

# Fibre provider

A small company believes it has found a recycling solution for 'difficult to recycle' MDF. **Neil Roberts** reports

## AT A GLANCE

MDF Recovery has just been granted a patent for technology it hopes will lead to the UK's first commercial-scale MDF recycling facility

## ■ EVERY YEAR IN BRITAIN WE USE AROUND ONE MILLION TONNES OF MDF. AND YET THERE

are no viable recycling options for the material. In 2009, WRAP estimated that the UK furniture manufacturing industry alone sent more than 150,000 tonnes of waste to landfill.

Medium density fibreboard (MDF) is an engineered wood panel product produced from virgin wood fibres, mixed with resins and waxes, and pressed into sheets. But the very properties that have made MDF such a popular material in furniture manufacture and construction during the past 40 years also make recycling it problematic.

Now, a small, two-man, firm believes it has the solution. Craig Bartlett from MDF Recovery explains: "MDF was not designed to be recycled. The whole benefit of MDF is that it is a very dense product. It is homogenous across its profile, and can be machined and cut into any shape or size. But because of the amount of pressure applied to it during production,

it is very difficult to prise apart again without damaging the fibres."

Another problem with MDF is the stack emissions caused by burning the resins and PVCs with it, so sometimes the material cannot even be burned for biomass.

Bartlett, an environmental R&D specialist with a focus

on MDF, and his accountant business partner Jim New have just been granted a patent for technology they say could lead to the UK's first commercial-scale MDF recycling facility.

Bartlett says: "The technology is called ohmic heating and is used in the food processing sector. We take MDF waste, shred it and add water. We then heat the material in a long tube with an electrode either side, applying an electrical current that results in a uniform heating.

"The material comes out like sludge or a soup and, from that, we apply pretty much standard wood recycling techniques to clean the material. The resultant fibre is a product that is similar in appearance

and performance to virgin wood fibre.

"We've had it independently tested in the past, and we are currently having the BioComposites Centre at Bangor University test it again to confirm that the technical quality of the fibres is okay, which we know they are. So it is really just a case now of being able to scale up the technology to provide commercial quantities of fibre."

Bartlett says the beauty of the process comes in reintegrating recovered fibres into MDF manufacture, eliminating the most energy-intensive stage in the manufacture of the board: the refining of wood chips into fibres. The technology should be attractive to MDF manufacturers, which potentially could recover large amounts of waste from their customers as around 18% of MDF used in furniture manufacture is wasted as offcuts. Recovered fibres can also be used in thermal insulation and horticultural products.

Despite his enthusiasm for his technology, Bartlett seems pessimistic about the UK waste management industry realising its potential. The company is looking for £500,000 in investment to build a demonstration plant and eventually to raise £6m to build a facility capable of processing 30,000 tonnes a year.

Bartlett says waste management firms "are not quite perhaps as environmentally friendly as most people would consider them to be", and have a propensity "to not segregate waste wood but to simply ship it to biomass plants". He says MDF recovery is just not worth their while when they can simply "bulk it up and ship it off".

He also criticises Government policy, saying that Renewables Obligations Certificates amount to "Government money to burn wood" and believes he is struggling on a "very uneven playing field".

"We should be eligible for subsidy because we are higher up the waste management hierarchy than biomass plants," he says. "We recycle and reuse. It's nonsensical from our point-of-view. But that's politics for you."

However, Bartlett says MDF Recovery has attracted positive interest from MDF manufacturers and end users. And a lot of interest is coming from abroad. "The Government claims Britain is a green economy leader," he says, "but there's no help for us here. So if we have to go overseas with this, we will." ■

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Fibre recovered from the process, in a form that can be used in MDF manufacture or other industrial applications