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FAO: Frances Warburton, Partner Energy Systems

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Dear Sirs

Embedded benefits – Response to Ofgem Consultation

Background

Energy Power Resources Limited ("EPRL") has a long history of development and operation of biomass power projects, and associated biomass fuel procurement. It owns and operates five dedicated biomass plants commissioned between 1992 and 2001 using a range of fuels and technologies with a total capacity of c113MW.

Response

Your open letter refers to DECC's Capacity Market consultation, specifically the concerns raised as part of that consultation that certain embedded generators (those sub-100MW) may be over-rewarded. It should be noted that the consultation document on this specific point dealt predominantly with diesel engines and emissions and not the wider range of renewable projects that would be adversely impacted by these proposals. Even the prompt on embedded benefits within the March 2016 consultation referenced diesel engines (*"...Ofgem has previously expressed concerns that these arrangements are not fully cost reflective; and hence "embedded benefits" may over-reward distribution-connected generators such as diesel reciprocating engines."*). Further, a review of the Government response to the consultation would suggest that opinion on embedded benefits (diesel engines aside) is at best divided and that there is no evidence to support the proposed broad-brush changes to the current regime that are now being proposed.

As a starting point we suggest that Ofgem reflects upon the underlying aim of the Triad regime which is to serve as both a charging mechanism and operational tool/signal. Your letter fails to focus upon the fundamental issue, namely increasing transmission system costs and how associated revenues are allocated between generation and demand. Instead it favours the more simplistic approach of removing an important and long-term revenue stream from one group of generators.

The purpose of the Triad regime was to send a cost/revenue signal to minimise peak net demand, and thereby minimise the requirement for generation capacity on the transmission system. This has worked extremely well to date and has ensured an efficient use of assets, despite falling capacity margin. The proposed changes will remove the income signal to embedded generators and presumably also reduce the cost signal to demand customers, and thereby will be less effective in achieving the continued efficient use of assets.

The increase in embedded generation capacity is one of several consequences of the long term support mechanisms for renewable generation. However, the overall reduction in net demand at grid supply point has not been matched by a reduction in National Grid's operational costs, a point that is hardly mentioned in Ofgem's letter.

In its paper of 28 January 2015 "Forecast TNUoS tariffs from 2016/17 to 2019/20" National Grid states (at section 3.6.2): *"The demand charging bases have all decreased from the May 2014 five year forecast. The decrease in total peak demand and Non-Half-Hourly energy are due to a number of different factors including; Triad avoidance, energy efficiency, embedded generation, price elasticity and Balancing & Settlement Code (BSC) changes."*

Consequently, there are less net demand units against which National Grid can recover its allowable revenue, hence the increase in unit charges.

Whilst there has been an increase in the number of generation assets connecting to the transmission system (largely offshore wind), National Grid's inability to recover its costs has been exacerbated by European Commission regulation EU 838/2010 dealing with cross border flows of electricity. This limits the average annual use of system charges that generators pay to €2.50 per MWh. Revenues recovered from generation are therefore effectively capped; this has a consequential adverse impact upon demand tariffs.

In its paper of 28 January 2015, National Grid summarises the position as follows: *"Reductions in the demand charging base, coupled with the cap on average annual generation charges with increasing revenue, generally increases the demand residual over the forecast period."*

In summary, there has been an increase in National Grid's cost base and recoverable revenue, created by an increase in the number of generation assets connecting to the transmission system. There is a limit to the revenue recoverable from those generation assets which actually use the transmission system, giving rise to an increasing demand residual which is being applied to a falling demand charging base.

Ofgem is proposing to address the issues identified above by artificially increasing the demand charging base (and effectively excluding embedded generation). We do not agree with this proposal, since it in turn would:

- (i) adversely impact investor confidence;
- (ii) call into question the financial viability of a number of generation projects which rely upon Triad revenue; and
- (iii) remove the financial signal to embedded generators and reduce the cost signal to demand customers which to date has contributed to the management of peak net demand.

Further, it is implied within the letter that embedded generators are unable to respond to the revenue signal. Whilst it is a fact that wind and solar generation cannot respond to Triad warnings, in our experience as a biomass generator, Ofgem's underlying assumption is not borne out by the evidence in all cases.

Biomass generation is based upon traditional thermal techniques (subject to the vagaries of the fuel and ash) and requires regular maintenance and boiler cleans. It can also to a certain extent vary its operating parameters to maximise output. By way of example, EPRL avoids planned maintenance outages during November to February, and where down-time is unavoidable (be it planned or unplanned) this will be undertaken where possible between Friday and Sunday. In addition, EPRL will generally maximise output (through fuel input, steam flow and parasitic/house load) when it is aware of likely Triad periods. It is not motivated to do so by its power purchase agreement (which is an annualised flat per MWh rate), but by the Triad revenue that is potentially available.

As a result of these actions, EPRL's five biomass power stations have successfully maximised availability and output in Triad periods as follows:

Financial Period	On-line per Triad period
2015/16	14 out of 15
2014/15	15 out of 15
2013/14	12 out of 15
2012/13	13 out of 15

Were the Triad revenue stream for embedded generators to be removed, we would not focus on availability specifically during November to February nor on output in specific peak half hours. The corollary of this is that net demand would increase over the peak winter period(s).

In addition to the unexpected nature of the proposed changes, we are firmly of the view that they are unfair. For biomass generators such as EPRL, fuel availability is critical and with that in mind we have in place long-term fuel contracts, many of which extend to March 2027. Such contracts were evaluated, and terms agreed, on the basis of anticipated revenue streams: electricity, ROC, LEC and Triad. Since that evaluation, LEC revenue (c£5 per MWh) was removed unexpectedly with almost immediate effect from August 2015 and ROC re-cycle benefit (assumed to be an average of c£6 per MWh for dedicated biomass) continues to be valued at close to zero due to DECC's inability to forecast renewable generation with any accuracy (albeit, there appears to be a consistent under estimation) since the introduction of the headroom mechanism. Given that our fuel costs are largely fixed for the duration of our contracts and are not directly linked to the electricity or commodity markets, to remove Triad revenue would be unfair, reduce profitability and consequently further destabilise investor confidence.

In light of the above and given the recent close to £20 per MWh reduction in electricity prices (a market risk operators accept), the suggestion that generators such as EPRL are being over-rewarded does not stand up to scrutiny.

Other points within Ofgem's letter

There are a number of statements, assertions and assumptions within your letter that we believe need to be corrected in order for you to evaluate the impact and potential unintended consequences of your proposals properly.

Your letter references that Ofgem has had concerns over the transmission charging arrangements for a number of years, the suggestion presumably being that market participants could have expected to lose this revenue during this time. I was involved in detailed discussions with DECC on the original 2007/8 RO banding review, the review of biomass grand-fathering in 2010 and RO banding review in 2013. These reviews revolved around projected revenue, costs and investment returns, and exclusion of Triads was never mentioned, it being commonly understood to be a foundation of the system. To remove such benefits retrospectively will reduce investor confidence further, which will not benefit the Capacity Market or future asset deployment generally.

As explained above the Triad regime has led to an efficient use of assets. The removal of Triad income from eligible embedded generators appears to be more about an opportunistic attempt to lower consumer costs through a broad removal of revenue from operational assets that have already been the subject of considerable investment, have significant sunk costs and long-term contracted positions, and will not be able to respond to the signal sent by the impact of this proposal.

Whilst Ofgem's proposals may result in benefits to consumers (to the extent that (i) embedded benefits are passed on to embedded generators currently, and (ii) the changes result in National Grid's recoverable revenue being allocated to an artificially increased demand charging base), such benefits should be considered against the negative impact on existing operators, investor confidence and the success of the Triad system to reduce net demand as well as the associated reduction in consumer costs and security of supply.

Ofgem makes a number of points and concerns in respect of possible distortions to the market. It appears that the majority of these are specific to small diesel engines. If Ofgem wishes to remove embedded benefits from diesel generators, it should make that case, and not remove Triad revenue from all eligible embedded generators, the majority of which are not operating diesel engines, have made significant investment in long term projects and rely on this valuable income stream.

In response to the five concerns you raise relating to the purported market distortion of the increasing TNUoS demand residual payments, we comment as follows:

- in our opinion, any mix of generation should include a proportion of reliable and controllable renewable energy, such as dedicated biomass. Although we are small in comparison to transmission connected generation (TG), our business is evidence of a cost effective and efficient use of agricultural residues;
- given the economies of scale of TG and the link between power prices and their fuel input costs, we do not believe our operations or entitlement to embedded benefits has resulted in TGs exiting the market;
- we do not agree with your concern over distorting despatch, further the dampening of prices at peak times is hopefully something that Ofgem would support;
- similarly, if the Capacity Market is being distorted through embedded generators being able to bid at significantly lower prices, then this is positive for the market and consumers; and
- in respect of your final point, it should not be overlooked that innovation is often driven by potential financial reward, be that embedded benefits or other market support mechanisms (such as the Capacity Market or the RO). If Ofgem wishes to stifle innovation it can remove any number of incentives in order to do so. Further, we do not believe that our access to embedded benefits is preventing TG from innovating.

We note that the list of generation types in receipt of Triad revenue excludes dedicated biomass and landfill gas – both renewable technologies. Ofgem needs to be fully aware of the projects its proposals will adversely impact.

Within its letter Ofgem questions the overall benefit of embedded generation to the wider transmission system, implying that it is significantly less than the TNUoS revenue it receives. Given that the revenue is simply the inverse of customer demand charges, this implies that demand is being similarly over-charged. If that is the case then Ofgem should address this, with a greater and fairer proportion of costs being allocated to generation assets.

One of the major causes of the increase in TNUoS demand residual costs is the €2.5 per MWh restriction on generation charges (a mere footnote in your letter), this in itself appears to be a distortion. As this restriction is driven by EU regulations, the recent Brexit vote potentially provides an opportunity to remove or amend this distortion.

Ofgem's letter states that embedded generators avoid the TNUoS generation residual charge. By definition embedded generation is not connected to and does not use the transmission system. If there are any grid supply points at which net demand is negative i.e. generation is greater than demand, there is an economic argument for an element of generation charges, but I assume that this would be quite rare and does not warrant this broad brush approach.

Transitional arrangements

To the extent that Ofgem wishes to discourage future embedded generation capacity we suggest it makes changes to exclude it from TNUoS revenue either through changes to the Capacity Market or CfD strike prices for embedded generators, thus removing the revenue signal. However we strongly recommend that Ofgem avoids retrospective changes and that pre-existing rights to embedded benefits including Triad are grand-fathered. This would protect investor confidence in the UK market and would also positively impact security of supply.

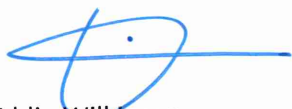
In parallel, the industry should aim to reduce demand residual costs by removing or amending the current (€2.50 per MWh) restriction imposed by European legislation on charges for generation. Pre-supposing that National Grid's costs are fair and reasonable, this would lead to a more equitable split of such costs between transmission system connected generation and embedded demand.

Summary

The actual and projected increase in TNUoS demand residual (£ per kW) is not caused by embedded generation, rather it results from the costs of increasing transmission system connected generation and the restriction on charges for generation imposed through EU regulations. The latter should be resolved as a matter of urgency.

If Ofgem wishes to address a potential influx of Capacity Market diesel engines (which have the benefit of speed and flexibility but a potential downside of emissions), then they could be excluded from the Capacity Market and/or emissions could be regulated through the environmental permitting regime. However we urge you not to sacrifice already fragile investor and operator confidence and a scheme which actually produces its intended outcome (flattening the net demand peaks of winter) by implementing retrospective changes and removing Triad benefits from long-standing embedded generators.

Yours faithfully



Eddie Wilkinson
CEO