



Open letter on charging arrangements for embedded generation

Response by E.ON

Key Points

- Embedded benefits for embedded generators should reflect the short and long term costs that have been or will be avoided by installing those generators.
- We do not accept or support Ofgem's view that the current locational TNUoS charge is cost reflective and that the demand residual charge is not.
- The total generation TNUoS charge will in future be limited by the split of charges between generation and demand¹. Attempting to change embedded benefits in isolation without understanding these impacts risks further distortion.
- The CUSC workgroup assessing proposed modifications to change embedded benefits in TNUoS charging has not explored the underlying costs of the transmission network and which of these may be avoided by installing embedded generation.
- The accelerated CUSC process is not appropriate to explore an issue of this magnitude. We do not believe there has been sufficient scrutiny of the potential defects in the CUSC methodology or of the proposed modifications.
- A thorough and independent review, such as an Ofgem-led Significant Code Review, is the only way to ensure conclusions and decisions are robust and represent the best outcome for consumers.

Full response

1. We welcome Ofgem's publication of its initial views in the area of embedded benefits. Given the increasing amounts of income that embedded generators receive from embedded benefits, we agree with Ofgem that a review of their levels and an assessment of whether they represent value for consumers is necessary.
2. Ofgem's focus on the embedded benefit from the Transmission Network Use of System (TNUoS) charging methodology is understandable given the recent and predicted rises in the value of this benefit. As we stress throughout this response, a holistic assessment of the value that embedded generation offers to consumers is essential in order to judge whether or not the

¹ Including the impact of the current EU cap on generation transmission charges

current framework represents the best outcome for customers and, if not, how it could be improved.

3. Given Ofgem's focus on the TNUoS embedded benefit, our comments in this response are also focussed on this topic.

Embedded benefits should reflect short and long-term costs avoided by installing embedded generation

4. Any TNUoS charge or benefit for any type of generator should reflect the transmission costs that have or will arise or will be avoided as a result of installing that generation. This will ensure a level playing field between all forms of generation, with any payment for embedded generation that may affect the capacity market, wholesale market or other markets reflecting a reduction in TNUoS costs which benefits consumers by at least the same amount as the benefit received.
5. Ofgem has described the TNUoS demand residual element of the charge under the current methodology as a cost recovery element. It has stated that most of this charge represents fixed and sunk costs, and then highlights that the connection of embedded generation cannot help to avoid sunk or fixed costs. This raises two questions:
 - These sunk costs may be as a result of an over-sized transmission network resulting from inefficient investment signals in the past. Should the charging methodology include longer term signals to avoid this happening in future?
 - Does the demand residual element represent fixed/sunk costs that cannot be avoided by installing embedded generation?
6. Whilst there is an argument that historic, sunk costs should effectively be socialised, the case is less clear for costs which may appear fixed on a short-term basis but vary on a long-term basis. Therefore, some form of long term signal reflecting the long term costs of avoided transmission investment as a result of reducing demand at a Grid Supply Point (GSP) is clearly in the interests of consumers. This will ensure current and future investment in the network is minimised and does not become a future sunk cost resulting from further over-sizing of the network.

The assertion that the current locational charge is cost reflective and that the demand residual is not cost reflective is false

7. As Ofgem states, the locational element of the demand TNUoS charge is a forward looking locational signal. It represents the relative costs of increasing demand in one location versus another. The spread of charges is derived from National Grid's load flow modelling, generating a *relative* locational signal: in other words how much more or less expensive installing generation (or demand) in one location versus another is. The overall level of the locational charge, the

absolute level, is determined by the choice of reference node in National Grid's modelling. Choosing a different reference node simply moves the overall relative locational charges up or down.

8. The *choice* of reference node is arbitrary; whether placed in the north or south or averaged across all locations there is no overwhelming logic to place it in one location or another. However, the *effect* of changing the reference node changes significantly the overall levels of locational charges and therefore changes the total funds recovered through the locational charge. Given that the residual charge is effectively a balancing factor to ensure the total allowed revenues are recovered, changing the reference node for the locational charge would result in a change to the residual element. Therefore it cannot be assumed that all of the locational charge is cost reflective and none of the residual charge is cost reflective.
9. The total revenue recovered from the current demand TNUoS locational charge is close to zero. The residual charge, the balancing factor, therefore recovers over 99% of the £2.2bn revenue to be recovered from demand. Across both demand and generation, the locational charge accounts for just 10% of the wider transmission revenue recovered. Having a cost reflective charge recover such a small proportion of the total revenues is a contradiction. The cost reflective charge, by definition, is not particularly cost reflective.

The total generation TNUoS charge will in future be limited by the G:D split and effect of the EU cap on generation transmission charges, attempting to make demand charges fully cost reflective in isolation from this risks distortion

10. The total charge to be recovered from generators has historically been limited to 27% of the total TNUoS allowed revenue (the remaining 73% being charged to demand users). EU Regulation (838/2010) limits the total generation charge to an average of €2.50/MWh (this was initially introduced as a temporary measure whilst an enduring Regulation was developed). In 2016/17 this has resulted in transmission connected generators paying around 17% of the total TNUoS allowed revenue. If this regulation remains in place, National Grid forecasts that in the near future generators' locational charges will actually be reduced (via a negative generation residual) in order to meet the EU cap on charges.
11. Attempting to make the demand charge fully cost reflective without understanding the impact of a regulatory dampened generation TNUoS signal risks further distortion in the market.
12. In Ofgem's view embedded generators have an advantage today and Ofgem's aim is to restore a level playing field. Changing the demand embedded benefit in isolation risks tilting the playing field in the other direction, penalising embedded generators and advantaging transmission-generators. These risks need to be explored and understood before making any change.

The CUSC process has not explored the underlying costs of the transmission network and which of these may be avoided by embedded generation

13. With the accelerated timetable it has been set, the CUSC workgroup exploring modifications to address any possible defect in relation to embedded TNUoS benefits has not explored the underlying costs making up overall TNUoS allowed revenue. This has been placed explicitly out of scope of the workgroup.
14. Many of the proposed modifications are predicated on the assumption that the locational TNUoS charge is cost reflective and that the residual charge is not, or that some minor elements of the residual charge represent costs that can be avoided by installing embedded generation but the majority do not. As we highlight above, both of these assumptions are false.
15. The workgroup has also not been able to explore thoroughly the impacts of changing the demand charge in isolation from other potential distortions which may or may not arise from the EU-mandated cap on generation TNUoS charges.
16. We are extremely concerned that without thorough analysis of the costs driving the overall TNUoS allowed revenue, without exploring the assumption that the current locational charge is cost reflective in absolute terms and without looking at the impact of changing one potential defect in the methodology in isolation from others, the output of the CUSC workgroup will not be robust. Without such analysis, we are concerned the CUSC workgroup's conclusions could lead to outcomes which increase distortions rather than remove them. This could have real consequences, not just for standalone embedded generators who may decide to close or reassess investment plans, but also for wider industry which uses embedded generation in its processes (for example combined heat and power).

The accelerated CUSC process is not appropriate to explore an issue of this magnitude

17. The CUSC process produced a substantial number of options resulting in 41 Workgroup Alternative CUSC Modifications (WACMs) in addition to the two original proposals, with very little time for workgroup members to assess them. These options range from those with very little change to options which could materially change investment decisions or even destroy some companies' business models. The accelerated timescales imposed on the CUSC group have materially harmed the workgroup's ability to make informed recommendations and perform robust analysis on such an important topic. Indeed, we would go so far as to say that it has made such outcomes impossible.
18. Furthermore, changing the charging methodology for embedded generators could have a substantial impact on a number of parties, many of whom are not direct CUSC parties and find it

difficult to participate in the CUSC process. This illustrates that the CUSC process is not best placed to explore this topic.

A thorough and independent review is the only way to ensure conclusions and decisions are robust

19. Given the importance of this topic and the lack of scrutiny to date, it is crucial that independent analysis of the justification for and impacts of any decision is carried out. We believe this would be best achieved through a Significant Code Review, led by Ofgem. At the very least, the CUSC working group should be given the time and a remit to commission external and independent advisors to assist in the exploration of the underlying costs and which of these can be avoided by installing embedded generation.
20. Addressing one issue which affects a specific category of generator in isolation from the underlying causes of this issue which may well affect other users of the transmission network is not a rational response to an issue, even if that issue exists, and risks increasing distortions rather than removing them.

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