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Dear Patrick

Ref : Access and Forward-looking Charges Significant Code Review: Consultation on Updates to Minded to Positions

Thank you for the opportunity to respond to Ofgem's updated minded to decision on the Access and Forward-looking Charges SCR. Please find below E.ON's response.

Summary

E.ON has been an active member of the Access and Forward-Looking Charges SCR Challenge Group since its launch back in 2018. We have been very keen to highlight to Ofgem how these changes will impact:

1. All DUoS paying customers
2. The growing group of customers who are looking to low carbon solutions to deliver their energy needs as well as offering flexibility and utilisation benefits to the system.

As such, we are very supportive of the move to a shallow connection boundary for demand as we believe that this will prevent networks becoming the bottleneck in the low carbon technology rollout of EVs and commercial/industrial heat pumps. However, we would prefer to see demand and generation treated on a similar basis as both can be used to offer flexibility to the network and treating one differently from the other will add a distortion to these nascent flexibility markets. Therefore, we would like to see new generation connections made shallow to match new demand connections.

The case for a high cost cap (HCC) is important in order to protect DUoS billpayers and also retains some degree of locational price signals encouraging new connections to locate in unconstrained regions of the network. But we believe that non network options are available which will mean that the cap is never needed. E.ON have a flexibility solution (Dynamix) which has been shown to allow network deferment on constrained parts of the system whilst allowing new low carbon solutions to connect in new build developments. We believe that if DNOs are

committed to a 'Flexibility First' approach then the issues around the HCC may become a non-issue.

We do see some need for further clarification around speculative applications as this puts all the risk of sizing the connection to a new housing development on the developer. Where the phased rollout for a large development is uncertain or where the demand for each house on the development is unclear to meet building regulations, we believe that there ought to be some degree of negotiation. It is in the best interests for all parties that the DNO only touches the network once and therefore some degree of anticipatory investment (as covered by RIIO ED2) should apply. In these instances, the inclusion of flexibility solutions into the development at the point of build can negate the need for speculative applications better than regulations.

Regarding storage and connection boundaries, we believe that a fairer solution to storage being treated as generation would be to charge the storage connection based on whether the reinforcement is due to import or export limitations. If storage requires network reinforcement to allow for the storage's export then it is treated as generation, but if the reinforcement is to protect the network from the storage's import, then it should be treated as demand.

We are supportive of Ofgem's position on in-flight projects, interactivity and the definition of Minimum Scheme (assuming that the Open Network Project work on the Common Evaluation Methodology for reinforcement fully attributes option value to flexibility solutions). We also are supportive of customers currently on non-firm connections being allowed to apply for a firm connection through the existing procedures.

For curtailment of customers with non-firm access rights, we are supportive of excluding curtailment that the DNO has no control of, such as transmission actions or customer interruptions. However, it should be the responsibility of the DNO to demonstrate that these events are beyond their reasonable control on a case-by-case basis. However, when setting a curtailment limit, this should be in in conjunction with the customer and a clear definition of 'whole system benefit' needs to be agreed by the industry as soon as possible which balances the benefit of the system with that of the individual customer.

Non-firm connections should not be seen as first choice flexibility for the DNO, but rather flexibility that can be used after the market has been offered the opportunity to tackle the issue. Our view is that rather than having non-firm connections, DNOs ought to give firm connections with the requirement to participate in any flexibility tenders or markets that the DNO needs to develop to keep the network operational and efficient. This allows customers to ascertain the value that they would be giving up under a non-firm connection better and allow for a clearer price discovery for flexibility as a whole on the network through a transparent and fair tender. We are in agreement with Ofgem that there should not be a cap to the costs of DNOs exceeding any curtailment limit as this gives DNOs an option to breach an agreed limit when reinforcement costs would be above this cap. We are also in agreement that there should be explicit end-dates to non-firm access rights as this gives

customers a review point by which point there is an implicit agreement that the DNO should be in a position to offer a firm connection which will be most customers preferred option.

Questions:

Question 2a:

i. Do you believe that it is necessary to introduce a High-Cost Cap (HCC) for demand, and to retain one for generation?

E.ON wholeheartedly supports the socialisation of demand reinforcement costs as Net Zero will necessitate a comprehensive change in the way that all customers run their businesses, heat their properties, fuel their vehicles and hence use the network. With widespread decarbonisation of industry, heat and transport it is essential that network reinforcement is not stalled waiting for one connectee to foot the initial cost of reinforcement, taking the risk that other new connections may join later to pay for their share of the upgrade. However, we do acknowledge that there may be a risk to customers who will now pay for these upgrades via DUoS and as such there should be some protection in place to discourage new connections applying to connect to parts of the network that will drive large reinforcement projects and hence costs. The inclusion of a High-Cost Cap (HCC) may help to reintroduce some locational signals that socialisation removes such that new connections are encouraged to find suitable, less constrained locations on the network rather than connecting at a highly constrained part of the network simply because it suits their individual business case better. This is clearly a trade-off between society's push towards decarbonisation and who is best placed to pay for the necessary grid reinforcement. However, there are alternatives.

We believe that there should be full and frank discussion between the DNO and new connections such that all possible options and alternatives to traditional reinforcement are considered rather than the DNO decreeing that the connection cannot proceed unless the connectee pays the additional cost above the HCC. We acknowledge that DNOs have all signed up to a 'Flexibility First' principle[1] and we trust that this is being applied in situations such as this where flexibility should be a lower cost option. This would include options where the new connectee agrees to have a flexibility solution applied to their site, such as the solution that E.ON have installed at Maiden Hill in Glasgow that allows deferment of LV and HV reinforcement needed to accommodate domestic solar PV export.

ii. Do you believe that our proposals to do so represent sufficient and proportionate protection for DUoS billpayers against excessively expensive connections driven reinforcement?

The key to whether the HCC offers sufficient and proportionate protection for DUoS bill payers will be the level that the cap is set at. Quite clearly, if the cap is set too

[1] https://www.energynetworks.org/newsroom/a-flexibility-first-approach-unlocking-capacity-opening-markets-powering-towards-net-zero

low, the benefits of socialisation will be lost. Set too high and DUoS bill payers will have little or no protection. As per one of the respondants to the original consultation on the minded to position on connection boundaries, it would be good to understand how often the HCC is currently triggered, how often it is forecasted to be triggered and whether there are commonalities in existing occurrences which may apply in the future e.g. are they occurring more frequently on less connected, off gas rural networks where the rollout of heat pumps is likely to happen first. Once this known, it may be possible to introduce a less blunt tool that is better suited to the situation or direct DNOs to research alternative (and specific) options more fully.

iii. What are your views on retaining the current 'voltage rule' to determine whether the HCC is breached (i.e., considering the cost of reinforcement at the voltage level at point of connection and the voltage level above)?

The cost of traditional reinforcement is constant regardless of whichever voltage level option is chosen and the question therefore becomes one of fairness. Is it fair to require a new housing development connecting at LV to have to pay for the additional cost above the HCC for upgrades needed to both the LV and HV networks? Table 1 shows a simplified example of a new connection at LV level to draw out the implications of each option.

Constants across both options	
Cost of LV reinforcement = £1m Cost of HV reinforcement = £5m Total cost of reinforcement = £6m HHC = £3m	
Current voltage rule	Single level voltage rule
New connectee pays £3m (Total cost – HHC) DUoS billpayers pay £3m (HHC)	New connectee pays £0m max(0,Cost of LV reinforcement-HHC) DUoS billpayers pay £6m (Total cost)

Table 1 - Example of one level voltage rule and current voltage rule to HHC methodology

It is likely that the current voltage rule will prevent new connections going ahead and stall the electrification of industry, heat and transport whilst the single level voltage rule removes any incentive for the new connectee to find a better location (from a network perspective). Ideally, the solution (and what connection boundary policy should be encouraging DNOs and new connections towards) is to find a flexibility option that can be applied at LV level that prevents (or defers) the need for HV reinforcement. On this basis, we do not have a strong view on whether the HCC methodology uses the current voltage rule, but whatever option is selected ought to consider this question of fairness and the trade-off between fairness and Net Zero.

iv. What are your views on the principles we have proposed to determine an appropriate HCC level for demand, including the potential for this to be set at a different level to generation under these principles?

We agree with the proposed principle outlined by Ofgem in this consultation for the setting of the HCC i.e., the top *n*th percentile of all new connection costs. We would

challenge Ofgem to consider unintended consequences of having a different HCC for generation and demand, especially regarding sites that might both import and export such as a new housing estate with PV panels on all the roofs. It is not clear to us under which HCC level this situation would fall, especially where reinforcement is required for both import and export capability.

Question 2b: What are your views on our proposals to maintain the requirement for three-phase connection requests to pay the full costs of reinforcement, in excess of Minimum Scheme (i.e., lowest overall capital cost)?

It is our belief that the need for three phase connection to a domestic property is in excess of that needed for an EV chargepoint and a heat pump (which will mean the property has decarbonised significantly). The current 100A limit below which there is no charge for a domestic customer is sufficient and therefore we believe that it is fair and proportionate to charge a customer believing that they need three phase the additional cost.

The case for non-domestic properties is not quite so clear cut, but we are minded to agree with Ofgem in that this prevents speculative applications for a three phase upgrade. Three phase reinforcement should be based on a clear justifiable and efficient need.

Question 2c:

i. Do you agree with our proposals to maintain the current treatment of speculative connections and is there a need for further clarification on the definition of speculative connections?

We believe that the area of speculative applications is most keenly felt in terms of new housing developments. This is especially clear for phased developments and where minimum standards for decarbonisation under building regulations and SAP are still unclear e.g., does every new build need an EV chargepoint and a low carbon heating technology such as a heat pump? Does every new build property need a PV installation? However, it would seem to make sense for a DNO to only touch the site once in terms of connecting to the network and reinforcing where necessary rather than returning as each new phase is brought online or when a final decision on what type of heating system each house will have is made (which could be after work has started). This would also seem to fall under the RIIO ED2 anticipatory investment incentive. Therefore, we would like to understand whether the Access SCR and RIIO ED2 are working in the same direction for new housing developments.

Again, new housing developments are likely to be a prime use case for flexibility (to facilitate low carbon technologies) and we would urge Ofgem to ensure that any proposals put in place do not push DNOs and developers away from these options.

ii. Do you agree that our wider connection boundary proposals broaden the disparity between connections deemed to be speculative versus non-speculative? If so, do you believe this needs to be addressed and how?

Requiring a connectee (especially someone like a new housing development) to have a clear idea of the capacity needed for their connection will be difficult. As has been outlined in Q2c i, property developers are frequently unsure as to the exact level of connection needed due to changes to development rollout (phasing) or changes to specifications. The proposals are unlikely to push developers into asking for a minimum connection and then additional upgrades to that connection (as new phases come online and changes are made to the specification of each house) as this will add significant delay to the development (especially as the new proposals are likely to increase applications to the DNOs overall). Today, developers would have been more likely to ask for a larger connection, which may not be fully utilised if later phases are cancelled or delayed, or specifications are downgraded. But the current proposals will make this unattractive as it will add additional cost to the development. A better answer will be to require the developer to add flexibility to the minimum connection such that if new phases go ahead or specifications are upgraded, the flexibility can be invoked to keep the overall connection below the rating of the minimum scheme and defer the necessary upgrade, thereby not delaying the rollout of the development.

Question 2d: Do you consider that our proposed DUoS mitigations (a demand HCC, and retaining reinforcement payments for three phase and speculative connection contributions) present a cohesive package of protections for DUoS billpayers? Do you consider these proposals to interact in any way that could counter their effectiveness, and if so, how?

In general terms we believe that DUoS billpayers should be protected from excessive costs of network reinforcement, but we also believe that unnecessary mitigations run the risk of stalling the uptake of low carbon technology and thus jeopardising Net Zero. It is our belief that any situation where the HCC might apply or where speculative applications are being made can be mitigated better through the application of a flexibility solution, either on the side of the DNO, the connectee or a combination thereof. We would strongly recommend that all such flexibility options are fully investigated prior to the implementation of the mitigations covered in this consultation. In that sense, the mitigations can act as a backstop to ensure DUoS billpayers are protected, but that every effort has gone into making the connection cost effective (through flexibility) first.

Question 2e: Do our updated proposals to treat storage in line with generation for the purposes of connection charging simplify charging arrangements for these sites and better align with the broader regulatory and legislative framework?

Whilst we understand that storage runs the risk of being 'caught between two stools', we don't agree that pushing storage into being always treated as generation is the right answer. When storage applies to be connected to a network and the DNO has identified that this will require reinforcement of the network, this reinforcement will be on the basis that either the storage export or the storage import rating will cause network issues. Table 2 highlights two potential situations where this might be the issue

Storage export is the problem…	Storage import is the problem…
A standalone 1MW battery wants to connect to the network. The network has headroom at the substation to accommodate 1MW of import, but cannot accommodate 1 MW of export. In this situation, the battery should be treated as generation and have the shallowish, 1 voltage level reinforcement rules applied	A co-located 1MW battery (alongside an existing 2MW solar farm) wants to connect to the network. The network can accommodate 2MW of export, but cannot accommodate 1MW of import overnight (in order to export during the day whilst the solar farm is on maintenance) In this situation, the battery should be treated as demand and have the shallow reinforcement rules apply.

Table 2 - Examples of storage requiring network reinforcement

Whilst we acknowledge that in terms of licensing, the Smart System and Flexibility Plan is looking to make storage a distinct subset of the generation license[2], we believe that there is a strong case for storage to have its own license agreement, precisely for reasons such as covered in Table 2.

Question 2f: Do you agree with our proposals regarding the treatment of in-flight projects (i.e., that they should not be permitted to reset their connection agreement and retain their position in the queue), noting they retain the right to terminate and reapply from 1 April 2023 should they wish to be treated under the proposed connection charging boundary?

We agree completely that it would be unfair for in-flight projects to be able to reset their connection agreement and retain their position in the queue. In-flight projects will have been invested in on the basis of the existing connection agreement (including costs associated with any reinforcement). By allowing these projects to reset and retain their position, Ofgem would simply be allowing investors to benefit from lower reinforcement costs at the expense of DUoS billpayers and at no risk to themselves.

Question 2g: Do you agree with our proposals to retain the existing arrangements for managing interactive applications? Do you agree with our proposals on the treatment of unsuccessful applicants (that the connection charges at original application date will continue to apply if queue position is retained)?

Again, we are in agreement that these minded to proposals should not alter the existing arrangements for managing interactive applications and that unsuccessful applicants can only retain their position in the queue as long as they retain the original application details. Allowing these changes to apply retrospectively would distort the interactive rules, giving existing projects a clear advantage over later projects.

[2] https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment_data/file/1003778/smart-systems-and-flexibility-plan-2021.pdf

Question 2h: Do you agree with continuing with the definition of the Minimum Scheme as currently set out in the CCCM? Do you believe this definition requires any further clarification or amendment, and if so, why?

We believe that the definition of the Minimum Scheme should include all the reinforcement costs (including those at higher voltage levels) as this ensures the best value for DUoS billpayers. However, we strongly agree with the position that DNOs should be required to fully investigate whether a Minimum Scheme might involve (or be fully provided by) flexibility markets or flexibility schemes. The Open Networks Project is currently developing a Common Evaluation Methodology (CEM)[3] tool that will be used by all DNOs to compare and contrast traditional reinforcement against other non-network build options such as flexibility tenders and energy efficiency. The Minimum Scheme should be that identified by the CEM such that DNOs are able to deliver on their Flexibility First promise. Therefore, the Minimum Scheme definition ought to be extended to incorporate the full benefits of flexibility including option value under demand uncertainty (which the Open Networks Project is currently working on).

Question 2i: Are there any risks associated with our proposals to allow current non-firm connected customers to seek a firm connection following the changes proposed by our SCR? Do you agree that existing non-firm connected customers that do seek a firm connection should be processed through existing queue management processes as determined by DNOs?

We do not foresee any risks associated with allowing current non-firm connected customers to seek a firm connection. In fact, we believe that not allowing non-firm connected customers to seek a firm connection will act as discrimination and allow DNOs to retain flexibility that they have not clearly and transparently 'paid' the correct value for. Customers on existing non-firm connections have had to estimate the value in flexibility that they have foregone in exchange for a cheaper and quicker connection. We believe that this trade-off has been impossible to quantify under historic non-firm connection agreements and therefore these customers should be given the opportunity to regain their flexibility and if they wish to offer this to the DNO again, to be able to do so through full price discovery.

Question 3a: Do you agree with our proposal to exclude customer interruptions and transmission constraints from the definition of curtailment with respect to distribution network access arrangements?

We agree with the exclusions of customer interruptions and transmission constraints from the definition of curtailment. To our mind, curtailment is a proactive response taken by the DNO to a customer's access based on the network situation. Both customer interruptions and transmission constraints are events that are outside of the DNO's control and therefore should be treated separately.

[3] https://www.energynetworks.org/industry-hub/resource-library/on22-ws1a-p1-statement-for-common-evaluation-methodology-for-network-investment-decisions-(14-jan-2022).pdf

However, we believe that it is the responsibility of the DNO to prove that the curtailment was due to an event outside of their control so that these exemptions are not abused. We believe that this ought to be relatively easy for the DNO to demonstrate and evidence.

Question 3b: Do you agree that the curtailment limit should be offered by the network based on maximum network benefit and agreed with the connecting customer?

We believe that the definition of 'maximum network benefit' needs to be carefully defined (the consultation suggests but does not state that this process is yet to be put in place). We would argue that the maximum benefit needs to balance the benefit of the non-firm connected customer and all the other customers on the constrained part of the network. If we are not careful, 'maximum network benefit' could curtail the non-firm customer excessively as they are the only non-firmly connected asset on the network. DNOs must look to find other flexibility solutions that can tackle the bulk of the constraint and only look to using agreed curtailment afterwards. For example, if a newly connecting customer connecting to a constrained area of the network would trip the network every weekday during the peak, is it fair to give that customer a cheaper and quicker connection (which is easy to quantify) but expect that customer to be curtailed for three hours every weekday, the impact of which will be very difficult for the connecting customer to quantify, especially further into the future?

We believe that this example demonstrates that a better solution would be to give the newly connecting customer a firm connection, but as part of that connection agreement, require them to participate in any flexibility market or tender that the DNO runs. This way, the customer can enter a bid into the tender/market that better reflects the impact of curtailment. For example, the DNO might run a twice-yearly tender, which in the summer the newly connected customer might want to bid in higher for (compared to the winter) as it will have a greater impact on their business. Similarly, after two years, the customer might be able to bid lower after they have invested in better insulated warehouses meaning the impact of curtailment has lessened. This example would reduce overall costs for DNOs and hence customers.

Regardless of the definition of 'maximum network benefit', the connecting customer needs to be in informed agreement about what they can expect from their connection.

Question 3c: Do you have any views on the principles that should be applied to ensure curtailment limits are set in a consistent manner?

Curtailment limits must be set in a consistent manner across all DNOs in a similar fashion to the common evaluation methodology (CEM) that is used to ascertain the right option to reinforce the network. Without consistency some DNOs might look to take advantage of customers by requiring higher levels of potential curtailment than are necessary. This 'free' flexibility then allows DNOs to run fewer flexibility tenders or markets and flexibility providers will be locked out of the market. Without

effective competition, customers will not benefit from market forces pushing down the cost of flexibility and delivering a better service.

The principles need to be agreed between DNOs and industry stakeholders, very much like the CEM.

Question 3d: Do you agree with our proposal not to introduce a cap for flexibility payments made should any curtailment in excess of agreed limits be required?

We believe that is prudent to not have a cap on flexibility payments for excessive use of curtailment. DNOs should be disincentivised from using curtailable customers as 'free flexibility' that they can use to alleviate a network problem. The curtailment limit will have been agreed on the basis that it balances the needs of the network and the needs of the curtailable customer. To exceed this limit is breaking that agreement and as such penalties should accrue. To set a limit on those penalties then gives the DNO an opportunity to take advantage of the non-firm customer should the cost of correcting the network issue be higher than the cap. We are clear that this should not be an option for the DNO.

Question 3e: Do you agree with our proposal to introduce explicit end-dates for non-firm arrangements? Are there any mitigations for DUoS billpayers we should consider?

It is unlikely that a non-firm connection would be a customer's first choice of access to the network. Therefore, it is our belief that a customer accepting a non-firm connection will at some point want to review this decision. However, electricity access rights are unlikely to be the top priority for any customer that is not in the energy industry and therefore without a clear review date, customer inertia may allow this situation to persist indefinitely. For this reason, it is clear to us that evergreen non-firm access is not suitable and explicit end dates should be a fundamental part of non-firm access rights.

However, the upgrade from non-firm to firm should not be automatic and the DNO should run a similar process to the original application. This should prevent DNOs having to upgrade simply on the requirement of one customer coming to the end of their non-firm arrangement and therefore add a layer of protection for billpayers. But we believe that there should be scope for the customer to appeal to Ofgem regarding the lack of an upgrade (which is implicitly assumed by the idea of an end date) and the DNO should have to explain and justify why it has not progressed with action to making the network more secure to Ofgem.

Question 3f: Do you have views on whether the end-dates should take into account only current known or likely works, or if it should allow time for wider developments to take place?

We believe that the DNO ought to be given scope to allow end dates to take into account wider developments in order to protect DUoS billpayers from paying for suboptimal solutions. However, we agree with Ofgem that this should be done in

conjunction with the customer so that they understand the trade-off between lower DUoS charges and the risk that their firm connection might be delayed.

Question 3g: Do you have any comment on our proposal not to further define or standardise time-profiled access arrangements?

We do not believe that further definition of time profiled access rights will add any benefit to the options already available and may in fact limit bespoke arrangements that could work for both customer and DNO. The RAG time profiles for DUoS charges already give some signal for access at different times.

Question 5a: Has the additional information in this consultation affected any of the views your previously submitted in response to our June 2021 consultation (if so, in what way)?

We believe that our views remain consistent to our previously submitted response in that we are supportive of shallow connection boundaries for demand and generation and that non-firm access rights need to be managed carefully so as not to give DNOs access to 'free flexibility' which could jeopardise the development of nascent flexibility markets, whilst maintaining consumer protections and the efficient & safe operation of networks.

Question 5b: Do you have any other information relevant to the subject matter of this consultation that we should consider in developing our proposals?

We do have some concern with the practicalities of non-firm access with respect to new housing developments. Ofgem have been quite clear that they believe that non-firm access should not be offered to small users (Section 3.24 of the minded to consultation) and we acknowledge that allowing small users to have non-firm access opens up potential abuse or mis-selling to vulnerable customers. The issues caused by selling interruptible gas contracts to hospitals without alternative fuel supplies back in 2005[4] is a clear precedent for not repeating these mistakes in electricity with small users.

However, it is not clear to us how a DNO can identify the final consumer when an iDNO requests a non-firm access agreement. The DNO will have no ability to ascertain whether this is for a housing estate or an industrial estate. If this does happen, it is also not clear to us who is responsible when the housing developer sells the house to a domestic customer. Will the domestic customer inherit the non-firm access even though they shouldn't have it or will the liability remain with the housing developer? Or in the absence of the housing developer, will the iDNO hold responsibility? Without clarity on this, we do not see how flexibility providers can offer to solve the situation without exemption from liability. No flexibility solution can guarantee 100% certainty that they can deliver firm access (although the firmness of the access will be significantly higher than without the flexibility solution) and therefore will not be able to offer a solution without some degree of

[4] https://www.dailymail.co.uk/news/article-370250/Top-hospitals-face-cut-gas-crisis.html

protection or liability sharing. We would appreciate greater clarity on this situation from Ofgem before any final decision.