the ancillary balancing services market... however this is severely limited in terms of overall balancing services market share. Most DER are prohibited from directly participating in the balancing services market due to their small size”*.

The full system value of DG is unrecognised and unrewarded

The value DG brings to the NGSO goes unrecognised and unrewarded. For instance, the engineering consultancy SWECO, in a report for the European Commission, notes that due to the remote geographic position of TG away from high demand areas, *“central power plants cannot access sources of flexibility value at local level and contribute solutions to close the local flexibility gap”*². On the contrary, with the appropriate policies in place, DG could be built closer to high demand areas, increasing flexibility and reducing inefficiencies at a local level. A lack of a whole system approach to balancing means that the value flexible DG can offer, particularly in providing balancing services at a local level, has not been realised. This might be addressed by a more active System Operator (SO) or a DSO role – something the SCR should consider – but the TCR should conduct a full analysis of the benefit that DG brings to the system to inform all charging regime changes.

Investor confidence

Focussing on only one section of the regime (as with a TCR) will not deliver the degree of predictability in charging that is necessary to support innovation and investor confidence. Without a holistic SCR, the industry may need to make further piecemeal and unpredictable changes to the regime in the coming years. This will mean that investors will continue to perceive a high degree of charging uncertainty. Some changes that are made rapidly (as proposed with CMP 264/5) without a full assessment made of the overall distributional effects of such changes across all system users is damaging to investment and consumers. The only way to secure the degree of investor confidence that will come about through longer-term reasonable predictability of the charging regime is through an SCR. An early focus on the analysis to understand the benefits that DG brings to the system would significantly enhance investor confidence at an early stage.

Once the full benefit of DG is understood then Ofgem must, over subsequent years, create a regime that reflects this value. If investors can be sure that the developing charging regime will be fully reflective of DG value then this will provide a significant boost to investment now, as investors can be confident that their technologies will be fairly rewarded based on the benefits they bring to the system. This analysis will be an early “quick win” for this work and would also inform the current embedded benefits review. Specifically, the analysis could

¹ Project Evolution 2016, ‘Project Evolution Project Summary’

² SWECO (2015) ‘Study on the effective integration of Distributed Energy Resources for providing flexibility to the electricity system’, a report for the European Commission

seek to understand the accuracy of the Ofgem assertion that the savings that EG brings to the system are limited to an estimated avoided Grid Supply Point (GSP) cost of £1.62/kW.

Question 1: Do you agree that the potential for residual charges to fall increasingly on groups of consumers who are less able to take action than others who are connected to the system, is something we should address? Question 2: If so, why do you think, or do not think, action is needed?

It is appropriate for Customers who use the transmission network to make a fair cost-reflective contribution to covering transmission system costs.

Ofgem raises concerns about the incentives that charges create and whether the residual element could dilute locational charges. We agree that these issues are a concern and that an SCR is necessary to ensure that residual charges and locational charges are dealt with together.

Ofgem has stated that:

“3.10 There is evidence of a growing amount of generation locating behind the meter,...

3.11. We have no wish to prevent individual consumers and generators from taking their own decisions about how to manage their energy or make use of generation. However, the current residual network charges may distort decisions to install generation behind the meter, and as a result lead to higher residual charges for other users.”

The charging regime must not be distorted to reduce investment in efficient innovations that will benefit consumers, including those behind the meter. The regime must create a fair level playing field for all forms of investment. With the development of these technologies and investments, the requirement for the transmission network will change in the future as more generation is located closer to consumers providing less capital intensive, more efficient and secure energy supplies.

This trend needs to be reflected in the allowed revenue of transmission owners. In this regard the charging review should also consider connection charging because the connection regimes feed into locational decisions made by investors. The connection regime remains too costly and slow with disadvantages for DG. For example, there is no “connect and manage” regime available to DG and there is no access to constraint payments – both of which are available to transmission connected generation. Ofgem must create a level playing field between connecting parties so that they face equal connection regimes that are flexible, fast and completed at lowest cost. Again, an SCR will ensure that all these interrelationships are considered when charging changes are made.

Question 3: We are proposing to look at residual charges in a Significant Code Review. Are there any elements of residual charges that you think should be addressed more urgently? Please say why.

Please see UKPR’s response to CMP264/5. Further work on residual charges should be dealt with as part of a holistic SCR, where Ofgem conducts a thorough analysis of the full benefit that DG brings to the system and to the consumer. Ofgem should conduct a detailed analysis on the benefit of DG as part of the TCR and then use this work when shaping the charging regime in an SCR (including a review of the EB value of the GSP £1.62 if the analysis shows that the value of DG is higher). Addressing some elements of the residual, without considering

or having an understanding of the wider distributional impacts, will not deliver a fair and equitable outcome for all system users.

The current industry governance through the CUSC panel is not the appropriate place to deal with any further proposed significant changes to residual charges. Changes of this significance should be handled by the TCR or SCR. More generally, the CUSC panel and voting rules need to be fully reviewed and materiality thresholds should be placed against what the CUSC can and cannot progress to working groups. Issues of greater materiality, complexity and wider significance should be dealt with through a TCR or SCR process. For example, CUSC Mod CMP 271, which looks at complex changes to the demand residual charges, should be absorbed into the SCR.

Question 6: Do you agree that our proposed principles for assessing options for residual charges are the right ones? Please suggest any specific changes, or new principles that you think should apply.

We agree that Ofgem's proposed three core principles of "*Reducing distortions, Fairness, Proportionality and practical considerations*" are appropriate.

In our response to Ofgem's minded to decision consultation on CMP264/5 we drew attention to these key principles, where we noted that we agree that distortions should be removed fairly and proportionately with practical considerations taken into account. We argued that grandfathering CM14 and 15 capacity would provide the fairness and proportionality that would be practical as the regime changes going forward.

These principles must be applied to all of Ofgem's decisions indiscriminately, so that a level playing field between all generators and investors is created. Smaller investors, who are least able to respond to the volatility arising from significant and rapid changes to the charging regime, must not be disproportionately affected. Where distortions exist, they should be removed in a way that is fair, proportionate and reflective of practical considerations (such as investments made under previous regimes) and investor confidence. In this way, the changes to the regime would have a measure of predictability, which has been absent from the minded-to decision on CMP264/5.

Along with others in the industry we continue to argue that decisions should not be made without robust analysis. As we noted in our response to CMP 264/5, Ofgem's impact assessment contributing to its minded to decision made a considerable number of assertions without robust analysis and this had a direct effect on Ofgem's understanding of investments made following previous Capacity Market auctions.

These kinds of erroneous assumptions must be removed now and in future if investors are to have confidence in the predictability of the charging regime going forward.

Question 7: In future, which of these parties should pay the transmission residual charges: generators (transmission- or distribution-connected), storage (transmission- or distribution-connected), and demand, and why? What proportion of these charges should be recovered from each type of user? Question 8: In future, which of these parties should pay the distribution residual charges: generators (transmission- or distribution-connected.), storage (transmission- or distribution-connected), and demand, and why? What proportion of these charges should be recovered from each type of user?

Parties should pay for the networks as they use them and those parties that reduce network costs, or provide reinforcement for the network should be appropriately remunerated in a cost-reflective way. For example, DGs need to be appropriately remunerated for their reduction in Transmission network costs and reinforcement that they avoid as well as for any value they bring in mitigating local grid constraints or distribution grid system management issues. Again, more work needs to be done to fully understand the benefits of DG before the appropriate charging and policy regimes can be defined.

Question 9: Do you support any of the five options we have set out for residual charges below, and why? Question 10: Are there other options for residual charges that you think we should consider, and why? Question 11: Are there any options that you think we should rule out now? Please say why.

Ofgem must analyse the full effects of any changes to residual charges. This needs to start with a rigorous analysis of the benefits that DG brings consumers so that the full distributional effects of change can be understood.

Question 12: Do you think we should do further work to analyse the potential effects of the charging arrangements for smaller EG (called ‘embedded benefits’)?

More work needs to be done to fully understand the benefit that embedded generation brings to the system and how this benefit can be better harnessed for the consumer. This full understanding of the total benefits of DGs must inform any further work to implement changes to the current charging arrangements and their impacts on DG.

Currently, there are several distortions in the regime that discriminate against DG which Ofgem should further analyse. For example, DG does not have full access to the wholesale market via the Balancing Mechanism (BM). The market access issue must be resolved if smaller generators are to be able to compete on a level playing field for the benefit of consumers. Furthermore, DG is subject to a complicated connection regime which is not standardised across the DNOs; some networks apply charges and restrictions that others do not.

Question 13: Do you think changes are needed to the current charging arrangements for smaller EG, and when should any such changes be implemented?

When considering distortions, Ofgem must recognise that this must not be limited to a focus on triad revenues. Ofgem must address distortions holistically so that all generators can compete on a level playing field. As noted above, Ofgem must ensure DG has access to the wholesale, ancillary and balancing markets.

Question 14: Of the embedded benefits listed in our table, do you think that any should be a higher or lower priority?

It must be remembered that the embedded “benefits” listed in Ofgem’s table will not benefit all DGs to the same extent and Ofgem must apply its core principles of cost-reflectivity, fairness, proportionality and practical consideration when prioritising the “benefits”. This is crucial because DG suffers from disbenefits under the current regime (restricted access to wholesale, ancillary and balancing markets). Ofgem must not focus only on removing revenues from smaller generators in favour of larger ones; in order to deal with all these complex issues fairly and proportionality a holistic SCR is necessary to deliver a level playing field.

Again, Ofgem should investigate the value that DG brings to the system and this will inform which embedded benefits may need to be adjusted. It is not possible to answer this question without Ofgem completing detailed and robust work showing the full benefits of DG.

Question 15: Do you think there are other aspects of transmission or distribution network charging which put smaller EG, or any other forms of generation or demand, at a material disadvantage?

See answers to questions 12-14.

Question 16: Do you agree with our view that storage should not pay the current demand residual charge, at either transmission or distribution level? Question 17: Do you agree with our view that storage should not pay BSUoS on both demand and generation? Question 18: Which of the BSUoS approaches describe is more likely to achieve a level playing field for storage?

The market needs clarity and certainty over the definition of storage and its treatment in the market. Clearly, storage assets should not be double-charged when importing and exporting energy to and from the system. However, given that frequency response is the key market for storage, Ofgem should investigate whether storage should be exempt from the current demand residual charges at either the transmission or the distribution levels.

Frequency data from 2014 and 2015 shows that during several winter peaks, storage assets would have been “net importers” if operating in the Dynamic Firm Frequency Response (DFFR) market and since DFFR is an automated system, storage owners would not have a choice whether to import during these periods. Therefore, to avoid large demand residual charges, companies would rationally adopt triad management strategies. For example, owners of storage assets would opt out of High Frequency during periods of peak demand otherwise they would be operating at a loss.

Charging storage assets the demand residual at both the distribution and transmission levels would inhibit the storage assets from bringing the value to the system for which they are designed. Ofgem should put a regime in place that does not discourage frequency management services during peak demand periods and therefore, full storage exemption from the demand residual charge should be considered.

Question 19: Do you think the changes in this chapter should be made ahead of any wider changes to residual charging that may happen in future? Do you agree with our view that these changes should be implemented by industry through the standard code change process?

We do not wish to see any delays in the development of the storage market. Therefore, we agree that storage changes should be dealt with within the existing industry and standard code process which will be faster than any SCR process. These proposed changes represent obvious “no regret” steps to begin to solve the clear disparities in the current regime.

However, a full review of monopoly charges should be undertaken by Ofgem via an SCR, ensuring it addresses all monopoly charging issues including connections;

Question 20: We would welcome your thoughts on the potential make-up of a CCG. Please refer to the potential role, structure, prioritisation criteria and assessment criteria. 21: Do you agree with our proposed delivery model, including its scope?

Ofgem's proposed Charging Coordination Group (CCG) must be a balanced forum containing representatives from all parts of the industry and smaller parties must have an equal voice. The governance of the CCG must be such that it does not add significantly to the disproportionate burden placed upon smaller players in following the many industry groups already extant.

Fora like this must not only secure an equal voice for all parties, they must also ensure that the system does not just protect vested interests which is something we have seen time and again with the way the CUSC panel functions. An independent panel of technical experts may be necessary (such as the technical expert panel on EMR changes). An NGSO led panel would be potentially biased as NGSO staff are under the same ownership as the TO and many of the SO employees hold TO shares, therefore an independent panel is essential if NG is going to be the secretariat.

Question 22: Do you agree that our proposed SCR process is most appropriate for taking forward the residual charging and other arrangements for smaller EG discussed in this document?

A holistic SCR process, covering the entire charging regime is necessary to ensure a level playing field across all generators. Only this approach can ensure a fair and proportionate outcome to the distributional effects of charging changes. Further changes to embedded benefits must move in parallel with steps to give fair access to the wholesale, ancillary and balancing markets. Therefore, Ofgem should carry out a detailed assessment of the full system benefits of DG as part of the TCR and this should then inform the reform of the complex charging regime in the SCR.