Frances Burton
Partner – Energy systems
The Office of Gas and Electricity Markets
9 Milbank
London SW1P 3GE

23rd September 2016

Dear Frances

Response to Ofgem as a letter: Charging arrangements for embedded generation

We would like to thank you for the opportunity to respond to your open letter and contribute to the thinking in respect of the challenges facing the industry. Aggregated Micro Power Holding plc (AMP plc) is an AIM-listed developer and investor in flexible generation. It follows that we are responding with a view to our future investments in flexible generation. Instability and rule changes obviously have an impact on the confidence of investors in the market . However we do recognise that the current direction of travel is unsustainable in respect to the benefits attributable to Embedded Generators under the current arrangements and a reasonable change is essential to protect all stakeholders. Recent changes have destabilised the historic accepted arrangements. We recommend a simple change, that is easy to implement, which addresses the underlying issue rather than the symptoms arising.

Key points from the open letter

Competition with non-embedded generators

The open letter starts by referring to the concerns that Ofgem has about the transmission charging arrangements and the way the arrangements prevent a level playing field between sub 100MW on the one hand and over 100MW embedded generation plus transmission connected generation on the other hand.

- Given the relatively low number of fossil fuel generators that are classed as embedded generators between 50 MW and 100MW, in practical terms, the practical competition issue may be between sub 50MW exporting embedded generation and greater than 100MW generation.
- Much of the embedded generation installed is sub 25MW.
- The delineation criteria for the different classes of generation assets have been in place for decades and they have become accepted practise. So perhaps the question is "*what has changed?*"

Size of avoided triad benefits

It is widely recognised that the current values for the avoided triad benefit are unsustainable and they are likely to continue to increase the unintended distortions in the market arrangements. We agree with this analysis. Rather than viewing the whole embedded generation proposition as flawed, we recommend addressing the key element that is creating the symptoms of an inflated avoided triad benefit.

- Licence exempt generation that is embedded is allowed to be classed as negative demand. This principle was established in 1995. We continue to believe in this principle.
- The February 2016 NGC forecast for the value of the demand side residual TNUoS indicates a rise from £45/kW now to £72/kW by 2020/21.
- The bulk of this spiral in residual TNUoS charges is attributable to investment in the support of renewable generation and particularly the off-shore transmission system as set out in the Cornwall Energy report of May 2016[1].
- If this element of new investment is carved out, then we go back to a regime in which the value of avoided triads reflects the historic sunk investment in the transmission system as originally intended in the commercial arrangements.
- By addressing the spiral, the consequential feedback loop that encourages further triad avoidance is also addressed. The proposal will result in a more stable and fairer TNUoS charging regime across the customer base.
- Your letter encouraged parties to engage in the CUSC modifications process to address the key issue of the demand residual that you have raised in your letter. As a result, the details behind the above approach are the subject of a proposal under the CUSC modification process. The proposal was sponsored by Eider Reserve Power and a summary is provided in the appendix to this response.

Cost reflectivity and economic benefits

- The issue of cost reflectivity is a perspective issue. *Which costs are under investigation?* If an embedded generator is reducing the costs of an energy Supplier, the economic benefit should be credited to the embedded generator.
- The economic benefits of embedded generation are not solely attributable to location. A substantial fraction of this type of asset is design to be flexible and highly responsive. Government policy has encouraged this type of new investment so that the challenges of security of supply in an intermittent generation world can be addressed. It would be uneconomic to connect many of these assets at higher voltages.

[1] *A Review of the Embedded Benefits Accruing to Distribution Connected Generation in GB*, Cornwall Energy, May 2016

- We recognise the calculation in your letter about the rent recovered from the market during the Triad periods reaching £30,220/MWh. However this calculation assumes that the relevant Triad periods are known well in advance. The number is not risk-weighted. In reality, ppa providers to embedded generators are very reluctant to take the compensation risk of missing a Triad period, and so continuous running regime through the Triad window is the accepted way forwards. [2]
- Already it is becoming harder to predict Triad periods because of the nature of the changing stress between demand and supply at peak as a result of the changes in generation mix. The risk-weighting required on prediction can only increase going forwards.

Summary

We recognise that there are consequential impacts from the spiralling demand TNUoS charges that are distorting the market. A simple change to the market arrangements can fix the underlying problem and address the symptoms without creating a series of new market distortions. The solution proposed maintains accepted principles and practises that have been in place for decades.

Your sincerely

Depak Lal

AMP plc

[2] DSR has different economic drivers and such activity is risk-managed in different ways.

Appendix: Summary of the proposal submitted to the CUSC Modifications Process

The proposal sponsored by Eider:

The proposal addresses the underlying problem rather than the symptoms arising. The proposal is based on carving out those elements of grid costs that are new investments predominantly to support renewable generation from the current TNUoS charges. It is these costs that are leading to a spiral in demand side TNUoS charges that are patently unsustainable and they are distorting the market. The bulk of these costs are attributable to offshore transmission and this has been used as a short-hand in the recorded matrix of proposals accumulated by the Working Group. As a result of this proposed change, there will be a shortfall of recovered revenue to support the transmission system and it has therefore been proposed to recover this revenue from a £/MWh charge across the market on a gross basis.

The value of the residual (estimated):

With reference to Figure 15 in the report by Cornwall Energy (*A Review of the Embedded Benefits Accruing to Distribution Connected Generation in GB*, May 2016), it is estimated that the new investment in the transmission system attributable to renewable generation will lead to an escalation in residual demand TNUoS to £65/kW by 2020/21 in 2011 prices. According to Cornwall Energy, the removal of the new investment element may reduce the charge in 2020/21 to between £22 and £36/kW in 2011 money depending on the assumptions made on the allocation of investments. This analysis is preliminary and requires further work and input from NGC.

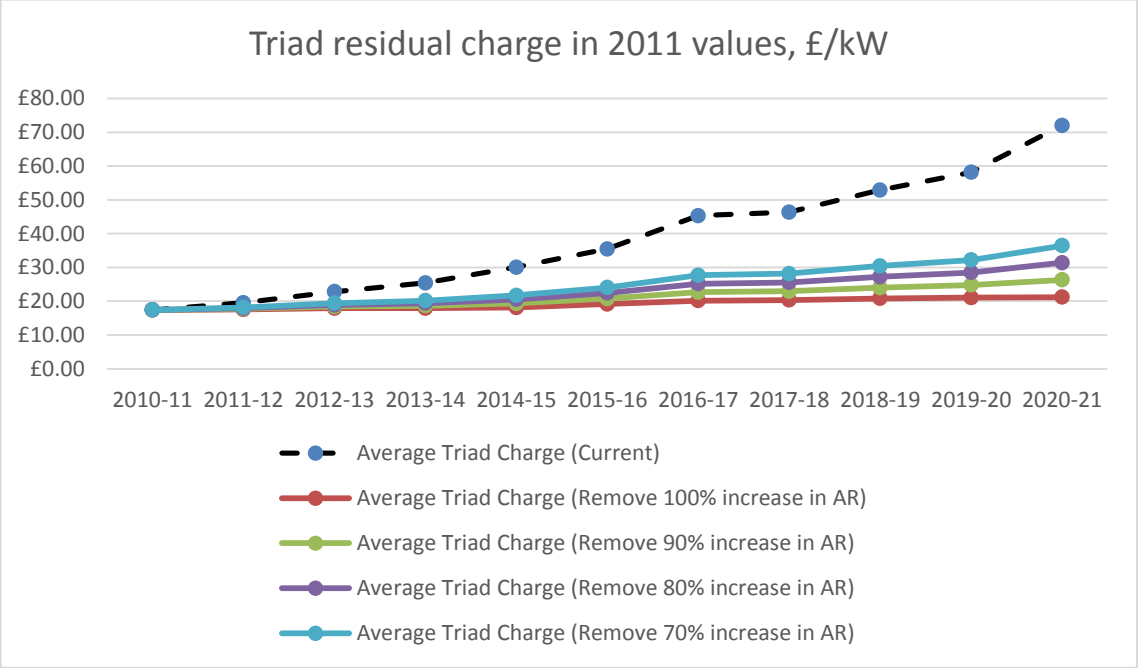
Broad market impact:

- The solution addresses the spiralling impact of demand TNUoS charges and therefore addresses the market impact of a "non-level" playing field. The market arrangements are consistent with historic principles for the treatment of embedded generation.
- The proposal is relatively quick to implement.
- This proposal does not conflate the benefits received by all generation that elect to participate in the CM arrangements **(to support security of supply)** with the unintended market distortions arising from the benefits received by the spiral in TNUoS charges **(paying for the transmission system)**. It addresses the underlying challenge of spiralling TNUoS charges based on historic established principles.
- The proposal does not require any changes to the locational element of the TNUoS charging regime like flooring.

The merits of the proposal:

- All parties currently participating in triad management will be treated equally. This includes "behind the meter" embedded generation. There is no arbitrary distinction in this proposal between different classes of embedded generation (with and without CM agreements, or by size). It also gives DSR equal treatment.

- The existing metering and settlements systems would, in the main, stay as they are. Individual meters will not be required to be flagged. The settlements system will continue to work as before. The only system change would involve the introduction of a new £/MWh charge on a gross basis to recover the missing Allowed Revenue (AR).
- No grandfathering is required under this proposal.
- The proposal is consistent with the original rationale and principles for embedded benefits. It is therefore not changing any established and accepted principles.
- The proposal is consistent with the precedents for separately supporting investments in renewable generation (FiTs and CFDs) which are recovered through a levy.
- The proposal addresses the current angst arising from the spiralling avoided triad benefits that are inadvertently distorting the competitive market. The proposal is addressing the source of the problem rather than the consequential symptoms.
- Compared with the other proposals, this is a relatively simple solution. The implementation costs would be relatively low in terms of the central systems and also energy market participant systems. This will reduce costs and also (critically) reduce the time to implementation.
- It is anticipated that the legal and contractual drafting would be relatively simple for this proposal.
- The value of future avoided triad benefits will be much more stable (see below).

Charting historic and future TNUoS rates:

The following diagram (from Cornwall Energy) shows the potential impact on demand side residual TNUoS of carving out the new investment based on different fractions of new Allowed Revenue that supports new grid investments. The data is indicative and really requires input from NGC to identify different assets to get the right numbers.