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Opportunities for Australia in the Circular Economy - the case for electronics / IT products

Submission:
Australian Government Productivity Commission
- Opportunities in the Circular Economy

Submitted by:
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IT products - a priority category for circularity, reducing waste and lifetime emissions reductions

IT products - specifically computers, monitors and other digital devices, are a priority category where circular economy principles are key to driving greater sustainability. IT is also a category, where an entire value chain approach is essential: from product design and manufacturing, through procurement, use and product / material recovery.

Electronic waste - E-waste - is among the fastest growing waste streams in the world. Globally, the amount of e-waste has doubled since 2010 and continues to rise. The circular economy is key for driving greater sustainability in the electronics ecosystem as a way to reduce hazardous waste, reduce product lifetime climate impact and bring about more circular flows of valuable, finite resources (eg gold,copper) already contained in computers and other electronic devices.

- In 2019 Australia generated 511,000 tonnes of e-waste. That means the average Australian produced 20 kg of e-waste, compared with the global average of 7 kg. By 2030 the national total is projected to rise by nearly 30%, to 657,000 tonnes.We only recover a third of the total value of the materials in the e-waste we generate. This means in 2019 alone, Australians sent $430 million worth of materials to landfill along with their e-waste.

Excerpt from DCCEEW - "E-Stewardship in Australia"

This submission identifies three key aspects that are essential for Australia to take a more circular approach to IT hardware:

1. IT product design as an enabler of circularity
2. Enacting circularity is key in procurement, use and policy
3. Engagement of end users in more circular flows, product management and business models.

1. IT product design as an enabler of circularity

IT products have for many years been designed, manufactured, used and disposed of in a linear way. First use in corporate and government settings has been on average 2-4 years, while devices are able to deliver high level performance for several more years. Becoming more circular starts with product design for longer life, reuse, safer material content and circular material flows.

With around 80-90% of lifetime emissions embedded in the manufacturing phase (scope 3), longer product lifetimes is the preferred way to reduce lifetime emissions, by preventing excess raw materials extraction and manufacuring, thereby “slowing the circularity loops”.

As a sustainability cerification for IT, TCO Certified includes criteria for product design of computers, monitors and several other categories to enable longer use, secondary use and material recovery. These criteria are used by most major IT brands and manufacturers in direct response to institutional purchaser demand for more sustainable electronics.

Circular design criteria in TCO Certified cover aspects essential to enabling longer first life, increased reuse and circular product / material flows:

- Product durability
- Easy battery / component removal and replacement
- Secure data removal
- Extended product support - minimum 5 year warranty, free security and functionality software updates and support
- Recycled packaging materials
- Use of safer, benchmarked substances - flame retardants, cleaners, plasticizers
- Repairability index
- Unique product identifier for each certified product

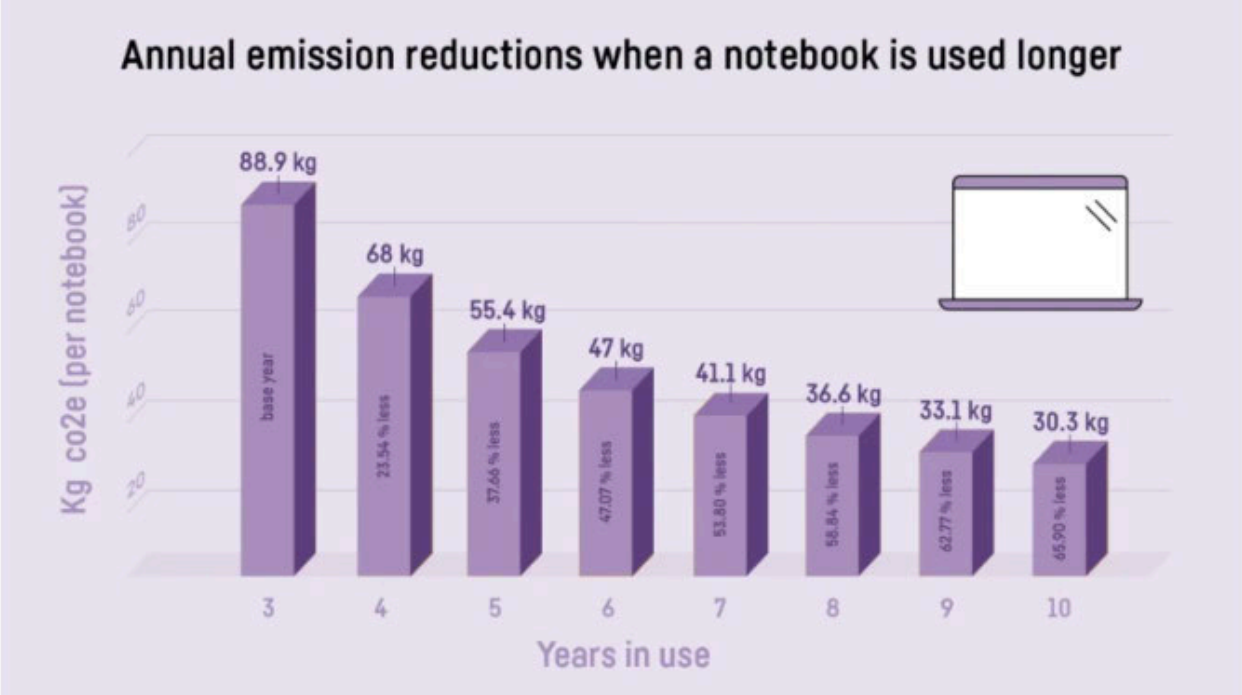
Importantly, all products bearing the TCO Certified designation must be independently verified to comply with all criteria.
Full criteria documents available here

While criteria in TCO Certified are tailored to electronic devices, the above list of design principles can be relevant to a wide variety of products to enable more high value, longer product lifetimes, less waste and lower lifetime emissions.

2. **Enacting circularity is key in procurement, use and policy.**

Product design criteria, as outlined above, while critical, function mainly as an enabler of a more circular product life cycle. However, design criteria alone do not make a product more circular. There is a significant demand-side role to enact more circular approaches in procurement, product use and policy frameworks. The role of product procurement and use - particularly scale in private and public sectors - is an essential driver of a product's ability to be more circular and reduce lifetime emissions and material footprint.

Longer use - both in first life, and ensuring second and third life - is the best way to cut lifetime emissions and negative climate impacts of IT hardware. Our research shows that extending the first use of notebook computers from three to six years reduces emissions by half.



Source: www.tcocertified.com

Achieving these extended lifetimes relies not only on intentional design criteria, but intentional procurement strategies and effective pre-competitive dialogs with product suppliers. Planning and communicating with suppliers up front that circularity and longer use are intentions in policy, procurement planning and category management are key to brands and manufacturers designing, manufacturing and creating business models to support longer, more ciruclar lifetimes.

In Australia, as observed in many countries with sustainability targets focused on circularity, more distinct and prevalent market signals are required around intentions to use products longer:

- In policies
- In procurement specifications
- In product category management

3. **Engagement of end users in more circular flows, product management and business models.**

   Identifying that product design and longer use are determining factors in a more circular product life cycle, greater uptake of business models designed to support circularity is also an important consideration for all IT purchasers in Australia.

   Programs such as product-as-a-service (PaaS), product leasing, refurbishment and take back options are widely available to IT buyers, but in several categories uptake needs to increase.

   For IT procurement, investigating alternative buying models is an essential up front step in determining the best way for extending product life:
   - Does buying differently extend the life of the product, or am I receiving a replacement product equally frequently as in a traditional purchasing model?
   - What happens to the products once they have been returned to the supplier in a PaaS or product takeback solution?
   - How are we including refurbishment as part of our product management process - planned for up front? Can we repair and redeploy used devices within the organization?

For more on circularity in the IT category, visit www.tcocertified.com