



Anaerobic Digestion

Well managed, anaerobic digestion (AD) systems are capable of conferring multiple environmental and socio-economic benefits. This type of biological treatment technology has become well established in some countries of the EU but is currently under utilized in the UK. AD is an important technology for the local recovery of source segregated biowastes, especially those that arise as liquids and the more putrescible fractions of solid biowastes. The biogas they produce can be converted into energy to meet the needs of the AD system itself, for local use, for supply as electricity to the national grid or for processing into biofuel for vehicles.

The whole digestate, separated liquor and separated fibre outputs that AD systems can produce have significant fertilizer value and can return useful amounts of organic matter to soils. Such digested materials are particularly suitable for maintaining and improving soil fertility of function. Benefits of these kinds can effect particular value in agriculture, soil-grown horticulture (field and some covered crops grown in soil), forestry, land restoration, land reclamation and land remediation applications.

The volume of digested materials is set to increase significantly as industry responds to the latest strategies on the nations of the UK for diverting biowastes from landfill (EU Landfill Directive requires a reduction of the amount of biodegradable municipal waste going to landfill to 35% of 1995 levels by 2020) and to other policy initiatives and measures geared to develop the supply of renewable energy, tackling climate change (the UK needs to reduce CO₂ emissions by at least 26% and all greenhouse gas emissions by at least 80% by 2050) and protecting soils.

PAS110 has been developed to remove a major barrier to the development of AD namely by encouraging markets for these digested materials. The document has created an industry specification against which producers can check that the digested materials are of consistent quality and fit for purpose. The PAS (Publicly Available Specification) details which digested materials are within or outside its scope, the quality management systems that should be in place and the digestate production sequence within which are details of what digestate sampling and testing requirements are required in order that the material produced (digestate) is no longer considered a waste but a product.

NRM have just begun providing an analytical testing service to operators of AD plants to ensure that their digestate (be that whole digestate, separated fibre and separated liquor) is compliant with the specifications as laid down in the PAS110. In addition to this there are requirements laid down in the ADQP (anaerobic digestate quality protocol) which outline additional analytical requirements that should be carried out on the soil that the digestate is being applied, a service which NRM is well positioned to also provide.

The new coalition government announced in May this year that they had agreed plans to promote a "huge increase" in energy-from-waste through anaerobic digestion and certainly visions for the development of plants from organisations such as the NFU is aspirational, 1,000 farm based AD plants by 2020 alongside at least 100 larger waste-linked AD facilities. Currently however there are some obstacles in the way in these plants getting constructed, not least of which the banks lending money for their construction and inadequate Renewable Obligation Certificate (ROC's) and Feed-in-Tariff (FIT's), however it would appear that if the new government wants to see its plans come to fruition changes will be made to encourage the development of such facilities in the future.

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