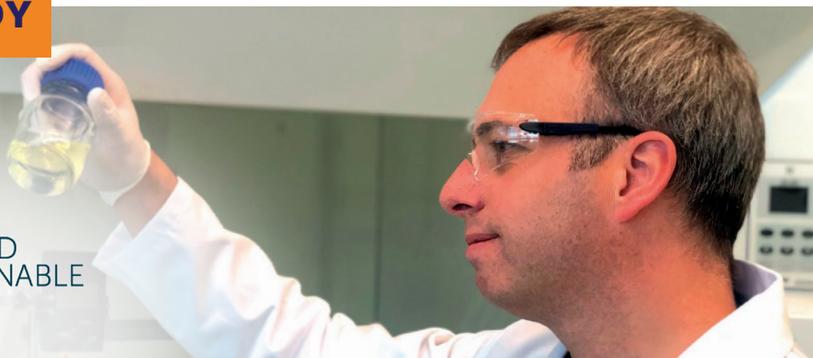


Plastic Fantastic: Turning Waste into Liquid Gold

CASE STUDY



OXFORD
SUSTAINABLE
FUELS



When David Attenborough graphically exposed the full scale of damage caused by waste plastic in our oceans, it made global headlines. According to the Royal Statistical Society, 90.5% of plastic waste has never been recycled* and buried as landfill or casually abandoned: a staggering 8.3 billion tonnes. In a world which is heavily dependent on plastics, recycling and re-purposing plastics on a vast scale is extremely important.

*Royal Statistical Society 2018

Large scale problem solving

Creating a circular economy for plastics is Oxford Sustainable Fuels' mission. A university spin-out, based at Begbroke Science Park, they have 5 patents which can turn problem plastic waste into a resource for high value products. Their innovations offer a tantalizing prospect of a world that can rid itself of its mountains of discarded plastic.

Chief Operating Officer, Ben Williams, describes their technology as unique: "We have a processing solution here which can be transformative. Taking the largely unusable oil made from heating plastics (pyrolysis), we can transform it into very useful high-quality synthetic oil which is very clean and takes away

all the risky elements inherent in the process. This can then be used to make chemicals and polymers for plastics."

The costs of creating oils from plastics and tyres are uneconomic using existing technologies and the product has a very limited market. In laboratory tests, Oxford Sustainable Fuels have proved their process can achieve a very high purity; eliminating problematic contaminants such as paper, food waste, other organics and metals which come with plastic waste. "What we can see is the potential for this to be used at scale in the waste management industry and in the petrochemical industry with plastic as a source. It is at last possible to imagine waste plastic having a tradable value as a raw material."

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Support from OxLEP Business

The company approached OxLEP Business for help when they reached the stage of needing to build a pilot plant to take their process to the next level and closer to commercial reality. Introductions by the Innovation Support for Business team (ISfB) enhanced their network and exposed them to new ideas and perspectives. Funding from the programme's Go-Create grant also facilitated their move to the next stage. "Whilst we were still in development, it was vital we could show the market what we could achieve" Ben Williams explains. "We also knew that we had to broaden our skill set and connect with others in the business of scaling up and creating a business from an idea."

"We successfully applied for a grant to help us get the pilot plant constructed. It enabled us to employ two more people to accelerate the speed of our work."

The expanded team has been able to produce the data and proof needed to support the patented processes in engaging with potential users in the market.

"There is no doubt support from OxLEP Business has had an accelerating impact on our path to be a trading, commercially active business" Ben said.

Looking forwards, Oxford Alternative Fuels hopes to see its technologies revolutionise plastic waste management worldwide. Plants using its processes can be built throughout the world and at different sizes too, depending on the location. Ben concluded: "The appetite for solving the plastic waste problem is substantial, so we are very positive about our future. It is a problem we all share, and the solution has been created in Oxfordshire. It is an exciting development to be giving plastic a new life."

Oxford Sustainable Fuels was founded in 2017. Its goal is to eliminate plastic from landfill disposal by creating a new synthetic product.



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Find out more about OxLEP Business' Innovation Support for Business (ISfB) programme and how it can help your Business to achieve its own goals.

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