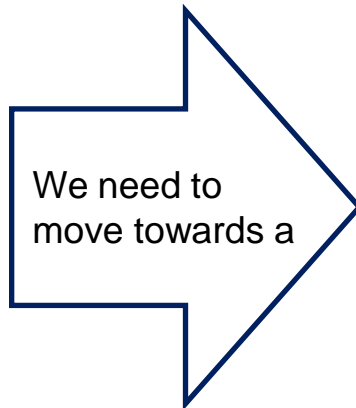
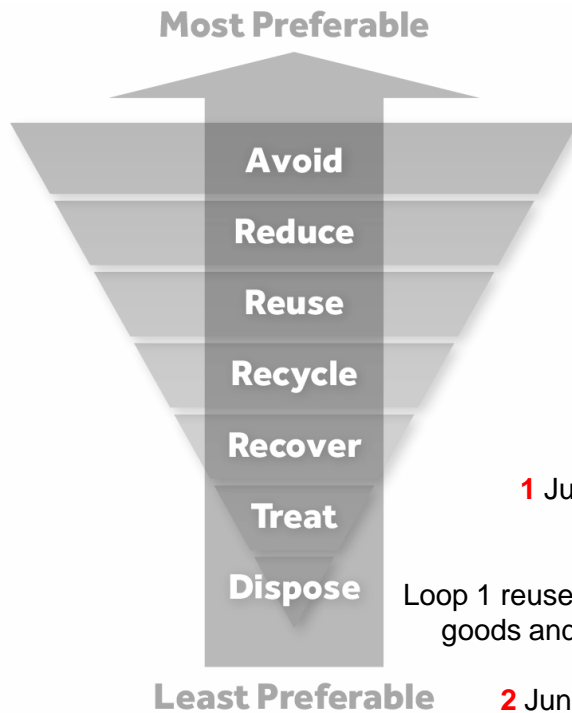


The Circular Economy: A resource recovery industry perspective

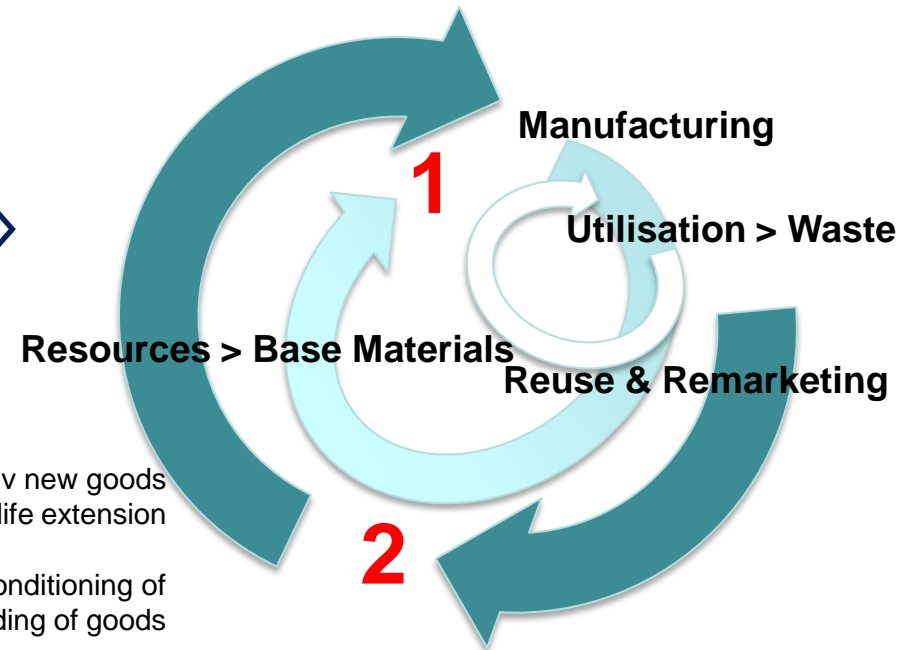
Towards a sustainable future

Barrier 1: The waste hierarchy is linear...

Linear model



Circular model



1 Junction 1 product-life extension v new goods
Cost advantage product-life extension

Loop 1 reuse of goods, repair of goods, reconditioning of goods and technological/ Fashion upgrading of goods

2 Junction 2 virgin materials v recycling materials
Cost advantage virgin materials

Loop 2 recycling of materials

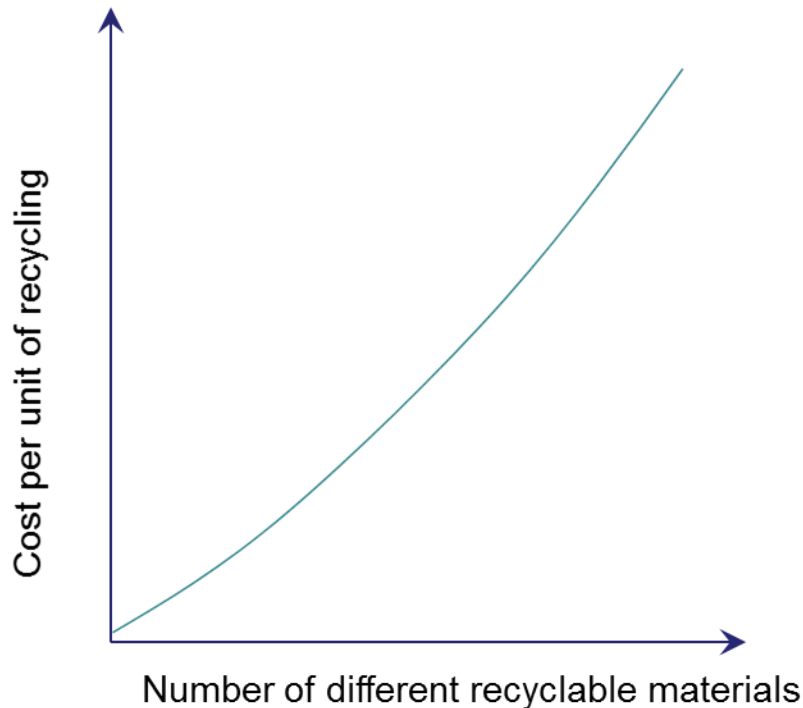
Barrier 2: LCA as a tool to make decisions...



**Hopeless
boundary issues**

**Misusing LCA
results= low cost
analysis**

Barrier 3: Material complexity & technical feasibility



SUSTAINABLE DESIGN PRINCIPLE



- Low-impact materials
- Energy efficiency
- Emotionally durable design
- Sustainable design standards
- Design for reuse and recycling
- Bio mimicry
- Service substitution
- Renewability

We need a national consistent material manufacturing and design standards!

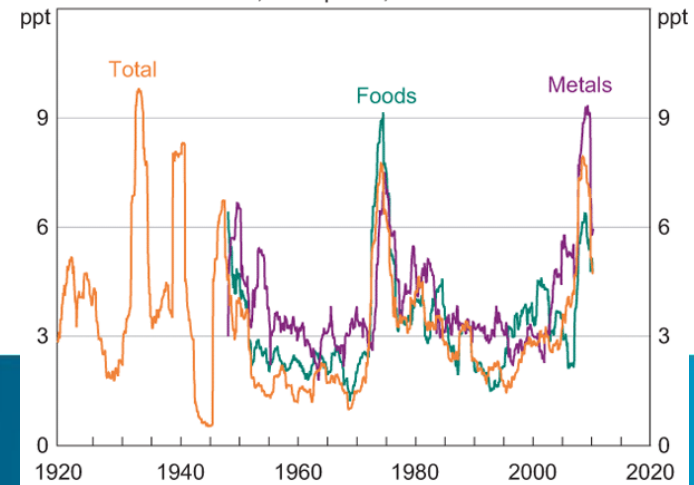
Barrier 4: Government policies

- Governments do not focus on sector profitability, sustainability and industry development.
- Subsidies to the mining industry
- Waste levy revenue from bad design= unavoidable residuals not being returned to the industry= a tax on CE and a Tax on recycling
- Fail to see circular economy strategies as central to insurance from material price volatility/depletion, resilient and stable economy



Real Commodity Price Volatility*

CRB indices, 2010 prices, relative to US CPI



* Standard deviation of monthly percentage price changes over preceding 2 years

Sources: Global Financial Data; RBA

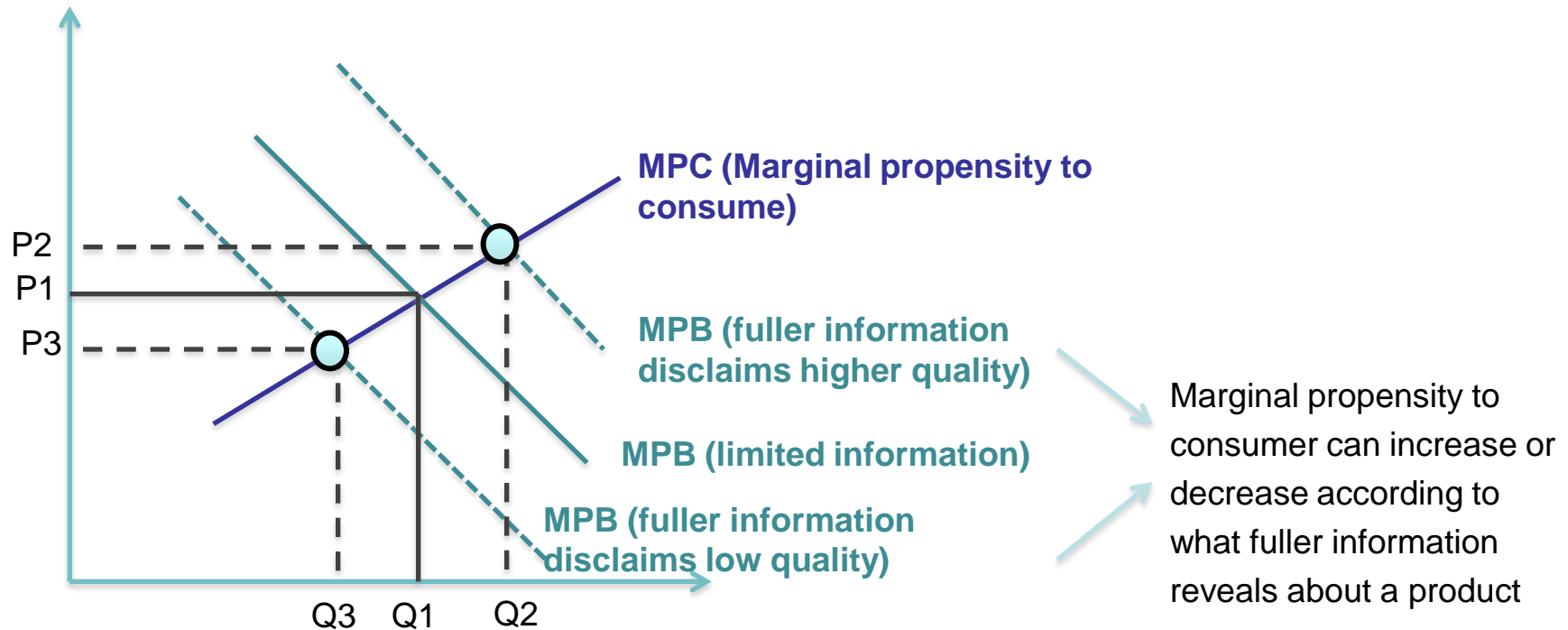
Barrier 6: Transaction and search costs

Reasons:

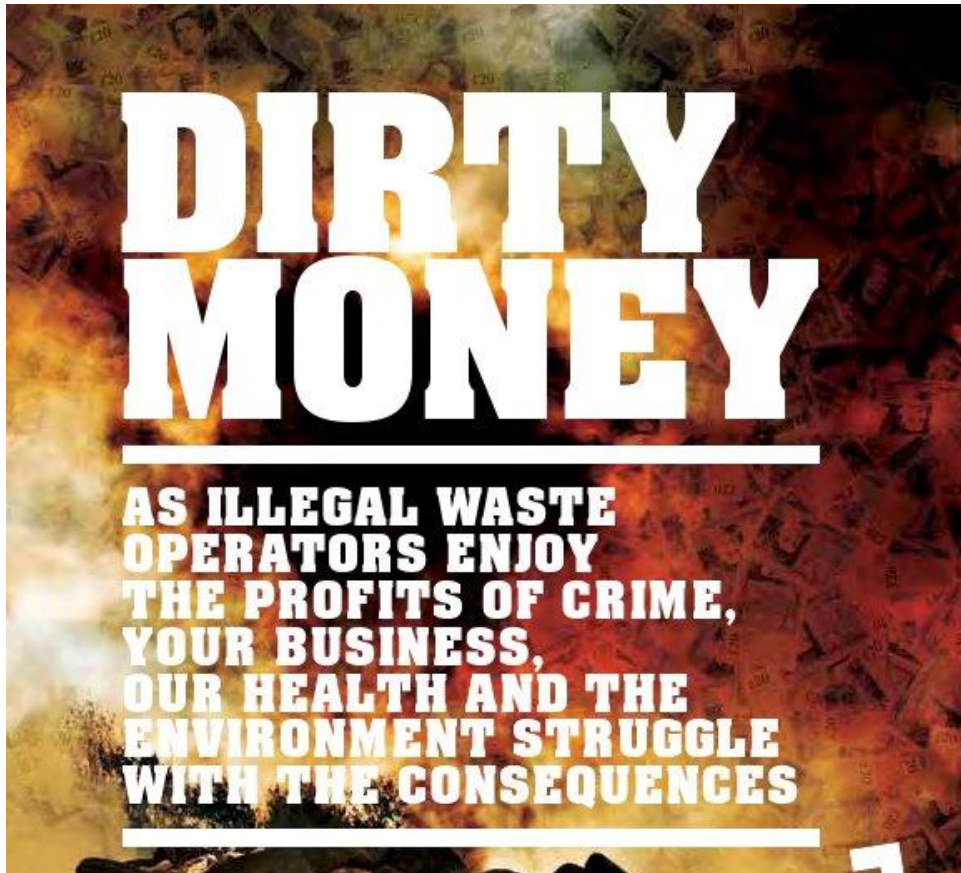
1. Diffuse and irregular nature of waste generation
 2. Heterogeneous nature of secondary materials
 3. Administrative costs due to permit requirements
 4. Negotiation and bargaining given heterogeneity of secondary material
- } Hard to achieve economies of scale



Barrier 7: Information failures related to waste quality



Barrier 8 Waste crime



- Levy avoidance
- Tax avoidance
- Market distortions
- Money laundering/organised crime
- Illegal exports
- Environmental degradation

Over 1 billion
AUD\$ is lost each
year!!

Untapped potential to boost the economy+ a sustainable resource based economy

At a National scale:

The **national economic contribution** of the waste sector is estimated to be \$14.2 billion per year.



A 30% improvement in
Resource Productivity



Increase GDP by up to 3%
and add 2 million jobs