UK Legislation on Vegetable Oil Waste

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Introduction

Fats, oils and grease (F. O. G's) are used by countless catering services in the preparation of meals, however these FOGs are responsible for many problems in the drainage system, causing expensive blockages and pollution of the environment if washed into flowing water sources. Every year there are approximately 200,000 sewer blockages in the UK of which FOGs cause 75%. These blockages cause 55% of sewer flooding and almost 3,000 property-flooding incidents, resulting in an annual governmental cost of approximately £15 million. The UK government has thus created appropriate legislation under the Environmental Agency to ensure the safe disposal and recycling of waste cooking oil. This report aims to look at the current ways that vegetable oils are disposed of and recycled in the UK and the legislation that follows.

Current Legislation

The UK Environmental Agency has set up certain guides and laws for restaurants to abide by regarding vegetable oil disposal. Specialised contractors must collect all waste cooking oil from registered companies from the environmental agency. This agency is sponsored by the Department for Environment, Food & Rural Affairs (DEFRA) in order to prevent incorrect disposal of waste oil. Although there are specific civic amenities for the collection of cooking oil, cooking oil is prone to being put with ordinary oil recycling banks, which causes the entire bank to become contaminated, and thus non-recyclable.

Waste oil from cooking comes from a variety of sources, deep fat fryers, woks and frying pans to name but a few. This oil must be collected and kept in an air-tight container to prevent odours and contamination and stored in a clean area, away from drains in case of a leakage. These containers are then stored until they can be collected and recycled by a contractor. Failure to adhere to this can result in prosecution and the local authority can abate the situation and recover the cost at charge to the owner under the Environmental Protection Act 1900 (Statutory Nuisance). This is in relation to smells, effluents or accumulation of refuse in sites, which are prejudicial to health or a nuisance, i.e. the accumulation of waste oil not suitably stored.

Upon waste oil collection, the Environmental Protection Act of 1990 (Duty of Care) ensures that every commercial premise arranging the collection of waste cooking oil and fats must comply with the requirements of Section 34 of the Environmental Protection Act (Duty of Care) Regulations (amended 1991). This ensures that waste is managed correctly and taken to a licensed waste management site from start to finish of the. Alongside this a waste disposal note is required to be completed by both parties (paper copy or electronic), which is kept by both parties for a minimum of 3 years. Essential information on this note includes:

- Waste regulation details (specific to their organisations)
- Details of who the waste is being transferred from (e.g. a restaurant)
- The date of this exchange
- Signature of authorisation from both parties involved

This act also means that an authorised officer can request access to the documentation of the waste note in relation to the registration of the waste oil collection. If this document fails to be produced, there is a fixed penalty charge of £300 or even prosecution as well as recovery of costs in cases of default from the owner of the establishment.

Prior to 2004, waste-cooking oil was used as a high fat source in animal feeds, which could be sold at a profitable price. The Animal By-Product Regulation EC act means that waste-cooking oil is no longer used as an animal feed product that aims to protect the food chain.

Section 59 of the Building Act of 1984 allows local authorities to acquire a provision for drainage of an existing building by service of notice on the owner, which allows the installation of a grease trap to further protect from blockages in drains. This follows from the Food Safety Act of 1990 where premises may be inspected and any problems from fat, oil and grease in drains will result in a failure to abide by the Food Hygiene Regulations can result in prosecution or even an emergency prohibition order to halt any trading action at the site.

Methods of removal

Grease traps may be used and implemented at establishments, which are placed inside drain pipes to separate fat, oil and grease from wastewater. This allows the wastewater to continue flowing down the sewers to be treated.. A licensed service courier can then collect the fats that are separated at regular collections with a record of maintenance being kept for inspections. Enzyme systems are also used to degrade down waste oils and fats, which are fitted by specialist services which work alongside grease traps should any oil, reach the drain.

Food macerators are designed to chop and grind down food into smaller pieces to allow them to be disposed via the drainage system however this still allows fat to accumulate in the pipes, resulting in expensive blockages again, thus this removal method is advised against and instead waste food should be disposed of in the bin and then collected by a waste contractor.

Waste Oil Recycling

Cooking oil has the potential to be refined into a variety of biofuels for power generation as well as heating. This is an area of focus in oil recycling as biofuels that are created from cooking oil have a tendency to burn cleaner and have a lower carbon footprint. This is also an area where restaurants can be provided with a revenue from recycling companies.

The process of refining used cooking oil falls under the chemical reaction of hydrocracking and hydrogenation. Hydrocracking breaks up larger molecules with the use of hydrogen whereas hydrogenation adds hydrogen to smaller molecules. Both of these processes are the backbone of creating a variety of oils ranging from diesel to propane

Collected waste vegetable oil upon collection is subject to the process of rendering, treatment to remove pesticides and harsh chemicals that often occurs in a vacuum to help any volatile impurities to be removed. This end product upon further modification will become diesel. To adapt this more, Transesterification reactions with methanol will increase the usability of diesel to make biodiesel, reducing carbon emissions. This is an efficient process, with 1 litre of waste oil creating 1 litre of biodiesel.

Conclusion

The UK has a variety of methods, both guides and legislation for restaurants and caterers to follow in regard to the correct disposal and recycling of cooking oil waste to prevent expensive and dangerous sewage blockages which damage not only the infrastructure but lead to potential pollution to the environment. Together this scheme can help to eliminate the danger and contribution that these services provide to fatberg formation.

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