

# Paragraph 51 Exemption

## Anaerobic Digestion of Agricultural and Distillery Wastes

### 1 INTRODUCTION

This document provides guidance, definitions, operational policy and strategy with regard to registering a Paragraph 51 exemption for the anaerobic digestion of specified biodegradable wastes.

### 2 SEPA'S OPERATIONAL POLICY CONCERNING PARAGRAPH 51 EXEMPTIONS.

#### 2.1 What wastes can be used for a paragraph 51 exemption?

The exemption allows you to treat agricultural and distillery wastes.

“Agricultural waste” is defined in the Regulations as “*waste from premises used for agriculture*”. The definition of “agriculture” is taken from Section 86(3) of the Agriculture (Scotland) Act 1948, namely: “‘agriculture’ *includes horticulture, fruit growing, seed growing, dairy farming and livestock breeding and keeping, the use of land as grazing land, meadow land, osier land, market gardens and nursery grounds, and the use of land for woodlands where that use is ancillary to the farming of land for other agricultural purposes, and “agricultural” shall be construed accordingly*”.

SEPA interpretation of the definition of “livestock” is that it includes aquaculture and bee keeping by primary producers (not markets, auctions or processing facilities) and waste from these activities can be classed as agricultural waste.

Commercial markets, auctions and food processing facilities do not fall within the 1948 Act definition of agriculture and SEPA considers that wastes from these facilities are not regarded agricultural waste.

Note also that forestry waste from commercial forestry plantations does not fall under the description of “agricultural waste”.

There is no definition of “distillery wastes” in the WMLR. SEPA has interpreted this as wastes from the manufacture of alcoholic drinks by a distillation process. Waste streams likely to arise from this process include spent lees, pot ale, maltings effluent and draff.

The exemption does not allow the treatment of any wastes that are classes as special wastes as identified within the Special Waste Regulations 1996 (as amended).

As the exemption covers agricultural and distillery wastes, it is acceptable to use both these waste streams together under the terms of this exemption.

#### 2.2 What other criteria must I meet?

The exemption requires that the inputs to the process are converted to a methane rich biogas for use in an energy recovery process and to a stable sanitised material (digestate), the application of which material to land results in benefit to agriculture or horticulture or ecological improvement.

This means that you must collect the biogas and use it to generate energy. This can be done in several ways:

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Heat production- the biogas can be combusted to produce heat alone. When burned, one cubic metre of biogas produces around 2.5 kWh of thermal power. Some of this heat energy can be used on site to maintain the temperature of the digester and nearby buildings.

Electricity production- Electricity generation is a relatively straightforward use for biogas and it can be the most profitable. The biogas requires minimal investment in cleaning and upgrading and there are financial incentives available to offset the costs of production. Electricity is easier to transport than gas or heat and supply is easily measured. Electricity storage, however, is not simple and connecting to the electricity network is costly.

Combined heat and power (CHP) - the simultaneous production of useable heat and electricity. CHP plants can achieve overall efficiencies in excess of 70% at the point of use.

Transport fuel - Biogas can be cleaned to remove impurities and upgraded to pure biomethane. It can then be used as a renewable transport fuel in vehicles designed to run on compressed natural gas (CNG) or liquefied natural gas (LNG).

Injection in to the main electricity or gas grid- Biogas can be upgraded to biomethane and injected into a gas grid. This can be the national high pressure gas transmission grid or a local low pressure gas distribution network. To be used in the gas grid in the UK biogas needs to be cleaned of impurities, dried and upgraded to a higher methane content (c. 95%) so that it resembles the qualities of natural gas. Injection of biomethane into the grid is not currently occurring in the UK.

### 2.3 What must be provided by the applicant?

- At least 21 days written notice of the date on which the exempt activity is first to be carried on shall be given to SEPA.
- The payment of the appropriate fee. (This can be found on the SEPA website [www.sepa.org.uk](http://www.sepa.org.uk) under the current charging scheme or from the local SEPA office)
- The establishment or undertaking's name, address and telephone number and, if applicable, its fax number and email address.
- a plan showing the location of any buildings, public rights of way, abstraction points or surface waters above Ordinance Datum which are situated within 250m of the boundaries of the site

### 2.4 What type of records does the establishment or undertaking need to keep?

When you register your exemption, you will have to detail the quantities and waste types to be digested. When you renew your registration each year, you will have to tell us if these waste types and quantities are still accurate. In order to do this, it is recommended that you keep a record of all wastes that you receive throughout the year.

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This is also necessary under the Duty of Care which requires that records are kept for two years and copies are made available to SEPA on request.

### 2.5 What are the main reasons a notification will be taken off the public register?

Although not exhaustive there are several principal reasons why a notification would be taken off the register. These are:

- The operator is no longer carrying out the activity
- The activity is being carried out in breach of any of the conditions or limitations of the relevant exemption;
- The operator fails to meet the Registration Obligations; and
- The type and quantity of waste submitted to the activity, and method of recovery are not consistent with the Relevant Objectives.

In the Regulations, Paragraph 6 of Schedule 4 specifies the 'Relevant Objectives' that must be met when carrying out the activity, in this case, recovery of waste. It must be ensured that waste is recovered without endangering human health and without using processes or methods which could harm the environment and in particular without:

- i. Risk to water, air, soil, plants or animals; or
- ii. Causing nuisance through noise or odours; or
- iii. Adversely affecting the countryside or places of special interest.

### 2.6 Is the output from an AD plant treating only agricultural waste still a waste and if it is to be used for agricultural benefit or horticultural or ecological improvement, does it still require to be registered as an exempt activity?

SEPA considers that agricultural manures and slurries<sup>1</sup> are not waste if they are used directly on agricultural land, providing they are being used as a fertiliser or soil conditioner to meet the crop requirements of that land (i.e. the use is beneficial to the land) in accordance with the PEPFAA Code and the Four Point Plan.

The revised Waste Framework Directive 2008/98/EC states that manures and slurries are classed as waste when treated in a composting or biogas (AD) plant. Therefore, unless the output from the AD process complies with SEPA's position statement on PAS110 digestate, its handling and use must comply with the requirements of waste legislation.

However, we recognise that the digestate produced from manure and slurry can have beneficial fertilising properties and will have less of an environmental impact than

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<sup>1</sup> Slurry is defined in the Control of Pollution (Silage, Slurry and Agricultural Fuel Oil) (Scotland) Regulations 2003 as a mixture consisting wholly of or containing excreta, bedding, feed residues, rainwater and washings from a building or yard used by livestock, dungsteeds or middens, high level slatted buildings and weeping wall structures, or any combination of these, provided such excreta is present. The PEPFAA code states that drainage from parlour standings and the parlour pit must be collected and contained and that this may be included in the slurry system. These washings may contain milk residues, excreta and cleaning chemicals.

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undigested manure and slurry. To reflect this, SEPA will not apply waste regulatory controls to the digestate if:

- the only waste feedstock to the AD plant is agricultural manure and slurry and the output is spread as a fertiliser on agricultural land in compliance with other
- regulatory controls, such as the PEPFAA Code, the Four Point Plan and the NVZ Regulations<sup>2</sup>, or
- agricultural manure and slurry is mixed with a non-waste feedstock e.g. crops grown specifically for AD and it is spread as a fertiliser on agricultural land in compliance with other regulatory controls, such as the PEPFAA Code, the Four Point Plan and the NVZ Regulations.

Other regulatory regimes such as General Binding Rules from the Water Environment (Controlled Activities) (Scotland) Regulations 2011 may still apply. You are advised to check with your local SEPA office or on the water regulation pages on the SEPA website: [http://www.sepa.org.uk/water/water\\_regulation.aspx](http://www.sepa.org.uk/water/water_regulation.aspx).

If the manure and slurry feedstock is mixed with other waste feedstocks, e.g. animal feed and green waste including any crops not specifically grown for AD such as discarded vegetables and excess silage, then the resultant digestate will be regulated as waste. Its use will therefore be regulated under the waste management licensing regime- either through a licence or an exemption (e.g. paragraph 7 or 9 exemption of Schedule 1 to the Waste Management Licensing (Scotland) Regulations 2011).

Excessive use of AD residues may be regarded as constituting a landfill activity and so would require a permit under the Pollution Prevention and Control (Scotland) Regulations 2012.

### **2.7 How often will a paragraph 51 exemption be inspected?**

Waste Management Licensing Regulations 2011 state that “*An initial inspection shall be carried out at the time when the exempt activity commences. Thereafter, periodic inspections shall be carried out at intervals not exceeding 12 months.*”

In practice this means the activity will be inspected when it is first registered and will only be inspected again when the renewal is submitted or if there is a complaint or incident.

## **3 ANAEROBIC DIGESTION OF MANURES AND SLURRIES: OTHER REGULATIONS AND REQUIREMENTS YOU MUST COMPLY WITH**

### **3.1 The Control of Pollution (Silage, Slurry and Agricultural Fuel Oil)(Scotland) Regulations 2003**

If you carry out anaerobic digestion of manures and slurries you will have to make sure that you comply with The Control of Pollution (Silage, Slurry and Agricultural Fuel Oil) (Scotland) Regulations 2003 (SSAFO Regs).

These Regulations aim to reduce the number of silage and slurry related water pollution incidents in Scotland. The regulations require that suitably sited, designed and

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<sup>2</sup> The Action Programme for Nitrate Vulnerable Zones (Scotland) Regulations 2008

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constructed facilities are put in place to collect, store and manage manures and slurries. They also set minimum standards for new, substantially reconstructed, or substantially enlarged structures, such as silos, slurry stores and manure/slurry digestion tanks.

Any new tanks constructed to contain slurry or digestate have to be designed and constructed as per these regulations. The general requirements are for the base and walls of the slurry storage tank and all associated tanks, reception pits and channels and the walls of any pipes to meet standards of impermeability and to be protected against corrosion as required in the current BS 5502 (Part 50) for agriculture. This requirement also applies to any synthetic liners used within tanks that will be in direct contact with slurry or digestate.

In calculating the size of any facilities used for the temporary storage or holding of slurry, such as reception pits and associated channels, the guiding principle is that the system should be capable of being left for 2 days without overflowing. This should take account of the **maximum** quantity of slurry draining to such pits or channels in any 2 day period including any yard areas, middens, pump sumps, dairy washings, parlour drainage etc. This calculation must include provision for the likely quantities of rainwater falling directly on to the store and on areas which drain into the store.

The Regulations require that all new structures must be constructed with a durability life of at least 20 years. This means that the structure is expected **with proper maintenance** to be durable without causing, or being at risk of causing, pollution for at least 20 years.

Structures should not be constructed within 10 metres of any permeable drains, inland or coastal waters which any silage effluent, slurry or digestate could enter if it were to escape. In checking prospective sites, farmers are advised to establish whether there are open (i.e. permeable) field drains within the 10 metre exclusion zone.

Where digested manures and slurry are applied to land, there is a standard requirement for six month's storage capacity. Digested slurry storage requirements may be higher for farms located in nitrate vulnerable zones, where such farms have a significant area of shallow or sandy soils.

The above are only selected minimum requirements. SEPA has to be given at least 28 days advance notice of any new, enlarged or reconstructed structure used to contain slurry or manure being brought into use. In this regard you are strongly recommended to contact your local SEPA office to discuss your proposals at an early stage.

The full regulations can be found via this link:

[http://www.legislation.gov.uk/ssi/2003/531/pdfs/ssi\\_20030531\\_en.pdf](http://www.legislation.gov.uk/ssi/2003/531/pdfs/ssi_20030531_en.pdf)

### 3.2 Water Environment (Controlled Activities)(Scotland) Amendment Regulations 2013

As outlined in 2.6 above, if you apply the digested manures and slurries to land they will not be controlled through waste legislation. However, the land manager must ensure any fertiliser applied to land is done so in accordance with General Binding Rule (GBR)

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18 of The Water Environment (Controlled Activities)(Scotland) Amendment Regulations 2013. These regulations can be found via this link:

[http://www.legislation.gov.uk/ssi/2013/176/pdfs/ssi\\_20130176\\_en.pdf](http://www.legislation.gov.uk/ssi/2013/176/pdfs/ssi_20130176_en.pdf).

Rule 18 requires that nutrient is only applied where there is a crop requirement. It also states that organic fertiliser must not be spread on frozen, snow covered and waterlogged ground. To help land managers comply with this rule SEPA is promoting the use of Planet Scotland to increase business efficiency. Good nutrient management is important for both farm efficiency and protection the environment. The free software is available at [www.planet4farmers.co.uk](http://www.planet4farmers.co.uk).

### 3.3 Farm Waste Management Plan

An updated farm waste management plan (FWMP) should be produced and submitted to demonstrate the farm has adequate slurry storage and land available for spreading the digestate as a fertiliser. The plan should reflect current stock numbers and farming practice. It should demonstrate compliance with current regulatory requirements.

More information on farm waste management plans is available on the Scottish Government Website:

<http://www.scotland.gov.uk/Topics/Agriculture/Environment/Agrienvironment/RuralStewardship/RSSguidance/RSSappendix/RSSAppendixXV>

### 4 OTHER SOURCES OF INFORMATION AND GUIDANCE

The Waste Management Licensing Regulations 2011, Scottish Statutory Instrument [2011:228](#)

The Official Information Portal on Anaerobic Digestion: <http://www.biogas-info.co.uk/>

The Organics Recycling Group of the Renewable Energy Association: <http://www.r-e-a.net/member/organics-recycling>