



Crystal clear on FOG

At the latest WWT Industry Forum in central London, wastewater industry leaders gathered to debate and report on the increasing problems presented by fats, oils and grease (FOG). **Steed Webzell** listened in

If ever our industry needed a 'plastic bag' moment, it's now," said Fraser Pithie, senior operations manager at Severn Trent Water, arguing that if the industry's big players unified in the same way as the leading supermarkets did recently to discourage the use of plastic carrier bags, public awareness of FOG would be similarly heightened.

It's a salutary point and one that strikes a chord with everyone gathered at this high profile WWT forum, sponsored by Anglian Water and Environmental Biotech UK.

"The key supermarkets got together and all of a sudden it's a bad thing to have a plastic bag. The issue got into the public mindset very quickly."

The comment met with approval from Steve Ntifo, environment and science adviser at Water UK, who chaired the event.

"I want us to help change people's behaviour regarding FOG," he said by way of introduction. "Everyone needs to accept that there is a problem and offer sustained commitment to affect change. Our sewer system has a finite capacity and we need to make the best use of it."

Setting the standard admired by all in the UK is Dublin City Council, which over the course of the past 18 months has tackled FOG head-on by imposing licences on restaurants in the city, installing grease traps and inspecting and collecting waste.

"The whole process is policed by a contractor who makes quarterly visits," said Michael O'Dwyer, project engineer at Dublin City Council. "In the past 18 months, 1,500 licences have been granted and 1,200 grease traps installed. There is obviously some cost involved for DCC but it will hopefully be budget-neutral by the end of the contract."

In Dublin, licence applications cost around €300, while the annual charge ranges from €600 for a small food outlet up to €1,370 for a hotel. However, once a restaurant is compliant the number of visits is reduced, along with the annual charge, thus providing an incentive.

With the majority of FOG collected in Dublin converted to biofuel, the council has found that many restaurants are pleased to display a certificate that reflects their environmental credentials. Unfortunately for the UK, at present there is no similar scheme. Furthermore, current legislation makes it difficult to mirror.



Some of the water industry's biggest names gathered around the table

"Section 111 of the Water Industry Act is very weak," explained Malcolm Dunk, senior consultant at Thames Water. "The burden of proof is very difficult to establish and requires review. At Thames Water we visit around 1,000 restaurants a year looking at FOG issues. We do as many of these as possible with the Environment Agency

or an Environmental Health Officer, as the visits then tend to be more effective."

"Legislation definitely helps, but alone it's not enough," added Paul Gibbs, director of wastewater at Anglian Water. "At Baddow Road in Chelmsford we've adopted a more holistic approach, getting restaurants involved and

Round Table Panel Members



Chair, Steve Ntifo
Environment and science adviser, Water UK



Michael O'Dwyer
Engineer, FOG project, Dublin City Council



Malcolm Dunk
Senior consultant, Thames Water



Tim Everett
Director of policy, Chartered Institute of Environmental Health



Paul Gibbs
Director of wastewater, Anglian Water



Emma Cullerton
Network strategy planning manager, United Utilities



Collette Nicholls
Media manager, Anglian Water



John Perriam
Sewerage management strategist, South West Water



Aziz Tejjpar
Managing director, Environmental Biotech UK



Fraser Pithie
Senior operations manager, Severn Trent Water



Aziz Tejpar (left): 'Yellow grease is a biofuel source,'; John Perriam: 'We've got to fight putting food into the sewer'

offering incentives. After all, the general public will vote with their feet – many diners visit restaurant websites to see if they promote good environmental practice. You don't always need a legislative framework to get a solution."

The issue of incentives is an interesting one, especially to *Water & Wastewater Treatment* magazine, which is co-organising (with *WET News*) the fourth annual Water Industry Achievement Awards in 2010. A new category is being introduced called 'FOG Reduction Initiative of the Year', and water companies will be invited to submit entries.

However, despite the presence of any incentives, John Perriam, sewerage management strategist at South West Water quite rightly stated that any solution must show a cost benefit.

"The problem is that it's very difficult to demonstrate over a short period of time how much would be saved 10-15 years down the line," he said. "We can isolate one street, as in the Baddow Road case, but generally across a region it's very difficult."

Tim Everett, director of policy at the Chartered Institute of Environmental Health agreed that "businesses won't wear more costs unless we can demonstrate cost savings".

Baddow Road in Chelmsford makes an interesting case study and, according to Collette Nicholls, media manager at Anglian Water, one that has proved a veritable success.

"The cost benefits to water companies are very real," she said. "At Baddow Road we saved £6,000 against the cost of treating blockages. OK, it's only one road, but it hosts 21 restaurants and takeaways. The problem of FOG was affecting everyone – in fact one restaurant was spending £300 a month clearing blockages. We had to educate them to the problem as unfortunately some people think FOG is just an

issue for the water companies. The cost benefits are there because jetting out can cost thousands, with blockages re-occurring within six months in some instances."

Aziz Tejpar, the managing director of Environmental Biotech UK agrees that FOG causes blockages, but said that different types of FOG require scrutiny.

"Roast lamb solidifies quite quickly, but steak, chicken and vegetable oils take longer, hence we need additional holding capacity in order to accommodate efficient separation, particularly

"I want us to change people's behaviour regarding FOG. Everyone needs to accept there is a problem and offer sustained commitment"

Steve Ntifo, Water UK



'Legislation alone is not enough,' said Paul Gibbs

regarding restaurants serving 500 meals a night. A standard grease trap isn't always sufficient. My solution is the Baddow Road trial in Chelmsford where we've put a bacterial bio-remediation solution in place that works in conjunction with improved practices in the workplace."

Mr Tejpar stated that best practice is also essential, as throwing food such as peas and beans down the sink acts as a binder for FOG.

"We've got to fight against putting food into the sewer rather than landfill – it will make FOG far worse," agreed Mr Perriam.

"A lot of food goes into the sewer unused," added Mr Dunk. "We need to heighten public awareness – the sewer isn't the place for it."

Education is clearly crucial here. Communicating the message about the problems of FOG to water company customers is vital if progress is to be made, however, it's far from straightforward, as Emma Cullerton, network strategy planning manager at United Utilities pointed out.

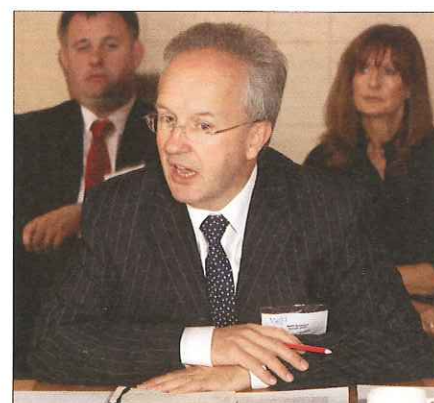
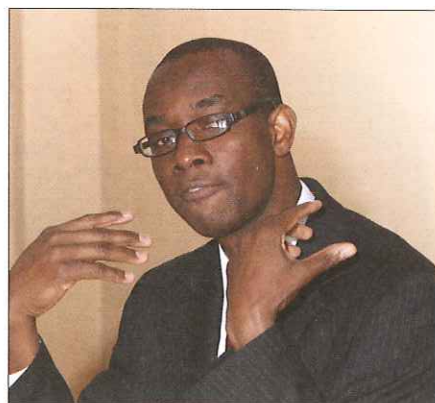
"Generally speaking, customers are only concerned when they are affected by an incident," she said. "To combat this we need to promote the adverse effects of FOG, such as flooding, pollution and health risks."

With everyone agreed on the detrimental effects of FOG the forum moved on to how this negative could be turned into a positive, something that Mr Gibbs feels is achievable.

"Until recently we tended only to class FOG as waste, but things are changing," he said. "FOG is taking on value because there is an end product – biofuel. If we can facilitate a process of getting the product to those who need it, we can go a long way to eradicating the problem."

In Dublin, the FOG issue has already evolved in this way.

"Contractors in Dublin initially charged to



Left to right: Tim Everett; forum chairman Steve Ntifo and Fraser Pithie, who said the industry needed a 'plastic bag moment' to raise public awareness

collect FOG, but now they collect it for free because it's regarded as a fuel source, not waste," stated Mr O'Dwyer.

Another issue entered the debate here, with Mr Tejpar the first to bring it to light.

"FOG has to be classified: 'yellow' grease is a biofuel source, but once it hits the sewer it becomes 'brown' grease that is little use to anyone," he said. "If we implement source prevention and educate people we can increase the level of yellow grease. Brown grease ends up in landfill, which creates another environmental problem because it can take 70 years to degrade."

Collette Nicholls stated that the use of cooking oil and fat had trebled since the 1960s.

"We have 10,000 tonnes of FOG sitting in

"If we mention FOG to our customers, it's an easy way to raise awareness and a positive step towards addressing the issue"

**Emma Cullerton,
United Utilities**

Anglian sewers. If this was converted to biofuel it would serve 8,000 family cars for a year. We've taken a mobile education unit out to the public and had a very good response."

Emma Cullerton said: "If we mention FOG to

our customers, then it's an easy way to raise awareness and a positive steps towards addressing the issue."

The WWT Industry Forum on FOG encouraged some genuinely worthwhile debate, with all agreeing that that tackling the issue needs to gather pace. As an outcome, Mr Dunk, who is chair of Water UK's Sewerage Network Abuse Prevention (SNAP) group, stated he would be happy to take forward the issues raised.

To find out more about SNAP's work on FOG, contact Malcolm Dunk: malcolm.x.dunk@thameswater.co.uk. To view a podcast of the forum visit www.web4water.com/tv

Anglian's Baddow Road Trial: how to beat flooding and bad odours

The Baddow Road trial in Chelmsford was hailed a success. Anglian Water was working with the Water Research Centre (WRC), Chelmsford Borough Council, Environmental Biotech as well as a number of other companies which produce products to help dispose of FOG.

During the trial – which ran for a year between 2007 and 2008 – there were no instances recorded of sewage flooding or bad odours and the borough council environmental health officers noted a significant reduction in vermin in the area.

This road has been free of fat in the sewers since, but it does need regular monitoring to ensure this is kept up. It has meant a saving to Anglian



The road has been free of fat in the sewers since the trial began

Water of more than £6,000 a year – the amount it used to cost to keep this one road with its 21 restaurants and takeaways – clear of fat and grease.

To get the trial rolling there were initial costs up front: to

cover the cost of surveying each lateral, then the cost of jetting out the fat to ensure the entire network in the road was clear, and the time involved visiting each establishment to give advice and monitor the situation.

The trial was hailed a success due to a combination of factors – raising awareness of the issues with restaurants and takeaways and working in partnership with them, educating the catering outlets to use better kitchen practices such as scraping plates into bins, and using innovative technology such as the product from Essex-based Environmental Biotech.

Paul Gibbs, Director of Wastewater for Anglian Water, said: "This trial is a clear indication of what working in partnership can achieve. All appreciate the risks posed to the environment by fat in sewers and the benefits to be gained by keeping it out. There is great potential for others to learn from the example set here."