

ABSTRACT

The objective of this study is to select the Best Available Techniques (BAT) appropriate for the disposal of used oil. On the basis of these techniques recommendations for the Flemish Government are put forward. These concern the environmental permit legislation, as well as the promotion of BAT by investment support.

In the Flemish region only a few companies are active in this field. Some companies carry out a simple purification removing the sediment and water from the used oil (e.g. Recyc-oil and Stevor). Mottay & Pisart recycles industrial and transformer oil. Other companies use the oil as a fuel (e.g. for the incineration of hazardous waste) or as a substitute for cokes (e.g. in a blast-furnace). Part of the used oil is also used as a fuel in cement kilns (e.g. Ciments d'Obourg).

New initiatives are taken for the disposal of used oil: a re-refining route (Ecolube) may yield distillates to be used for the production of base oil, a cracking installation may produce a new fuel (in accordance with the legal standards), a port reception facility in Antwerp can transform the used oil into bunker fuel.

This report describes the various ways of disposing of used oil and compares their environmental impact and their technical and economic aspects. Especially the ability of the processes to eliminate the hazardous components of the used oil, including the sulphur and metal components and the emission of the products of incomplete combustion and VOC, are carefully assessed.

The BAT assessment of 10 representative systems shows that the re-refining project and the use in the blast-furnace are the most preferred options. Almost as good are recycling of industrial oils, co-combustion in cement kilns and the use as fuel in a hazardous waste incinerator. The application of these 5 BAT would restrict the loss of sulphur compounds and metals to the environment (by air, water and fuel products) to 10 %. This value can be used in the permit conditions rather than imposing specific technologies. The re-refining project and the installation for use of oil in a blast-furnace may be suitable for "ecology" investment support.

When the annual 170 000 ton of used oil that is produced in Flanders, is treated according to BAT, SO₂ emission would be lowered from 2000 ton to below 200 t/a. The emission of metals would be reduced over 36 000 kg/a as compared to the total of 40 000 kg/a.