

Small Scale Manufacture of Biodiesel

Introduction

This guidance is written for people who make less than 200 tonnes per annum (tpa) (approx 222,000 litres) of biodiesel from waste vegetable oil such as used cooking oil (UCO). If you make biodiesel from virgin oil, for example unused vegetable oil, the production process is not covered by any waste legislation. However, you should read the section on oil storage as this applies to most types of oils.

This guidance sets out SEPA's position for controlling biodiesel manufacture from small scale processes. This note does not set out the circumstances under which the outputs from such processes are wastes: that is a matter for case by case consideration in accordance with guidance already issued by SEPA.

Small scale processes are able to register an exemption from waste management licensing, provided they meet certain criteria. This guidance sets down the criteria for meeting the exemption and other applicable legal requirements.

Biodiesel production activities differ according to raw material type, production process, and scale of operation. There are two broad types of process: physical (basic heating, filtering and centrifuging) and chemical processing (using an alcohol such as methanol and a catalyst such as sodium or potassium hydroxide).

Regulatory Framework

Schedule 1 to the [Waste Management Licensing \(Scotland\) Regulations 2011](#)¹ (WMLR) contains a list of activities that are not required to hold a full waste management licence. These are called "exempt activities". These activities must comply with specific conditions in the exemption and with overall conditions relevant to all waste management activities.

[Paragraph 5](#)² details the requirements a biodiesel manufacture process must meet to be classed as an exempt activity.

In essence, the process must be carried out using equipment manufactured for the purpose and must not be carried out for commercial purposes on an industrial scale using the definitions below.

All waste management activities, including exempt activities, must be carried out 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.

These are referred to as the "relevant objectives".

Exemptions under paragraph 5 need only be registered once and there is no fee. This can be done [online](#)³ or by using a [registration form](#)⁴ available from your local SEPA office.

¹ <http://www.legislation.gov.uk/ssi/2011/228/contents/made>

² <http://www.legislation.gov.uk/ssi/2011/228/schedule/1/made>

³ http://www.sepa.org.uk/waste/waste_regulation/application_forms/exempt_activities.aspx

⁴ http://www.sepa.org.uk/waste/waste_regulation/application_forms/idoc.ashx?docid=785b433f-34af-404c-b19b-960fe178cb24&version=-1

1. Definition of commercial purposes

For the purposes of biodiesel manufacture, SEPA interprets “commercial purposes” as meaning conducting an activity, to meet a demand from another organisation or person for the chemical produced in return for financial gain.

“Financial gain” means that there is some financial benefit to the person or company for supplying the fuel. This may be in the form of monetary payment but also includes the provision of goods or a service in return. It is not intended to mean simply that it is cheaper to use biodiesel than fossil diesel.

An example of a financial benefit would be where a haulage company is supplied with biodiesel in return for haulage services.

2. Threshold for industrial scale

For the purposes of biodiesel manufacture, the threshold for industrial scale is set at 200 tonnes per year.

In summary, if you produce less than 200 tonnes per year of biodiesel, or you produce more but it does not meet the definition of commercial purposes below, a PPC permit⁵ or Waste Management Licence (WML) will not be required. You will have to register an exemption from waste management licensing.

Outputs from the Biodiesel Manufacture

Small scale manufacturing processes produce biodiesel and a residue containing a mixture of glycerol, solvent and unreacted vegetable oil.

SEPA is currently considering whether biodiesel manufactured according to the British Standard (BS EN 14214) is no longer waste. In the meantime, a decision will be made on a case by case basis based on the information in our [“Is It Waste” guidance](#)⁶. However, biodiesel manufactured under the terms of paragraph 5 can be used as a fuel in accordance with the terms of paragraph 5.

Waste glycerol, solvents and unreacted vegetable oils, if they are not capable of being reused in the process, should be removed from the site by a licensed carrier (if not carried by the biodiesel manufacturer) and taken to a suitably licensed site for recovery or disposal. These residues may be Special Waste which must be consigned in accordance with the requirements of the Special Waste Regulations 1996, as amended.

If a business regularly carries its own waste (excluding construction or demolition waste) to a site for disposal or recovery, that business must be registered as a Professional Carrier/ Transporter of Waste. This registration is free and more information is available on our [website](#)⁷.

Duty of Care and Small Scale Manufacture of Biodiesel

Everyone who produces or handles waste has a statutory duty of care to prevent anyone collecting, transporting, storing, disposing of or recovering the waste unless they have a waste management licence or an exemption from the need for a licence.

The UCO producer, e.g. takeaway owner, is responsible for:

- packaging the waste oil appropriately and robustly to stop it leaking
- ensuring that the waste is only transferred to a registered waste carrier or someone holding a licence or exemption to deal with that waste
- ensuring that the waste being transferred is accompanied by a written description that will enable anyone receiving it to dispose of it or handle it safely and appropriately
- keeping records of all waste that is transferred for at least two years

⁵ A permit issued under the Pollution Prevention and Control (Scotland) Regulations 2000, as amended

⁶ http://www.sepa.org.uk/pdf/guidance/waste/is_it_waste_v2.pdf

⁷ http://www.sepa.org.uk/waste/waste_regulation/waste_carriers_and_brokers/who_needs_to_register.aspx

The person who removes the UCO from the producer and takes it to the biodiesel manufacturer is responsible for:

- registering as a waste carrier (charities or voluntary organisations need to register as a professional collector/ transporter of waste which has no fee)
- ensuring the waste they collect matches the description in the transfer note
- taking the waste only to a licensed or exempt site
- keeping records of all waste carried for at least two years

The biodiesel manufacturer is responsible for:

- registering an exemption under paragraph 5 with SEPA
- complying with the terms of the exemption and the relevant objectives
- keeping records of all waste received for at least two years
- correctly disposing of all waste generated by the process

Storage of Vegetable Oil and Diesel

The [Water Environment \(Oil Storage\) \(Scotland\) Regulations 2006](#)⁸ apply to the storage of any kind of oil including petrol, diesel, waste vegetable and plant oil and biodiesel, and apply to any kind of container which is being used and which is stored on premises above ground, whether inside or outside a building. The range of premises covered by the Regulations is wide including land and mobile plant but does not include storage of oil in vehicles or vessels.

The regulations lay down requirements for the design and construction of oil storage containers with a capacity of more than 200 litres (the average 44 gallon drum): the container must be of sufficient strength and structural integrity so as to ensure that it is unlikely to burst or leak in its ordinary use.

Where the container has a storage capacity of 200 litres or more, the regulations require provision of secondary containment (a 'bund' or 'drip-tray') to ensure that any leaking or spilt oil cannot enter the water environment.

Further information on oil storage is available on our [website](#)⁹ or from your local SEPA office.

Summary: What small scale manufacturers need to do

- register an exemption under paragraph 5. This can be done [online through our website](#). Paper copies of the form are available on our [website](#) or from your local SEPA office
- register as a waste carrier if you collect the UCO from the takeaway, etc.*
- meet the requirements of the exemption, e.g. storage limits and record keeping
- meet the duty of care and oil storage requirements
- ensure waste is disposed of properly

*NB If you are a registered charity or voluntary organisation and you transport waste, you must be on SEPA's Register of Waste Transporters. There is no charge for this type of registration.

Sources of Further Information

SEPA guidance on the definition of waste:

http://www.sepa.org.uk/pdf/guidance/waste/is_it_waste_v2.pdf

NetRegs Guidance on Duty of Care:

<http://www.netregs.gov.uk/netregs/275207/275430/?version=1&lang=e>

SEPA guidance on waste carriers:

⁸ <http://www.legislation.gov.uk/ssi/2006/133/contents/made>

⁹ <http://www.sepa.org.uk/regulation/oilstorage2006/index.htm>

<http://www.sepa.org.uk/regulation/rocas/index.htm>

SEPA guidance on consigning special waste:

http://www.sepa.org.uk/pdf/guidance/waste/consigning_special_waste.pdf

SEPA guidance on storage of vegetable oil and biodiesel:

<http://www.sepa.org.uk/regulation/oilstorage2006/index.htm>

The Health and Safety Executive has produced guidance on small scale biodiesel production:

<http://www.hse.gov.uk/pubns/biodiesel.htm>

Although SEPA's prime concern is with environmental protection, we advise you that the public must pay duty on all vehicle fuel, regardless of the origins of the fuel. Further information is available from HM Revenues and Customs. HMRC tax position (HMRC Reference: Notice 179E (October 2005)) is available at:

http://customs.hmrc.gov.uk/channelsPortalWebApp/channelsPortalWebApp.portal?_nfpb=true&_pageLabel=pageVAT_ShowContent&id=HMCE_CL_000205&propertyType=document

This guidance note gives details of the various biofuels and their excise duty rates. It also explains the roles and responsibilities of producers of these products.

Summary Table of Applicable Licensing Regimes

| Commercial Purposes | Industrial Scale | Type of Treatment | | Input | | Licensing Requirement |
|---------------------|------------------|-------------------|----------|-------|-----------|-----------------------|
| | | Physical | Chemical | Waste | Non Waste | |
| ✓ | ✓ | | ✓ | ✓ | | PPC |
| ✓ | ✓ | | ✓ | | ✓ | PPC |
| ✓ | ✓ | ✓ | | ✓ | | WML |
| ✓ | ✓ | ✓ | | | ✓ | None |
| X | X | ✓ | | ✓ | | WMX |
| X | X | ✓ | | | ✓ | None |
| X | X | | ✓ | ✓ | | WMX |
| X | X | | ✓ | | ✓ | None |
| ✓ | X | | ✓ | ✓ | | WMX |
| ✓ | X | | ✓ | | ✓ | None |
| X | ✓ | | ✓ | ✓ | | WMX |
| X | ✓ | | ✓ | | ✓ | None |

PPC = Pollution Prevention and Control Permit

WML = Waste Management Licence

WMX = Exemption from Waste Management Licensing