Enabling Design for Environmental Good
ELECTRONIC GOODS SECTOR

Demand for electronics in Australia is continuing to grow and the more that is bought, the more waste that is generated. Despite an estimated 50% of e-waste being diverted from landfill, the volume to landfill is still growing. Market pressure can limit durability and repairability in products and tying electronics to software and digital licences can restrict transparency and access to support, all resulting in higher turnover. In addition, heavy reliance on imported electronics to meet market demand has resulted in low visibility of the design and manufacturing stages. Despite these barriers there are opportunities to influence better design of electronics through measures that can improve visibility of a product's whole life cycle and measures supporting local manufacturers. Australia has strong electronic product design capability with globally competitive in-house design teams embedded in original equipment manufacturers. **Australian designers have an opportunity to lead the global use of advanced manufacturing technologies for ecological benefit.** A predicted shift to designing and manufacturing appliances with advanced technologies, will support Australian companies as skilled labour in advanced manufacturing is readily available onshore.

'Enabling Design for Environmental Good' is a project that uses insights and approaches from design, innovation, and sustainability to propose a suite of actions to improve the uptake of sustainable design for products and associated materials used in Australia.

This is an extract from the original project report, focusing specifically on the electronics sector which was selected as it holds significant potential for impact on the Australian economy.

For this report, the electronic goods sector is considered to encompass products that have a battery or a plug i.e. rely on electric currents or electromagnetic fields to operate, including goods that generate, transfer and measure currents and fields and associated mechanisms, housings, and interfaces.

To encourage more action, key points of potential intervention along the supply chain were identified. 'Cross-cutting levers' developed in this project support stakeholders to apply Eco-Design initiatives at meaningful points in the development of products such as electronics. The four most important levers for improved Eco-Design and circularity in electronics sector are (in numerical/ not priority order):

CROSS CUTTING LEVER 1
A national strategic plan would enable innovation and investment in the electronic goods sectors and achieve better Eco-Design outcomes by coordinating between industry and governments approaches to imports, local design, production, procurement, and circularity.

CROSS CUTTING LEVER 2
Revising and energising product stewardship would safeguard Eco-Design principles, ensuring accountability for material and resource choices in the design phase, both for imports and locally designed stock, and improving guidelines for importing quality electronic goods.

CROSS CUTTING LEVER 3
Reactivating a culture of reuse, repair, and refurbishment of electronic goods would support the uptake of Eco-Designed products and services to support them.

CROSS CUTTING LEVER 8
A procurement program for major procurers of electronic goods would enable them to use their purchasing power to significantly scale up the demand for Eco-Designed electronic products.

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Prepared for the Department of Climate Change, Energy, the Environment and Water

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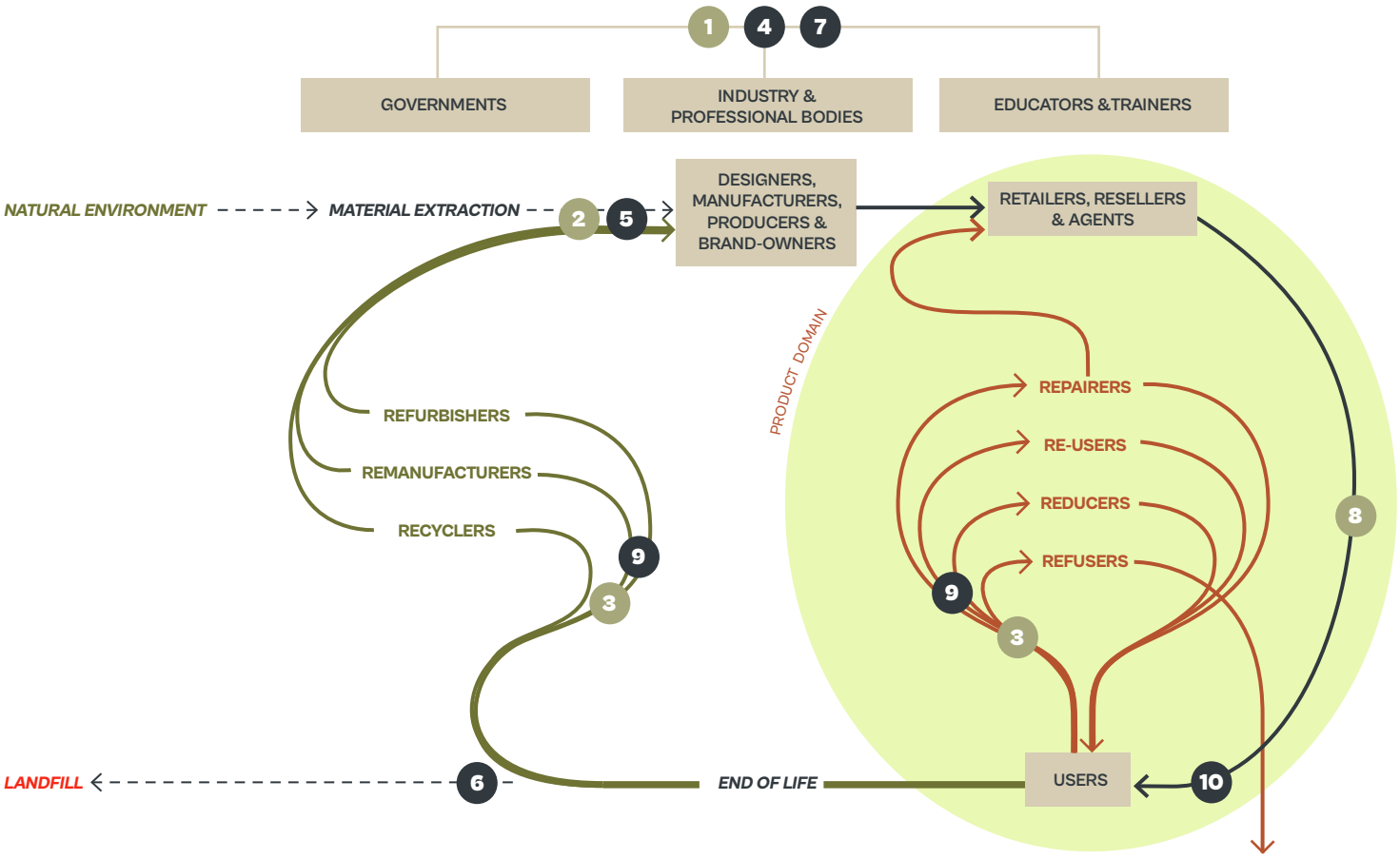
The diagram below is adapted from various circular economy diagrams, such as the Ellen MacArthur circular diagram, which represents the flow of materials from extraction/production to manufacture, use and end of life at landfill in the electronics sector.

It shows the specific points along the supply chain where recommended levers may be applied to improve Eco-Design and circularity. If levers are not formed and activated, material flows directly in a linear way through to landfill at the end. The diagram also shows two distinct circular loops:

Orange shows actions and pathways that keep a product in circulation for as long as possible (reuse, repair, refurbish) and Green shows actions and pathways that keep material in circulation for as long as possible (recycling).

Impacts of levers for Eco-Design within a product supply chain
EXAMPLE: MOBILE PHONE (ELECTRONIC GOODS SECTOR)



1 **Cross-cutting lever 1**
Strategy for Eco-Design for a Circular Australia

2 **Cross-cutting lever 2**
Revise and energise product stewardship and extended producer responsibility

3 **Cross-cutting lever 3**
Activate design for reuse, repair and refurbishment: the Reuse & Repair Reset program

4 **Cross-cutting lever 4**
Raise standards and specifications for products and materials for national alignment with global best practice producer responsibility

5 **Cross-cutting lever 5**
National funding for Eco-Design, circular initiatives and supply chain innovation: The Eco-Design Innovation Fund

6 **Cross-cutting lever 6**
Phase in Accelerating Recyclables from Landfill Fees on priority products

7 **Cross-cutting lever 7**
Financial and regulatory mechanisms addressing negative externalities

8 **Cross-cutting lever 8**
Procurement power and market pull: Buy for Good program

9 **Cross-cutting lever 9**
Professional education program to activate skills and capacity: Learning for Environmental Good and Up-skilling Program

10 **Cross-cutting lever 10**
Accelerate public acceptance and support of design for environmental good

Responsible entities | Current dominant linear flow | Preferred circular flow | Products flow | Secondary Materials flow

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