

Question 1: Do you agree with our problem definition and that the Transmission Network Use of System (TNUoS) Demand Residual (TDR) payments to sub-100MW Embedded Generation ("smaller EG") are distorting dispatch, wholesale price, the capacity market (CM) and that they pose an increased cost to consumers?

We disagree but note that we have yet to see any substantive analysis of the perceived "problem".

We recognise that increased competition from smaller EG may constitute a problem for large transmission-connected generators but it seems illogical and contradictory to conclude that smaller EG are putting extra costs on to customers while at the same time reducing the wholesale price, depressing prices for dispatched plant and reducing the clearing price in the capacity market.

Taking, therefore, each of the above aspects of the perceived "problem" in turn:

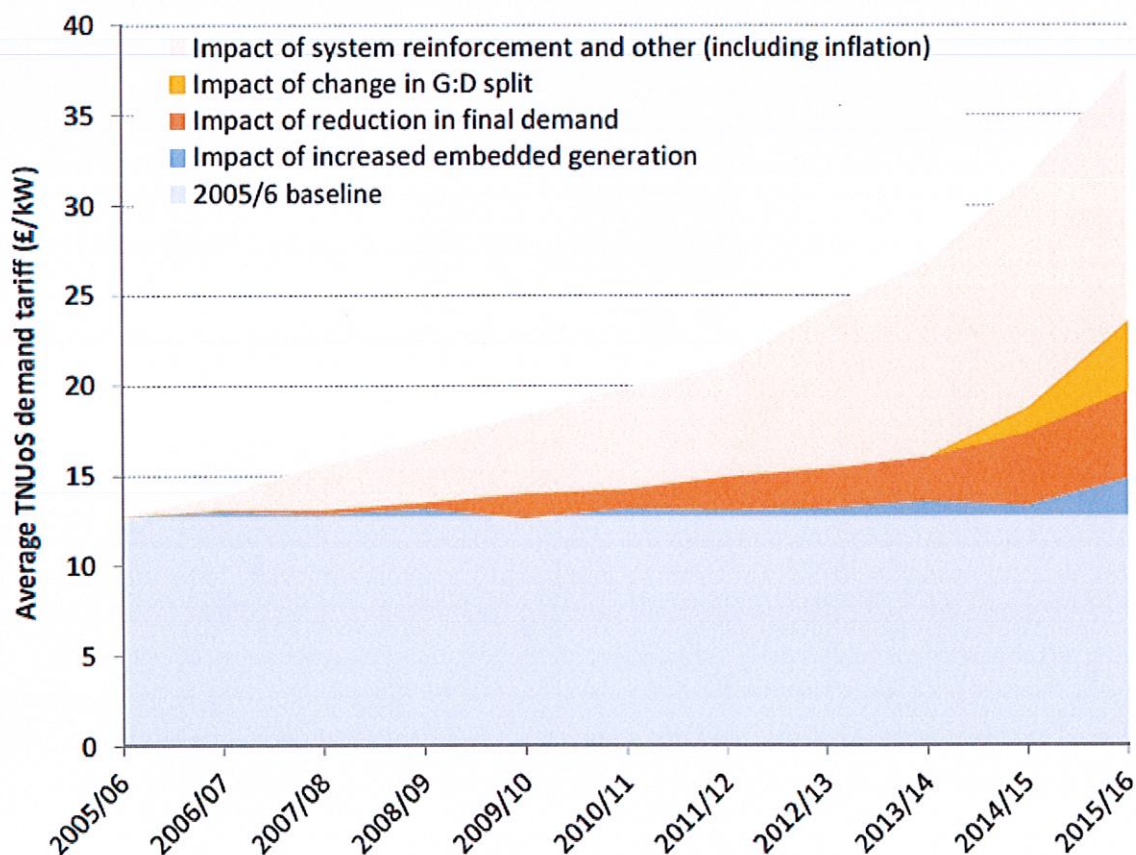
- **Wholesale price** – virtually all EG is sold on forward contracts, sometimes by up to 15 years. This means that the pricing for these plants is relatively stable and will have limited effect on any prices shorter than seasonal (summer and winter) pricing. The key drivers of wholesale power pricing in the UK are undoubtedly global oil and gas prices and, in the longer term, new entrant costs and the cost of carbon.
In the shorter term the largest volatility in power prices has come when nuclear power, either in the UK or France, has been withdrawn unexpectedly or when the cross border interconnectors have been unable to supply adequate power.
Whilst we recognise that smaller EG can reduce wholesale power prices, this is to the benefit of the consumer. When compared to other influencing factors on wholesale price volatility, smaller EG is also a relatively minor concern.
- **Capacity Market** – claims that distributed generators are causing low clearing prices in the CM are partially true but are a smokescreen which hides the real cause of distortion. By far the largest distortion is caused by large existing transmission-connected generators which have no capital costs of construction and very low marginal running costs bidding in at very low price levels. In effect, the capacity market has become a huge subsidy for large scale nuclear and coal plants which would have operated anyway without need of CM payments. If the highly polluting coal plants and the fully depreciated old nuclear plant were excluded from the auctions we would likely see a jump in clearing prices as well as a faster reduction of greenhouse gases in furtherance of other consumer interests.
Moreover, smaller EG only wins around 30% of capacity market contracts, largely on the basis of its lower cost of implementation, locational flexibility and greater desirability among suppliers. Our understanding, based on the above factors and the analysis of industry commentators, is that any distortion of the CM clearing prices based on existing residual payments to smaller EG is very limited and lower clearing prices are in any event good for the consumer.
- **Dispatch** – very little smaller EG is centrally dispatched and smaller EG does not generally take part in the balancing market. As such, smaller EG should have very little impact on short term dispatch pricing. Most smaller EG which participates in the CM is contracted far in advance of delivery and is able to provide a stable output at a fixed price in the best interests of consumers and suppliers alike.
Within day spikes in dispatch prices are much more likely to be caused by unexpected outages on large conventional plant or by unexpected weather conditions affecting the large

transmission-connected onshore and offshore windfarms. Smaller EG is a mitigant for these other distorting factors and is wrongly labelled as the cause of a distortion problem.

Question 2: Do you agree that rising TDR payments to smaller EG is a problem which needs to be addressed?

We disagree. We agree that rising residual payments are an issue in as much as that the way they are calculated is flawed but believe that rising TDR payments to smaller EG are a symptom of other problems rather than the problem which needs to be addressed.

Smaller EG currently pays the full cost of network reinforcement and sole use assets attributable to its installation. Offshore transmission network owners (OFTOs) in contrast incur shallow connection costs which do not reflect such reinforcement and this is causing the overall residual value to rise as these avoided costs are passed on to everybody else - the following graph produced by Poyry using BEIS and National Grid data supports the view rather that this is the single largest factor in TNUoS rises.



Source: Pöyry analysis of NGC and DECC data

Transmission-connected generators are also only paying a fraction of the costs required to connect them to the network because of the currently applicable EU cap of €2.50 on the level of TNUoS charges which may be directly imposed on generators. This again means that large sums must currently be recovered elsewhere, pushing the TNUoS demand residual to higher than necessary levels. Within the potential timeframe for implementing measures here, however, this cap seemingly need not be a limiting factor.

It is our opinion, therefore, supported by the above analysis that embedded generation is a relatively insignificant cause of rising TNUoS charges. Whilst acknowledging that this is the subject of a separate consultation, therefore, we would suggest that changes to TDR payments should be

considered as part of a wider review of transmission network charging which takes into account the more significant contributing factors to rising charges highlighted above. It is also our opinion that the residual calculation methodology needs to be rewritten to more accurately reflect actual network charges and the amount of reinforcement avoided by embedded generators and that the calculation as currently proposed does not achieve this.

Question 3: Do you agree with our interpretation of the applicable CUSC objectives?

Whilst we agree that Ofgem have correctly identified the applicable CUSC objectives, we do not agree with Ofgem's interpretation either of the status quo or the likely implications of the "minded to" proposals against those objectives. The interpretation is without the benefit of a detailed analysis of the market in which perceived distortions resulting from payments to smaller EG are asserted and "minded to" proposals are made for which there is, therefore, inadequate support. No single market factor can be taken in isolation and it is accordingly not clear from the impact assessment of the "minded to" proposals that those proposals will better facilitate those objectives.

Question 4: Do you agree with our assessment against the applicable CUSC objectives and statutory duties? Please provide evidence for any differing views.

We do not agree with Ofgem's assessment against the applicable CUSC objectives and statutory duties nor, as above, do we consider that such assessment is possible without further analysis of the market, substantiation of the perceived "problem" or the output of the TCR/SCR in which other more significant distorting factors and implications of network charging arrangements more generally are considered. In particular:

- **Facilitating and promoting effective competition:**

The CUSC objective provides as follows:

"a) That compliance with the use of system charging methodology facilitates effective competition in the generation and supply of electricity and (so far as is consistent therewith) facilitates competition in the sale, distribution and purchase of electricity; "

We believe that the proposed TCR/SCR is a positive move and should properly assess all aspects of network charging which impact effective competition. We do not understand, however, how this CUSC objective can currently be interpreted or the "minded to" proposals assessed against it and the statutory duty discharged in isolation. The "minded to" proposals are acknowledged by Ofgem as significant and should accordingly properly form part of a significant code review.

- **Cost-reflective and proportionate charging:**

As below, we believe that the avoided GSP investment would provide an excellent indicator for the value of 'x' and that this, together with the inverse of any positive locational signal which demand users pay, would provide a basis of charging which is cost-reflective of the value of smaller EG.

We do believe, however, that the work done to date for the purposes of the impact assessment and "minded to" proposals falls well short of that required to calculate a fair and accurate avoided GSP investment cost as the basis for "x". The £1.62/kW value that has been chosen by Ofgem is based on a calculation made several years ago and which has been the subject of little analysis but which is clearly critical to the "minded to" proposals being made. Consideration of the value of the embedded network is notably absent in the analysis and

yet has been funded by generators and consumers and should be reflected in the value of the avoided GSP investment cost.

In our view, implementation of the “minded to” proposals should be postponed or deferred in exercise of Ofgem’s discretion, in order that a value of “x” can be properly considered in addition to the completion of the TCR/SCR.

- **Non-discrimination:**

Due to a lack of analysis and support for the perceived “problem” and focus on that sole factor in isolation without the benefit of the wider TCR/SCR, the “minded to” proposals are in our view discriminatory against smaller EG.

It is important that Ofgem assess and ensure that any potential conflicts of interest arising in CUSC panel representation and through whom CUSC modifications and WACMs are ultimately referred to National Grid, do not ultimately result in a discriminatory outcome.

- **Transparency:**

As above, we have particular concerns as to the transparency of analysis and evidence for the perceived “problem” which appears rather to have been assumed and the alternative proposals for change then considered against the CUSC objectives and Ofgem’s other statutory duties.

This reflects our concerns, as a member of the working group, with the transparency of the CUSC modification process from which the proposed changes are derived. Evidence and analysis was notably lacking particularly in the latter stages and yet effective industry consultation is clearly vital in the context of any significant changes and necessary for proper regulation. These concerns are amplified by our observations on governance.

- **Proportionality:**

We do not believe that the “minded to” proposals are proportionate for the following reasons:

- i) the perceived “problem” is not properly analysed or substantiated and is considered in isolation without the benefit of the TCR/SCR, notwithstanding that the proposed changes are significant;
- ii) the value of “x” is out of date, has not been critically evaluated and in our view is disproportionately low as regards the true value of smaller EG through avoided GSP investment; and
- iii) the implementation date is too early given the significance of the changes proposed and the need to complete the work in (i) and (ii) above prior to implementation.

In summary, the “minded to” proposals should be postponed, or the implementation date for their phased introduction deferred to April 2020 through exercise by Ofgem’s of its discretion, given their significance and so as to enable the CUSC objectives to be considered and Ofgem’s statutory duties

freely discharged in the context of the output of the proposed charging review when available, including the fair value of “x”.

Question 5: In our assessment against the objectives, do you believe there are any relevant assessments we have not taken into account?

We believe there are many relevant areas that Ofgem have not taken into account. Indeed we believe that the Authority have only focused on one very small area, the demand residual, and that this area also warrants more detailed analysis.

In order for Ofgem properly to assess whether the “playing field” is level we believe that the parameters of the playing field first need to be determined. We have heard much about the disadvantage to large transmission-connected generation in relation to embedded benefits. On the other hand, we have heard relatively little on the following subjects:

- Cost of connection – transmission vs embedded connection costs
- Cost of the embedded network – embedded generators have paid many £ billions to construct the embedded network and face ongoing use of system costs. Transmission connected generators do not pay to send their power across these networks and therefore the logic follows that such generators receive a ‘non-embedded benefit’ in the form of avoided DUoS charges
- Balancing costs – large organisations can effectively cross-subsidise using large portfolios
- Power price discounts – smaller EG typically have to take large discounts to access the market, often relying on the owners of large transmission-connected capacity for a route to market
- Intermittent vs baseload - no analysis has been done to differentiate between smaller EG which is intermittent or baseload or to ascertain whether different types of generator provide different levels of support to the network
- Turn down payments – smaller EG have no access to the revenue streams available to transmission connected generators to balance the system. This is despite embedded baseload generators being in the perfect location to do so.
- Black start contracts – it is our understanding that black start contracts may have been issued to some large transmission-connected generators with no apparent tender process.

These are just some of the key factors which we think warrant consideration and should be analysed if a level playing field is truly to be established on a non-discriminatory basis in the promotion of effective competition in the interest of the consumer and in fulfilment of Ofgem’s statutory duties.

Question 6: Do you agree with our assessment that, in this instance, grandfathering as set out in the WACMs would be unlikely to best facilitate the CUSC objectives when compared to the other options available to us?

We agree that grandfathering is unlikely to prove to be the cheapest solution. Grandfathering at current levels for current generators would at least provide stability for investors who have made investment decisions based on long standing charging arrangements and revenue streams and an expectation that any significant changes will be proportionate and non-discriminatory. That stability is clearly important for longer term investment and security of supply. Where significant changes are proposed it is most important, however, that implementation is not rushed and that the basis for

change including a consideration of all relevant factors and the consequences of their implementation are properly assessed prior to their implementation.

Question 7: Do you agree with our assessment that the value of the avoided GSP investment cost best facilitates the applicable CUSC objectives?

In principle we believe that the avoided GSP investment would provide an excellent indicator for the value of 'x' and that this, together with the inverse of any positive locational signal which demand users pay, would provide a basis of charging which is cost-reflective of the value of smaller EG.

We do not, however, believe that the appropriate work has been done to calculate an accurate value for the avoided GSP investment cost. As can be seen from the various WACMs, there is a wide range of proposals for this value. The £1.62/kW value which has been chosen by Ofgem is based on a calculation which was made several years ago and which has been the subject of very little analysis. This is deficient given the significance of this value for the purposes of the "minded to" proposals being made.

The value of the embedded network, funded in large part by generators and consumers, has also consistently been ignored during debate on the value of "x" and yet logically this is the minimum value of avoided GSP investment costs. The value of the embedded network has not been calculated in the impact assessment but, based on an assumption of 20GW of embedded generation and many millions of users, the value is significant and it is simply not reasonable to argue that this value should be £1.62/kW.

As far as we can ascertain, only Cornwall Associates have made any attempt to model this figure which they calculated to be in the range of £18.50/kW to £32.30/kW depending on the treatment of long term costs offset by embedded generation (the latter value being for the Association of Decentralised Energy – May 2016 report). Ofgem's decision to reject Cornwall's £18.50/kW proposal without further analysis is disappointing.

We urge Ofgem to defer implementation of the proposals whilst an up to date and appropriate calculation of the value of avoided GSP investment costs is conducted.

Question 8: Do you agree with our assessment of the impacts on security of supply? Please provide evidence for provided views

Whilst the risk should not be overstated, we believe that it is self-evident that removing a revenue stream runs the risk of generating capacity not being built, being retired sooner or not being available when most needed. Of these, we believe that the greatest risk concerns new build plant, particularly in the capacity market, which had projected a significant proportion of revenues from triads.

Ofgem should not underestimate, however, the wider impact of piecemeal regulatory change, particularly to significant and stable long term revenue streams, on long term investment decisions on which the sector and in turn consumers rely for security of supply. We recognise the importance of promoting value for money for the consumer but seemingly rushing through significant changes to charging arrangements without evaluating key numbers or conducting the TCR/SCR necessarily required to understand the context in which those changes are proposed is in our view not in the best interest of consumers overall.

Question 9: Please provide evidence to show if there are other cost savings which small EG drive in comparison to larger (over 100MW) EG on the distribution system.

The main cost saving that is driven by smaller EG is that much less reinforcement is required to connect smaller generators to the distribution system. Building smaller plant nearer to the end user means that line losses are significantly lower which if deployed on enough scale leads to more efficient movement of electricity around the network and subsequently cheaper energy costs. Smaller EG accordingly enables a nimble, cost-effective decentralised energy system which should be the ultimate goal to ensure local supply, minimal network costs and security of supply.

Question 10: Is there other evidence that payment above avoided GSP/generation residual would better facilitate the applicable objectives?

We believe that Cornwall Associates have already laid out clear evidence for the value of the benefits provided by embedded generators. Ofgem appear to have dismissed this helpful contribution from Cornwall Associates claiming the work is flawed but with little other reasoning. The £1.62/kW value of "x" is poorly calculated and not reflective of the cost saving. We believe that if the number were to be calculated robustly and accurately as has been done by Cornwall Associates then Ofgem would find much greater levels of support for their proposals.

Question 11: Do you believe you have a legitimate expectation or contractual right for the continuation of TDR payments? If so, please provide evidence.

We are not aware of our having a contractual right for the continuation of TDR payments. Ofgem are properly placed to consider any legitimate expectations which may have arisen from past statements or conduct.

We do believe that we have rights to expect a decision which ultimately is rational, proportionate and made after proper consultation. We also believe that we have a legitimate expectation to a process and timetable for implementation of changes which is reasonable and proportionate in the context of changes proposed.