



Ofgem
10 South Colonnade
Canary Wharf
London. E14 4PU

By email: FutureChargingandAccess@ofgem.gov.uk

25 August 2021

Dear Sir/Madam,

Re: Access and Forward-looking Charges Significant Code Review: Consultation on Mindset to Positions

Introduction to RES

RES is the world's largest independent renewable energy company with operations across Europe, the Americas and Asia-Pacific. A British company, at the forefront of renewable energy development for 40 years, RES is responsible for more than 17GW of renewable energy capacity and energy storage projects worldwide. RES is active in a range of renewable energy technologies including onshore wind, offshore, solar and energy storage.

In the UK, RES has developed and/or constructed 1GW of operating wind generation capacity. We provide support services (AM and O&M) to a global operational portfolio of 5.5GW of renewable projects and energy storage for a range of third-party clients. We play a critical role in ensuring the provision electricity with our teams on the ground and in our 24/7/365 control centre responsible for keeping 10% (3GW) of the UK's operating renewable capacity running.

RES wants to play an active part in the UK's energy future, ensuring our projects contribute to decarbonising the energy system at least cost to the consumer, in line with RES' vision to be a leader in the transition to a future where everyone has access to affordable zero carbon energy. We therefore welcome this opportunity to respond to the "Access and Forward-looking Charges Significant Code Review: Consultation on Mindset to Positions" document of 30 June 2021 ("the Consultation") and we are happy for our response to be published.

Executive Summary

We welcome many of Ofgem's proposals made in the Consultation, however we also have grave concerns that some, if progressed, may be damaging to the facilitation of the Net Zero whole energy system. The following is a brief summary of our thoughts in the three key areas covered in the Consultation.

TNUoS

We fully support the proposal to conduct a fundamental review of TNUoS in light of the need to regulate for Net Zero. We are deeply concerned that the proposal to impose generator TNUoS upon Small Distribution-connected Generation (SDG), if implemented without a fundamental review of TNUoS, will hinder essential investment in new renewables which could do irreparable damage to the UK's mission to achieve Net Zero by 2050. We also have questions relating to the modelling methodology upon which the Impact Assessment

of the Consultation TNUoS charging proposals has been made. Specifically, we would like Ofgem to share more detail on the assumptions that were made around delivery and operation of mature least cost renewables to ensure that they reflect the realities of constraints such as planning law and the effects of weather diversity. This detail will be crucial to give the market confidence that Ofgem's decisions are based on analysis reflective of the real world challenges the market will face in delivering investment necessary to facilitate the Net Zero whole energy system. If not properly reflective of those real world challenges, the impact assessment may grossly overstate the customer and environmental benefits claimed in the Consultation.

Distribution Connection Boundary

We welcome Ofgem's proposal to make demand distribution connections shallow and to increase the shallowness of generator distribution connections, however we also encourage Ofgem to consider adoption of shallow generator connection charging with a suitable User Commitment regime to ensure a risk reflective pre-connection signal is retained.

Non-Firm Distribution Access

We welcome Ofgem's proposal to introduce better defined non-firm access options for distribution connected users but question the extent of the value of the proposal if those options are not accompanied by suitable use of system charging incentives.

We respond to the individual questions posed by Ofgem in the Consultation document below.

We are keen to engage further on Access and Forward-looking Charging reform and more broadly in relation to the UK's transition to net zero. We would be happy to answer any further questions on our evidence or provide additional information if required.

Yours faithfully,

A handwritten signature in black ink, appearing to read 'P. Smart', is enclosed within a thin black rectangular border.

Patrick Smart
Energy Networks Director

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Response to questions

Question 3a: Do you agree with our proposals to remove the contribution to reinforcement for demand connections and reduce it for generation? Do you think there are any arguments for going further for generation under the current DUoS arrangements? Please explain why.

Yes, we welcome Ofgem's proposal to make demand distribution connections shallow in order to better facilitate the connection of new flexible demand that will be critical to efficient delivery of Net Zero. We also welcome the establishment of a connection charging signal that creates consistency between transmission and distribution. While we also welcome the proposal to make generator distribution connections more shallow, we question why there is a difference in the treatment of demand and generator connections. Applying shallow connection charging to all connections would address the current distortion and help to facilitate the connection of new renewable electricity generation at all voltage levels as well as new low carbon technologies (LCT). Were Ofgem to consider implementation of shallow connection charging for distribution connected generation then we would also propose that this be accompanied by a form of "User Commitment" similar to that applied in generator transmission connections to ensure that a risk reflective pre-connection signal is retained.

We note the statement on page 83 of the consultation explaining the proposal to continue to charge SDG for reinforcement at the same voltage level because it will;

"keep some signal within the upfront charge. We think this is important given DUoS, in the absence of further reform, will not provide any signal of the costs these users place on the system (generation customers receive credits and do not face DUoS charges under the current DUoS charging methodology)."

The underlined statement only applies to generators small enough to connect at HV (i.e. 11kV circuits) or below. All other distribution connected generators connecting into 11kV busbars in primary substation pay GDUoS.

Question 3b: What evidence do you have on the effectiveness of the current connection charging arrangements in being able to send a signal to users and what do you think will be the effect of our proposed changes? How does this vary between demand and generation connections?

Within our onshore wind and solar development portfolio, we have multiple projects which have either stalled or been cancelled due to costs associated with distribution reinforcement having rendered the projects unviable. We would be happy to provide further detail around this evidence on a confidential basis.

Question 3c: What are your views on the effectiveness of the current arrangements in facilitating the efficient development and investment in distribution networks? How might this change under our proposals where network companies are required to fund more of this work?

We note the views expressed in the Consultation to the effect the current distribution connection charging arrangements "lead to a co-ordination failure" and do not encourage strategic DNO network management. In 40 years of connecting onshore renewables in GB, we are unaware of a single instance of strategic distribution network reinforcement in order to facilitate new electricity generation. We agree that the proposal would help to remove barriers to entry for new network users. The proposals could also help to encourage strategic co-ordinated investment by DNOs,

allowing the consumer to benefit from overall system efficiencies but only if the DNO has access to suitable allowances or efficient uncertainty mechanisms (such as volume drivers) within its approved RIIO ED3 business plan.

Question 3d: Do you agree whether the need to provide connection customers with certainty of price reduces the potential for capacity to be provided through other means such as flexibility procurement? How might this change under our proposals?

In 40 years of connecting renewables to distribution networks in GB, we have never been given the option to connect through the provision of network flexibility so have no direct experience of assessing such an opportunity but we recognise the impact that an unmitigated operational grid risk can have on the capital cost of a project through our experience of constrained dynamic connections. Reduction of these types of grid operating costs and risks through the implementation of shallower connections and the encouragement of well justified strategic investment is likely to help reduce barriers to essential new investment.

Question 3e: What are your views on whether we should retain the High Cost Cap? Is there a case for reviewing its interaction with the voltage rule if customers no longer contribute to reinforcement at the voltage level above the point of connection?

As noted in our response to Q3a, RES is of the view that Ofgem should be establishing a consistent approach between distributed connected generation and transmission connected generation. To that end we think distribution connected generator connections should be charged for on a shallow basis in order to create the strength of charging signal necessary to encourage new investment in essential new renewables equivalent to that being created for new flexible demand.

We note that, in Appendix 1, Ofgem may still be considering the option of retaining the HCC and applying it to the connection voltage plus the voltage above. We would absolutely oppose this option and consider that such an outcome would completely undermine the effect of supposedly moving to “shallower” charges.

Question 3f: What are your views on the recovery of the costs associated with transmission that are triggered by a distribution connection? Does this need to be considered alongside wider charging reforms or could a change be made independently?

We are keen that Ofgem continue to attempt to remove distortions between transmission and distribution connections. With this in mind, we urge Ofgem to pursue a way forward that allows the cost of transmission infrastructure reinforcements provoked by distribution connection to be recovered through use of system charges as is the case for transmission connections.

Question 3g: What are your views on the likelihood of inefficient investment under our proposals (e.g., an increase in project cancellations after some investment has been made)? What are the arguments for and against further considering introducing liabilities and securities to mitigate this risk?

If Ofgem pursues its minded to option of continuing to charge generators for network reinforcement at the same voltage as the connection or if it were to adopt a suitable User Commitment methodology then we think there is very low risk of inefficient investment in the networks as the local

signal will remain strong. This signal would become damaging were Ofgem to retain the HCC and allow it to apply at the voltage above that of connection.

Question 3h: What are your views on whether the interactions between our connection reforms and the ECCRs must be resolved before we are able to implement our proposed reforms? How do you factor in the effects of the ECCRs (if at all) into decision making, given the levels of uncertainty around subsequent connectee(s)? What suggestions do you have to make our policy and the ECCRs work together most efficiently?

We agree that it may be appropriate to change the ECCR in respect of reinforcement funded by an eligible person and that it would not be appropriate to apply in respect of extension assets. We also agree with the principles outlined on page 45 and 46 that should guide the way forward on development of the ECCR.

Question 4a: Do you agree with our proposal to introduce better defined non-firm access choices at distribution? Do you have comments on their proposed design?

We support the development of non-firm access options at distribution but, at the present time, the value of these options is diminished by the absence of a firm access product at distribution voltage. On page 49 of the Consultation, Ofgem states that users with standard connections are generally only curtailed due to maintenance issues, network damage or faults. We would highlight that we have experience of wider network maintenance giving rise to significant periods of restricted operation of a generator connection (many months) and that mitigation solutions were at the cost of the affected generator. This is not consistent with the notion of a “firm” connection.

We also note Ofgem’s statement on page 49 noting that if a DNO wants to curtail a user with a distribution “firm” connection, “*the DNO would seek to agree a flexibility contract with the user*”. In forty years of connecting renewable generation and storage projects to DNO systems, RES has never been offered such an option by a DNO.

We also think it is too early to rule out shared access options, particularly with the prospect of a fundamental review of TNUoS which may encourage strategic localised siting of generation and flexible load that would seem to be the most likely candidate projects to deliver efficiencies through a shared access product.

Question 4b: Do you agree with our proposal to introduce new time-profiled access choices at distribution? Do you have any comments on their proposed design?

Yes, we agree with proposals to introduce new time-profiled access choices at distribution, although the value of such an initiative (in terms of providing an incentive to operate in a way that supports efficient network development and operation) would be significantly diminished if those reduced access rights are not reflected in suitably targeted use of system charges.

Question 4c: Can you identify any benefits to shared access rights that we have not considered, which could impact likely take-up?

The Net Zero whole energy system is likely to be built around locally co-ordinated renewable generation, flexible, load and storage. It seems that these are exactly the type of users that would

deliver system efficiencies through use of shared access rights. We therefore think it is too early to rule out shared access at this stage of the consultation.

Question 4d: Do you have any comment on our proposed choice about how to reflect access rights in charges (i.e. connection and/or distribution use of system charges)?

Historically, non-firm connections at distribution voltage have typically been pursued as a location specific last resort alternative to a fully rated local reinforcement which would have either been too expensive or taken too long to deliver. They are a short-term interim project delivery measure to deal with a historical absence of strategic investment in distribution networks. Going forward, non-firm access options should be part of the tool box of incentives and products that will be used to encourage operation of a flexible net zero whole energy system. However, new flexible network users will have limited incentive to make use of non-firm access products if DUoS charges do not send signals for them to operate in a way that supports efficient system operation. We think non-firm access options will only have value if they are accompanied by suitably targeted alterations to the EDCM and CDCM.

Question 4e: Do you have any comment on our proposal to not prioritise the introduction of new transmission access choices as part of this Significant Code Review?

We agree that new transmission access options should not be the priority for this SCR.

Question 4f: Do you have views on how access rights should be standardised across DNOs?

We think the options set out in Appendix 2 are a good starting point for establishing a standard framework for non-firm access options but they will only have value if progressed in parallel with associated review of DUoS charges.

Question 5a: Do you have any evidence that SDG does not contribute to flows in the same way as large generation and, therefore, should not be charged on a consistent basis?

All users of the GB electricity system contribute to power flows in some way. The current use of system charging methodologies, broadly speaking, are intended to recover costs and send signals to those users in a way that meets relevant licence objectives against a current state of the total electricity system. Given the priority of setting a path to Net Zero, it is now time to consider the power flows likely to be associated with a Net Zero whole energy system taking into account locally optimised generation and demand with each of equal significance in achieving the optimum outcome for the benefit of the customer. For example, large battery energy storage projects connected to the electricity distribution system would attract Generator TNUoS charges under Ofgem's minded to proposal. Given battery storage's role in supporting the electricity network through the provision of essential peak management and flexibility it would seem entirely contrary to the objectives of the charging methodologies and also of the cause of Net Zero to apply generator TNUoS charges to such projects.

With these factors in mind, we are firmly of the view that a fundamental review of TNUoS is now urgently required and that any significant changes to electricity network charging should be delayed pending completion of that review.

Question 5b: Do you agree with our threshold for applying TNUoS generation charges of 1MW? If not, what would be a better threshold and why?

We think that any major change to the application of generator TNUoS should not occur until a fundamental review of TNUoS in light of the need to regulate for Net Zero has been completed. Regardless of the MW threshold to be applied, we are firmly of the view that network supporting energy storage projects should not pay generator TNUoS.

Question 5c: Do you have any evidence that distribution connected generation at a grid supply point has a different impact than directly connected generation?

As noted in our response to question 5a, all system users affect power flows on the total electricity system. In relation to the specific circumstances of a generator connecting on the distribution side of grid supply point (GSP) substation relative to the same generator connected to the transmission side of a grid supply point substation, there are technical differences in system impact due to the presence Super Grid Transformers (SGT). A distribution connected generator would have less impact on transmission system fault level (potentially beneficial depending on location) and would be able to absorb more reactive power from the transmission system (also beneficial as transmission system typically suffers from low load and high voltage ironically due to reduced transmission demand due to embedded generation among other things).

However, more broadly, the TNUoS charging methodology must now facilitate Net Zero on a whole energy system basis so focusing on the specific impacts of large generators either side of a GSP seems an unnecessarily detailed scenario on which to focus. A fundamental review of TNUoS focused on creating the signals and cost recovery that will enable the Net Zero whole energy system is required.

Question 5d: Do you have a preference for one of our options for addressing the local charging distortion? If so, please indicate which option and provide your views on pros and cons. Are there any options we have missed?

We agree that local charging should not be a priority for reform under this SCR but we are strongly of the view that distribution connected generation should not pay local TNUoS charges in respect of local transmission assets connecting to the relevant MITS node. Efficient forward looking signals and recovery of costs associated local electricity network infrastructure should be considered as part of a fundamental review of TNUoS.

Question 5e: Do you support our position that we should consider transitional arrangements? If so, do you have a preferred option and evidence to support the benefits or risks associated with each option?

Question 5f: Have we identified all the options for administering TNUoS generation charges for SDG? If not, what options have we missed, and why would they be preferable to those we have identified? Can you provide any evidence regarding the implications of the different administrative options for your business?

As mentioned previously, we fully support Ofgem's proposal to delay implementation pending completion of a fundamental review of TNUoS charging to ensure that it is aligned with enabling delivery of Net Zero at least cost to consumers. Given the potentially harmful impacts of Ofgem's

minded to position on the charging of generator TNUoS to SDG, we think the case for conducting such a review is compelling and implementation of such changes must be delayed until this review is complete.

With regard to grandfathering, we support retaining it as an option for transition as part of implementation of any reform conclusions. We understand the arguments for and against but, at this stage, we think it is too early to say whether it is justified in this instance.

Question 5g: Are there any specific issues you think we need to consider, as part of our work on the future role of network charges? Why are these important to consider?

In light of the extent of the investment in new renewables and flexible LCT required in order to deliver the Net Zero whole energy system, it is crucial that grid charging policy decisions are based on analysis reflective of real-world market conditions and which takes account of the scale of the whole energy system investment required. In light of the information shared in respect of the methodology applied in the CEPA-TNEI impact assessment it is unclear whether the underlying analysis meets these requirements.

We agree that use of the NGESO Future Energy Scenarios (FES) represents a prudent set of baseline assumptions however, it is unclear how robust these assumptions are to the effect of the Ofgem minded to proposals. For example, in respect of Onshore Wind, assuming that the levels forecast in the FES will be robust to the Ofgem proposals requires relocation of these projects from areas of high TNUoS charges (Scotland) to areas of lower TNUoS charges (England and Wales). This rather stretches credibility in light of the current planning framework and typical wind resource distribution. We note that Graham Pannell, Chair of RenewableUK's *Networks and Charging* Work Group wrote to you on 5 August 2021 setting out questions relating to the methodology applied in the CEPA-TNEI impact assessment. We look forward to seeing responses to these questions, learning more and contributing to further discussions to ensure that all analysis is robust to the requirements of Net Zero.