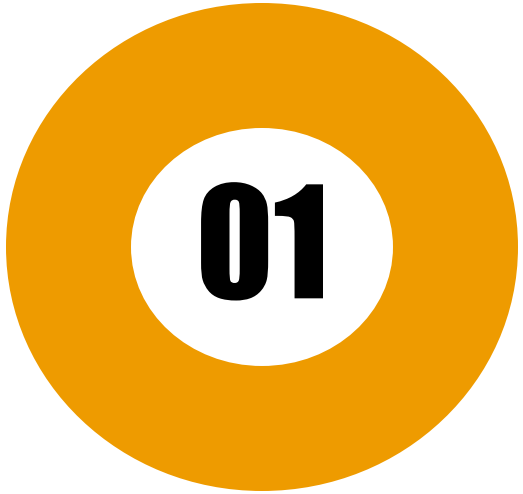
ISCA-LawSoc's Sustainability Apex Programme (SAP)

Masterclass 12: Circular Economy and Waste Management

January 2027

Agenda for today's masterclass…



Introduction to Circular Economy

Provide an overview of the core concepts, the environmental and economic rationale behind circularity, and why it matters

1.1 Key Concepts of the Circular Economy

1.2 Business Drivers & Regional Context

Global Trends in Waste Management and Circularity

Examine emerging global practices and regulatory movements that shape how organisations manage waste and close resource loops.

2.1 Circular Economy Trends

2.2 Evolving Waste Management Regulations

Practical Approaches & Opportunities to Advance Circularity

Explore actionable strategies for improving waste management and accelerating the shift toward circular operations.

3.1 Effective Waste Management Approach

3.2 Success Stories: Practical Examples of Circularity in Action

Understanding of a Circular Economy based on the concept of the Butterfly model

A Circular Economy is an economic system of closed loops in which raw materials, components and products keep their value for as long as possible, where renewable energy sources are used and with systems thinking at the core.

(Ellen McArthur Foundation)

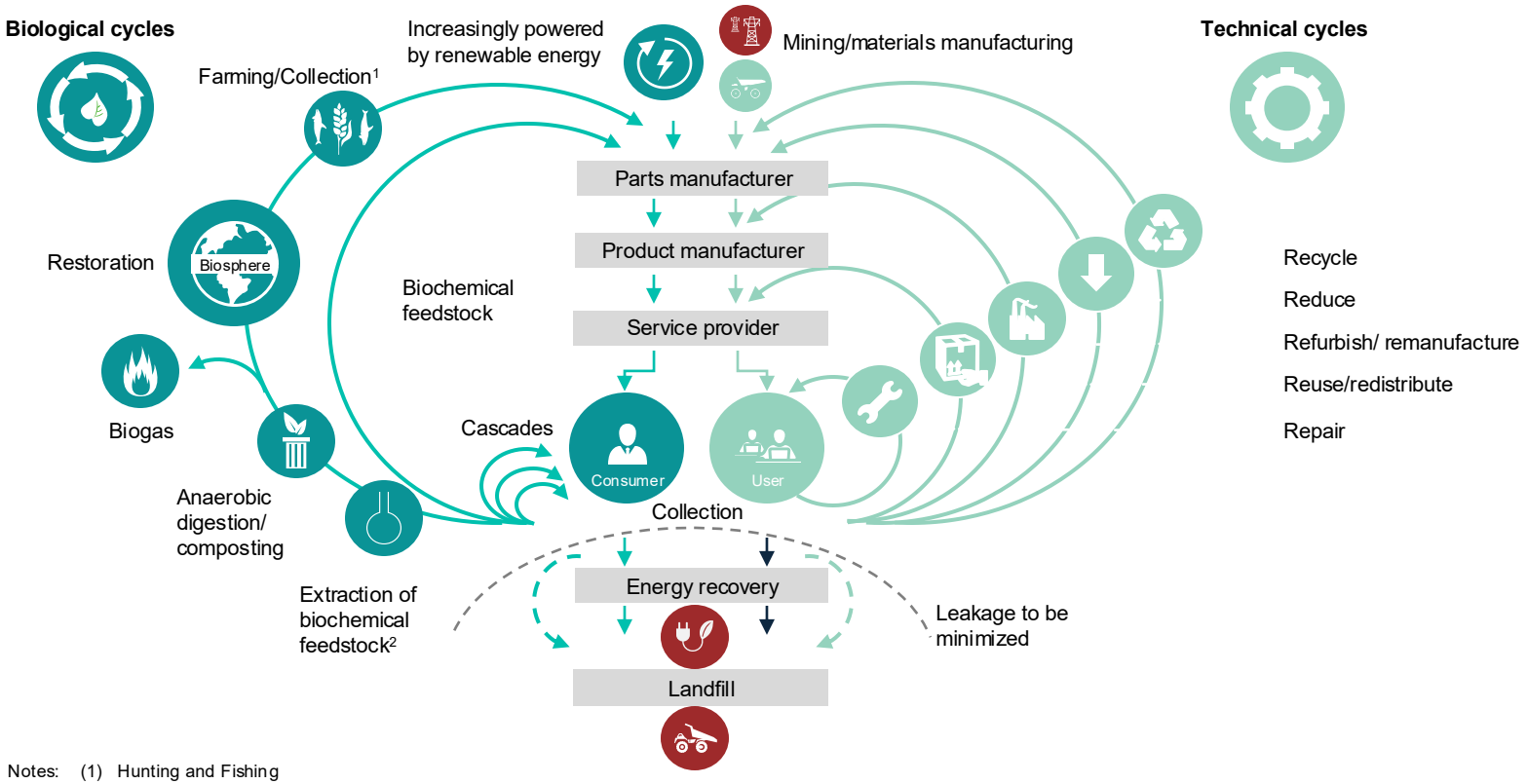
Eliminate Waste and pollution

Circulate products and materials

Regenerate natural systems

Currently, our world is only circular **7.2%**

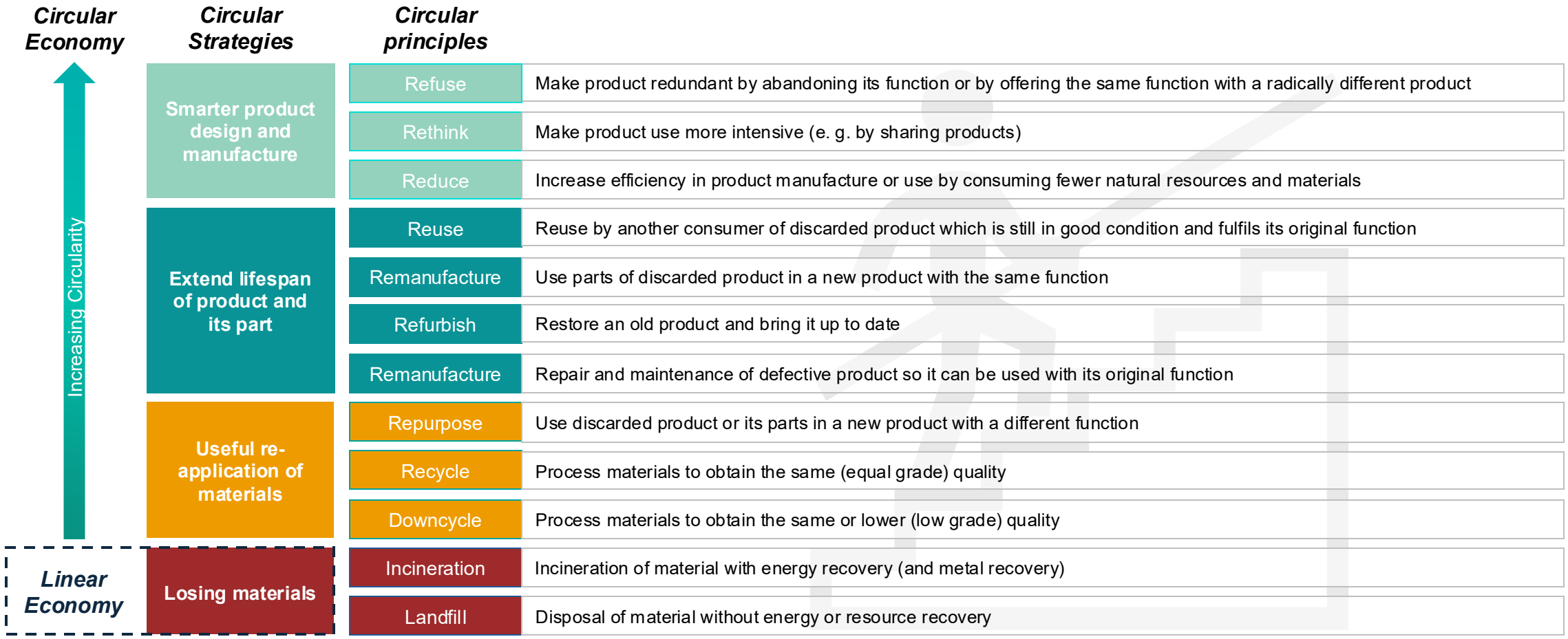
(Circularity Gap Report 2023 – The Circle Economy)



Notes: (1) Hunting and Fishing

(2) Can take both post-harvest and post-consumer waste as an input

Products and components should be designed with circularity in mind – every step upwards on the R-Principles is valuable



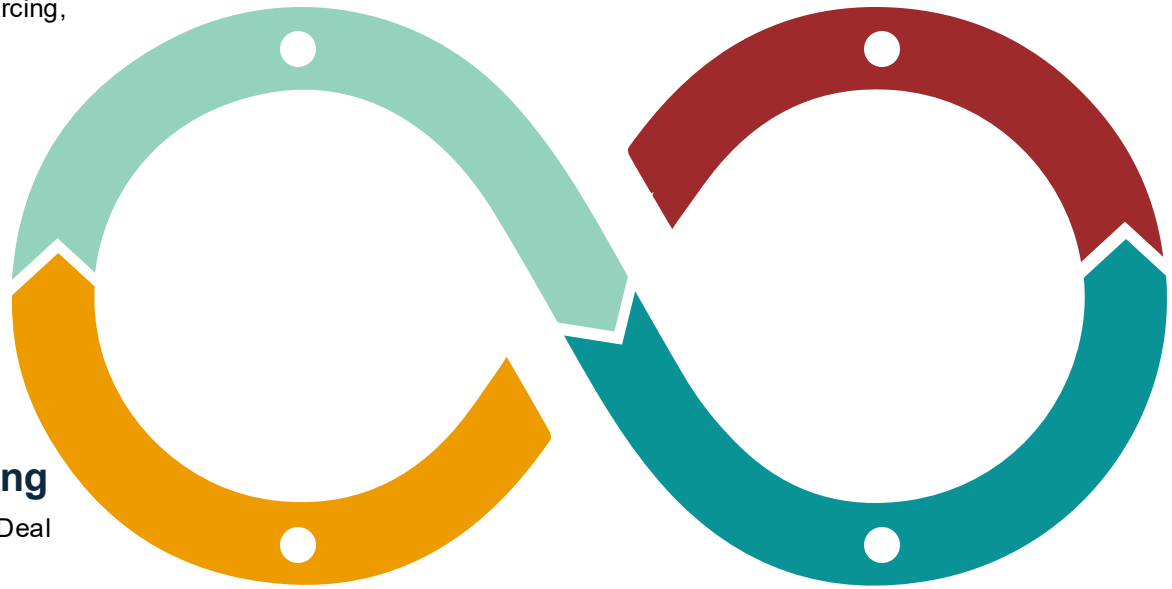
Circular Economy is the answer to the rising challenges

Essential for decarbonization

45% GHG come from materials sourcing, manufacturing, use and disposal. Circularity reduces drastically GHG emissions vs. linear models.

Regulations are pushing

Focused directives from EU Green Deal & Circular Economy Action Plan, Sustainable products and EPR Schemes, Repairability initiatives around the globe and reporting requirements under the CSRD



Mitigate supply risks

Companies are facing resource scarcity & high price volatility; with increased focus on baselining and measuring circular performance

Electronic components, rare earth and special metals are facing high supply chain disruptions.

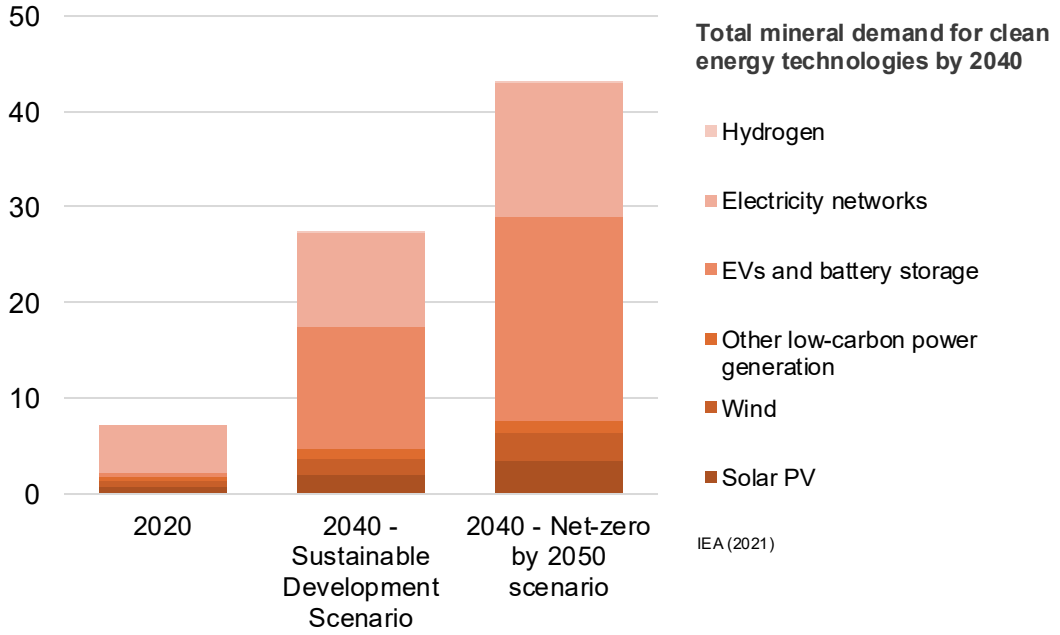
Creates economic value

New markets & trends in the sector provide economic opportunities

Conscious purchase & emerging revenue models such as Product as a Service vs. ownership trigger product and business models innovation.

Circular economy helps strenghten resilience

Demand for critical materials is expected to soar up to 6 times in the coming decades, for example for clean energy technologies alone

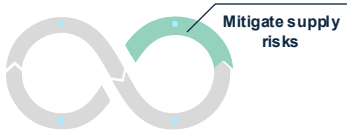


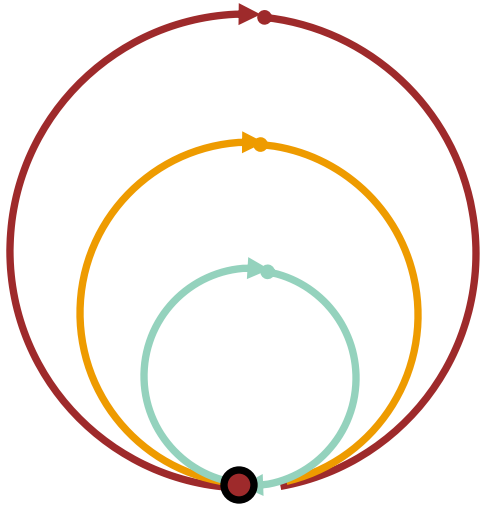
IEA (2021)

While known reserves for the materials exist, accessibility and use of the materials can be challenging due to:

Geopolitical risk	**Environmental implications**	**Supply chain risk**
ESG regulation	**Social risk**	**Price volatility**

Embedding circularity is becoming 'essential' to build supply resilience of critical resources





By applying circular economy strategies, companies can

- ✓ Build **supply resilience** with **reduced dependency** on primary materials and few supplier countries
- ✓ Keeping the **supply and demand balance** in a more **resilient and sustainable** manner

Global Landscape of Waste Management Regulations

Parameter	Singapore	Japan	Finland	Norway
System Structure	**Government-led**, primarily managed by the National Environment Agency (NEA). The framework is still maturing.	**Municipal-driven**. National laws set the framework, but municipalities manage collection and sorting.	**EU aligned and centralised.** National producer responsibility organisations manage DRS.	**EU aligned and centralised.** DRS operated by a national non-profit.
Regulation				
Extended Producer Responsibility (EPR) Framework	Resource Sustainability Act (2019); MPR since 2020; Beverage Container Return Scheme starting July 2026	Containers & Packaging Recycling Act (1995); Plastic Resource Circulation Act (2022)	Full EPR for all packaging (2024); Packaging Act under Waste Management Act	Mandatory EPR for all packaging; Waste Regulations Chapter 7
EPR Duty	Retailers with annual turnover of > S$10 million and import or uses specified packaging for regulated goods	Retail, wholesale, service sectors above thresholds (annual sales >70 million JPY, >5 employees)	Retailers/brand owners marketing private-label products	Retailers and wholesalers introducing packaging into the market
Waste Categories				
Plastic	Reporting & 3R plans; no recycling target yet; BCRS aims for 80% return rate for plastic bottles	Covered under C&PRL; 25% single-use reduction (2030), 60% reuse/recycle of containers & packaging (2030)	Covered under EPR; included in DRS (55% by 2030)	
Glass	Not yet included in Deposit Return Scheme (DRS)	Covered under C&PRL; colour-sorted municipal collection widely implemented.	Covered under EPR; included in DRS (75% by 2030)	
Metal Cans	Included in DRS (from 2025); BCRS aims for 80% return rate for metal cans	Covered under C&PRL; separate collection by ~97% of municipalities; aluminium can recycling rate 97.5% (2023)	Covered under EPR; included in DRS (Aluminium: 60% by 2030)	
Tetra Pak / Beverage Cartons	Not explicitly regulated yet	Included under C&PRL (as paper packaging)	Included under EPR obligations	

Source: Public resources

Waste Management Regulations in Singapore

Singapore's waste management system is government-led and centrally regulated by the **National Environment Agency (NEA)** under the **Resource Sustainability Act (RSA).** Retailers and producers above specified thresholds (e.g., turnover or packaging volume) are required to comply with reporting , 3R plans, and, where applicable, deposit return and take-back obligations

Mandatory Packaging Reporting by NEA

- Requires companies with over S$10 million in annual turnover to **report packaging data and submit 3R** (Reduce, Reuse, Recycle) plans annually to NEA.
- Plans must include initiatives, KPIs, and targets, with progress tracked over time.
- Reporting for 2024 data must be submitted between 1 Jan and 31 Mar 2025.

Beverage Container Return Scheme (BCRS)

- Nationwide **mandatory initiative** launching on 1 April 2026 to **reduce packaging waste and boost recycling rates**.
- **10-cent refundable deposit** will be applied to all pre-packaged beverages in plastic and metal containers (150ml–3L).
- Consumers can reclaim the deposit by returning empty containers at designated return points, including reverse vending machines.

Source: *Mandatory Packaging Reporting*, *Beverage Container Return Scheme*