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23 September 2016

Dear Frances,

Re. Open letter: Charging arrangements for embedded generation

The Anaerobic Digestion and Bioresources Association (ADBA) is the trade association that represents the range of interests and matters related to the anaerobic digestion of organic materials (AD) across the UK, including the collection of waste for use as feedstock. ADBA understands the complex range of skills required by developers of new AD plants, from feedstock management through technology to energy production, markets and resource to land.

The organisation has over 400 members from across the AD industry, including plant operators and developers, farmers, local authorities, waste management companies, supermarkets, food processors, energy and water companies, equipment manufacturers and suppliers, consultants, financiers and supporting service companies. Anaerobic digestion can make a significant contribution to renewable energy, climate change, and critical resource preservation targets, subject to the right policies being in place.

Process for reviewing charging arrangements

As we set out in this letter, the issues around charging for embedded generation are complex, and the potential implications of any changes need to be properly assessed. We do not believe that this is possible through the process that is currently being followed, and we therefore urge Ofgem to reject any proposals from the Connection and Use of System Code (CUSC) panel to reduce the value of embedded benefit.¹ The CUSC process is unsatisfactory for changing network charging as industrial manufacturers and distributed generators, the majority of who are not members of the CUSC process, are not adequately represented. The only way to fully understand the implications of changes would be for Ofgem to undertake a Significant Code Review accompanied by a comprehensive impact assessment.

If changes to embedded benefit are rushed into place there is a risk that a proportion of the 20GW² of distributed generation may close due to lost revenue, resulting in higher wholesale prices for UK electricity overall as lower cost renewables close or new projects fail to materialise. This will ultimately impact the consumer and raise energy bills. We would also expect to see higher volume of network losses as power is directed from further afield – the value of avoided losses as a result of local generation has not been assessed in the current review. These potential impacts and unintended consequences that may result should be assessed comprehensively before any element of network charging change is made.

System wide impacts from reducing the Embedded Benefit would be likely to include:

- Reduction of deployment and increased subsidy cost for renewable generation, as existing Contracts for Difference tariffs are now significantly undervalued;

¹ <http://www2.nationalgrid.com/UK/Industry-information/Electricity-codes/CUSC/Modifications/CMP264/> and <http://www2.nationalgrid.com/UK/Industry-information/Electricity-codes/CUSC/Modifications/CMP265/>

² https://www.gov.uk/government/uploads/system/uploads/attachment_data/file/467024/rpt-frontier-DECC_DSR_phase_2_report_rev3-PDF-021015.pdf 6.

- Increased energy costs of up to 19% for energy intensive manufacturers in the steel, paper, chemicals and food and drink sector, negating recent government efforts to reduce energy costs on these users, and leading to potential job losses;
- Harm to government's energy storage and demand side response ambitions by reducing value from these investments by £45/kW per year, which represents a significant proportion of projected revenue; and,
- Reduced electricity security, as more than 7.5 GW of distributed generation operates during peak demand periods - this should be considered in terms of its impact on winter supply margins.³

A Significant Code Review would better consider these issues, along with the related charges and benefits discussed below.

Embedded benefit is interrelated to other networking charges and they should be reviewed in unison

As the open letter states, distributed and on site generation is set to constitute a large and important part of the future electricity network. Anaerobic digestion (AD) is by its nature distributed, but unlike many such technologies provides a source of baseload power. National Grid's Future Energy Scenarios 'Consumer Power' scenario forecasts local generation providing 49% of electricity to the UK by 2050.⁴ The energy market is already beginning to respond to this change in technology – with energy storage providing opportunity for self-sufficient microgrids in some areas of the country.⁵ The former head of National Grid, Energy UK and the National Infrastructure Commission all agree that changing technologies, new generation patterns, costs and consumer behaviour require a flexible 'smart' grid made up of renewables, interconnection, storage, capable of demand response⁶ – distributed generation is clearly a key part of the future of the network, and AD has a particular role to play as small scale renewable baseload technology.

Distributed generation removes reliance on the transmission network and negates the need for reinforcement and maintenance of the transmission system. Where distributed generation provides baseload power, transmission network operators (TNOs) save money from a constant reduced use of the transmission network. They can predicate their network investment on distribution generation and can balance network supply and demand in a more cost-effective manner. Such major changes to the nature of the UK's power generation and supply require a comprehensive, holistic response: the accelerated process described in the open letter cannot provide this.

The case has not been made in the open letter that Transmission Network Use of System (TNUoS) charging is disproportionate to the benefits received by the transmission network throughout the life of the distributed generator assets. Over the medium to long term significant cost savings can be made by TNOs through offsetting local demand – these savings have not been considered in the open letter or in the CUSC process. Regional differences have also not been considered: in parts of the UK where transmission network capacity is constrained distributed generation can offer a significant infrastructure cost offset. Embedded generators such as AD operators are not represented through the CUSC process, so the impacts on their businesses have not been taken into account.

Ensuring fairness in changes to network charging

ADBA would welcome a review of network charges and fresh consideration of the value provided by distribution generators such as anaerobic digestion and corresponding benefits. What is currently being considered is far from this and, moreover, risks introducing unfair networking charges. To avoid introducing unfairness into the charging regime and additional

³ ADBA has joined several other organisations to express these system wide impacts to BEIS.

⁴ FES 79.

⁵ <http://www.smarternetworks.org/Project.aspx?ProjectID=1873>

⁶ <http://www.telegraph.co.uk/business/2016/02/21/power-of-technology-will-transform-the-way-that-we-deliver-and-u/>; <https://www.energy-uk.org.uk/publication.html?task=file.download&id=5722>; and, <https://www.gov.uk/government/news/a-smart-power-revolution-could-save-consumers-8-billion-a-year-adonis>

unintended consequences it is right that a Significant Code Review is initiated and a full Impact Assessment undertaken. Below we set out our issues views on the concerns Ofgem has identified in its open letter.

Need to change to the Transmission Network Use of System (TNUoS) charges

It is important to note that most generators do not receive the full value of the embedded benefit and that the payment they receive is contingent on their power purchase agreements (PPAs), geographical location and the ability of some technologies such as AD to provide baseload energy at peak winter demand periods. The triad charge does not fully reflect the avoided cost of embedded generation and therefore should not be used as a proxy for the TNUoS embedded benefit.

Such discrepancies would be apparent to Ofgem following a comprehensive impact assessment that takes into consideration technological and regional variances. Decisions made in the absence of such an impact assessment will not address questions surrounding fair award of revenue.

The Association for Decentralised Energy (ADE)'s report *'Bringing Energy Together: A Review of the Embedded Benefits accruing to Distribution Connected Generation in GB'*⁷ finds that some network charging afforded to distributed generators are overvalued, namely those relating to transmission costs. Importantly, they also find that distribution benefits are undervalued, for the reasons we have presented above. Accordingly, as the report finds, "any reduction in triad benefits without concurrent increases in distribution benefits would result in the embedded benefit regime becoming less cost reflective overall."⁸

The report also finds that, contrary to the intentions of the open letter of addressing distorted investment and inefficient outcomes in the Capacity Market (CM), the removal of embedded benefit would not lead to additional deployment of over-100MW generation.⁹ From the perspective of the AD industry, it is important to note that projects claiming renewable financial incentives cannot access the CM – so there is no distortion in payments for renewable generators.

We also agree with the finding of ADE's report that the sunk costs vary when a long-term view is adopted.¹⁰ When a span of 15-45 years is taken into account to reflect the expected life of an embedded generator costs are seen to be variable and correspond to the avoidance of long term costs to the transmission network.¹¹ The open letter recognises that sunk costs are an area of charging that requires review. Due to their interaction both areas should be considered in unison within a Significant Code Review to ensure their effect on one another can be sufficiently understood.

Balancing Services Use of System (BSUoS) charges

AD offers baseload power to the distribution network. As such the generators receive BSUoS payments to the extent their generation is used to balance and offset demand. Due to the variability of baseload generation across

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<http://www.theade.co.uk/medialibrary/2016/05/16/09ca4432/A%20review%20of%20Embedded%20Generation%20Benefits%20in%20Great%20Britain.pdf>

⁸ ibid 5.

⁹ ibid.

¹⁰

<http://www.theade.co.uk/medialibrary/2016/05/16/09ca4432/A%20review%20of%20Embedded%20Generation%20Benefits%20in%20Great%20Britain.pdf> 38.

¹¹

<http://www.theade.co.uk/medialibrary/2016/05/16/09ca4432/A%20review%20of%20Embedded%20Generation%20Benefits%20in%20Great%20Britain.pdf> 26.

the country this payment is inconsistent. However, this payment is distortedly low and generators may receive greater revenue for private wire sales. Rushing through changes to TNUoS payments could bring the unintended consequence of more generators favouring private wire sales to recover lost revenue and adequate value for their energy. This may in turn affect the wholesale energy price if capacity is seen to close. The open letter recognises the issue of connection via private wires as an “important issue” for review in subsequent network charging work. Again, due to the interrelatedness of embedded benefits with connections via private wire we urge Ofgem to reject all motions advanced during this consultation and instead initiate a comprehensive Significant Code Review.

In the open letter Ofgem recognises that in addition to embedded benefits there are wider system issues that need to be addressed. It notes that the current arrangement of networking charging may be “distorting investment decisions and leading to inefficient outcomes in the Capacity Market.”¹² This is rightly a concern for Ofgem and we would welcome a comprehensive review of charging throughout the network. Any review must be holistic and look, in particular, to potential disparities within the Capacity Market and between those in and those not in the CM, which – to date – is all AD generation, whose projects are excluded from the CM because they have received financial support through the renewable financial incentives.

Financial impacts on AD generators

The proposals will have a particular impact on AD operators because the technology provides local baseload energy, so most receive triad benefits as an important part of their income stream. As the data included in table below shows triad levels depend on the individual PPA and region.

Evidence point	Capacity/Generation	Location	Value
10 plants in England	c. 100GWh per annum	Various	c. £6/MWh
Single AD plant	1.4MW	East England	£31,020 per annum
Single AD plant	1MW	SE England	£4.74/MWh
Single AD plant	1MW	SW England	c. £32,000 per annum
Single AD plant	700kW	SW England	c. £38,000 per annum

Variance in triad payments due to contractual arrangements and region has not been considered in this review and any resulting change to the charging arrangements for embedded benefits would accordingly not be fair. In addition, as we have discussed in our response, interrelated benefits, costs and revenues, have not been considered and if changes to networking charges are to be made they can only be taken into account through a Significant Code Review and impact assessment.

Importantly, the open letter and CUSC process have shown no consideration of the impact any reduction in embedded benefits would have on the revenue streams of distributed generators, at the individual plant level or collectively. Generation of renewable electricity from AD plants contributes significantly to several government objectives: providing energy security, reducing imports, curbing carbon emissions and helping the UK meet its renewable energy and recycling targets. Reducing or removing the embedded benefit would put the continuing delivery of these benefits at risk.

¹² https://www.ofgem.gov.uk/system/files/docs/2016/07/open_letter_-_charging_arrangements_for_embedded_generation.pdf 1.