

Rhys Charles' EngD project focused on the recovery of critical raw materials from Waste Electrical and Electronic Equipment (WEE). As a result of his project, Rhys was a co-author for the WRAP Recovery of Critical Raw Materials from WEEE – Wales: Final Report.

The report provides guidance and information to others seeking to exploit WEEE as a CRM source.

The report enhanced the reputations of Rhys and sponsor company Metech



Rhys was approached by the Cardiff Eco-Design Centre (EDC) following a recommendation by Welsh Government. EDC were engaged in the high profile EU cyclLED project and sought Rhys' expertise on CRMs in WEEE

This led to further projects...

Which led to influencing policy...

Rhys has attended the "APSRG parliamentary debate" twice on the recast of the UK WEEE regulations, and the APSRG parliamentary event "One year on... Looking at the Effects of the Recast WEEE regulations"



Rhys responded to the BIS public consultation on the recast of the UK WEEE regulation on behalf of Metech which is taken into account when BIS come up with the new regs

Rhys was invited to take part in the EU funded (FP7) LCA2go case study with the Fraunhofer Institute on behalf of Metech. He was subsequently invited to the policy forming workshop in Brussels with representatives of the EC.

And an invitation to join an Expert Advisory Group...

Rhys was invited to join the Expert Advisory Group for the Mapping Critical Resources for Wales project (MCR4W). Rhys represented Metech and SPECIFIC on the advisory group as key stakeholders in the CRM agenda. Project outputs now inform Welsh Government policy decisions designed to enhance resource efficiency and mitigate resource criticality.

Benefits to the Sponsor Company

Excellent research

Rhys identified many barriers to CRM recovery from WEEE which will form the basis of further research

A library of CRM bearing components in WEEE items has been created

Metech have adopted some of the methods Rhys investigated which enable additional value to be derived from PCBs

Increased funding & Income



The fee which Metech received for Rhys' work was sufficient to cover his sponsorship over the period of the project and 10 days of the Site Manager's time (£3.1K)

Awarded £12,000 funding from Innovate UK for Rhys' involvement on behalf of Metech for the Tetronics project

Partnership opportunities

Metech's reputation following their involvement in previous CRM trials resulted in Tetronics seeking them as a partner. Along with Vale Inco, they now work in partnership on a £600k Innovate UK funded project



WRAP have invited Metech to submit tenders for further funded trials investigating WEEE reuse potential

Letters of Support

Based on Rhys' research and involvement, he was able to provide letters of support for inclusion with the grant application for the Materials and Manufacturing Academy (M2A) from:

Metech

Cardiff Eco-design Centre

Lucy Chamberlin on behalf of the RSA Great Recovery Project (Formerly Ellen MacArthur Foundation)

Rhys was funded by the COATED engineering doctorate centre, and in the spirit of circular economy, he used his connections to give back to the scheme by providing letters of support that helped secure the funding for the M2A.

The funding for the £14m EU backed M2A project was announced in January 2016 and will train the next generation of EngDs - each one with the potential to make a difference like Rhys.

The M2A has been made possible by the EU's Convergence European Social Fund through the Welsh Government