

Frances Warburton
Ofgem
9 Millbank
London, SW1P 3GE

Ecotricity Group Ltd
Unicorn House
Russell Street
Stroud
GL5 3AX

27th September 2016
Ecotricity Reference No.: 622
Emma.Cook@ecotricity.co.uk
01453 769301

**Ecotricity Response to Ofgem Open Letter:
Charging arrangements for embedded generation**

Dear Francis,

Ecotricity is an independent renewable energy generator and supplier, with around 180,000 gas and electricity customers. Our commitment to those customers is that the money they pay for their energy bills will contribute towards powering the UK by renewable sources. We have followed this pledge since first generating renewable electricity in 1998, and are now at the forefront of new renewable generation with ongoing research into tidal power, storage and biomethane.

We have 24 wind parks, all of which are distribution connected. We were also pioneers of the Merchant Wind Power model, in which we install wind turbines directly on the sites of large energy users including factories, retail centres and industrial parks. This model brings benefits to the system by reducing the amount of power that must be transmitted across the network.

Ecotricity agrees that there are problems with the triad system: in particular the fact that it has created a lucrative market for highly polluting diesel generators and that it rewards generation that only switches on for expected triad periods. However, the proposal to remove net metering entirely would result in a less efficient system with more distortion and insufficient reward of system benefits.

We are also concerned that Ofgem is minded to make changes with limited and out of date data on the actual benefits that embedded generation brings to the system. The proposed

removal of the triad benefit for all embedded generators will have a significant impact on the incomes of those affected and will be particularly damaging for the renewables market, given the recent subsidy cuts. We do not believe that sufficient research and analysis has been done for either of the CUSC proposals referenced and more research is needed.

Rather than rushing ahead with the removal net metering we would advocate the following: a full review of the actual system benefits that embedded generators bring; the addition of a carbon emissions limit as a condition on embedded generation counting as negative demand; and a requirement for generators to generate a minimum amount of time outside of triad periods in order to count as negative demand.

Insufficient Evidence of Over Compensation

Ofgem has not done sufficient analysis to justify the removal of this benefit and the reversal of the principle of net metering. Ofgem's open letter argues that embedded generators are over-compensated in relation to network charges and that this puts them at a competitive advantage compared to transmission connected generation. The primary remedy that it proposes is to move from a system of net demand to one of gross demand, meaning that suppliers would no longer be able to net off their embedded generation.

Whilst it is clear that distribution connected generators benefit from TNUoS demand residual payments and other embedded benefits, these benefits are based on the fact that embedded generation reduces the load on the transmission network. Ofgem acknowledges that there are benefits, but states that these are between £1 and £6/kW. Two National Grid reviews are referenced to support this, one from 2013, the other from 2010. We do not believe that either of these reviews are sufficiently detailed, robust, or up to date to justify a complete abandonment of net charging. Other studies put this higher, including one by Cornwall Energy¹, which has estimated an appropriate triad charge value of £32.30/kW. It therefore appears that there is insufficient knowledge and little agreement about what the system benefits of embedded generation are. Prior to making any major changes, we believe that a full review of the benefits that embedded generation brings to the system is necessary. Ofgem should also ensure that better collecting of data on costs and savings be maintained going forward. This information should be used to inform better policy.

Diesel Generators and the Capacity Market

It is clear that a key driver behind the changes to embedded generation is to make new build gas more competitive in the Capacity Market by driving up the cost for embedded generation, particularly diesel generators.

Network charging should not be driven by concerns about the Capacity Market. If the Government wishes to change the Capacity Market, it should do so directly. Claiming that the it is technology neutral and then attempting ensure that more expensive technologies win by

¹

<http://www.theade.co.uk/medialibrary/2016/05/20/f8e4631b/Embedded%20Benefit%20Report%20final.pdf>

adjusting costs elsewhere is, in our view, a disingenuous approach, which simply increases costs to consumers.

Ecotricity's view is that there should be no subsidies for fossil fuel generation and we believe that this desire to increase the cost of the Capacity Market, simply to make new gas commercially viable, makes a mockery of its justification for cuts to renewable generation. Nonetheless, we agree that diesel generation is particularly problematic, due to its high level of pollution; however, diesel generators could be prevented from participating by either explicitly prohibiting them or imposing emissions standards as a condition of participation in the Capacity Market.

Indeed, this principle should be taken further and apply to triad avoidance payments. Given the need to phase out polluting energy sources, we would suggest that Ofgem distinguish between embedded generators on the basis of carbon intensity. The fact that the triad system has created a market whereby diesel generators can earn substantial sums simply by turning on in triad periods, is contrary to the Government's commitments to decarbonisation and consumer value for money. Rather than changing the rules end all net metering, Ofgem should retain it but simply prevent highly polluting generators such as diesel from qualifying as negative demand.

Permanent versus triad chasing generation

It appears that Ofgem's primary concern with respect to overcompensation is about generation that is only turned on for triad periods and, whilst it reduces peak demand, it does not reduce the strain on the transmission network at other times. We agree with Ofgem that companies turning on or ramping up generators specifically to avoid transmission charges, could be gaming the system and are a cause for concern. However, to deal with this, it is not necessary to remove triads for all generators; rather a distinction should be made between embedded generators that exist only for triad avoidance and permanent that generate throughout the year, bringing broader system benefits. One way of doing this would be to require a minimum number of hours generation outside of triad periods.

Onshore wind is an example of an embedded power source that cannot switch on specifically for triad periods. We believe that Ofgem currently underestimates both the benefits that embedded onshore wind brings to the system and the value of triads to onshore wind developers.

Benefits of onshore wind to the transmission network

Onshore wind is not dispatchable and therefore cannot be turned on specifically to receive triad avoidance; however, high wind generation tends to coincide with high consumer demand. This means that whilst wind generators cannot "play the system" by only generating at expected triad periods, they do in fact reduce net demand during triad and other high demand periods. In addition, it should be noted that wind generation is relatively predictable on a day-ahead basis and National Grid can include it in its estimates. Wind generation should therefore continue to be rewarded for reduction in the strain on the transmission system that it brings.

Value of triads to onshore wind developers

Ecotricity's wind parks would lose 11-12% of their profits per year if we were to lose these embedded benefits. This is consistent with RenewableUK, who confirmed that on average, embedded benefits account to 5% of revenue streams for parties and this would amount to a significant loss in revenue.

CUSC Modifications

We do not believe that Ofgem should approve either CUSC modification discussed (CMP264 and CMP265). Firstly, we are concerned about the way in which the modifications have been rushed through with no time for in depth quantitative analysis of their justification; whether they are indeed cost reflective or their impact.

Secondly, we believe that the modifications raised have too narrow a focus and are based on the incorrect assumption that embedded generation has no system benefits. A more comprehensive analysis of the benefits that embedded generation brings to the system; the costs it faces; and the way in which it is rewarded, is needed. Failing to look at the full picture risks creating further market distortions.

Thirdly, neither modification would enable a smooth transition: CMP265 poses a risk to existing generation, which will have been commissioned and attracted investment on the assumption of triad avoidance benefit. As noted above, we recognise the concerns about the way in which diesel generators were able to win so many capacity market contracts, but this should be dealt with by the capacity market itself. In the context of numerous other policy changes, applying any major financial reduction to existing generation would further undermine investor confidence. CMP264 is preferable because it protects existing projects and sunk investment; however, it has a start date that is too soon to allow sufficient time for industry to adjust.

Increasing complexity in the system & potential for discrimination

If the grandfathering method is followed, this will introduce complexity into the charging mechanism; however, a failure to include grandfathering would retrospectively penalise investors.

An immediate change would discriminate against those parties who have already made their decisions, but are yet to build/about to commence building of the generation. This is because their final decision would have been based on the fact that this generation would receive embedded benefits.

Investor confidence

If this change applies to embedded renewables, it could cause a significant negative impact on investor confidence, which is already shaken by frequent major policy changes.

The proposed loss of this triad avoidance benefit for onshore wind, for example, must be seen in the context of wider policy changes. The loss of embedded benefits will see a large drop in revenue streams at a time when the industry is reeling from other cuts; which have led to significant job losses, as well a scaling back in investment at a time when new renewable generation is desperately needed.

Storage

We would like to stress the importance of storage to the system. It is vital that, should the proposal to end net metering go-ahead, storage developments be exempt.

Energy storage is an effective means of reducing stress on both the transmission and distribution system: balancing intermittent generation and consumer demand. Embedded benefits provide a vital mechanism through which this system benefit of storage is recognised and is critical for enabling storage to reach full commercialisation. It would be counterproductive, to say the least, for storage to be penalised by removing the triad benefit.

The Government has repeatedly stressed its desire to ensure that storage be developed to its full potential. Storage, and in particular batteries, are just at the point of becoming commercialised and need all the support that they can get to make their widespread use realised. It is important for Ofgem to note differences between storage that operates for grid services and the type that is currently in development and will operate all year around. The latter will help consumers balance their demand and save money as well as smoothing intermittent generation. Just as onshore wind, provides year round reductions in the load on the transmission network year round and cannot be accused of "gaming the system"; the same is true of frequently operating storage.

It is important that Ofgem fully understand all forms of storage from grid balancing to home scale; the benefits they bring and the impact that amendments to the charging framework would have on this transformative technology.

Differential treatment of distribution and transmission connected generation

We believe that by seeking to reduce the differentiation between distribution and transmission connected generation, Ofgem is looking at the question the wrong way around. Distribution connected generation does not currently use the transmission network and therefore it does not make sense to include it in the transmission charging regime. Therefore, the question should not be whether they are treated differently in respect of charging, it should be whether these differences are justified. As noted above, a full review of system benefits is needed to establish whether the differential treatment is set at the right level.

It is also worth noting that, because embedded generation does not incur line losses, it reduces the amount of power that needs to be produced and therefore has environmental benefits.

Avoiding Long Term Market Distortions

We do not believe that it is possible for future market distortions to be avoided under Ofgem's current approach. Removing net metering for all generators will lead to an inefficient system in which the charging system does not adequately reward embedded generation for the benefits it brings.

Security of Supply

Ofgem should bear in mind that embedded generation can be installed in a short time frame, whereas it can take many years to commission and install transmission connected generation. Given the rapid changes in the UK energy market; the potential for smart meters to alter consumer behaviour; and the unpredictability of the global energy market, it makes sense to ensure that embedded generation remains profitable.

Behind the meter and onsite generation

It is not clear why behind the meter generation is seen as a problem in relation to network charging. This is generation that does not use either the transmission or distribution network and therefore it is right that it does not pay for either. Furthermore, it reduces the demand that the onsite consumer has on both networks and therefore it is appropriate that these consumers should not pay network charges for electricity for this power.

As noted above, embedded wind generation cannot be ramped up specifically for triad avoidance and this applies equally when generation is directly connected to a customer. Nonetheless, onsite wind generation does provide significant system benefits by reducing network demand and rather than viewing it as a distortion, Ofgem should be seeking ways to incentivise it.

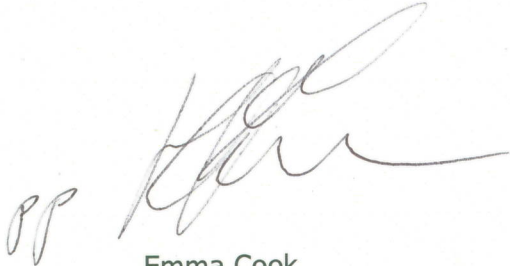
Conclusion

To adequately evaluate the embedded benefits, more information is needed and Ofgem must ensure that it fully understands the broader benefits that embedded generation brings. It is important to note that embedded generation receives benefits such as triad avoidance payments because it does not use the transmission network and in fact reduces demand on it. It appears that Ofgem is concerned primarily about those generators that seek to "game the system" by ramping up only for potential triad periods. Distinctions should therefore be made between embedded generation that chases triads and that which operates all year long and provides a more permanent benefit to the system.

Ofgem should not use embedded benefits as a way of changing the outcome of the capacity market: these should be addressed directly and in a way that improves environmental outcomes and prevents the most polluting generators from participating. In addition, Ofgem should address the problem of a lucrative and highly polluting diesel generator market by not only advocating its exclusion from the capacity market, but also ensuring that it cannot be counted as negative demand.

Ecotricity welcomes the opportunity to respond and hope you take our comments on board. We also welcome any further contact in response to this submission. Please contact Holly Tomlinson on 01453 769366 or holly.tomlinson@ecotricity.co.uk.

Yours sincerely,

A handwritten signature in dark ink, appearing to be 'Emma Cook', with a large, stylized initial 'E' and a long horizontal flourish.

Emma Cook
Head of Regulation, Compliance & Projects