

FIGHTING THE FAT(BERG)

A fatberg weighing an estimated 130 tonnes and stretching the length of two football pitches is blocking a section of London's ageing sewage network. The plan is to manually dismantle the monstrosity and subsequently convert the waste into 10,000 litres of biodiesel.

Fats, oils and greases (FOG) effluents are comprised mainly of saturated fats that solidify between 35°C and 40°C, resulting in blockages as they flow from a heated cooker into cooler drainage systems. FOGs restrict pipe flow and coat or damage sensors used in monitoring and maintenance of systems, rendering them ineffective.

Fat to Fuel

Biofuel, a fuel derived from living matter, is considered to be the purest and the easiest available fuels on the planet. There are various forms of biofuels and most of them are made through a detailed process having various stages. One such fuel is biodiesel, produced from vegetable oils, yellow grease, used cooking oils, or animal fats. The production process, called esterification, converts oils or fats into chemicals called long-chain mono alkyl esters and separates out glycerine. When the alkyl chain alcohol is methanol (most common), these are called fatty acid methyl esters, or FAME. When FAME is used for fuel, it is commonly referred to as biodiesel.

R&D

Jumpstart has helped a number of companies in the waste and recycling and environmental engineering industries claim tax relief on their efforts to either combat the build-up of such 'fatbergs' or develop improved processes for their conversion into biodiesel.

Case Study

They do say prevention is better than cure! Developing preventative methods to avoid large quantities of fats, oils and waste products being ejected into our drainage systems would be fantastic, reducing both environmental and economic impacts.

One of our clients continually develops appreciably improved products for integrating with existing industry processes to provide greater efficiency in the extraction of FOGs. In the development of a proactive cooker canopy cleaning system, which had to adhere to both European





The knowledge of the people within the team and their ability to extract the right information from us to make a successful claim was really impressive. We were able to claim substantial relief on the back of the R&D Tax Claim process.

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Case Study (cont)

and American standards, the company developed electrostatic precipitators, ultra-violet sterilisation methodologies and active-heating grease shields for integration with the passive traps. In a second project, the company developed improved filtration technologies and corresponding large scale manufacturing processes for improved reliability in the extraction of detritus from cooker effluents.

Industry standard biodiesel production methods are typically 90 % efficient, leading to a great deal of waste and impurities in the final product. Furthermore, many existing esterification processes struggle when processing waste oil with high free fatty acid content (> 5 %), increasing the cost and complexity.

Our client qualified for R&D tax relief by investigating enhanced production and filtration technologies to increase the overall efficiency of conversion. Systematic investigations conducted analysed the contact area of the reaction media and residence time and temperatures, with a significant improvement in efficiency achieved. Furthermore, knowledge was generated on filtration methodologies and the interdependent variables involved, to enable the development of a product with reduced contaminants.

Be Rewarded For Your Innovation!

The good news is that the majority of the challenges your business will be faced with in order to extend the knowledge and capability in the extraction of FOGs will fall within the boundaries of the R&D tax relief scheme, offsetting some of the financial risk posed to innovative companies.

For more details and a chat about how this might apply to your own business:

CONTACT A MEMBER OF THE JUMPSTART TEAM TODAY.

There is no substitute for experience and expertise. Experience gained through years of daily involvement in putting together thousands of successful R&D tax claims. Expertise built through a detailed programme of training and study, maintained and regularly enhanced.

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