

Resource Recovery from Waste: A Brief Look in the Rear-view Mirror

Kenneth O'Callaghan

End-of-Pipe (again)

People have criticized “end-of-pipe” thinking on waste for decades – (create waste/pollute then treat the waste) for example Amory Lovins’ Natural Capitalism

Zero Waste Institute thinks human life is all one long walk to the end of the pipe:

- End-of-pipe medicine – create/allow illness then develop longer term treatments that yield pharma income
- End-of-pipe conflict resolution – create allow/fuel the conflict then treat the collapse
- Waste ditto...etc

For whatever reasons we needed new models and ideas for waste and resources.



Resource Recovery from Waste: players and dates

Some early players – Andrew Impey (NERC), Lizzie Jones (NERC), Phil Scotney (FCC Environment), Jim Wharfe (EA), WRAP

Discussions between NERC and Defra through May 2012

Programme Advisory Group (PAG) first met July 2012 and identified the *programme scope* – included Peter Guthrie, Simon Pollard, Jan Gronow and others

In 2012 catalyst grants were approved to get the programme moving

PAG morphed into the Science Advisory Group (SAG), which first met in April 2013

Stakeholder workshop 25th June 2013 with government and private sector

Programme Executive Board formed July 2015 – included Jim Wharfe, Ruth Kelman (NERC), Tom Roberts (ESRC) and others

Early thinking behind RRfW

NERC already invested in Sustainable Use of Natural Resources (SUNR) and Environment Pollution and Human Health (EPHH) strategic areas.

PAG considered the waste hierarchy, industrial ecology, circular economy and sustainability principles*, the strategic direction needed and any overlap with other research. Obviously, continued wasteful exploitation of resources + population increases + product expansion in an economy demanding growth = bad.

There were no significant restrictions of the ecosystems and habitats that could be involved, and few restrictions on approach, e.g., field based, desktop, lab, emergent technologies etc.

Some subjects out of scope – municipal waste collection systems and current treatment enhancements, radioactive waste (already had NERC Radioactivity and the Environment (RATE)), food already a big subject.

* Key documents at the time were Aldersgate Group 2010, *Beyond Carbon*, and Institute of Civil Engineers 2011, *State of the Nation: waste and resource management*.

Arjes VZ950
shredder



Vision and ambition

RRfW vision: to lead delivery of the strategic science needed to accomplish a paradigm shift in the recovery of resources from waste that is driven by environmental benefits (integrated across air, soil and water resources, and biodiversity) and for human health, rather than by economics alone. The programme will also forge new thinking that goes ‘beyond carbon’ to understand *waste as a resource* from the perspective of ecological and not just carbon outcomes.

RRfW’s ambition was influenced by the idea that “...globally, society needs to understand how exploiting resources could affect the environment, including the impact of their waste products, and how this can be managed so as to live within the Earth’s environmental limits.” [Next Generation Science for Planet Earth NERC Strategy 2007-2012]

Are we still focused on environmental and societal benefits of using waste as a resource?

Today and beyond

Great couple of days to look forward to – project updates; posters; exhibition; mini-projects; and how to work with others with the new knowledge we generate.

As we share our ideas, can we be thinking about links to other projects and programmes? – both researchers and administrators – we listed out some potential research links in the PAG*.

Can we start or continue to align our ideas on knowledge sharing and making impact with stakeholders? Are we still bringing partners with us on the journey? Now is a good time to bring some honest and open reflections on that so we recalibrate our efforts if we need to.

The conference will spend some time reflecting on the benefits we identified when we began the journey. To contribute to a paradigm shift, we must do better than just create another blinkered walk to the end of a pipe.

* EPSRC Engineering Solutions for Resource Efficiency; EPSRC Waste, Water and Land Management cluster; EPSRC Resource Efficiency research area; Waste and Resources Action Programme (WRAP); ESRC's The Waste of the World research programme; BGS Minerals and Waste theme/programme; The Environmental Sustainability Knowledge Transfer Network (ESKTN); TSB competition "The Great Recovery"; TSB's Future Cities Catapult; Global Food Security programme Resource Efficiency research theme; RCUK Energy Programme...