

Briefing note

Crop residues used as feedstocks in anaerobic digestion plants

1. Background

We have had queries about whether particular feedstocks used in anaerobic digestion (AD) plants are waste or not. This is important because it will affect whether we regulate AD plants and the use of the digestate produced by them. AD plants that take feedstocks consisting of or containing waste require an environmental permit or a relevant exemption. Plants that take only non-waste feedstocks currentlyⁱ do not. Similarly, use of any AD digestate that is classified as waste will require an environmental permit or relevant exemption.

For many types of feedstock the question of whether or not they are wastes is very straightforward. For some types of feedstocks, for example crop residues, it is not. There are circumstances where crop residues being sent to an AD plant by the producer are by-products (i.e. not waste). This note, which draws on existing guidance from Defraⁱⁱ and the European Commissionⁱⁱⁱ, provides some clarity around these circumstances. N.B Energy crops (i.e. crops intentionally grown specifically for use as feedstocks for AD plants) are not wastes and are not the subject of this briefing note.

2. What do we mean by crop residues?

We are referring here to crop residues in the sense that they are 'production residues', produced as an integral part of the commercial production of agricultural crops. A 'production residue' is something that is not the end product that the production process directly seeks to produce. Crop residues may or not be wastes, depending on the circumstances. If wastes, they will fall under the 02 01 03 (plant-tissue waste) or 02 03 04 (materials unsuitable for consumption or processing) categories in the List of Wastes (England) Regulations 2005.

The following are examples of crop residues

- Misshapen, bruised or undersized fruit and vegetables separated out, on the farm or in a pack-house, as being unsuitable for sale as food for consumption
- Parts of fruit and vegetables such as leaves, roots and toppings that are removed as part of the processing for sale. This may be in a pack-house or at a farm.

On the other hand, surplus or reject fruit and vegetables from supermarkets, for example, and food leftovers or scraps from restaurants or households, are not crop residues, they are wastes.

3. Under what circumstances can crop residues be regarded as by-products rather than wastes?

Our view is that crop residues may be regarded as by-products provided that all of the following apply:

- They are not mixed with or contain any wastes;
- They are suitable for use and certain to be used as a feedstock for AD (irrespective of whether the AD plant is on a farm or not);
- They can be used directly as an AD feedstock with no additional processing apart from that which might be reasonably expected of energy crops. For example, maceration would be OK, whereas de-packaging or pasteurisation would not; and
- Their use in AD will not lead to overall adverse environmental or human health impacts. N.B. This needs to take into account any storage and processing prior to AD, the AD process itself, as well as the subsequent storage and use of the biogas and digestate produced. The crop residues will, for example need to be disease free and not contaminated with pathogens.

4. Which AD plant operators currently¹ need an environmental permit?

Operators do not require an environmental permit or exemption either for the operation of the plant or for the beneficial use of the digestate produced, provided that they only take the following feedstocks:

- purpose-grown crops, or
- crop residues that meet the above criteria, or
- a mixture of the above,

Where any of the feedstocks consist of or contain waste (for example, an AD plant taking crops and livestock slurry), an environmental permit or exemption is required for the operation of the AD plant. An environmental permit or exemption is also required for the use of the digestate produced except where:

- its production and use is certified under the digestate Quality Protocol, or
- it is produced only from manure or manure/non-waste feedstocks and is spread as a fertiliser on agricultural land

According to current industry data, it appears that there may be a very small number of existing operators who have an environmental permit for an AD plant, where the feedstocks are only crop residues or crops plus crop residues. If the particular crop residues meet the criteria in 3. above, and the operator decides that they do not wish to

ever take any waste feedstocks in the future, the operator may wish to consider surrendering their plant permit and/or landspreading permit . Our '[Environmental Permitting Charging Scheme and Guidance: April 2014 to March 2015](#)' sets out the different types of permit surrender and associated charges, and includes information on where charge abatement may be appropriate in particular cases. NB There is no surrender charge for mobile plant landspreading permits

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ⁱ We have been discussing the environmental risks associated with all AD facilities with Defra. On the basis of these risks, we have recently recommended to them that consideration be given to the case for regulating AD under the Environmental Permitting Regulations irrespective of the feedstock used.

ⁱⁱ Guidance on the legal definition of waste and its application, Defra August 2012

ⁱⁱⁱ Communication from the Commission to the Council and the European Parliament on the Interpretative Communication on waste and by-products 2007