



Managing Food Waste in the Hospitality and Food Service Industry



Growth that doesn't cost the earth



A programme from



Contents



Resource Efficient Scotland, a Scottish Government funded programme, provides a one-stop shop for businesses and organisations in the private, public and third sectors. Delivered by Zero Waste Scotland, this service offers free advice, training and practical support to help organisations, large or small, adapt, change and benefit from greater cost savings by using energy, water and materials more efficiently.

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This Guide was produced in consultation with CESA members, who were invited to submit details of available equipment compliant with the Regulations.



Section 1 Introduction

Food waste is an issue that affects everyone, whether at home or at work. It is also a particular concern for businesses in the Scottish hospitality and food service sector, which dispose of an estimated 53,500 tonnes of food waste every year.

This means that for a percentage of their products, Scottish hospitality and food service companies are losing not only the purchase cost of food, but are also unable to recover the add-on operational costs associated with labour, water, energy and waste disposal.

Food waste can have a detrimental impact on the environment too. If sent to landfill, decomposing food gives off methane, a greenhouse gas at least twenty times more potent than CO₂. If unavoidable food waste is collected separately and sent for appropriate treatment it can be turned into valuable end products such as compost, fertiliser and renewable energy.

Environmental improvement is an increasingly important factor for businesses to stay competitive and manage their supply chain risks. Increasing resource scarcity; rising raw material, transport and utility costs; and pressure from legislation, customers and society to reduce environmental damage are combining to drive businesses to improve their performance and become more sustainable.

From 1 January 2014, all businesses, no matter how large or small, will have to separate their waste for recycling to comply with the Waste (Scotland) Regulations 2012. Implementing the necessary changes to meet these responsibilities may present challenges for some, but they also represent the route to real opportunities.

The drive is for Scottish business to become increasingly effective at maximising every bit of value from the resources they use. This requires changing the way people think about products, the way we manage finite resources and the way we assess and consider waste.

Produced in conjunction with the Catering Equipment Suppliers Association (CESA), this Guide sets out the key steps that food businesses can take to make efficiency savings and meet the requirements of the Waste (Scotland) Regulations 2012. It examines some of the practical options available, and considers equipment that has been specifically designed to process food waste in a way that captures its resource value.

In taking the right action, Scottish hospitality and catering companies can contribute significantly towards Scotland's climate change, renewable energy and zero waste targets. In so doing, this will help to drive down business costs and maximise profits with greater opportunity for economic growth.

“Businesses can benefit from maximising every bit of value from the resources they use. The Resource Efficient Scotland programme has been created to help firms save money by using energy, water and materials more efficiently.”

Iain Gulland,
Director of Zero Waste Scotland



Section 2 The Legislation: Waste (Scotland) Regulations 2012

From 1 January 2014 Scotland's new waste Regulations mean that all companies, big and small, will have to recycle their plastic, metal, glass, paper and card.

The Regulations also require all non-rural food businesses** producing more than 50kg of food waste per week to recycle food waste. This legal requirement will extend to non-rural food businesses generating over 5kg of food waste from 1 January 2016.

You can find out if your business is located in a non-rural location by visiting the Waste (Scotland) FAQ Database at www.resourceefficientscotland.com/regulations

From 1 January 2016, there will also be a ban on disposing food waste, including solid waste from grease traps, to the public sewer. This may present a new challenge for businesses that have previously used food waste disposal units as a convenient way of quickly removing food waste from the kitchen.

The Regulations do permit the use of equipment such as dewatering systems, which help to efficiently and effectively manage food waste in a busy commercial kitchen.

To comply, these systems must maximise the capture of

food waste in order to use the nutrient and calorific value of the food. For this reason systems which, for example, use enzymes to digest food waste and convert it to grey water are not acceptable within the Regulations.

The Regulations will also affect waste contractors, including local authorities, who will be required to provide services which support the separate collection of dry recyclables and food waste as appropriate, while also promoting 'high quality' recycling. It is therefore important to be aware of changes in local collection services that could affect your business.

Enforcement

Enforcement of the Regulations will:

- Be undertaken by the Scottish Environment Protection Agency (SEPA) and Scottish Local Authorities.
- Run alongside other business regulation
- Potentially lead to fines of up to £10,000 for non-compliance

Support

This Guide outlines different equipment options that will allow food businesses to collect and store food waste safely, in a manner which is both compliant with the Regulations and is straightforward to implement in a commercial kitchen. Whether the food waste is then treated on-site, or collected and transported to an appropriate treatment facility, businesses can help to ensure that food waste is converted into useful end products such as compost or renewable energy.

** With the exception of medical care establishments such as a hospital or hospice [as defined in section 108 of the National Health (Scotland) Act 1978] with catering facilities, who have until 1 January 2016 to comply with the Regulations.

Key Requirements of Waste (Scotland) Regulations 2012

| 1 January 2014 | | | 1 January 2016 | | |
|---|--|---|---|---|--|
| All businesses: present dry recyclables for collection. | Waste collection companies must take steps to maintain the quality of dry recyclables presented for separate collection; not allowed to mix separated waste post collection. | Non-rural food businesses producing over 50kg food waste per week: must recycle food waste. | All food businesses: disposal of food waste to the public sewer banned. | A ban on the use of macerators to discharge food waste into the public sewer. | Non-rural food businesses producing over 5kg food waste per week: must recycle food waste. |



Section 3 How to reduce food waste at source

It is estimated that up to 53,500 tonnes of food waste is disposed of annually by the Scottish hospitality sector, two-thirds of which could have been eaten.

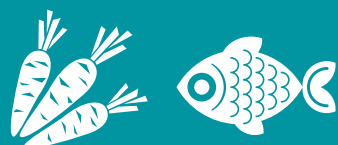
Most business do not realise how much food waste costs them. A 240 litre wheeled bin filled with food waste costs around £240 for food purchase costs and waste disposal alone.

Just one bin of food waste per week across 52 weeks of the year could cost a business more than £12,000. This is money that could be saved if a few things were done differently.

Purchasing, ordering and menu design

Thinking carefully about menu design is one of the key ways to reduce waste and help realise cost savings. Here are a few tips to help:

1



Stocking lots of ingredients, particularly perishables, means a higher risk that things will go out of date. Try to design a menu with fewer items, using seasonal ingredients where possible.

2



Use a number of core items across your menu to spread the risk of some dishes not selling as well as others. If one dish sells well it can use up the core item from another dish that might not be selling so well. A good example is tomatoes; they can be roasted, made into soups, as garnish or used in salads. A 'Special Dish of the Day' is also a good way to use produce approaching its best before date.

3



Continually review the menu. As slower moving dishes are identified, either modify produce ordering or consider taking them off the menu before they start to cause waste.

4



Think about what is made in-house and what can be bought ready made in the right portions.

5



Consider supplementing fresh and seasonal produce with frozen or dried ingredients where appropriate to minimise spoilage.

How to reduce food waste at source



Storage

- Handling produce properly is the first step to ensure that product shelf life is maximised as bruised or damaged fresh products will result in extra waste. Check produce on delivery and return anything that is damaged.
- Storing fresh products and raw ingredients in the most appropriate environment will increase their usable life. For example, store potatoes in the dark above 5 degrees Celsius and store apples in chilled storage.
- Continually rotate produce by putting the newest product at the back of the shelf so that the oldest automatically gets used first. Clearly label products with their purchase and best before dates.
- To help with accurate ordering try to place all the items of the same type (e.g. cans) from the same supplier on one shelf or in one area. This way you can easily see what you need.
- Try to work towards 'just-in-time' delivery rather than pre-ordering in quantity. This will help to minimise storage costs and spoilage.

In fridges and cold stores

- Have a selection of airtight containers for storing food and keep labels handy to mark dates. Store dairy products, cooked meat, raw meats, fish and fruit and vegetables separately.
- Label food with the date going into the freezer and keep a list of frozen produce. Food frozen on site should always be chilled in an appropriate piece of equipment, for example a blast chiller.

Preparation

The way food is prepared can prevent waste and make a big difference to profit margins.

- Try to avoid excess trimming of fish, meat and vegetables. Order pre-cut and trimmed items where possible, particularly when returnable transit packaging is offered to reduce waste packaging.
- Offer "skin-on" boiled, baked and roasted potatoes to reduce the amount of peelings you throw away.
- Try to avoid pre-preparation of food which will spoil quickly, and store leftover food safely for use the next day where appropriate.
- Get creative with trimmings and excess to make pâtés, soups and stocks. Freeze excess berries for coulis or smoothies, and excess bread can be made into bread crumbs or croutons.

Did you know?

Most businesses do not realise how much food waste costs them. Every 240 litre wheeled bin filled with food waste costs around £240 for food purchase costs and waste disposal alone.

Just one bin of food waste per week across 52 weeks of the year could cost a business more than £12,000 a year. This is money that could be saved if a few things were done differently.



How to reduce food waste at source

Portioning and plate waste

Accurate portion control is key to reducing waste and increasing profitability. Not everyone eats the same amount. Offer different portion sizes on the menu so customers can choose how much they want to eat.

Top tips

- Keep portions consistent and use standard spoons and measures so that portion sizes don't creep up.
- Offer different portion sizes for toddlers, children and lighter eaters.
- Serve a standard portion of vegetables or side dishes – but offer a second helping if the customer wants more.
- Encourage staff to help customers order the right amount and monitor plate waste to help identify opportunities for savings.
- Consider offering customers the option to take unfinished food home.
www.thesra.org/some-good-thing/too-good-to-waste/

Follow the waste hierarchy

Recycling waste that can't be prevented or re-used is a great way to help the environment and another way to save money.

Develop a better idea of the products you use and the waste you generate by continually monitoring and measuring. This will help you to identify ways of reducing your waste and, in turn, help you to reduce your operational costs.



Did you know?

It has been estimated that if all the food waste produced annually in Scotland was processed through modern treatment plants, it has the potential to generate enough energy to power a city the size of Inverness and supply 10% of Scotland's fertiliser needs¹.

Did you know?

It is estimated that waste typically costs companies between 1% and 4% of turnover.

¹ Zero Waste Scotland calculation



Section 4 The Hospitality and Food Service Agreement

If a business is serious about reducing costs, reducing waste is a great place to start.

As part of a UK-wide initiative, Resource Efficient Scotland is working with the hospitality sector to reduce food waste and associated packaging waste.

Supported by all four UK governments, the Hospitality and Food Service Agreement is a voluntary industry commitment to support the sector's efforts to reduce waste and recycle more.

The Agreement is flexible and allows any size of organisation to sign up, from smaller businesses to multinational companies, from sector wholesalers and distributors to trade bodies.

What are the targets?

The agreement includes two targets:

1

Prevention target:

Reduce food and associated packaging waste arising by 5% by the end of 2015. This will be against a 2012 baseline and be measured by CO₂e emissions.

2

Waste management target:

Increase the overall rate of food and packaging waste being recycled, sent to anaerobic digestion (AD) or composted to at least 70% by the end of 2015.

Did you know?

Research by the Sustainable Restaurant Association suggests that, on average:

Every tonne of avoidable food waste, i.e. food that could have been eaten, costs a hospitality business around £1,800.

For every meal eaten in a UK restaurant, nearly half a kilo of food is wasted – through preparation, spoilage and what's left behind on the plate.

Why should we sign up?

Signing up to the agreement can help you tackle food and associated packaging waste, reduce your environmental impact and potentially save your business money in the process.

The Benefits

- more efficient use of resources saving you money;
- meeting clients' and consumers' growing expectations to reduce food waste;
- cost savings for clients and businesses;
- reducing the carbon footprint associated with products and operations;
- driving innovation in the sector with support from all UK Governments; and consistency with Government policy and regulation.

How do we sign up?

Large Business (250+ full time employees)

A senior director from your company should send a formal letter to Resource Efficient Scotland to confirm that you wish to sign up. You will then be contacted by Resource Efficient Scotland to arrange a scoping meeting to determine your current baseline position and to help develop your implementation plan.

Smaller Business (Fewer than 250 full time employees)

A senior director from your company should send a formal letter to Resource Efficient Scotland to confirm that you wish to sign up. You should then work through Resource Efficient Scotland's online resource centre to help identify areas for improvement for your business in waste prevention and waste management.

Supporters

A senior director from your company should send a formal request to Resource Efficient Scotland confirming that you wish to join the supporters group. You should provide details of the pledge you wish to make in support of the Agreement. Certification schemes can usually sign up automatically, provided that your scheme meets the required standards.

For more information see

www.resourceefficientscotland.com/HospitalityTourism



Section 5 Equipment availability and solutions

Under the Waste (Scotland) Regulations 2012, food businesses in urban areas will be required to make food waste available for collection.

While many smaller businesses will simply store food waste in bins prior to collection, larger businesses have the option to use systems that dewater food waste. They can then store the solid material at source for collection, or convert the food waste to compost on site.

Catering waste compost facilities must be compliant with EU Animal By-Products regulations. These restrict the use of animal carcasses, parts of a carcass or products of animal origin that are not intended for human consumption. It is the producer's responsibility to ensure their waste is being treated correctly.

Preventing contaminants from getting mixed with food waste is essential; some systems include a cutlery magnet to ensure cutlery accidentally mixed with food is 'rescued' before the food waste is treated. Businesses should consider these, as well as other methods of preventing contamination by materials such as glass, paper and foil.

There is currently a limited range of food waste equipment solutions available that fully comply with the Regulations. In some instances, existing equipment may need to be adapted or possibly even removed.

Thought should be given to updating procedures manuals and modifying staff training to take account of the new legislation.

Pump and vacuum systems

Pump and vacuum systems are used to transport food waste through a network of pipes from the kitchen to a remotely-sited food holding or storage tank. They can work in conjunction with a food waste disposal unit, provided the output does not discharge to the sewer. Food waste can also be directly placed by staff into inlets or hoppers that feed into the pipes.

The process is managed by a control module located adjacent to the food waste holding tank. There is a choice of tank size, and it should be selected to suit the daily volume of food waste generated by the individual business. The food waste can either be stored for collection by a waste management company, or treated further on-site if appropriate.

Dewatering systems

The process of dewatering can reduce the overall volume of food waste by up to 80%, potentially lessening the need for large storage areas. Dewatering can provide a hygienic and ergonomic solution for catering businesses, although it should be noted that some dewatering equipment requires regular maintenance. They are generally efficient in terms of water and power use (please check with individual suppliers for equipment specific information), with the stored and dewatered food waste having the potential for conversion to energy, or composting on- or off-site.

Dewatering systems can work in conjunction with pump/vacuum systems. Waste food is either placed in a hopper at a food waste station, or scraped into food waste inlets. Either of these can be located at multiple sites in any catering location where space allows, with the food transported to the dewatering equipment via the pipe network.

Systems typically work by macerating food waste and combining it with a measured amount of water, which is then converted to a liquid mass that can be easily moved through pipes via a vacuum or pump system. The excess water is extracted from the liquid food (slurry) by means of a filter system. From the on-site storage tank the liquid slurry can be transferred again through the pipe network to a storage tank on the exterior of the building.

The dehydrated food waste is up to 80% less in volume and is hygienically stored for collection. These systems meet the objective of sending no waste food to drain. Dewatered food waste can be collected for appropriate treatment.

Key elements of a dewatering system

The four main elements that require to be installed are:

- food waste deposit inlet or inlets in the kitchen;
- a food collection and storage tank;
- a compact vacuum or pump unit with incorporated system control unit; and
- a network of interconnecting transfer pipes.

Emptying of the storage tank is undertaken by a specialist tanker vehicle and the liquid slurry is then removed from the premises for appropriate treatment.

Once the liquid element of the food waste has been separated from the solid food waste, it requires further treatment on-site. The commercial systems available use processes such as an Archimedes screw or centrifuge, which may be part of the dewatering system. These generate further solid food waste, which can be collected and stored. The remaining liquid is regarded as grey water, and may be disposed to drain with the appropriate consents from Scottish Water.

On-site composting

Biodegradable kitchen and canteen waste may be composted on-site under a Waste Management Licence paragraph 12 exemption, as long as the composting process is compliant with the Animal By-Products (Scotland) Regulations 2003.

Food waste can be treated on-site by businesses using an in-vessel composting unit. The composter works by using a combination of controlled temperatures, agitation and airflow. A composting unit with a tank suitable for the volume of waste produced by the site needs to be selected. Options available range from units able to process from 20kg to over 1 tonne of waste per day.

When the unit is turned on for the first time, an organic starter material is added, along with a small amount of water. This means there is no need to continue to add microbes or water once the unit is in use. Depending on the nature of the food waste, more carbon-rich material such as wood-chip or prunings may be needed.

The volume and weight of organic waste is reduced, and composting on-site can help avoid levies and charges for the cost of removing, transporting and processing waste off-site. The automated process eliminates odours and creates a nutrient rich compost.

The energy consumption of units is moderate, although businesses should check details of individual models with suppliers, and the automated process makes it simple to use. The unit is loaded daily and compost typically only needs to be removed no more than once a week.

There will be minimal space required with this type of equipment as these units are generally compact in design. It should be noted however that there is a need for regular loading and maintenance that may generate some additional labour costs.

Composting units perform best when a combination of food waste types are used, although not all food waste is suitable for composting.

If businesses do not have sufficient requirement for compost on-site, it is recommended that they present food waste for collection rather than use a composting solution.



Case Study: Monklands Hospital, Airdrie

Monklands Hospital in Airdrie is using a vacuum processor to separate food waste for subsequent collection and delivery to an anaerobic digestion facility.

Monklands is a district general hospital with a 24-hour accident and emergency department and 521 inpatient beds. Between 300kg and 400kg of food waste is collected daily by the vacuum processor system.

Transported into an adjacent vacuum waste storage tank for collection by tanker, the slurry can be converted into energy or fertiliser. At Monklands, the waste slurry is collected weekly and recycled into biogas for generating electricity at an anaerobic digestion plant in Cumbernauld.

"There are a lot of waste handling systems out there," says Catering Services Manager Peter King. "This one ticked a lot of boxes including savings on water and electricity, reduced carbon footprint and a rebate from the water board because we are no longer putting food waste down the drains. We also get duty of care paperwork from the waste processor.

"We are a hospital and we have to watch what we do with our food waste. We did look at alternatives but chose this system because it is hygienic, fully sealed and includes the tank housing, which has its own heating, lighting and odour control."



Rural areas

In rural areas where no food waste collection service is offered, various food waste processing options are available to businesses.



The range of equipment in this section is compliant under the Waste (Scotland) 2012 Regulations for use in rural areas that are exempt from the duty to separately present and treat food waste. Where possible, we encourage all businesses to follow the ethos and spirit of the waste hierarchy described in Section 3 of this Guide with food waste prevention, recycling and, if appropriate, on-site composting considered before disposal to sewer.

It is illegal under the Sewerage (Scotland) Act 1968 Sec 46a & 46b to discharge matter e.g. food waste and/or fat, oil & grease (FOG) which is likely to injure the sewers or to interfere with the free flow of their contents.

Water UK, the organisation which represents the UK's water and wastewater utilities, reports that there are approximately 200,000 sewer blockages throughout the UK every year, with up to 75% caused by food waste, especially FOG².

In 2012/13, Scottish Water had 20,000 sewer blockages, of which an estimated 55% were due to FOG.

Businesses are liable for prosecution under the Sewerage (Scotland) Act 1968 if they discharge such waste to the public sewer and it causes a blockage.

Grease separator

A grease separator, often called a grease entrapment system or grease trap, takes advantage of the fact that fat, oil and grease (FOG) are less dense than water, and so naturally float on the surface of the water within the separator unit. Other food solids are denser than water, and sink to the bottom.

While models differ, all separators basically work by slowing down the flow of warm water coming out of a commercial kitchen. The surface area of the trap, larger than a drain, holds the water. Over time, the FOG separates and floats to the top of the grease trap, while food solids sink. The sizing of a grease trap is of critical importance, and an undersized trap would be much less effective.

The cooler water continues to flow down the pipe to the sewer. The FOG is kept in the unit by baffles, covering the inlet and outlet of the tank, preventing it from flowing out of the trap, while food solids remain on the bottom of the trap. The trap needs access for the cleaning out, servicing and maintenance by specialist contractors.

Any grease trap should comply with European Standard EN1825.

Grease Removal Unit (GRU)

Along with an external or internal entrapment system, there are a number of smaller passive separators available that deal with food waste by the same means.

While entrapment systems are basically passive, using gravity and the flow of water to separate food waste, a GRU actively uses mechanical skimmers to remove the surface grease from the water, while other food waste sinks to the bottom.

These units are typically smaller than conventional entrapment systems. While the use of mechanical skimming compensates for the smaller size of the unit, the lack of available space to store food waste means GRUs need to be emptied more frequently, often daily. If internal GRUs are fitted under kitchen floors, a solution sometimes adopted, then easy and clear access to the unit for emptying will need to be considered. Collected food waste including fat, oil and grease, should be stored for collection, and not discharged to the public sewer.

² www.water.org.uk/home/resources-and-links/snap/snap

Rural areas



Food Digesters

Food digesters use natural micro-organisms to digest food waste.

The equipment requires a power source and water supply, as well as drainage. Food waste is collected in appropriate storage bins in the kitchen, before being tipped into the digester manually.

Once the digester is activated, the waste is rotated and mixed with fluid containing the micro-organisms, which produce enzymes that digest the food solids over a set period, typically 24 hours. Once the process is complete, the remaining fluid output is defined as grey water, which may be disposed to drain with the appropriate consents from Scottish Water, or collected for appropriate treatment. Please note as with any system that allows grey water to be released directly to the public sewer system, should the discharge create a blockage the business would be liable for recovery of costs and/or prosecution under Sewerage (Scotland) Act 1968.

Biological / bacteria based dosing systems

Biological or bacteria-based dosing systems use microorganisms which through natural biological processes permanently biodegrade and break down the fat, oil and grease element of food waste. Scottish Water's preference is that dosing systems are used in conjunction with a grease entrapment system, rather than as a standalone system.



Meeting the regulations What's the right solution?

Effective food waste management depends on the size, location and operational needs of your business. Illustrative examples of the ways three different types of business could approach waste management are detailed below.

Café

Food prepared to order, mainly snacks and sandwiches

Six day trading equivalent to 20 full covers per day/120 covers per week

Relatively low food waste from customers

Urban location

Low staff levels

Limited space for waste treatment

Limited equipment budget

Estimated weekly food waste c. 40kg - 60kg per week

Potential Solution:
Food waste stored in sealed bins for collection

Hotel

Full meal service including buffet breakfast as well as lunch and dinner

Regular catered functions for up to 500 guests, average 2 per week

Seven day trading, equivalent to 260 full covers per day/1820 covers per week

Suburban location with grounds

Space available for waste storage and treatment

Relatively high levels of food waste from buffet and function trade

Staff available for food waste responsibilities as part of wider duties

Estimated weekly food waste c. 750kg - 900kg per week

Potential Solution:
Food collected for on-site composting, compost used in hotel grounds only. Any excess food waste dewatered and presented for collection

Workplace Canteen

All day buffet style food service

Significant amounts of pre-prepared food at peak meal times

Five day trading, equivalent to 120 full covers per day/600 covers per week

Business park location

Relatively high volumes of food waste from servery format

Kitchen and outside space available for food waste treatment and storage

Some staff time available for food waste responsibilities as part of wider duties

Estimated weekly food waste c. 300kg - 500kg per week

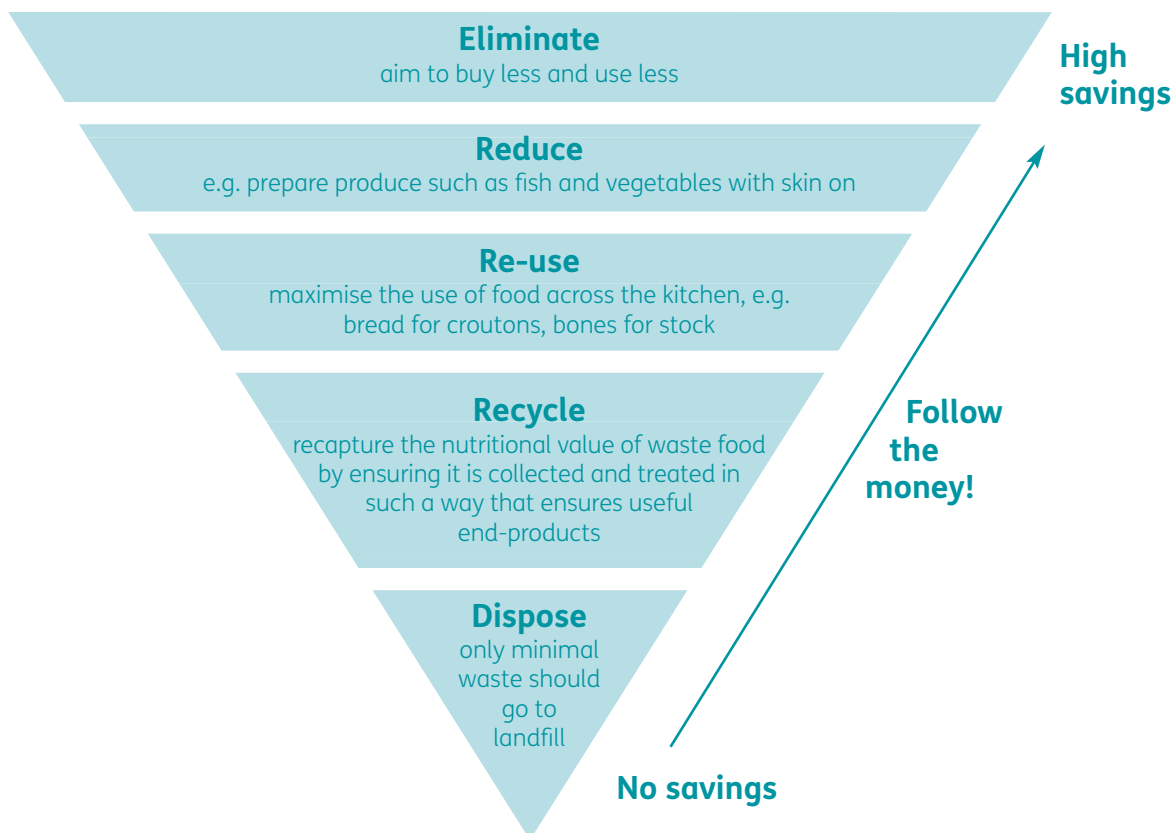
Potential Solution:
Food waste collected and dewatered on site, reduced waste stored in bins and collected

Section 6 Site evaluation and installation

Every hospitality business is different in terms of its location, physical layout, types of food served and the arrangements for the storing and collection of waste. As these practical requirements differ for every site, individual evaluation is needed.

Food waste represents a potential food hygiene hazard where there is a risk of cross contamination of waste with food to be served. Whether food waste is stored in a kitchen or in a waste store elsewhere on-site, hygiene guidance must be followed. Frequency of collection should be considered when planning food waste storage arrangements, particularly for businesses that operate over weekends and bank holidays when the amount of waste generated may be high and collections not available.

Procedures and systems for managing food waste in a commercial kitchen should conform to the principles of the waste hierarchy:



When planning a system to manage food waste, operators, along with consultants, designers, contractors and equipment suppliers involved, will need to consider:

- Kitchen use, including the style of menu and cooking methods;
- Layout, assessing what is possible within the space available including whether equipment will need to be placed inside or outside the kitchen, or under flooring;
- The drainage system, including its route through the kitchen and beyond the premises, to prevent waste food entering the sewer system. The system should include a correctly sized and positioned grease management system;
- Supply of utilities including water and electricity;
- Installation requirements including access;
- Arrangements for food waste storage;
- Staff training procedures and working practices. Staff turnover rates should be considered as untrained staff are least likely to understand and follow procedures; and
- Service and maintenance arrangements.

Installation

Every kitchen is different and needs to be assessed on its own merits for the purposes of food waste management, in the same way that kitchen planning, installation workflow and maintenance are organised.

It is important to establish common elements, particularly compliance with all relevant Regulations before any food waste solution is installed and implemented.

Whichever system is to be used, the starting point for any installation is an up-to-date drainage plan, or the proposed drainage plan for a new build, along with other services such as telecoms and utilities.

The drainage will need to be considered in conjunction with details of any catering equipment that discharges into individual drains in addition to the planned system for managing food waste, as there is a need to ensure that food waste does not enter the drainage system.

Equipment should be installed in a location that provides easy access for inspection, cleaning, and maintenance. Siting needs to avoid the risk of physical contamination of kitchen working areas with disposed of food waste.

The need for food waste to be transferred for collection or further treatment will also need to be accommodated, this may require the movement of wheeled or other sizable containers, and as such must allow sufficient room for safe handling.

Installation Checklist

- System large enough to cope with the volume of food waste and FOG produced
- Water supply
- Electricity supply
- Drainage
- The requirements of the Food Hygiene (Scotland) Regulations 2006 and potential for cross-contamination addressed
- Arrangements for preventing food waste mixing with other material, e.g. cutlery magnet
- Kitchen workflow
- Access for service and maintenance



Section 7 Service & maintenance

Any food waste system is only as effective as the service it receives.



Specialist equipment such as dewatering systems and on-site anaerobic digesters require regular servicing and maintenance, either by the manufacturer, supplier or by their approved specialist contractors.

Poorly maintained equipment will not deliver the intended long-term benefits or return on investment. Design, purchase and installation needs to take into account the need for servicing and maintenance, including ease of cleaning, and ease of access to components such as pipework and food storage tanks.





Kitchen practice & staff training

Investment in equipment should never be seen as a substitute for staff training and correct working practices. Where existing equipment can no longer be used as a result of the Regulations, consideration should be given to removing or disabling the equipment to ensure it can no longer be used.

Staff should be fully briefed on any new arrangements; helping them to understand any new procedures and the reasons for them. Managing food waste requires all operational staff to be informed about both company policy and their legal responsibilities on food waste. Working procedures should ensure that there is sufficient time and manpower allocated to do so. The benefits and cost saving achieved by reducing food waste should be factored against any increased labour costs.

Staff training should include instruction on the importance of managing food waste, and emphasise the need to keep food waste out of general bins, drains and sewers. Working systems should specify that plates, pots, trays and utensils are scraped clean prior to putting them in the sink or dishwasher, and the scrapings placed in the food waste storage bin or other system used to capture food for treatment.

All sinks used for cleaning equipment associated with food preparation, serving and plate waste should be fitted with a strainer, and if required a means of grease entrapment, to prevent food waste entering the drain. Waste collected in the strainer should be placed in the food waste bin ready for collection.

Food waste should ideally be safely stored away from the kitchen in sealed containers, ready for specialist collection. Food waste must be stored appropriately in accordance with food hygiene principles and food safety guidance prior to collection. Ideally this would be away from the immediate kitchen area. The implications for both hygiene and working conditions of food waste storage means that the location and cleaning regime for food waste storage containers should be carefully

considered in all cases, particularly if containers need to be stored in outdoor areas. The potential for food odours to affect staff, customers and neighbours should be borne in mind when siting containers. Food waste collection companies can advise on container type, size etc to suit an individual business. They may also be able to advise on key elements for staff training.

Containers should not be overfilled and should be regularly cleaned in order to minimise the potential for spills, which may be a slipping hazard as well as causing odour. Seals and locks should be regularly checked as part of maintenance regimes, and where containers need to be moved for collection by specialist contractors, staff required to undertake this should receive appropriate training.

Businesses should consider appointing a Food Waste or Green Champion, with responsibility for ensuring that all staff are aware of the Waste (Scotland) Regulations 2012, lead on any necessary changes, and ensure that new staff are aware of food waste systems and procedures through the induction process. The importance of not contaminating food waste with other waste such as foil, clingfilm and napkins should be fully understood by all staff.

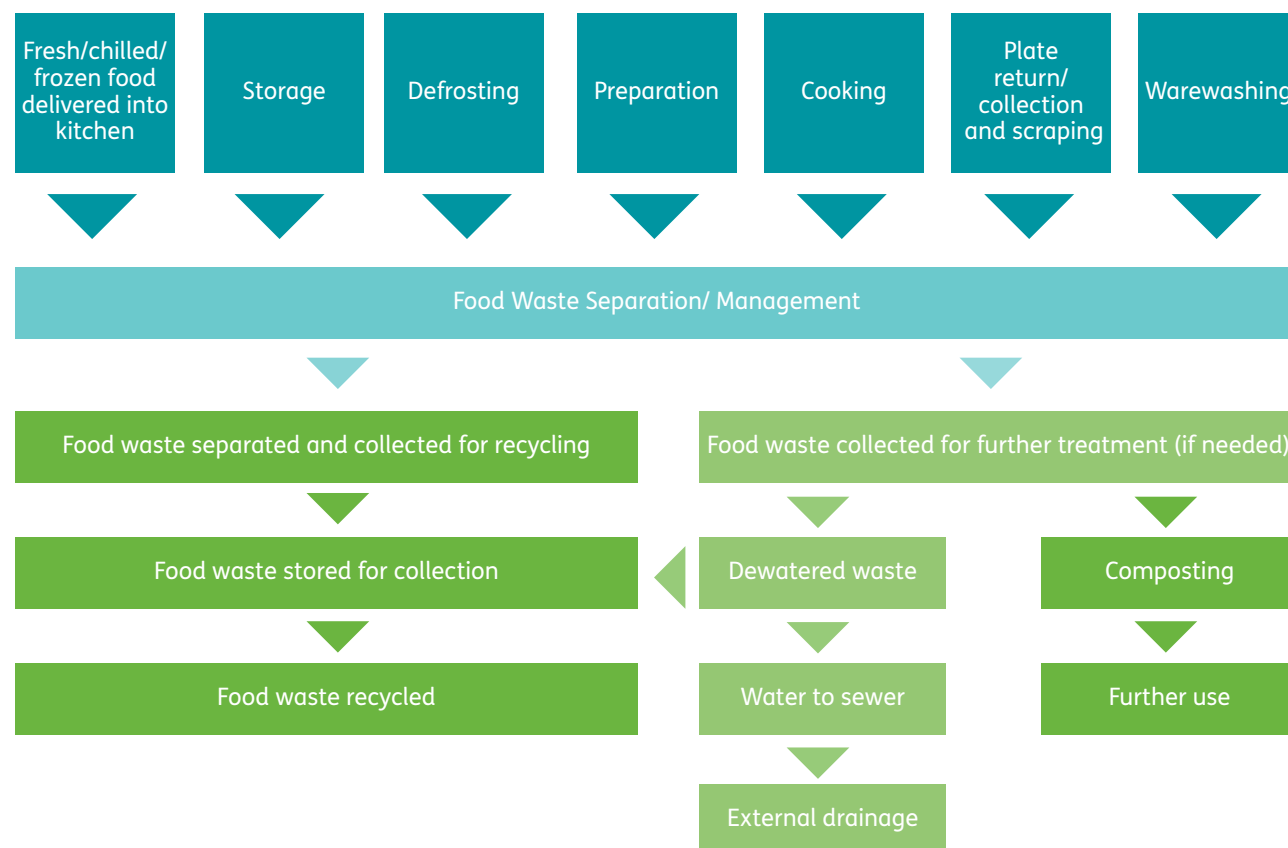
Food waste management is an integral part of a food businesses Food Safety Management system. Food Safety Management systems must be reviewed and amended appropriately so as to comply with both the Waste (Scotland) Regulations 2012 and the Regulation (EC) No. 852/2004 on the Hygiene of Foodstuffs.

Environmental health officers will be fully briefed on the Regulations and the need for businesses to make practical arrangements for food waste handling, storage and collection, and will work with operators to ensure that procedures are implemented effectively. Details of licensed waste collectors are available on the [SEPA website](#)



Food waste management and training checklist

Food Waste Management Flowchart for Urban Area*



Training Checklist

- Are all staff informed about the new Regulations?
- Do they understand the reason for changes in equipment and procedures?
- Do they understand what they now have to do?
- Has equipment that can no longer be used been removed or disabled?
- Do staff understand the need to avoid contamination of food waste with other waste?
- How will new staff be trained?
- Have you appointed a food waste champion?

*As defined by the Waste (Scotland) Regulations 2012



Section 8 Checklist to cut your waste disposal costs

The best way to cut costs is to prevent waste from occurring in the first place.

Be aware of what types of food waste are being created and investigate if you can change working practices to avoid this altogether.

Examples include checking to see if the menu should be changed to ensure common food waste types are no longer included, asking customers before including sides/garnishes as standard, and offering smaller portion sizes. These are all 'no cost' options that could save money throughout the supply and disposal chain.



For waste that is produced, there are steps that could be considered when looking to lower waste disposal costs;

- Determine where the waste is coming from and seek solutions to prevent it;
- Check your waste data regularly, identify any significant changes in waste production and why it has occurred;
- Check your current waste contract and determine how much it is costing;
- Check the amount you need collected actually matches what you are paying for;
- Use the waste hierarchy to set priorities, prevent, reduce and ensure appropriate waste collection treatment for unavoidable waste;
- Identify how much of the material can be recycled;
- Identify the value of the recyclate where applicable. This is generally only relevant where substantial tonnages of recyclate are collected;
- Work out what kind of waste contract you need, Resource Efficient Scotland can help with this process;
- Start any identified waste reduction and recycling initiatives;
- Speak to, and work with your waste contractor to ensure your current waste service is providing best value; this includes discussing most appropriate bin sizes, number of bins, collection etc, and if relevant renegotiate to a lower price or more flexible contract.

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