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Dear Judith,

Consultation response to Ofgem's 'Targeted Charging Review: a consultation'

Thank you for the opportunity to respond to Ofgem's consultation on a Targeted Charging Review. National Grid's System Operator is the code administrator for the Connection and Use of System Code (CUSC) which contains the methodologies for how transmission charges are set and billed, and is also the responsible party for setting and billing customers for transmission charges.

Charging arrangements are fundamental to how the electricity market works to meet the UK's energy needs, which is why it is important that commercial frameworks underpinning the energy industry keep up with technology driven changes in an increasingly decarbonised, digitised and decentralised energy system. Current network charging arrangements are increasingly misaligned with developments in the electricity market - leading to market distortion, inefficient signals, volatility in charges and ultimately higher costs for consumers. The time is right to commence a significant review of network charging arrangements to level the playing field in today's market, and create the best platform for a more flexible and whole system approach to managing our energy networks in the future. We welcome the Targeted Charging Review as starting these reforms.

In our response to the Ofgem and BEIS consultation on the *Future arrangements for the electricity system operator: its role and structure*¹, we detailed our Future Role of the System Operator (FRSO) programme and said that "*The SO will support Ofgem through providing a framework that allows industry to work through code changes in a more strategic, expedient and agile way*"². We are ready to start delivering as a more independent SO by providing the expertise and balanced support that industry needs to manage significant charging reform. Our Level Playing field workstream will meet the needs of whole system thinking for charging, and develop a new stakeholder engagement approach where both small and more established entities can participate on an equal footing. We recognise the challenges and constraints associated with the existing code modification processes and want to see a step-change in how industry can be engaged in a more agile, expedient and cost effective way.

¹ <https://www.ofgem.gov.uk/publications-and-updates/future-arrangements-electricity-system-operator-its-role-and-structure>
² [https://www.ofgem.gov.uk/system/files/docs/2017/03/nget - future arrangements for the electricity system operator - role and structure.pdf](https://www.ofgem.gov.uk/system/files/docs/2017/03/nget_-_future_arrangements_for_the_electricity_system_operator_-_role_and_structure.pdf)

Our full response to the questions outlined in the consultation is in the attached annex, and can be summarised as:

- We support the scope of the Targeted Charging Review - it prioritises addressing distortions in today's market caused by embedded benefits across transmission and distribution network charges.
- The Targeted Charging Review lays the right foundations to meet GB's long term energy ambitions by proposing changes to network charging arrangements for storage, and beginning to look at a whole system view of charging.
- This review will deliver significant progress in levelling the playing field for all industry participants, and in facilitating the market for greater flexibility. We suggest consistency of access rights and connection charges between transmission and distribution connected parties are similarly reviewed in the near future. This will give all plant and technologies greater opportunity to participate in the same markets as their transmission connected generation counterparts.
- Ofgem's proposed Charging Coordination Group (CCG) will need to play a crucial role in supporting the delivery of change on this scale and is fundamental to delivering a review of this nature. By bringing the industry together in a way which recognises smaller parties as well as more established entities, it will help co-ordinate the direction for future reform for an evolving energy system, and prioritise the tactical changes needed to the markets. The CCG will allow all market participants to contribute, including new and smaller players, and ensures the impacts of change for the bill payer are well understood.
- As System Operator, we hear the concerns of new and smaller players that it can be difficult to participate in cross-industry discussion, and have been working to find new ways to engage these parties through forums like the Power Responsive programme and we are ready to start delivering as a more independent SO to provide all industry participants the expertise and balanced support they need to manage significant charging reform. To deliver best value for all our customers we would like to bring our experiences of managing critical market change and leading industry collaboration to the Charging Coordination Group to play a facilitative role, and support Ofgem as Chair.

If you have any queries on our response, please contact Andy Wainwright
(Andy.Wainwright@nationalgrid.com, 01926 655944)

Yours sincerely



Cordi O'Hara
Director of UK System Operator

National Grid's response to Ofgem's Consultation on a Targeted Charging Review

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?

Yes, we agree that the current way in which residual charges are levied, leads to distortions that need to be addressed. In the short-term these distortions need to be addressed to realise savings for consumers who are impacted by the rising value of embedded benefits and other market distortions. Addressing these distortions will also create a more level playing field so that all parties, including distributed energy resource and storage, and smart metering developments have the appropriate network charging framework to base investment decisions on. Taking action today is important in creating the right commercial foundations as we develop a smarter, flexible, and more efficient energy system.

Question 2: If so, why do you think, or do not think, action is needed?

Action is needed to address market distortions that are leading less efficient overall outcomes for end consumers and network users.

We strongly support the principles that

1. users should be able to discover the marginal cost of providing energy in the market, reflecting the cost or benefit they have on the network;
2. network charging arrangements for non-avoidable costs should be recovered in a manner that avoids creating an inappropriate incentive for network users; and
3. that parties who have the same impact on the network should face the same charges.

This means that, for example in Transmission Network Use of System (TNUoS) charges, it is right that cost-reflective locational charges can be avoided, but that residual charges (used to ensure the correct overall revenue recovery) should not be able to be avoided. The current charging arrangements (termed 'net charging') favour the ability to offset demand at specific periods to avoid both the locational and residual elements of network charges. The current demand residual charge recovers around £2.2bn from net demand. This incentivises network users to seek to avoid this cost over and above the cost reflective signals that are provided by the relatively much smaller locational signal. This avoidance can manifest itself in two ways: through demand reduction which results in a reduction in a party's charges, and in embedded generation which receives a payment ("embedded benefit"), typically from their supplier, for reducing their supplier's net liability for TNUoS. By ensuring network users are incentivised by only cost reflective signals, a more efficient overall outcome for network users and end consumers will be derived.

Both National Grid's Five Year Forecast of TNUoS Tariffs³ and Future Energy Scenarios⁴ (FES) publications suggest the net demand charging base will continue to fall as we move to more distributed generation mix. This, in turn, causes the TNUoS demand residual to rise, creating a greater value of embedded benefit and incentive for triad avoidance, which increases charges for the

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<http://www2.nationalgrid.com/UK/Industry-information/System-charges/Electricity-transmission/Approval-conditions/Condition-5/>

⁴

<http://fes.nationalgrid.com/>

remaining customers and continues the spiralling effect. This will have a particularly hard-effect on the fuel poor, and those with the least ability to reduce their energy demand or avoid charges.

Additionally, the transition to smart metering provides an opportunity for more commercial customers and domestic consumers to be able to manage their energy usage to avoid network charges. This ultimately passes the cost on to other consumers who may be unable to manage their demand as effectively. The growing value of this distortion and the increasing penetration of smart metering highlight the need for this issue to be resolved as a priority.

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.

Residual charges are those charges used to allow network companies to recover their allowed revenues, once all other charges have been collected. Ofgem have included transmission demand residual, transmission generation residual, and Distribution Use of System scaling charges as elements of residual charging. As each of these elements is experienced by parties at different locations on the transmission and distribution networks it is imperative to consider the impact of each of the residuals together.

Given the breadth of these elements of residual charges, the number of interrelated topics, and the practicalities that changes may be required to multiple industry codes, it is important that these are considered in a holistic manner, which is not practicably achieved through normal industry governance. A Significant Code Review (SCR) is critical to allowing residual charging to be considered in a timely and effective manner, and further note the need for additional stakeholder engagement (as detailed in our responses to Questions 20 and 21).

As we move to a more decentralised energy system the need for alignment between distribution and transmission charging arrangements is important to ensure that all parties can compete on a level playing field, without inappropriate incentives favouring connection to any network location. Addressing residual charges together across both networks helps set the allocation of non-locational charges in a consistent manner, and therefore we believe an SCR is the right method to achieve this.

We also note that more urgent work has and is already progressing in this area of TNUoS demand residual embedded benefit; namely CUSC modification proposals CMP264 and CMP265. We support some variants of the CMP264 and CMP265 proposals in providing a short-term interim solution pending the outcome of a broader SCR, to properly address the value of embedded benefit and the structure of tariffs at transmission and distribution.

An SCR focusing on residual charging affects Triads⁵ which are a key feature of the TNUoS charges for demand customers. There are already existing modifications (CMP271 and CMP274) which are seeking to change the definition of Triads, and it may therefore be timely to also consider whether Triad remains an appropriate method for charging the locational element of demand TNUoS. We have referenced this further in our response to Question 22.

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Triad is short-hand for the triad based charging methodology for transmission demand, whereby half-hourly demand customers are charged network charges based on their average demand taken over the three-half hours of highest system net demand between November and February, separated by 10 clear days. Domestic customers are not charged using triads, but instead on their usage between 4pm and 7pm each day of the year.

Question 4: Are there elements of the approaches in other countries that you think could be appropriate for GB residual charges?

The consultation has highlighted a number of approaches from the USA (California and Nevada), Australia (Queensland and Victoria), Italy, Spain and the Netherlands that could be appropriate for GB residual charging. We welcome this international review and note that there are a number of elements within gross, fixed price and hybrid charging that should be considered by industry as part of the proposed SCR. National Grid's experience of other jurisdictions is detailed in our response to Question five.

In addition to these elements of network charging, we note that the international review has identified a number of examples of best practice in managing changes to network charging. These include:

- Open communication with network users to ensure all parties are aware of the changes being considered and have opportunity to contribute to industry debate.
- Transitional arrangements to allow industry parties time to prepare and respond to a new structure of network charging while also keeping investor uncertainty to a minimum.
- Robust analysis of the wider impacts of any changes to residual charging to ensure that any changes offer end consumers the best value.

Question 5: Are there other approaches that you know about from other jurisdictions, that you think offer relevant lessons for GB?

Experience should be sought from relevant global markets in energy, recent change programmes in other countries, experience from other sectors within similarities to electricity, and from academia.

In Europe, National Grid is an active member of ENTSO-E, the European Network of Transmission System Operators for Electricity. We play a leading role in the ENTSO-E Working Group Economic Framework, which among other topics prepares the annual report entitled 'Overview of Transmission Tariffs in Europe' recognising that transmission tariffs are one of the key elements of the Internal Electricity Market (IEM). Beyond market splitting between European markets areas, we note there are few countries that have location specific charges and few levy entry charges on transmission generators. This implies almost all European TSO tariffs would be classified as demand residual charges in the UK context. We understand the majority of these charges are levied on energy rather than demand capacity. We expect to shortly meet with the French and Norwegian TSOs to discuss charging methodologies for in more detail.

In the USA, National Grid own and operate electricity distribution networks in upstate New York, Massachusetts and Rhode Island, and own and operate an electricity transmission system spanning upstate New York, Massachusetts, Rhode Island, New Hampshire and Vermont. In the US, as in Europe, there is considerable focus on removing barriers to inter-area trading and the barriers that might arise from undue generation connection charges. Much of the remaining network costs are recovered from the demand-side by what would be classified as demand residual charges. Cost allocation issues, such as the scope of net-metering policies, are a hot-topic.

We also highlight a recent programme in Ireland - Delivering a Secure, Sustainable Electricity System (DS3). The DS3 programme was a major eleven workstream programme designed to meet Ireland's renewable obligations, whilst ensuring a secure operable network. Of particular interest for learning for the Targeted Charging Review and the Charging Coordination Group are the structure of an industry-led Advisory Council and broader stakeholder engagement. The Advisory Council consisted

of experts from academia and industry across Ireland, Northern Ireland and Europe. The stakeholder forum provided regular updates to the wider industry on recent findings and developments.

There is also benefit to be gained from considering how similar matters are addressed in other regulated network business such as telecommunications, water, and gas. National Grid is actively involved in the review of gas transmission charges, and the development and implementation of common European tariffs for gas through our role within the European Network for Transmission System Operators for gas (ENTSO-G)

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.

The proposed principles address the distortions we see in the market. Considering residual charges across both transmission and distribution is a pragmatic first step to a whole system approach to charging and a level playing field for network users. We welcome the need to understand the impact of any changes on the end consumers' bill.

We agree that the simplicity of calculation and understanding of any solution is an important consideration but believe that this should be extended to the simplicity of both implementing and running any new charging structure. An understandable, transparent charging regime will allow industry parties to better understand their risks, and for network companies to minimise their risk to over or under recovery of their allowed revenues.

It is important that any review of residual charging needs to be robust and future proof to manage risk as the market continues to experience change and evolve to meet the UK's ambition for a smart and flexible energy system.

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?

Response to Question 7 and Question 8:

For efficient decentralised decision-making to occur users should be able to discover the marginal cost of providing/taking energy in the market. A consequence of this is that the remaining costs should be recovered in a way that avoids creating further distortions. In terms of the allocation of residual charges between types of network user, it should be done without causing distortion or unfair and non-discriminatory treatment between users and this applies to users connected to both transmission and distribution.

It is right to retain charges based on a user's position on the network, to reflect the investment needed on the system as a result of users' connections and any directly required works. At present for transmission connections this is through locational TNUoS, local circuit TNUoS and shallow

connection charges. The connection charging arrangements for transmission and distribution are different, and consideration should be given to harmonising the arrangements. The ENA TSO/DSO charging workstream could be a suitable mechanism for taking forward this discussion.

We note that the relative proportion of the locational and residual are not proposed to be covered under the Targeted Charging Review, but note that they are worthy of further consideration, and existing CUSC modifications are looking at related topics e.g. CMP271.

In order to recover the residual in the least distortive way, in principle we propose that residual charges should be removed from generation, and recovered from demand in a manner which cannot be avoided. This will cause generation, regardless of voltage level or whether it is behind a meter, to be treated in the same way. We agree that demand will ultimately pay for the total of residual as a combination of direct and indirect (charges levied on supply / generation) charging arrangements. By removing residual charges from generation any distortions across the generation base are avoided whilst leaving the total network bill for demand the same. Further consideration on the impacts on storage is still required to ensure it is treated in fair manner compared to other parties.

However, in terms of implementation at transmission level, we note EU Regulation 838/2010 requires the average transmission charge paid by transmission connected generation to be within a zero to 2.50 Euro/MWh range. Whilst this cap exists it will set a constraint for how much of the TNUoS residual charge is recovered from transmission connected generation; as from next year a negative residual will be needed to set TNUoS tariffs in line with the 2.50 Euro/MWh Cap. This means in practice it may not be possible to remove (negative) residual charging from generation whilst this cap is in effect in its current form. To ensure a level playing field, the effect of this cap on other industry parties, particularly those in competition with transmission connected parties including distribution generation (which is not currently taken account of within the cap or pay residual charges), should be considered.

Question 9: Do you support any of the five options we have set out for residual charges below, and why?

The proposed targeted review of residual charging needs to build the best platform for future developments in flexibility and whole system operation. This is why in looking at all five options, and any others developed during the SCR process, we consider the extent it would support future charging reform. There is also always a need to ensure a balance between simplicity and practicality.

It is important that all options are considered with more analysis, in an objective way and by a group of industry experts. At this stage we would also propose exploring combinations of the five options presented, such as having smaller consumers on simple fixed price solutions (either a fixed price, or a connection capacity), but having larger users on a more complex arrangement involving a combination of a volume element (broader net, or kWh consumption) and a fixed charged element (either fixed price, or connection capacity). This would reflect the appetite and ability of users to modify their behaviour but retain basic levels of amenity in an affordable way (for domestic users in particular). This would also result in the largest number of customers (domestic) being on the simplest tariff, otherwise there will be a very significant data collection and manipulation exercise to be undertaken.

Question 10: Are there other options for residual charges that you think we should consider, and why?

We see the list of options described in the consultation as a good starting point for discussion and analysis done during an SCR but we would expect further options to be derived as the work progresses such as the combination of options as discussed in question nine.

Question 11: Are there any options that you think we should rule out now? Please say why.

None of the listed options should be ruled out at this stage without further analysis.

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')?

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

Response to Question 12 and Question 13:

There is further work required in considering the charging arrangements for embedded generation. In order to build the best platform for greater flexibility and a move towards a whole system view, there is a need to understand all of the charges and benefits that all generators receive from networks, including embedded benefits for smaller distributed energy resource.

This work will need to be considered broadly, in the context of overall commercial arrangements for energy resources connected to both transmission and distribution. We do not necessarily believe that this needs to be achieved by broadening the scope of the SCR. The Charging Coordination Group (CCG) provides a fitting framework to consider related areas such as connection charging and access arrangements in a timely manner and in coordination with the SCR.

There is a need for reform of Balancing Services Use of System (BSUoS) charges. We see the primary driver for this work as ensuring that this cost recovery mechanism is suitable for the increasing proportion of balancing services actions procured from non-BM parties and sends signals to all parties. This would also provide a timely opportunity to review the embedded benefit arising from BSUoS charges. We similarly note that, under the CCG delivery vehicle, this could be progressed as a separate workstream.

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

Ofgem has listed TNUoS demand residual, TNUoS generation residual, TNUoS locational charges, BSUoS demand charges and BSUoS generation charge as embedded benefits for smaller embedded generation. In terms of priority it makes sense to focus on those which have a highest overall value as these have the potential to have the greatest distortive effect; so we would support addressing TNUoS demand residual and BSUoS (both demand and generation) as higher priority.

In terms of TNUoS demand residual, the need for further review following CMP264 and CMP265 remains. In terms of BSUoS, distributed energy resource contributes to the need for balancing actions, and benefits from these actions being taken. As the quantity of distributed energy resource increases they will provide more balancing services, and therefore there is a need for the BSUoS embedded benefit to be reviewed to ensure that charging and other arrangements are providing a fair market for all parties. We would propose further work in this area either through the Targeted Charging Review or the Flexibility work programme.

However, it is also worth ensuring that the Targeted Charging review considers embedded benefits in the whole, in particular in the context of broader distribution charging arrangements, and other required changes to charging and commercial arrangements as detailed in our response to question 15 below.

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?

From the assessment that we undertook with our stakeholders, we have identified further areas – as outlined in the following table – where current charging and commercial arrangements require further review as there are potentially causing distortion among market parties.

Issue	Discussion
Locational charging for TNUoS	Different zones for generation and embedded generation (treated as demand) means locational signals may not be consistent
Harmonisation of T/D locational	Different signals may be provided to transmission and distribution networks due to the different methodologies
Exporting GSPs	The TNUoS charging methodology does not reflect exporting GSPs, where the distribution network is flowing on to the transmission network.
Non BM access to the Balancing Mechanism	Parties which are not Balancing Mechanism units are not able to fully participate in the provision of all Balancing Services. However simply providing these parties with access to the BM could also distort arrangements as these parties are not liable for charges related to accessing the BM including BSUoS. We support parties being able to provide balancing services so change is required.
Access arrangements	Different forms of access at transmission and distribution which affect how parties connect and interact with the networks.
Connection Charging	Different approach to what is considered connection assets and how these are charged across networks.
Triad	Does Triad remain an appropriate method for charging the locational element of demand TNUoS.

The need to address issues of access and BSUoS charging for smaller embedded generators is real and present, we need to focus sooner rather than later on delivering a coherent whole system approach to access, cost reflective charging, and cost recovery. In particular to facilitate further such connections in key transmission-constrained areas of the whole system, we need to provide investor certainty through remuneration of curtailment, in a manner consistent with that for transmission-connected generation. In certain areas of the network (such as UKPN's south coast network) there is a need to address this issue from this summer.

We are aware of the challenges faced by distributed generation in getting connected and are working on interim solutions to methods to remove transmission as a blocker for their connection. We suggest consistency of access rights, user commitment arrangements, and connection charges between transmission and distribution connected parties are similarly reviewed in the near future. This will give distributed energy resource greater opportunity to participate in the same markets as their transmission connected generation counterparts.

Question 16: Do you agree with our view that storage should not pay the current demand residual charge, at either transmission or distribution level?

Storage technologies present a step change in the way the electricity system behaves, and one that has not been accounted for in the development of network charging arrangements. They provide both an opportunity and risk to the end consumer; an opportunity for the provision of new cost effective services and new ways of managing the network, but a risk that storage becomes disruptive making the role of the system operator more difficult and costly.

Currently storage is charged for both importing and exporting on the transmission and distribution systems. This is because it can play a number of roles on the system depending on the requirement of the system and energy costs. However, as storage becomes increasingly important for the system and consumers, we need to change the charging methodology so that all types of storage are treated in a fair and equitable way, and that inappropriate charging does not present a barrier to entry for storage developers. We need to change the methodology to avoid any undue double charging, and to ensure fair treatment of storage compared to other parties. Similarly storage itself may take many forms, for example, existing pumped storage at transmission level, new technology large-scale storage at transmission level, co-location with other generators, smaller scale storage on the distribution network, behind the meter storage in individual properties, or aggregation of electric vehicle batteries, and these need to be treated fairly, and not at the detriment of other technologies. Changes to network charging methodologies are critical in order to achieve an ambition of a flexible and smart electricity system.

In order to establish fair and equitable treatment, consideration needs to be given to ensuring that storage is not charged in such a way as to be discriminatory between a storage unit and a generation or demand providing the same services / having the same effects on the network. This will ensure that storage develops in an efficient manner, and despatches in response to market signals in a competitive market.

Our stakeholders have told us that they want the status of storage clarified, and to achieve this we support a new type of licence for storage. In this context, storage can then be charged for the impact that it has on the networks, and this may vary depending on whether a storage unit is primarily providing short-term balancing services (such as fast frequency response), or energy arbitrage.

Question 17: Do you agree with our view that storage should not pay BSUoS on both demand and generation

In order to ensure fair treatment we agree that double charging seems inappropriate, however, we note this is a position that existing pumped-storage has faced for many years so this also needs to be considered in any decision. Also, by the very nature of storage it takes both demand off the network and injects energy onto the network in response to market signals. Therefore, it is still right to provide cost reflective signals through charges to storage to reflect the impact a storage unit is having on the network both as a generator of electricity or a consumer.

In terms of cost recovery, it would be right to remove the elements of BSUoS which are not cost-reflective from the 'double charge' paid by storage. That said, storage needs to be charged in such a way as to not discriminate between a storage unit and a generator providing the same services / having the same effects on the network. Therefore, a broader review of BSUoS for all parties would be an needed next step to delivering a more flexible and smarter energy system.

Question 18: Which of the BSUoS approaches described is more likely to achieve a level playing field for storage?

Charging BSUoS on the basis of gross imports (i.e. storage acting as demand), is a possible feature, however consideration needs to be taken to manage any unintended consequence to locate storage behind the meter (i.e. similar to other distributed energy resource). For BSUoS, other methods may be appropriate to reduce these incentives. For instance, BSUoS could be split in to a cost-reflective and residual element; with cost-recovery charged on a gross basis, and a residual element on capacity basis to reduce such incentives.

Consideration should also be given to other types of users who may cause similar impacts so that there is a consistent approach.

Finally, broader reform to BSUoS is needed. For instance, currently usage in a half-hour is netted for BSUoS purposes; this may not be proper for providers of fast services, when energy is not arbitrated over settlement periods.

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 have previously called for clarity on the treatment of storage, which we see should have its own separate licence in primary legislation. This will then ensure that developers and industry have clarity on how storage will be treated in the event of new technologies being developed. In doing so, this will also help to avoid the issues of double charging. Industry has told us that there is a large amount of potential finance waiting to begin investing in storage on the GB system but waiting for the resolution of commercial arrangements including network charging.

Therefore, it is important that any new charging arrangements should be done on the basis of a clear definition of storage for industry. We hope Ofgem and the Government's joint call for evidence on a smart and flexible system will provide this clarity, and that charging arrangements can be developed in a timely manner to support this existing industry work.

Though we see storage as a separate entity, charging arrangements around storage will impact both generation and demand in distribution and transmission networks, which is why it will be difficult to progress all aspects of the charging residual in relation to storage independent of an SCR. However, arrangements for BSUoS (for both storage and more broadly) could be taken forward as a stand-alone modification(s) as part of a set of reforms including the TCR supported by the Charging Coordination Group.

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.

Question 21: Do you agree with our proposed delivery model, including its scope?

Response to Question 20 and Question 21:

We support Ofgem's proposed Charging Coordination Group (CCG), which we see playing a crucial role in designing and delivering change on this scale. It presents an opportunity to bring the industry together to set the strategic direction for existing charging reviews, including the Targeted Charging Review, as well as future programmes of charging reform.

What the CCG needs to achieve

As System Operator, National Grid has engaged with over 200 industry participants since July 2016 on what a review of transmission charging could look like, and how they would like a review to be delivered through a potential industry forum. A number of industry requirements emerged from these discussions, as indicated in the table below, which we recommend are incorporated into the CCG:

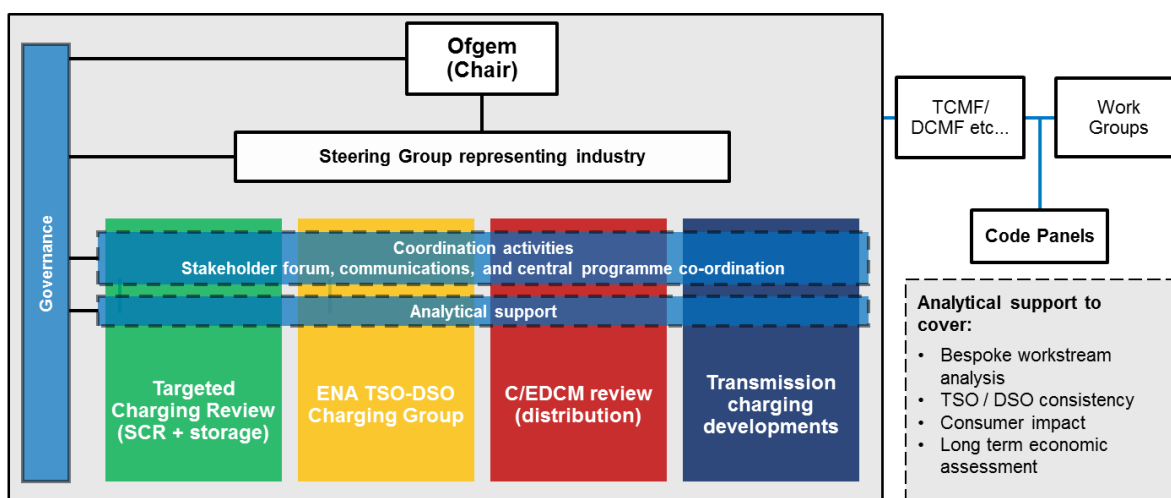
Industry feedback	Industry requirement
<p>"Small and new players don't have the expertise or resources to manage a significant review to the extent bigger players do"</p> <p>"This needs to be an open to every part of industry where customers who are most impacted can have a voice"</p> <p>"Policy makers and academics need to have a role to keep an eye on future developments"</p>	<ul style="list-style-type: none"> Fair representation of all parts of the industry with representation from networks, customers, consumers, policy makers etc. Outcomes in a review aren't decided by how much resource an organisation has. Equity in expertise and support across the industry in a review. Single place or point of contact on all charging changes e.g. a stakeholder forum event.
<p>"A review will take too long and create too much uncertainty – delaying investment and impacting business revenues"</p>	<ul style="list-style-type: none"> Well-structured group with clear communications Clear timelines that are rigorously adhered to Clear signposting where there are areas of uncertainty
<p>"There is so much change in the industry at the moment – how will this work with other programmes of change and governance?"</p>	<ul style="list-style-type: none"> Strong coordination between all significant charging reviews and how this works with other industry programmes of change Group has a clear role and accountability in the industry Code governance presence in the group.

Considering these industry requirements, we recommend the CCG should aim to:

- Provide strategic direction on how network charging arrangements need to develop to meet the UK's ambition for a smarter, more flexible energy system.
- Provide a central place for all industry participants to learn and contribute to network charging developments.
- Understand and account for the long term impacts of significant change on network consumers, particularly the average bill payer.

- Consider the practicalities around implementing these changes and how this would fit with existing governance processes.
- Make material available in a transparent manner, and in a format which is easily understandable and applicable to specific groups of industry parties.

To deliver these aims, the industry needs a CCG that looks and feels different. It needs to be a group where charging developments are spoken of in real and simple terms so that all market participants understand how they may be impacted by developments in charging, and a place where industry feels supported and comfortable to manage this change. With this in mind, we have developed a proposed structure and roles for the CCG in collaboration with customers and other stakeholders such as trade associations and consumer bodies. Below we present a proposed structure and description for the CCG.



We propose the following key elements for the CCG;

1. **Steering Group:** A group of senior representatives of industry, consumers and policy makers to agree the overall strategic principles of charging reform, and drive the delivery of reform according to these principles. This would be an advisory group to support working groups, code panels and Ofgem as the decision making authority.
2. **Secretariat and Governance support:** Central programme coordination through a secretariat for the Steering Group, and for each work stream within the CCG. This includes pre-code governance support within the CCG and work streams to ensure all recommended solutions are workable and efficiently progressed through existing code governance structures once outside of the CCG.
3. **Stakeholder forum and communications function:** Regular engagement with all interested parties of network charging through an open regular stakeholder forum, supported in the interim by tailored communications and subject matter experts to support different industry sectors.
4. **Analytical support:** Expert advice and balanced analytical support for individual working groups and reviews in the CCG. Analysis could include; transmission and distribution interface; long term economic and consumer impact assessments.

We are confident that with these roles the CCG will be focused, robust and accessible to all market participants will know what developments in charging are taking place, how it impacts them, and how they can contribute -providing the confidence and certainty industry need in network charging and access arrangements.

The System Operator's role in the Charging Coordination Group

We understand that the commercial frameworks underpinning the energy industry need to keep pace with the technology driven changes of an increasingly decarbonised and decentralised energy system. To deliver best value for all our customers and the consumer through this change, we want to bring our experiences leading industry collaboration and managing critical market change, as we've done with Power Responsive, to play a facilitative role with Ofgem in the CCG.

We are ready to start delivering as a more independent SO to provide all industry participants the expertise and balanced support they need to manage significant charging reform, including helping industry parties to understand the changes and the potential impact. Many of our code frameworks will come under review as we start to adopt a more whole system approach, and we want to develop new approaches with the industry that address this need to change. Supporting the TCR and taking on a facilitative role in the CCG gives us an opportunity to design and pilot these new approaches in the charging space, and learn lessons that will help the SO to support wider reforms of the industry code framework.

Power Responsive: a stakeholder-led programme driving industry change

As an example of where National Grid has facilitated a major stakeholder-led programme, **Power Responsive** stimulates increased participation in the different forms of flexible technology such as DSR and storage. It aims to grow participation in GB markets from these technologies by identifying and addressing barriers to offering flexibility, and brings together industry and energy users in a co-ordinated way through:

- A steering group of senior industry and customer representatives driving high level principles for change, and reporting on annual industry progress.
- Topic focused, open forum working groups to progress Demand Side Response as a balancing capability, and support the introduction and evolution of storage technologies.
- Award-winning communications that simplify complex market services and are tailored to industry sector groups.
- An annual conference providing a central place inclusive of all industry participants

This co-ordinated and streamlined approach has led to over 1500 individuals signing up to the Power Responsive programme, from more than 700 organisations - around half of which are potential new providers. It has been praised across the industry and Government for providing the necessary focus, support and structure to navigate a rapidly evolving electricity market.

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?

Yes, a Significant Code Review (SCR) is critical to allowing residual charging to be considered in a timely and effective manner, combined with the Charging Coordination Group (as detailed in our responses to Question 20 and 21). An SCR is a framework that is understood by the industry, and creates a process around which the changes to residual charging and other arrangements can be made. The introduction of the CCG provides an opportunity to support and enhance the SCR process, ensuring it is done efficiently and co-ordinated with other work streams of charging change (such as storage, TSO-DSO project etc).

There are three questions that need to be considered for the proposed SCR:

1. What is the scope of the SCR? Which sections of which codes are affected by the SCR, and therefore subject to different governance arrangements during the SCR? For example, the complex nature of the methodologies and how they are defined in the codes, means there may be added complexity in how to define an SCR.
2. How will modifications already in progress be integrated with an SCR and the Charging Coordination Group where there is overlap with the scope of the SCR?
3. There is a risk that further modifications are raised prior to the formal launch of an SCR, and we would encourage Ofgem to be clear about expectations that new modifications should not be raised where they address issues within the SCR scope, prior to the launch of the SCR.

For example, within the CUSC, CMP271, CMP274 and CMP276 all deal with topics of triad charging, residual charging, generation charging and embedded benefits. Some of these topics are covered by the proposed SCR scope, so there needs to be clarity on how these modifications can proceed if only part of their scope is covered by an SCR.