

# MOVING TOWARDS THE CIRCULAR ECONOMY: **IRISH CASE STUDIES:**

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# OVERVIEW

1. Introduction
2. Rationale for research
3. Research design and approach
4. Cases

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# RATIONALE FOR RESEARCH

1. **Transformative opportunity – disruptive innovation**
2. Potential to assist Ireland in meeting **multiple environmental policy objectives**, including **climate change** targets, while creating a **stimulus for employment** in existing and emerging sectors
3. EU Circular Economy Package – e.g. legislative proposals on waste
4. **Other regions are already gaining first-mover advantage**



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# A POTTED HISTORY

**1966**

**Kenneth  
Boulding**

Circular  
material  
flows

**1976**

**Walter  
Stahel**

Cradle to  
Cradle

**1989**

**Pearce &  
Turner**

Circular  
Economy

**2002**

**McD &  
Braung.**

Cradle to  
Cradle

**2008**

**Chinese  
Gov**

CE  
Promotion  
law

**2010**

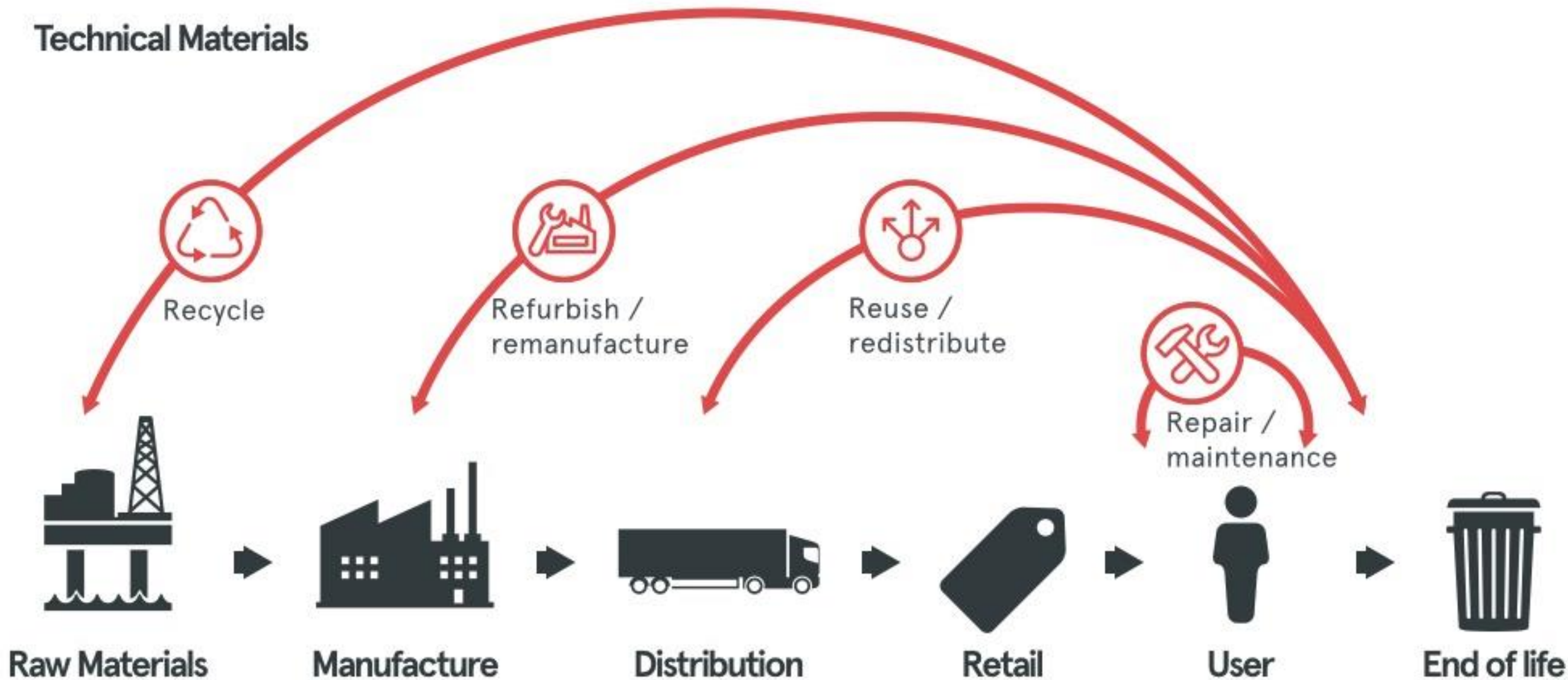
**Ellen  
McArthur**

Found.

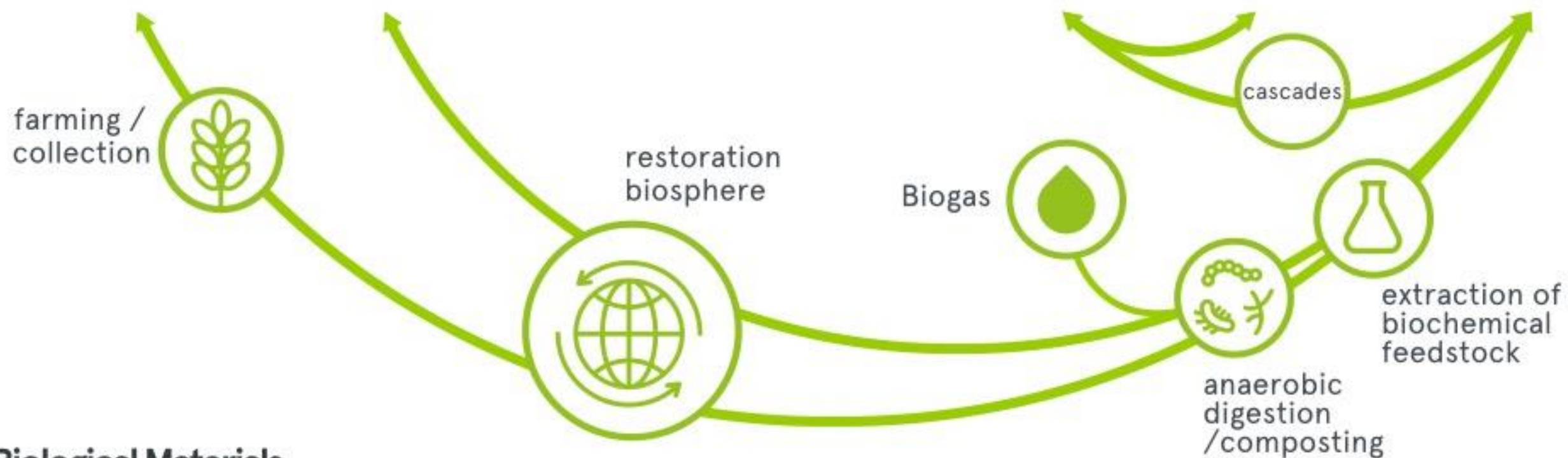
**2015**

**EU CE  
Package**

## Technical Materials



## Biological Materials





# RATIONALE FOR CIRCULAR ECONOMY



## RESOURCE PRODUCTIVITY

EU AVOID 10 ~ 17% OF ALL MATERIAL CONSUMPTION (INCLUDING FOSSILS FUELS) THROUGH EXISTING MEASURES



## LOWER CARBON

48 % BY 2030 IN MOBILITY, FOOD, BUILT-ENVIRONMENT  
  
- CARBON IMPACT OF MATERIALS (E.G. SCOT 2/3)



## COST SAVINGS

VARIOUS ESTIMATES OF POTENTIAL SAVINGS



## EMPLOYMENT POTENTIAL

VARIOUS ESTIMATES:  
  
- NL 54,000  
- UK 50,000  
- IRL 2,100 ~ 5000

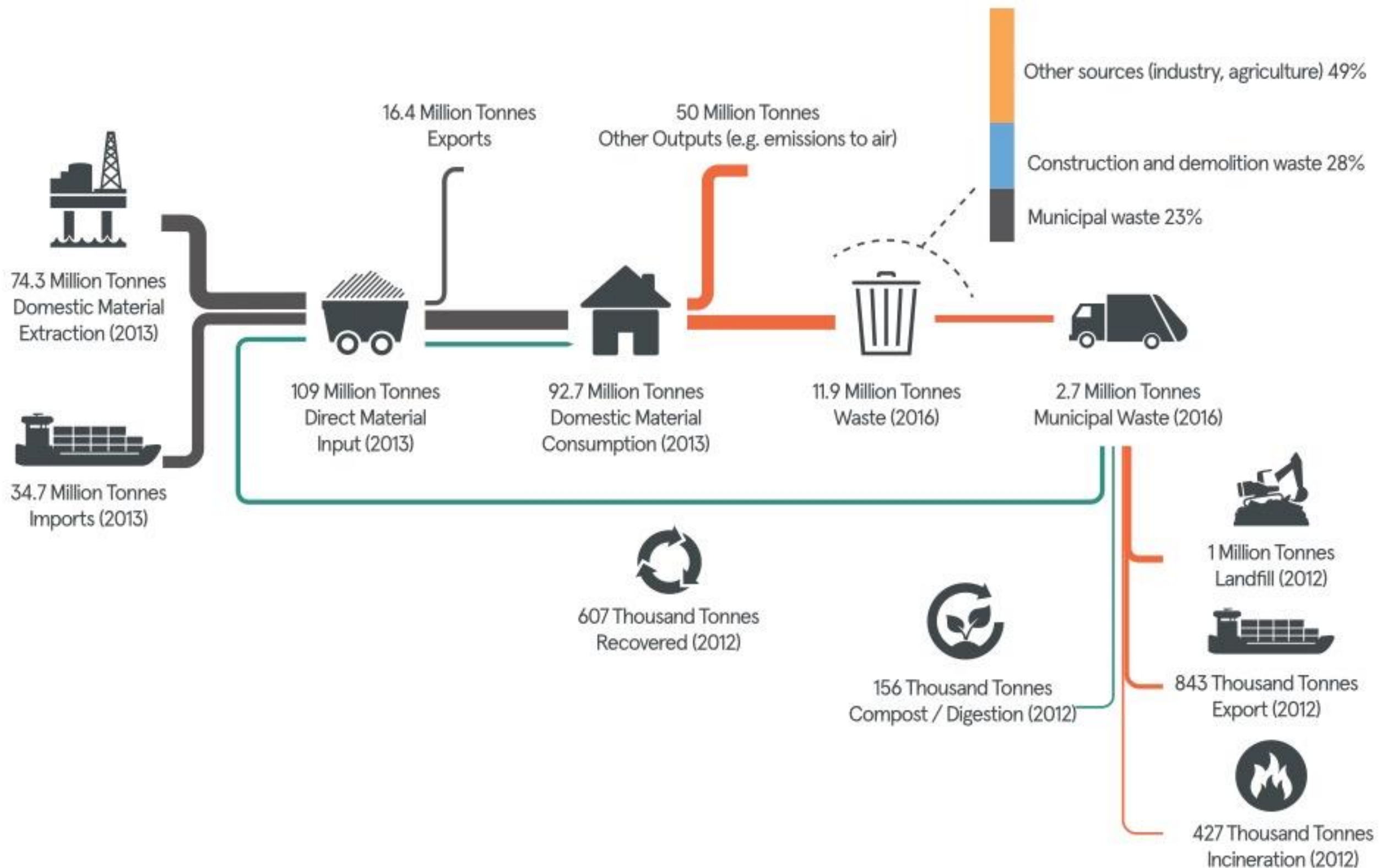
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# RESEARCH DESIGN

1. Brief desk research on circular economy in Ireland, review of available evidence and secondary data
2. 10 cross sectoral case studies – contextual interviews, site visits & email/phone discussions – **Sept. and early Oct. 2016**
3. Informal conversations (e.g. QUB, UCC, CRNI, CTC)
4. EPA workshop “Mapping the Circular Economy in Ireland”
5. Elaboration on tentative recommendations (**Irish context**)



# IRISH CIRCULARITY



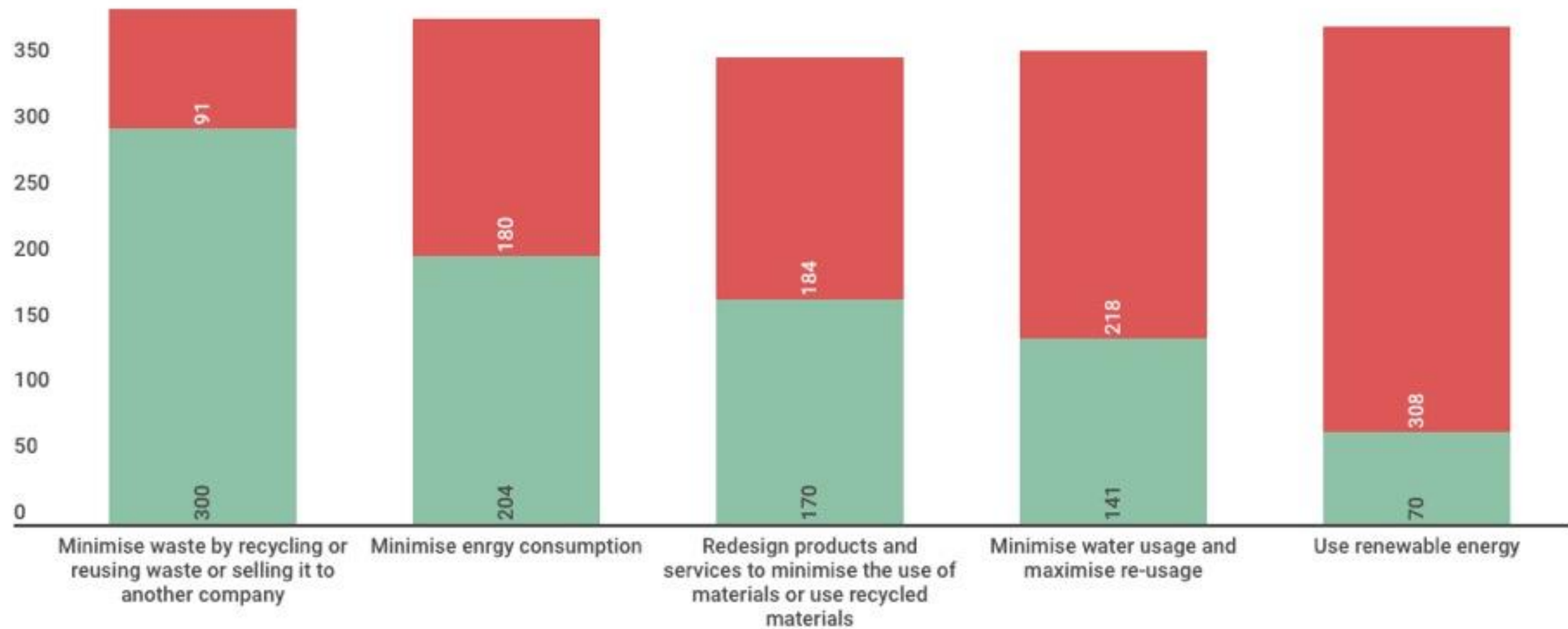


# IRISH SMES & CIRCULAR ECONOMY (N=400)



## Actions undertaken

*Has your company undertaken any of the following activities in the last 3 years?*



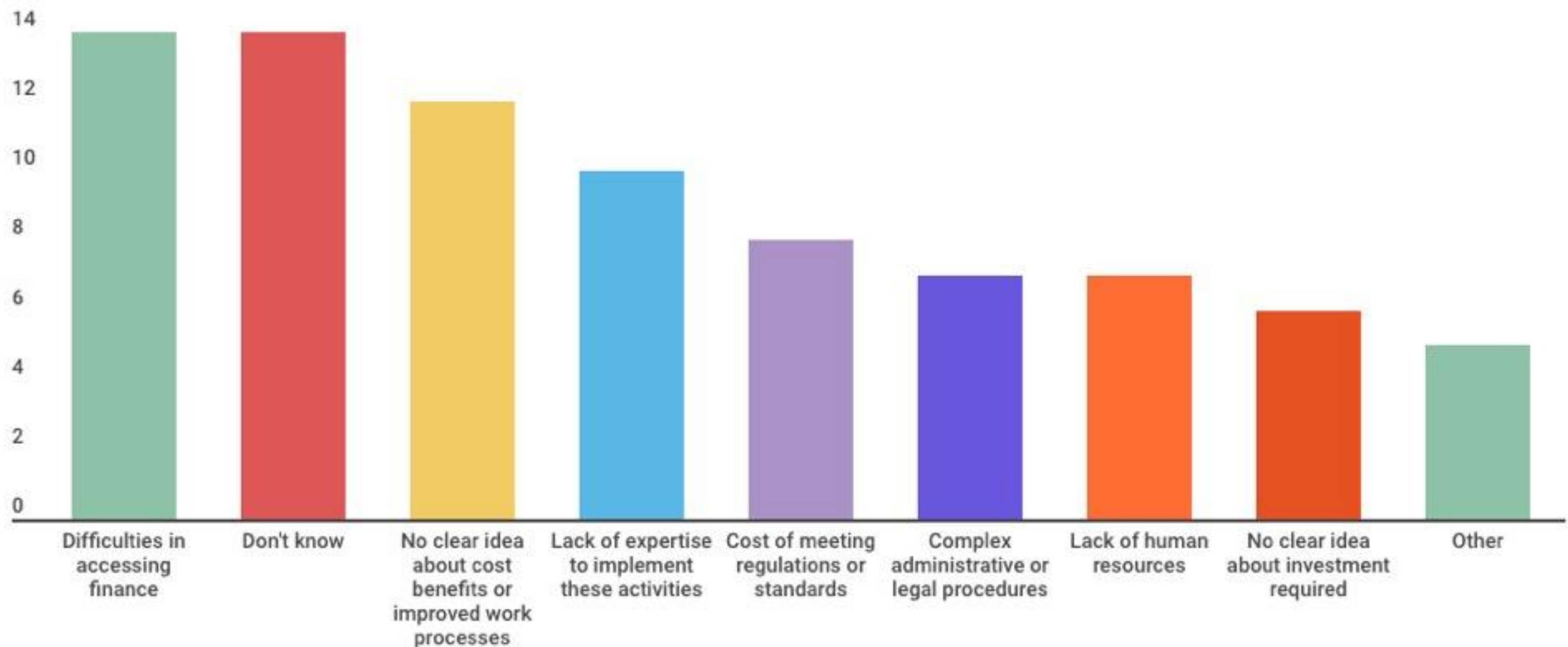
EUROBAROMETER JUNE 2016

# IRISH SMES & CIRCULAR ECONOMY (N=400)



## Reasons for not implementing

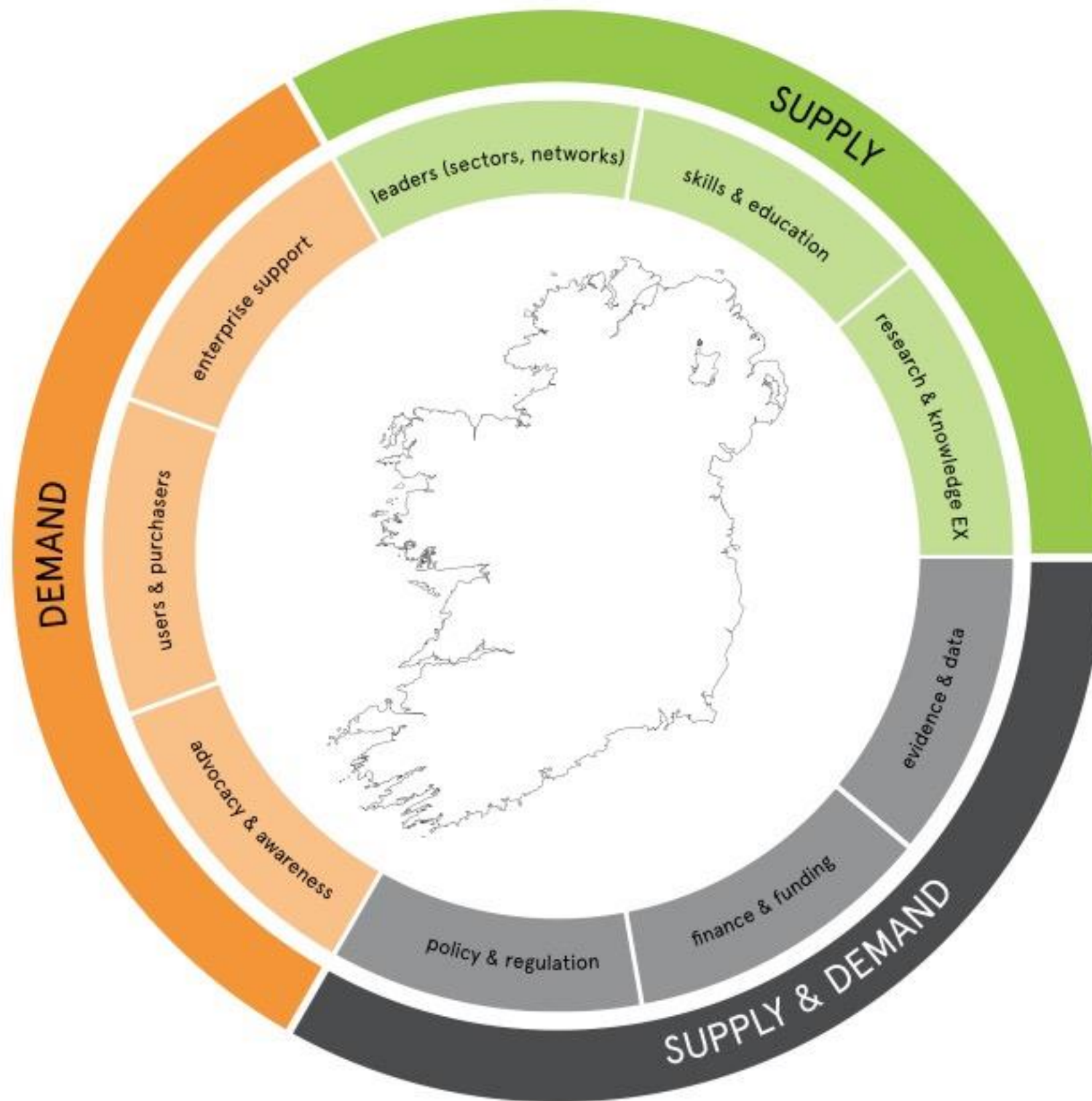
*For which of these reasons have you not undertaken any activities related to the circular economy?*



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# IRISH CIRCULAR ECONOMY INNOVATION SYSTEM



# CASE STUDY SELECTION

## Products

These case studies are predominantly focussed on circular product development. They are a combination of products that upcycle waste materials or improve energy performance.

## Supply chain

These case studies are predominantly focussed on issues related to supply chains e.g. the recovery of materials across value chains or industrial ecology.

## Sharing/Social

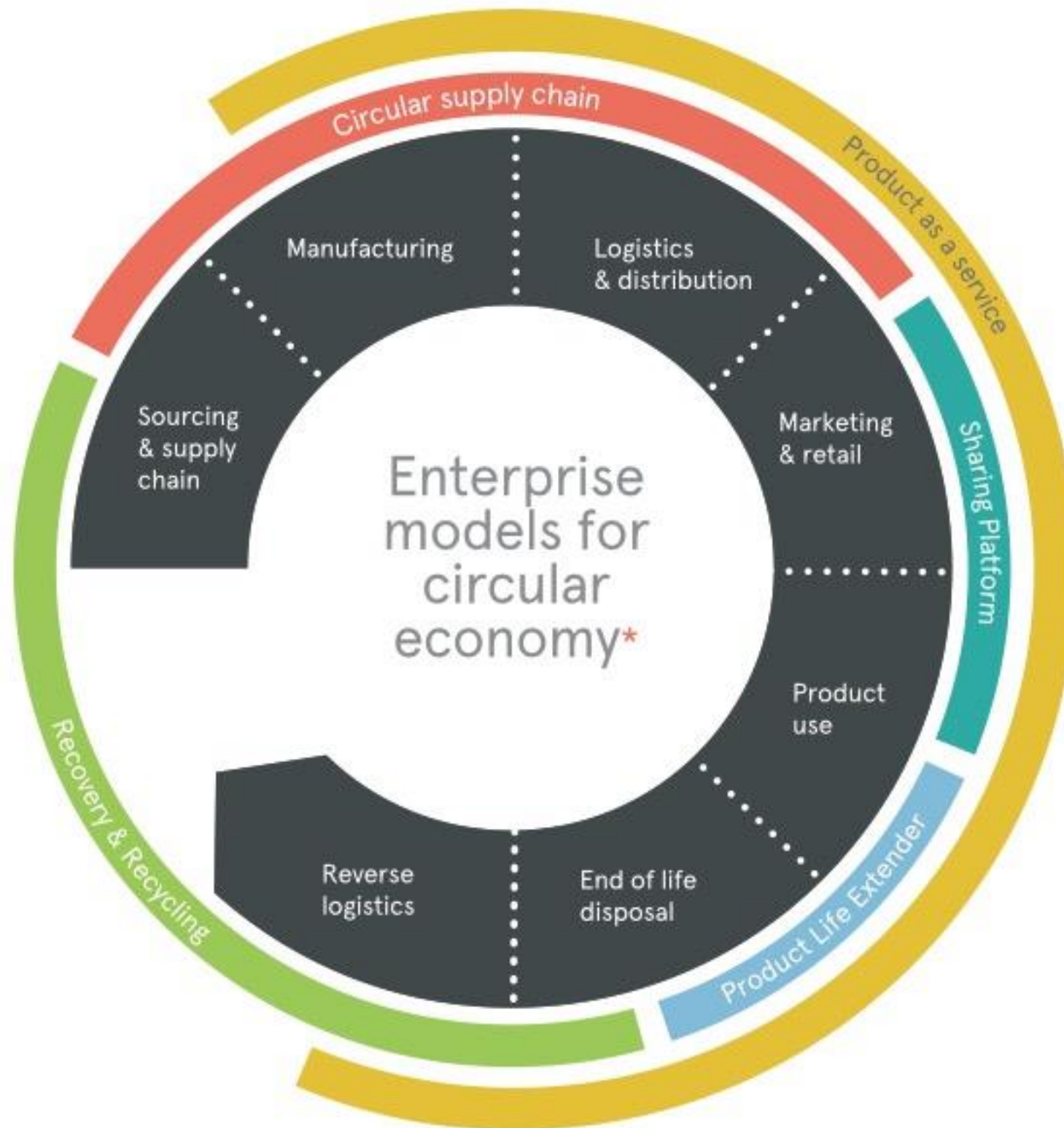
These case studies are predominantly focussed on the sharing economy, social enterprises and community level actions

## Services

These case studies are predominantly focussed on the delivery of services that support the circular economy. They cover topics such as design, remanufacturing, reuse and remarketing.



# CASE STUDY SELECTION



## Product Life Extender

repair, reuse  
remanufacture  
durability inc. service model

## Circular supply chain

renewable feedstock  
re-selling

## Sharing Platform

peer to peer lending

## Recovery & Recycling

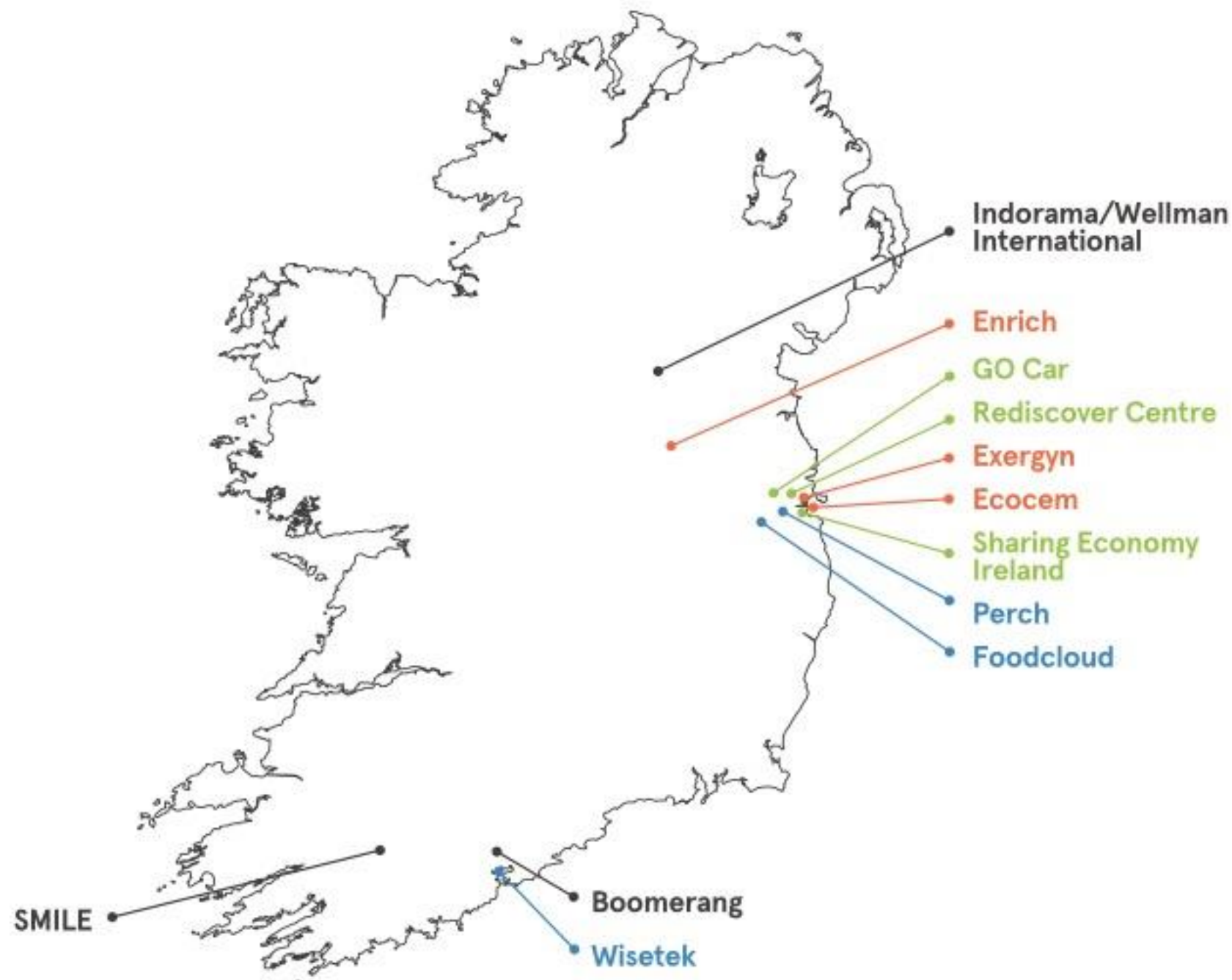
upcycling  
downcycling  
biorefining

## Product as a service

digital service  
product service system

\* Based Accenture report

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# CASE STUDY THEMES

Reuse and Remanufacturing of EEE

Bio-economy & closed loop recycling

Cultures of reuse & repair

Upcycling waste products in construction

Plastics – closed & open loop recycling

Collaborative consumption & sharing economy

Design

Social economy & social enterprises

Financing Circular Innovation & start-ups

Industrial Symbiosis

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## CASE STUDY INSIGHTS

- some actions and policy interventions in place
- a broad network of stakeholders (no platform or broker)
- the knowledge base and support infrastructure in relation to the circular economy in Ireland is fragmented

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# RECOMMENDATIONS

Enhancing the **circular economy innovation system** in Ireland

Establishing **enabling conditions** (incentives and other interventions)

Establishing **transition pathways** (priority sectors, materials)

Applying **common metrics** for measuring progress