

UNRMS in Action

UK Circular Approach

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RESOURCE MANAGEMENT WEEK

2024

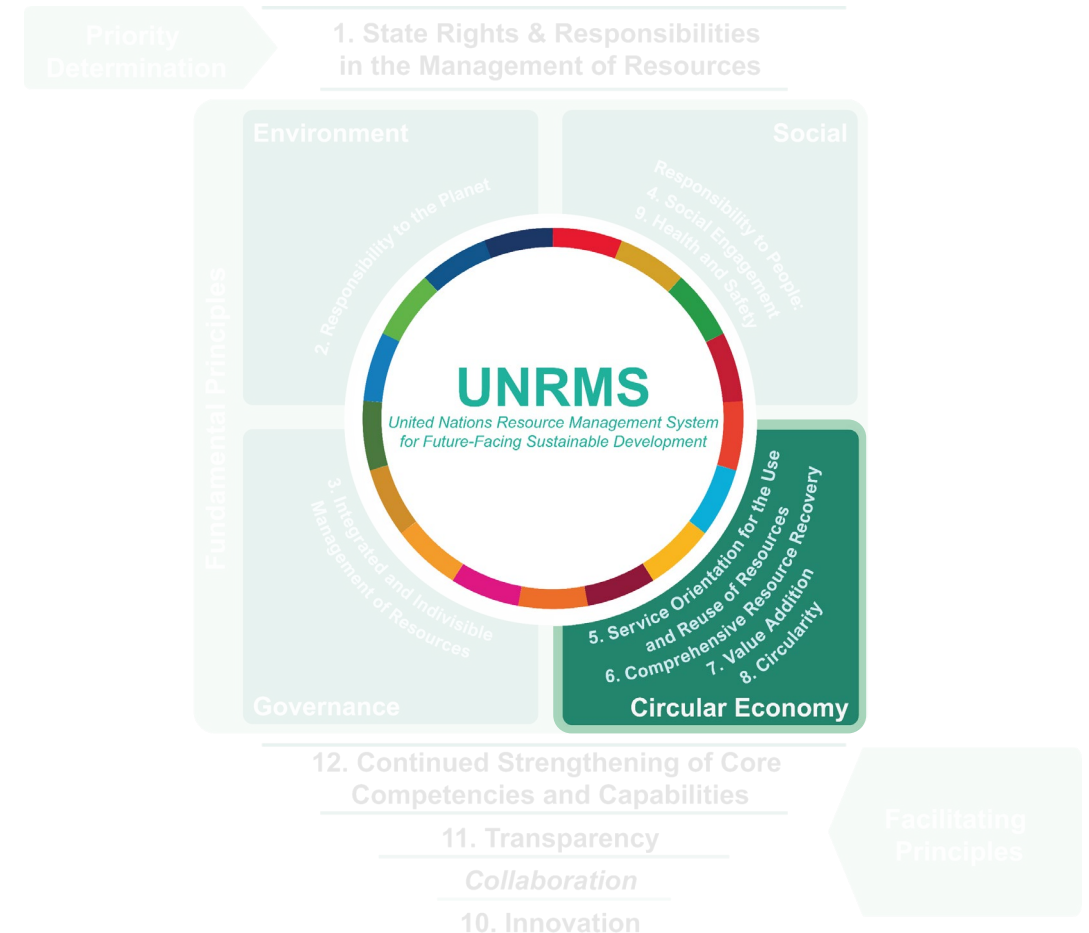


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Circular Approach

Circular Economy in the UNRMS

- **Circular Economy**, is a core component of the UNRMS
- Fundamental principles relating to Circular Economy include:
 - **Principle 5:** Service Orientation for the Use and Reuse of Resources
 - **Principle 6:** Comprehensive Resource Recovery
 - **Principle 7:** Value Addition
 - **Principle 8:** Circularity



UNRMS adapted for Cornwall Technology Metals Case Study

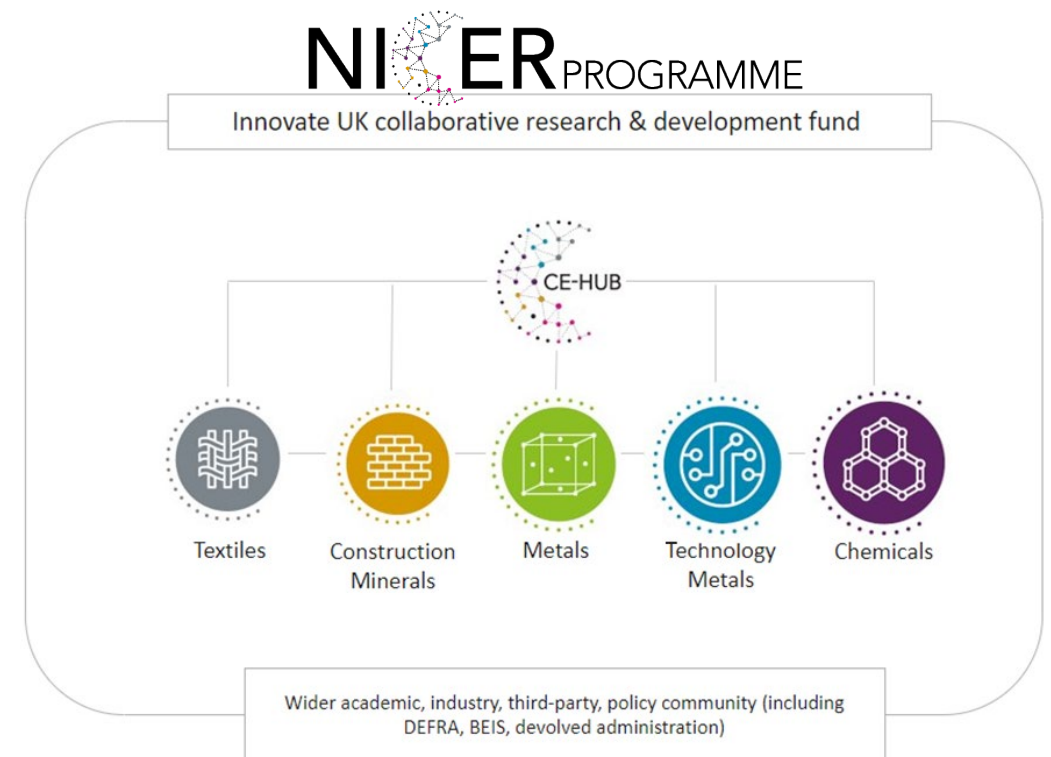


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Case Study: UK Circular Approach

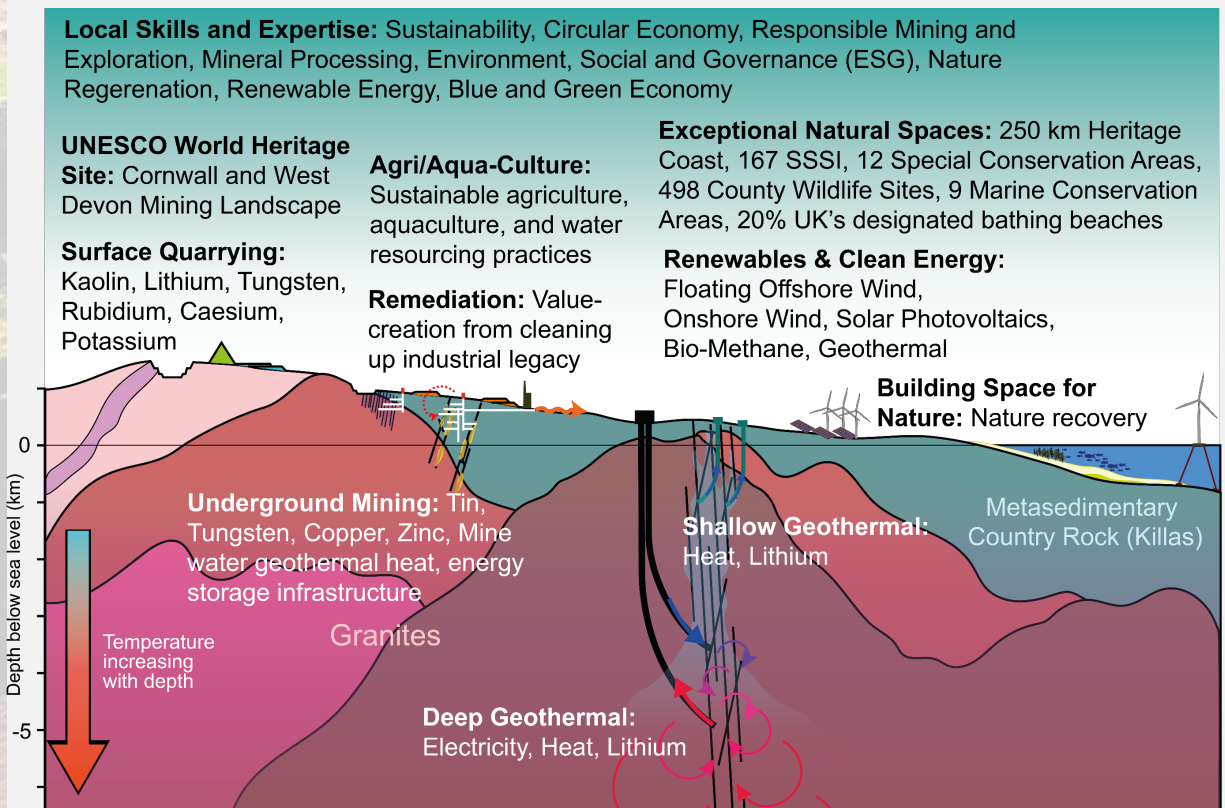
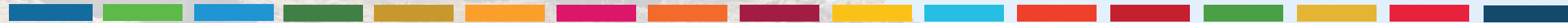
UK Critical Minerals Strategy – NICER, Met4Tech – CMIC - ICE-SRM Circular Economy

- UK Critical Minerals Strategy
 - Accelerate – Collaborate - Enhance
 - “...accelerating a circular economy of critical minerals in the UK...”
- National Interdisciplinary Circular Economy Research (NICER) program including the UKRI Circular Economy Centre for Technology Metals (Met4Tech)
- Critical Minerals Intelligence Centre (CMIC)
- International Centre of Excellence on Sustainable Resource Management in the Circular Economy – Opening April 2024

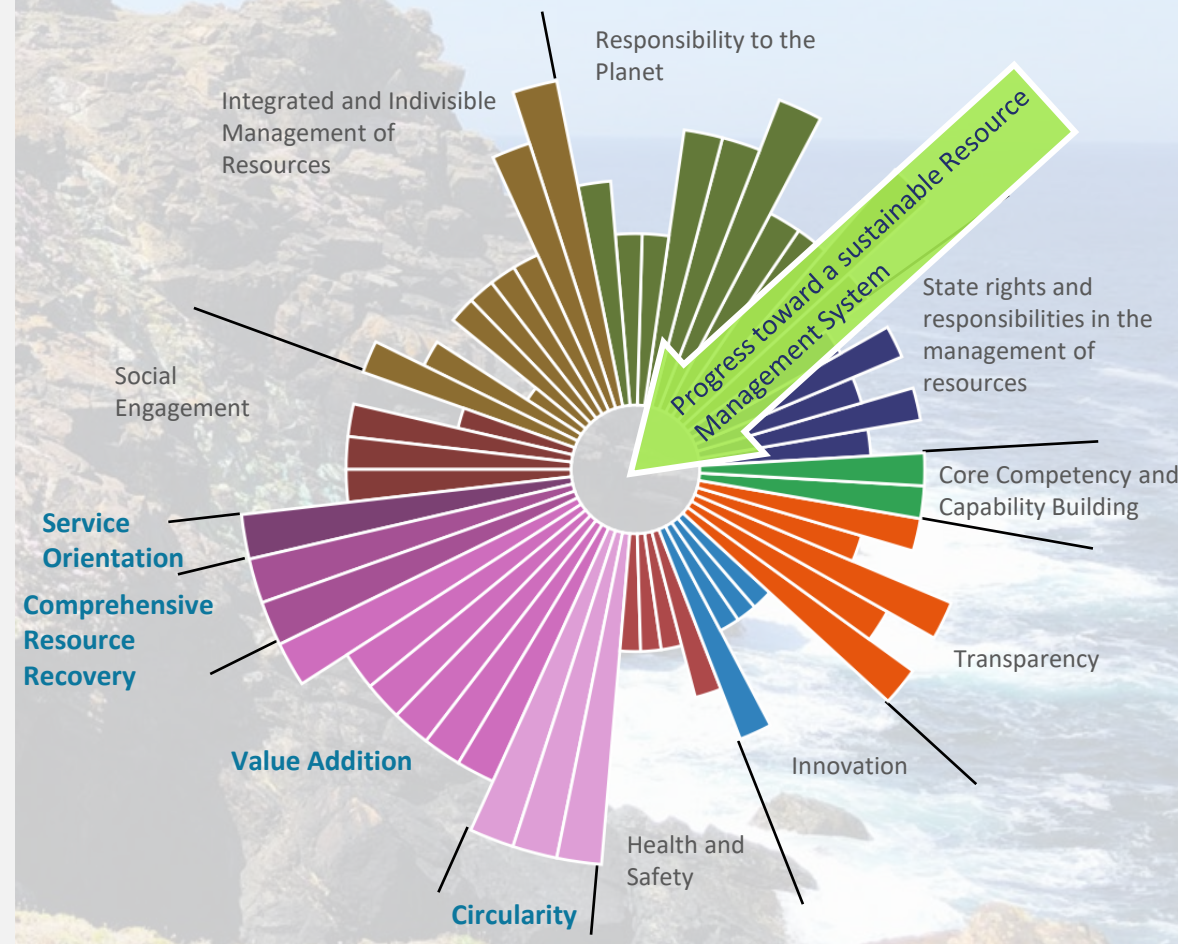


Case Study: UK Circular Approach

Cornwall Case Study



Full case study report available in UNECE Raw Materials Week 2024 Documents - <https://unece.org/sed/documents/2024/04/working-documents/optimizing-resource-management-critical-raw-materials-case>



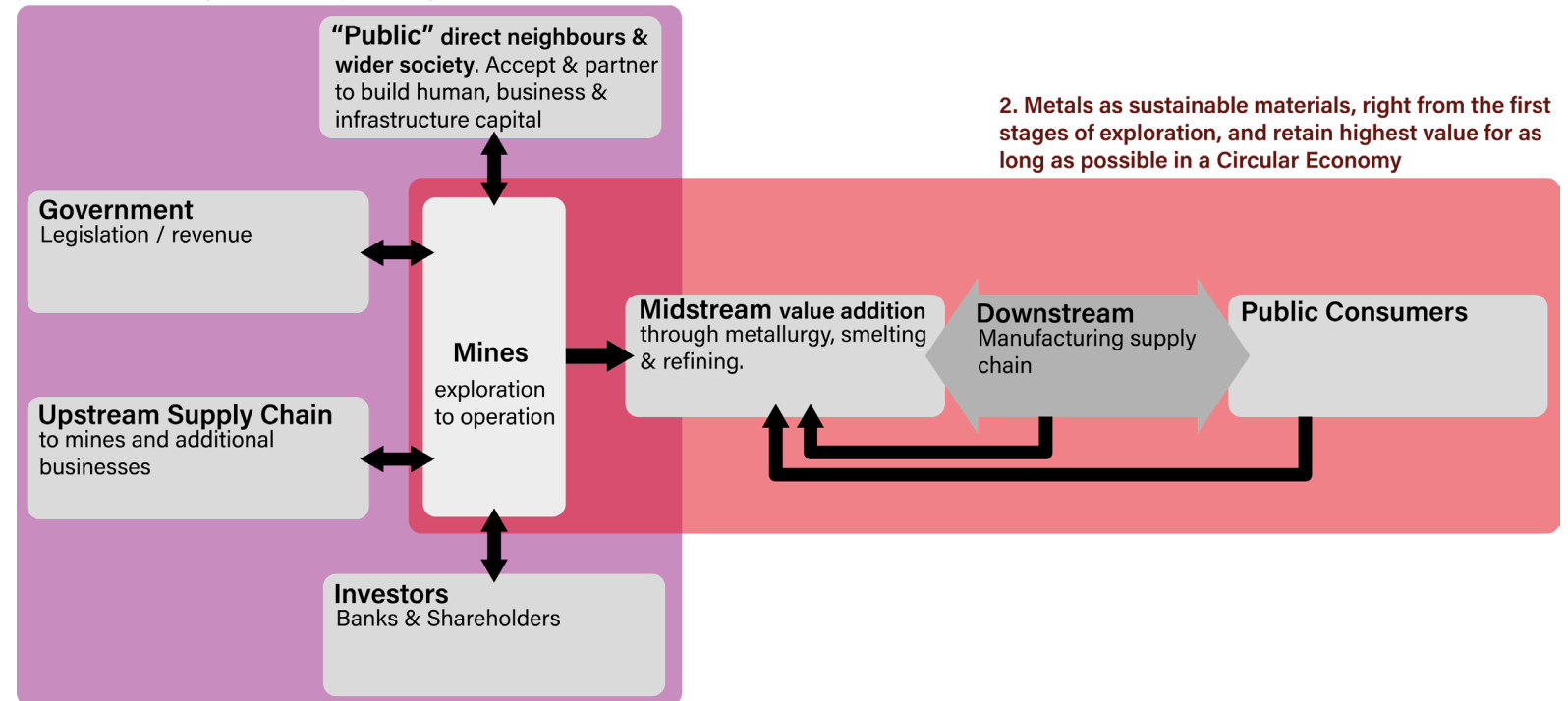
Principle 5: Service Orientation for the Use and Reuse of Resources

Resources shall be produced primarily as a **service to society**

“Two views of sustainability”

- **Resources as a Service**
- *“Providing a service rather than selling goods”*
- Challenging for exploration and extractive companies to identify how they would work within this framework in the current linear system.

1. Turning geological natural capital into human, infrastructure, and environmental capital. For the producers this may be seen as providing a service



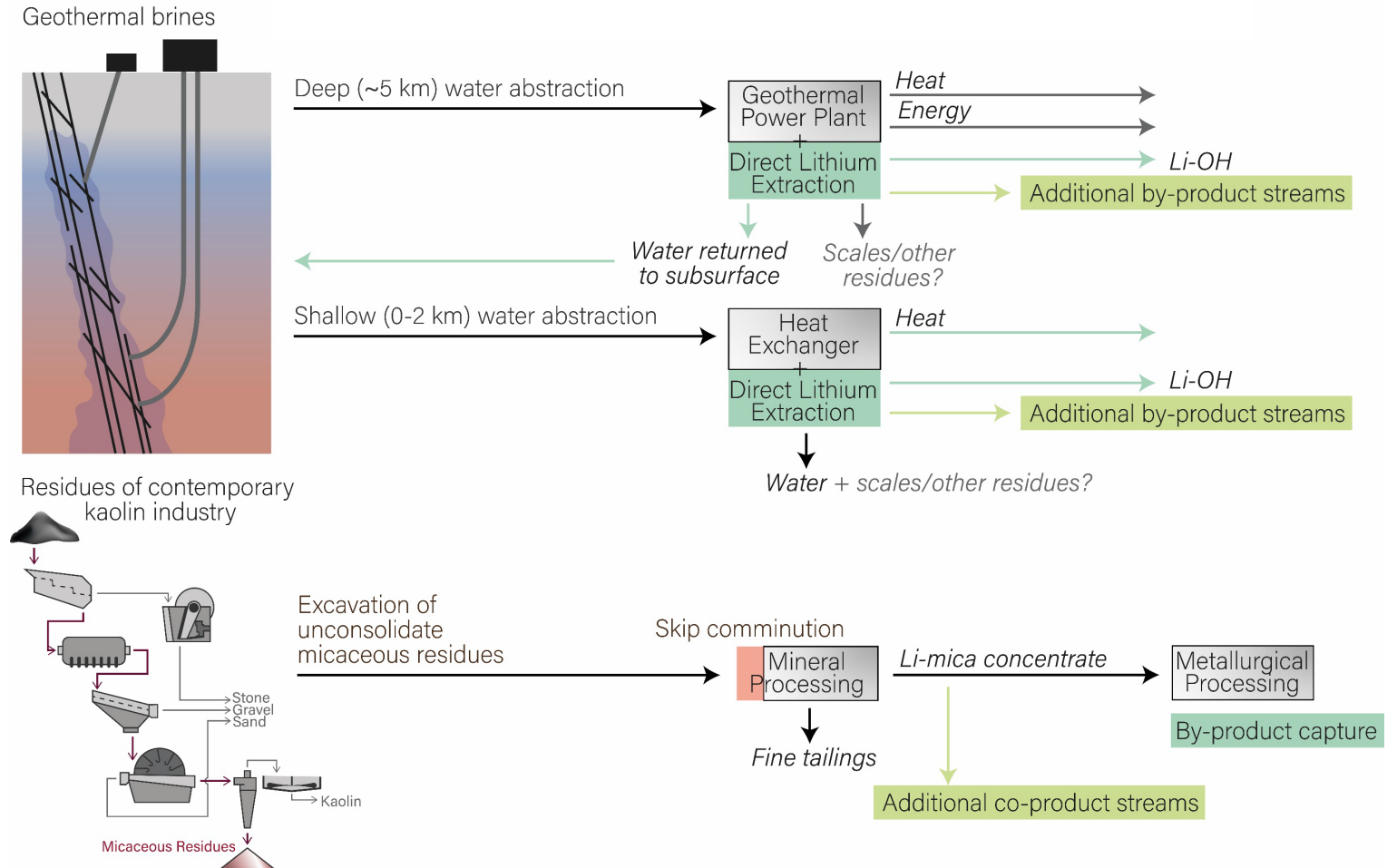
2. Metals as sustainable materials, right from the first stages of exploration, and retain highest value for as long as possible in a Circular Economy



Principle 6: Comprehensive Resource Recovery

Sustainable resource management shall facilitate and support the knowledge base and systems for comprehensive value recovery at all operation stages

- **Innovative Resource Capture**
- Identifying and capturing the full resource potential.
- Requires a collaborative approach between industry, society, service providers, and governance organisations.
- How can business models be developed for this? How to record value that is not associated with direct profit creation?

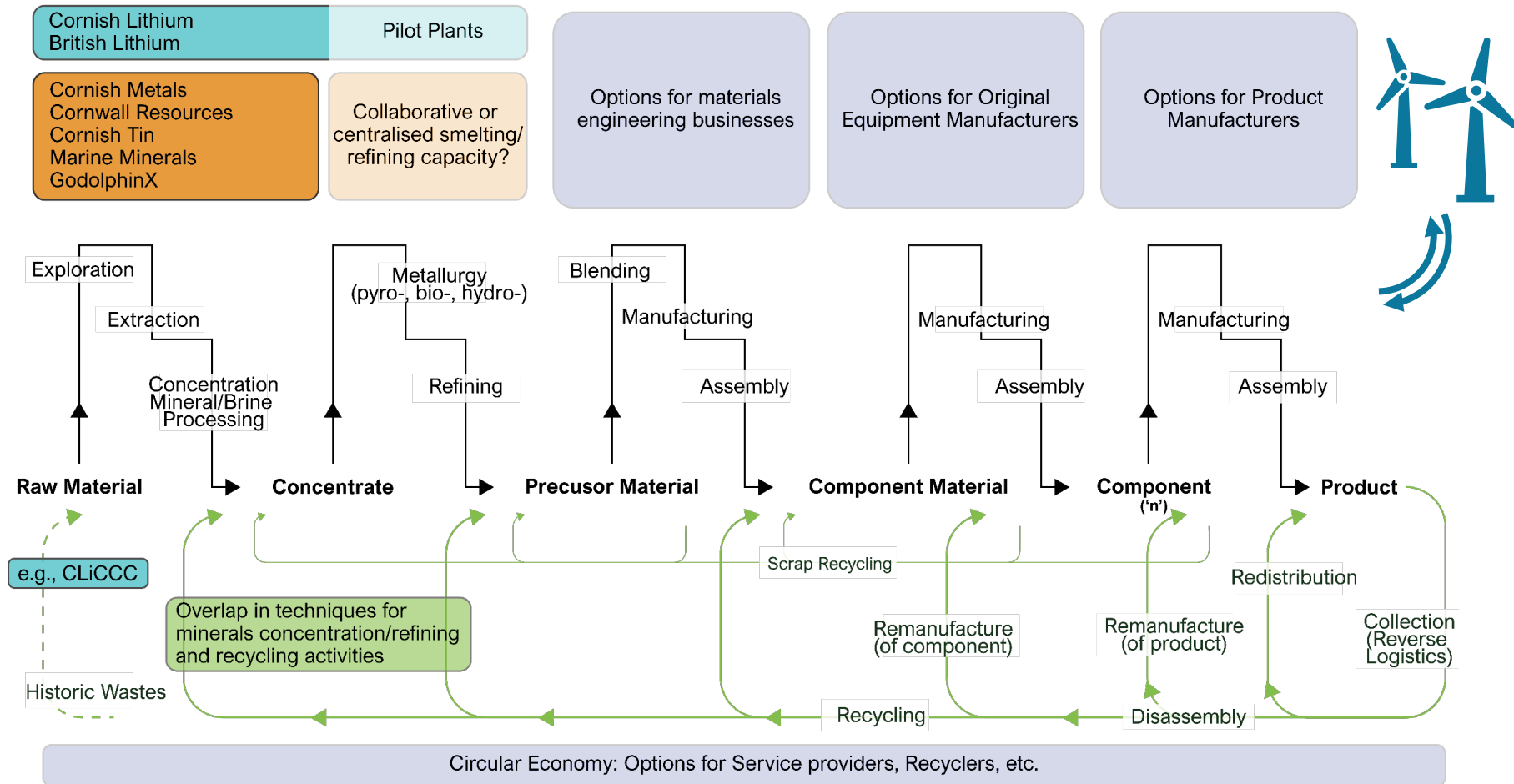


Principle 7: Value Addition

Sustainable resource management shall facilitate and support value addition throughout the life cycle

Adapted from: Weimer et al. (2019) Resource Policy 64: 101473

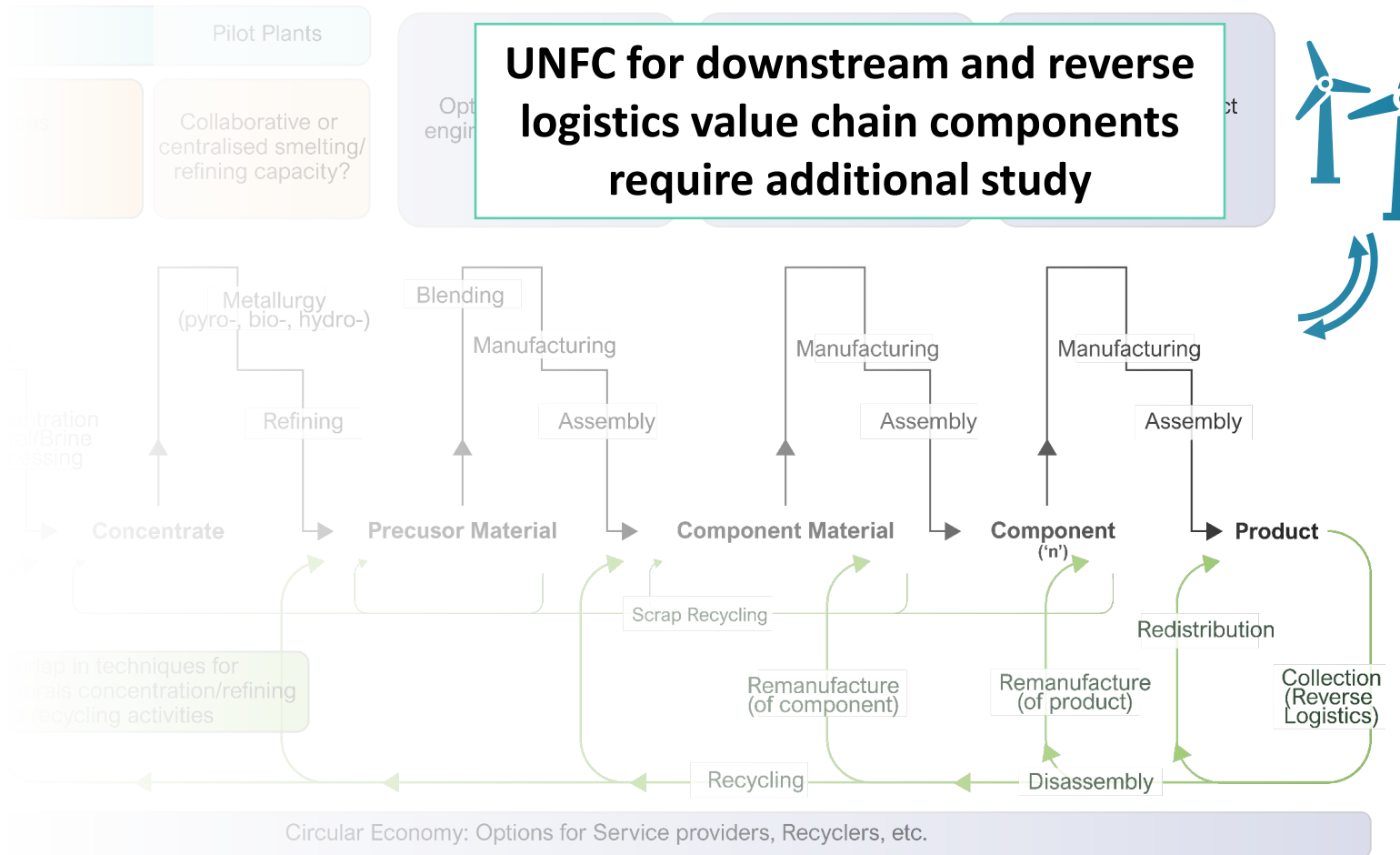
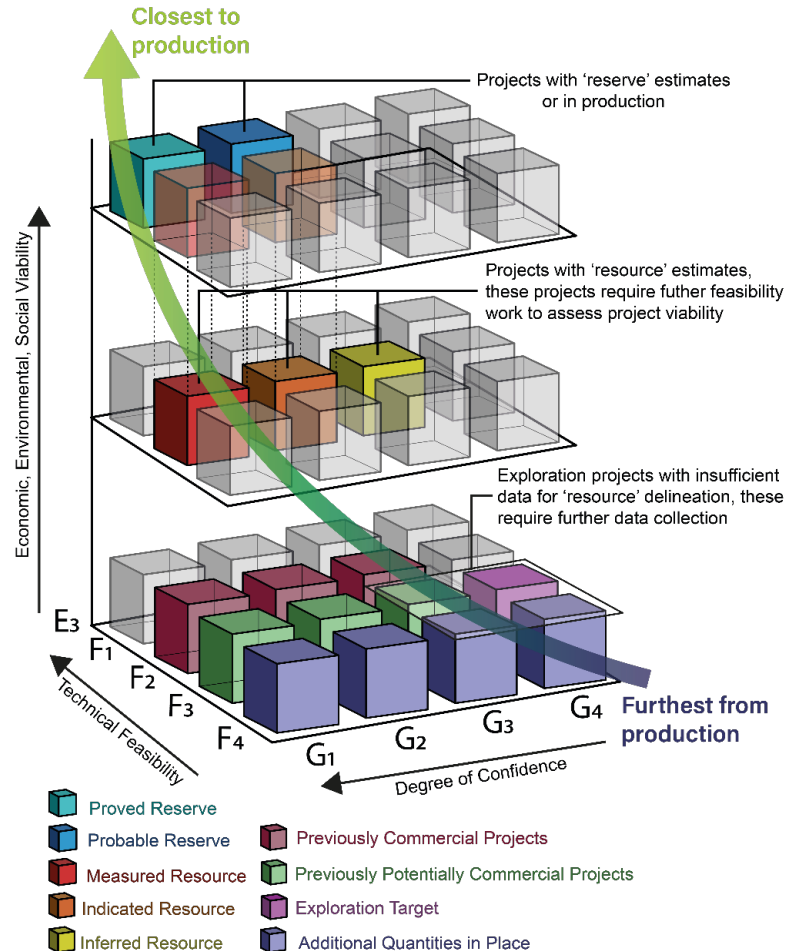
- Value Chain Maturity
- Opportunities for industrial symbiosis.
- Opportunities for regional – national value addition.
- Highlights where value chain needs to transition across borders and/or where there are missing 'links' in the chain.



Principle 7: Value Addition

Sustainable resource management shall facilitate and support value addition throughout the life cycle

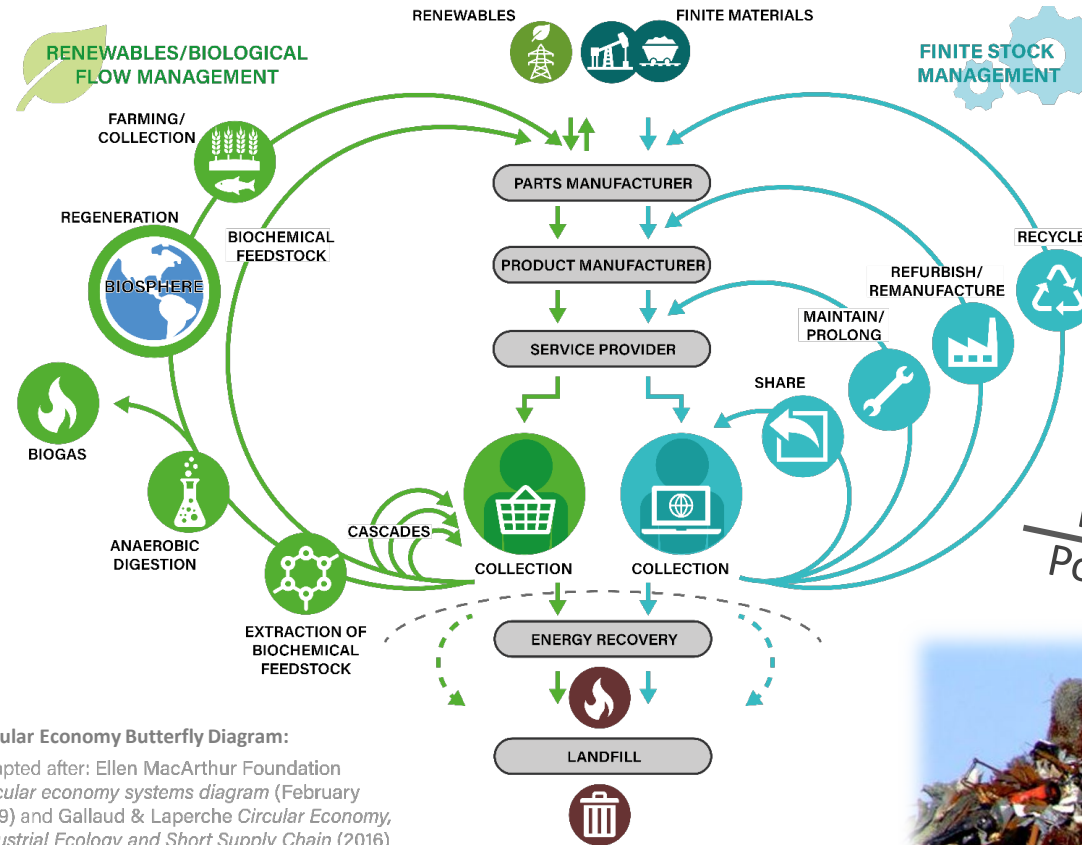
Adapted from: Weimer et al. (2019) Resource Policy 64: 101473



Principle 8: Circularity

Sustainable resource management shall facilitate and support the knowledge base and systems for responsible design, use, reuse, recycling and minimization of waste at all stages

- **Waste** – *what is in a word?*
- “Any substance or object which the holder discards or intends or is required to discard.” EU, 2008, Directive 2008/98/EC
- Precautionary, catch-all definition that is designed for hazard minimisation which can be at odds with material circularity.
- Easy to call a material stream waste, however once it is termed waste it is very challenging to reprocess or recycle.



Circular Economy Butterfly Diagram:
Adapted after: Ellen MacArthur Foundation Circular economy systems diagram (February 2019) and Gallaud & Laperche Circular Economy, Industrial Ecology and Short Supply Chain (2016)

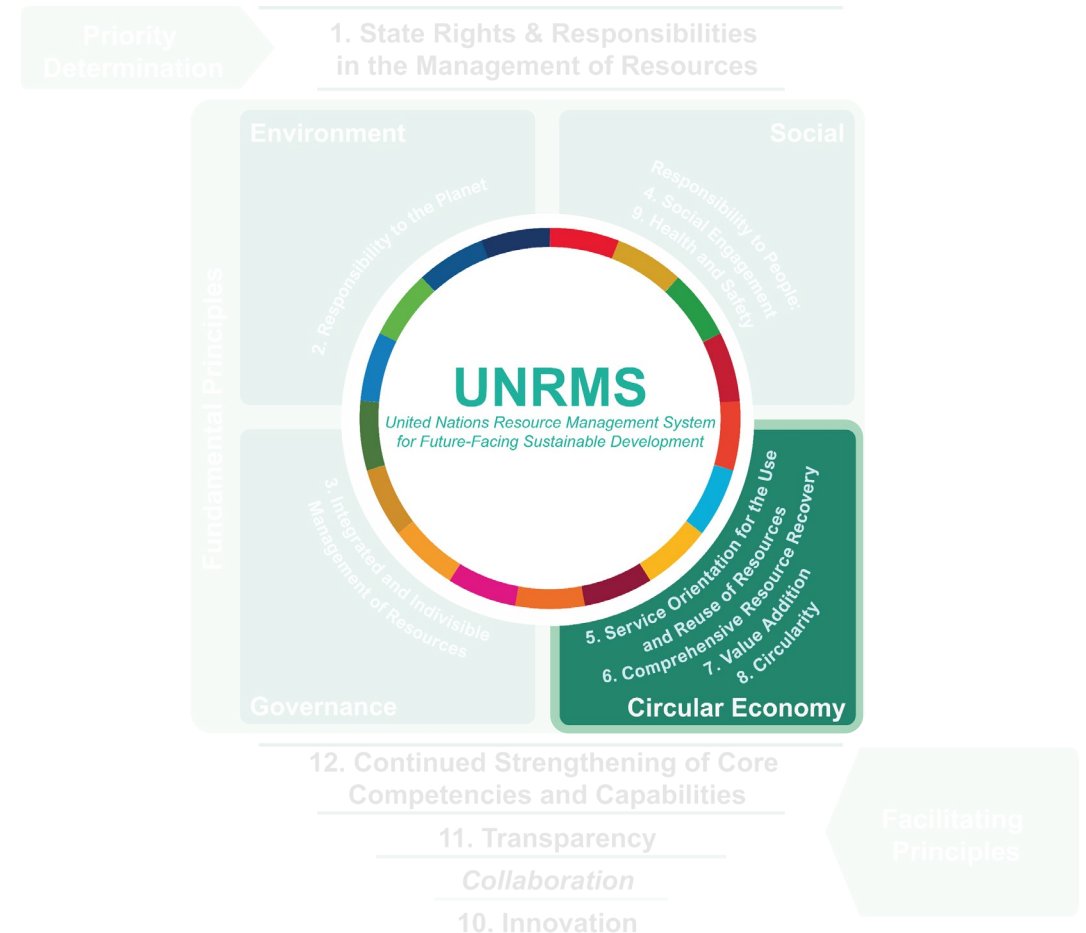
“See if you can spot...” by Elsie esq. is licensed under CC BY 2.0.



Summary

Case Study: UK Technology Metal Circularity

- 1. Resources as a Service is viewed as interesting concept** – however, primary producers, especially smaller scale operators and/or exploration companies find it hard to see the link to their operations.
- 2. Novel and innovative technologies can unlock opportunities for comprehensive resource recovery** – there is progress in this area – requires a boarder range of stakeholders to enable and scale-up responsibly.
- 3. Value addition is seen as a crucial aspect of critical minerals value chains** – much of the value add is in the downstream which is often outside of the regional area – requires a more national/global study to identify opportunities.
 - Feasibility studies on value addition have been commissioned building on ideas from the Cornwall UNRMS Case Study.
- 4. Waste definitions can cause challenges for circularity ambitions**



UNRMS adapted for Cornwall Technology Metals Case Study



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THE VIEWS EXPRESSED ARE THOSE OF EVA MARQUIS AND DO NOT NECESSARILY REFLECT THE VIEWS OF THE UNITED NATIONS.

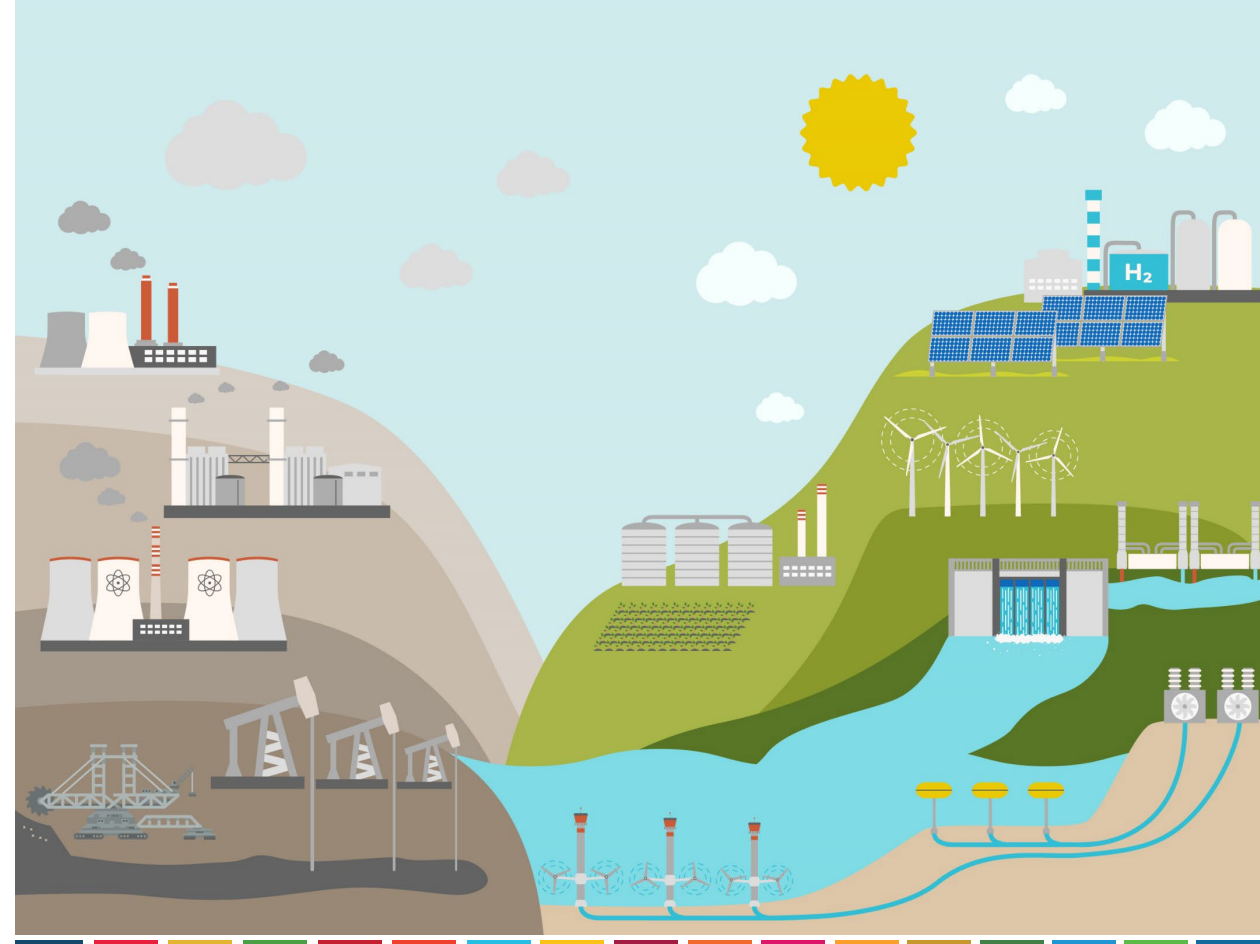
Thank you!

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