



University  
of Exeter



University  
of Sheffield

# ReMake Value Retention Centre

Accelerating the Green Economy Centres



UK Research  
and Innovation



NMIS  
National Manufacturing  
Institute Scotland

\*This work was supported by UK Research and Innovation (UKRI) Building a Green Future strategic theme [grant number UKRI202]



# RVRC Funding

The ReMake Value Retention Centre is a new **£10m centre** (£5m UKRI and £5m industrial co-investment), set to take a **cross-sector, systems-level approach** to **maximising the life** of high-integrity sector products in **high-integrity sectors** (transport and energy sectors).

The RVRC brings together **industry and academic experts** to collaborate on innovation that will reshape the future of the circular economy within these UK sectors.

The RVRC will be delivered by teams from the **National Manufacturing Institute Scotland (NMIS)**, the **University of Strathclyde**, the **University of Exeter**, and the **University of Sheffield**.



**Aerospace**

Transport



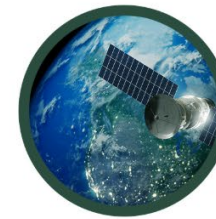
**Automotive**

Transport



**Maritime**

Transport



**Space**

Transport



**Wind**

Energy



**Nuclear**

Energy



**Industrial**

General



1. This centre was initiated through the "Accelerating the Green Economy Centres" funding call ([https:// www.ukri.org/ opportunity/ accelerating-the-green-economy-centres/](https://www.ukri.org/opportunity/accelerating-the-green-economy-centres/)), which is part of UKRI's "Building a Green Future“.
2. "Building a Green Future" theme ([https:// www.ukri.org/ what-we-do/ browse-our-areas-of-investment-and-support/ building-a-green-future/](https://www.ukri.org/what-we-do/browse-our-areas-of-investment-and-support/building-a-green-future/) ).
3. 4-year program





# Net Zero – to be or not to be?



•**Energy Transition:** Renewables, Hydrogen, Nuclear, Electrification



•**Transport:** Aerospace, space, marine and rail travel



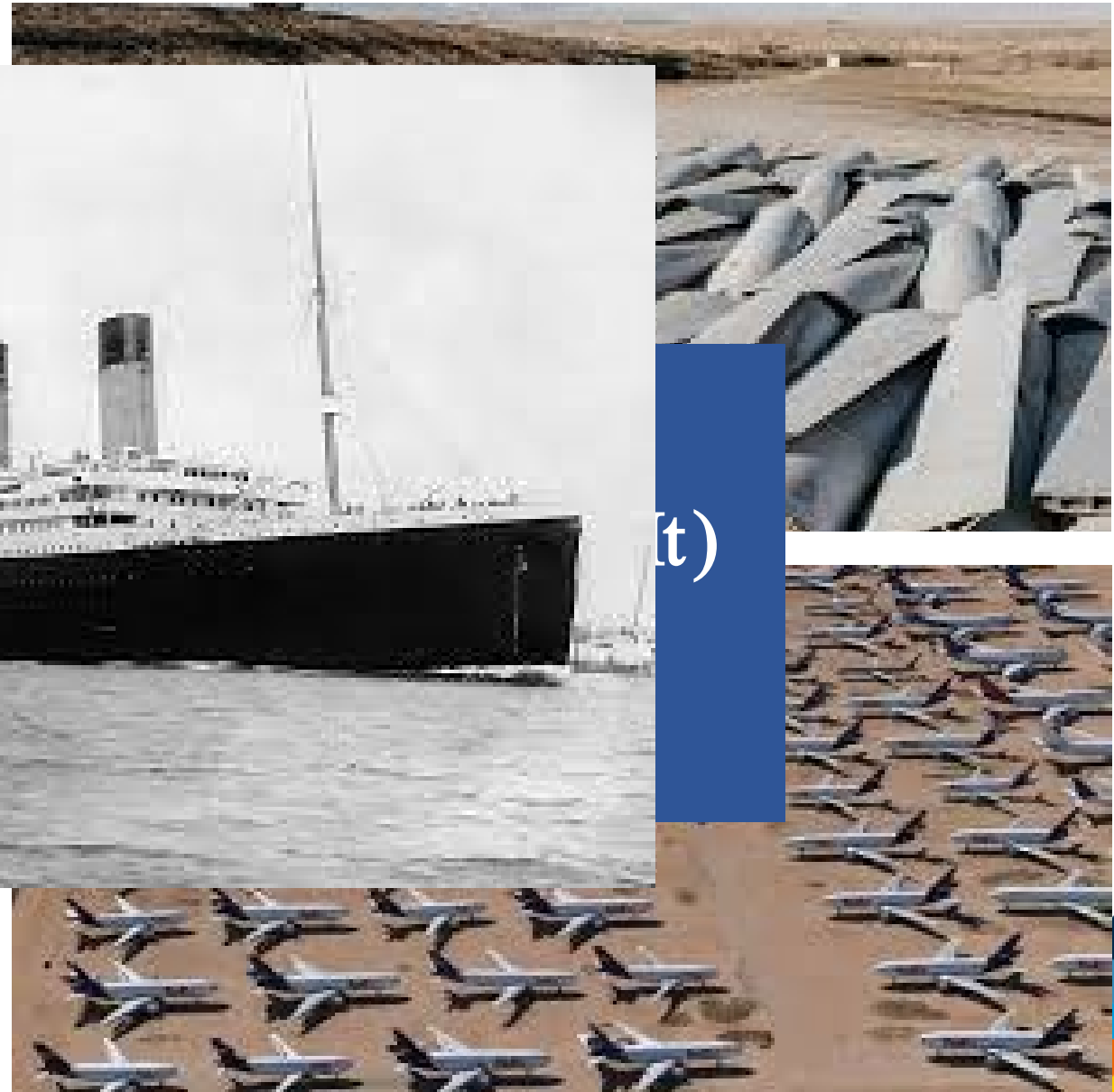
# The Challenge!



500 million  
tonnes



(t)



# High Integrity Sectors - Critical for National Infrastructure

High Integrity Sectors underpin our national infrastructure, including:

- Energy Transition:** Renewables, Hydrogen, Nuclear, Electrification



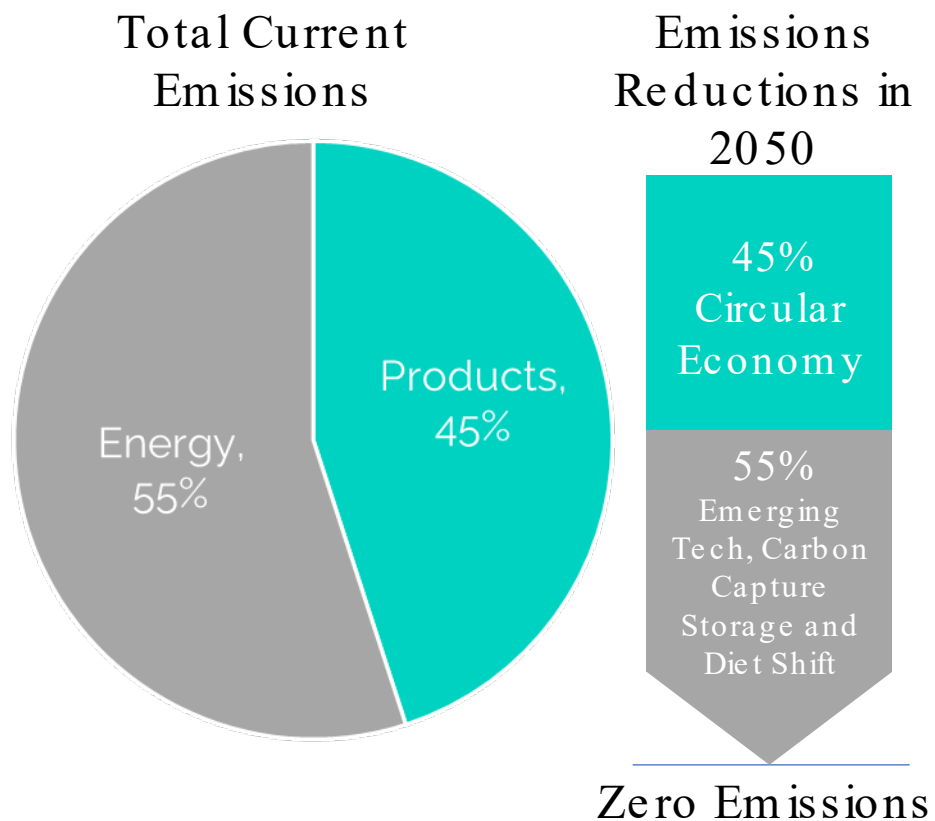
- Transport:** Aerospace, space, marine and rail travel



- Structural** (wings, vessels, towers..)
- Mechanical** (pumps, valves, transmission systems..)
- Prismatic** ( housings, conrods..)



# The Challenge!



\*45%

Of global emissions come from the things we make

10%

Of global emissions come from high-integrity sectors

\*\*70-85%

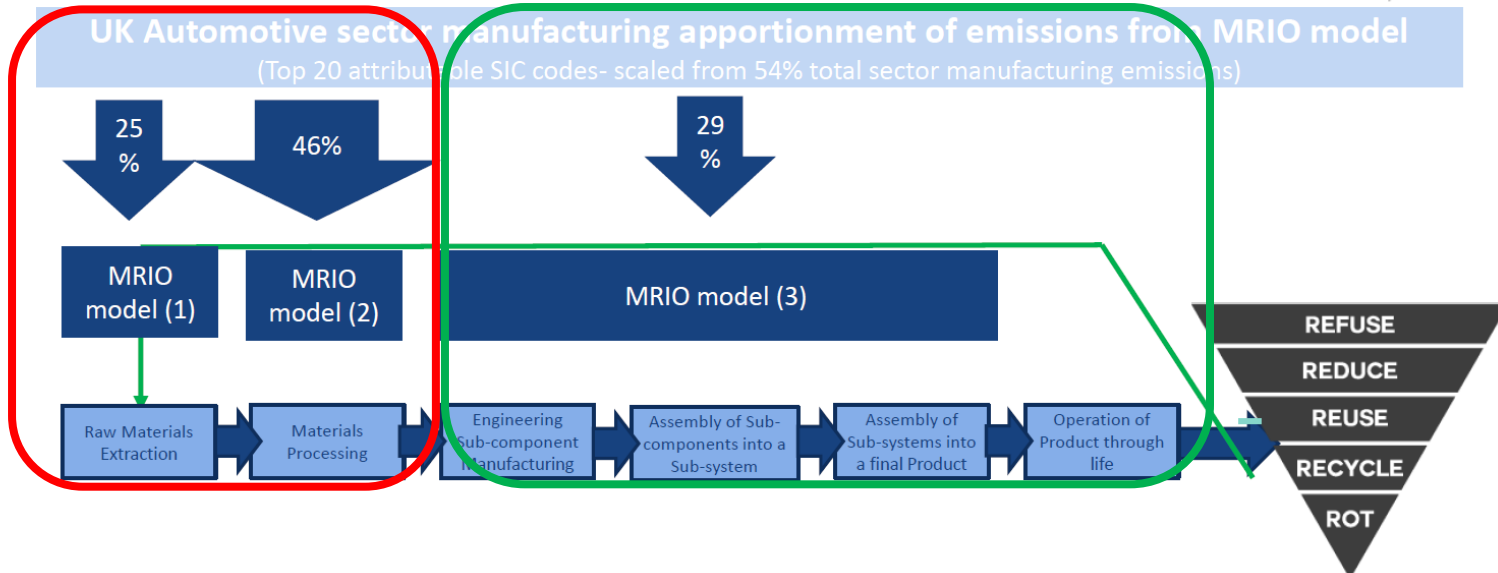
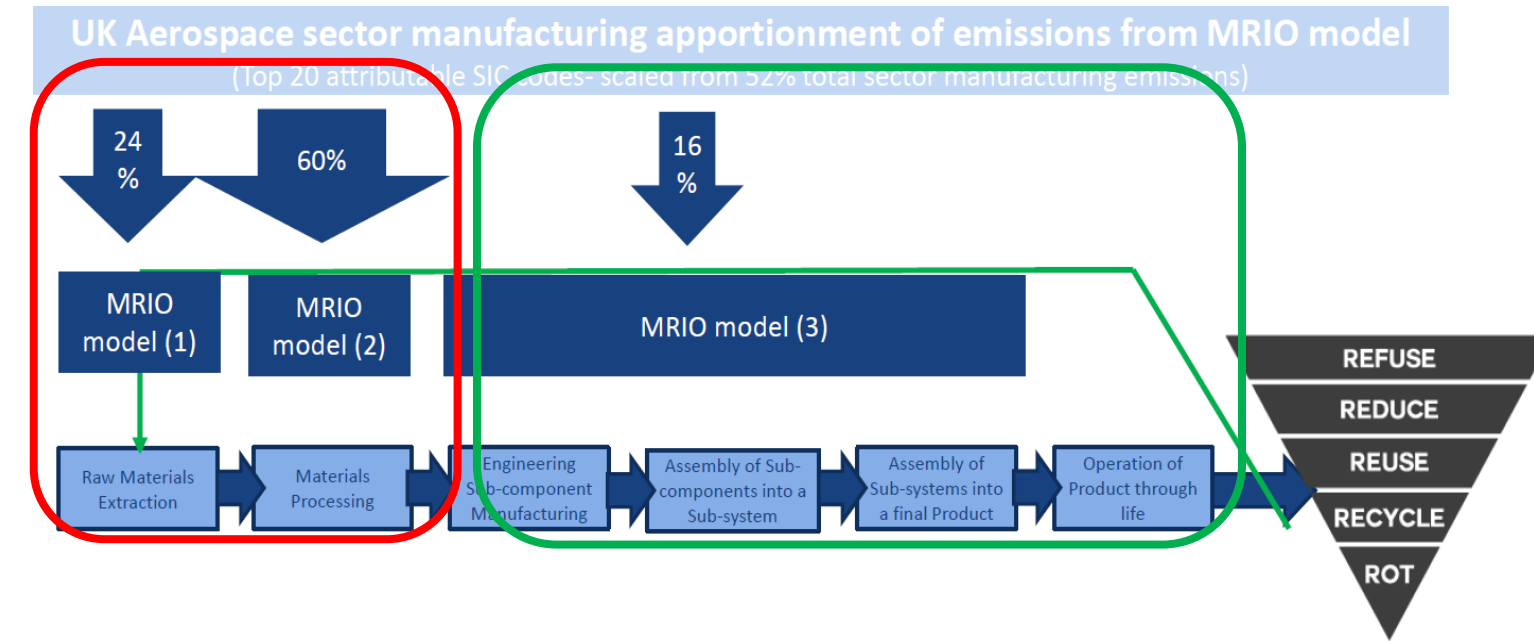
Of emissions are locked in at material extraction/primary processing

*\*Ellen MacArthur Foundation (2022)*

*\*\*Catapult Enabling Conditions EC5C (2020)*



# Critical Challenge - Embodied Emissions in High Integrity Sectors (scope 3)



70-85%

of emissions are locked in at material extraction/ primary processing



# Circular Economy for High-Integrity Sectors



LINEAR ECONOMY



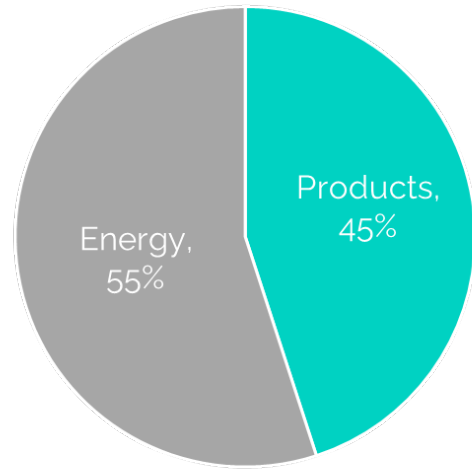
CIRCULAR ECONOMY





# The Critical Challenge – Circularity Gap

Total Current Emissions



\*Only 8%

of products are  
circular

Only 6%

go through  
recycling

\*Only 2%

go through value  
retention processes  
(reman, repair, reuse)

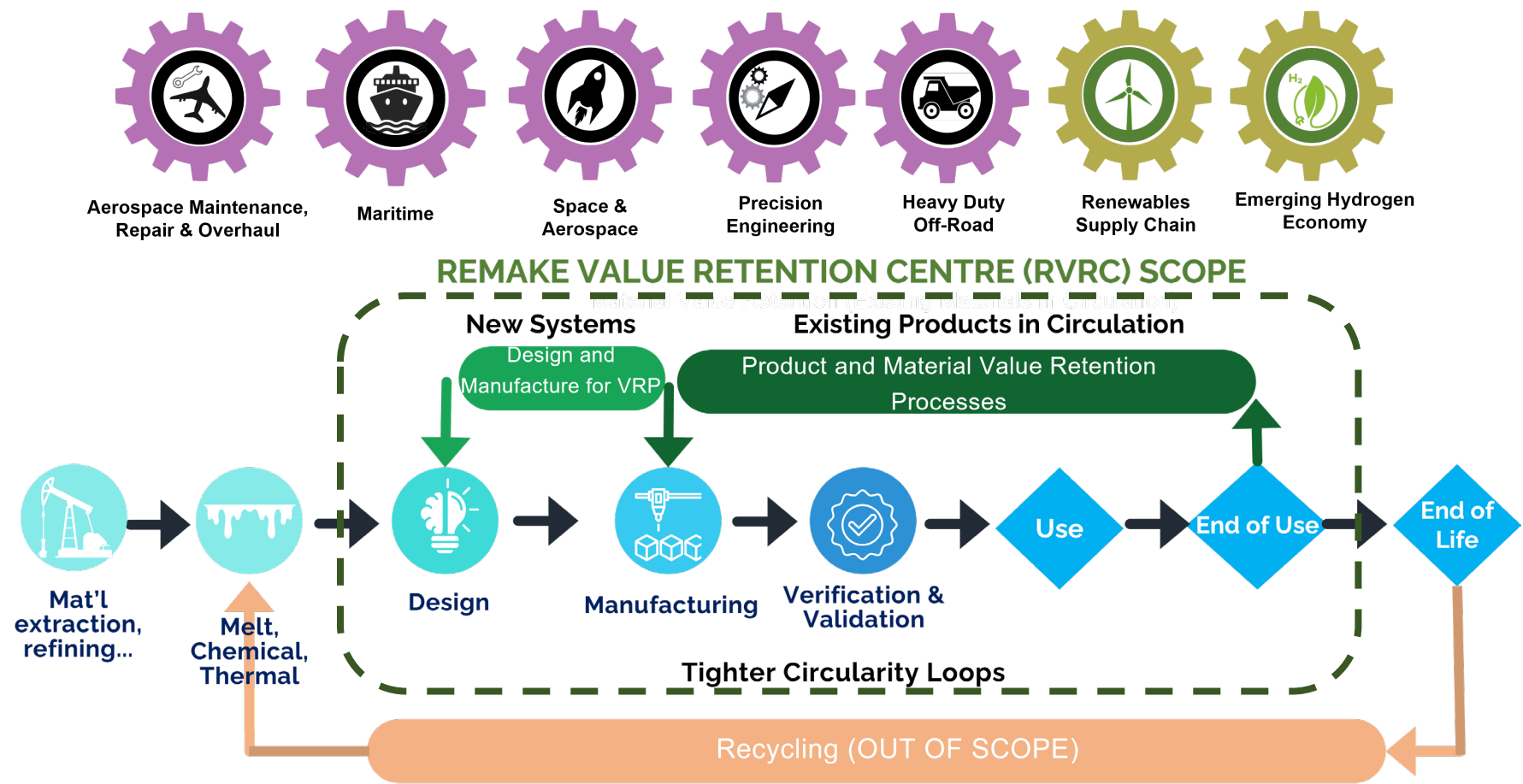
- **Critical Situation** – Net Zero in the UK will not happen without intervention
- **Critical materials are going to landfill** – need to keep parts in service for longer
- **Supply chains are fragile for new part production** – need to keep parts in service for longer
- **Designs are introduced without any of use in mind** – need to design for remanufacture and disassembly
- **Data is fragmented** – need to connect manufacturing, in use reliability and aftermarkets together.

*\*The Circularity Gap Report (2023); European Reman Network (2020)*

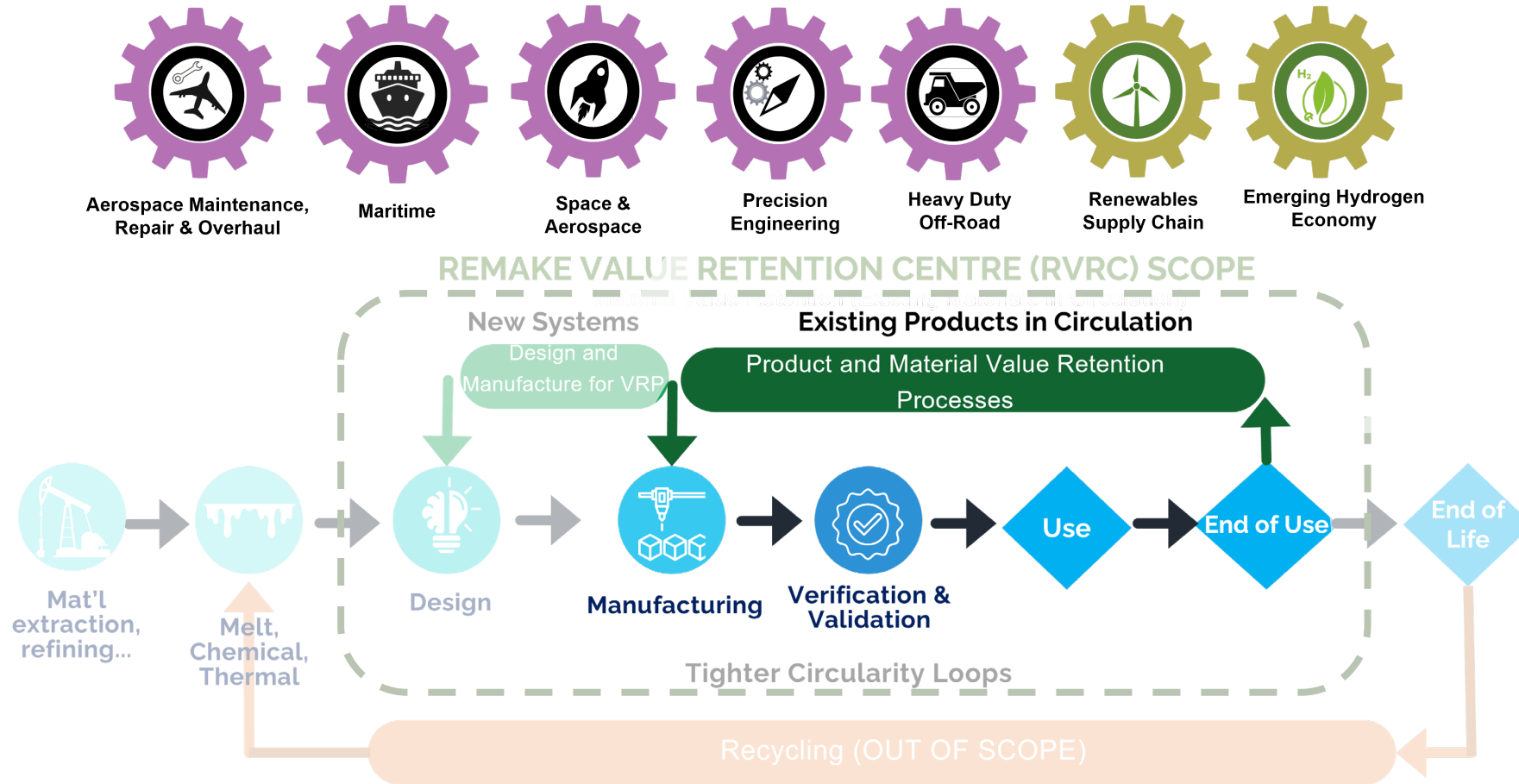




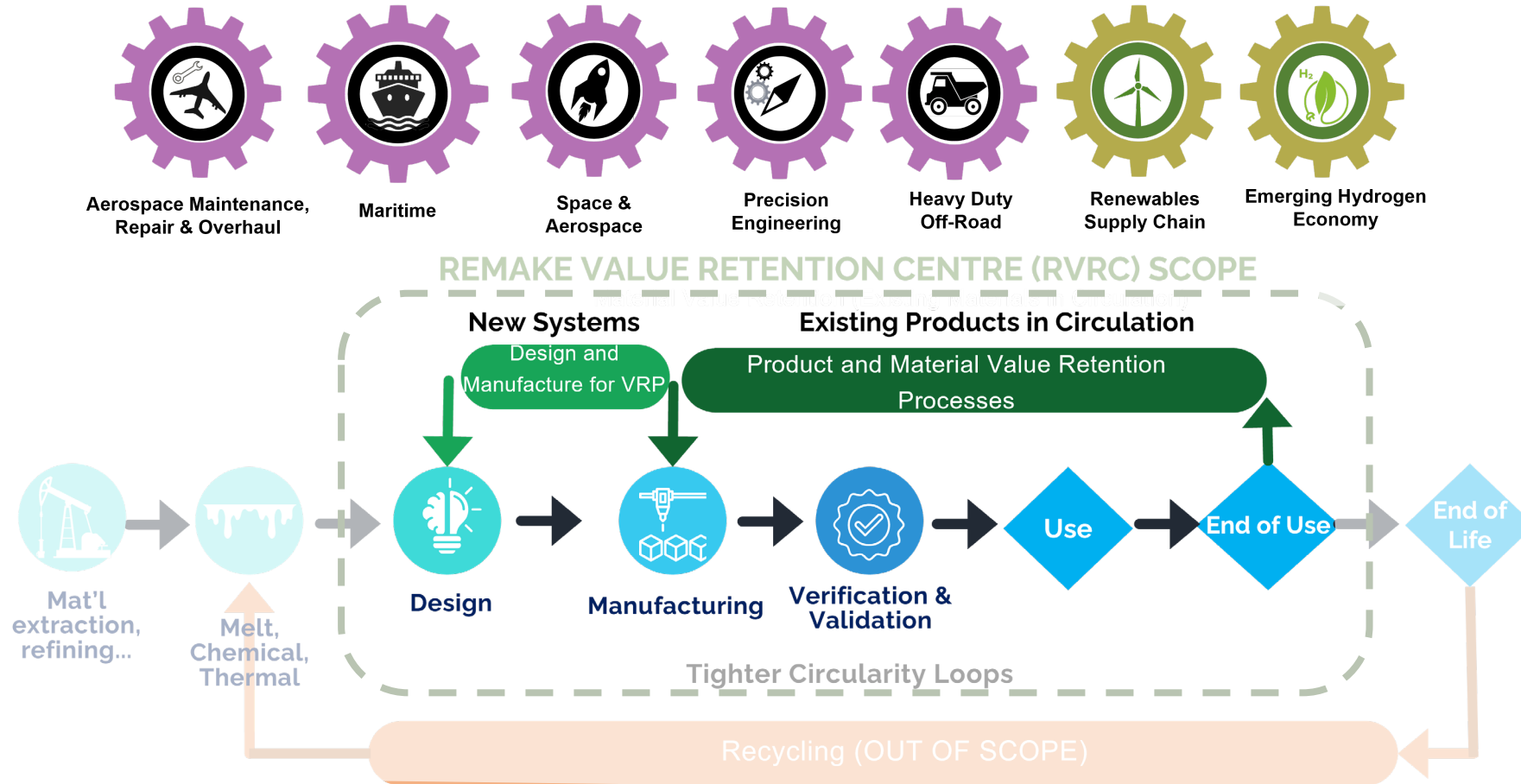
# RVRC Scope

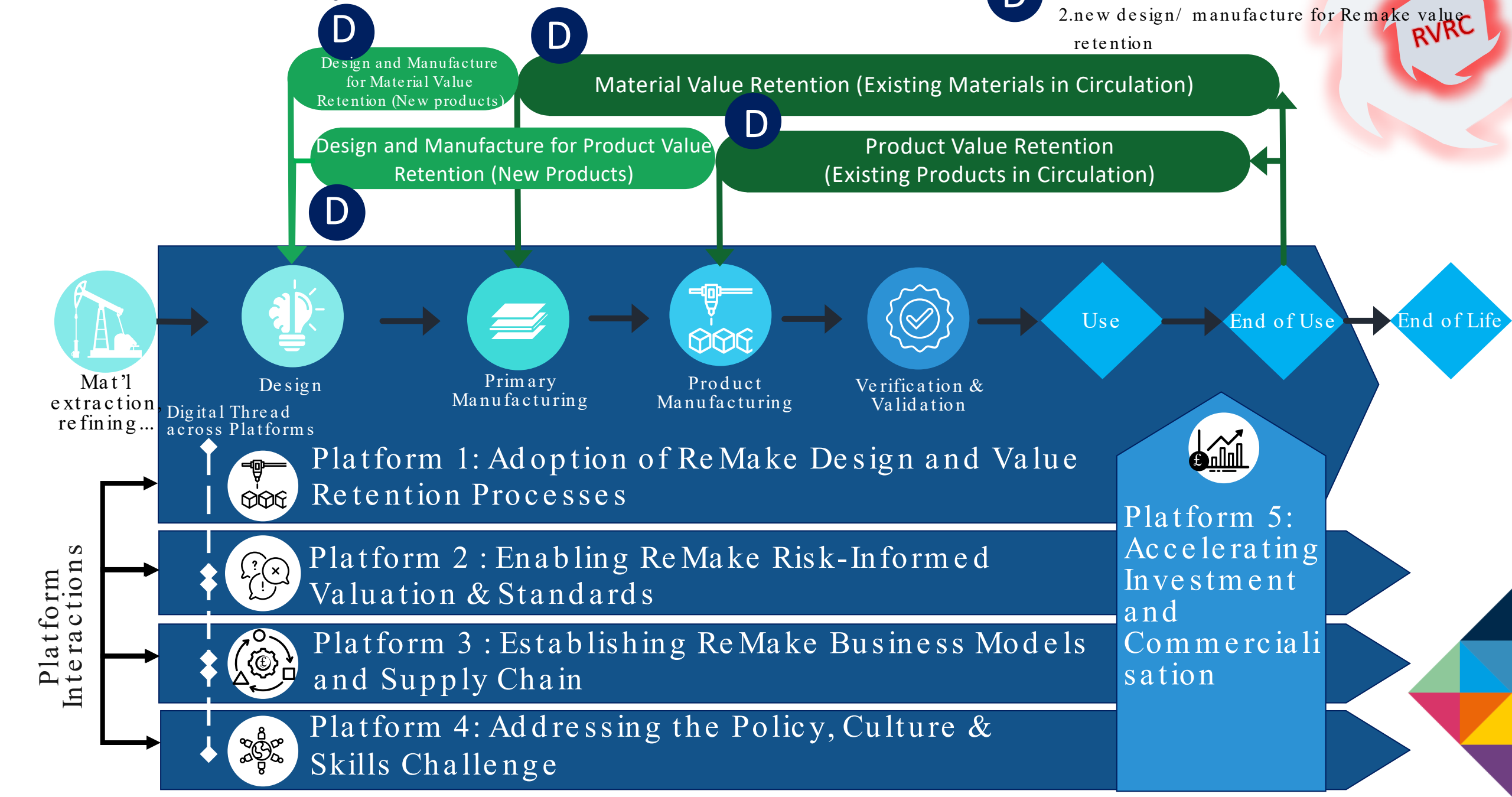


# RVRC Scope



# RVRC Scope





# Funded/ Platform Delivery Partners



## Research



## Research & Translation



## National Infrastructure



## Policy



## Standards



## Skills



# Thank You

