



Citizens Advice
3rd Floor
200 Aldersgate
London
EC1A 4HD
citizensadvice.org.uk

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Dear Frances,

I am responding on behalf of Citizens Advice to your open letter seeking views on embedded generation. Detailed comments are offered below. In summary, we recommend that:

- Sub-100MW embedded generation's avoidance of the demand residual charge needs to be addressed
- A Significant Code Review is initiated to take a wider, holistic look at TNUoS charging.

We support Ofgem's proactive approach in initiating this open letter, rather than leaving it to deliberating upon CUSC modifications alone. We believe it is likely that the current arrangements are causing significant consumer detriment. It is an important part of Ofgem's duty to consumers issues surrounding embedded generation are addressed.

Overall, we think that some level of triad benefit is appropriate for embedded generation, because it encourages an efficient reduction in investment in locationally more expensive parts of the transmission network. In our view, it is therefore sensible that all embedded generators can avoid the locational TNUoS charge, as a way of meeting this objective.

We also agree that avoidance of the demand residual charge, which funds the existing operation and sunk costs of the transmission network, is the principal potential distortion that needs to be considered.

We see two principal consumer impacts to consider. Firstly, if the TNUoS charging methodology is encouraging economically inefficient investment in small-scale embedded generation, then overall energy bills will be driven up.

Patron HRH The Princess Royal

Chief Executive Gillian Guy

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Registered office: 3rd Floor North, 200 Aldersgate Street, London EC1A 4HD

Secondly, there could be a knock-on effect on efforts to cost-effectively decarbonise the economy. In the 2015 Capacity Market auction, embedded diesel generators bid for long-term contracts of £176m out of £1.1bn. The current value of the demand residual avoidance, at £45/kW, far exceeded the Capacity Market's clearing price, at £18/kW. It is therefore likely that the embedded benefit is partly responsible for a high CO₂ fuel's success in the auction.

Sub-100MW embedded generation

The main question for Ofgem to consider is whether sub-100MW embedded generators' avoidance of the demand charge is causing this inefficient behaviour. We are minded to agree with Ofgem's initial position that it is. As a general rule, charging methodologies should not encourage behaviour that incentivises additional investment to avoid paying sunk costs, as these sunk costs cannot be recovered.

Within the current design of TNUoS, it certainly appears as if inefficient behaviour is being encouraged. If we accept that both the locational and residual components of the charge are set at an appropriate level, then the charges that sub-100MW embedded generation avoid look extraordinarily difficult to justify. We therefore welcome Ofgem's focus on this point.

However, there are several important considerations that Ofgem needs to take into account:

- Firstly, embedded generation may be helping the transmission system in ways that TNUoS does not currently reward. For example, as you note, embedded generation may be providing a benefit of between £1/kW and £6/kW to avoid demand at Grid Supply Points.
- Secondly, we also note that a straightforward extension of the demand residual charge to sub-100MW embedded generation may simply cause the distortion to reappear behind the meter, as large users are encouraged to install embedded generation on site.

- Thirdly, it is possible that the demand residual charge overestimates sunk costs and that a more efficient system could be delivered by using the charging methodology to further encourage a reduction in investment in the future transmission system. If this is the case, then it may be appropriate to retain part of the demand charge benefit, in a more transparently designed way. However, it is unclear to us why this benefit should accrue to sub-100MW embedded generation rather than across the board.

None of these points strike us as decisive in favour of sub-100MW embedded generation's current benefits and we agree that the current methodology is highly likely to be encouraging inefficient behaviour. Thorough investigation is needed to find the correct reduction of the existing benefit. However, we are persuaded that the distortion caused by embedded benefits is likely to be sufficiently large to warrant urgent action. We suggest that, following the analysis that emerges from the modifications process, Ofgem takes the necessary and immediate action to ensure that sub-100MW embedded generation is not able to exploit this regulatory loophole further.

But Ofgem's actions should not end there. Reform should not stop at simply eliminating sub-100MW embedded generation's ability to avoid the demand residual. Proceeding on this basis would imply that all other elements of the TNUoS charging methodology relating to embedded generation were correct in every particular.

Taking a strategic view of TNUoS charging

We are sympathetic to the view that there are wider questions needing to be asked about the TNUoS charging methodology. National Grid have been reviewing TNUoS for the past 12 months, but there has been little significant progress in TNUoS reform for some years. It is also possible that investigating transmission charges will have knock on effects on distribution charges and require wide-ranging code modifications.

Furthermore, it is uncertain whether the current charging methodologies are fit-for-purpose in a changing technological landscape. As and if the energy system changes to a more distribution-led, demand-responsive order (for

example), it may be appropriate to provide stronger price signals to accommodate this. Reform taken under the energy system's current technological profile could need to be undone quickly as the technological profile shifts. We think it would be a mistake to only consider the embedded benefit that emerges within the current charging design without reflecting on whether the design of these charging methodologies are themselves appropriate. This is further supported by the fact that you already identify other, albeit smaller, distortions that may also require attention.

We are also cautious about Ofgem only considering the embedded generation issues that are emerging out of industry self-governance. There are many well-funded established industry parties who have an interest in the outcome of any changes to these charges and there are hundreds of millions of pounds on the table. In our own conversations with industry colleagues on this matter, we have been struck by the quantity of inconsistent, partisan modelling and advice that has permeated this debate. Some parties who will be affected by modifications are relatively new players and are not organised into the industry codes yet. Given any decision will create many winners and losers, it is an issue that, in our view, requires something more than Ofgem only making a deliberation on the decision that emerges from self-governance.

We therefore believe, in addition to taking urgent action regarding the demand charge residual anomaly, that the appropriate course of action is for Ofgem to initiate a Significant Code Review (SCR) regarding embedded benefits. This would, while supported by industry analysis, take an impartial and thorough approach to investigating the robustness of TNUoS and (possibly) other charging methodologies.

As you note in your open letter, SCRs can often be protracted affairs. Many SCRs have been delayed in the past. Nevertheless, the issues are sufficiently broad that we think it is still the most advisable course and we hope that Ofgem takes steps to complete this SCR in a timely manner. More broadly, we hope that Ofgem will go further in working with BEIS to set strategic direction for industry codes, to ensure that changes to rules happen more nimbly and coherently. Crucial to this, as [we have previously argued](#), is a

more strategic approach to holistically reviewing industry codes, rather than following the piecemeal and sometimes haphazard reforms that have often emerged from industry self-governance.

On the transitional arrangements raised in your open letter, we agree that grandfathering the change for a specific set of users would be inappropriate. Investment is a risk, and one of the legitimate risks investors face is the closing of loopholes in regulation. It would be wrong for all other users to foot the bill for investments that have not paid off. We also agree that some level of phasing in is appropriate but, when a decision is taken, the time it takes for consumers to enjoy the benefits of resolving this issue should not be prolonged unduly.

Please do not hesitate to contact me should you have any questions about this response.

Yours sincerely,

Morgan Wild

Senior Policy Researcher
Citizens Advice