

Last resort disconnection of 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 is at the forefront of the AD sector, promoting the potential of AD to cut GHG emissions and in the hardest to decarbonise sectors of heat, transport and agriculture. ADBA has around 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. There are now around 675 AD plants operating in the UK with a capacity of over 1,000 MWe-equivalent.

The ready to use technology for the hardest-to-decarbonise sectors

AD already reduces the UK's carbon emissions by over 1% and with the necessary support in place could reduce them by as much as 6%, providing 30% of the carbon reduction required to meet the UK's 2030 emissions target. The CCC has consistently identified biomethane as a "low regret option", advising that greater quantities of the green gas are urgently required and that AD needs to be used more widely on farms if the UK is to meet its fifth carbon budget. AD cuts emissions in waste management, agriculture, heat and transport by reducing emissions from rotting food and farm wastes, providing low-carbon biofertiliser, and displacing fossil fuels with green gas.

AD at heart of a circular economy

AD closes the loop, developing a circular economy by drawing value from waste and feeding its value back to the system. Organics processed through AD produce renewable energy and biofertiliser which, in turn, can be returned to the land to and grow more plants. AD increases efficiency of farms, cities and businesses – nothing is wasted.

Circular cities can recycle their food and garden waste and wastewater into fuel for local buses; power and heat for homes; digestate for urban gardens; and bio-CO₂ for urban farming and industrial processes. Circular farms can capture methane emissions from manure and farm wastes to provide community energy to rural areas; clean fuel for tractors; diversify rural incomes; and help replenish depleted soils. Circular business can recycle inedible organic residuals through AD to fuel transport fleets, heat and power industrial processes, replacing fossil energy needs, using bio-CO₂ in industrial processes and recovering nutrients to spread back to soil.

Cost effective carbon abatement

AD delivers multiple carbon savings. Biogas upgraded to biomethane displaces fossil natural gas, but also prevents the release of methane from organic wastes directly into the atmosphere, for example when food waste is left to break down in landfill. AD also reduces emissions from rotting manure, farm wastes and slurries, while still providing a low carbon, renewable biofertiliser. The CCC itself claims that AD *needs* to be used more widely on farms if the UK is to meet its fifth carbon budget.

Local energy security and local recycling infrastructure

AD is good for Scotland's energy security. It is home-grown and supplies are constant and reliable. AD is delivering home-grown green energy now and can continue to do so. AD can contribute to energy security by delivering over 20% of domestic gas or total electricity demand in the UK, whilst also reducing imports and curbing carbon emissions. AD 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". To realise the 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.

Do you support the proposed implementation approach?

We agree with the use of a 'sunset clause' as outlined in the proposal form and that prior to this been timed out on 25th October 2020 a more comprehensive engaged consultation should be carried out for future amendments of this nature, with greater industry engagement.

The proposal should be sent to all engaged industry associations of embedded generation. We understand that, due to the nature of this consultation, a novel virus and the need for swift implementation, contacts and response times may have been restricted.

Do you have any other comments in relation to GC0143?

The disconnection of anaerobic digestion (AD) plants does not only impact energy generation but can pose other issues to the plants biological stability and other industries such as the waste, water and agricultural sectors that can have long term and serious implications that are considerably wider ranging than just energy. Disconnecting AD plants will therefore have significant environmental implications, including for legally binding government commitments to cut carbon emissions. We do appreciate that this disconnecting is to be used only in the rarest circumstances, but it is vital that AD plants' connection are prioritised.

Unlike other forms of embedded generation, the DNO's, Ofgem and ESO must understand the unique role that anaerobic digestions play and has in comparison to other connections:

- Anaerobic digestion feedstock contracts make some plants contractually obliged to receive waste/feedstock, which then requires processing so the energy generation cannot simply be disconnected. Biogas production does not stop immediately following a cease in feeding of the plant and can take long periods of time to cease and carefully ramp back up, which will have long term effects on the industries energy output. A long period of not feeding or serious alterations will also need to be communicated to the regulator.
- AD is not just a source of renewable energy (electricity, heat and transport fuels) but is a waste management technology to reduce emissions from unavoidable organic wastes such as food waste. It also generates renewable fertiliser, which makes it one of the greenest renewable technologies.
- Organic waste, which is commonly fed into AD, will be diverted to less environmentally responsible treatment methods and disposal such as landfill, counter to the government's waste hierarchies, and will significantly increase GHG emissions.
- If an AD plant is disconnected, the ongoing biogas generated will need to be flared, with significant environmental and health and safety implications. Lack of compliance with the Environment Agency permitting regime will occur and as such flaring may lead to plants receiving a non-compliance order and further penalties.
- AD plants are operated so they provide baseload electricity, rather than variable electrical supply. Therefore, unlike other renewables, unforeseen downtime can be disruptive to budgets and technical operations of the site.
- The AD industry also produces renewable natural gas for the gas grid that is commonly accompanied by small CHP plants. It is vital that any disconnection of the CHP is done in such a way that the ongoing supply of electricity to the biomethane operation is not disrupted. If the upgrading process and operation of the site is disrupted biomethane may be flared, with obvious environmental and business impacts. Plants may exceed sustainability criteria and no longer be entitled to support, leading to plant closures.

It is vital that implemented measures are as transparent as possible, and that the specific conditions under which National Grid may use these, the rarity of use, and how different technologies will be prioritised, is shared with industry. It is also vital that any financial burden created for AD plants is recognised and taken into account in COVID-19 support for the industry. We will be following up on this point with BEIS and Ofgem.