Typology of options for metal recycling: Australia's perspective

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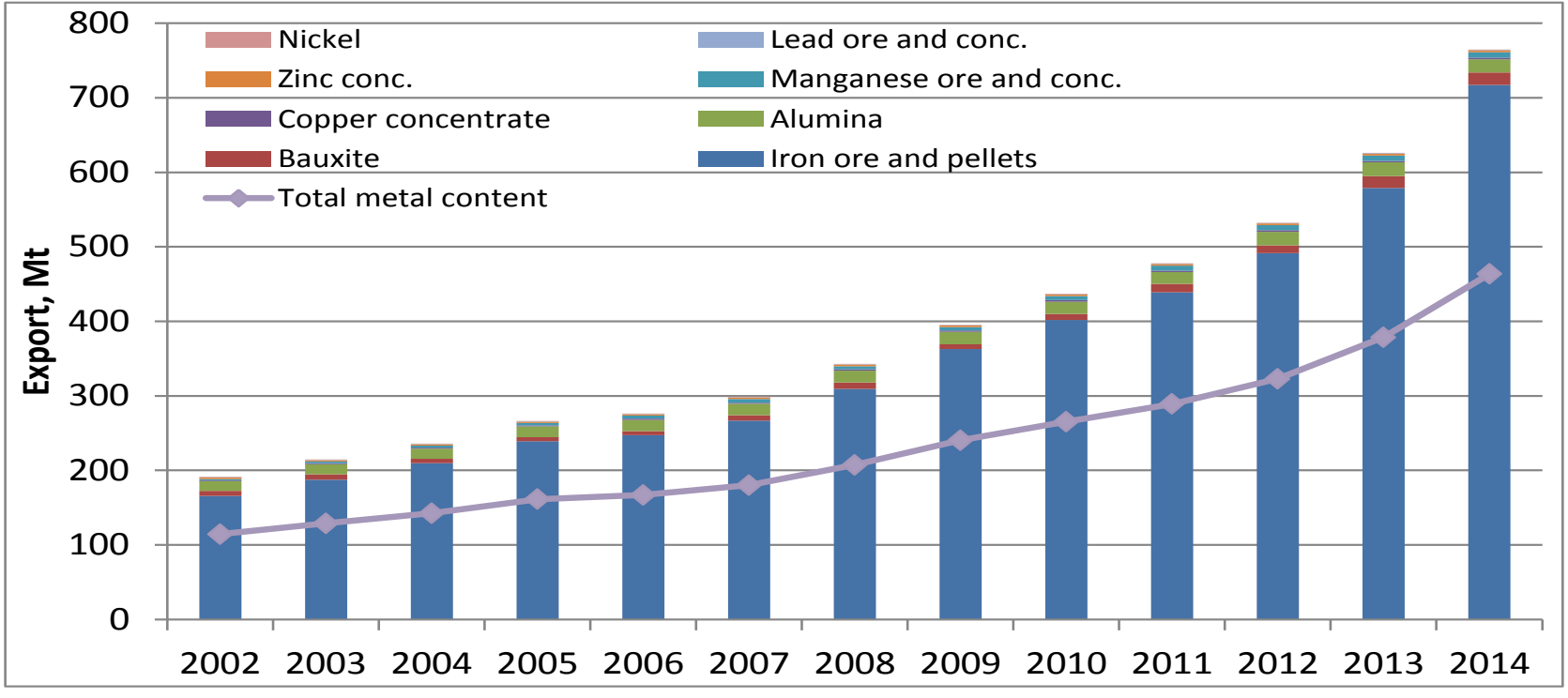
Presentation Overview

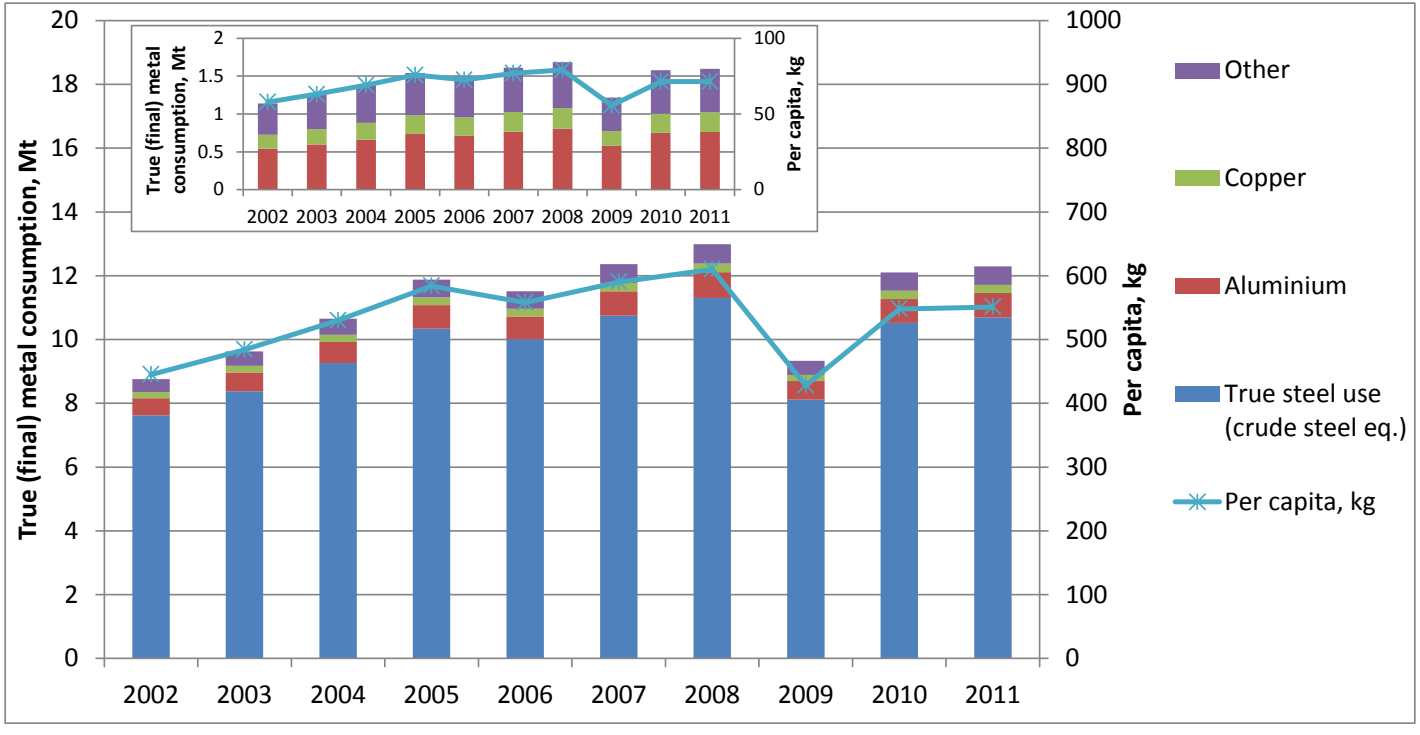
- Metals flows in the Australian economy
- Recycling value chain for end-of-life products
- Typology of options and the recycling/reuse value chain
- Concluding comments

Australian export of metal concentrates



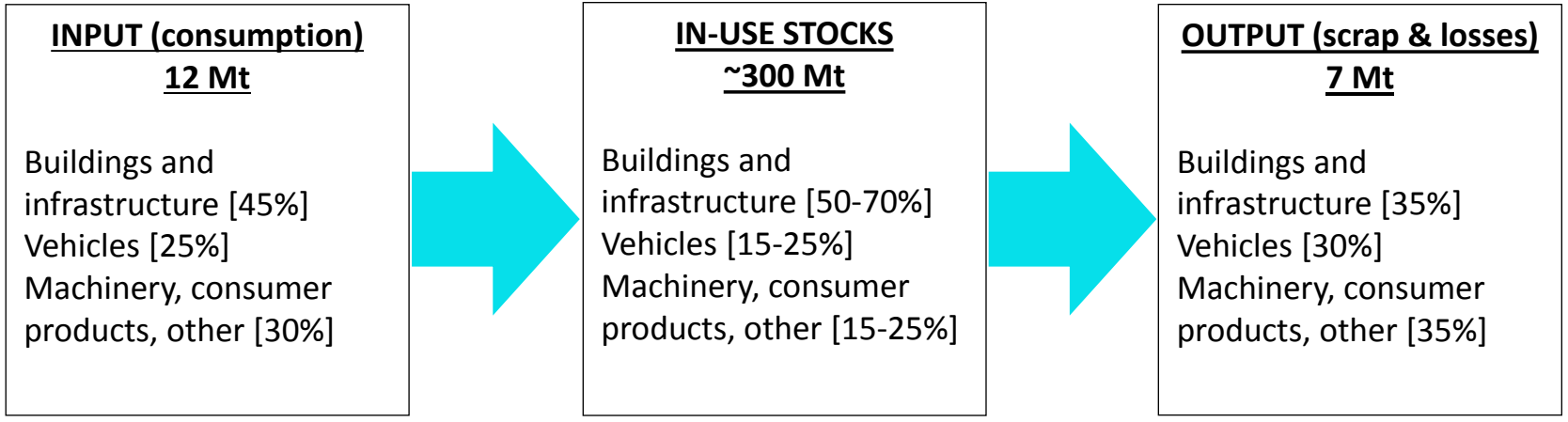
Data source: Bureau of Resources and Energy Economics (BREE, 2014).

Estimation of true (final) metal consumption in Australia



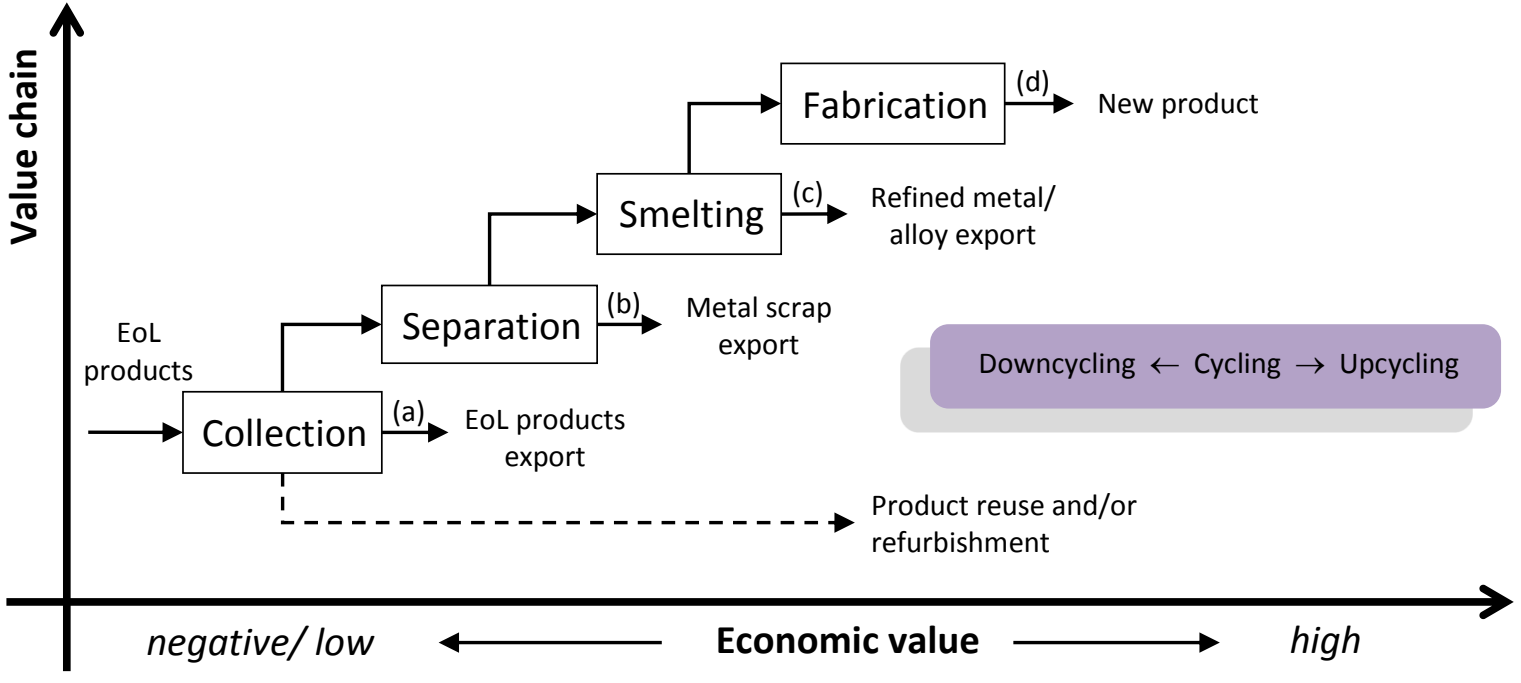
Source: Golev, A. & Corder, G. D. 2015. Modelling metal flows in the Australian economy. Journal of Cleaner Production.

Metal inputs and outputs in the Australian economy



Source: Golev, A. & Corder, G. D. 2014. Global systems for industrial ecology and recycling of metals in Australia: Research report.

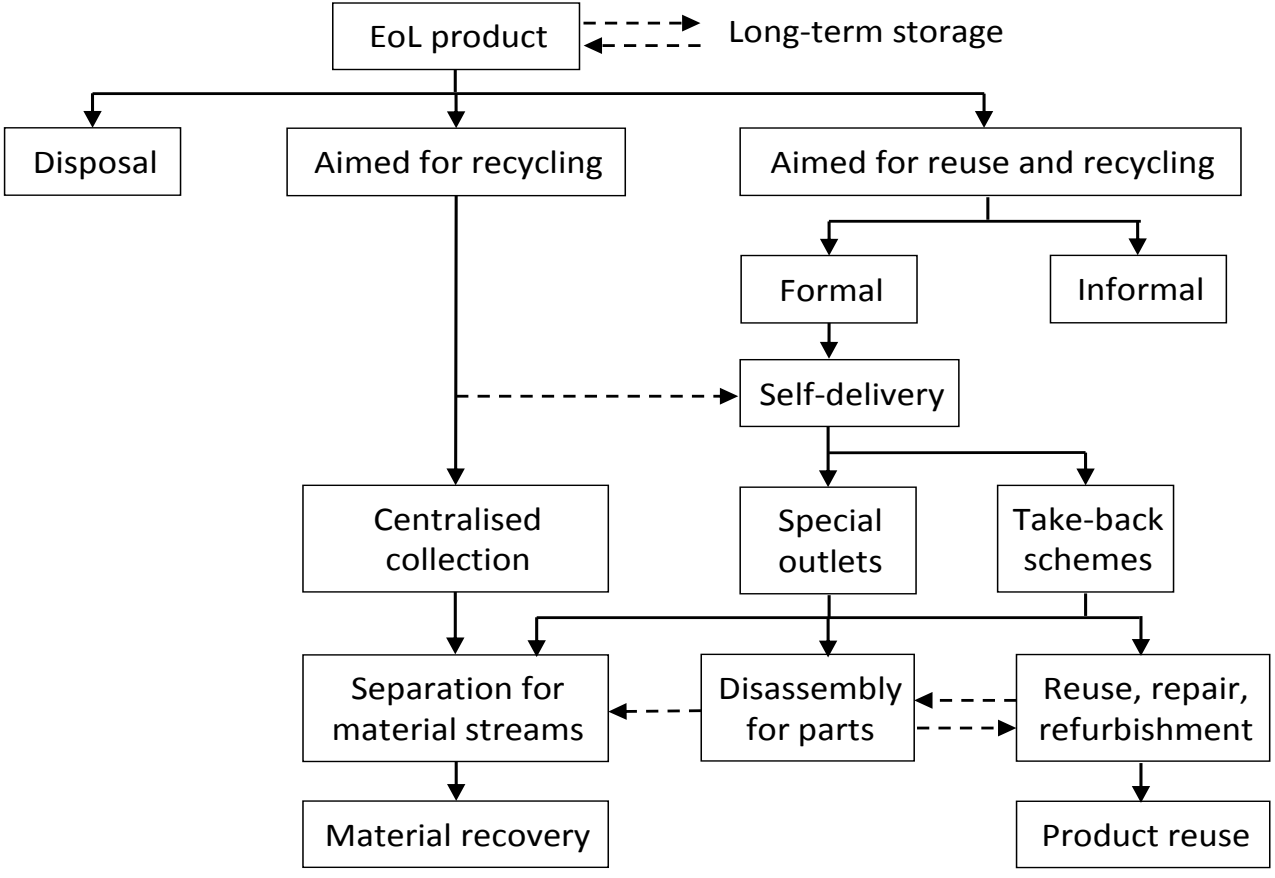
Recycling value chain for end-of-life (EoL) products



Recycling value chain for end-of-life (EoL) products

Criteria	Options	Point(s) of influence
Re-use and recycling route	Reuse, repair, refurbishment; Disassembly for parts/ material streams; Bulk recycling	Product design, recycling technology
Recovery approach	Product centric; Material centric	Product design, recycling technology
Reuse channels	Formal/ regulated; Informal	Regulation, business model, public education
Regulatory regime for recycling	Voluntary; Co-regulation; Regulation	Regulation, stewardship programs
Infrastructure and collection system	Centralised collection; Special outlets for collection; Take-back schemes	Regulation, stewardship programs
Typical consumer behaviour	No interest in reuse and recycling (disposal); Giving away (for reuse); Centralised recycling (e.g. kerbside, self-delivery); Long-term storage of obsolete devices	Public education, regulation
Collection and recycling costs are covered by	Producer; Consumer; Recycling company; Government	Regulation, stewardship programs, public education
Relative recovery value	High; Medium; Low to zero; Negative	Product design, recycling technology

Typology of options and the recycling/reuse value chain



Conclusion Comments

- Progression in maturity towards a circular economy requires significant changes in main drivers for economy.
- Such as environmental regulation; public awareness; business reputation; product design; and supply of secondary resources.
- Other factors include national targets; regulation and policies across value chain; producer responsibility; existing infrastructure/technology; consumer behaviour; information availability; and recycling rates.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