



## WASTE MANAGEMENT

### 'Green' solutions for waste management

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Tom Wray reports from the Recycling and Waste Management Exhibition, held recently in the UK, which provided plenty of ideas for everyone involved in the waste management sector

Seafood businesses which plan to cut their waste and recycle more, may be discouraged by a lack of local recycling services and/or information on how to recycle. However, the situation in many countries is improving and there is now little excuse for not going 'green'.

In the UK, legislative changes focusing on environmental protection and food/feed safety have resulted in increased difficulties and costs for seafood companies disposing of all types of waste. To help the industry address these problems, the Sea Fish Industry Authority (Seafish) has been working in a number of areas, and continues to develop projects on different aspects of waste disposal and by-product utilisation.

Seafish has identified some of the ways in which companies can use seafood by-products. For example, some seafood waste is rich in valuable minerals, enzymes, pigments and flavours that are required by many industries including food, agriculture, aquaculture and pharmaceuticals.

However, commercial opportunities for using seafood by-products in this way are currently very limited in the UK, and so there is an increased use of composting as a way of disposing of seafood waste.

The seafood industry is a big user of packaging, the disposal of which can also be problematic. Expanded polystyrene (EPS) fish boxes have come under a lot of fire recently as being particularly environmentally unfriendly, but these boxes can be, and are now being, successfully compacted and recycled (see feature on tubs and boxes beginning on page 21. ) The latest machinery for compacting EPS and other packaging materials, as well as systems for turning seafood waste into saleable compost, were among many products and services on display at this year's Recycling and Waste Management (RWM) exhibition in Birmingham, England.

The three-day show, held at the National Exhibition Centre in September, featured compactors, compliance schemes, computers and software systems, cranes, crushers, plant and equipment hire, recycling campaigns, separators, shredders, trade associations, waste vehicles, weighing equipment, and a wide range of other products and services for recycling.

Composting fish waste UK COMPANY VCU Europa's composting technology is being used to treat organic waste on more than 30 different sites in seven countries.

Its Vertical Composting Unit (VCU) is an in-vessel, aerobic composting system with a small footprint and incredibly low operating costs, says Steve Morris, VCU's general manager. Systems are proven in municipal and industrial applications ranging from 2500 to 40,000 tonnes per year, he adds.

The VCU was the first system to be fully accredited by the State Veterinary Service (SVS). There are currently 13 VCU installations in the UK and Ireland, with a further 20 worldwide.

Gray Composting Services, which was set up by farmer Charlie Gray to service fish processing plants in Aberdeenshire, Scotland, opted for the VCU technology and took delivery of its first two-chamber unit in 2006. As of August this year, Gray had achieved positive release from the SVS and at this year's RWM show was negotiating for a further two chambers, for which he has been awarded WRAP (Waste & Resources Action Programme) funding.

Total processing capacity then will be around 6000 tonnes of waste a year.

Before the introduction of the UK's Animal By-Product (ABP) Regulations, Gray had some experience in composting shellfish waste on his farms. However, with the introduction of the ABP regulations, he began to look for a proven process alternative.

After contacting his local Chamber of Commerce for assistance and researching the market for technologies, Gray opted for the VCU technology.

'We chose the VCU in-vessel composting system as our preferred technology for its proven track record in animal by-product processing,' he says. 'VCU were also extremely supportive and knowledgeable in assisting with both our successful planning application and waste management licence.'

Marine Harvest, at its site at Fanad Head, County Donegal, Ireland, is another user of VCU technology for composting seafood waste. The leading seafood supplier's organic and farmed salmon unit is located at the northernmost tip of Ireland, and consists of hatcheries, farms and a processing plant (see feature beginning on page 18 for a report on the processing plant).

Originally the so-called Category 3 waste was mixed with the other category wastes and was being sent more than 500 miles (805km) for rendering followed by shipment overseas for incineration. This was an unsustainable disposal option and the company decided to research the market for alternatives. In order to meet the ABP regulations, Marine Harvest chose the VCU system.

The Marine Harvest composting site, which was officially opened in November 2004, was the first in Ireland dedicated to turning fish waste into high quality compost for horticultural use.

The installation of the VCU process is said to have significantly reduced Marine Harvest's transportation, treatment and waste disposal costs.

'This commitment demonstrates that Marine Harvest Ireland, and aquaculture operations in general, continue to lead in the development of ecologically responsible solutions, including for Waste Management,' says Catherine McManus, the company's technical manager.

Waste containers on show GERMANY'S Paul Craemer Group, one of Europe's leading plastic injection moulders and well known in the seafood industry for its plastic fish boxes and pallets, exhibited its Kliko brand of waste containment products at Recycling and Waste Management 07 (RWM 07).

These included its range of high quality, plastic injection moulded wheeled bins and recycling containers including the latest development in wheeled bin technology, the DU Diamond System.

On display were both two and four wheeled waste containers of various capacities, manufactured in accordance with European specifications including EN-840, RAL and DIN to ensure safe handling and long life expectancy.

The company also exhibited a selection of products from its range of injection moulded pallets.

Craemer UK is geared to competitively supply single waste containment units through to volume batch quantities, Seafood Processor is told. Working closely with local authorities and private business partners, it has developed new products and adapted existing ones to facilitate the collection of various recyclable materials.

The company's state-of-the-art facility for plastics processing, established in 2006, is located in Telford, Shropshire, in the English West Midlands. It is there that the company manufactures wheeled waste bins, transport and stacking containers, as well as high quality plastic pallets on three injection moulding machines with capacities ranging from 1000 to 2700 tonnes.

Composting facility to open in Scotland INTERNATIONAL Composting Corporation (ICC), which provides an innovative in-vessel composting system to turn organic waste into nutrient rich organic fertiliser, will next spring open its first UK composting facility in partnership with Levenseat Organics of Scotland.

Levenseat Organics forms part of the Levenseat group of operations whose core activity is waste management in central Scotland. The composting operation specialises in handling green waste, and a variety of feedstocks from industry to compost for both the horticultural and agricultural markets.

'Levenseat Organics is still actively determining what its waste stream would be, but it could include fish processing waste,' Kris Obrigewitsch, ICC marketing and investment specialist, tells Seafood Processor.

In Canada, ICC owns and operates the Nanaimo Regional Composting Facility on Vancouver Island, British Columbia (BC), an important salmon farming and processing area. The facility has a capacity of 28,000 tonnes per year, and its feedstock includes significant volumes of seafood waste, says Obrigewitsch.

'We have a five year track record of processing fish and shellfish processing waste and mortalities from fish farms.

We have been taking an average of three to five tonnes a day of fish waste, and are seeking contracts that would bring in 50 tonnes of fish waste a week, about 25 per cent of our feedstock.'

ICC, which has its head office in Victoria, BC, currently charges a commercial tipping fee of \$30 per tonne for fish waste at its Nanaimo facility.

'According to the UK Composting Association, a lot of people in the UK seem to be shying away from taking in fish waste because of the odour. The way we look at it is that fish waste makes such a quick acting compost and speeds up the process by 20-30 per cent. Fish break down so readily and they have a high nitrogen content,' Obrigewitsch says.

ICC says that its Nanaimo facility offers a sensible and environmentally sound alternative to the common practice of landfilling. Considerable pressure is being placed on existing landfills in North America. Added to that, landfills are extremely expensive to construct and, in most communities, nobody wants a landfill close to where they live.

ICC claims that its proprietary technology is demonstrating to local governments, and other third party composting vendors, that it is possible to economically mass produce compost in an odourless, safe, and clean environment, thus providing a viable alternative to landfill.

In addition to the Nanaimo facility, ICC is looking to establish turnkey municipal facilities in other North American locations. It has also recently begun expanding into the UK and Mexico.

ICC's business strategy is to provide turnkey operations, including staff training and long term quality assurance and quality control for its clients. The company is also developing product marketing to help ensure the success of new facilities by potentially buying the product.

One of the Nanaimo composting facility's functions is as a technology showcase where ICC can demonstrate 'how it is possible to economically mass produce compost in an odourless, safe and clean environment'.

Organic waste treated on site UK COMPANY Accelerated Compost manufactures the Rocket range of invessel composters for the on-site treatment of organic waste. They are pre-validated under the UK Animal ByProducts Regulations 2003, which enables them to compost catering waste including meat and fish.

Other Rockets are being used for research and educational projects.

'A number of salmon farms use our composters to digest the salmon waste that they get, including the daily mortalities, ' Accelerated Compost's Simon Webb tells Seafood Processor.

'Seafood restaurants also use them to deal with their waste, for example bits and pieces of shellfish, as well as the guts and other parts of fish that they don't use in their cooking process.

'Fish waste is something that works extremely well in our composting system. It won't compost on its own, however, so it has to be mixed with something, generally wood chip.

Providing you mix them in the right ratio and make sure you've got the right water content, fish waste and wood chip will make excellent compost.'

The Rocket is available in four models - A500, A700, A900 and the new A1200 - with the capacity to treat between 50 and 7000 litres of organic waste per week.

'Anywhere that produces food waste or garden waste can recycle using the Rocket on site, and we see those who produce the waste, treat the waste and reuse the resultant material - compost - on site, as being ideal applications, ' says Webb.

Claimed advantages of using the Rocket include speed of decomposition; quality of finished compost; freedom from weed seeds, slug eggs and pathogens; cost effective;

little manual effort required; conforms with current UK rules for food processing; is virtually odour free; and access to rodents and flies is denied.

The UK is sending huge amounts of organic wastes to landfill. The EU has set targets for diversion of this waste to be completed by 2010 and has set huge fines to encourage councils to curb this harmful practice.

Until this point, charges will continue to increase to transport and dispose of wastes by the traditional methods. For organic wastes there are minimal alternatives: incineration or composting, and the latter is said to be the only environmentally friendly one of these.

Rocket in-vessel composting is a solution for small scale industrial or commercial applications, according to Accelerated Compost. 'The use of our technology means that these applications do have an alternative to paying rising disposal charges, and an alternative to the harmful methods of burying or incinerating their wastes, ' says the company.

Recycling old packaging into new SMURFIT Kappa Recycling UK chose RWM 07 to showcase its sustainable recycling systems designed to optimise diversion of waste from landfill and reduce environmental impact.

The company collects paper and packaging which it reprocesses at Smurfit Kappa Group paper mills in Birmingham and Kent, England, to produce a range of new packaging materials which end up on supermarket shelves.

Smurfit Kappa Recycling claims to offer one of the most comprehensive recycling services in the UK. It operates a countrywide fleet of articulated vehicles - many with demountable fork lift trucks - handling baled material destined for its paper mills. The recycling depots also offer a range of vehicles serving many small to medium enterprises.

Smurfit Kappa Recycling is part of the Smurfit Kappa Group, which claims to be the world's largest fibrebased packaging group, and a notable supplier of packaging to the seafood industry worldwide.

Bringing together the resources and experience of two packaging companies with long established recycling divisions - Jefferson Smurfit and Kappa Packaging - Smurfit Kappa Recycling now offers increased coverage and improved technologies to provide high quality, reliable, paper collection and recycling services.

With origins dating back more than 70 years, the organisation operates 370 facilities in Europe, Asia and South America.

'The combined expertise and resources of the Smurfit Kappa Group have resulted in a very impressive portfolio of recycling services that offer benefits all round,' says Simon Watson, managing director of Smurfit Kappa Recycling.

'Collecting material locally and reprocessing it at our own mills is not only good for the environment, but also very important to the sustainability