

AMDEA is the UK trade association for large and small domestic appliances: heating; water heating; floor care and ventilation. We represent manufacturers at UK, European and International level; with government and EU political institutions; in standards and approvals; with non-governmental organisations; with consumers and in the media. AMDEA protects and promotes its members' interests in all these spheres.

All of our members are fully committed to waste prevention, opposed to landfilling of waste and support the recovery of value from waste. However we have some member companies with a particular interest in sustainable and effective food waste management, as they manufacture domestic food waste disposers (FWDs).

Food waste disposers are the small devices that fit under a standard domestic kitchen sink and grind most food waste to minute particles that flush easily through the sewer system to waste water treatment plants, where increasingly biogas and soil improver are extracted. They use minimal amounts of electricity and water¹, eliminate the need for road transport and can improve the recovery of other waste fractions².

A ten year study in Surahammar³, Sweden, indicates that the addition of ground domestic food waste from FWDs to the waste water has increased the recovery of biogas at waste water treatment (with AD capacity) by 46%, with no impact on the sewers or sewer blockages. Overall Surahammar's waste strategy decreased the tonnage of waste to landfill from 3600 tonnes in 1996 to 1400 tonnes in 2007.

Members of AMDEA's FWD Group include the world's leading producer, InSinkErator, that has manufactured food waste disposers for over 70 years and markets these appliances in over 80 countries. As food waste management and recovery of value from this waste stream are core issues for this group, we have accumulated and continue to build a substantial evidence base of peer-reviewed scientific research conducted by recognised experts and academics worldwide.

As our members specialise in appliances for domestic use we restrict our comments to domestic food waste management. We welcome this opportunity to respond to this inquiry

¹ Market Transformation Programme (2008) BNXS43: Food Waste Disposers – an overview

² Yang, X.; Okashiro, T.; Kuniyasu, K. and Ohmori, H. (2010) Impact of food waste disposers on the generation rate and characteristics of municipal solid waste. *J. Mater. Cycles Waste Manag.* 12:17-24

³ Evans, T.D.; Andersson, P.; Wievegg, A.; Carlsson, I. (2010) Surahammar – a case study of the impacts of installing food waste disposers in fifty percent of households. *Water Environ. J.* 24:1 309-319

as worldwide evidence increasingly indicates that the most advanced nations are constantly evolving food waste policy to incorporate new technologies as they emerge.

Successful policy for England should include a variety of effective food waste management options to suit populations living in diverse environments and circumstances. Yet we note with increasing concern the tendency to pursue a single solution of kerbside collection for road transport to commercial or merchant anaerobic digestion anaerobic (AD) facilities.

Key Points

- Households need a flexible range of environmentally sound options to allow them to choose the food waste management system that best fits their living conditions. While ideally encouraging households to maximize their consumption of the food they prepare we also believe such behavioural change will be assisted if the complete process of food preparation to management of the inedible waste is considered as a whole.
- The current policy bias in encouraging the separation and storage of food waste to take to the kerbside for separate collection is challenging for the elderly, infirm, urban populations and those in flatted properties. Mandatory policy cannot alter these facts . We also believe that enforcing such requirements on householders is not an optimum policy.
- Pursuing a single prescriptive solution will prove a barrier to innovation. It will not keep pace with the environmental agenda and threatens to limit the ultimate achievement.
- AD technology requires a constant stream of high quality feedstock. This runs counter to the crucial aim of food waste prevention. AD is also vulnerable to problems caused by common domestic food waste contaminants.
- Stored in restricted spaces food waste contaminates and reduces the value of other dry recyclables.
- Food waste disposers can improve the recovery of other waste fractions .
- Separate food waste collections are technically and economically untenable for some local authority waste collection routes.
- The most environmentally advanced nations, including Sweden, Denmark and the Netherlands, are increasingly examining alternative technologies including FWD.

1. How far can voluntary initiatives further reduce food waste or is legislation required in this area?

Encouraging consumers to maximise their use of edible food should be inter-linked with methods of recycling unavoidable food waste that are suited to their living conditions. Even

in those countries with mature recycling cultures and highly disciplined populations participation in programmes relying on household separation of food waste for kerbside collection achieves a certain level (of the willing and able) and then plateaus. While in urban environments improving the capture of domestic food waste still challenges recycling targets in most cities worldwide. There is no one-size-fits-all, single, solution that will suit city and rural dwellers, those in flats, city terraces or spacious detached homes. Demographics also play a part. With an increasingly aging population successful policy must also take account the disabilities of the elderly or infirm. Education cannot help a frail householder to carry their food waste out to the kerb or a communal bin. While some of the poorest recycling rates reported by local authorities are among student communities. It is reasonable to assume that student participation could be addressed with education and incentives, but legislation would be costly to administer, unpopular and ineffectual.

In 2014-15, 45% of local authorities in England did not offer separate food waste collections due to the complications and costs associated with this form of retrieval. Wales invests £70 per household/p.a. in local authority subsidies to support mandatory separate food waste collections. Never-the-less low success rates are reported for Cardiff especially in the city centre and student areas. A comparable initiative rolled out throughout the UK would require a commitment of £1.89billion.

2. What proposals are necessary to further reduce food waste?

The majority of our members do offer advice on how to store food correctly and, providing guidance is followed, improvements in refrigeration technology can help perishables such as salad to last longer. Greater flexibility on sell by dates and dates for consumption would also help reduce the waste of food in the kitchen.

3. What are the comparative approaches to reducing and managing food waste in the devolved nations, and across Europe.

We welcome this opportunity to submit evidence to this inquiry as worldwide evidence increasingly indicates that the most advanced nations are constantly developing policy to incorporate new technologies as they emerge, alongside introducing systems for encouraging consumers to minimise their wastage of food. We believe education, guidance and voluntary schemes are best suited to encouraging consumers in England to minimise their wastage of food. Successful policy for England should include a variety of effective food waste management options to suit populations living in diverse environments and circumstances. Yet we note with increasing concern the tendency to pursue a single solution of kerbside collection for road transport to anaerobic digestion.

In this context a recent [BBC Freedom of Information Request](#), highlighting the difficulties consumers have in effective separation of their waste, is extremely relevant. The impact of contamination on domestic recyclables is that despite the cost and effort large volumes are consigned to landfill. The contamination issue is often overlooked and under-reported especially within jurisdictions that have introduced mandatory requirements into their separation collections.

The cost to local authorities of re-sorting so-called contaminated recycle bins is said to be the primary reason the vast majority of the waste is being rejected. BBC Breakfast reported that 97% of the rejected rubbish was incinerated or sent to landfill in 2013-14 - the most recent year for which such figures were available. Just over 173,000 tonnes of rejected waste was incinerated or sent to landfill in 2011-12, with the figure rising to 270,000 tonnes two years later.

Across Europe there is an impetus to recover critical resources at waste water treatment. Increasing recovery of 'bio-resources' (biogas and soil improvers) at waste water treatment works (WwTW) has most recently been recognised by the water regulator OFWAT as a key strategic objective in its Water 2020⁴- regulatory approach for water and wastewater services in England and Wales. [Politico Europe reported](#) on the 12 August that the European Biogas Association was calling for the European Commission to encourage wider use of sewage for biogas production emphasising that Nordic countries were already operating a large number of initiatives in this area. Given the evidence from Sweden mentioned above that food waste co-mingled with sewage at WwTW can enhance biogas and soil nutrient production we would argue that policy in relevant areas of the UK should better reflect these trends.

Recognition of the need to improve food waste capture and resource recovery at waste water treatment has prompted a recent increase in FWD studies. Reports by DANVA⁵ in Denmark, Lulea⁶ and Lund Universities in Sweden and STOWA⁷ in the Netherlands have been driven by the pursuit of Circular Economy policies, including the need to increase the production of biogas and to identify secure supplies of phosphates and nitrates.

In the drive to promote evidence-based policy InSinkErator is committed to extend experimental work in the UK, to ensure that robust scientific study scrutinises the

⁴ <http://www.ofwat.gov.uk/water-2020-regulatory-approach-water-wastewater-services/>

⁵ Clauson-Kaas, J. et al (2011) Food waste disposers: energy, environmental and operational consequences of household residential use. ISBN: 978-87-92651-05-1.

⁶ Mattsson, J.; Hedström, A. and Viklander, M. (2014) Long-term impacts on sewers following food waste disposer installation in housing areas– Environmental Technology, DOI: 10.1080/09593330.2014.915346

⁷ STOWA (2015). Principles for implementing LCA: food waste in the water chain. Stichting RIONED/STOWA 2015-W-02.

positioning of FWDs amongst the basket of options for recovering value from food waste. Working with the University of Sheffield (UoS), Albion Water Group and part-funded by the Engineering and Physical Sciences Research Council (EPSRC) a new project will commence shortly in Upper Rissington, Gloucestershire. Here using field trials, laboratory testing and modelling techniques the use of FWDs and the consequential effects on the sewer system, wastewater treatment and bio-resource recovery are being investigated at full-scale, in a three year programme.

Upper Rissington marks the continuation of a project initiated by the Local Government Association (LGA) in a series of studies that included households in Shropshire⁸ Whilst these demonstrated a 44 - 46% decrease in residual waste (to landfill) over a two year period, in households using FWDs, there was neither time nor resource to study the flows through the sewer, impacts on waste water treatment or resource recovery.

Less than 6% of homes in the UK currently have a FWD, while in the United States it is calculated that on average at least 50% of homes have a disposer. The City of Los Angeles estimates that 80% of local homes are fitted with a disposer and yet they are seeking to increase FWD usage, to reduce landfill and increase resource recovery. The Bureau of Sanitation, Wastewater Engineering Services Division, has recently issued a tender for a US\$2million project similar in scope to the work proposed by UoS to monitor FWD usage in 500 homes from kitchen sink through to recovery of biogas and soil improvers at waste water treatment. In Los Angeles they are seeking to upgrade equipment and encourage their households to put all unavoidable food waste into their disposers.

The ambition of Los Angeles is zero waste and they view FWDs as a critical tool in this aspiration. England should consider this example, along with the policies adopted in Denmark, Netherlands and Sweden, where FWDs are incorporated into their methodology.

The Association of Manufacturers of Domestic Appliances - AMDEA /13.09.2016

⁸<http://www.local.gov.uk/search?q=shrewsbury>