Information and markets for a circular economy

Submission to the Productivity Commission's interim report on Australia's circular economy: Unlocking the opportunities.

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Dear Commissioners,

We write to you as academic economists and policy experts regarding your interim report, *Australia's circular economy: Unlocking the opportunities*.[1] Our argument is that the report misframes the central challenge. It treats the transition to a circular economy primarily as a problem of government intervention, overlooking the core economic problem: missing markets and the pervasive loss of information about goods over their lifecycle. Achieving a more circular economy requires enabling entrepreneurship and market creation, not more top-down control or funding.

Centrally planned economies and top-down regulatory approaches struggle or fail to effectively 'close the loop' on industrial by-products, largely because they lack the localised knowledge and dynamic adaptability inherent in market systems.[2] Waste is a problem of information loss and missing markets – that is, a lack of detailed and trusted information about potential mutually beneficial trades.

Private 'planning' within firms and spontaneous market processes, driven by entrepreneurs seeking profit opportunities within clear frameworks of private property rights, have historically proven adept at discovering valuable uses for discarded materials. The interim report acknowledges the importance of coordination, but focuses too heavily on the government's capacity to aid that coordination (e.g. "building on trials of digital platforms that enable connections between waste producers and users to close material loops..."[3]). We need a competitive market process that functions as an information discovery mechanism, identifying potential connections and creating linkages – essentially building markets – where planners see only waste.

Thus, the persistence of waste often signals not inherent uselessness, but rather barriers (informational, transactional, or regulatory) preventing the market from finding and realising its potential value. **Fortunately, we now have a suite of frontier technologies that enable us to accelerate the development of digital institutions, helping entrepreneurs to coordinate and trade their way to 'circularity'.**[4]

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[1] We are academics with RMIT University but this submission is in our personal capacities.
[2] This mirrors the reasons why central planning more broadly failed (see, for instance, Desrochers, P. (2023). The Circular Economy:(Re) discovering the Free Market. *Fraser Institute,* ESG: Myths and Realities, 81.")
[3] Interim Report, p. 6
[4] See Allen, D. W. E., Berg, C., & Potts, J. (2025). Institutional Acceleration: The Consequences of Technological Change in a Digital Economy. *Elements in Evolutionary Economics*.

The local information problem for circular economies

The circular ideal involves endless reuse, repair, and recycling. This demands more than just managing physical materials; it requires managing information. Currently, valuable resources are often wasted simply because their potential uses are unknown or too costly to discover. Entrepreneurs find ways to repurpose materials, turning waste into value. But this process is severely hampered by information decay.

As goods age and change hands, crucial information is lost. We forget what things are made of, how they work, or who might value them next. This information entropy makes reuse and repair prohibitively expensive. Identifying, valuing, and reallocating used goods becomes a high-cost activity. The report acknowledges information gaps but proposes government labels and data collection. These are insufficient. They tinker at the edges instead of addressing the systemic loss of information that prevents markets for reuse from emerging efficiently.

Technology for market-based 'circularity'

Fortunately, new technologies are drastically reducing the costs associated with information and coordination. This makes market-based solutions increasingly viable.

- **Blockchain:** Can create persistent, trustworthy records about a product's materials, history, and ownership. This directly fights information entropy, making data available for future reuse or recycling.
- **IoT:** Sensors can track a product's condition and location in real-time. This provides valuable data for maintenance, identifying reuse opportunities, and efficient collection.
- **AI Agents:** Can automate the search for, and matching of, underutilised resources with potential buyers. This facilitates the creation of dynamic, decentralised markets for secondary materials and used goods.

These technologies build the infrastructure for an entrepreneurial circular economy. They allow information vital for reuse to persist and be easily accessed. They lower the transaction costs involved in finding and trading secondary materials. **Policy should focus on enabling the use of these tools, not prescribing specific circular outcomes**. This requires regulatory clarity for technologies like blockchain and AI, ensuring they can be deployed effectively by innovators. We note that in the 205 page report, blockchain technology is mentioned only once (p. 87), and artificial intelligence mentioned only twice (p. 51, 152). We recommend that the final report more deeply consider these technologies and their policy barriers.

Problems with a planning approach to the circular economy

The interim report prioritises solutions like regulatory harmonisation, government coordination, product stewardship schemes, and procurement policies. This reflects an outdated model focused on managing known processes rather than enabling unknown discoveries. This top-down approach is problematic:

1. **It stifles discovery** because central plans and standards cannot anticipate the myriad ways entrepreneurs might create value from waste. Innovation requires experimentation, which top-down systems inhibit.
2. **It creates rigidity** through mandated processes or standards that risk locking out better, future solutions. The focus should be on adaptable frameworks, not fixed rules.
3. **It crowds out markets** through government schemes and subsidies that distort price signals, making it harder for genuine, unsubsidised circular businesses to compete and emerge.

Australia needs a dynamic environment where new ideas and business models can be tested. The report's approach risks reinforcing existing structures rather than enabling the necessary transformation.

Policy enabling markets

The policy focus must shift from directing outcomes to enabling market processes. This involves:

1. **Clarifying rules for new technologies:** Provide clear legal frameworks for foundational digital tools – blockchain, digital assets, artificial intelligence – so entrepreneurs can confidently build circular solutions upon them.
2. **Improving the business environment:** Reduce overall barriers to entrepreneurship. Lowering company taxes leaves more capital for experimentation. Cutting red tape reduces the cost and delay of trying new things. Adopting a permissionless innovation stance towards new technologies prevents premature restrictions. These reforms benefit the entire economy, including circular ventures.
3. **Strengthening market foundations:** Investigate policies that clearly define property rights for waste and secondary materials. Support the development of interoperability standards for digital information about goods, facilitating trade in decentralised marketplaces.
4. **Using information policies strategically:** Support trustworthy information flow through market mechanisms. Encourage industry-led standards for data disclosure, possibly using blockchain for verification, rather than relying solely on government mandates.

Conclusion

The Productivity Commission's interim report approaches the circular economy as a system needing better government management. This perspective overlooks the fundamental roles of information, entrepreneurship, and market creation. Information decay is a core barrier, and new technologies offer powerful ways to combat it by drastically lowering transaction costs.

An effective circular economy strategy must prioritise creating an environment where entrepreneurs can discover and implement solutions. This means providing clarity for enabling technologies, reducing economy-wide barriers to innovation, and strengthening the foundations for new markets to emerge. The circular economy is an economic transformation that will be built from the bottom up through market processes, not planned

from the top down. We recommend that the Commission refocus its final report on enabling this entrepreneurial future.

Regards,

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