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Velenturf, A and Purnell, P (2017) Participation Processes for Social Learning in the Transition towards a Sustainable Circular Economy: The Case of the Resource Recovery from Waste Programme. In: 23rd Annual ISDRS Conference, 14-16 Jun 2017, Bogotá, Colombia.

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# Participation Processes for Social Learning in the Transition towards a Sustainable Circular Economy: The Case of the Resource Recovery from Waste Programme

ISDRS

Bogota | 16 June 2017

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 @RRfW6

  Resource Recovery from Waste



Department  
for Environment  
Food & Rural Affairs



Department for Environment Food & Rural Affairs



# RRfW in Numbers

**RESOURCE RECOVERY FROM WASTE PROGRAMME** **IN NUMBERS**

**6** PROJECTS

**80** UNIVERSITIES

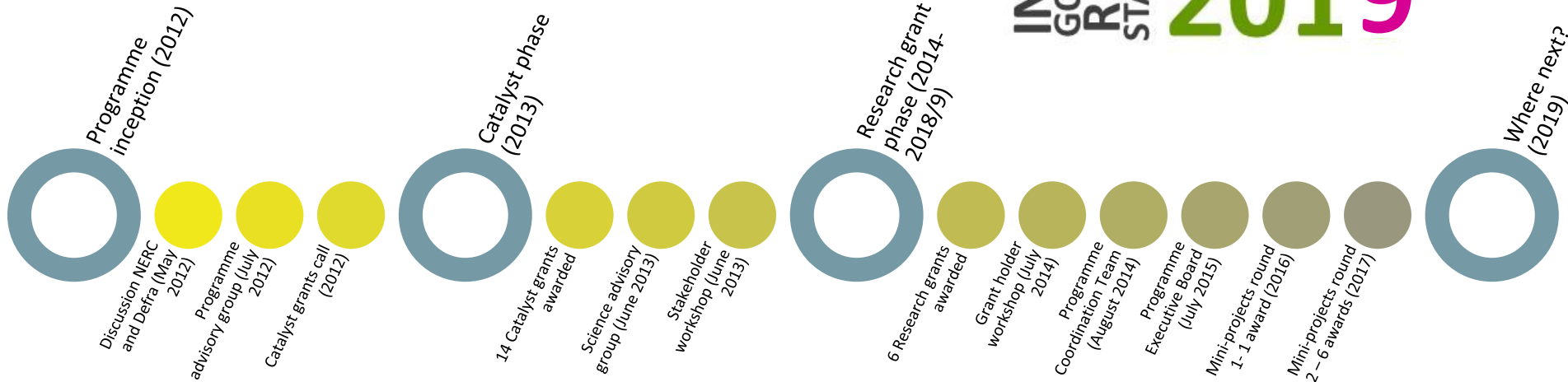
**7.2M** FUNDING

**2014**

**2019**

**15+**

**INDUSTRY & GOVERNMENT RESEARCH STAKEHOLDERS**



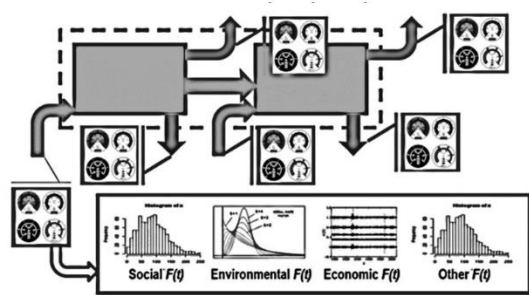
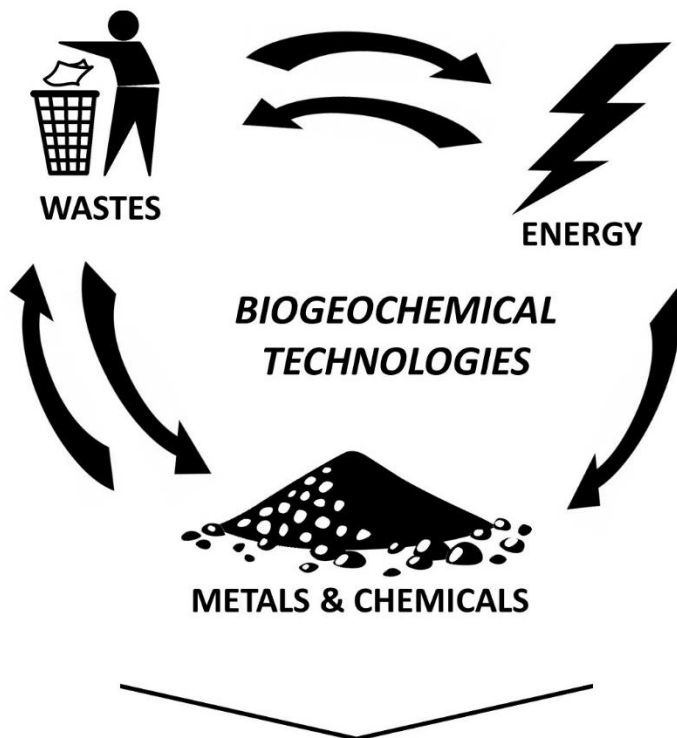
# RRfW purpose



*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.*



*Developing resource recovery technologies,  
valuing whole supply chains.*



**ASSESSMENT TOOL MULTI-DIMENSIONAL  
VALUE OF WHOLE SUPPLY CHAINS**

# RRfW Projects



**UNIVERSITY OF LEEDS**

**C-VORR** Complex Value Optimisation  
for Resource Recovery from Waste



**INSPIRE** In-situ Recovery of Resources from  
Waste Repositories



**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



**MeteoRR** Resource Recovery from  
Wastewater with Bio-electrochemical Systems



UNIVERSITY OF LEEDS

C-VORR Complex Value Optimisation for Resource Recovery from Waste



INSPIRE In-situ Recovery of Resources from Waste Repositories



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



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

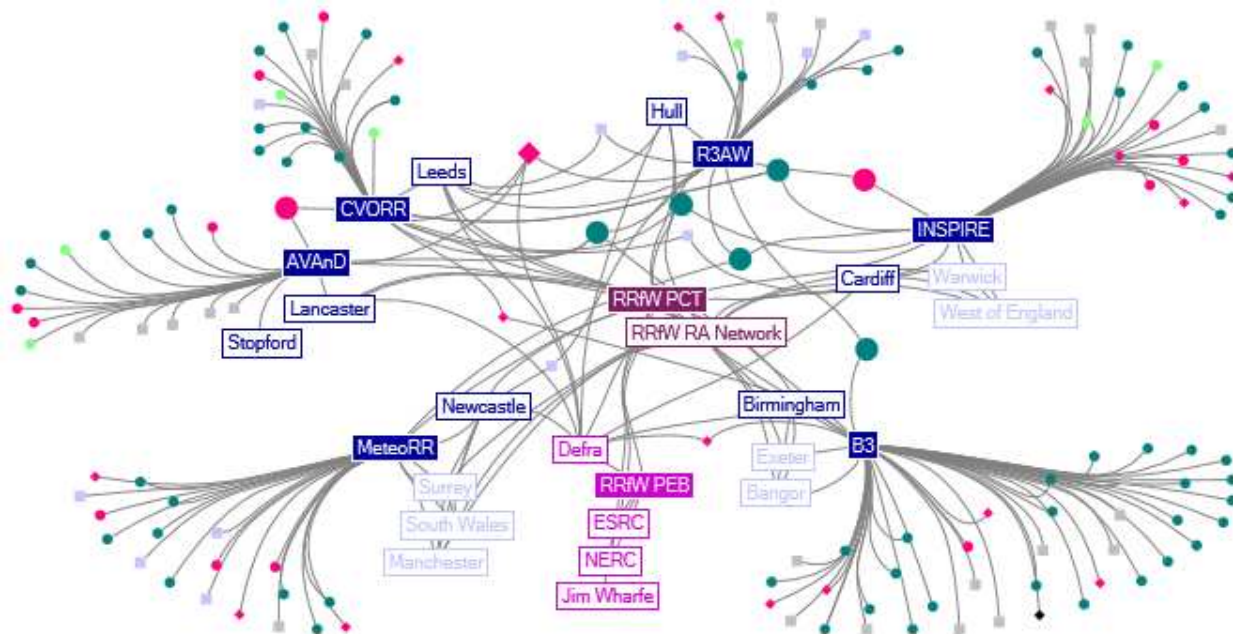
Participatory Situational Analysis for the Implementation for RRfW technologies and vision



Project integration

# Participation Process

1. Stakeholder and network analysis
2. Learning and innovation
3. Engagement strategy



Created with NodeXL (<http://nodexl.codeplex.com>)

# Strategic network expansion

## Network strengths:

- + Large network
- + Ca.50% commercial
- + Ca.10% governmental
- + KE Stakeholders

## Strategic priorities in 2016:

- ✓ Academic integration
- ✓ Ensure/ increase governmental organisations with capacity and power to use and disseminate RRfW outcomes

# Learning and innovating – industry

## Waste and reprocessing sectors

1. Only 10-25% knowledge sourced externally; most generated in-house
    - 🌐 Narrow resource specs, small markets
    - 🌐 Highly specialised companies
  2. Innovation processes: Supply chain partners; Trade associations; Professional membership bodies
  3. Most trusted knowledge providers: Colleagues in other waste management companies + Environment Agency
  4. Most important and trustworthy communication channels:
    - 🌐 Government reports; Trade shows; Trade association magazines; Internet incl. specialist online channels and libraries; Direct personal contact
- ↘ Least valued: Twitter, TV; Radio

# Academic-government collaboration

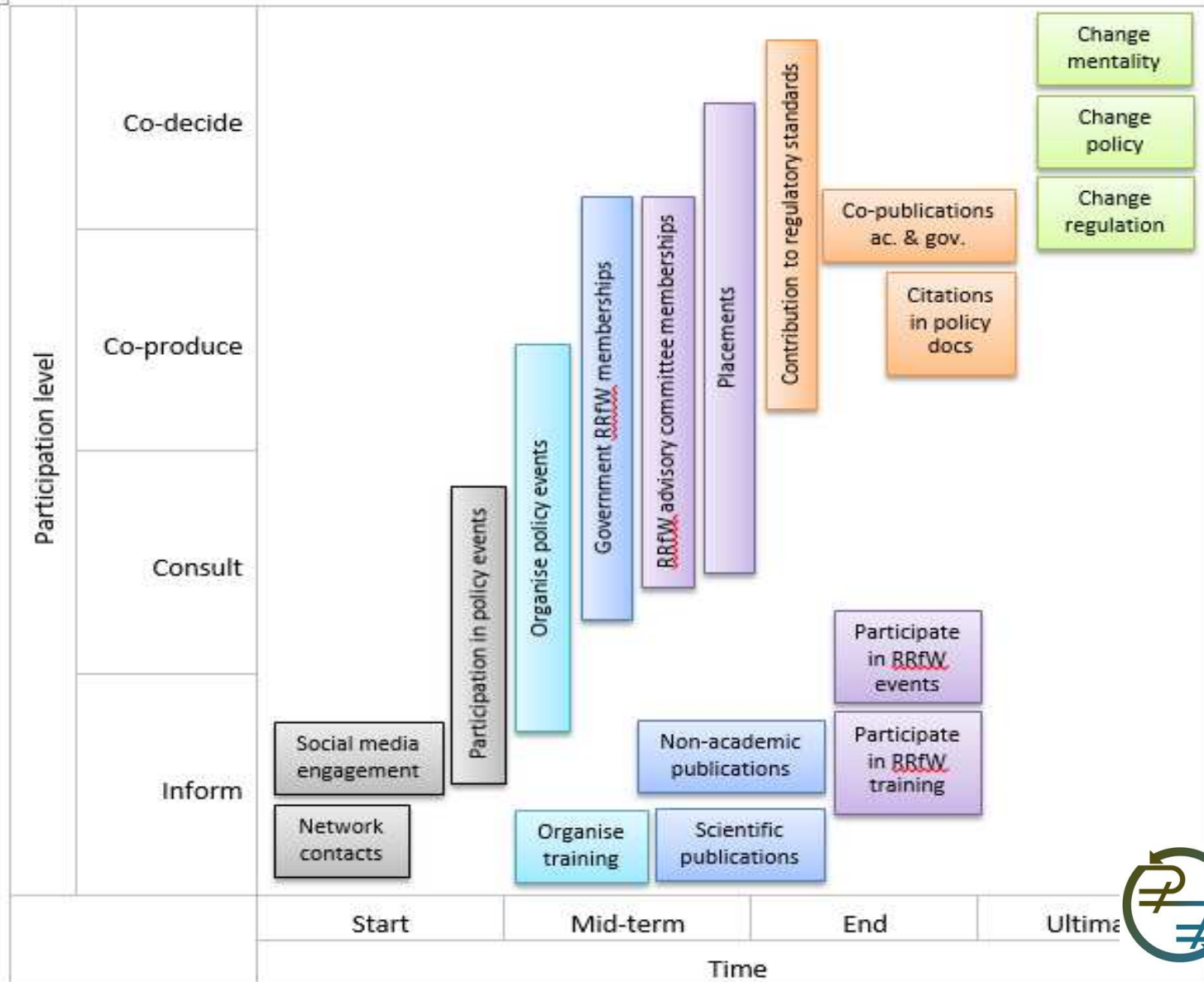
1. Regularly engage organisations at all levels of government from the start and throughout research projects.
2. Present holistic system perspective but with practical recommendations targeting key intervention points.
3. Explicitly link recommended changes to specific policies and regulations as well as regions.



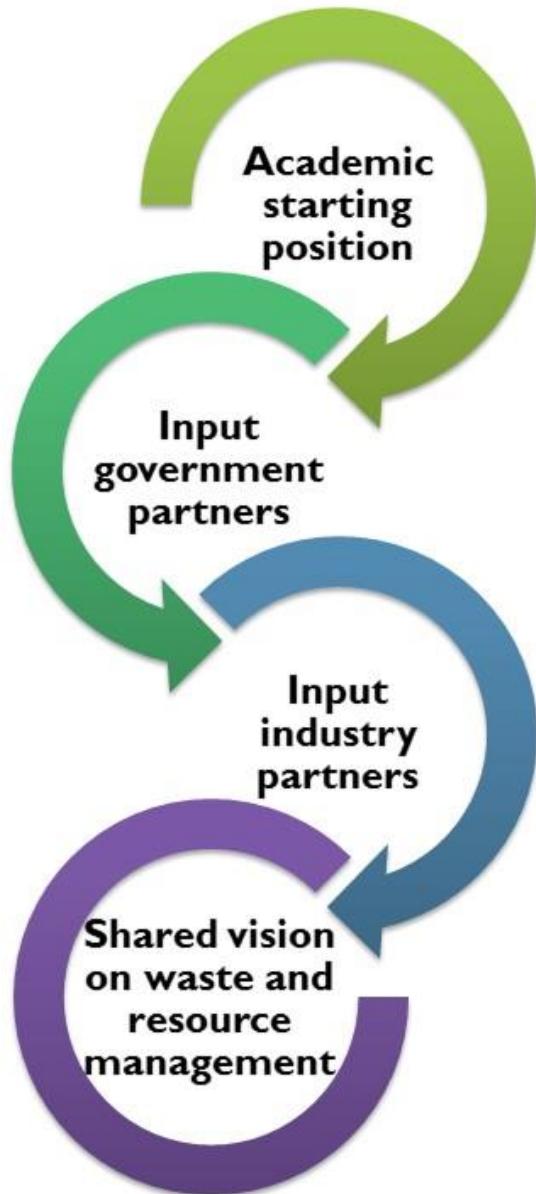
# Participation ladder



# Participation strategy - government



# Co-creating a Vision and Approach for Waste and Resource Management



# Outcomes co-creation process

NATIONAL  
INFRASTRUCTURE  
COMMISSION



BS 8001 - a new standard for the Circular Economy

The move to a 'circular economy' has been identified as a significant opportunity for business. It will contribute towards a resource efficient and low-carbon economy, reducing costs and supply chain risks, while generating economic and social value. BS 8001 will enable organisations to take action practical action to realise these benefits.



Department for  
Business, Energy  
& Industrial Strategy



Department  
for Environment  
Food & Rural Affairs

- Article series
- Conference papers
- Blogposts
- Input for consultations
- Platform for further engagement

Article

## Resource Recovery from Waste: Restoring the Balance between Resource Scarcity and Waste Overload

Anna P.M. Valenturf<sup>1,2</sup> and Phil Purnell<sup>1</sup>

## Co-producing a Vision and Approach for the Transition towards a Circular Economy: Perspectives from Government Partners

Anna P.M. Valenturf, Phil Purnell, Kenneth O'Callaghan, Mike Tregent, John Ferguson, Andrew Woodend, Lee Davies, Arjan Geveke, Louise McGregor, Helen Jamieson, Caroline Spencer, Andrew Dickson and Alan Holmes

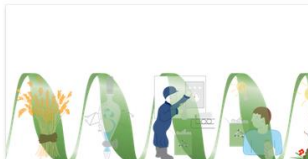
Abstract

British economy is overly reliant on unsustainable production and consumption practices. The economy depends on finite resources that are consumed at a fast pace, causing the depletion of natural resources, climate change and pollution through emissions and wastes. Environmental degradation severely impacts on human wellbeing. Maintaining current production and consumption patterns violate human rights and risk economic instability. To resolve this paradox of growing resource scarcity and waste overload, the Resource Recovery from Waste programme (RRFW) proposed a transition towards a circular economy that contributes to a resilient environment and human wellbeing. Such radical change in waste resource management can only be achieved if all relevant actors are engaged in the transition process. RRFW coordinates on-going engagement of actors in academia, industry, government and civil society.



Government  
Office for Science

## From Waste to Resource Productivity – Our Vision



Working towards a shared vision for waste and resource management (3): Key changes and pivot points  
Resource Recovery from Waste programme on LinkedIn  
February 15, 2017

Towards a shared vision for waste and resource management (2): Policy and regulatory approaches  
Resource Recovery from Waste programme on LinkedIn  
February 3, 2017

Towards a shared vision for waste and resource management (1): Effective government – academic collaboration  
Resource Recovery from Waste programme on LinkedIn  
January 23, 2017

**Building our Industrial Strategy**

Green Paper  
January 2017

Building an Industrial Strategy for a Stronger Waste and Resource Management Sector  
Resource Recovery from Waste programme on LinkedIn  
January 24, 2017

**EPA Network**

23<sup>rd</sup> INTERNATIONAL SUSTAINABLE DEVELOPMENT RESEARCH SOCIETY CONFERENCE  
14<sup>th</sup> - 16<sup>th</sup> OF JUNE 2017 IN BOGOTÁ, COLOMBIA



Co-creating a Shared Vision for Waste and Resource Management  
Resource Recovery from Waste programme on LinkedIn  
October 6, 2016

Why care about waste?

- Growth and productivity
- Resilience
- Resources and environment



# Where next...?



1. Continue industry co-creation process
2. Participatory situational analysis
3. Facilitate discussions around diverging subjects between industry, government and academic partners
4. Case studies of RRfW applications
5. Continue contributions to government consultations



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Participatory Situational Analysis for the Implementation of RRfW

# Reflections on Co-creation Process

## Positives

- Captured diversity of perspectives
- Identified circular economy scenarios
- Cross-fertilisation of perceptions
- New connections within governance system
- Added value due to proximity to government
- Demand for continued engagement

## Areas for improvement

- Reducing engagement as co-creation process progressed
- Organisational challenges to bring people together
- Virtual/ telephone meetings no replacement for meeting in person
- Gaps between formal and personal positions
- Limited input Members of Parliament and House of Lords