14th May 2015

BEAMA is aware that costs and delays in carrying out connections and reinforcement are acting as a barrier to renewable projects. BEAMA thus agrees with the need for this issue to be addressed and welcomes OFGEMS's consideration of possible improvement measures.

BEAMA sets out below its general understanding of the issues. In its view there are two main issues to be dealt with; a) allocation of the necessary cost of reinforcement and b) minimising the costs of connection and reinforcement.

a) The main challenge around reinforcement is the allocation of risk. The time necessary to carry out a reinforcement project is typically much longer than that needed to build a generation project, hence reinforcement always lags project development, even when it begins at the same time. It follows that reinforcement should be carried out before it is needed. However, generation projects are subject to a variety of uncertainties, such as planning permission, commercial issues, changes to government support, market conditions so any anticipatory reinforcement must be exposed to some risk of not being needed and then stranded (88% of onshore wind projects were refused planning permission in 2014, Utility Week , 9th Dec 2014). At present DNOs carry the risk of stranded assets and largely avoid the risk by deferring reinforcement until it is proven to be needed. This makes the situation even worse, however, as the delays over reinforcement cost and timescales add to the project risk, further reducing the likelihood of project success; in turn increasing the DNO risk exposure.

   OFGEM argues that under RIIO ED1, the DNOs are incentivised to invest to maintain the network's reliability. However, this only applies for general load growth. For connection of renewable generation, there is little liability for the DNO over network reliability as it has control over connections and can prevent a reduction in reliability by refusing connections until the necessary reinforcement is carried out.

   If proposals are going to provide a solution they must either reduce the risks for the DNO or increase their rewards, so as to allow more anticipatory reinforcement and improve the likelihood of renewable project success. BEAMA view is that the key to this would be the introduction of a third party to advise OFGEM and the DNO of appropriate network reinforcement. OFGEM is currently consulting on increasing the role of the TSO to advise on the need for wider reinforcement schemes at the Transmission level. It is reasonable to argue that the Distribution network would benefit from a similar approach. A major difficulty in this is the lack of a DSO to take this role. To address that lack, a body should be set up to take a similar view for DNOs. Efficiency would suggest setting up one body to work across all DNOs. This would offer additional benefits as the body could both i) liaise with the TSO to identify the most efficient solutions across the distribution and transmission networks and ii) liaise with government to ensure that the pace of reinforcement was consistent with government decarbonisation policy objectives.

b) BEAMA understands that OFGEM's intention of reducing costs and delivery times for connections by introducing competition is failing to deliver fully because the DNOs retain a position of authority over the ICPs. This is resulting in delays, adding cost and preventing the ICPs from introducing innovative solutions. OFGEM should continue to ensure the health of the ICP sector and ensure that it competes on an even basis with the incumbent DNO service. This will introduce both market pressure on the DNO connection fees but also allow the ICPs to introduce innovation. OFGEM would then be advised to examine the relative performance of the independent and DNO ICP services to challenge DNO (and OFGEM) assumptions on efficiency.

BEAMA believes that there are a number of cost effective and proven grid technologies that could be used to reduce the need for and/or cost of reinforcement. These are in widespread use overseas and OFGEM should encourage the DNOs to conduct a review of overseas best practice and seek explanations why such technologies cannot be used in the UK.

Scenario 1: DNO funds (via DUoS) cost of anticipatory reinforcement (costs are socialised as no initial connection customer)

Q1. 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?

BEAMA supports moves to reduce delays in connection and reinforcement and prefers Option 1. However the consultation document appears to leave an element of risk with the DNO as it would still be open to charges of poor efficiency.

To be effective there must be confidence that the changes will result in the DNO acting positively. BEAMA recommends the establishment of a third party body to advise on anticipatory reinforcement in a similar manner to its current proposals for the transmission network. This would then relieve the DNO of risk as it would not be acting on its own analysis.

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

Another variation of Option 1 would be for a third party could carry the risk, for example, as part of a Regional energy policy, but this is likely to be rare and just seems to make the regional authority a 'larger' customer paying for a connection. In what way would this be different to any other source the DNO currently uses to forecast future demand? More often it is likely this would lead to third parties not making forecasts so as to avoid any implied or actual financial liability.

Scenario 2: DNO funds (via DUoS) cost of anticipatory reinforcement when initial connection takes place (to be reimbursed by subsequent connection customers)

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?

BEAMA supports the RAV buyback model such that this approach reduces the risk faced by the DNO in making anticipatory investment in reinforcement. Hence it promises to alleviate the current challenges. However, it would be important to avoid the introduction of any processes and consultations that impose long delays in making the reinforcement. OFGEM would also need to accept a non-zero level of uncertainty, i.e. there would be a real possibility of stranded assets, as otherwise there would be no real change from the current situation. Determining an acceptable level of that risk will be an important task.

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

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

Surely the justification for allowing this option would be to provide lower cost connections to subsequent customers through anticipatory reinforcement. In this case there should be no need to force connections to these areas as this should happen naturally driven by costs.

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?

It is more likely that the DNO would want to charge a premium to reimburse the DNO for the risk that it had borne and, if there were also premiums payable to the customer, this seems most likely to price new projects out of the market and leave the asset more likely to be stranded. Surely if you want to attract connections there should be a reduction in the cost for the connection, not an increase.

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

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?

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

BEAMA does not believe that there would be any risk so long as only reinforcement of the network was allowed, not extension of the network. If an extension was identified it should be made contestable once approved. On the basis that the investment was

justified on the DNO minimum cost basis, if it could be done more cheaply by another party then this only strengthen the justification.

Scenario 3: Connection customer funds cost of anticipatory reinforcement when initial connection takes place (to be reimbursed by subsequent connection customers)

Given that the current arrangements are deterring projects from going ahead, placing this cost premium on the first scheme would seem more likely to simply stop the first scheme. Also, this places the risk of subsequent connections not materialising on the project developer, the party least able to afford the risk premium.

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?

The DevCo model, whilst welcome in potentially reducing connections charges does not seem to be more than a variation on the current arrangements. Specifically, it only appears to be triggered when there is guaranteed additional generation load so that the risk is minimal for the DNO. Where such schemes are viable, OFGEM should make the necessary changes to facilitate them.

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

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

As for Q5, the justification for allowing this option would be to provide lower cost connections to subsequent customers through anticipatory reinforcement. In this case there should be no need to force connections to these areas as this should happen naturally driven by costs.

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?

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

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?

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?

Scenario 4: Other ways of making it easier to connect

4.1 Reducing the need for reinforcement via 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?

Network design standards presently in use (P2/6) makes little use of probabilistic analysis. All networks are founded on probabilistic assumptions over customer demands resulting in diversity factor analysis. Although such assumptions are implicit in network design they are little used in design tools such as P2/6. Better analytical tools are now available to carry out such analysis and the nature of new loads and generators means that more sophisticated design tools are needed. An important immediate action would be to ensure that a number of trials are carried out to compare the results of current and probabilistic analysis to gain confidence prior to their wider use.

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

P2/6. BEAMA notes OFGEMs support for a review of P2/6 and supports this.

4.2 Reducing the need for reinforcement by managing connection offers

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

Clearly the current situation regarding connection assessments is unsatisfactory. However, this is largely driven by uncertainty over connection costs. The principle behind the current arrangements is that connection costs are meant to push connections to locations where the costs are low. However, if the cost is unknown until a request is made this has to be a very hit and miss process. What is needed is more certainty over connection costs prior to application. This could be provided by DNO analysis of its networks and published GIS data, or capped connection costs.

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?

DNOs should make more use of probabilistic analysis to understand to actual demands and behaviour of its networks. There are also affordable data collection tools available that would increase DNO understanding of the true condition of its networks.

OFGEM should consider introducing special rules to support innovation, either excluding areas of a DNO network from the DNO's reliability targets for the duration of trials of novel solutions or else approving additional spend to allow parallel solutions (a novel

solution installed alongside a conventional one to allow back up of any failure in the novel solution).

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

Whilst connections are managed as they are now and projects are making speculative requests then some such measure is needed. However, the introduction of assessment and design fees should reduce this practice and it is important not to introduce two measures to address this and over correct. DNOs providing GIS data showing likely costs of connections would reduce the driver behind this concern.

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

BEAMA members have a number of smart grid technologies which they consider as quite mature in the area such that if they were applied more proactively on the UK network it would in several instances negate the need for reinforcement. It is worth noting that these technologies are used more extensively in Germany than in the UK, supporting the need for a full examination of best practice in other countries. OFGEM to examine why these technologies are not being more widely used and look to reduce unnecessary barriers.

4.3 Flexible terms for the recovery of connection charges

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

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

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

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

There seems to be little oversight of the DNOS in their analysis of network capacity and reinforcement costs. Given their access to the network data and responsibility for system reliability it is reasonable that they have a high degree of control of the process, hence introducing competition in network analysis and design is not an option. Perhaps a rule could be introduced such that, if a cheaper network option compliant with P2/6 was identified by a third party, then the DNO would only be able to recover the lower charge?

A key priority for connection arrangements must be to encourage innovation. For this to be effective there must be an opportunity for innovative solutions to be identified and adopted. It is strongly recommended that the DSO conducts a review of experience

overseas. At present, UK levels of renewables are lower than, for example, Germany. We must look at the lessons learnt in countries that have progressed further to adopt their best practices and avoid their worst.

Summary and next steps

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?

Increasing anticipatory reinforcement for projects that face a varieties of uncertainties must place additional risk on customers (although not necessarily cost, if it allowed more efficient solutions). The introduction of a DSO role to advise on wider reinforcement opportunities would be the best way of minimising any additional risk and identifying options for reducing overall costs.

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?

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

Contestable connections need to be made more competitive. At present the DNO is in an advantageous position with regard to independent connectors as the ICP is dependent on the DNO for information, design assessment and checking. As the ICP is working to published standards and is externally audited there is no need for the DNO to carry out its own checking. If the design standards and quality processes are appropriate there should be no need to double check them. Either the DNOs should identify the inadequacies in the standards or they should commit to accepting their results.