

theaxionnewsletter

WELCOME to the latest edition of the Axion Newsletter. This issue includes articles about the feasibility of recycling post-consumer film following successful trials and Axion's call for more effort to recover critical materials from shredder and WEEE residues, currently ending up in landfill.

POST-CONSUMER FILM RECYCLING POSSIBLE WITHIN 4 YEARS, PREDICTS AXION

Closed-loop recycling of post-consumer and retail waste plastic films could become a full-scale commercial reality within four years following the outcome of successful feasibility trials.

Refuse sacks, external hoardings, shelving and in-store displays are among various new products that could be made from waste supermarket plastics and either sold or used within their store networks.

Axion worked with three leading manufacturers – CeDo, Centriforce Products and Protomax Plastics - on a series of demonstration trials of post-consumer films sourced from a leading retailer's front and back of store collections.

Axion's research, funded by WRAP, shows it is technically possible to manufacture commercially useful products for the retail sector from mixed post-consumer film packaging. [You can read the full report here](#)

According to Axion Director Roger Morton, the 'great potential' shown by the studies should give manufacturers confidence to invest in production capability, which in turn would stimulate Local Authorities to accept waste plastic films in their recycling collections. He predicts this could happen within two to four years.

"This is a tremendous step in the right direction to really grow film recycling capacity in the UK over the next few years," says Roger. "Consumers want to see their plastic waste given a new second life as they're now far more conscious of what they're throwing away. Ultimately, consumer demand will drive this whole closed-loop recycling process."

The trial at CeDo's Telford facility produced refuse sacks that met existing product specifications using 100% UK-sourced recycled content from household waste. Previously European recycle had to be used due to

waste quality issues here. CeDo is now working with retailers to launch new products.

According to David Brookes, CeDo's Technical Development Director, retailers are showing increasing signs of wanting to manage their plastic waste derived from their own supply chain and retail stores back into products they sell.

"The WRAP study run by Axion demonstrates technically that this is possible," he says. "Of critical importance is to develop upon this technical foundation to deliver economic solutions."

David adds: "CeDo are firmly behind these initiatives and will continue to develop the technology to provide an economic closed loop model for our key customers in the UK and the wider EU."

The other two successful manufacturing trials with Centriforce and Protomax focussed on boards made from comingled film waste that could be used for a variety of applications, such as hoardings, security panels and shelving. Both firms are continuing to work on product specifications and with retailers to open up market opportunities.

Developments in these types of products, which can effectively incorporate post-consumer mixed-packaging plastics, are on the increase. One example is Protomax, a manufacturer of a plywood substitute from waste plastics, whose foamed-core plastic board and panels are being used successfully in many construction applications.

Roger adds: "While the financial viability of these potential products needs to be explored further, we believe the real interest shown by the retail sector could lead to exciting developments in the future. To that end, Axion is continuing its research into innovative closed-loop recycling solutions to divert thousands of tonnes of plastic packaging waste from landfill."

UK MISSING A 'MASSIVE OPPORTUNITY' WITH CRITICAL MATERIALS, CLAIMS AXION

The UK is missing a 'massive opportunity' by failing to capture embedded value from 'high-tech' critical materials in waste that could support new jobs and economic growth in sustainable businesses here, claimed a leading recycling specialist.

Wholesale exports of low-grade comingled polymer materials from our commercial and domestic waste streams are depriving the nation of valuable resources that could be re-used in high-quality, higher-value goods, said Axion Polymers Director Keith Freegard.

Developing techniques to identify and extract rare elements, such as platinum, palladium and indium, from currently-landfilled shredder and WEEE (Waste Electrical and Electronic Equipment) residues was another key issue to address in the face of rising worldwide demand, rocketing prices and dwindling supply.

Speaking at the recent launch of the KTN Materials Security Special Interest Group, Keith called for stronger legislative frameworks to drive business innovation and safeguard rare materials for processing at home.

"Why sell waste for a few hundred pounds to economies without robust checks on what happens to mixed recyclables when we could keep it in our economy,

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support hi-tech businesses, create 'green' jobs and end up with materials that can be re-manufactured into new goods worth five times as much," asserted Keith. "We seem to be missing a great opportunity to capture and hold that much-needed upgrade in economic value within our own country's GDP."

With the continued rise in electronics waste tonnages and short-life products containing complex components, the big challenge in the next decade is to overcome predicted shortages of rare elements and potentially prohibitive materials prices by developing sophisticated extraction and recycling techniques to recover these elements from diverse waste streams.

Keith added: "I don't think we've even yet begun to really scratch the surface in terms of knowing in which items of WEEE they exist or how we might go about the complex task of recovering them. Having said that, quite often the very tiny concentrations of rare elements in a big pile of electrical scrap are still richer than those found from mining thousands of tonnes of ore just to get a useable amount of the element."

Knowledge Transfer Networks (KTNs) are national networks set up for specific areas of technology or business, which bring experts together to promote innovation in research and development and knowledge sharing.



STAFF FOCUS: GERRI CAMPBELL

Axion would like to welcome new recruit Gerri Campbell. Gerri has joined the Axion finance team based in the Bramhall office to support the accounts work. She works on purchasing, accounts payable and looks after Axion staff travel arrangements.

Gerri has several years experience working in the chemical and medical industries and has returned to full-time work following a career break. She spent her time off traveling around Europe and to Australia.

While in Australia, Gerri worked on a cattle station and learned how to brand, castrate, de-horn and immunise cows, how to drive tractors and bulldozers, round up bulls while riding a motorbike, mend miles of fencing and even set the bush alight!



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