



**URBAN
WASTE**
URBAN STRATEGIES FOR
WASTE MANAGEMENT
IN TOURIST CITIES



Collection points for used cooking oil





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What is the measure about?

Description and scope of the measure

This measure introduces the selective collection of used cooking oil (UCO) from restaurants, bars, hotels, etc. through the establishment of a collection scheme comprising a network of collection points.

As it is known, used cooking oil (incl. lard, dripping, hydrogenated and refined/unrefined vegetable oil) should not be dumped into the kitchen sink, this common practice implies important environmental pollution problems. As a liquid waste, it should not be disposed together with solid waste fractions either, and it consequently requires a special management and treatment. However, the adequate disposal of UCO is often not covered by special requirements or regulations.

The separation at source and the transportation to specific collection points (e.g. civic amenity sites or specific containers for kerbside collection) is hereby presented as a measure to help tackle the problem.

By separating cooking oil from the rest of municipal waste fractions, it will be possible to treat it accordingly and it will become a valuable resource having a very high recovery potential. In most cases, used cooking oil will be processed and transformed into biofuel for diesel engines, power generation or heating.

The transportation of used cooking oil generated at source can be carried out by the producer itself (e.g. citizens), although it is common for larger producers (e.g. restaurants, hotels, etc.) to hire private authorised waste managers that provide the service of collection and adequate management. In both cases, it will be necessary to implement and distribute specific on-site containers to facilitate the storage and further collection of used oils.

Whereas in some cases UCO collection is governed by public authorities, in other cities private companies are in charge of its management. In any case, the separate collection and treatment of used cooking oil is a widespread practice in many cities of Europe.

Integration in a waste management plan

This measure for collection and recycling of UCO can be easily integrated in the sustainable development plan, waste management plan or waste recycling strategy/policy of any municipality or city council.

How to implement this measure?

Costs

- Costs of specific containers for the collection the used cooking oil, which vary depending on the size and provider.

Cost savings

- As an example, during the CIVITAS project, it was published that participating restaurants saved about €0.30 per kg on disposal costs as well as €30,000 on costs of maintaining the sewerage system and wastewater treatment¹.

Revenues

- The recycling of UCO could provide a form of revenue for restaurants and hotels, which are sometimes compensated by cooking oil recyclers for their used oil. During 2017, the market price for UCO ranged between 600 and 820€/ton².

Type of stakeholders to involve

For the effective introduction, implementation and continuous operation of the proposed measure a number of key stakeholders should be involved. These include:

- Municipal government
- Waste management and energy department of local authorities
- Waste management company/local authority in charge of municipal waste collection
- Private companies authorised to collect/recycle UCO
- Suppliers of containers and bins for UCO disposal and collection
- Hotel, restaurant, bar managers and workers (kitchen staff)
- Householders and tourists

Description of the operational steps to follow

At municipal level

- Engagement and support from the municipal government and public authorities is essential already in the design phase, before the implementation of the measure (e.g. allocating and allowing public areas - such as public squares or schools - for collection of UCO).

¹ Source: <http://civitas.eu/measure/optimising-collection-used-cooking-oil>

² Source: <https://www.greenea.com/en/market-analysis/>

- Establishment of collection points, as numerous as possible, located in highly frequented areas and public places with high visibility (taking into consideration the theft risk):
 - Consider schools, public parking slots, supermarkets, municipal buildings, etc. to establish collection points.
 - Facilities where containers or bottles with UCO can be thrown inside could be a feasible option.
- Consider the implementation of a public-private partnership to incentive private oil providers to collect the UCO on-site when delivering new oil to the clients. The idea is to facilitate the UCO collection for the producers.
- Regular communication campaigns:
 - Householders and hotel, restaurant and bar managers must be informed about what, how and where to deliver UCO. They will be keener to recycle UCO if they think it is practical and easy to do (environmental reasons for recycling should be made explicit and preferably relating to individual behaviour).
 - The system should be advertised only after it is tested and is running accordingly.
 - Communication channels: newspapers, leaflets, outdoor billboards, lettering on vehicles, websites, social media and the collecting container itself.
- Promotional activities to increase participation:
 - Free of charge “oil pots” and special funnels could be delivered to producers to facilitate the pouring of UCO into plastic bottles and pots.
 - Contests or rewards for producers (e.g. local virgin olive oil, detergents or cleaning agents in exchange for UCO).
- All collaborating establishments (e.g. restaurants, hotels, etc.) should be registered and identified with a sticker and also receive containers for the collection of UCO.

In some situations, the produced biodiesel is sold to the market and partially provided back to the promoting organizers to use it, for example, in the municipal truck fleets.

At restaurant/bar/hotel level³

- Definition of responsibilities:
 - Appointing of a responsible person (coordinator) to coordinate and promote the preparation, implementation and assessment of the measure.
 - Appointing of a responsible person (head of department) within each area of department in charge of applying the measure within his/her scope of activities.
 - Keeping periodic meetings between coordinator and heads of area.
- Baseline analysis:
 - Quantification assessment to identify improvements and priorities where to implement changes and optimise the use of resources.

³ *Guía de hoteles más sostenibles (2010). Ajuntament de Barcelona – Agenda 21 – Publicacions – Guías de Educación Ambiental*

(http://w110.bcn.cat/MediAmbient/Continguts/Continguts_Transversals/Educacio_Ambiental/Documents/Fitxers/Guia_Hotels_Sostenibles_CAT.pdf)

- Provision of continuous awareness and training of personnel. Stimulate and motivate workers and staff in the preparation and implementation of the measure to increase their commitment.
- Publish or release the plan and ongoing results to motivate workers.

Gender aspects to consider

Who will do the additional work required, and will this increase the work load?

Attention needs to be paid to whether this will lead to gender imbalance in workload, and how this will be managed.

Examples of good practices

- City officials in Barcelona (Spain) begun handing out free “oil pots” in an attempt to get more citizens to deposit the material for eventual reuse. This initiative aims to reclaim as much of the used cooking oil as possible and there is no limit as to which oils can be recycled. In turn, oil will be kept from clogging drains and contaminating local water in addition to providing an alternative ingredient for soap, biodiesel and even paint. In 2010, the city initiated civic amenity sites (also known as “Green points”) and was able to collect 195,136 litres of oil – which is just 2.5% of the oil used each year in the city. With the new oil pots, and a new campaign launched by the city council, Barcelona hopes to transform this number significantly. The pot will make it easy for citizens to save any type of oil and allow them to easily drop the waste off at any Green Point in the city⁴.
- In Valencia (Spain), the project ECOBUS designed strategies and a pilot scheme to collect UCO from households, restaurants and hotels for recycling and use as biofuel for diesel engines. Cooking oils could be recycled into an environmental friendly fuel and could be used by public transport in the city centre. During this project, 322,654 litres of eco-diesel were used and the amount of eco-diesel/diesel mixed used in the fleet was 1,778,140 litres. The buses covered a total of 3,228,783 km thanks to this initiative⁵.
- At the “Le Manoir aux Quat’ Saisons” hotel (Oxford, UK), UCO (incl. oils and butters from cooking) is being recycled using a local company called “Arrow Oil” that supplies *Fat Bins* (“Le Manoir” and “Arrow Oil” split the cost of purchasing the bins 50-50). These bins are stored in a separate outdoor refrigerated unit to stop unwanted smells, leakages and pests and are collected on a weekly basis. The fat is recycled into biofuel and “Arrow Oil” gives back to the hotel 25p per litre (back in 2012). The biofuel produced is then used to fuel the “Arrow Oils” transportation trucks⁶.
- Located in Spain, Ekogras is a pioneer in the collection of cooking oil in containers. It collects, transports and manages used edible oil. As an authorized manager, it recycles the food oil that has become waste and transforms it into raw material for the production of second generation biodiesel. Within URBANWASTE pilots should look for authorized organisations that can collect, transport and manage the cooking oils to transform it into biodiesel⁷.

⁴ Barcelona Promotes Kitchen Oil Recycling By Giving Out Free ‘Oilpots’ (<http://inhabitat.com/barcelona-promotes-kitchen-oil-recycling-by-giving-out-free-oilpots/>)

⁵ ECOBUS: Collecting used cooking oils to their recycling as biofuel for diesel engines (http://ec.europa.eu/environment/life/project/Projects/index.cfm?fuseaction=search.dspPage&n_proj_id=2124&docType=pdf)

⁶ *Reducing and Managing Food Waste in Hotels* (Green Hotelier) <http://www.greenhotelier.org/know-how-guides/reducing-and-managing-food-waste-in-hotels/>

⁷ <http://www.ekogras.es/>

- More examples of good practices related to UCO collection can be withdrawn from the RecOil project, which gathered information on different collection systems and promotional campaigns carried out in Portugal, Spain, Italy, Greece and Belgium. In total, 44 systems were analysed and the information obtained helped to identify common aspects as well as critical points.⁸

⁸ RecOil Project (<https://www.recoilproject.eu/index.php/en/good-promotion-and-collection-practices>)

Guidance for setting up monitoring indicators

Two groups of indicators are to be set:

1. The first group aims at monitoring involved stakeholders:

- Restaurants involved **[number]**
- Total number of restaurants in the pilot area **[number]**

These two data will enable to compute the following indicator:

- Percentage of restaurants or hotels involved: $\text{Restaurants involved} / \text{Total number of restaurants in the pilot area}$ **[%]**

The pilot area can be the whole city or a part of it: down town, old town, port area...

- Mapping of restaurants that implement the measure **[Name and address]**
- Bins for cooked oils collection distributed **[number]**
- Frequency of cooked oil collection with door-to-door system **[day/week]**

2. The second group aims at monitoring waste production in involved restaurants and the performance of the measure:

- Quantity of cooked oils collected **[kg]** or **[number of bins]**: the number of bins can be chosen as a unit of measurement if it is not possible to weight cooked oils collected, the average weight of a fulfilled bin will have to be estimated beforehand for further calculation
- Number of customers **[number]**

These last two data will enable to compute the following indicator:

- Quantity of cooked oils collected per capita: $\text{Quantity of cooked oils collected} / \text{Number of customers}$ **[kg / customer]**

Time frame

It is recommended to start the monitoring at least one week before collection points for used cooking oils are implemented to assess the effect of the measure.

Quantity of cooked oils collected and number of customers can be registered **continuously** (every day every week) or **randomly** (one day per week or every day one week per month).

Gender Considerations

- Who makes ultimate decisions in establishment? **[male-female]**
- Who is involved in oil collection within each establishment? **[%female]**
- Approximate gender distribution of extra work involved? **[% female]**

Lessons learnt from the implementation phase and fine tuning



Pilot implementing collection points for used cooking oils within URBAN-WASTE

In **Syracuse**, 1 bin for collecting used cooking oils (UCO) of private accommodation (citizens and tourists) with a capacity of 300 litres was installed in a strategic place close to the old city and the popular market.

23 facilities and 3 touristic info-points were committed to promote the initiative. 6 tailored events have been organized for collecting the UCO (47 litres in 3 months). The measure has permitted to raise awareness.

20 tons from "door to door" collection was done in the whole cities, involving more than **160 facilities**. The urban waste bin located in Ortigia reached a small quantitative compare to the overall data, but in all the cities, facilitating and improving the overall collection (20 tons)

The measure was supported by a massive and wide communication campaign about waste separated collection and waste reduction (stickers, Promo cards, T-Shirt, info-point during main cultural and public events, involvement of touristic info points, association of guides and facilities, social communication).

Key points

- **Involve diverse facilities (i.e. hotels, supermarkets...) to increase the participation.**
- **Plan the involvement of stakeholders well in advance before the peak tourist season when they are available and not too busy.**