

RESPONSE TO OFGEM'S TARGETED CHARGING REVIEW

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. ADBA is a founder member of the World Biogas Association (WBA).

The organisation has over 350 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.

Why should the government invest in AD?

The UK's AD sector now has a capacity of over 850MW electrical-equivalent - enough power for more than 1.2 million homes. AD produces biogas which can be used to generate baseload electricity. It also offers flexibility, with plants able to dispatch electricity to meet high demand periods, provide low carbon heat or be upgraded and used as a transport fuel.

AD offers an excellent return on the government's investment. This return includes:

1. Energy security from domestic green electricity

Biogas is good for UK energy security. It is generated in the UK and supplies are constant and reliable. AD is delivering home grown green power to the electricity grid here and now. AD can contribute to energy security by delivering around 30% of either domestic electricity or gas demand.

2. Cost effective carbon abatement

AD has already reduced UK greenhouse gas emissions by nearly 1% annually. Supporting the technology further could reduce carbon emissions by 4%.

3. Economic productivity and global competitiveness

A sector already employing around 3,500 people, with the potential to employ over 30,000 more, many in rural areas and manufacturing jobs, is worth protecting. The UK is a world leader in biogas with UK companies exporting over £100m-worth of biogas-related expertise and equipment per year. Given its world-leading expertise, the UK AD industry has a real opportunity to be at the heart of the growing global biogas industry, estimated to be worth £1 trillion.

4. Strengthening the rural economy

Recycling digestate back to the land boosts crop yields and improves Britain's soils, the poor quality of which is costing the UK £1 billion a year according to a Parliamentary Office of Science and Technology estimate. Integrated into farming, AD also helps stabilise farming businesses, improving their ability to withstand fluctuations in global commodity markets.

5. Meeting recycling targets

Anaerobic digestion is highlighted in the Government's Resources and Waste Strategy for England as representing "the best environmental outcome for food waste that cannot be prevented or be redistributed"¹. To realise the

¹ https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment_data/file/765914/resources-waste-strategy-dec-2018.pdf 71.

ambitions of the Strategy and meet UK recycling targets mandatory separate food waste collections are required throughout the UK. This will require more food waste AD capacity to treat and recycle the resulting separated food waste, and support for local authorities in their adoption of suitable recycling practices.

General comments

At a principled level we support Ofgem in the purpose of the Targeted Charging Review of seeking to ensure fairness in electricity charging, reforming network charges more generally, and ensuring value for money for bill paying electricity consumers. However, in key areas the proposed charges fail the remit and introduce new areas of unfairness that will disproportionately affect anaerobic digestion (AD) plant and other baseload, low-carbon generators. Baseload distributed generation provides an inherent benefit to the network system and should be rewarded accordingly.

As we detail in our response, the proposed changes will damage the business case for existing generators which will in turn impact future investment in the industry. The changes risk the decommissioning of AD plant, in turn reducing the amount of renewable electricity in GB. This would be contrary to the binding UK targets pursuant to the Climate Change Act 2008 and the carbon budgets that have been set to achieve an 80% reduction in greenhouse gas emissions by 2050, relative to 1990 levels.

Network charging must support the evolution of the electricity grid and energy supply to one that is low carbon. To limit warming in line with the UNFCCC Paris Agreement the IEA recommends Scenario 450, the limiting of GHG atmospheric concentrations to 450 parts per million of CO₂. Nothing less than this would limit average global warming “well below 2°C” or drive efforts to limit the temperature increase even further to 1.5°C above pre-industrial levels.² To achieve this the emissions of energy generation must fall to around 80kg of CO₂ per MWh by 2040 – only renewables provide for this future.³

Anaerobic digestion is the natural breakdown of organic material such as food waste, farm wastes, purpose grown crops and sewage sludge in the absence of oxygen. Biogas from AD plants is approximately 60% methane and 40% carbon dioxide. It can be used in a Combined Heat and Power (CHP) engine to generate electricity and heat, or it can be upgraded to biomethane – almost pure methane – by removing the impurities and the renewable CO₂, which itself can be used commercially. Accordingly, AD provides a waste management solution in addition to providing renewable energy generation.

Wider impacts

Appropriate financial recognition of the multitude of benefits delivered by AD is being eroded. AD improves the UK's energy security by providing homegrown, baseload and dispatchable electricity. AD plants are not built where they can connect to the grid at the cheapest price. The majority of AD plant are built close to suitable and sustainable sources of feedstock, which are often sewage, agricultural wastes and residues or food waste. The network charges that relate to location are a secondary consideration, a reality of the project, and one factored into revenue models.

In respect of non-energy benefits AD:

- Reduces emissions from rotting manure, farm wastes and slurries, and replacing petrochemical derived artificial fertilisers, abating significant amounts of carbon;
- Supports farmers by diversifying their income, providing a steady income that is not dependent on fluctuating global commodity prices, and reducing input costs;

² http://unfccc.int/files/essential_background/convention/application/pdf/english_paris_agreement.pdf art 2.1.

³ <http://www.iea.org/newsroom/news/2016/november/world-energy-outlook-2016.html>

- Improves food security through profitable crop rotation and the recycling of essential crop requirements of Nitrogen (N), Phosphorous (P), Potassium (K) and trace elements through the spreading of digestate back to farmland, replacing the need for petrochemical-derived artificial fertilisers from overseas;
- Increases organic matter, improving soil structure, reducing water demand, reducing soil degradation and run-off;
- Strengthens the rural economy by creating jobs: the AD industry currently employs 3,500 people and has the potential to employ a further 15,000 in the agricultural sector and 30,000 more widely; and,
- Develops low carbon technology and expertise to export to global markets.

The proposed changes would result in fewer of these benefits being delivered.

Despite these benefits the AD industry is already receiving reduced revenue due to the changes being introduced to TNUoS embedded benefits. AD was particularly impacted because the technology provides local baseload energy, so most plant receive triad benefits as an important part of their income stream. The data in the below table shows the variance in this existing impact. As with the present minded to position, little assessment was made of the impact the changes would have to AD.

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

Additionally, the AD sector has faced the removal of the Climate Change Levy (CCL) levy exemption certificates (LECs) in 2015 which equated to £11 million worth of cuts across the entire AD industry. The removal of Enterprise Investment Scheme (EIS) has also had an impact on the industry.

Also, going forward in the electricity sector, AD deployment will no longer be supported by the Renewables Obligation (RO) and the Feed-in Tariff (FIT), with the RO having closed to new applicants in March 2017 and the FIT closing in March 2019. Other routes to market, such as Contracts for Difference exclude AD sub 5MWe, severely limit routes to market and growth potential – this despite there being planning for hundreds of additional AD plant.

The proposed reforms risk frustrating the critical role AD has to play in treating food waste. In the government's recently published Resources and Waste Strategy for England, anaerobic digestion is noted as "the best environmental outcome for food waste that cannot be prevented or be redistributed"⁴. If introduced in accordance with the minded to position, the reforms would jeopardise the ability of the industry to provide treatment solutions and the wider role of AD has in decarbonising the waste sector and making the best use out of this material, in accordance with the waste hierarchy and circular economy principles.

⁴ https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment_data/file/765914/resources-waste-strategy-dec-2018.pdf 71.

The minded to position fails to present any assessment of the impact the proposed changes could have on AD gate fees. With reported fees varying from -£15 to £69 per tonne of organic material⁵ we would expect the regulator to take every effort to determine possible implications for generators. Ofgem concede that, “One risk associated with the policy is that some users may decide to disconnect from the grid. Users that are more likely to disconnect are those that have long term site commitments or ownership, have invested significantly in a specific site, and have access to low cost fuel feedstocks or distributed energy resource surplus output from legacy or co-located activity”⁶. This could include AD sites and we would encourage detailed impact assessment in this area.

Fewer AD plants along with the increased socialised cost of failing to reduce greenhouse gas emissions from sources of waste sooner rather than later will, ultimately, result in additional cost for tax payers – this will eclipse any savings they may receive as a result of changes to network charges.

If changes to charging are rushed into place through this minded to decision there is a risk that a proportion of the 20GW⁷ 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, not reduce them. We would also expect to see higher volume of network losses as power is directed from further afield.

Responses

Question 1: Do you agree that residual charges should be levied on final demand only?

Yes, although an appropriate and clear definition needs to be adopted to ensure that any electricity imported for the purposes of generation (including backup, say) is exempt.

To avoid this, as has been proposed by the Environmental Services Association, we propose that a “works power” definition be introduced so that any power imported for the purposes of generation is exempt, where import is less than 10% of export across a calendar year. Such an idea has broad support and would uphold the principle of not charging generation.

Question 2. Do you agree with how we have assessed the impacts of the changes we have considered against the principles? If you disagree with our assessment, please provide evidence for your reasoning.

No comments.

Question 3. For each user, residual charges are currently based on the costs of the voltage level of the network to which a user is connected and the higher voltage levels of the network, but not from lower voltage levels below the user’s connection. At this stage, we are not proposing changes to this aspect of the current arrangements. Are there other approaches that would better meet our TCR principles reducing harmful distortions, fairness and proportionality and practical considerations?

No comments.

Question 4. As explained in paragraphs 4.41, 4.43, 4.46, 4.49, 4.80, we think we should prioritise equality within charging segments and equity across all segments. Do you agree that it is fair for all users in the same

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http://www.wrap.org.uk/sites/files/wrap/WRAP%20Gate%20Fees%202018_exec+extended%20summary%20report_FINAL.pdf 3-4.

⁶ https://www.ofgem.gov.uk/system/files/docs/2018/11/annex_7_-_draft_impact_assessment.pdf 6.

⁷ https://www.gov.uk/government/uploads/system/uploads/attachment_data/file/467024/rpt-frontier-DECC_DSR_phase_2_report-rev3-PDF-021015.pdf 6.

segment to pay the same charge, and the manner in which we have set the segments? If not, do you know of another approach with available data which would address this issue? Please provide evidence to support your answer.

Line loss factor class is an appropriate means of segmentation but granularity is needed, particularly for the <5,000 MWh p.a. HV profile. The distributional analysis fails to consider the fact that many within this user group would have demand of less than 2% of this threshold.

Question 5. Do you agree that similar customers with and without on-site generation should pay the same residual charges? Should both types of users face the same residual charge for their Line Loss Factor Class (LLFC)?

No comments.

Question 6. Do you know of any reasons why the expected consumer benefits from our leading options might not materialise?

As set out in our general comments, we are concerned that the minded to position interprets consumer benefits narrowly and that the broader costs of damaging the investment case for renewables will have far greater an impact on consumer bills than the savings that would be delivered by the proposed changes here. This is not to say that changes to charging are not required, but allowances should be made, notably for AD which is a key strategic technology necessary for treating food waste, as the Resources and Waste Strategy notes.

Question 7. Do you agree that our leading options will be more practical to implement than other options?

No comments.

Question 8. Do you agree with the approaches set out for banding (either LLFC or demanding for agreed capacity)? If not please provide evidence as why different approaches to banding would better facilitate the TCR principles.

No. LLFC is far too broad and will introduce unfairness. To rectify what we see as a gap in the impact assessment modelling, we suggest that granular distributional analysis be undertaken so that Ofgem can set out expected effects the change would have on very small loads that would be grouped within the <5,000MWh p.a. HV class. In correspondence with ADBA, Ofgem has recognised that granularity has not yet been considered. While this was not part of their remit to date in relation to the TCR it is imperative this assessment be undertaken before any changes are made, especially since their impact would be profound.

Another issue under the preferred fixed charging option is that the proposed MPAN multiplier would penalise sites that have in place backup systems, despite the fact that a secondary MPAN would not be used concurrently. Such changes would require additional capital and would lead to further erosion of investor confidence in the AD industry. Due to cost implications, such a change should be expected to result in greater plant down time, ultimately meaning less renewable generation for GB and a reduction in the quantity of wastes and residues being treated, and in turn more greenhouse gas emissions. Alternatively, a 'per site' basis should be used.

Question 9. Do you agree that LLFCs are a sensible way to segment residual charges? If not, are there other existing classifications that should be considered in more detail?

See our response to question 8, above.

Question 10. Do you agree with the conclusions we have drawn from our assessment of the following?

- a) distributional modelling
 - b) the distributional impacts of the options
 - c) our wider system modelling
 - d) how we have interpreted the wider system modelling?
- Please be specific which assessment you agree/disagree with.**

No comments.

Question 11. Do you agree with our proposed approach to the reform of the remaining non-locational Embedded Benefits?

No. As mentioned in our general comments, AD provides baseload renewable generation and as such it should be recognised for reducing balancing pressures. It should be rewarded for this – not penalised. 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 save significant expenditure 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. Retroactive changes in policy such as that being proposed in the minded to decision discourage future investment in so far as they create regulatory uncertainty which may detract from the investment case.

As discussed in our general comments, the AD industry has already incurred changes to charging in respect of the TNUoS demand residual which has impacted the business case for hundreds of operational plants, and reduced their return on investment.

Question 12. Do you agree with our proposal not to address any other remaining Embedded Benefits at this stage? Which of the embedded benefits do you think should be removed as outlined in xx? Please state your reasoning and provide evidence to support your answer.

Yes.

Question 13. Are there any reasons we have not included that mean that the remaining Embedded Benefits should be maintained?

No comments.

Question 14. Do you agree with our proposed approach to transitional arrangements for reforms to: a) transmission and distribution residual charges b) non-locational Embedded Benefits? Please provide evidence to indicate why different arrangements would be more appropriate.

Implementation in 2020 is too short a timescale and should be delayed by at least two years to give industry time to prepare at a practical level and in terms of the impact on investment.

Question 15. Do you agree with our minded to decision set out? If not please state your reasoning and provide evidence to support your answer.

No. As discussed throughout our response, the present minded to TCR position will disproportionately impact AD, put at risk the generation of renewable, baseload electricity, and frustrate government policy regarding support for the technology and its critical role of treating food waste and other sustainable feedstocks.

Question 16. For our preferred option do you think there are practical consideration or difficulties that we have not taken account of? Please provide evidence to support your answer.

No further comments.

We thank Ofgem for the opportunity to comment.