

Our Ref
Your Ref 211/05

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Dear Colin,

Enduring Transmission Charging Arrangements for Distributed Generation.

EDF Energy is pleased to have the opportunity to respond to this consultation on longer-term charging arrangements for distributed generation.

We agree with the central premise of this consultation document, that the current charging arrangements contain anomalies which, whilst undesirable at the moment, will become more pronounced as increasing volumes of distributed generation connect across the United Kingdom. Historically, distributed generation has been seen largely as an avoided cost, but it does impose operational and infrastructure burdens on network operators and these are becoming increasingly significant. This means that it is important to establish an enduring solution now – even if it is one that takes time to implement – rather than waiting until these issues cause major problems for transmission and distribution networks.

The consultation also covers issues which are less to do with the application of charges but also need to be addressed in order to provide an enduring solution. These include the way in which System Operators are able to manage their networks by having visibility and control of significant demand and generation users and finding the best UK-wide technical solution for moving energy from generators to centres of demand and hence provide the proper framework for ongoing network development.

In principle we believe that all network charging should be cost-reflective as this provides system users with the proper incentives to locate in places where they can benefit the total system. Where there are significant advantages to a generator in locating in a particular part of the country – e.g. a windfarm locating in the north of Scotland where average windspeeds are high – then the generator should be able to make a rational economic decision which weighs up the benefits of additional income against the cost of transmitting and distributing the electricity generated to where it is required.

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The charging framework should encourage generation to connect at the most technically efficient voltage and location rather than giving rise to artificial commercial incentives and sub-optimal connections in some parts of the country. This would provide efficiency by minimising transmission and distribution losses and matching generation to demand.

However, it is also necessary to be pragmatic, rather than dogmatic, about the extent to which cost-reflectivity can be realised without placing undue burdens on network operators or adding additional administrative costs. For example, it would not be practical to model lower level distribution voltages on a nodal basis due to the sheer size of those networks and the complexity and transparency required to run any such model.

In addition it is important to consider the impact that any change in generation tariffs will have on demand tariffs, particularly for those users who are unable to respond to locational signals or avoid Triad charges. Certain of the options, most notably the IDSO agency, would also impact on demand customers because the solutions would be unworkable if only applied to generation.

We also believe that the enduring solution should aim to avoid fundamental change to the market structure which is likely to be expensive and create instability. Some significant changes may be required, but these should only be those necessary to achieve consistency within the market. It is also important that the solution does not distort competition by increasing the market dominance of any participants.

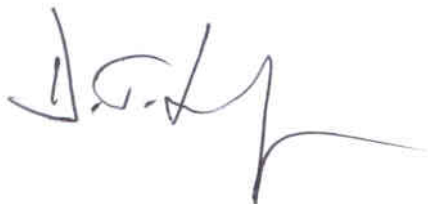
Some of the other issues are more subtle, the proposed solutions to the exporting GSPs seem to presuppose that these will all be in the north of the country and that any access charges will therefore be positive. However, there are GSPs within southern GSP groups which can export at the moment, or are very close to doing so. If charging is to be consistent, then embedded generators contributing to these power flows should be paid the transmission part of any charges if they are in generation zones where transmission charges are negative. How exactly this would work in practice is an area which will require further consideration.

The proposed options are not all mutually exclusive and the enduring solution could incorporate elements of more than one of them. Accordingly, we believe that there is merit in considering further the option effecting a common charging methodology and models to incorporate parts of the distribution network and that of creating a consistent liability for charges. However, we believe that the DNO Agency model is the best of the options and is certainly worthy of further development. An additional advantage of this option is that in future DNOs will have to actively manage their networks to a greater extent than at present, irrespective of the commercial arrangements,

There are more detailed comments on the main problems with the current arrangements and a critique of Ofgem's proposed solutions below.

We hope that you will find these comments helpful. If you have any queries please do not hesitate to contact Stephen Moore on 020 7752 2524 or myself.

Yours sincerely

A handwritten signature in dark ink, appearing to read 'D. Linford', with a long horizontal flourish extending to the right.

Denis Linford
Director of Regulation

Anomalies and problems with the current network frameworks.

There are a number of areas where the existing market arrangements do not provide consistent incentives for participants or where the development of the industry has superseded existing charging methodologies and codes. It is our contention that these discrepancies will become more pronounced as the volume of distributed generation increases and that these are not sustainable in the longer-term. The most important of these are:

- The step-change between distribution and transmission charging in Scotland and the north of England creates an incentive for generators to connect to the distribution network even if they are generating electricity to meet demand further south. We believe that the current charging regime encourages inefficient decision making, whereas it should encourage generation to connect at the most technically efficient voltage and location.
- The rising number of exporting GSPs will have an impact on the operation of the transmission network. Whilst CAP093, if approved, would allow GSPs to export under the CUSC, it would not resolve the issue of generation gaining access to the transmission system without paying for that access or the concerns that National Grid have about unrestricted power flows onto the transmission network.

In any case, there is still a question of who should be responsible for say 20MW of export where there are four 20MW generators in close proximity to a GSP; should it be the last to connect or should they all be liable for part of the exported volume?

- The 132kV discount for generation in Scotland connected to the 132kV network is alleged to compensate for the lack of embedded benefits that generators connected at the same voltage would receive in England and Wales. Embedded benefits only accrue where there is demand to net off against generation, meaning that this discount is an unnecessary distortion to the principles of cost-reflective charging.
- The current size definitions are derived from the technical definitions which exist under the Grid Code and the requirements for exemption from the generation license.

Ofgem's options for an enduring solution.

1) Do Nothing.

2) De-energise plant that spills.

Neither of these options provides any sort of solution to the problem. As described above, there are real issues with the current arrangements which need to be resolved before they become unmanageable. Whilst the requirement exists within the CUSC for DNOs to de-energise plant that spills on to the transmission network, to enforce this would be a completely disproportionate and regressive solution to the problem.

3) Amendments to the charging model.

Were this solution implemented, it would refine National Grid's DCLF model to better account for the characteristics of different transmission voltages. This in itself would be an improvement on the current arbitrary discount for generation connected at 132kV in Scotland but it would do little to solve any of the other problems, nor indeed the

perceived difference in treatment when compared with generation connected at 132kV in England and Wales.

4) Extend the DCLF ICRP model to parts of the distribution network.

The introduction of a common methodology and charging models to include the transmission network and parts of the distribution network would create consistent charges for transmission and distribution connected generation at distinct geographical locations and provide a common model to cover 400, 275 and 132kV transmission lines. It would, however, raise a number of issues in its own right:

- Would this require a single charging model (the DCLF extended) or separate models for each GSP group? Is the existing National Grid charging methodology and DCLF model the most efficient solution or are there alternatives which better reflect costs? Does the BETTA model of Scottish Power and Scottish Hydro Transmission running their transmission networks under a single system operator provide a model here? It may be more efficient for DNOs to run their own version of the model and pass on the output to the System Operator.
- To what voltage level would this model reach? Even at 132kV not all generators are CUSC parties and so may not have a contractual relationship with NG. We believe that the model could practicably be extended to include the 132kV network but the volume of data required to model the 33kV network would be too great.
- This would effectively turn bulk supply points into mini-GSPs, many of these substations no longer have bulk supply point metering and it is likely that new or re-developed sites may not have circuit breakers suitable for metering, meaning there would be a significant cost to reinstall metering of sufficient robustness.
- Would the customer pay a transmission charge to both National Grid and the DNO or solely to one who would reallocate money to the other? A single payment may be more efficient.
- Would this change the way in which 132kV demand charges are collected in England and Wales?
- It may be difficult and costly for DNOs to provide National Grid with detailed information on their customers and networks, in any case some might not wish to divulge such commercially sensitive information.

5) Amend use of size definitions as the basis for charging and contractual arrangements.

The current size definitions are a result of technical definitions that originally applied in each of the three transmission areas. To have three definitions of a 'large' power station is confusing, but part of the reason for the different thresholds is the impact that generation has on the local transmission network: is the impact of 20MW of generation in the Highlands of Scotland the same as 20MW on the outskirts of Glasgow?

Any amendment would see more power stations classified as large and therefore potentially liable for a higher level of charges. The threshold for license-exemption would, however, remain at 100MW without an amendment to primary legislation.

Whilst re-aligning the size definitions might represent an improvement over the current situation it would not, of itself, solve all of the current problems caused by inconsistent charging.

6) Create a consistent liability for charges.

In some ways this could have the same effect as extending the DCLF model (Option 4) because transmission and distribution charges would be consistent within geographical areas. However were the residual element of the existing TNUoS charges lost, then charges would become more extreme and possibly more volatile.

Currently the locational element of TNUoS charges comprises only about a quarter of the total revenue meaning that the remainder is recovered from all users of the network. There is a risk that charges that are too extreme would discourage investment by negating the benefits brought about by the change from deep to shallow connection charging.

In addition, such a change would cause several clear difficulties for demand charges which would become more volatile than at present and also be negative in several parts of the country as the demand tariff would be the inverse of the generation tariff. More volatile and extreme demand charges would carry a risk of hurting customers, particularly those in the South of England who are unable to respond to locational signals or avoid Triad charges. The problems which negative demand charges cause have been discussed at length and we agree with Ofgem's view that they are undesirable.

Creating a consistent liability for charges is an effective solution to the problems faced by distributed generation but a model that creates purely locational tariffs will cause as many problems as it solves and is not, therefore, workable.

7) Agency Models.

The concept of an Agency Model could provide a solution to the interactions between generators, DNOs and the Transmission System Operator without necessitating fundamental changes or imposing unnecessary costs on the industry. It would also allow scope for more incremental changes in the longer term were they deemed desirable. There are, however, distinct characteristics of the options suggested by Ofgem which affect the viability of each.

Supplier Agency.

There is a certain amount of logic in the idea that a supplier is best placed to judge whether their portfolio of embedded generation is likely to be greater than their contracted demand. There is however a fundamental flaw which makes this model unworkable; it gives primacy to suppliers who have retained a large volume of demand within each GSP group. This will distort competition and invalidate previous changes to the market such as BSC Modification P100 made to increase the options for embedded generators.

The alternative option of allocating export from a GSP group proportionately amongst suppliers and charging for transmission access on that basis is completely arbitrary and will lead to the cross-subsidisation of charges. It provides no more than a patch to the existing problem of exporting GSPs and no incentive to contract for access appropriately.

In addition the Supplier Agency model ignores CVA registered generation in England and Wales below the 100MW licence threshold. Whilst these generators may have a BEGA they do not pay a TEC under the existing arrangements and to charge these generators TEC for the full value of their export, as large embedded power stations currently do, would remove one of the main benefits of being licence-exempt.

DNO Agency.

The option of a Distribution Network Operator acting as an agent is, from the point of view of a Supplier or generator, the best of the three agency models. The DNO will always have a contractual relationship with generators and is also best placed to understand and manage power flows within a distribution network; indeed many do this already to prevent power flowing onto the transmission network. The DNO could also have an incentive to invest in parts of the network rather than paying for transmission entry access, although this is another area that would require detailed development and a decision as to which costs would be classified as pass-through.

Where a generator accesses a distribution network via an IDNO's network then the DNO will have a contractual relationship with the IDNO to manage power flows between the two; this should not complicate the model unduly.

This approach is likely to be best suited to harmonising the needs of network development at both 132kV and 33kV and therefore meeting the needs of all customers, be they demand or generation. Using this model, the longer-term arrangements for connection and use of system charging can provide the appropriate cost incentives to connectees and users to choose the most technically efficient voltage and location.

Independent Distribution System Operator.

This option has superficial attractions in that it provides active management of distribution networks and avoids any potential for discrimination towards IDNOs. However we believe that this approach will create an unnecessary layer of bureaucracy and complexity and that it will be expensive when compared with the benefits delivered. One advantage of the Supplier or DNO Agency options is that the cost of modifying an existing business are far less than those of creating a new business entity to act as an IDSO. In addition, an IDSO would be another organisation that a generator would need to deal with, in addition to the DNO and offtaking supplier; if the aim of this consultation process is to simplify the current arrangements, then this option fails to achieve that. It would have to apply to large demand customers as otherwise the IDSO would not have a full understanding of power flows on the network it was managing.

Were this solution implemented then it is important that there is no single IDSO as this would be detrimental to competition and provide no opportunities to benchmark performance.