

Environmental Services

Ed Potter – Head of Environmental Services



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Dear Ms Frerk

RE: Quicker and more efficient distribution connections

We welcome the opportunity to respond to this consultation and would advise that we are in a relatively unique position, representing a planning authority which stretches across two distribution network operators (DNO's) and exposed to some of the different approaches of each.

We agree that the place of the historical DNO setup from large single generators, through the national and local grid to end users, is fast changing with an exponential increase in the numbers and size of distributed generators. As a result we agree that the need for changing how the electricity grid is upgraded and interacted with is of prime importance, particularly with the effective changes to take significant time to implement and the complexity of the proposals. Furthermore we recognise Ofgem's intentions to change the existing status quo which must not be allowed to continue, as failure to act will severely restrict and stunt the economic growth and development of, at the least, Oxfordshire if not the rest of the UK. Specifically, the grid in both parts of rural and urban Oxfordshire is at maximum capacity, business investment has already been curbed and implications for the future have the potential to be seriously damaging.

Following discussion by an Ofgem employee encouraging comments wider than this consultation, we have commented on further aspects.

If you have any questions concerning this please do not hesitate to contact me

Kind Regards

Sam Thomas

Carbon and Energy Officer

Scenario 1 – DNO funds cost of anticipatory reinforcement with costs being passed back to customers

With regards to this approach, given that the DNO's are in effect a heavily regulated natural monopoly, we understand that every aspect of their business will have cost implications for their customers. We understand that under the RIIO-ED1 anticipatory reinforcement has been allowed in some situations, specifically the creation of 2x132kv circuits from the GSP at East Claydon over 12 miles to a new 32kv/132kv substation at Bicester. This will cost approximately £30million which is being passed onto every customer of Southern England. (Technical appendix 3 of the RIIO-ED1 business plan of SSEPD, 2013).

Following discussions with the DNO we understand the earliest this upgrade will occur is 2019 – 2020, but this upgrade will require Secretary Of State approval, compulsory purchase orders and works under the assumption that there will be no legal challenge from various groups opposed to the upgrade. As a result, and given the current rate of progress, we believe this is a highly ambitious timeline and it will likely be a number of years later - certainly into the next decade.

It should be noted the local electricity grid is already at or near maximum capacity in this area. We are aware of a community energy project agreed between a local industrial and provident society and a local business to install 250kWp of solar pv; the cost of connection to the electricity grid was quoted at £530,000 – more than the entire install was worth and relates to upgrades to the 132kv substation in Headington. At a similar time the option for a 50kWp connection was approximately £1,500. Following discussions with the DNO, options relating to an install of the 250kWp and 0% export, private wiring, storage technology and plug and play options were all discounted. The DNO advised that the reduction in demand in the area would increase the load to an unacceptable level. We understand a nearby 132kv substation in Yarnton is similarly at capacity and in effect any new connection above 50kWp cannot be installed on this area of the grid: this area ranges from the majority of West Oxfordshire, large parts of Oxford City and approximately half of Cherwell or approximately 1/3rd – 1/2 of the entire population of the county.

We do understand the upgrades to the Headington substation and further substations at Yarnton and Cowley (400kv) have all been paid for by other developer. The works will take until approximately 2017 to be completed, and in effect, as we understand it, blocking new connections above 50kWp until this date and possibly after.

In essence this has already impacted the development of several community energy rooftop solar pv projects which total a loss of 175kWp of lost capacity, some of which are in the Prime Ministers' constituency of West Oxfordshire. This, in addition, has put a halt to more than 4MWp of new rooftop solar pv community energy projects at various stages of development on both businesses and schools in Bicester. This already represents the loss of millions of pounds of investment into the local economy, not to mention projects in the City and other nearby settlements.

Furthermore, Oxfordshire is expected to build approximately 100,000 new homes along with associated business premises and jobs under the strategic housing assessments and formulated local plans. Under the planning guidelines, which are increasing the energy efficiency and lowering the carbon footprint of the buildings, many are being designed with solar pv installed or heat networks complete with Combined Heat and Power. Our planning teams have written to SSEPD and WPD, which cover Oxfordshire as key stakeholders being utilities providers, who have both advised that this growth will not be a problem. As we understand the current role of the DNO with new connections, no applicant can be denied with the costs of any application, however complex or difficult, being passed onto the applicant and therefore have concerns that any DNO would not be in a position to advise against the local plans being buildable. As such ever increasing and significant sums of money will be needed to build these new connections prior to the major

upgrade agreed in the RIIO-ED1 being enacted. We have concerns that the increasing costs will force developers away from the area which will literally be restricting the economic growth and financial development of an economy which contributes £15.5billion to the national economy (Oxfordshire ESIF bid, 2014). It is further worth noting that Bicester has recently been awarded garden city status by the coalition government, but this is potentially under threat if no new buildings can be built. These constraints and implications are under investigation and we expect a report to be produced in the coming months.

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?

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

With regards to both of these questions, as detailed above, we have a DNO which is already predicting demand and has taken steps to implement anticipatory upgrades. We have significant concerns about whether this will be successful or completed in time. However, we do recognise the significant need of this upgrade.

We note that there is currently little need or incentive for the DNO's to seriously interact with the future planning teams and the local growth plans of the local authority, or provide little more than a letter noting the plans. As a result we have concerns regarding the DNO's approach.

Furthermore, there is a distinct lack of transparency concerning the DNO's; we have regularly received conflicting information and have found the entire process to be lacking in transparency. Specifically: meeting notes with one DNO taking months to be signed off (if at all), the calculations are opaque and not being explained fully in a clear manner, responses regularly take weeks and the upgrades themselves can often take many months if not years to be implemented which is also not explained. As more and more distributed generators interact with the DNO's the need for transparency should be paramount in order to build confidence in any system. In addition the lack of transparency is a particular problem for small and independent distributed generators who often lack the detailed knowledge needed to understand, let alone challenge, a DNO's response which can vary between operators. We realise that in the last few years this has improved but it still has a long way to go before it reaches an acceptable level.

In the case of Bicester, discussions with the other DNO's such as WPD have led to confirmation that this is a common issue, but the blocking of distributed generation to ensure demand on parts of the grid has other solutions. It was noted that in the event of the company moving or going bankrupt the problem would still be created with less time to find a solution. Other DNO's advised they would either take the risk knowing that there is spare capacity in the system (with the issue only likely to occur for a few hours per year if at all) or prefer to work with the applicant to find a technical solution. In essence, however, all pointed to a very strict regulatory framework but it was made clear from these discussions that the interaction and acceptable level of risk viewed by the DNO's is vastly different. As mentioned previously, we understand the need for the regulation of a natural monopoly but the different interaction is in effect creating regional distortions. It is becoming clear that some DNO's either have an appetite to interact with the new technological solutions and work with distributed generators or actively blocking these solutions citing an unacceptable level of risk. With the potential implications on the growth of the economy detailed above there is an unacceptable level of difference between DNO's concerning risk.

Scenario 2 - DNO funds 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?

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

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

We would welcome this approach in order to ensure closer interaction between grid upgrades and the planning authorities, however we have concerns linked to those mentioned previously. The timescales of upgrades are over lengthy time periods and are often needed immediately: given the different interaction of risk by the different DNO's there could be a concern that the DNO would always ensure the upgrade is behind the date required. This would, in effect, ensure that there would be significant numbers of customers to connect and the DNO would rarely financially be at risk, however the drawback would be a limiter on economic development. The potential implications for this would be larger generators, with a large portfolio of projects, preferentially investing money into the regional areas of the DNO's prepared to take a greater element of risk.

Furthermore, we recognise the need for there to be a greater degree of independent generators alongside the established role of the larger generators. In this situation, any anticipatory upgrade could quite easily be wholly taken up by the larger generators who would have more financial backing and experience to interact with the DNO's at a level the independent generators are not able to. In addition, the smaller independent generators would often be looking at a fixed site(s) and therefore would be disadvantaged if required to only connect to newer grid networks. Additionally, in the situation in Oxfordshire, it would be difficult to determine which part of the grid is the 'new' part and which is the 'old'. The upgrade would release capacity elsewhere on the grid and has implications across Oxfordshire or specifically the neighbouring 33kv system running through Yarnton to Witney.

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?

We recognise the benefits this model would bring in joining together the potential option for a greater degree of linkage with the local plans. However it should be noted in the case of Bicester the cost of the upgrade was £30 million, the total sum provided to the Oxfordshire LEP was approximately £17 million, and the financial position of local authorities is often in a precariously declining state. The investment required and the timeframes involved would both be significant and would not always be available; requiring significant third party investment which could skew the aims of the DevCo.

As mentioned previously, there are significant concerns relating to the transparency of certain DNO's especially given the level of money that would be required to be invested.

Scenario 4: Other ways of making it easier to connect

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?

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

As mentioned previously, the different DNO's appear to work with a different attitude towards risk, specifically surrounding the engineering standards. However, we understand the biggest stress distributed generation causes on the electricity grid are the spikes in demand and generation, with the substations in effect not being able to warm up or down correctly. With the nature of the technologies available it is possible to counteract the problems; however the existing electricity grid (at least in Oxfordshire) is archaic and requires significant investment.

Specifically, the DNO's have limited knowledge of electricity demand, the substations and circuit breakers cannot tell which direction the electricity is flowing and in effect the DNO's control systems are not fit for purpose on a modern grid. A greater degree of knowledge of what is happening on the electricity grids themselves should facilitate a more accurate picture of the problems and target upgrades accordingly.

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

As noted previously, the option of flexible plug and play is an option elsewhere in the country but not in Oxfordshire, which has a significantly constrained grid and many mooted projects with export levels at minimal percentage. These projects have been rejected in effect due to the 'worst case scenario approach' by the DNO. The plug and play option would not impact significantly on the finances of the projects at all and would enable them to go ahead whilst also reducing the risk to the DNO accordingly.

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?

In the case of the different scenarios we believe that enacting them, as they are currently proposed, will not solve the myriad of different issues. Each one has its advantages and disadvantages. How Ofgem intends to overcome the supplementary issues beside this is the key, specifically the interaction of the DNO's with the planning authorities, the current archaic grid and the lengthy timeframes of any new upgrade sitting against the local plans, the different approaches of the DNO's to levels of risk and the interaction with the DNO's with new technological solutions.

Two things are clear, however, in our opinion: investment and anticipatory investment is overdue and the blocking by DNO's of distributed generation with 0% export is obtuse and unethical.