Editorial

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It is with great pleasure that I am editing this issue of the *Proceedings of the Institution of Civil Engineers – Waste and Resource Management*. This is my fourth year on the editorial panel and we are always looking for more members that can broaden the scope and knowledge of the journal. The papers in this issue are distinct but interrelated to the concepts of resource management, collaboration and circular economy.

The first paper by Hill (2015) ‘documents the range of countries, drivers and ideas that have culminated in the present profile of the idea of the “circular economy”’. This paper is an essential guide to the journey of waste management to circular economy. The circular economy is made up of many facets and one of those identified by Hill is strategic engagement and adoption such that ‘players should be pressing home this point with policy makers’. Previous research has identified similar conclusions; Durão *et al.* (2014) suggested ‘reduction targets could be achieved by implementation of good practices in waste management and the development of networks to allow an increase in the reuse and recycling rates of wasted materials’. It is obvious that ‘for the departure from much of the business and policy debate ... focused on managing wastes rather than preserving resources and value through waste prevention, and moving towards a richer understanding of resource stocks, flows and efficiencies’ (Hill, 2015) is only achievable through collaboration.

This theme of collaboration is continued by Warner *et al.* (2015) in the second paper albeit from a different angle; they state ‘At the present time the future of zero waste places is uncertain. There is no clear lead from Defra as to future developments’. The paper suggests that initiatives funded by governments as ‘seed-corn’ pilots have longevity and that characterisation by the ‘phrase “catalyst for further action” is accurate, as many of the places continued their activities, sustainably, after the pilot project had completed’. It is evident that whilst research is commonplace, valuable research can only be acted upon if there is some form of continuation. The Warner *et al.* paper draws that conclusion out with real impact.

The circular economy is a multitude of different approaches to ensuring that materials are economically and environmentally maximised. There has been much research in how the circular economy approaches different materials, indeed, Stafford *et al.* (2012) give ‘recommendations for assessing the criticality of

materials (metals and non-fuel minerals), including the need for context-dependent assessment methods, providing a framework for conducting criticality assessments’, this has now been narrowed down to one group of materials waste electrical and electronic equipment (WEEE) in Germany by von Gries and Wilts. The third paper has developed a ‘planning criteria for the design of collection groups to achieve higher recovery’ (von Gries and Wilts, 2015). This paper concludes that for the recovery of the valuable materials as part of the circular economy approach, in this case defined as resource efficiency, communication, collaboration and sharing of knowledge are the key traits required to facilitate a ‘resource-oriented design of collection groups – comprising “design for dismantling-ability” and a pure knowledge of component contents’ – they go on to suggest that this ‘depends on a high level of information as well as, to a high degree, an improved information exchange between producers and recyclers’.

Finally, our fourth paper targets one of the essential parameters in ensuring that the circular economy approach can be undertaken in a collaborative and effective way, through the use of appropriate Environmental (Waste) Compliance Control Systems for UK SMEs. The introduction to the paper encapsulates the theme of this edition, following Europe’s 2010 post-recession austerity measures, it is clear that while we need to protect the environment, this needs to be done with fewer resources (Wilson *et al.*, 2015). It is a subject that has been much commented and researched with many papers dedicated to protecting the environment with fewer resources.

This volume of *Waste and Resource Management* has presented some strategic and important challenges to achieving resource security through a circular economic approach; collaboration, sharing knowledge, prioritisation of materials, economic incentives and appropriate focus. All of these challenges need further research and analysis as the solutions will always evolve. This evolution is something that I have experienced in relation to the circular economy and local authority waste management in particular. In 2013 the journal published a briefing article on the public sector contribution to resource recovery in the UK, this paper introduced a matrix for supporting planning for new collection and treatment methodologies for consideration and future development (Greenfield, 2013a), subsequent comment and critique meant that this document evolved to the matrix published in 2013 and

OPTIMUM METHOD OF MATERIAL MANAGEMENT		LEAST FAVOURABLE METHOD OF MATERIAL MANAGEMENT
TREATMENT	MATERIAL	FOOD WASTE	PAPER	METALS	GLASS	TEXTILES	GARDEN	PLASTICS	RESIDUAL	ICT
PREVENTION REUSE & REFURBISHMENT RECYCLING	PREVENTION
	REUSE & REFURBISHMENT
	RECYCLING
CLOSED LOOP RECYCLING
HOME COMPOSTING
HOME DIGESTION
WINDROW COMPOSTING
IN VESSEL COMPOSTING
ANAEROBIC DIGESTION (AD)
PYROLYSIS
GASIFICATION
ENERGY FROM WASTE CHP
ENERGY FROM WASTE
LANDFILL

Figure 1. A waste strategy on a page – The Smiley Resource Strategy (Greenfield, 2013b)

shown in Figure 1, it will continue to evolve (Greenfield, 2013b).

This process of evolution is a fundamental aspect for the circular economy and should be pursued, while being considerate of what has gone before, demonstrated by Hill in the first paper.

I am confident that you will enjoy this issue of *Waste and Resource Management*. I can only encourage you to submit your papers for consideration, especially on the circular economy in relation to waste and resource management. Finally as encouragement, as if you need it, it is free to submit to our journal, papers appear ahead of print as soon as they are ready to be published and ahead of print articles are fully citable using the DOI system. I hope this issue advances or supports your current thinking on waste and resource management.

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