

Case study

Food Waste into Energy and Revenue

SEaB Energy helps the hospitality and leisure industry turn food waste into energy and revenue.

In November of last year the government-sponsored Waste Resources Action Programme (WRAP) announced that the hospitality industry faces an annual bill in excess of £2.5bn for food waste and warned that this could top £3bn by 2016 unless action is taken. This equates to almost 1.3bn meals wasted annually with an average cost to each outlet of £10,000 each year.

The report, one of the most comprehensive produced yet, revealed that 920,000 tonnes of food is wasted each year, with only 46% currently being recycled, sent for Anaerobic Digestion or composted, with an estimated the cost to the industry of £2,800 per tonne.

Whilst much can be done to address unavoidable food waste, the catering, hotel and leisure industry is now looking for radical solutions to help address the problem by turning their waste mountain into a valuable income stream. The good news is that there are viable solutions commercially available that will turn this green waste – including grass cuttings from hotel gardens and golf courses – into energy which can then be used on-site or sold back to the grid, thereby creating positive income streams and eliminating waste disposal costs.

Best Western Hotel and the University of Southampton Science Park
One such solution, which has been successfully in operation for 18 months, is employed at the Best Western Chilworth Manor Hotel, a Victorian manor house hotel located in 12 acres on the University of Southampton Science Park (USSP). The hotel comprises 95 bedrooms, a health club and 11 conference meeting rooms sufficient to cater for up to 160 delegates, whilst the Science Park supports a wide range of organisations in 400,000 square feet of mixed single- and multi-tenant buildings with over 900 individuals employed across 75 organisations.

USSP is positioning the Science Park as an exemplar site of cleantech and low carbon technologies and, by partnering with innovative tenants to demonstrate leading edge technologies, will enable it to become a leading regional cleantech cluster.

In May 2012, USSP having installed energy efficient climate control systems in the form of air source heat pumps and heat recovery mechanisms in both new and refurbished buildings, it entered into an Electricity Service Company (ESCO) relationship with SEaB Energy to deploy the company's innovative, and multi-award winning, Flexibuster™ on-site containerised micro power plant.

In a collaborative approach, undertaken between the hotel and USSP, an average of 500kg of kitchen food waste, cooking oil and spent alcoholic drinks are being collected and, together with waste from the grounds, are



Case study (cont)

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processed each day through the Flexibuster™. As a result, the hotel and USSP are now able to take advantage of the energy harvesting potential of food and organic waste produced on the site, which previously had been an untapped resource, whilst at the same time eliminating costs associated with the collection and disposal of their green wastes.

Steve Axton, Maintenance Manager, Best Western Hotel Chilworth Manor, couldn't be more delighted. "SEaB Energy's Flexibuster™ has been a revelation in the way we now manage our food waste. It ticks all our important recycling and sustainability boxes as well as health, safety and cleanliness", commented Steve.

Electricity and heat generated from the biogas production is used within the Science Park offices and research and development laboratories whilst the liquid digestate is being used as a nutrient-rich fertiliser at a local turfing and landscaping company. The 8kW combined heat and power unit (CHP) produces an average of 105 m³/day of biogas based on the estimated annual feedstock which in turn provides approximately 57MW of electricity per annum. Through the generation of energy and the elimination of waste disposal costs, the unit produces net revenues of around £20,000 per annum whilst achieving a payback of just 5 years.



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