



CRITICAL  
RAW  
MATERIAL



## Electronics Goes Green 2016+ - September 2016

### Innovations transforming sustainable electricals

By Malcolm Waddell, Programme Manager at WRAP

I had the pleasure of attending and presenting at Electronics Goes Green 2016+ in September 2016. With sustainable electricals being one of WRAP's strategic areas, it was the perfect arena to showcase the latest news from two of our EU LIFE funded projects; REBus and CRM Closed Loop Recovery.

This article shares my reflections following the event.

### Business Models: Innovation Value Creation

During my first session, I presented on Business Models: Innovation Value Creation. This provided an overview of the impact that resource efficient business models (REBMs) can have on the industry. I also explored how we have helped some of the REBus pilot projects complete their REBMs journeys, through tailored support.

Key questions arising from the audience focussed on the consumers. They asked to what extent the consumer's appetite was for a greater emphasis on circular economy for electrical products along with, what can often be, the prohibitive cost or hassle of getting an item repaired. The example from Argos on incentivised returns has shown that there is good potential in this area. This and other schemes available such as neighbourhood sharing were touched on in my presentation and also explored in another presentation. Using a service model would have benefits for both businesses and consumers and, from a consumer perspective, would certainly take away the burden of repair cost.

### Critical Raw Materials Closed Loop Recovery

During my next session, I shared the aims of the Critical Raw Materials Closed Loop Recovery (CRM) project. This will explore commercial opportunities for harvesting critical raw materials and precious metals including gold, silver and platinum group metals, from everyday unwanted electronic products. It will be the first-of-its-kind to link collection methods with recovery success.

I highlighted some key information about why this work is needed, such as the fact that:

- the UK wastes one tonne of gold per year;
- we buy 175 million items valued at £20bn per year; and
- 9.9m tonnes of waste electronic and electrical equipment (WEEE) is generated every year in the EU.

We will be running 10 trials using five reprocessing techniques to recover a range of CRMs. The aim of the combined trials is to collect a

minimum of 100 tonnes of WEEE and increase the recovery of target CRMs by 5% by 2020. We will also be developing policy recommendations using trials and trial evaluation data, and will develop an infrastructure plan to deliver the most effective resilience for EU businesses and the wider EU economy.

We had some good questions during this session. Some of these touched on the data sources and our reference for the calculation used for the one tonne of gold statistic. I was asked about how we calculated the total amount and value of electrical items in the UK. This was based on research and both a top down and bottom up approach. There was also interest in the technology used in the trials. I explained that we will be using a range of methods such as the hydro-metallurgical and electro-chemical methods, however, this will depend on the trial and may also recover different materials. This presentation followed one from Apple on their recycling robot LIAM which recovers CRMs from their products.

### **Networking and sharing knowledge**

The wider event offered a great opportunity for networking and finding out more about sustainable developments in the sector. It was beneficial to hear developments that would help our wider sustainable electrical work, the REBus project and also the Critical Raw Material project. We heard about other global initiatives and technologies. In total there were 193 presentations in 50 sessions. There were just under 400 delegates attending from 35 countries representing a range of sectors.

The event coincided with a consumer event on electronics which highlighted many new developments in the market. Notably, the growth in the demand for new and improved technology has also led to a growth in the second hand and re-use market for smart technology. Estimates demonstrate that smart technological devices will increase globally from approximately 14bn devices to 100bn by 2030. From kettles you can control with your phone, to home security and clothes pegs which keep an eye on changing weather conditions to give advance notice of rain - there will be a marked increase in devices which are currently more conceptual or price prohibitive that will become standard for many households.

From a sustainability perspective this will have an impact on demand for new technology. The repair, re-use and recovery models will help manage this demand. We should also look at how these devices will help us live more sustainably. A good example might be for WRAP's Love Food Hate Waste campaign - a smart app could highlight what we have in our fridge which is approaching the use by or best before end date, and provide enticing menu suggestions highlighting portion sizes or what would go well with the food in the fridge.