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16 May 2025

Re: Draft new Queensland Waste Strategy 2025–2030 (Less landfill, more recycling) consultation

The RMIT Construction Waste Lab (CWL) welcomes the opportunity to provide a submission to the Legislative Assembly Environment and Planning Committee inquiry into the Supply of Homes in Regional Victoria.

Since 2018, RMIT's Construction Waste Lab (CWL) has been a leading force in advancing research and knowledge dissemination on circular economy practices in the built environment, with a particular emphasis on construction and demolition (C&D) waste resource recovery and reuse. Our industry-driven research covers a wide range of C&D waste management aspects, including policy, education, circular supply chains, and innovative waste solutions and technologies. In collaboration with various state public agencies and private organsations, we have actively raised awareness about the circular economy approach in both sectors. To maximise our impact, we have collaborated with researchers from Griffith University, Deakin University, The Sunshine Coast University and Curtin University, resulting in a prolific output of academic and industry publications, including three books addressing C&D waste management, market development for waste resources, and the utilisation of products with recycled content in the building and construction sector.

Members at RMIT CWL are experts in construction sustainability, knowledge management and circular economy. They have been deeply involved in analysing state and national waste policies, leading to a set of recommendations aimed at enhancing the C&D waste management system in Australia.

RMIT CWL welcomes the opportunity to provide expert guidance on recommendations included in this submission. For further information, please contact the corresponding author, Dr Salman Shooshtarian (salman.shooshtarian@rmit.edu.au).

Please find below our perspectives regarding the following terms of reference:

Whether the draft new Queensland Waste Strategy can deliver environmental and

economic benefits for Queensland

The **Waste Strategy** document commendably acknowledges the importance of harmonisation and has appropriately prioritised it in shaping Queensland's waste management system. The release of the ***Australian Circular Economy National Framework***[1] in 2024 presents a timely opportunity to strengthen this approach by aligning Queensland's waste strategies with national directions. It is therefore recommended that the Waste Strategy aligns its goals, targets, and strategic focus areas with those outlined in the national framework.

Such alignment would offer multiple advantages, including the ability to benchmark Queensland's waste management performance against other states and territories. Moreover, it would facilitate consistent reporting against national targets and actions, enhancing transparency and accountability.

In addition, the ***Circular Advantage*** report[2]—developed by the Circular Economy Ministerial Advisory Group—serves as a valuable reference for informing the Waste Strategy. The report offers a set of targeted recommendations designed to maximise the environmental and economic outcomes of circular economy initiatives. Specifically, Recommendation 5 (p. 43) underscores the critical need for harmonised governance models to support circular economy implementation across jurisdictions. Incorporating insights from this report can further strengthen Queensland's strategic position and accelerate progress toward a circular economy.

> *Develop, with states and territories, a new governance model to modernise and harmonise regulations, standards and specifications related to the circular economy, resource recovery and waste that will accelerate productivity and support industry to innovate and scale (Recommendation 5, Circular Advantage Report, Page 43)*

It is also recommended that the Waste Strategy, in addition to adopting the traditional waste hierarchy, integrates the **10Rs framework of the circular economy** to more effectively structure its strategies, targets, and actions. A strong example of this approach is demonstrated in a recent report by *Sustainability Victoria*[3], which categorises the 10Rs into three overarching strategic areas:

1. **Smarter product use and manufacturing** through alternative design approaches (*refuse, rethink, reduce*);
2. **Extending the lifespan** of products and components (*reuse, repair, refurbish, remanufacture*); and
3. **Maximising the utility of resources** at end-of-life (*repurpose, recycle, recover*).

These strategies are commonly presented in a hierarchical ladder, where actions with the highest potential environmental benefits—such as refusing and rethinking—are positioned at the top. Incorporating this comprehensive and structured model will strengthen the Waste Strategy's alignment with circular economy principles and help prioritise actions based on environmental impact.

The actions and initiatives that will be most effective in achieving our vision

Establishing a strong, centralised agency to lead Queensland's transition to a circular economy would deliver substantial benefits. At present, Queensland remains the only Australian state without an

[1] DCCEEW. (2024). Australia's Circular Economy Framework: Doubling our circularity rate. Canberra, Australia: Australian Government. URL: https://bit.ly/40712iQ
[2] Circular Economy Ministerial Advisory Group. (2024). Circular Advantage. URL: https://bit.ly/4juAxM2
[3] Sustainability Victoria (2024) Strategic Plan 2024-2027, URL: https://bit.ly/4g96Uyk

Environmental Protection Authority (EPA). While it is acknowledged that a previous proposal to establish such an authority was voted down, it is recommended that the Queensland Government—specifically the Department of Environment, Science, Tourism and Innovation—renew efforts to establish this critical institution.

Across Australia, apart from EPAs, other dedicated agencies play a central role in waste management and the implementation of circular economy principles. In Victoria, for example, **Sustainability Victoria** and **Recycling Victoria** have led transformative initiatives that support industry and public agencies in building more effective waste and resource recovery systems. In **Western Australia**, the **Waste Authority** has emerged as a key driver of progress in this space. Likewise, **Green Industries SA** has been instrumental in achieving South Australia's nation-leading waste recovery performance. Outlined below are key initiatives planned and delivered by the Waste Authority in Western Australia and Green Industries SA in South Australia—both of which offer valuable lessons for Queensland. These examples demonstrate how targeted, well-resourced agencies can effectively drive circular economy outcomes at the state level.

Waste Authority is a government agency that works with local government, regional councils, stakeholder groups, the waste management sector and the community to promote understanding of resource recovery. The organisation uses four major initiatives to increase the use of PwRC in construction projects. As outlined in Figure *1*, these initiatives include 'Waste Strategy Action Plans', 'Waste Forum', 'Waste Data Portal' and 'WasteSorted Program.

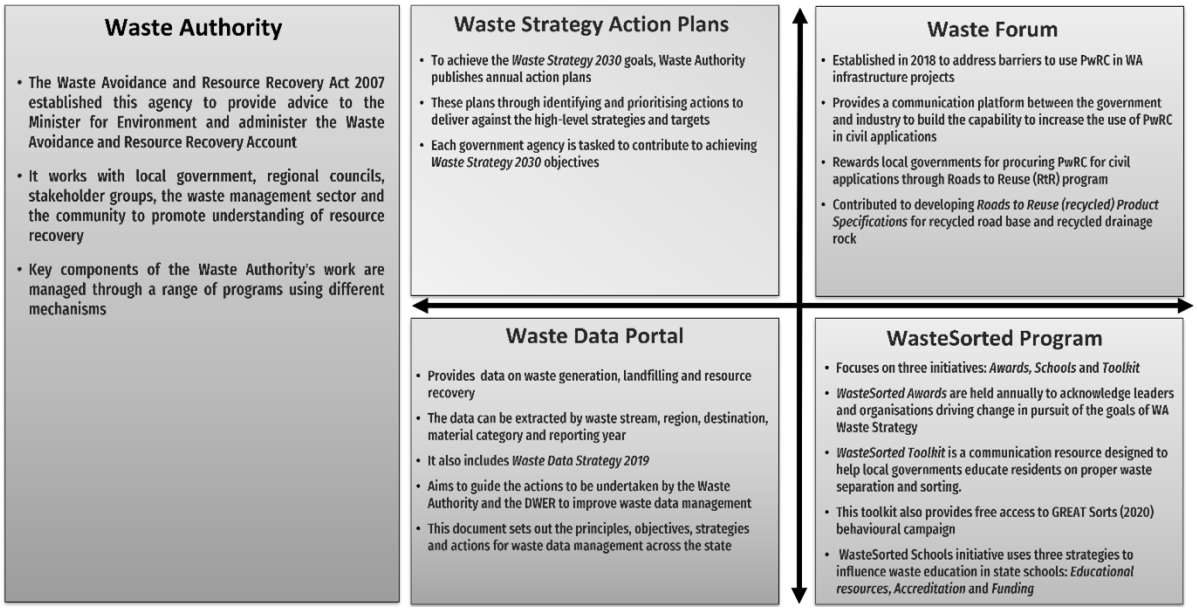

Figure 1. Waste Authority's major initiatives to enhance the use of PwRC in construction. Source: Authors

Green Industries SA (GISA) is an enabler and driver of change, supporting the development of the circular economy in South Australia. This government agency was established in 2015 under the Green Industries SA Act 2004[4] and replaced Zero Waste SA. This change agent strives to improve productivity, resilience, resource efficiency and the environment through diverse collaborations and partnerships[5]. GISA has outlined its strategic priorities through the GISA Strategic Plan 2021-2025[6]. This strategic plan outlines how South Australia can ensure a sustainable future while maintaining a thriving economy. Green Industries SA's five strategic priorities will focus on Circular products and services, Circular consumption, Circular resource recovery, Circular sectors and Circular capacity over the next five years. This agency offers a range of initiatives that help the state transition to a circular economy and achieve its five strategic priorities (*Figure 2*).

[4] Government of South Australia, Green Industries SA Act 2004, G.I. SA, Editor. 2024
[5] GISA, Circular Economy Knowledge Hub. 2024, Green Industries SA Adelaide, Australia
[6] GISA, Green Industries Strategic Plan 2021-2025. 2021

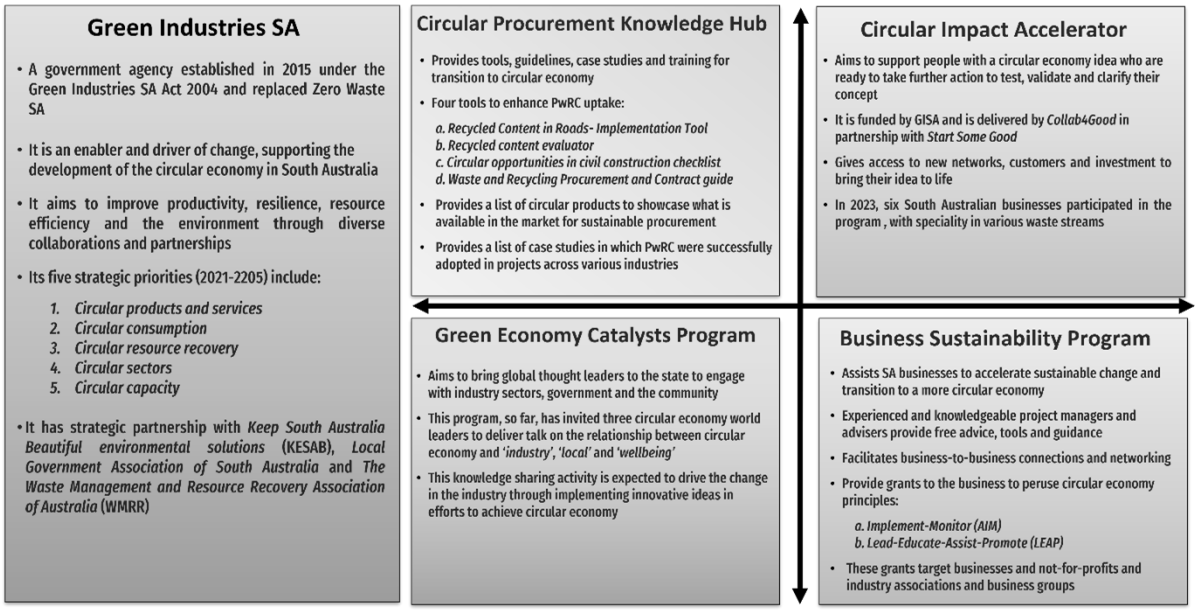

Figure 2. GISA initiatives in circular economy space. Source: Authors

There are several circular economy policies that Queensland can adopt to accelerate recycling and circular practices across the state. These policies aim to minimise waste disposal by promoting circular strategies, such as the efficient use of secondary materials—especially within the built environment sector. At the Construction Waste Lab (CWL), we identified 17 circular economy policies that either directly or indirectly support the uptake of recycled products in construction projects. Our research[7], informed by policy analysis, desktop review, and a national survey, outlined the key challenges, limitations, and actionable measures to enhance the effectiveness of these policies in the Australian context.

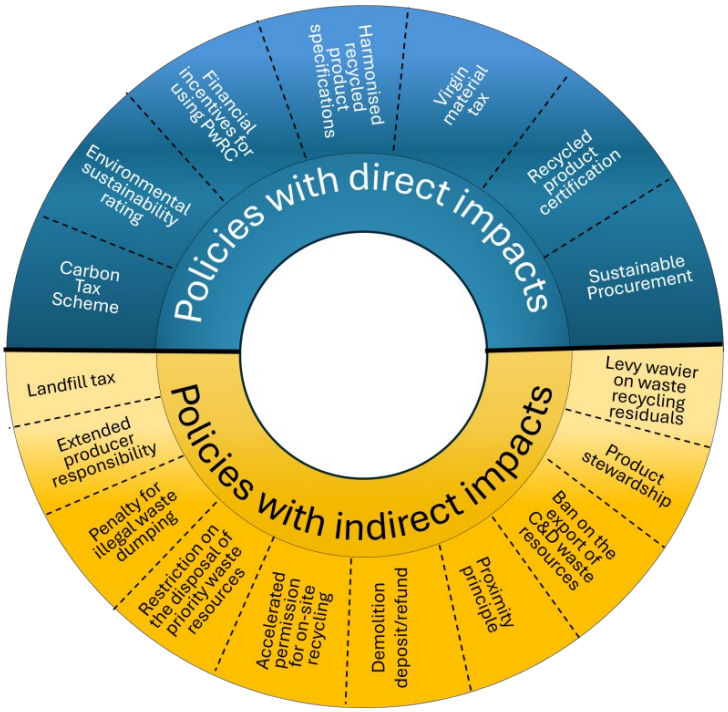

Figure 3. Circular economy policies with direct and indirect impacts on the optimal use of PwRC in construction projects. Source: Shooshtarian et al (2025)[Error! Bookmark not defined.]

Among the 17 circular economy policies, the Waste Strategy should particularly emphasise the proximity principle, sustainable procurement, and extended producer responsibility (EPR). These three policies are critical to establishing a resilient and effective circular waste management system

[7] Shooshtarian S, Wong PSP, Maqsood T (2025) 'Circular economy policies for the optimal use of recycled content in built environment'. Construction Waste Lab (CWL). RMIT University, Melbourne, Australia. URL: https://bit.ly/3Zrfi4H

in Queensland. Notably, EPR is already addressed in the current Waste Strategy draft (page 21). Our survey findings indicate that nearly all participants supported the application of these circular economy policies at a national level. While national harmonisation in policy development and governance is essential, Queensland must also harness localised solutions to mitigate potential rebound effects associated with circular economy implementation, as promoted in this Strategy.

In our recent study[8], we highlighted the benefits of local collaboration and the application of the geographical proximity principle using the **Subiaco Oval Stadium** demolition project as a case study. The findings revealed clear social, economic, and environmental advantages associated with the local use of products with recycled content (PwRC) in construction. The table below outlines the key social benefits derived from these localised approaches.

Table 1. Social benefits of geographical proximity in the utilisation of PwRC in construction projects

Key benefits	Description
Creation of local jobs	Initiatives focused on recycling and the use of local materials can create job opportunities in the recycling sector, construction, and related industries.
Community engagement and empowerment	Collaborating on recycling initiatives fosters a sense of community ownership and participation. Local stakeholders can work together towards common sustainability goals. This engagement can empower communities by encouraging active participation in decision-making processes and fostering a sense of pride in local initiatives.
Enhanced social cohesion	Working together on environmental projects can strengthen relationships among community members and organisations. Such collaboration builds networks and trust, which can enhance social cohesion and create a more resilient community.
Improving local constructors' capacity to handle with PwRC	By working together, local construction firms can share knowledge and resources, improving their capacity to effectively utilise PwRC. This capability enhancement can lead to higher-quality construction practices and more successful projects.
Educational and awareness opportunities	Local collaboration facilitates the sharing of knowledge and resources, improving awareness of recycling practices and sustainability issues among community members. Educational programs can empower individuals and organisations to make more informed choices regarding waste management and resource utilisation. This knowledge can inspire future generations to adopt environmentally friendly habits and practices.

The materials that are the highest priority to reduce, reuse and recycle

Timber should be prioritised as a key material in Queensland's Waste Strategy**.** The COVID-19-induced disruptions to construction supply chains, combined with the ongoing housing crisis, have significantly driven up the cost of construction timber. While the state currently manages some timber waste through waste-to-energy processes and conversion to mulch, the Waste Strategy must instead prioritise strategies that extend the lifecycle of timber beyond its initial use. The Strategy should also emphasise collaboration with local research institutions actively developing timber waste solutions. For example, the Centre for Future Timber Structures, a joint initiative by The University of Queensland

[8] Shooshtarian S, Wong PSP, Maqsood T, Ryley T, Zaman A, Caldera S, Jayarathna C and Ruiz AMC (2025) 'The role of proximity principle in driving circular economy in built environment '. *Circular Economy and Sustainability*.

and the Department of Agriculture and Fisheries (DAF), explores innovative approaches to timber use in the built environment.

Furthermore, the Strategy must alert timber waste managers to the health and safety risks associated with potential contaminants, including asbestos, chemical preservatives, paints, and coatings. The recent discovery of asbestos in recycled timber used as soft-fall mulch in **playgrounds**[9]—including in Queensland—triggered national concern and highlighted serious threats to community wellbeing. To address this, the Strategy should underscore the mandatory use of recycled product certification schemes when procuring processed timber waste products. However, it should also acknowledge and address the practical challenges associated with the implementation of these schemes, as identified in our previous research[10,7].

Emerging waste streams from **solar panels and batteries** also warrant urgent attention in the Waste Strategy. In the coming years, a range of drivers—including rapid technological advancements in solar efficiency, declining feed-in tariffs, changes to government subsidies, and rising electricity costs—are expected to prompt widespread replacement of existing solar systems. In addition, Queensland's housing crisis is accelerating the demolition and renovation of older buildings, many of which are equipped with outdated solar infrastructure.

These factors combined will generate a substantial volume of solar panel and battery waste, much of which contains valuable materials that can be recovered and reintroduced into the resource loop. To avoid loss of critical resources and minimise environmental harm, the Waste Strategy should include targeted actions for the collection, safe handling, and recycling of these materials, and support the development of a circular economy framework for renewable energy infrastructure.

Which strategic focus areas in the draft new Queensland Waste Strategy are the most important

We believe that any effective waste management system must rest on three foundational pillars: **education**, **enforcement**, and **encouragement**. In alignment with this, the strategic focus areas outlined in the Waste Strategy—particularly 'Unleash Innovation' and 'Improve Access to Recycling and Encourage Behavioural Change'—are commendable. However, we recommend refining the latter by separating it into two distinct focus areas: **capability building** (e.g., infrastructure and system development) and **attitudinal and behavioural change**. These are both essential for fostering circularity across sectors, communities, and businesses.

What remains absent from the current strategic focus areas is a dedicated emphasis on **policy development and waste regulation**. These elements are critical and can be situated under both the **enforcement** and **encouragement** pillars. Without robust policy and regulatory frameworks, the broader goals of the Strategy may be difficult to achieve.

Lastly, it is recommended that the Waste Strategy adopt a **sector-specific approach**, whereby priority areas (strategic focus areas) are defined based on the distinct characteristics and needs of individual sectors. This approach enables the development of more targeted, practical, and effective strategies. A notable example of this method is demonstrated in the *Australian Circular Economy Framework* report[1], which highlights how tailoring circular economy initiatives to specific sectors can significantly enhance impact and implementation efficiency.

Yours sincerely

[9] Shooshtarian S, Wong PSP and Maqsood T (2024) 'Asbestos in playground mulch: how to avoid a repeat of this circular economy scandal'. The Conversation. URL: https://shorturl.at/tFHI8

[10] Shooshtarian S, Maqsood T, Wong PSP, Zaman A and Ryley T (2024) 'Utilisation of certification schemes for recycled products in the Australian building and construction sector'. Business Strategy and the Environment. 2024(33): 1759-1777. DOI: 10.1002/bse.3568.

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Further readings

[1] **Shooshtarian S, Wong PSP, Maqsood T, Ryley T, Zaman A, Caldera S, Jayarathna C and Ruiz AMC** (2025) 'The role of proximity principle in driving circular economy in built environment '. *Circular Economy and Sustainability*.

[2] **Shooshtarian S, Wong PSP, Maqsood T** (2025) 'Circular economy policies for the optimal use of recycled content in built environment'. *Construction Waste Lab (CWL)*. RMIT University, Melbourne, Australia. URL: https://bit.ly/3Zrfi4H

[3] **Shooshtarian S, Wong PSP and Maqsood T** (2025) 'What Australia's circular economy framework means for recycled content in the built environment'. *The Fifth Estate*. URL: https://bit.ly/41lYOeS

[4] **Wong PSP, Shooshtarian S, Ryley T, Zaman A, Caldera S, Maqsood T, Ruiz AMC and C Jayarathna** (2025) 'Final Industry Report 1.95: Using recycled and recyclable products: Influencing stakeholders through circular economy practices'. Sustainable Built Environment National Research Centre (SBEnrc). Perth, Australia. URL: https://bit.ly/3F0pGtA