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Dear Olivia

QUICKER AND MORE EFFICIENT DISTRIBUTION CONNECTIONS

I am offering this response to your consultation on behalf of the Northern Powergrid businesses based in the Northeast and Yorkshire. We think the consultation raises a number of important questions relating to delivering efficient processes for electricity distribution connections while protecting the interests of all customers.

In addition to delivering high standards in today's connections arrangements we are keen to work actively with policymakers and other stakeholders to consider, and as appropriate develop, future improved arrangements for connections services. These should benefit customers by delivering performance standards at minimum cost, attaining carbon reduction targets and contributing to the overall objective of keeping overall energy costs as low as possible. As part of this consideration it is important that we recognise the key fundamental principles that have served customers well in the past and need to remain in any future arrangements. By being cognisant with these guiding principles we will continue to develop and maintain an efficient, co-ordinated and economical system of electricity distribution and avoid 'blurring the edges' in any material way.

In this response we provide two appendices. In the first, we set out the key principles that we consider are relevant to potential changes to the design of the connections arrangements. Second, we provide responses to each of the 29 questions posed in your consultation document.

I hope you find these comments useful. If you have any questions arising from this response please do not hesitate to make contact.

Yours sincerely

A handwritten signature in black ink, appearing to read 'John Barnett'.

John Barnett
Commercial Director

APPENDIX 1 - KEY PRINCIPLES

In order to develop new arrangements for connections we consider it important to set out the key principles that we believe need to be honoured in the future as well as today. By establishing these foundations or fundamentals we can then apply a series of tests to each of the proposals and scenarios set out in the consultation in order to conclude on our views.

We support a healthy competitive market where the customers benefit and the best companies thrive, delivering better products and services through innovation

- Competition applies downwards pressure on the total cost of energy and uplift in the quality of customer service. In this instance, the competition could be provided by the commercial market - for example, scenario 3 identifies a customer or third party investing in anticipatory reinforcement.
- It is right to investigate new propositions that aim at improving better and fairer network access for all.
- Incentives should be used to drive the appropriate outcomes using objective criteria.
- The customer should benefit from lower prices and improved service regardless of who provides the service.
- A level playing field is required for incumbents and new entrants. Where possible, as an incumbent, we want the opportunity to compete in the delivery of new services. Therefore in scenario 3, we consider it reasonable to assume that a third party that provides such anticipatory reinforcement could include an affiliate of a regulated distribution network operator.
- The creation of 'ransom strips' is to be avoided - customers must not be forced to connect to one network when an alternative neighbouring network offers them a lower cost and potentially more effective option. One of the proposals for scenario 3 conflicts with this principle.

Outcomes must be good for society as a whole and not benefit one sector at the expense of material downside to another

- Communities should be able to benefit from localised demand-side response offsetting generation and network constraints - a win/win for customers and energy companies.
- We must continue with policies that drive incremental and 'just in time' network development in order to minimise the risk of unnecessary capacity and stranded assets.
- Any new funding/investment products must enable lowest total energy cost solutions to thrive to benefit customers while also delivering a secure and appropriate long-term return to investors.
- More generally, improvements need to put customers in control of their energy use and their bill; while avoiding unnecessary complication.

Maintain fairness - do not create the opportunity for 'free riders'

- Cost-reflective charges are a fundamental precept.
- Locational price signals are important for connection customers to incentivise economical system development.

- We must also avoid excessive socialisation of costs that inhibits the right economic decisions being made on least cost solutions.
- Cross subsidies between connection and use of system charges or between customer types should be avoided.
- At the same time, the development of cost reflective *local* network tariffs/commercial products may enable local energy solutions to be deployed to achieve the lowest long-run total energy costs that hitherto may have been inhibited by lack of access to upfront capital by stakeholders, or other constraints. Appropriately structured, these commercial products *would not* represent a cross-subsidy between connection and use of system charges or customer types as the related costs are recovered from the beneficiaries.
- 'One-size-fits-all' depreciation periods must be avoided - the period needs to be matched to the economics in each situation such as the intergenerational funding for long-life assets, the cost of capital trade off and the risks of default. For instance, in scenario 4, any flexible payment terms would need to reflect the credit risk of the connectee.
- Stimuli in the form of subsidies to encourage certain outcomes are a matter for government policy.

While there are a multitude of drivers and benefits behind the consideration of new arrangements, what matters most to customers is security of supply

Risk and return need to be matched and we must avoid ratcheting them up with no associated benefit for customers that justifies the move

- Customers will not be best served by the risk and associated cost of capital being any higher than it needs to be. Cap and collar mechanisms may usefully limit the risk and return for customers, companies and other stakeholders.
- Speculative or anticipatory reinforcement must be funded with an appropriate rate of return that recognises the uncertainty inherent in the design of the regime. Relevant factors include who carries the risk of the increased capacity being required and counterparty credit risk for connectees who do not pay up front.

Not all customer groups are equal - policymakers and companies need to consider disproportionate effects on the most vulnerable

- Vulnerable customers in particular must be protected from escalating service risk and price risk issues.

APPENDIX 2 - RESPONSES TO CONSULTATION QUESTIONS

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?

A DNO can be sufficiently confident about future connections demand and the benefits to DUoS customers, and NPg have been confident enough on occasion, however it is unusual. A DNO would require evidence of load growth driven by a lively and sustainable connections market; predictions in development plans are unlikely to be sufficient due to their unreliability. Uncertainty of load growth in specific locations is the major barrier to DNOs investing “in anticipation”. Stakeholder development plans have proven unreliable as predictors of load growth, often:

- overestimating the growth where they make a prediction;
- failing to make any prediction about the load that will be created by development; or
- predicting load growth in the wrong place because the development doesn’t go ahead (being replaced by a different development, elsewhere, instead).

This is true even when there is a specific connection project. For example, shortly before Northern Powergrid submitted its RIIO-ED1 business plan in March 2014, a major new generation connection project was cancelled which had been quoted and accepted. With a specific connection project the investment is not made until the connecting customer is financially committed, which eliminates the risk exposure to DUoS customers. If investment is made on the back of development plans DUoS customers do not have this protection. Uncertainty does not however prevent all anticipatory reinforcement and there are circumstances where NPg has been sufficiently confident about future connections demand and the benefits to DUoS customers to invest in this way. Such situations are not common, but the best recent example is the reinforcement of the South Leeds area of the network.

The investment we made at South Leeds was not fully *anticipatory* in that it did not occur entirely before the need arises; rather pressures on the network had grown and were expected to continue to grow. On the basis of this expectation NPg was confident enough to invest heavily in the extra-high voltage (EHV) system in Leeds. This investment was necessary to serve the generality of existing customers and connectees in the area as growth continued. It consequentially created capacity which significantly reduced the cost for anyone connecting at a voltage where EHV capacity is relevant to the connection charge. EHV connections are of course subject to site specific DUoS charges which will recover the vast majority of the costs other than those that general DUoS customers would have become liable for under the apportionment rule anyway.

In the ED1 Final determinations Ofgem stated that if a DNO could demonstrate benefits to DUoS customers of a ‘strategic approach’ (i.e. anticipatory investment), Ofgem would consider allowing DUoS customers to fund up to the level they would have done under an incremental approach. Ofgem made clear that it expected the DNO to pass some of the benefits on to DUoS customers in recognition of the increased risk they would be taking under such an arrangement.

In principle we can see that such an approach would encourage efficient anticipatory investment where the benefit and the risks are properly aligned. However, we do not yet understand how the DNO will ensure that the additional capacity provided by the strategic investment will not simply be eaten up by additional new connections, perhaps at voltages that do not bear the costs of the strategic investment. In those circumstances the strategic

investment approach may not yield a better result for the generality of customers than the incremental approach. Moreover, establishing the counter-factual (the costs that would have arisen under the incremental approach) is likely to be problematic, but that is an essential part of this regulatory innovation. Ofgem has allowed UKPN's strategic investment so we presume that Ofgem has satisfied itself that these practical difficulties are not insurmountable. If so, we are supportive of this regulatory development.

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

Section 9 of the Electricity Act 1989 requires "an electricity distributor to develop and maintain an efficient, co-ordinated and economical system of electricity distribution". This requirement for an economical system is a statutory recognition that we should be cautious about anticipatory reinforcement based on uncertain predictions of load growth. It is a sensible constraint since it is not in the interests of the generality of customers for distributors to undertake speculative developments that end up being funded by those customers without any benefit accruing to those that are paying for it.

Consideration should be given to how anticipatory reinforcement associated with connections interacts with regulatory allowances. The current cost incentive arrangements always incentivise DNOs to minimise expenditure (to the mutual benefit of both DUoS customers and DNO owners), subject to the requirements of the Act, other legislation, and service level incentive schemes. Given the uncertainty associated with benefits from speculative investment, coupled with the certain costs, there will always be a strong incentive not to undertake it. Under the current incentives (which are there primarily to safeguard customers) it will usually be better to wait until the requests for new connections arrive and undertake only the reinforcement necessary to meet the requirement for that connection. The only exception will be where it is clear that we are catering for a number of related connections where a single reinforcement action for all might be less expensive than several smaller actions and where the combined requirement for reinforcement is sufficiently certain. Clearly as the current regulatory arrangements are there to safeguard the generality of customers, careful thought should be given before any changes are made to incentives or to the connection charging principles.

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?

With every connection made there are design and authorisation decisions that pertain to how much capacity over and above the customer's request should be installed. It is almost never the case that all electrical assets to be installed are available in a size that exactly matches the customer's capacity request. Therefore every scheme considers, explicitly or implicitly, how far beyond the customer's request the installed network should go.

This is envisaged and catered for by the apportionment rules and the second-comer rule (to the extent that the effectiveness of the second-comer provisions are not compromised when ICPs are undertaking the initial or the subsequent connections), and controlled by the efficiency incentive properties of the cost incentive.

If DNOs were able to charge a premium for connections in areas of anticipatory reinforcement, this might make such investments more attractive (counteracting the influence of the cost

sharing incentives), but other arrangements such as increased allowances associated with anticipatory reinforcement could also be explored. In either case a method of distinguishing anticipatory reinforcement from both general reinforcement and the DNO's contribution to the shared portion of connections would need to be established to ensure any incentive for anticipatory reinforcement was used correctly.

Whatever approach was taken, care would have to be taken to ensure that anticipatory reinforcement did not become too attractive, to the point that the costs of investments which prove to be unnecessary outweigh the benefits of the faster or cheaper connections that result when the investment is useful. It would also be necessary to ensure that any reinforcement under the "anticipatory" banner truly fell within the definition to avoid any potential boundary issues (such as exactly how reinforcement is classified, its exact timing, and the extent to which anticipatory investment may simply "crowd out" shared connection costs that would have been incurred under the current system).

This scenario has more to recommend it than the first scenario because it is not premised on the assumption that the costs will be socialised to the disadvantage of the generality of users. A DNO would have to decide whether the probability of future connections (paying the economic price of their connections) was sufficient to justify the investment.

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

All schemes fall under this arrangement to some extent due to the nature of equipment sizes described earlier, and where the second corner rule comes into play the scheme has all the key characteristics of these arrangements. However such schemes fall under these arrangements due to the relative sizes of available equipment and capacity requested. We do not have an example of a situation where we have, for example, sized an asset larger than the next available size above the connection capacity request because we were making a deliberate choice to use such arrangements. We also are not aware of examples of situations where deliberate and significant oversizing of equipment would have been useful.

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

Customers currently enjoy the right to be connected to the most cost effective part of the network for their capacity requirement, or at their cost to be connected to a part of the network that better suits their reliability requirements or their growth aspirations. Further they can elect to connect to the local DNO or to an IDNO, and to use that organisation's connections function or an ICP of their choosing.

Requiring connection to a specific part of the network would remove some, perhaps all of these customer choices, presumably because it is supposed that this restriction would protect the initial investment in capacity thereby making it more attractive. The disadvantages seem to us to outweigh the advantages.

Anticipatory reinforcement might bring benefits in terms of lower costs or faster connection lead times (it is unlikely to bring both), but even in that case it should be for connecting customers to make the choice as to what they value and whether they wish to connect to the enhanced network.

Moreover, a restriction to only use the enhanced network would remove a virtuous *competitive constraint* that should otherwise prevent unnecessary anticipatory investment from going ahead.

We do not therefore believe that requiring subsequent connection customers to connect only to the new, enhanced part of the network would be justified. As per one of our key principles in appendix 1, we are not attracted to this or any other proposal that introduces 'ransom strips' and reduces customer choice.

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?

If DNOs make investments ahead of need and the generality of users, or DNOs, are to bear some or all of the risk of such investments turning out to have been premature or unnecessary, a case can be made that the subsequent connectees should pay a risk premium in their connection charge. This would alter the scale and nature of the cross-subsidy from the generality of users to the new connectees.

There are alternatives to a simple premium, which might involve:

- adjustment of regulatory allowances (as discussed in question 8);
- an allowance for a (potentially relatively high) cost of capital within the second-comer rules; but no guarantee of any return; or
- a system of caps and collars that guarantees some return of the investment, but caps the potential return at a lower level (commensurate with the residual risk once the collar is taken into account).

Whatever approach was taken, care would have to be taken to ensure that anticipatory reinforcement did not become too attractive, to the point that the costs of investments which prove to be unnecessary outweigh the benefits of the faster or cheaper connections that result when the investment is useful. It would also be necessary to ensure that any reinforcement under the “anticipatory” banner truly fell within the definition to avoid any potential boundary issues (such as exactly how reinforcement is classified, its exact timing, and the extent to which anticipatory investment may simply “crowd out” shared connection costs that would have been incurred under the current system).

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

There is no obvious one size fits all policy. It could in principle depend on the exact policy framework chosen, as well as the specifics of a particular project. The intergenerational funding of long-life assets, the expected timing of future connectees, and the cashflow and default risk profile of any third party “underwriter”, could all be relevant.

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?

An upfront adjustment might be appropriate in a situation akin to strategic wider works in the transmission environment, where if Ofgem is satisfied that strategic investment by the DNO is in the interests of the generality of customers then adjustments are made such that the generality pay through DUoS. We understand that, while not identical, this is essentially what Ofgem allowed for UKPN at the RIIO-ED1 final determination.

If there is to be an upfront revenue adjustment consideration will have to be given to the nature of any mechanism leading to it.

Akin to strategic wider works in the transmission environment, where either on a case by case basis or under some framework of rules, a DNO might approach Ofgem with a proposal for an investment ahead of need project.

Should Ofgem be convinced of the merit of the case then it might be appropriate to raise price control allowances by the appropriate amount. The generality of DUoS customers would pay until the next connectee arrives and in so far as their connection uses the ahead of need investment they will pay a contribution (including any premium) that will reduce the RAV thereby reducing the DUoS customer’s exposure.

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

There are no implications for competition in connections (provided any mechanism applies equally for both DNO and ICP provided connections).

Competition in distribution might however be affected in a number of ways depending on the particular details of any changes made to the mechanisms which support this scenario. In particular, requiring subsequent connection customers to be able to connect only to the new, enhanced part of the network would establish localised monopolies which would restrict customer freedom, and *remove a competitive constraint* on anticipatory investment decisions. Companies might be incentivised to make reinforcements that were not truly efficient to confer on themselves local monopolies in the future development of the network.

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

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?

A similar model to this has occurred previously where some regional development agencies invested directly in infrastructure in development areas. The proposed method might be thought of as a new method of funding development agencies' work.

As with scenario 2 and explained further in question 5 and 12, customers already face a limited set of choices in connection and this range should not be further constrained by requiring customers to connect to a specific part of the network; conversely proceeding with the DevCo model without this restriction should increase choices, increase competition and at the margins slightly reduce the monopoly nature of distribution.

Other than the restriction noted above, we are supportive of this scenario which allows a first comer, or third party (egg a DevCo), to elect to invest more than is needed at present with a view to recovering it from subsequent connectees.

A development company will seek to invest in an area where connections customers would value anticipatory reinforcement and will be willing to pay for it. Connections customers will have the option of paying a premium for a connection to the reinforced network or accepting a connection to the general network. If the reinforced network is cheaper or the connection is sufficiently faster to be of interest given the price differential, then presumably the customer will connect to that reinforced network. This places choice with the customer and the customer can choose what they value and how much they are willing to pay for it.

There would be no need to regulate the specific premium in this instance. However regulations governing, for example, whether the same premium must be applied to all connectees or whether all connectees should be treated equally, might be desirable.

Whatever approach was taken, care would have to be taken to ensure that anticipatory reinforcement did not become too attractive, to the point that the costs of investments which prove to be unnecessary outweigh the benefits of the faster or cheaper connections that result when the investment is useful. It would also be necessary to ensure that any reinforcement under the "anticipatory" banner truly fitted the definition to avoid any potential boundary issues (such as exactly how reinforcement is classified, its exact timing, and the extent to which anticipatory investment may simply "crowd out" shared connection costs that would have been incurred under the current system).

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

We have an example of investment in a specific development area by the then regional development agency (RDA), albeit indirect investment, and is the type of project that might be undertaken by DevCo's on a direct basis.

In this instance the RDA was forecasting growth in a localised area on the back of the regeneration work. We were not sufficiently confident in the regeneration work producing load growth that investment was deemed necessary; however the RDA was willing to underwrite the costs of the reinforcement should the load growth fail to materialise and on this basis the investment proceeded. In practice there was some growth in the area, but the load growth did not materialise to the RDA's expectations. As a result the RDA refunded a portion of the investment made by NPG that would otherwise have been funded by DUoS customers.

It is worth noting that the DevCo would essentially assume a similar risk if load did not materialise.

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

We think that for the same reasons as we have given in answer to question 5 it would not be right to require subsequent connectees to connect only to the enhanced part of the network.

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?

A premium would be justified provided it was within a free and competitive market, and reflected an appropriate risk/reward balance.

The premium would be justified provided connections customers have the option of paying the premium for a connection to the reinforced network or accepting a connection to the general network. If the reinforced network is cheaper or the connection is sufficiently faster to be of interest given the price differential, then presumably the customer will connect to that reinforced network. This places choice with the customer and the customer can choose what they value and how much they are willing to pay for it.

The premium could be left to the market to decide. There would be no need to regulate the specific premium in this instance. However regulations governing, for example, whether the same premium should be applied to all connectees or whether all connectees should be treated equally, might be desirable.

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

This, like the premium, could be left to the market to decide. Parties providing funding who seek to be reimbursed too quickly might price themselves out of the market, while those allowing slower reimbursement would increase the level of risk to which they are exposed. Provided the connecting customers have choice over whether to pay the premium or pursue a non-premium connection to the general network, there would be no need to regulate the reimbursement period. However regulations governing, for example, whether the same premium should be applied to all connectees or whether all connectees should be treated equally, might be desirable. And for any circumstances where competitive options for new connectees may not be viable, then backstop regulation is also likely to be desirable.

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?

We cannot see ground to justify this restriction on customer freedom and competition.

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?

We have no comments to make on this Appendix.

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?

We are supportive of a review of standards. We support innovation and the challenges that presents to existing standards, and we appreciate the need to review, adapt and modernise standards in a timely manner to accommodate new ideas and innovations. For example, protection standards do not currently cater for electrical energy storage devices such as a battery inverter arrangement.

We already allow connectees to elect to have non-firm connections and for the purposes of P2/6 such connections are not included in the immediate load group, thereby significantly reducing the connections driven costs at a small increase to supply reliability risk. The connectee enjoys the vast majority of both of the benefits and the risks of this arrangement, although there they can also be of benefit to DUoS customers in terms of cost.

Connectees can also elect to accept non-standard voltage limits; however these choices should not affect other customers. Again this will reduce connections driven costs, the vast majority of which fall to the connectee, at a small inconvenience (perhaps no inconvenience depending on the customer's equipment) to the connectee.

In both these cases these are appropriate offerings because the connectee gets to make the risk-reward choice. It is expanding choice for the customer.

We would not encourage reductions in standards; this includes reliability, protection and power quality standards, where there is a significant effect on existing customers, as this would be imposing risk on these existing customers at little benefit to them and without allowing them a voice in the decision. This does not of course preclude the review of standards for the benefit of all.

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

The process might benefit from a review framework for reliability, protection and power quality standards which encouraged the timely incorporation of ideas to address the changing nature of the demand (both load and generation) connected to distribution networks. This might not lead to any specific change; however we note that protection standards do not explicitly and adequately cover some forms of energy storage.

4.2 Reducing the need for reinforcement by managing connection offers

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

Allowing DNOs the option to charge customers an amount in advance for a full connection offer will bring the following benefits for customers.

- Reduced diverted resources. Reducing the number of speculative requests will enable DNOs to devote additional time to the more developed applications they receive.
- Faster response times. With DNOs developing more information online and reductions in abortive detailed design work the average time to provide a formal connection offer should be reduced whilst at the same time allowing DNOs more time to discuss specific requirements e.g. utilising smart grid options
- Fairer charge allocation. A&D charges will be met only by the party that causes the costs to be incurred.

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?

The description of the flexible manner of assessing connection capacity already generally reflects the method within NPg. Because interactivity can reduce as well as increase the costs of the second and subsequent connectees there is no single solution. We seek to discuss the issues with customers making them aware of the issues at an early stage in the process. Interactivity is a complex issue and there are likely to be improvements that will be made over time both in tackling interactivity itself and the process to manage the issues interactivity creates.

We recognise the importance of maintaining and applying a consistent set of rules to manage any interactivity or queue with connection requests. This has become particularly pertinent with distributed generator connections in areas where output is constrained. This is a key area where we expect the rules to be developed through time as constraint management processes change.

However we do not think that at this time there are significant opportunities to improve the management of interactivity that could make a contribution that would materially speed up the connections process.

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

Capacity that has been offered and accepted might be withdrawn if reasonable progress is not being made on the development being connected; for example if planning has been rejected and there is unlikely to be a successful appeal. We would seek to do this by mutual consent. Capacity that has been energised might be withdrawn if it is not being used; again this would normally be by mutual consent.

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

We always seek to minimise reinforcement in line with our obligations and the incentives placed upon us.

Education of customers, and their consultants, with regard to proper assessment of their actual requirements, particularly with regard to diversity calculations and time of use, might allow connectees to make smaller capacity requests.

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?

Where payment terms can be made more flexible and 'customer friendly' without materially altering the cost and risk borne by DNOs and their end users, the impact can only be positive. DNOs have incentives through the Ofgem customer service and connections arrangements to pursue such improvements.

Flexible terms could be offered where the increased reward to DNOs and DUoS customers meets the increased risk imposed by not collecting connections payments up front. The increased risk varies both with the risk profile of the connectee and the length of time that the DNO and/or DUoS customer are exposed to that risk. Clearly if the DNO is accepting more of the risk then it would expect more of the reward, while if the DUoS customers are accepting more of the risk they will expect more of the reward.

Whoever bears the risk – whether it is the DNO's shareholder or the generality of customers – the standard WACC applied to normal investment (which reflects the risk of a distribution business that does not expose customers or shareholders to these additional risks) would be too low and would not allocate the risk properly to the customer classes that would be giving rise to that risk.

At the same time other, competitive, routes to obtaining finance already exist, with organisations that are expert in assessing credit and default risk associated with lending to projects and businesses.

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

Schemes which struggle to obtain credit from normal sources may benefit most from this arrangement. This will generally be the higher risk or schemes or those with less certain outcomes, for example where companies do not have a good credit history, where rates of return are lower than might be expected, where there is a long time period between investment and the income, or where the profitable life of a development is uncertain. The risk of a DNO becoming a financier of last resort should be avoided.

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

There may be a case for DNOs accepting this risk and not seeking to offset that risk onto the generality of DUoS customers, however DNOs would need to be appropriately remunerated for carrying that risk.

There is a competitive market already in existence for provision of finance. This market is skilled and experienced in understanding the financial risk developments pose and there are many players within it. It is reasonable to assume therefore that the associated interest rates or returns expected by these types of investors reflect a fair view of risk and return.

Any DNO which provides such finance should do so on similar competitive terms. The rate of return assumed in the regulatory settlement would not be appropriate for higher risk investments of this type.

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

Potentially the linking of generation and demand customers such that the net size connection is reduced might reduce the connection's cost and timescale. A brokerage system might assist with this.

Such a broker might facilitate negotiations between generation and demand intending to develop within a similar area to nest their two developments within one site on a single connection. This nesting might reduce the net size, and therefore costs and timescales, of the connection.

Such a brokerage might form a commercial opportunity in the longer term, however Local Enterprise Partnerships (LEPs) might undertake this role initially.

It should be noted however that this might lead to a higher risk/lower reliability connection as loss of either demand or generation might necessitate a reduction in the other. If local customers understand and accept this trade off it may be attractive.

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?

The development company option (as described in scenario 3) probably provides the greatest opportunity. It creates a new commercial opportunity in the competitive market and places less risk on the existing DUoS/DNO framework, thereby preserving its low risk, low return status.

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?

Where NTBMs can provide benefits to DNOs or DUoS customers, then the regulatory regime should not disincentivise DNOs from adopting or facilitating them. If there are considered to be wider societal benefits that can be released by NTBMs, wherever possible the value of these benefits should be internalised within the regulatory arrangements so that participants can factor these into their investment decisions. It would be better to avoid arrangements where regulators make judgements (especially *ex post* judgements) about which NTBMs are especially worthy of recognition or reward.

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

No.