

Access and forward-looking charges consultation

Roadnight Taylor response collated list of all consultation questions

3. Connection boundary

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.

On balance we agree with the proposal to remove the contribution to reinforcement for demand connections and reduce it for generation, as it will accelerate the deployment of low carbon technologies.

There may be an argument to go further with generation. The current trend for generation at distribution, most significantly solar and storage, is to move towards larger connections, typically 49.9MW but often up to and exceeding 100MW. Connections of this size will usually be made at 132kV, which is the highest voltage of distribution in GB and can be very costly to reinforce. Under the new arrangements, there will clearly be an incentive for generators to avoid contributing to costly 132kV reinforcements and may therefore trigger a reduction in scheme sizes to connect at 33kV, which may serve to hamper deployment. Having a completely shallow connection charge for generation would disincentivize such behaviour and lead to fewer, but larger, connections.

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?

The current connection charging arrangements have given a very clear locational signal to users. Customers frequently face significant reinforcement costs (either for works they have triggered or costs picked up under ECCR payments for previous reinforcement works) which render schemes financially unviable. In these circumstances, developers seek alternative opportunities on parts of the network where there are no/low reinforcement costs. So whilst the current arrangements provide a strong signal, they also provide a barrier to connections. The proposed changes will remove this signal for demand customers, and to a lesser extent for generation customers.

Reinforcements for demand can be triggered by new connections, but they can also be triggered by general demand growth, funded through the price control and with the costs socialised. Reinforcement for generation is normally only triggered by new connections. There is a greater chance, therefore, that capacity will be provided for a demand development through socialised reinforcement.

Generation connections are exposed to the £200/kW high cost cap, which has the effect of stopping smaller connections triggering large reinforcement schemes and therefore stops the smaller schemes from moving forward with connection.

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?

The current arrangements do not very well facilitate DNOs making appropriate investments in the network, because DNOs can only ever act in a reactionary way to customers, rather than making strategic decisions. This is especially true for generation schemes. A DNO gets strong visibility of customer interest in any given area, through connection surgeries, budget estimates and connection applications. However, the DNO cannot currently make a strategic investment to either reinforce the network to release capacity, or to

build new network (e.g. a hub), even though it may have a very high level of confidence that this capacity would be utilised. This leaves large areas of the network sterilised with customers not being able to fund the reinforcement, and DNOs not being incentivised to make the investment to release the capacity.

The proposed new arrangements will greatly help with this. Developers will have a reduced upfront cost and will be more likely to proceed with schemes which require reinforcement (where they will not pick up the cost of this reinforcement). DNOs will then get a very clear signal as to when to invest for customer connections and will have a financial mechanism to recover the costs. DNOs will also have the flexibility to trigger the reinforcement investments when needed and to potentially implement interim technical and commercial measures (flexibility) to allow faster connections prior to the reinforcement works being completed. The proposed arrangements will unblock the stalemate.

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?

See also the answer to 3g below. With all demand-led and a significant number of generation-led reinforcements paid for by the DNO in the new arrangements, there will be no compulsion on the DNO to immediately implement conventional reinforcements. In the same way as reinforcements at transmission have the Network Options Assessment to choose the most economic option between build and non-build solutions, DNOs will have the same choices to make at distribution. This will provide even greater opportunity to use flexibility, as at present conventional reinforcements triggered and paid for by connecting customers must be delivered, often without the option to use flexibility.

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?

The High Cost Cap was introduced to prevent small generation connections triggering large DNO reinforcement schemes. However, in the current environment and with the new proposals this no longer seems appropriate:

- 1) Many more times the level of renewable generation than is already connected to the network needs to be connected, in order to meet net zero targets. This will require smaller connections as well as large ones. Discouraging smaller connections with the High Cost Cap does therefore not seem appropriate.
- 2) In light of the extraordinary levels of low carbon technology deployment required, the risk of stranded assets through unused reinforcement is low. For the time being, generators will likely fill capacity wherever it is provided in a timely fashion. Historically, the approach has been to direct generation developers to to where the capacity is already available. Perhaps the new approach will be to encourage generators, through signposting, to seek sites on parts of the network where spare, new capacity is being created, in a timely fashion – which may be as a result of a small generator triggering works in the absence of a high cost cap.

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?

In many areas transmission reinforcements at Grid Supply Points (GSPs), triggered by distribution connections, already are or will become the biggest blocker to generation connections, typically through the Supergrid Transformers (SGTs) becoming too heavily loaded. This blocker will be through either of:

- 1) Very high levels of curtailment through transmission ANM schemes; or
- 2) The cost of SGT reinforcement, where transmission ANM is either not possible or has been fully utilised.

SGT reinforcements triggered by distribution connections are currently passed on in full to connecting customers (as they don't come under the charging methodologies for the DNOs), which means only the very largest of distribution connections trigger such works (typically £8m-£10m and upwards).

As mentioned in 3b above, such reinforcements required for generator connections will currently never be triggered as general reinforcement, unless there fortuitously is a demand-led reinforcement scheme that also happens to provide capacity for generation. If there is no or low demand growth, then such a demand-led reinforcement scheme may never be triggered, providing a permanent block to generation.

A requirement for this type of reinforcement to be socialised, or at the very least to become part of the DNO's charging methodology and a CAF applied, should therefore be implemented along with the existing proposals. Leaving this issue for the reform of DUOS would seriously delay the roll out of renewables.

Applying the proposed new rules for generation to SGT reinforcements would mean that no reinforcements at GSPs would be picked up by connecting distribution connections. As such, changes would clearly then need to be made to the funding for DNOs and/or TOs. This change should not be put off for a further cost review, as transmission restrictions at GSPs will all but put a halt to the deployment of distribution-connected generation and storage in a fairly short timescale.

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)? Are there good arguments for further considering introducing liabilities and securities to mitigate this risk?

As mentioned in 3e above, the risk of stranded assets or of inefficient investment is small, in the short to medium term, given the high volumes of renewable generation and electrification of demand and transport needed to meet net zero. Wherever capacity is created, in a timely fashion, it will likely be used by customers. The immediate necessity for securities at the distribution level, therefore, seems minimal. With regards reinforcements triggered at the transmission level, it is more likely that one very large contracted customer can pull out. The case for securities at transmission level remains.

In order to minimise stranded assets and to help DNOs make the most appropriate investments, DNOs will need a range of tools to manage the network in the short term and to trigger the reinforcements at the most appropriate time. This will ultimately be some kind of flexibility service, where either existing connected customers or new customers can be paid to adjust demand or output to avoid the immediate need to reinforce. The DNOs will need a strong cost signal to undertake the best reinforcement schemes when the flexibility service costs get too high (similar to NOA at transmission).

The administrative burden on a DNO of managing the securities would be high, and the resource involved would be best focused elsewhere.

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?

One important question for interaction with the ECCRs is that of historic schemes. This needs consideration in terms of reinforcement schemes and network extensions.

Reinforcements

Will second comer payments for customer-driven reinforcements prior to the implementation of these proposals still be able to be collected by the DNOs? If not, the DNOs have a potential funding gap that needs to be filled. If Yes, then as a minimum there will need to be careful records maintained by the DNOs (and ideally made public in a transparent way, maybe similar to the Embedded Capacity Register, mandated through a licence condition) to differentiate between the new and historic schemes.

It is worth noting that any historic schemes (such as network built for areas designated for housing development) that were subject to reinforcement and where the ECCR payments continue past the implementation of the new proposals, will potentially be seen to be less financially attractive than new areas where reinforcement costs will not need to be paid. The presence of an historic ECCR payment towards reinforcement could make the £/house higher, whereas new developments will not attract any reinforcement charge at all.

Network extensions

If historic network extensions cannot claim second comer payments once the new rules are in place, then there will be many customers out of pocket without a means to recoup their money. So it would seem that historic network extensions should be able to claim their second comer payments for a period of up to ten years.

Because of these issues above, the ECCR rules will at the very least need clarification about how they relate to the new proposals.

4. Access rights

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?

ANM

Under existing arrangements, customers can elect to have an ANM system and experience curtailment, rather than the DNO undertaking reinforcement and charging the customer a contribution (and having to wait for the reinforcement to be completed). Even under the existing arrangements, 11kV customers triggering or contributing to 132kV reinforcements (where there is an intermediary 33kV network) may end up taking an ANM connection, not to avoid reinforcement costs (the 1 voltage level rule means they won't contribute) but to overcome the timescales for reinforcement that would otherwise delay their connection.

Under the new arrangements, if generation customers trigger reinforcement at the voltage level above, they won't be charged for the conventional reinforcement works – however they may have to wait a significant time for a conventional connection (given the volume of reinforcement works that DNOs will be managing). Where interim flexible/flexibility arrangements are put in place, there is an argument for there being a price signal imposed upon the DNO to prevent the over-deferment of reinforcement works.

7. General question

Question 7: Do you have any other information relevant to the subject matter of this consultation that we should consider in developing our proposals?

Reinforcement, network extensions and least cost scheme

Careful consideration should be given to the definitions of network reinforcements, sole use assets, network extensions and least cost scheme. Under the proposed changes, demand customers will pay nothing for reinforcement and generation customers will only pay for reinforcement at the same voltage level as the POC. However, a DNO's obligation to provide the least cost scheme to connect a customer can lead to network constraints being overcome by providing new network (which will likely be classified as sole use assets / network extensions) rather than reinforcement. The example below highlights this issue:

- A generator wishes to connect into a 33kV network. The capacity of the two 132/33kV transformers feeding this network would be exceeded by this potential generation connection. There are two possible solutions:
 - Option 1: connect the customer at 33kV and change the two 132/33kV transformers
 - Option 2: connect the customer at 132kV (which avoids the need to change the transformers)
- Under Option 1, the customer would not pay for the reinforcement under the proposed new rules, as changing the transformers would be classed as 1 voltage level above the connection voltage.
- Option 2, however, is calculated to be a lower cost overall than option 1, so the customer is charged for the 132kV connection, which is significantly more expensive than the connection charge they would have had for option 1.
- In this situation, the transformer reinforcement may never be triggered by customers and may therefore provide a blocker to connections in that area, because the installation of network extension assets, when considering an individual customer, will always be cheaper.

Network extension assets used as an alternative to reinforcement should, arguably, therefore, be classed as reinforcement and funded by the DNO.

Customer behaviour

Whilst this proposal is very welcome for customers and will serve the net zero agenda, it does come with potential consequences in customer behaviour as follows.

- Applications may well be delayed until such time that the new rules are put in place, as customers will want to avoid reinforcement charges, leading to a slowing of the roll out of renewable schemes.
- Customers may choose to cancel existing applications which contain reinforcement and then reapply once the new rules are in place, again delaying schemes.
- There may be a rush on certain generation hotspots as soon as the new rules come in place, e.g. lots of solar applications in Cornwall. It is possible that there could be so many applications that large scale

distribution and transmission reinforcement is required, leading to timescales of 10 years + to complete works.

- It would be a good idea to get input from Local Authorities, as some, like Cornwall, might be inundated in planning applications as a result of this proposal.

Unanswered questions:

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?

Question 4c: Can you identify any benefits to shared access rights, which would indicate we have underestimated the likely take-up?

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)?

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

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

Question 4g: Do you have any views on our proposed timescale of 1 April 2023 implementation?

5. TNUoS charges for SDG [section 5, pages 58-72]

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?

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?

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

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 reasons. Are there any options we have missed?

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?

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?