

Integrated research, engagement and impact: a case study of the Resource Recovery from Waste programme

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 @RRfW6

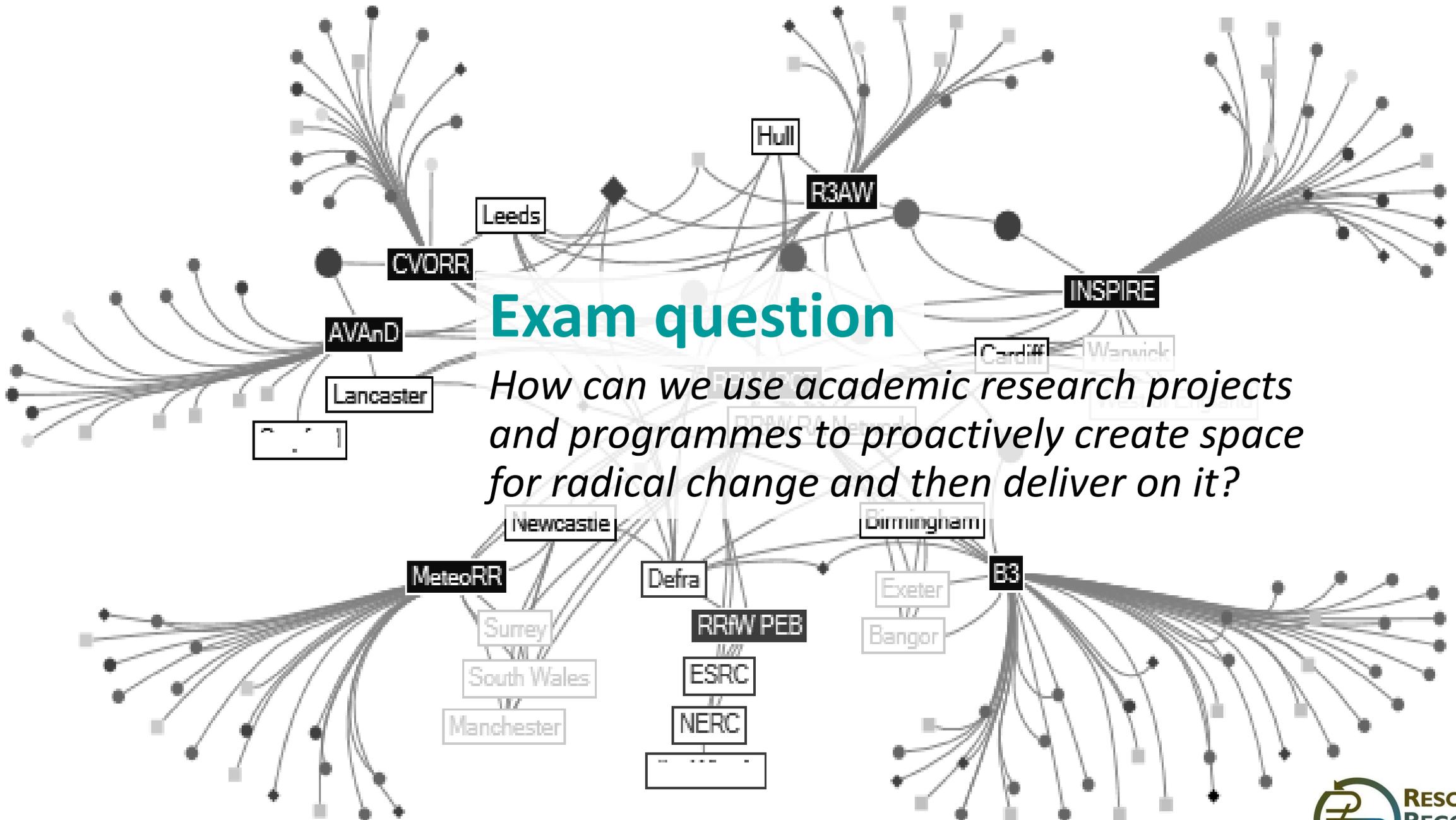
  Resource Recovery from Waste



NERC
SCIENCE OF THE
ENVIRONMENT

E·S·R·C
ECONOMIC
& SOCIAL
RESEARCH
COUNCIL


Department
for Environment
Food & Rural Affairs



Exam question

How can we use academic research projects and programmes to proactively create space for radical change and then deliver on it?

14 CAPACITY BUILDING PROJECTS

Programme preparation 2011-2014, Coordinated delivery 2015-2019

Strategic purpose: Deliver radical change in resources and waste management

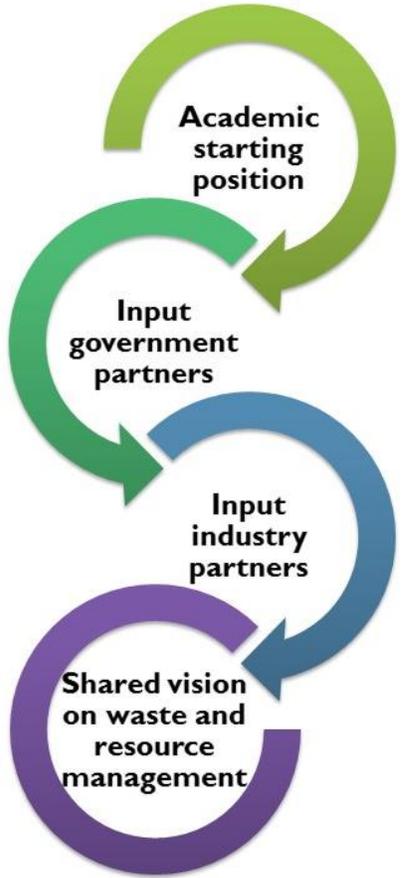
>£7M investment



ENGAGEMENT

IMPACT

Co-creation vision and approach for resource recovery & circular economy



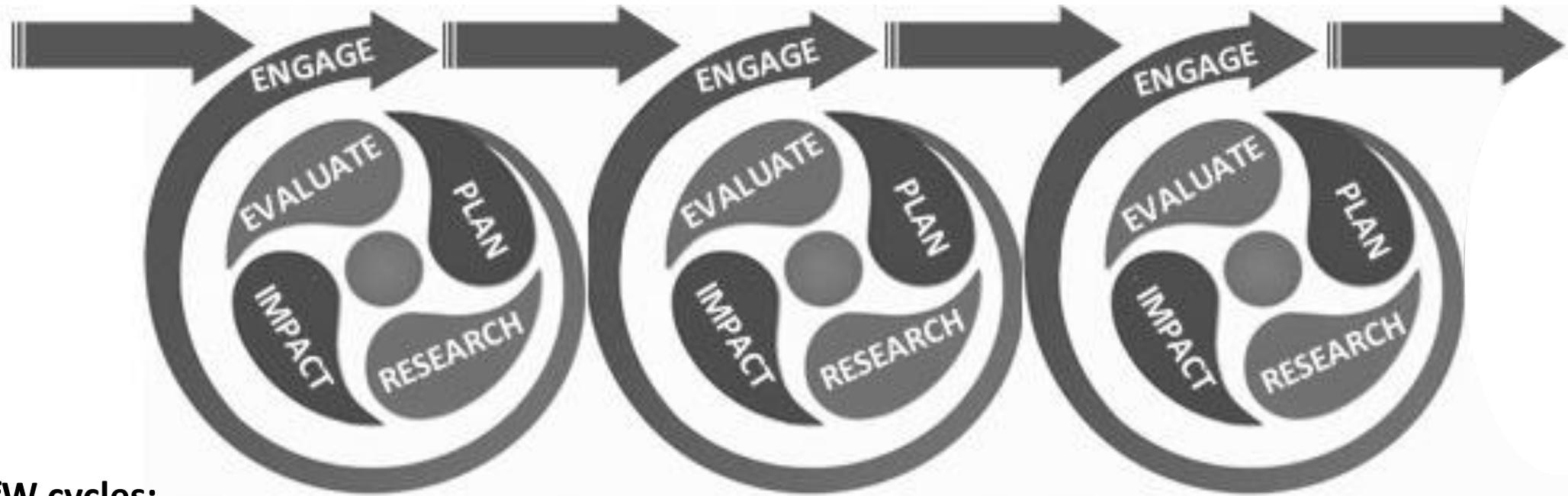
- UNIVERSITY OF LEEDS**
C-VORR Complex Value Optimisation for Resource Recovery from Waste
 - CARDIFF UNIVERSITY**
INSPIRE In-situ Recovery of Resources from Waste Repositories
 - Lancaster University**
AVAnD Developing a Suite of Novel Land Conditioners and Plant Fertilizers from the Waste Streams of Biomass Energy Generation
 - UNIVERSITY OF Hull**
R3AW Resource Recovery and Remediation of Alkaline Wastes
 - UNIVERSITY OF BIRMINGHAM**
B3 Beyond Biorecovery: Environmental Win-Win by Biorefining of Metallic Wastes into New Functional Materials
 - Newcastle University**
MeteoRR Resource Recovery from Wastewater with Bio-electrochemical Systems
- Multi-parametric Assessment of Policies for RRfW
- Formulating the Environmental and Social Business Case for a RRfW process
- Life Cycle Sustainability and Policy Analysis of Plausible Systems for RRfW
- The Resource Recovery from Waste Retreat
- Recovering the Multi-Dimensional Value from Compost Oversize
- Resource Recovery from Parys Mountain: past, present and future
- Participatory Situational Analysis for Implementation RRfW technologies and vision

Policy Impact Project

Impact Acceleration Accounts

Integrated Research, Engagement and Impact Cycles

A combination of: Participatory Action Research, Participation process management, Project & Programme management



RRfW cycles:

1. Programme co-production
2. Develop shared vision and approach
3. Co-produce evidence base
4. Bridges to translate and transfer more knowledge
5. Acceleration to capitalise on impact opportunities

Velenturf, A.P.M., Jopson, J., Marshall, R. (June 2019) *Delivering knowledge exchange and impact: a case study of the Resource Recovery from Waste programme*. Invited presentation at UK Research and Innovation, Swindon, UK.

Did it work?

An overview of major RRfW impacts

Coproduce business case for National Materials Datahub

Coproduce Resource Sector deal

Citations and language use in Resources and Waste Strategy

Self-declared changes in practice following RRfW events

Public dialogue on resources and waste

Companies' communication on resources, waste and sustainability

Circular economy research and innovation investment landscape

Resources and circular economy in Industrial Strategy

Academic publications

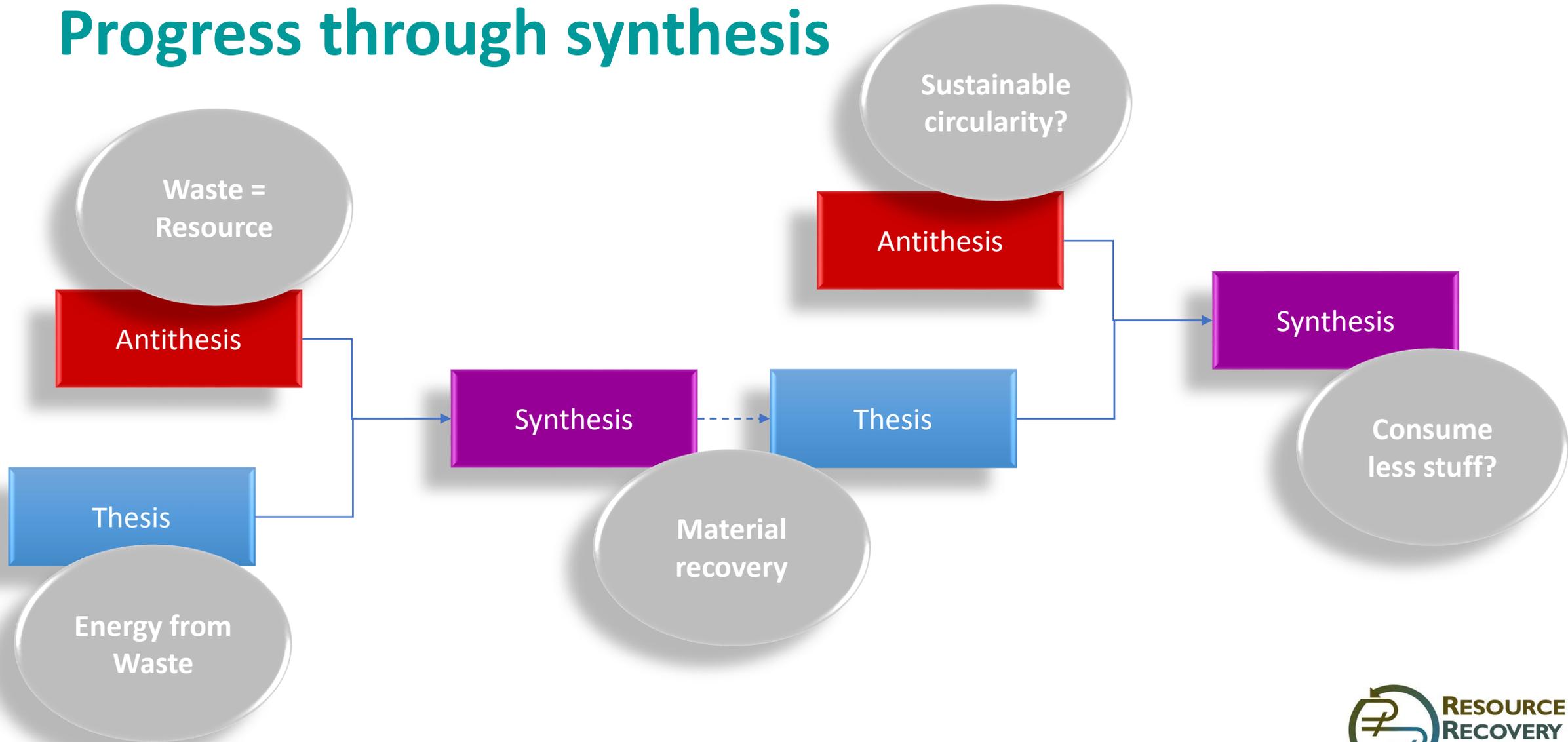
Co-create arena for policy integration



Designing a programme for impact

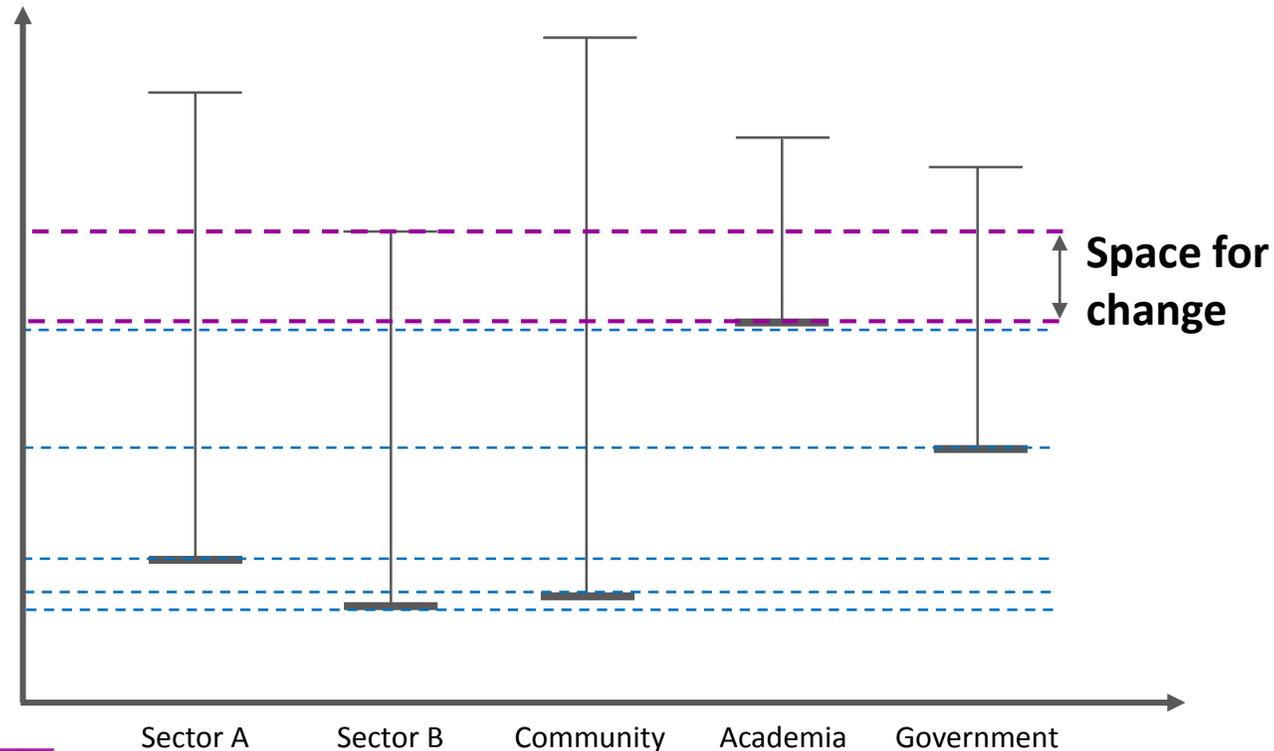
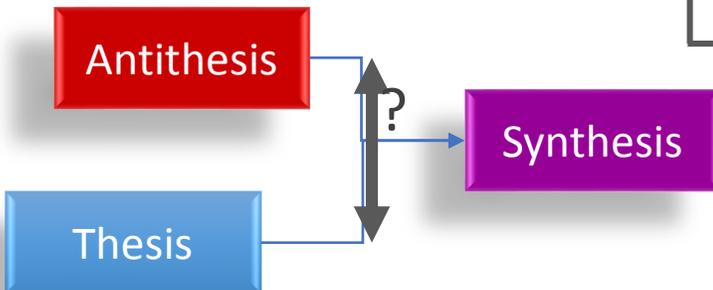
1. Clarity on problem that is to be solved, the targets to be achieved, and for whom and why.
2. Resource availability, e.g. money, time, expertise and contacts.
3. Analyse your context, e.g. governance system, economic situation, public narrative, others aiming for change.
4. Identify stakeholders and get to know them: perspectives, motivations, interests, concerns, wishes, relations, learning and innovation behaviour – how can you help them?
5. Get a feel for the “space for change” (more about this in next slide!).
6. Develop a public identity and communicate consistently, but leave enough room to be flexible enough to integrate nuances from on-going research.
7. Coproduce plans for engagement and impact, that work alongside the academic research, with your team.
8. Keep aside time to mentor and support your colleagues in engaging stakeholders and delivering activities that are likely to make a real difference in practice.

Transforming society: Progress through synthesis



Creating a window of opportunity

- Stakeholder & network analysis
- How they learn & innovate
- Motivations, interests, values
- Flexibility to change
- Design engagement strategy



Academic narrative

Resource Recovery from Waste: Restoring the Balance between Resource Scarcity and Waste Overload
<http://www.mdpi.com/2071-1050/9/9/1603>

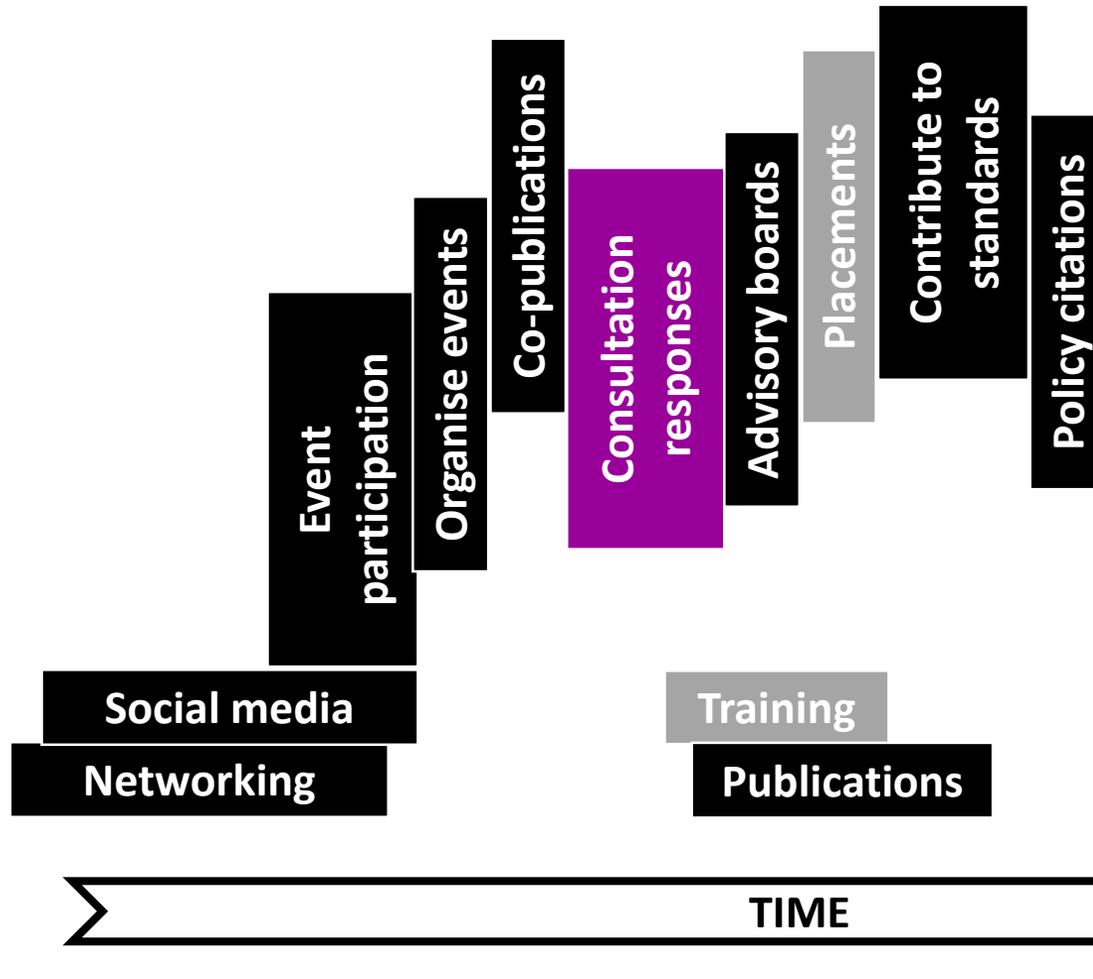
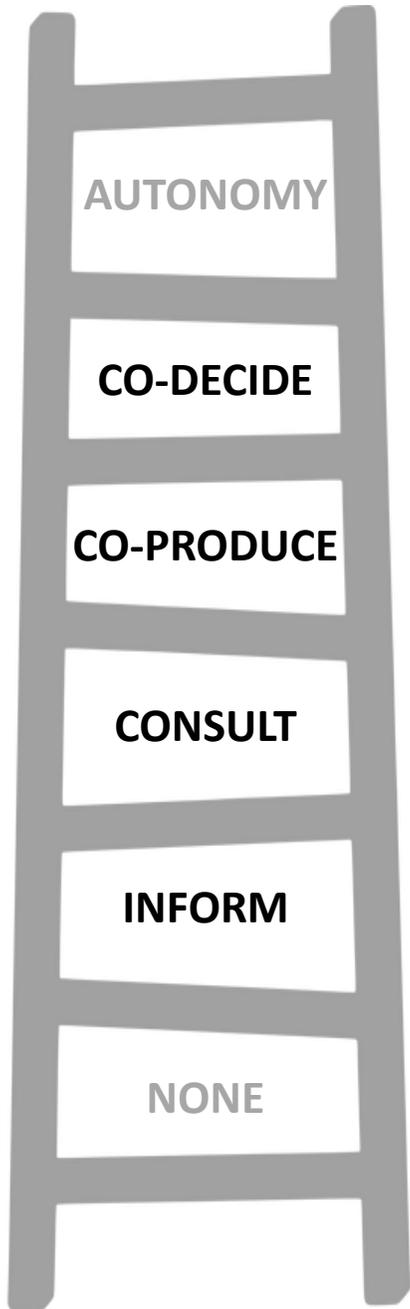
Government narrative

Co-Producing a Vision and Approach for the Transition towards a Circular Economy: Perspectives from Government Partners
<https://doi.org/10.3390/su10051401>

Industry narrative

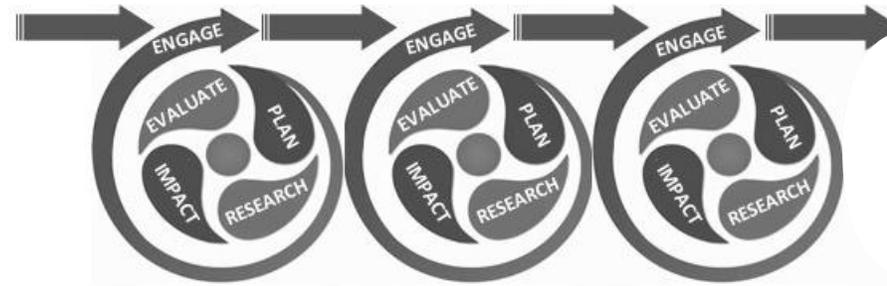
Delivering Radical Change in Waste and Resource Management: Industry Priorities
<https://rrfw.org.uk/2018/09/26/actions-for-companies-to-take-for-a-circular-economy/>

Engagement strategy

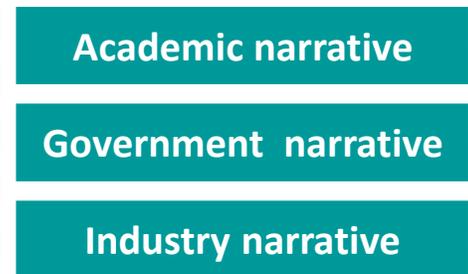


Velenturf, A.P.M. and Purnell, P. (2017) *Resource Recovery from Waste: Restoring the Balance between Resource Scarcity and Waste Overload*. Sustainability 9: 1603. <http://www.mdpi.com/2071-1050/9/9/1603>

Parallel, interlinking and overlapping cycles



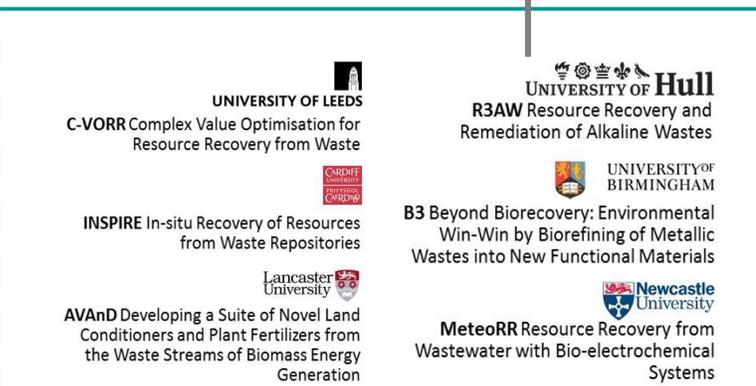
Develop shared vision....



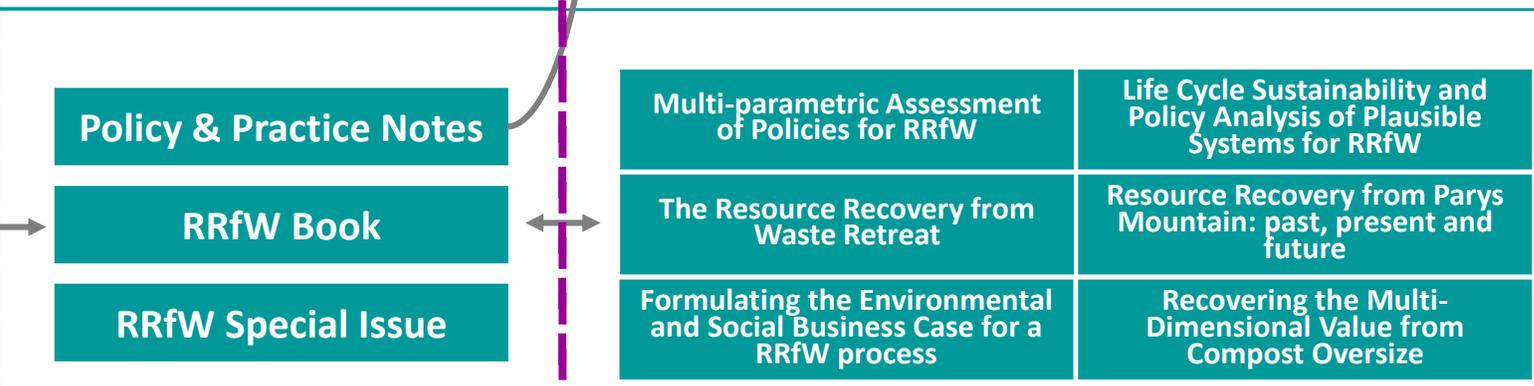
...and approach



Capitalising on impact opportunities

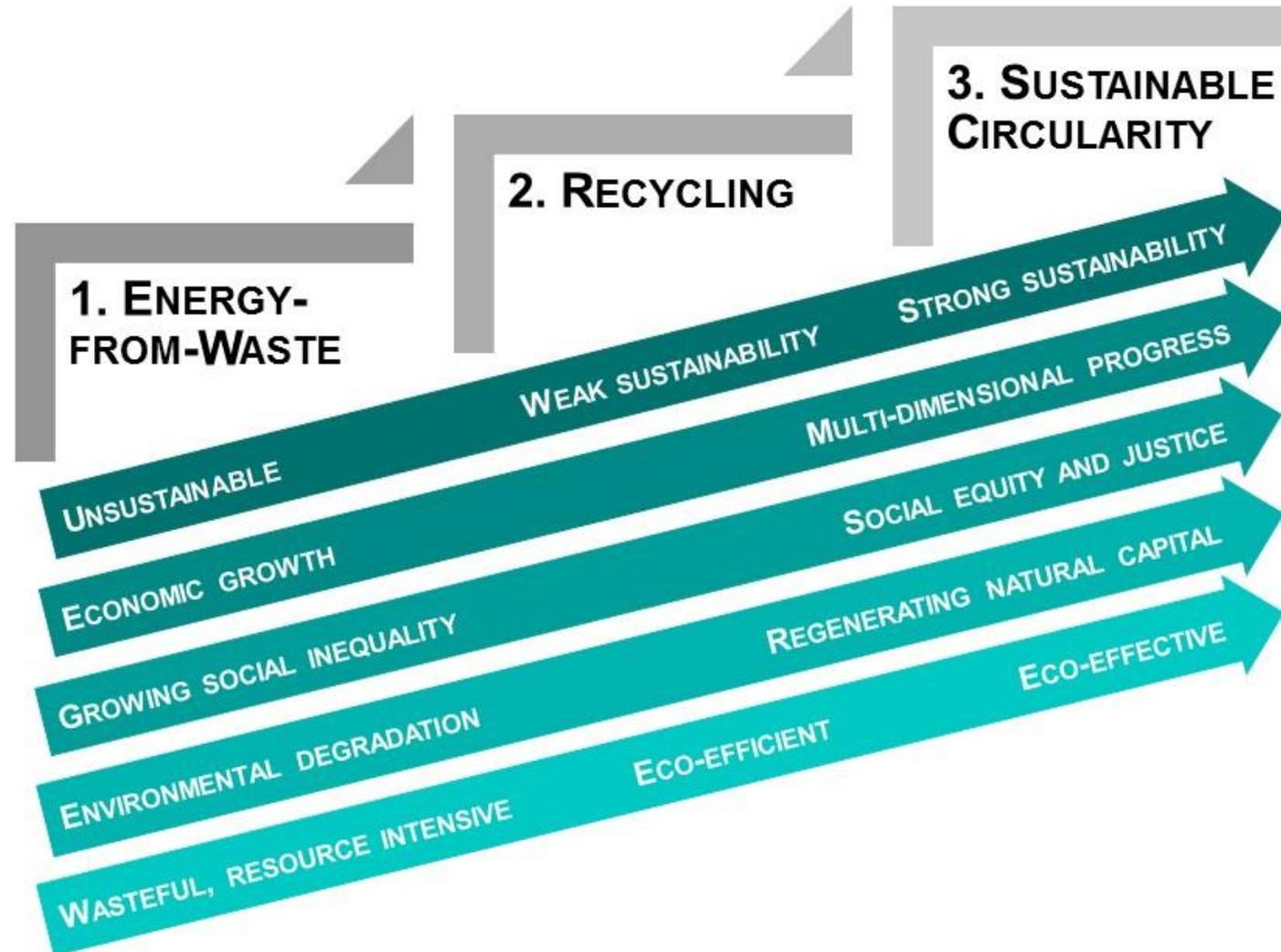


Co-produce evidence base



Bridges to translate and transfer more knowledge

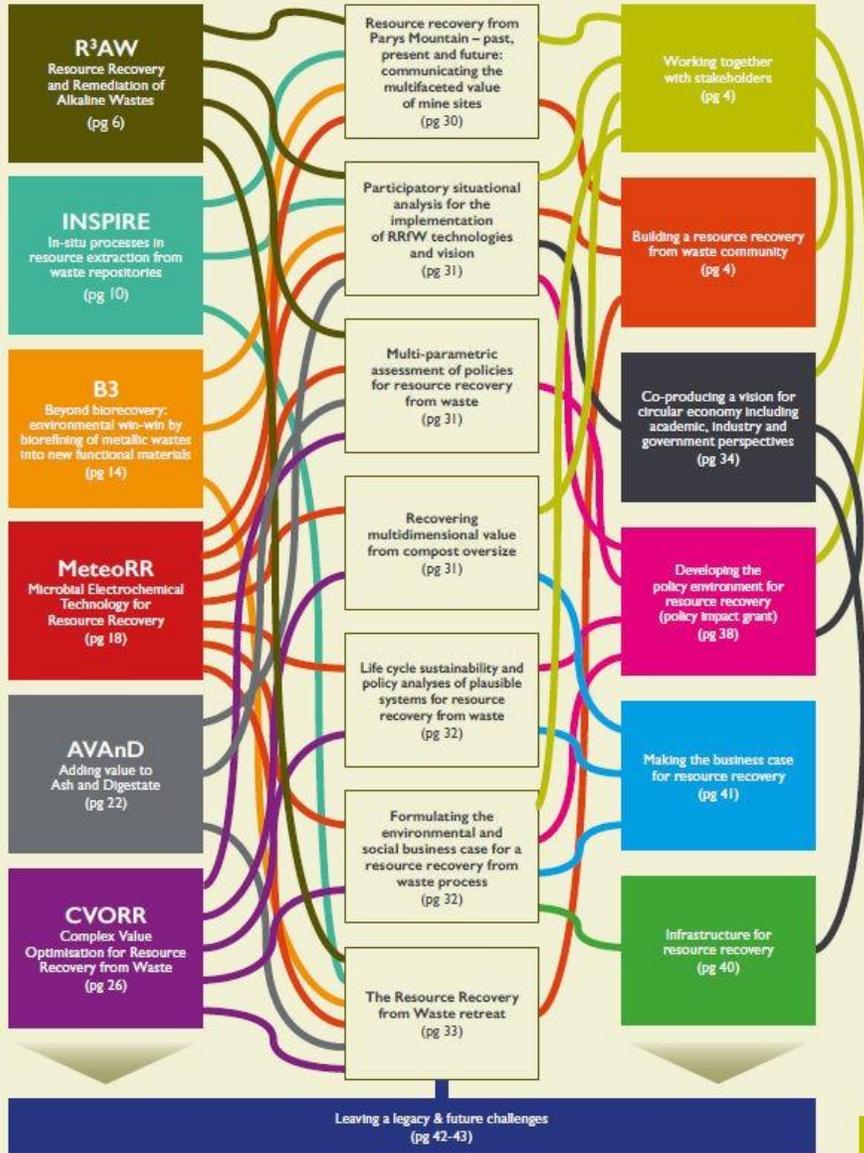
Widely differing perspectives on circular economy



Velenturf, A.P.M. and Purnell, P. (2020) *What a sustainable circular economy would look like*. The Conversation. <https://theconversation.com/what-a-sustainable-circular-economy-would-look-like-133808>



RESOURCE RECOVERY FROM WASTE PROGRAMME OVERVIEW



Building bridges to translate and transfer more knowledge

Bringing researchers and stakeholders from across the programme together in short projects, for example:

Participatory Situational Analysis workshops

Now translated into general method for action-oriented research:

- 1) Current progress towards circular economy and agree next ambitions for transition
- 2) Constraining and enabling factors
- 3) Actors in control of transition in given system
- 4) Potential actions that key actors could take
- 5) Research challenges that project will solve

Jopson et al (2019)
Resource Recovery from Waste end of programme brochure.
<https://resourcerecoveryfromwaste.files.wordpress.com/2019/05/rrfw-programme-brochure-web-spreads.pdf>

Velenturf et al (2018)
Participatory Situational Analysis: How can policy and regulation support resource recovery? Synthesis report.
<https://resourcerecoveryfromwaste.files.wordpress.com/2018/10/rrfw-psa-synthesis-report-final.pdf>

Finding key intervention points to drive change

“Conference +”

Delegates were asked to report on drivers, barriers and actions for implementing a circular economy

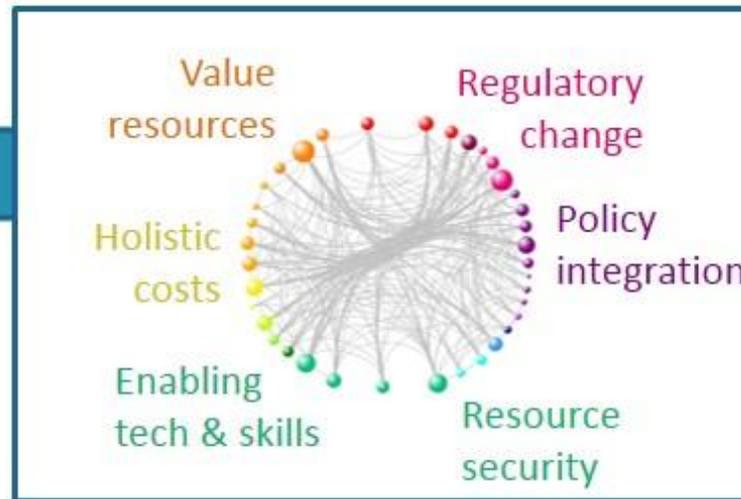


Resource Recovery from Waste Annual Conference 2017

Making the Business Case for Resource Recovery

Key nodes of action for transition to Circular Economy

Linear Economy
Economic Growth



Circular Economy
Multidimensional Growth: Social, Environmental, Economic

Lose technical value of materials

Retain technical value of materials

Velenturf, A.P.M. and Jopson, J. (2019) *Making the business case for resource recovery*. Science of the total environment. <https://doi.org/10.1016/j.scitotenv.2018.08.224>



Putting our evidence into action: example of policy change

The organic waste gold rush: optimising resource recovery in the UK bioeconomy

Making the most of industrial wastes: strengthening resource security of valuable metals for clean growth in the UK

Overarching recommendation

Integrating evidence base with coproduced policy advice

A strategy for valuing resources: incorporating environmental, social and economic value

Resource Recovery from Waste: How government intervention can help

Multi-dimensional value of resources

Westminster Energy, Environment and Transport forum: British infrastructure not ready for circular economy

NATIONAL INFRASTRUCTURE COMMISSION

Building a circular economy: How a new approach to infrastructure can put an end to waste

Transforming infrastructure for circular economy

RESOURCE RECOVERY FROM WASTE

<https://rrfw.org.uk/>

New special issue invites radical views to spark a sustainable circular economy

Resource Recovery from Wastes: Towards a Circular Economy

Integrating academic evidence

Research and innovation challenges for resource recovery and circular economy

RESOURCE RECOVERY FROM WASTE

Resource Recovery from Waste Annual Conference 2019

Keeping momentum: Setting the research agenda

The National Materials Databank Can Improve Government for Better Material Use by Industry: An Evidence Briefing from the Resource Recovery from Waste Programme

Find all outputs & more at rrfw.org.uk

RESOURCE RECOVERY FROM WASTE

Resource data infrastructure

Knowledge exchange and impact expertise



Key skills
and expertise

Velenturf, A.P.M., Jopson, J., Marshall, R. (June 2019) *Delivering knowledge exchange and impact: a case study of the Resource Recovery from Waste programme*. Invited presentation at UK Research and Innovation, Swindon, UK.

Thank you!

'KE is often associated with activities which can be planned and costed; from seminars and workshops to placements and collaborative research. However, good KE is as much about approach, mindset, personal qualities and researcher mission.' (ESRC)

If you found this presentation useful, then please cite us & feel free to get in touch!

Velenturf, A.P.M. and Jopson J. (July 2020) *Integrated Research, Engagement and Impact: a Case Study from the Resource Recovery from Waste programme*. International Sustainable Development Research Society Conference, Budapest, Hungary.

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