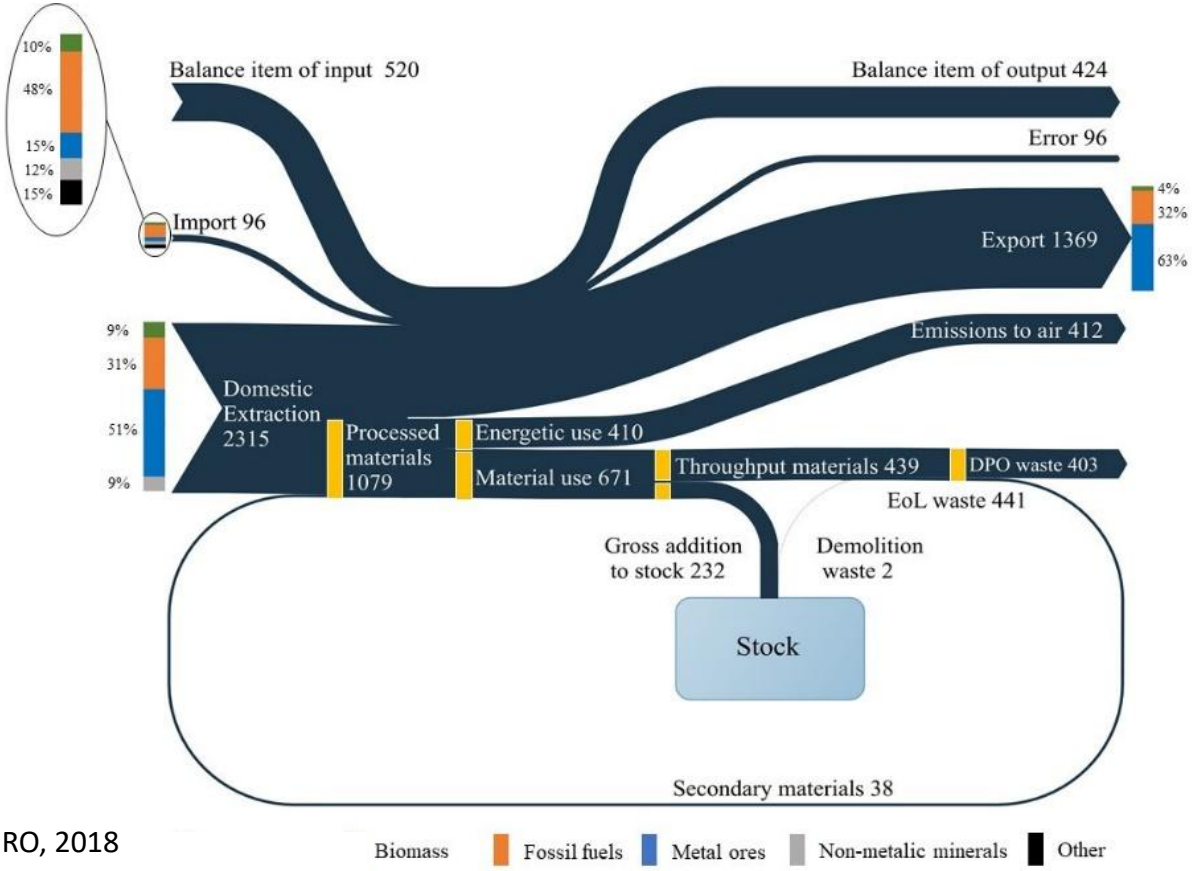
Australia's National Science Agency

Australia's effort to transition to a net-zero circular economy: opportunities and challenges for cities and regions

Seventh Annual Session of the Global Forum on Human Settlements and Sustainable Cities

Heinz Schandl | 16 December 2022

Australian Material Flow Balance 2018



8.0% Recycling Rate

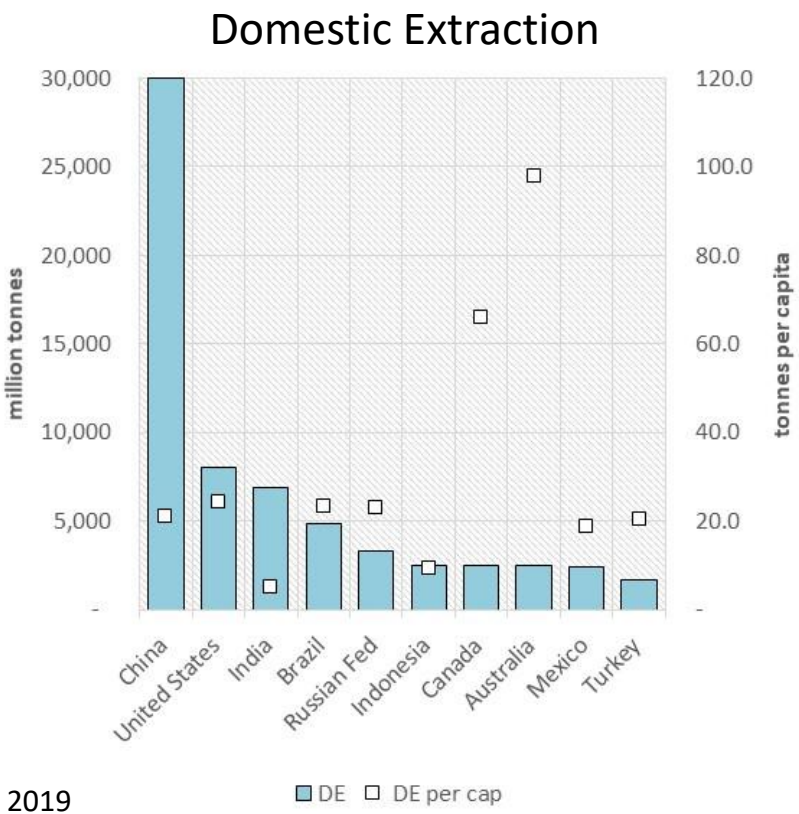
3.5% Circularity Rate

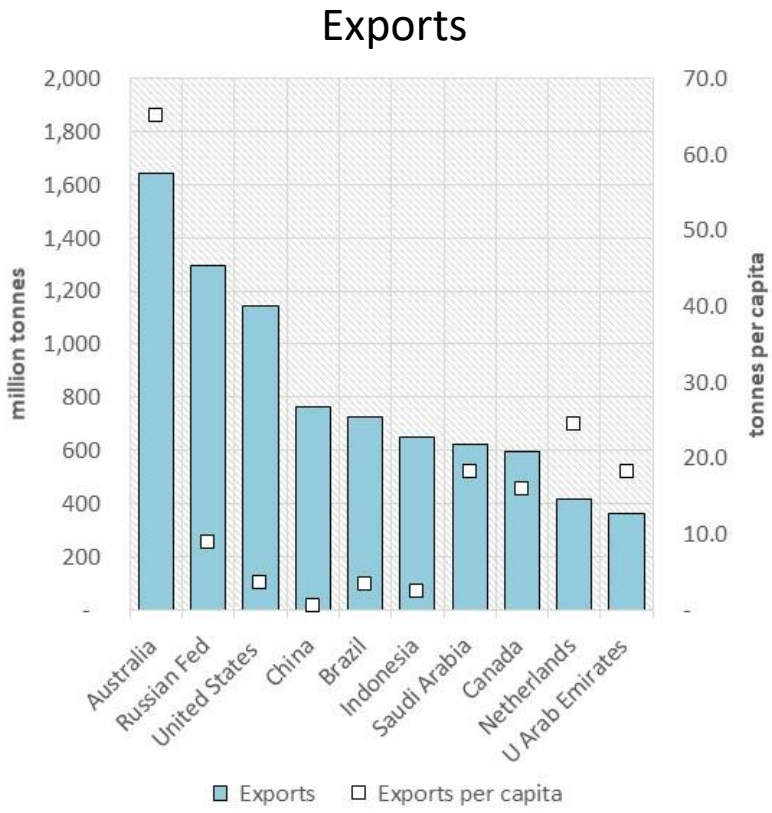
20% Circularity Potential

CSIRO, 2018

Unit: million tonnes

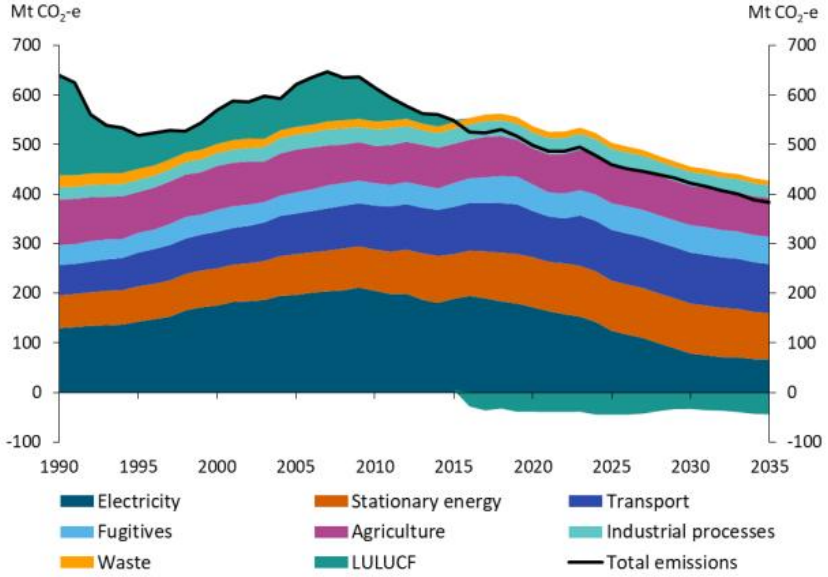
Top-10 primary material extractors and exporters

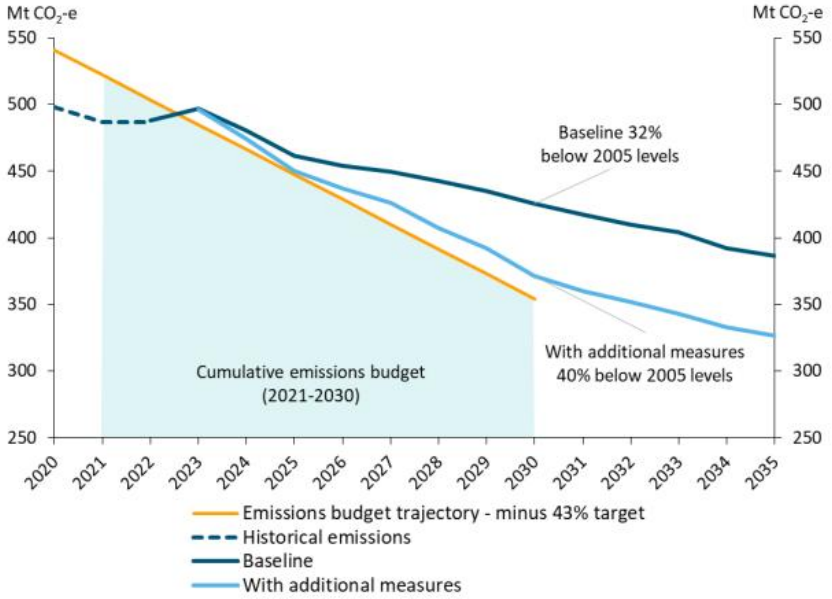




UNEP, 2019

Australia's Emission Projections





Department of Climate Change, Energy, the Environment and Water, 2022

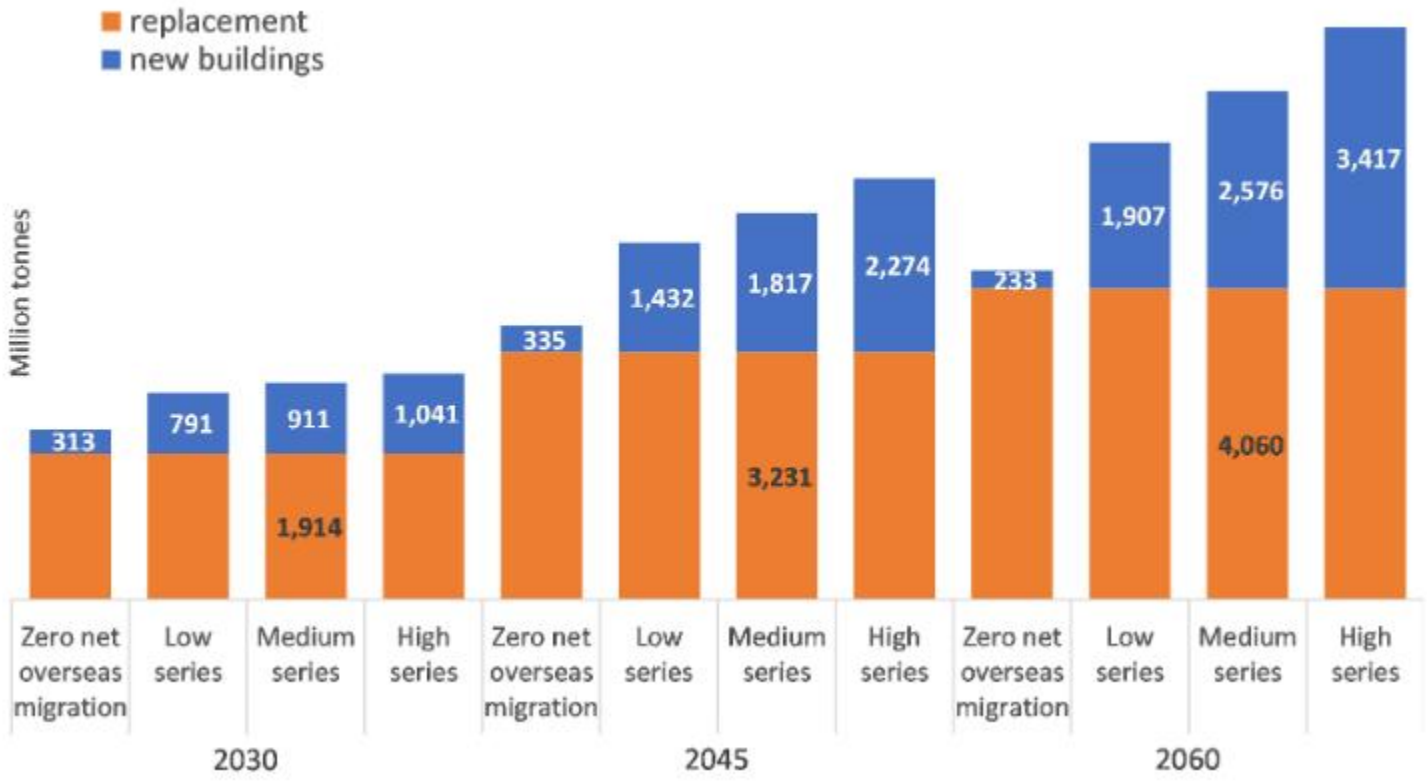
National, State and Regional CE Policy Initiatives

- National Waste Policy (2018) and National Waste Policy Action Plan (2019) with seven national waste reduction targets enabled through circular economy
- Large investment in recycling infrastructure – Recycling Modernisation Fund
- Recycling and Clean Energy one of six priorities of the Modern Manufacturing Initiative (2021)
- Circular Economy initiatives in Victoria, New South Wales and South Australia
- City deals for nine urban agglomerations aligning three levels of government
- New South Wales Special Activation Precincts - advanced manufacturing, renewable energy and resource recovery

A national effort to transition to a low carbon circular economy

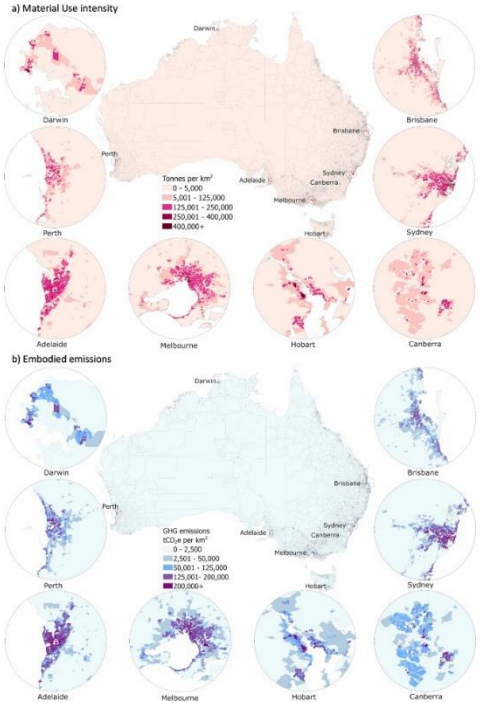
Department of Climate Change, Energy, the Environment and Water, 2022

The role of cities for net-zero and circular

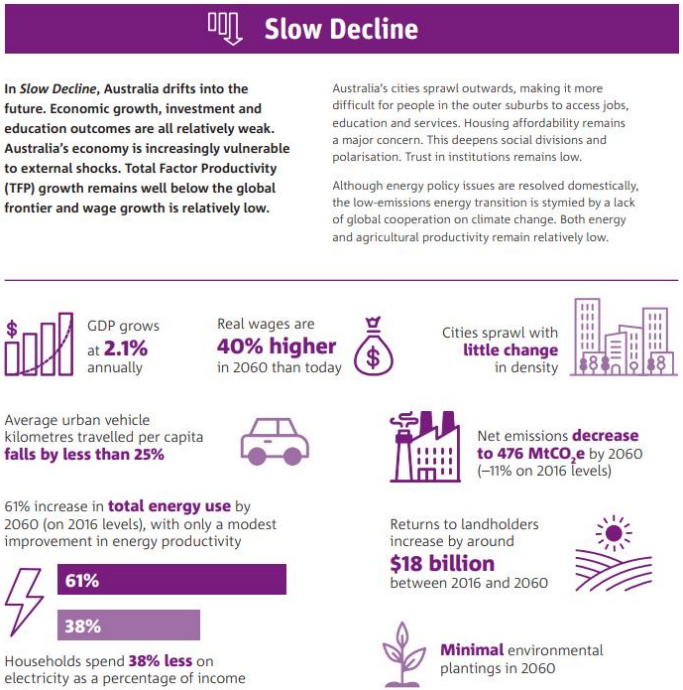


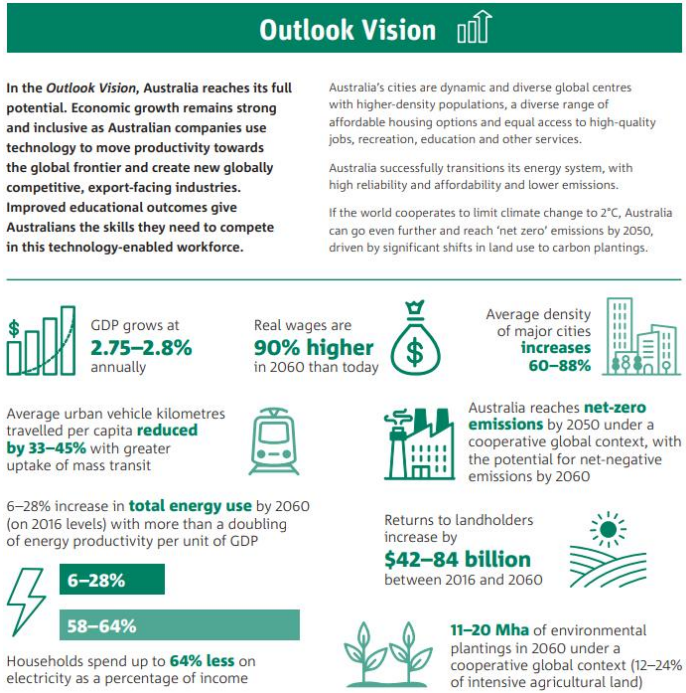
Cities material and emission intensity

- Metrics to measure the material and carbon intensity of the built environment
- Spatially explicit models of urban metabolism
- Identifying opportunities for low carbon and circular solutions in housing and mobility



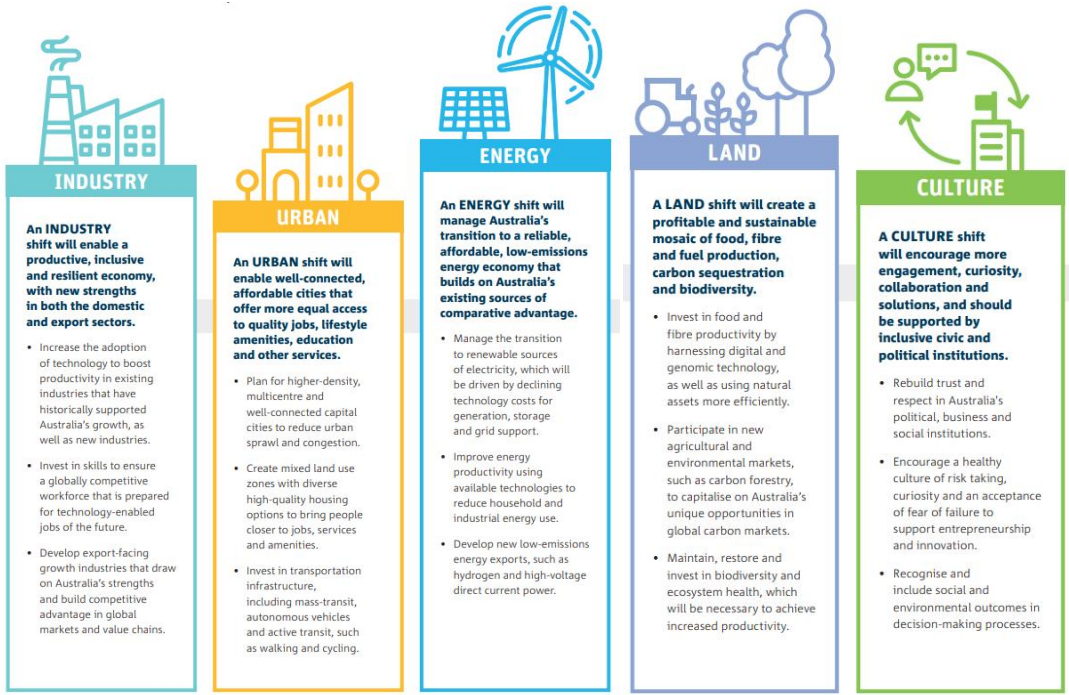
Australia National Outlook 2019





CSIRO, 2019

Five Key Shifts



CSIRO, 2019

Thank you

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