

Moving beyond waste management towards a circular economy

Valuing Infrastructure Conference

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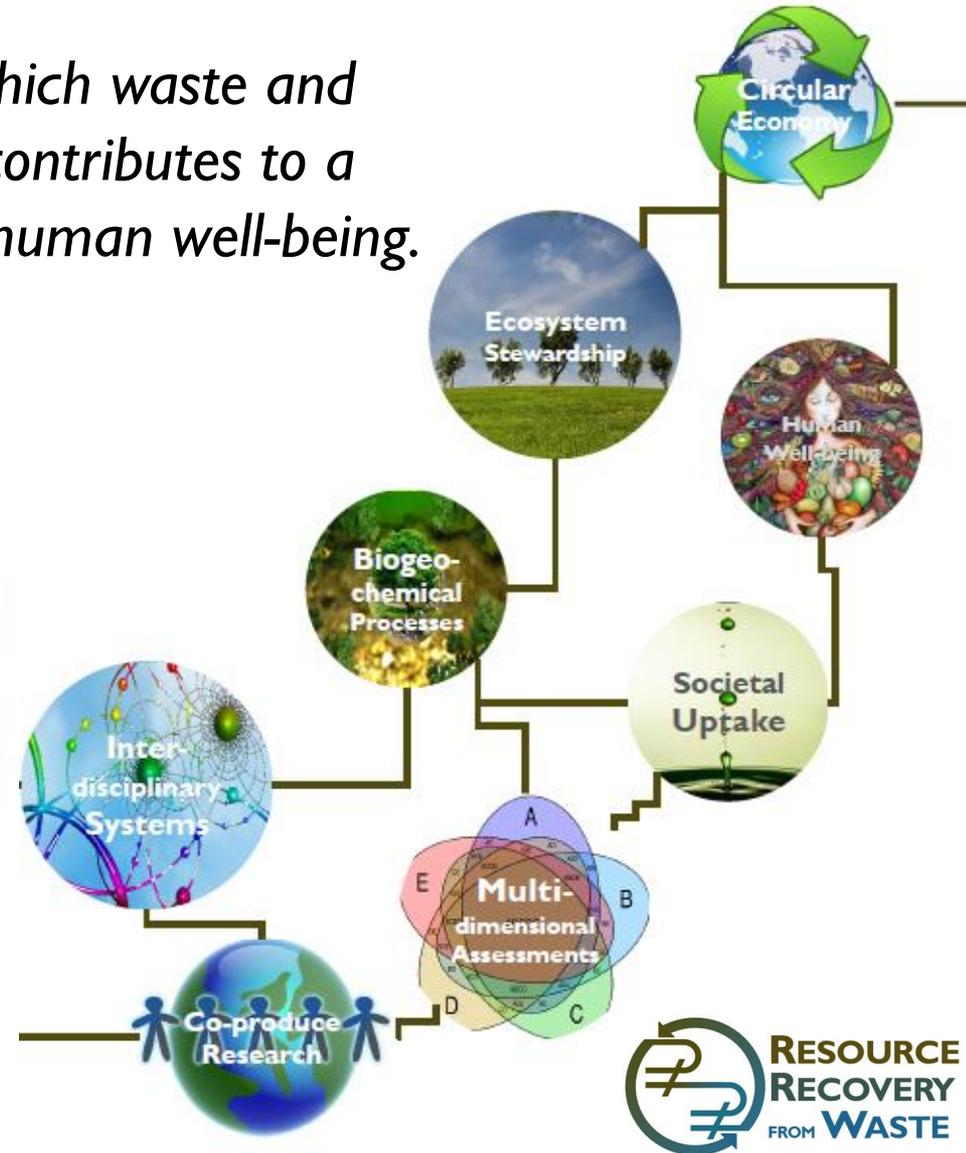
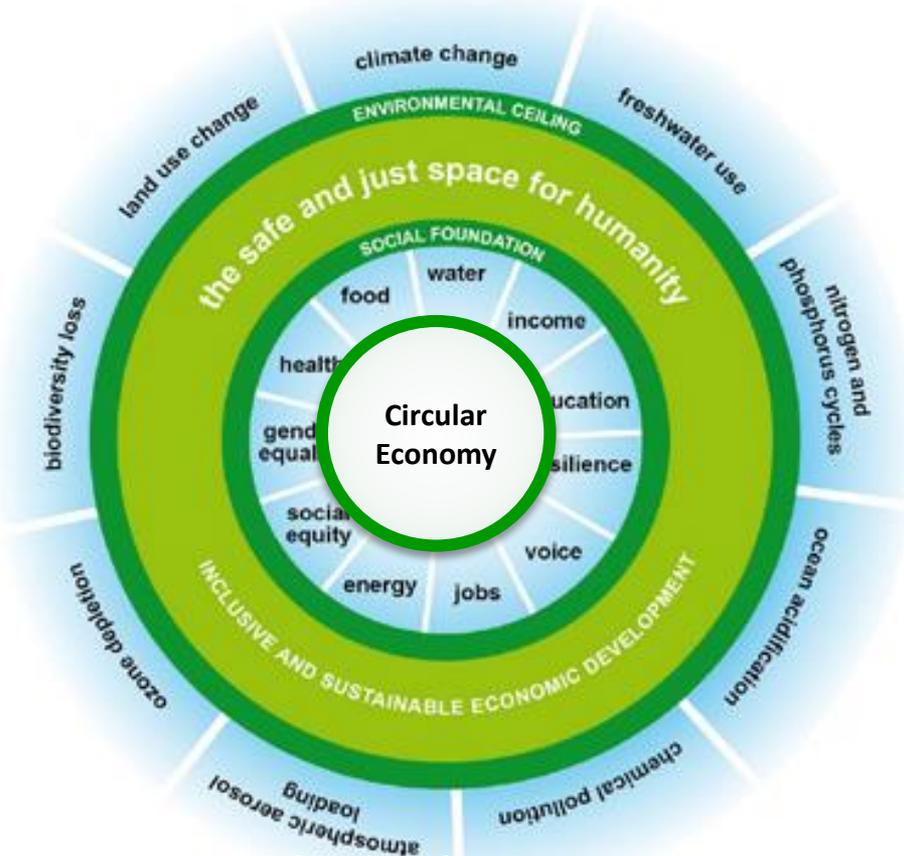
  Resource Recovery from Waste



Department
for Environment
Food & Rural Affairs

Resource Recovery from Waste

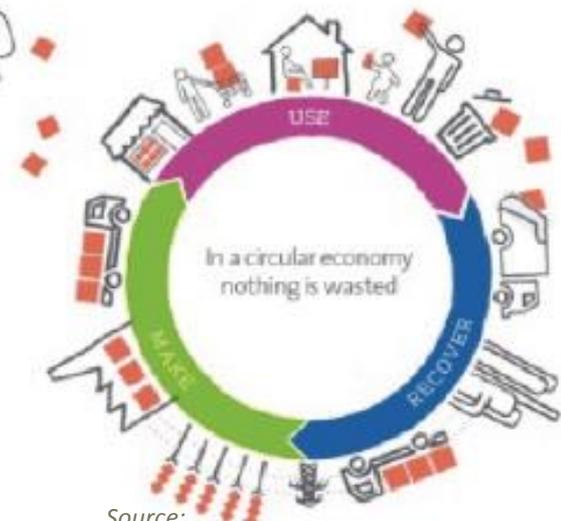
A circular economy in which waste and resource management contributes to a resilient environment and human well-being.



Source: Kate Raworth (2012) *A safe and just space for humanity: can we live within the doughnut?* Oxfam International.



In today's linear economy, we are missing opportunities to create new products and clean energy from consumed materials.



Source: <http://www.specchemonline.com/feature/articles/squaring-the-circle>

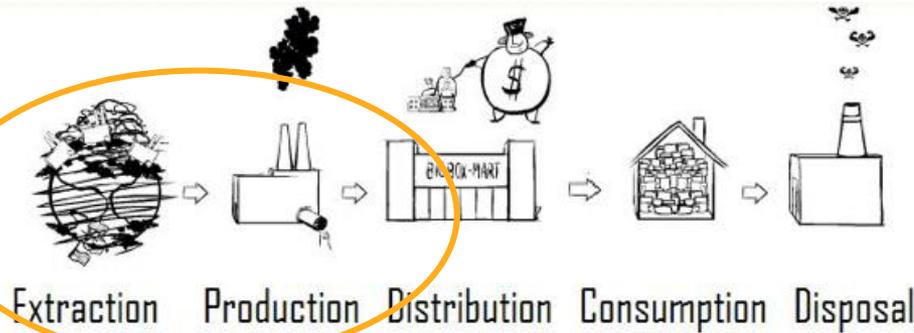
Moving beyond waste management towards a circular economy



Office for Resource Stewardship



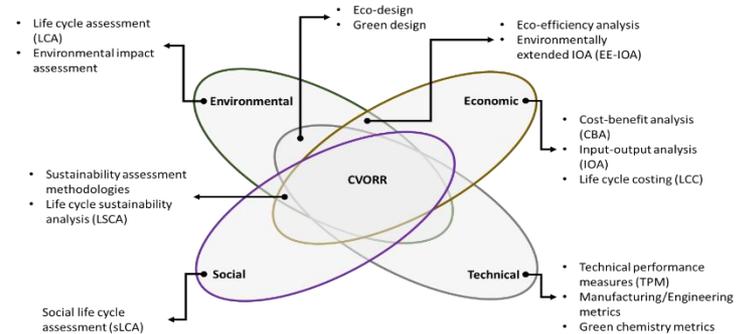
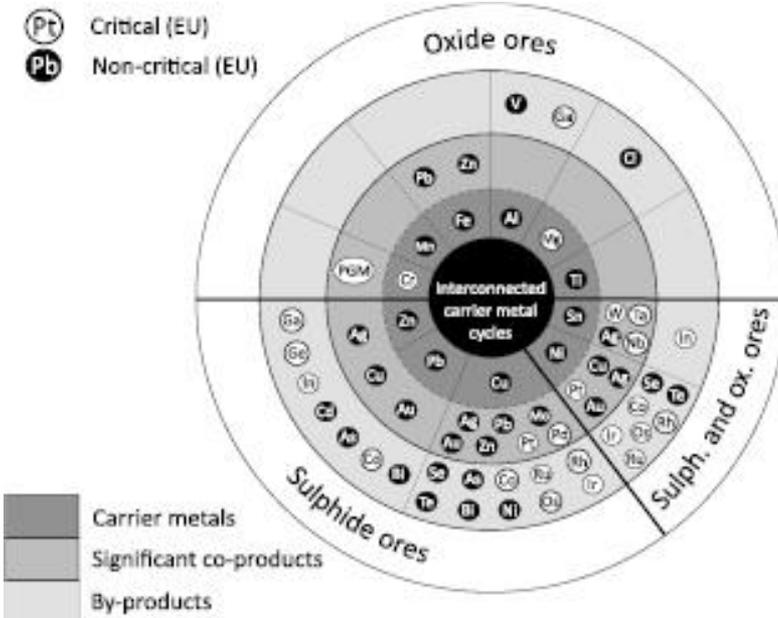
Changing values



<https://sarahbellumsdotcom.files.wordpress.com/2015/01/screen-shot-2011-04-11-at-10-08-24-am1.png?w=610>

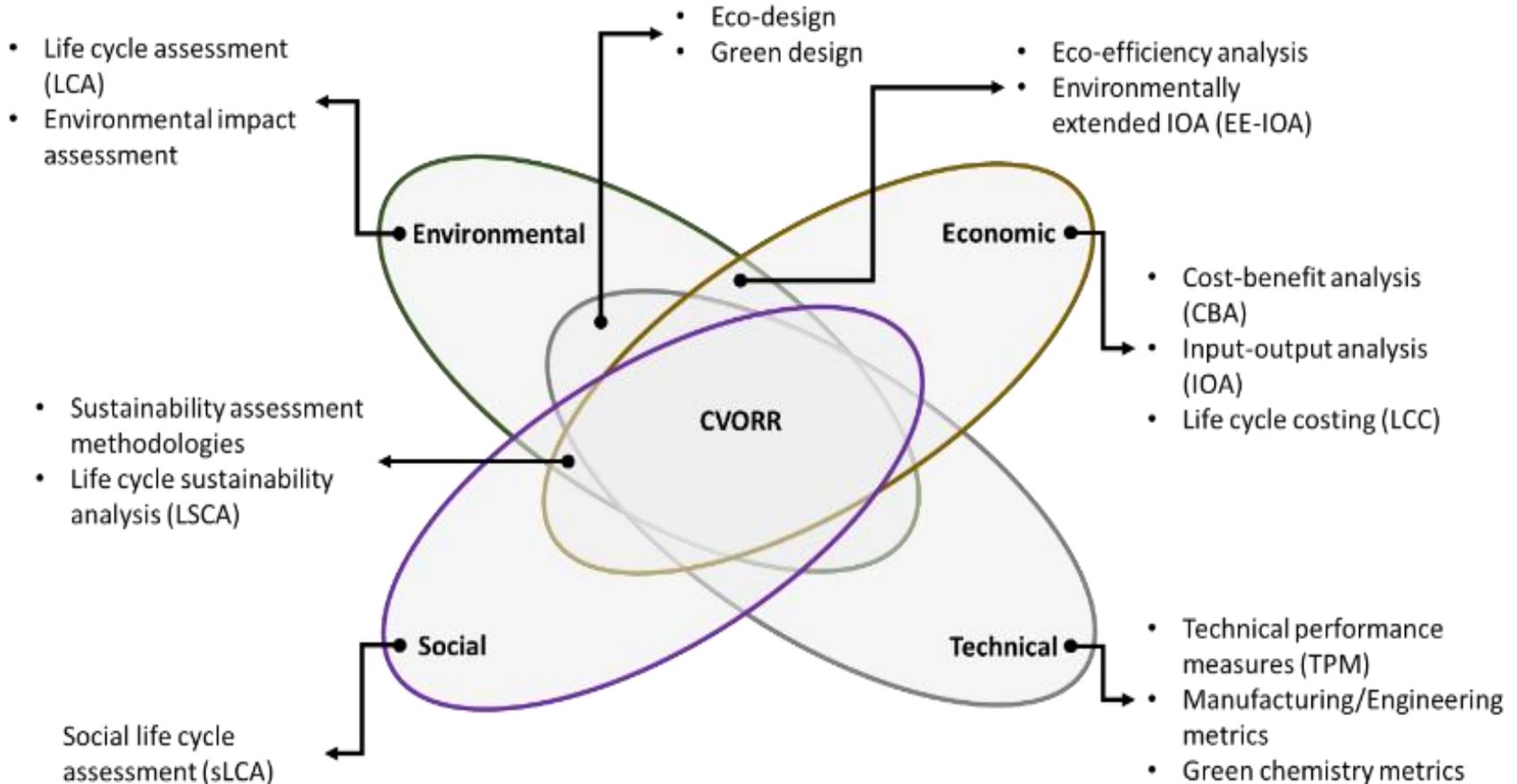


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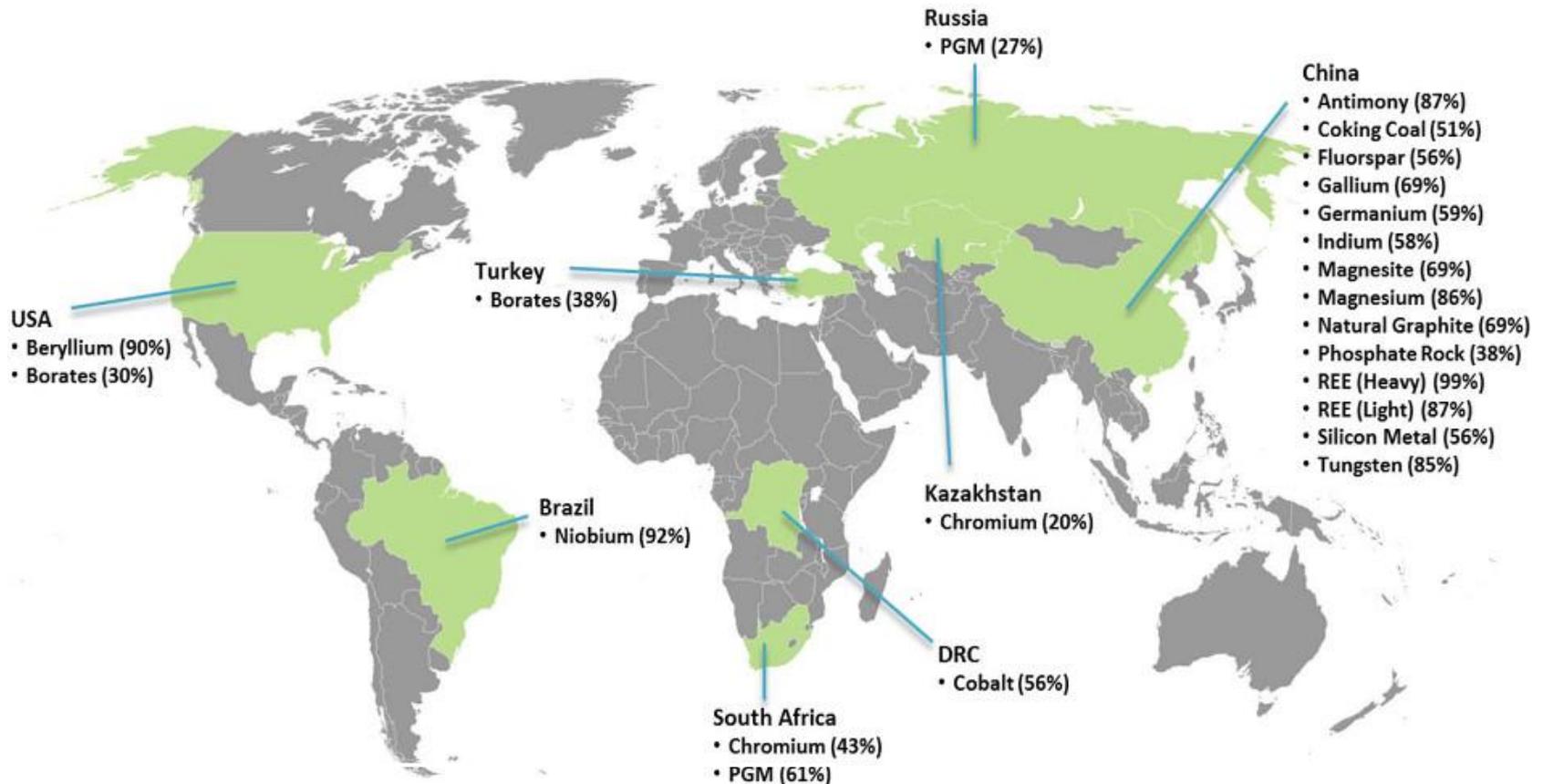
<http://iopscience.iop.org/0022-3727/50/12/123002/downloadFigure/figure/daa5b64f05>

Complex Value Optimisation for Resource Recovery



...further details in poster session!

Waste management and industrial strategy



<https://ec.europa.eu/growth/sites/growth/files/critical-map.jpg>

How are we going to secure resource access for future, low carbon industries?



B2B resource efficiency

METEO R

B3

INSPIRE

R3AW

ALKALINE REMEDIATION

AVAnD

- Resource extraction and processing
- Mining legacy landfills
- Turning wastes into products



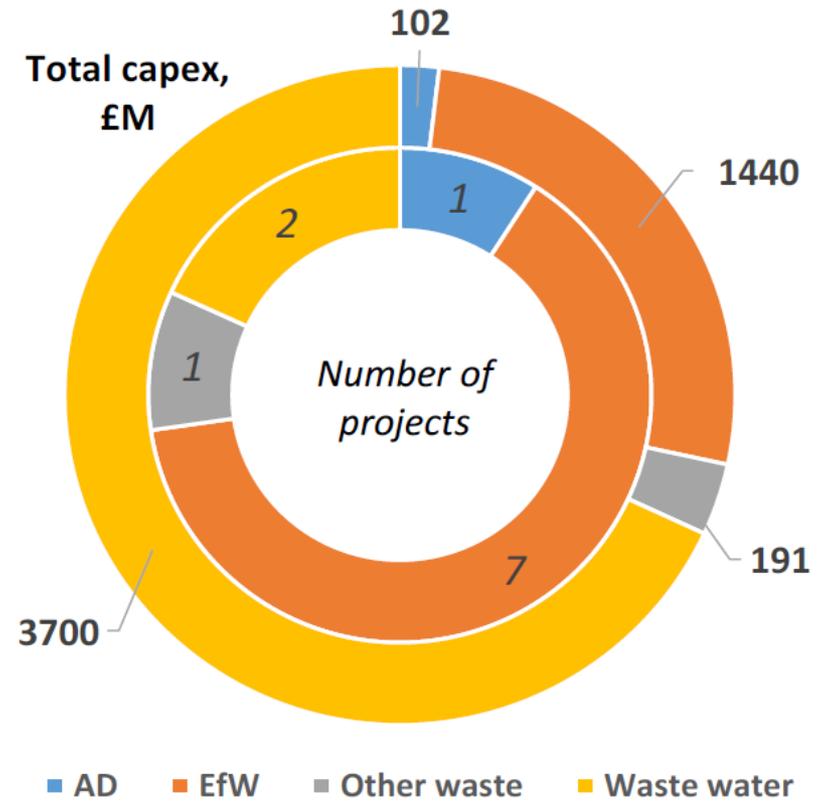
Further info
www.rrfw.org.uk

http://ostseis.anl.gov/images/photos/TS-Open_pit_Suncor-600.jpg;
https://britishmineralogy.com/wordpress/wp-content/uploads/2012/01/02-Parys-Mountain-Great-Opencast-viewed-from-the-south-DSC_0354-1280x768.jpg;
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EfW ≠ CE

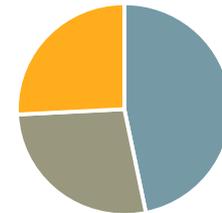
“...an ambition to move towards a ‘circular economy’ where material resources are valued and kept in circulation” (IPA 2016, p64)



Size and potential circular economy

1. In 2014 0.5% GVA; Potential £29 billion GDP (Veolia 2015)
2. Excl. reuse, repair, remanufacturing; Reuse sector Scotland estimated £244M
3. In 2013 employed 140.000 people; 50% up from 1993
4. New jobs in circular economy (WRAP and Green Alliance 2015)

£6.2Bn GVA

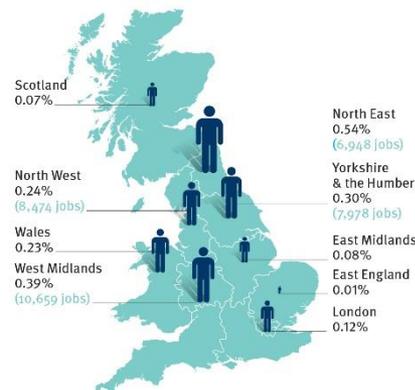


- Waste collection
- Treatment and disposal
- Material recovery

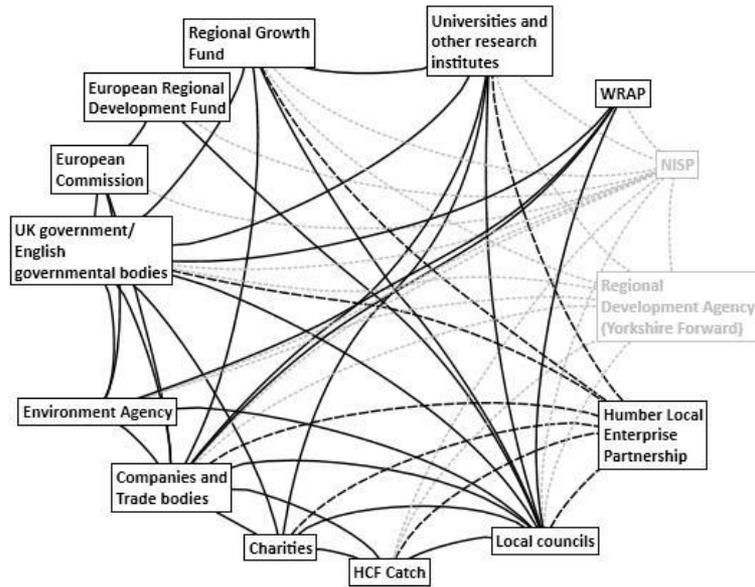
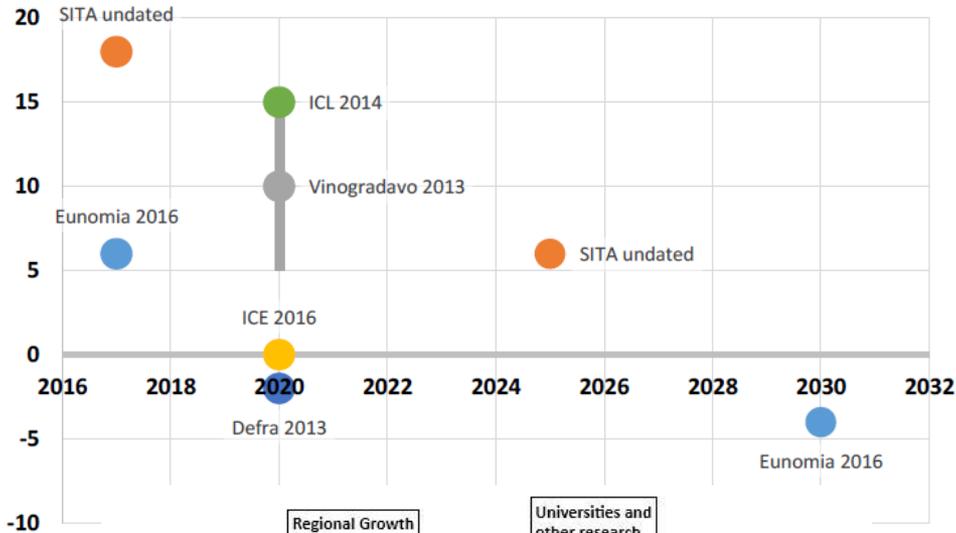
Circular Economy Jobs Potential



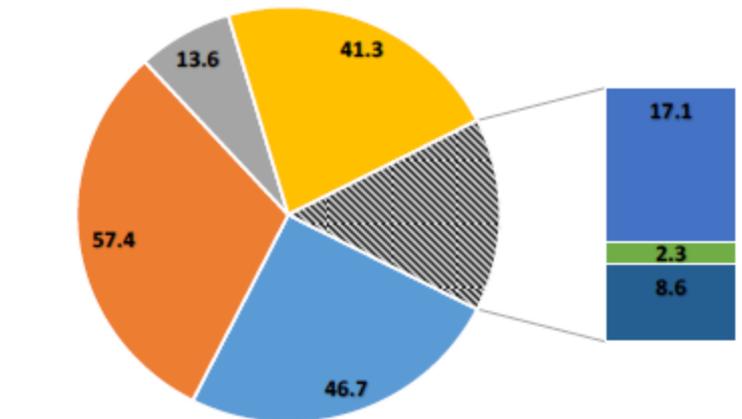
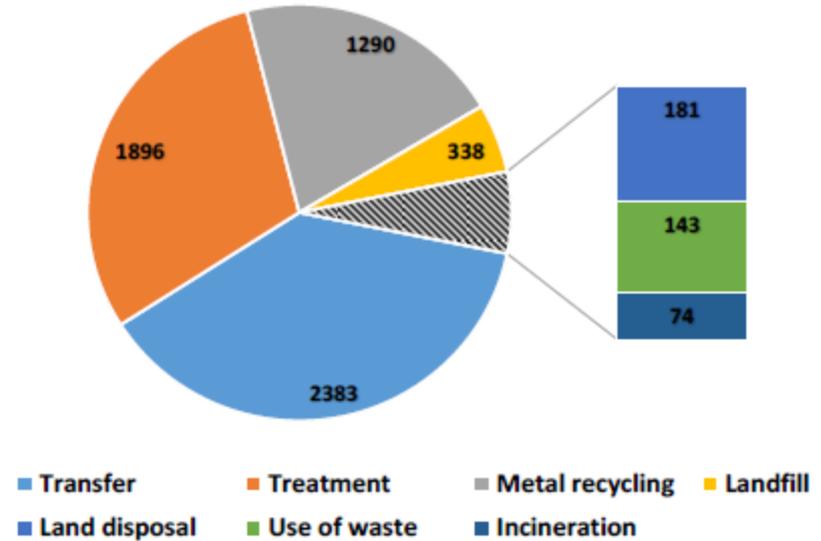
Net job creation in circular economy activity to 2030 at current growth rate, as a percentage of labour force



National and local capacity



Number of sites (total 6305)



Mt managed (total 187 Mt)

Data and resource quality



1. Capacity requirement estimates complicated by lack of data; especially for commercial, industrial and construction wastes.
2. Data collection within waste treatment supply chain not standardised; changes to definition of waste.
3. Standardised data required on waste resource quality, quantity and location.
4. Data deficiencies complicate coherent policy making; policy uncertainty is barrier to investment.
5. Between £5 and £25 billion investment needed for close to circular economy.



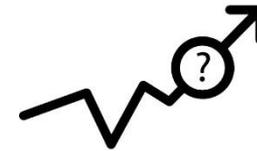
Office for Resource Stewardship

1. Enforce resource efficiency; incl. waste prevention and promoting reuse and recycling
2. Standardised data collection
3. Extended producer and consumer responsibility
4. Integrate national and local level governance
5. Targets based on recovery of value and function, instead of landfill diversion
6. Reduce reliance on resource imports
7. High- and low-skilled jobs creation
8. Infrastructure investment
9. Research and innovation of exportable recovery technologies
10. Contribute to Sustainable Development Goals



Conclusion

1. Investment needed for material recovery infrastructure
2. Data deficiencies hold back investment
3. Need to establish an Office for Resource Stewardship



Office for
Resource
Stewardship

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Resource Recovery from Waste

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