

RenewableUK response: quicker and more efficient distribution connections

14th May 2015

Dear Ms Powis,

Thank you for the opportunity to respond to this consultation. Established in 1978, RenewableUK is the leading trade association for the wind, wave and tidal sectors and acts as the voice of its 500+ members. With a third of GB generation capacity expected to be distribution connected by 2030,¹ it is important that the infrastructure for this generation is deployed in a timely and cost-effective manner. Written below are RenewableUK's overarching thoughts on the consultation and answers to the individual questions from the open letter.

Summary

RenewableUK welcomes Ofgem's initial consultation on securing quicker and more efficient distribution connections. We believe:

- **This should be the start of a process of ideas development. There is a need for a clearer, systematic account of the mechanisms for investment, and it would be helpful to run a further workshop specifically for generation connectees.**
- **It is a priority to avoid the cliff-edge in reinforcement costs for generation connections in areas of congested grid, in order to facilitate more capacity and more diverse entrants into the competitive generation market.**
- **It is essential for all proposals to be tested against the drivers for a DNO to pursue them – including the business risk entailed – and to ensure that the risks and rewards are balanced.**
- **Scenarios 1 and 2, once developed further, are potentially beneficial mechanisms, but Scenario 3 requires further thought and clarity before it could be considered relevant to generation.**
- **It is essential that initiatives within Scenario 4 are immediately pursued in order to make the most of the available grid capacity in a cost effective and practical manner.**
- **The increasingly competitive and time-bound nature of generation developments militates against collaborative solutions and openness with information.**
- **RenewableUK supports the concept of DNOs being incentivised to invest strategically in necessary network upgrades. Reducing DUoS charges by allowing a more efficient and coordinated network to be built, rather than undergoing smaller and more frequent reinforcement works in an ad hoc manner is a logical approach.**

¹ National Grid Future Energy Scenarios 2014, "Gone Green" scenario

Introduction

We are delighted to see that the pressing issue of distributed connection arrangements are being considered by Ofgem in a forward thinking and open minded manner. The topic of network reinforcement and how this is built and funded is a key challenge for all our members, so we welcome this opportunity to discuss and debate proposed solutions in the consultation, as well as the chance to put forward our own ideas.

We appreciate that the proposed scenarios take into account both demand and generation connections, however our response will focus upon the acceptability of these propositions from the perspective of the distributed generation customer only. We note that the consultation seems to have been driven by demand customer considerations and, while we value the references to generation customers, we feel this angle could be more explicitly set out in future consultations.

Specific considerations from the generation perspective include:

- The need to avoid the cliff-edge in reinforcement costs for generation connections in areas of congested grid, in order to facilitate more capacity and more diverse entrants into the competitive generation market.
- The increasingly competitive and time-bound nature of generation developments, as a result of annual degression in FiT support and competitive allocation of CfD support, which militates against collaborative solutions and openness with information.
- The wider benefits to the energy system of new generation connections, including: increased generation capacity over a period of tight margins; and increased competition in generation at a time when liquidity in the electricity market is under close scrutiny.
- The imbalance in arrangements between distribution connectees who pay for their connection upfront, and transmission connectees, who pay on the back of Use of System charges.
- The potential knock-on impact of distributed generation on the transmission system, whereby investment in distribution network may need to be coordinated with investment in transmission which itself may be constrained.

We hope that our response provides insight into our view of the suggested scenarios. We are delighted that this consultation has taken place, however we hope that it is simply the start of a broader discussion into establishing the correct route forward for the industry. Upon closure of this consultation, the industry requests a further generation led workshop to discuss these proposals in greater detail. The complexity of the suggested scenarios and the detail of the solutions proposed by the industry mean that this consultation response is unlikely to have captured the necessary detail to inform Ofgem of the best way forward.

Our following response takes the suggested Ofgem scenarios in turn.

Scenario 1: DUoS funded Anticipatory Investment, No Initial Customer

1. Would a DNO be sufficiently confident about future connections demand and the benefits to DUoS customers to justify this approach? If so, in which circumstances?

Firstly, the time horizon and scale for ‘anticipatory investment’ needs to be defined and then the DNOs capacity to forecast can be properly assessed. Ofgem’s open letter did not provided enough clarity on the ‘scope’ of reinforcement works.

Secondly, we accept that the certainty of future development is difficult to predict, and DNOs will not want to be faced with stranded assets. Nonetheless, we perceive the risk of stranded assets to be unlikely due to the desperate need of available grid capacity. In light of the different scales of development and the different technologies on offer, it could be argued that new capacity would be well-utilised by future renewable energy developments. A more challenging task is to calibrate the specific capacity required within a reinforcement, but to some degree this could be countered by scoping reinforcement options with a range of possible capacity outputs.

It needs to be established what type or what level of information DNOs require to enable them to feel confidence about future connections. RenewableUK members agree that a DNO could only be sufficiently confident about future connections if it opened up direct communication channels with DG developers. Application portals give an indication of committed development proposals, however the appeals process clouds the visibility they can provide and they are also unable to provide detail on the proposed timescale of projects. Nevertheless, planning information at least provides a basic indication of focal points of DG development. If a number of applications are pending in a specific area, it indicates that wind/solar resources are good, permitting hurdles are low and developers are willing to pursue project options. It is suggested that DNOs use planning portals, council development plans and previous grid application information to assess areas of likely development, and then communicate directly with developers to establish further detail. Ofgem needs to ensure that an appropriate incentive mechanism is in place to ensure that DNOs can resource forecasting activity so that it is sufficiently robust.

The option of a financial penalty was discussed between RenewableUK members, to ascertain whether developers would be happy to contractually commit to projects, and then receive a financial penalty if they do not pursue. However, it was agreed that this option could not be pursued, as investors would be unlikely to financial commit to a project in the early stage of development. This arrangement would also penalize smaller projects or community projects, as they would be highly unlikely to have the funds in place to pay a financial penalty. It could also lead to a system of late-coming “free-riders” and act as a deterrent to developers declaring their interest pre-connection-application.

Q2. What other barriers are there to DNOs taking this approach? How might these be overcome?

A clear barrier is the risk to the DNO if the anticipated connectees do not appear. In this circumstance, the aborted asset costs are paid for by GDUoS customers in the DNO’s area and the DNO loses revenue under the ED1 efficiency incentive if it overspends beyond its eight-year allowance.

The socialisation of costs onto generator and consumer bills is a clear political risk. However, RenewableUK would like to make it clear that DG connecting customers are not against paying for network reinforcement, and do not expect DUoS customers to absorb all reinforcement costs. The industry is happy to pay its fair share, so long as it is approached in an efficient, reasonable and timely manner. RenewableUK and its members appreciate the political pressure of maintaining low energy bills for the UK general public. As a result, we realise the perceived pressure that Scenario 1 could exert, despite the intention that this methodology could ultimately reduce DUoS charges.

In light of these considerations, RenewableUK proposes an amendment to the scenario according to the principles of the second comer rule. We suggest that customers connecting to a reinforced network paid for by DUoS customers, pay back the appropriate proportion of these reinforcement costs in order to refund the DUoS investment, as per Scenario 2. In this circumstance, not only do DUoS customers benefit from a more efficient and cost effective approach to reinforcement, but they also benefit from some reimbursement of costs when customers choose to connect. The second comer rule is already an established mechanism and should therefore be utilised under this scenario to make grid reinforcement mechanisms more appealing to Ofgem, Government and DNOs.

Another barrier highlighted by our membership is the length of time it takes to build-out the reinforcement of networks. DNO timescales to reinforce networks are much longer than those to build solar projects or FiT-scale wind projects. As a result, the time lags between the identification of a suitable constrained network area and the actual reinforcement works being completed, are too long for small-scale FiT projects to wait. By this point in time, they may have already moved on elsewhere, or no longer have the financial resources to hand. These types of projects cannot commit to waiting any longer than a couple of years for connection, otherwise the economics of installing the project will no longer stack up. It is therefore necessary for a range of reinforcement upgrades to be made, some short-term, some long-term. This will also allow for the level of risk to be spread.

RenewableUK also questions how this scenario addresses the issue of transmission reinforcement. As noted in question 1, the time horizon and scale for 'anticipatory investment' needs to be defined in order to understand the potential scope of reinforcement. The industry is fully aware that many DG capacity restraints are due to restrictions on the transmission line. As a result, any DNO efforts to improve the capacity will need to be done in coordination with National Grid, or only in areas where transmission restraints are not felt. This approach however, would fail to address the restrictions in place across most of Scotland, and more recently in the South West. As stated previously, waiting many years for transmission upgrades reduces the certainty of projects going ahead in the future.

Scenario 2: DUoS Funded Anticipatory Investment, One Initial Customer

Q3. What are your views on this type of approach and the RAV Buyback Model? Are there any elements which are essential, not required or should be changed – and why?

RenewableUK believes that the RAV Buyback Model is a plausible solution to reinforcement. As stated previously, we believe that the second-comer rule should be utilised to reimburse DUoS customers, and this model reflects that belief. Nevertheless, our members hold concerns regarding the premiums that could be imposed. Paying premiums would result in an increased base cost of electricity from DG sources and there is a fear that the idea of premiums could be exploited at the detriment of DG connection customers. If a premium payment is deemed to be necessary, it should very transparently reflect the risk taken by the DNO, on behalf of DUoS customers, in making the strategic investment.

While we support the concept of the RAV Buyback Model, we would like to log a concern about the process. Learning from the Strategic Wider Works model for transmission, we are aware of the huge uncertainty on the part of network companies as to what information is needed by Ofgem to justify the work, compounded by the huge uncertainty in the timing of the decision making process. We congratulate Ofgem and the TO on their recent efforts to streamline the SWW process and we will keenly monitor whether it leads to the desired improvements. We suggest that there are lessons to be learnt from this development and we recommend reviewing the ENSG paper on the role of the stakeholder.²

Q4. Please give details of any projects or schemes this type of arrangement could have helped progress which would have not otherwise gone ahead?

Changing the application of the £200/kW rule so that the second comer rule is applied to it is an example of where this approach would facilitate development to go ahead.

We are aware of some member organisations submitting example project information in a separate document in order to maintain commercial confidentiality.

Q5. What would justify requiring subsequent connection customers to only be able to connect to the new, enhanced part of the network?

RenewableUK has a concern where “*new connections customers within a defined area would be required to connect only to the enhanced part of the network*”. It is believed that this is against the Electricity Act, where connection offers must offer the most *economic, efficient and coordinated* route to connection, which should result in a minimum cost scheme. Forcing a customer to potentially take a longer, more expensive route to connection is surely against this act. Regardless of the concern however, we believe that once anticipatory reinforcement is made, it is highly likely that if a project is anywhere near the area, it will be the cheapest and most logical route to connection. We can’t imagine there would be many circumstances where a project would be on a boundary. Capacity restrictions are now at such an extent that there are limited connections offers available anywhere else.

² See paper submitted to ENSG 6th March 2015.

Q6. What would justify a DNO charging a premium to subsequent connection customers to reimburse DUoS customers for the risk they bear in funding this work? What might be the impact of this? How should the premium be calculated?

See answer to question 3.

Q7. Over what time period would it be reasonable to expect DUoS customers to be reimbursed for their initial funding?

As submitted in the recent second-comer rule consultation, RenewableUK agrees that the five-year threshold seemed arbitrary and presented a disruptive discontinuity. We agreed that a longer timescale should be explored, but an important principle of this would be a tapered arrangement rather than a sharp cut-off. This could be fairly achieved by applying a depreciation factor to the assets, in recognition of their age and utilisation before the second comer arrived. This would prevent developers on the boundary of the timeline intentionally waiting until the cut-off date before applying for grid connection.

Q8. When might it be appropriate for a DNO to have an upfront revenue adjustment to cover this type of scheme? Or should existing mechanisms be used?

The large scale of necessary reinforcement schemes would require funding outside of agreed ED1 business plan revenue. Without revenue adjustments, only very minimal reinforcement schemes could go ahead.

Q9. Do you consider that this approach would have any implications on competition in connections?

Reinforcement to an existing piece of network can only be completed by the DNO, therefore there would be no impact on competition in connections (CiC). However, anticipatory reinforcement could potentially include the building of new assets (for example a new 132 kV ring around an area). Under the current charging methodologies this would be classed as CiC if triggered by a single developer, but it would be classed as non-contestable if it was triggered by several parties. A positive development for CiC would be for Ofgem to consult on placing such works out to tender as CiC activities.

Scenario 3; Customer Funded Anticipatory Investment, One Initial Customer

Q10. What are your views on the DevCo model and process set out in Appendix 2? Are there any elements which are essential, not required or should be changed – and why?

We struggle to understand whether the proposed DevCo model would suit the needs and requirements of the DG connection community. As noted previously, the industry is wary of paying premiums without full transparency and auditability, and it does not feel comfortable being at the mercy of a third party for connection to the network. At odds with license conditions, it is possible that the third party could stipulate the types of scheme it could subsequently connect, resulting in potential discrimination.

We also understand that the DNOs have an ability to secure finance at a lower rate than most independent parties, consequently rendering this reinforcement option significantly more expensive for connectees.

It is recognized that this scenario has been generated for the purpose of demand customers, therefore greater detail and clarity would be required before stating whether this mechanism would work for generation customers. As a result, we have refrained from commenting further on the below questions.

Q11. Please give details of any projects or schemes this type of arrangement could have helped progress which would not have otherwise gone ahead?

N/A

Q12. What would justify requiring subsequent connection customers to only be able to connect to the new, enhanced part of the network?

N/A

Q13. What would justify a DNO charging a premium to second-comers to reimburse the customer? What might be the impact of this? How should the premium be calculated?

N/A

Q14. Over what time period would it be reasonable to expect the customer to be reimbursed for their initial funding?

N/A

Q15. What would justify the initial investor being permitted to restrict the type of schemes that would connect using the infrastructure it has paid for? For which type of schemes might this be appropriate?

N/A

Q16. Do you have any comments on the recommendations proposed in Appendix 3 to enhance consortium arrangements? What would justify these recommendations? Are there any other changes which would support consortium arrangements?

RenewableUK has been made aware of a number of consortium arrangements within the DG industry, facilitated by DNOs or Regen SW. However, we are acutely aware of the complexities of these arrangements, specifically the need for someone to underwrite the scheme. We have been informed that a number of trial consortium arrangements have failed, therefore we do not believe these should be relied upon for the development of national infrastructure.

Scenario 4.1: Active Network Management

Q17. What role, if any, could changes to engineering standards play in helping to accelerate the connections process without damaging reliability levels? In what circumstances would this be appropriate?

RenewableUK believes that there is significant headroom that could be utilized to increase available capacity on the network. The EHV network needs to be operated more actively. Some DNOs have considered management of reactive power and we would expect to see this replicated across all DNOs, but the learning curve and adoption of these methods in the UK seem to be incredibly slow. Harmonization of reactive power and services would be welcomed in order to deliver a more efficient connections service across the UK. DNOs should learn from both their own lower voltage trials and Transmission level implementation of network management in order to be able to accomplish this as soon as possible.

RenewableUK is engaging with the review of P2/6, the distribution security standard. We note the arguments for this review, including the efficiencies that could be gained through a more flexible approach to network security, and the opportunities this is likely to open up in some areas for smarter technologies and less costly connections. The review has only just begun, and we believe it is too early at this stage to state whether a complete change is justified.

Q18. Which particular standards might most benefit the connections process if changed?

DNO's do not apply standards such as G54 (harmonics) and P28 (voltage dips and transformer inrush) consistently. This causes delays and additional costs to the developer during the design/construction phase of the schemes.

Power factor requirements should also be used more consistently across all DNOs – only some DNOs choose to apply them in a more relaxed manner which can result in a greater number of connections.

Scenario 4.2: Management of Connections

Q19. What benefits might the introduction of assessment and design fees bring?

It is clear that the introduction of upfront assessment and designs fees would reduce the level of speculative applications, thereby allowing DNOs to respond faster and more comprehensively to a smaller number of applications. It would also prevent developers

from speculatively absorbing capacity when they may not have a serious intention of using it. RenewableUK has worked alongside the DG/DNO Steering Group to formalise a proposal. This was submitted to DECC in December 2014. We look forward to receiving feedback from this proposal and proceeding with the development of upfront assessment and design fees in the near future.

As part of the grid application process, it is also noted that only some DNOs request a Letter of Authority from the landowner, stating that the developer has permission to carry out development work on his/her land. Making these letters mandatory in all DNO areas could further reduce speculative applications.

Q20. Could more flexibility in the way assumed available capacity is calculated help accelerate the connections process? Are there any other improvements to be made in how DNOs manage interactivity between schemes looking to connect to the same part of the network?

Recognising the relationship between solar production and wind production will create additional capacity on the network. Obviously, solar productivity is most prominent in the summer, wind in the winter, therefore flexible arrangements need to be offered to recognize these disparities. RenewableUK welcomes the flexible connection models currently being progressed by DNOs, but we urge for these mechanisms to be offered as 'business as usual' as quickly as possible within DG work plans.

We commend Scottish Power's "Quote+" approach to connections that takes prospective connectees through a process before definitively allocating grid capacity that cannot thereafter be offered to others.

Q21. When might it be reasonable to withdraw capacity it has previously offered to customers?

RenewableUK recognises that it is difficult for DNOs to terminate connection agreements if the developer is not willing to voluntarily return unused capacity. We would welcome a steer from Ofgem to help provide confidence to DNOs that appropriate termination of offers is consistent with the economic and efficient management of the distribution network.

RenewableUK and its members recognize the importance of imposing project milestones to ensure that the a DG project is progressing towards build out, and we would welcome the opportunity to discuss these project milestones in further detail if DNOs do not feel they have already received sufficient steer from the industry during DG/DNO Steering Group meetings.

Evidence of progression should be submitted to the DNOs on a regular basis. It is recognised that chasing the requested information and keeping track of the main contact for each connection offer is likely to be a time consuming job, however it is a duty that we believe each DNO should dedicate time and resources to, especially if it removes the immediate need for expensive reinforcement with significant time lags.

For operational sites, a lengthy period of under-utilisation (e.g. a generator not using its maximum export capacity) should lead to a DNO reducing the contracted capacity

accordingly. This is most readily evident where the installed plant is significantly less than the contracted capacity, an issue which should be more actively tackled by DNOs.

Q22. Are there any other changes which could be made to reduce the need for reinforcement?

Where network constraints arise not from thermal capacity limits but system stability considerations such as voltage, DNOs need to pro-actively seek out the most cost-efficient ways of addressing these issues. We understand, for instance, that the WPD network is “closed for business” not because of thermal constraints, but because of voltage issues. The DECC-Ofgem chaired Smart Grids Forum (Workstream 6) is making recommendations on how DNOs could procure reactive power from connectees, including distributed generation and storage, and this agenda needs to be progressed with urgency.

Where a DNO is not using such services to alleviate grid constraints, there is a question as to whether they are operating and allocating network capacity in the most economic and efficient manner.

Scenario 4.3: Deferral of Connection Charges

Q23. What would justify a DNO offering more flexible terms for connection charges? What might be the impact of this?

More projects may come forward if there were minimal upfront payments, however there is a risk that speculative applications could again rise if down-payments were minimal. Deposits would need to be kept high enough to ensure that speculative applications didn't increase under deferred payment circumstances.

Q24. What type of schemes would most benefit from this arrangement?

This mechanism would benefit all DG projects, but for community groups and small locally-owned projects (small businesses, farmers etc.), the option of paying back connection charges over a period of time would be particularly beneficial, as it would allow the connection cost to be funded via revenue generated from the project, rather than via upfront payments via potentially high interest loans. It is recognized however that the offer cannot be made to customers in a discriminatory manner.

Q25. What could be done to protect other customers from picking up any costs which cannot be recovered from the original connection customer?

A contractual agreement could be applied during the FiT pre-accreditation application, requesting for FiT revenue via Ofgem to be paid directly to the DNO in installments to recover connection charges. This would provide an automated set-up that ensures generating projects are paying back their connection costs.

Q26. Are there any other measures that would reduce the cost impact of connecting to the network?

As per our recommendation for Scenario 1 and Ofgem's proposal for Scenario 2, we see the argument for connectees to make an appropriate contribution towards the cost of reinforcements once these have taken place. In the case of flexible connections that subsequently gain access to reinforced grid, there is an argument for these likewise to

make this contribution, provided this is written into their connection contracts at the outset.

This is a strategically very significant concept – it relates to congested areas of grid where generators need to take a flexible connection in order to avoid paying unaffordable reinforcement costs. Instead of “leaving it at that,” the appearance of many generators on flexible connections would act as a signal to the DNO, and justification to Ofgem, that reinforcement is needed.³ The generators involved would be no worse off subsequently, as their contribution to the cost of reinforcement would be less than or equal to the constraint that they had signed up to when connecting.

Smart Grids Forum (Workstream 6) is exploring this concept further, and we recommend that it is incorporated into Ofgem’s thinking for strategic development of the distribution network.

Summary

Q27. Which of the arrangements described above would deliver the greatest benefit to the connections process without placing additional risk or cost on the generality of customers, and why?

The recent letter circulated by WPD in March illustrated the difference in ‘contractual constraints’ versus ‘physical restraints’. The letter stated that restrictions are being applied to connection offers because the capacity has either been connected or allocated. However, only 1.38GW has been connected, whereas 1.89GW is still unused but ‘contractually unavailable’. This highlights the very large volume of capacity that is essentially sitting unused and waiting. It is therefore essential that mechanisms suggested within Scenario 4 are immediately developed to utilize this remaining capacity.

Having said this, we cannot ignore the fact that grid capacity will be reached in the near future, regardless of headroom creation or efficient queue management. As a result, it is essential that DNOs embark on grid reinforcement (Scenarios 1 or 2) as soon as possible, in recognition that decision making and build-out takes considerable time.

Q28. Should wider benefits beyond energy system benefits (such as those provided by NTBMs) be taken account of in DNOs’ or third parties’ considerations of any of the measures or mechanisms described in this paper?

Yes, wider benefits should be considered, both from within the energy system and beyond. Within the energy system, benefits include:

- increased generation capacity to increase national capacity margin
- increased competition in generation to improve market liquidity

³ Compensation of the generators for constraints beyond a pre-agreed cap is also being discussed. This would a) reassure the generator and their funders that they will not incur unlimited losses; and b) provide a more concrete financial signal to the DNO on the value of reinforcement. This cap and compensation mechanism is not however a pre-requisite for the funding of reinforcement ex-post as proposed here.

- strategic progress towards decarbonisation of the energy system

Benefits beyond the immediate energy system are far reaching, for example, greater community engagement and public buy-in into development of national infrastructure.

Q29. Do you have any other suggestions for delivering quicker and more efficient connections?

We have set out our thoughts in the form of suggested changes within the principal Scenarios put forward by Ofgem, but please also note the outputs from the Smart Grid Forum, Work Stream 6 (summarised in Q.26).