

# Tracking Progress Towards a Circular Economy

Australia's Circular Economy Metrics and Indicators

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**Sustainable  
Communities  
and Waste**

**National Environmental Science Program**





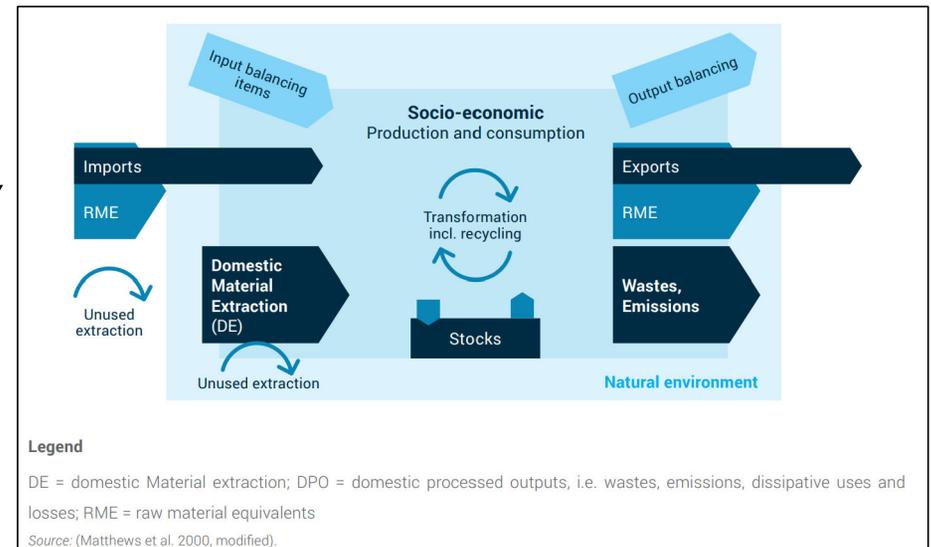
# Project overview

**Overview:** Establish material flow accounts (MFAs) to measure progress towards a circular economy

**Why?** To inform *Australia's Circular Economy Framework, Measuring What Matters* and further policy development

**What?** MFAs at national, state and territory levels, linked to environmental impacts. Modelled scenarios to 2025

**Who benefits?** Federal, state and local policymakers enacting policy on circularity and sustainable resource management



# Informing the Policy Process



- **Problem Framing:** MFAs highlight that current linear usage of materials incompatible with circularity and sustainability
- **Policy Framing:** Metrics such as material footprints and productivity inform policy targets
- **Policy Implementation:** Economy-wide MFAs reveal intervention and pressure points for policy instruments
- **Monitoring and Evaluation:** Indicators track annual progression towards targets



# Pathway to impact



- **Activities:** Federal, Victorian and South Australian Government collaborations, 2025 Singapore ISIE Conference
- **Outputs:**
  - Publications in *Journal of Industrial Ecology and Resources, Conservation and Recycling*
  - Reports: *Australian material flow analysis to progress to a circular economy and Measuring Victoria's Circularity Report*. Upcoming: *Circularity Metrics for Australia's States and Territories*
- **Outcomes:** Influence on federal, state and local circular economy policy. Data to support State of the Environment Report. International research community awareness
- **Pathway to impact:** Shift in government policies at all scales to further encourage circularity and sustainable consumption and production



## Impact example



**Problem:** Lack of data and metrics on transition to a circular economy at federal, state and territory levels

**How research is helping:** Building a) national MFAs and b) state and territory accounts from 2010-24, covering extraction, trade, circularity, footprints, productivity, waste and emissions for all resources

**Tangible outcome achieved :** Complete dataset, publications, and results shared directly with Federal, State and Territory governments





## What's next

1. Material flows and circularity online data portal, pending on additional funding
2. Assessment linking material flows to associated environmental impacts, policy domains and planetary boundaries
3. Outlook of material flows, waste and circularity to 2050 for a) baseline and b) ambitious scenarios



# Impact of EMCR on project



- Led development of state and territory material flow accounts
- Particularly domestic extraction and trade
- Shared research: (1) 2025 Singapore ISIE conference and (2) UK (Cambridge, UCL, etc.)
- Dr Quoc Anh Nguyen: used GLORIA input-output tables to calculate material footprints



## Impact example



**Problem** – state and territory accounts face additional data challenges compared to national

**How your specific research is helping** – finding novel solutions, leveraging existing datasets and triangulating to complete accounts

**Tangible outcome achieved** – completed subnational material flow accounts, highlighted areas of focus for future ABS data collection



# EMCR career impact



- Been able to work with world-leading researchers at CSIRO
- Able to translate my research into impact on policy and society
- Opportunities to present research domestically and internationally, building a research profile
- Intend to take the research to local and regional scales, build capability to align MFAs with industrial symbiosis for application in regional circular economy hubs

