

RTFO Guidance - Wastes and residues

Valid from 15 April 2013 - v6.3

This document contains lists of biofuel feedstocks which the Administrator has assessed and categorises them according to whether, in the Administrator's view, they are products or other materials such as wastes and residues which double count under the RTFO. Materials listed in Tables 2-4 receive two RTFCs for every litre/kg of biofuel. It should be used in conjunction with the RTFO Guidance Part Two: Carbon and Sustainability Guidance. Chapter 9 of the guidance document addresses the categorisation of materials including wastes and residues and how these should be reported.

This document may be updated during the course of the obligation period: any changes will be communicated to suppliers and will be reflected in ROS. The latest version can be found on the DfT website's [RTFO Guidance page](#).

Table 1- Products		
Material	Description	Valid from
Acid ester	Esters are produced intentionally and are therefore a product.	15/12/11
Brown/sulphite liquor	This material arises during the pulping of wood. As for tall oil, it is considered a product.	15/12/11
Corn or wheat dried distillers grain (DDGS)	This material's treatment in the RED GHG calculations makes clear that it is to be treated as a product.	15/12/11
Crude tall oil	Crude tall oil arises from the process of pulping coniferous wood. The pulping process involves cooking woodchip in a chemical mixture and this gives rise to a soapy material which is separated from the pulp and liquor. It is then acidified and heated to convert it into crude tall oil. Crude tall oil is a product of the pulping process.	15/12/11
Glycerol (refined) from virgin oils	The treatment of glycerol from virgin oils in the RED GHG calculations makes clear that it is to be treated as a product.	15/12/11
Meal from virgin oil production	The treatment of these materials in the RED GHG calculations makes clear that they are to be treated as products.	15/12/11
Molasses	This material arises from the processing of sugar cane and sugar beet into sugar. It arises on the basis of a	15/12/11

	technical decision, and is considered a product.	
Palm fatty acid distillate (PFAD)	The treatment of PFAD in the RED GHG calculations indicates that it is to be treated as a product. PFAD has a significant economic value in relation to the main product (palm oil) and a variety of productive uses.	15/12/11
Palm kernel oil	Palm kernel oil is a product.	15/12/11
Palm oil olein	The refined liquid fraction of palm oil is a product.	15/12/11
Palm stearin	The refined solid fraction of palm oil is a co-product of palm olein. It is traded at a discount to palm oil and palm olein; making it a cost-effective ingredient in several applications.	15/12/11
Sugar beet pulp	This is the pulp left over following sugar extraction. Its treatment in the RED GHG calculations makes clear that it is to be treated as a product.	15/12/11
Tallow (animal fats) category 2 ¹	<p>Tallow is a product of the meat rendering process. Category 2 tallow has a high economic value and a variety of productive uses. It is a direct substitute for other products (e.g. palm oil).</p> <p>Note: As this material is not obtained directly from land, suppliers are not required to demonstrate compliance with the land criteria. The previous land use column in ROS automatically defaults to 'not applicable' as the land criteria are automatically satisfied for tallow.</p>	15/12/11
Tallow (animal fats) category 3	<p>Tallow is a product of the meat rendering process. Category 3 tallow has a high economic value and a variety of productive uses. It is a direct substitute for other products (e.g. palm oil).</p> <p>Note: Category 3 tallow is specifically excluded from the default for waste vegetable or animal oil biodiesel. Actual carbon values must be used.</p> <p>Note: As this material is not obtained directly from land, suppliers are not required to demonstrate compliance with the land criteria. The previous land use column in ROS automatically defaults to 'not applicable' as the land criteria are automatically satisfied for tallow.</p>	15/12/11
Tallow - unknown	Tallow of an unknown category will be treated as category 3 tallow.	
Uncategorised tallow	Tallow derived from outside of the EU might not be categorised through EU animal by-product regulations.	

¹ The treatment of tallow will be kept under consideration and may be reviewed for April 2014 in relation to legislative changes and to assess the impact on other markets resulting from additional incentives for tallow based biodiesel.

	<p>For the purposes of the RTFO this material will not be treated as a waste unless a supplier can demonstrate that its permitted uses excluded food, feed and oleochemical uses as a raw material, in which case the material will be treated as per category 1 tallow.</p> <p>Notes: The EU carbon default may be used.</p> <p>As this material is not obtained directly from land, suppliers are not required to demonstrate compliance with the land criteria. The previous land use column in ROS automatically defaults to 'not applicable' as the land criteria are automatically satisfied for tallow.</p>	
Virgin oils	<p>Including, but not limited to, oils derived from palm, soy, rape and sunflower. The treatment of these materials - and of the meal produced as part of the same process - in the RED GHG calculations makes clear that these are to be treated as products.</p>	15/12/11

Table 2 - Residues from agriculture, aquaculture, forestry and fisheries

Material	Description	Valid from
Arboricultural residues	Arboricultural residues meet the same criteria as forestry residues. See above.	15/12/11
Bagasse	Bagasse results from crushing sugarcane or sorghum. Bagasse is specifically named as an agricultural residue in the RED.	15/12/11
Cobs	Cobs are specifically named as agricultural residues in the RED.	15/12/11
Forestry residues	Forestry residues are identified explicitly by the RED as residues and treated as wastes/residues in the RED GHG calculations. The Environment Agency's statement (see the link below) provides guidance on the distinction between forestry residues and waste wood: http://www.environment-agency.gov.uk/static/documents/Research/PS_005_Regulation_of_wood_v3.0.pdf	15/12/11
Husks	Husks are specifically named as agricultural residues in the RED.	15/12/11
Nut shells	Nut shells are specifically named as an agricultural residue in the RED.	15/12/11
Straw	Straw is specifically named as an agricultural crop residue in the RED.	15/12/11

Table 3 - Wastes & processing residues

Material	Description	Valid from
Brown grease	Brown grease is the grease that is removed from wastewater sent down a restaurant's sink drain. This is a waste. Material removed from sewers known as "FOG" (fats, oils and grease) should also be reported as brown grease.	15/12/11
Crude glycerine	Crude glycerine is specifically named as a residue from processing in the RED. (The RED treats refined glycerine from as a product - see above).	15/12/11
Food waste	Whether from manufacturers, retailers or consumers, this will be a waste.	15/12/11
Low grade starch slurry	Low grade starch slurry for which it can be demonstrated that there are no other economically viable end uses is considered a waste, and double counts.	15/12/12

	Suppliers may be asked for evidence that this material is unsuitable for other end uses, such as animal feed.	
Manure	Manure is treated as a waste/residue in the GHG calculations. It is specifically named as a residue in the Commission Communication on its practical implementation (2010/C 160/02).	15/12/11
Organic municipal solid waste (MSW)	This is a waste. Only the biomass portion of MSW counts as a renewable fuel.	15/12/11
Palm oil mill effluent (POME)	<p>POME is a waste water/sludge arising from palm oil production. It has no economic value; current practise in SE Asia is to release to open ponds for anaerobic digestion resulting in methane emissions.</p> <p>The oil extracted from POME is often referred to as Palm Sludge Oil (PSO). Suppliers wishing to report either POME or PSO on ROS should use the POME category.</p>	15/12/11
Renewable component of end-of-life tyres	<p>Tyres are manufactured from a mixture of non-renewable petroleum products and natural rubber. Suppliers of fuel made from end-of-life tyres will need to have a Fuel Measurement and Sampling (FMS) regime in place, and will need to demonstrate how they have apportioned the renewability of the material in terms of the outputs from the conversion process of the tyres into fuel as the conversion process usually produces solid, liquid and gaseous fractions.</p> <p>End-of-life tyres are a waste.</p>	15/5/13
Soapstock acid oil contaminated with sulphur	<p>Refiners of vegetable oils who use chemical extraction processes to refine their oils give rise to soapstock acid oils that have levels of contaminants that make them unfit for human or animal consumption. This is generally sulphur from the use of sulphuric acid in the extraction process, but may also include phosphorus from phosphoric acid or sodium / potassium from the alkalis used to neutralise them.</p> <p>This material is a waste.</p> <p>Suppliers of fuel made from this material should be able to demonstrate that the material was produced by a refiner who used these methods of extraction, and may be asked to produce evidence of the levels of contaminants within the material.</p>	5/9/13
Spent bleached earth	Bleached earth is used to bleach palm oil as part of the production process. Spent bleached earth has no economic value; it is typically land-filled but can be	15/12/11

	incinerated.	
Tall oil pitch	Tall oil pitch meets the definition of a residue for the purpose of the RED. It is specifically named as a residue in the Commission Communication on its practical implementation (2010/C 160/02).	15/12/11
Tallow (processed animal fats) category 1	<p>Category 1 tallow is processed animal fat produced in the meat rendering process. It has a significant economic value but its legally permissible end uses are, at present, generally limited to energy generation.</p> <p>Note: The treatment of tallow will be kept under consideration and may be reviewed for April 2014 in relation to legislative changes and to assess the impact on other markets resulting from additional incentives for tallow based biodiesel.</p>	15/12/11
Used cooking oil (UCO)	<p>Commonly called 'UCO' or 'WCO' (waste cooking oil), this is purified oils and fats of plant and animal origin. These have been used by restaurants, catering facilities and kitchens to cook food for human consumption. They are wastes as they are no longer fit for that purpose and are subsequently used as either feedstock for the production of biodiesel as fuel for automotive vehicles and heating or as a direct fuel.</p> <p>The following document underpins the Environment Agency's regulation of the process of producing biodiesel from UCO:</p> <p>http://www.environment-agency.gov.uk/static/documents/Leisure/090612_Biodiesel_QP_V5_final.pdf</p>	15/12/11
Waste pressings from production of vegetable oils	When a vegetable material such as olives is pressed to produce vegetable oil, the pressed material consisting of pips, skins, flesh etc. remains. This may be used as a fuel. The purpose of the process is to produce oil; the pressings are therefore wastes.	15/12/11
Waste wood	<p>The treatment of waste wood in the RED GHG calculations makes clear it is to be treated as a waste/residue. The Environment Agency's statement (see the link below) provides guidance on the distinction between forestry residues and waste wood:</p> <p>http://www.environment-agency.gov.uk/static/documents/Research/PS_005_Regulation_of_wood_v3.0.pdf</p>	15/12/11

Table 4 - Non-food cellulosic and ligno-cellulosic material

Material	Description	Valid from
Miscanthus	This is a non-food material commonly grown as an energy crop.	15/12/11

	If it is put to another use first, e.g. as animal bedding, before being used as fuel, then it will be a waste.	
Short rotation coppice (SRC)	SRC is a non-food material commonly grown as an energy crop.	15/12/11

Table 5 - Other materials		
Material	Description	Valid from
Free fatty acids	Free fatty acids should generally be reported in line with the feedstock they were derived from. For example, free fatty acids derived from UCO have the same waste/residue status as UCO.	15/12/11
Yellow grease	Yellow grease is the US term for used cooking oil but can be used for a wider range of materials including tallow for which particular requirements apply. Where suppliers have sourced 'yellow grease' they will be expected to report either UCO or the relevant category for tallow (or a combination of the two) as appropriate. In the case that a supplier is unable to substantiate the category of tallow or proportion of UCO content, a conservative approach should be adopted and single counting 'tallow - category 2 or uncategorised' reported. The EU carbon default may be used.	15/12/11