

Circular supply chain systems integration

Sustainable solutions for clean and contaminated hospital consumables

Australia is racing against the clock to achieve net zero by 2050

There is much ground to be made in the next 7+ years to meet interim targets and timeframes for emissions reduction

The race is on to transition to net zero emissions by 2050.

The Australian Government has legislated its emissions reduction targets, declaring its commitment to 43% emissions reduction (on 2005 levels) by 2030 and net zero by 2050.

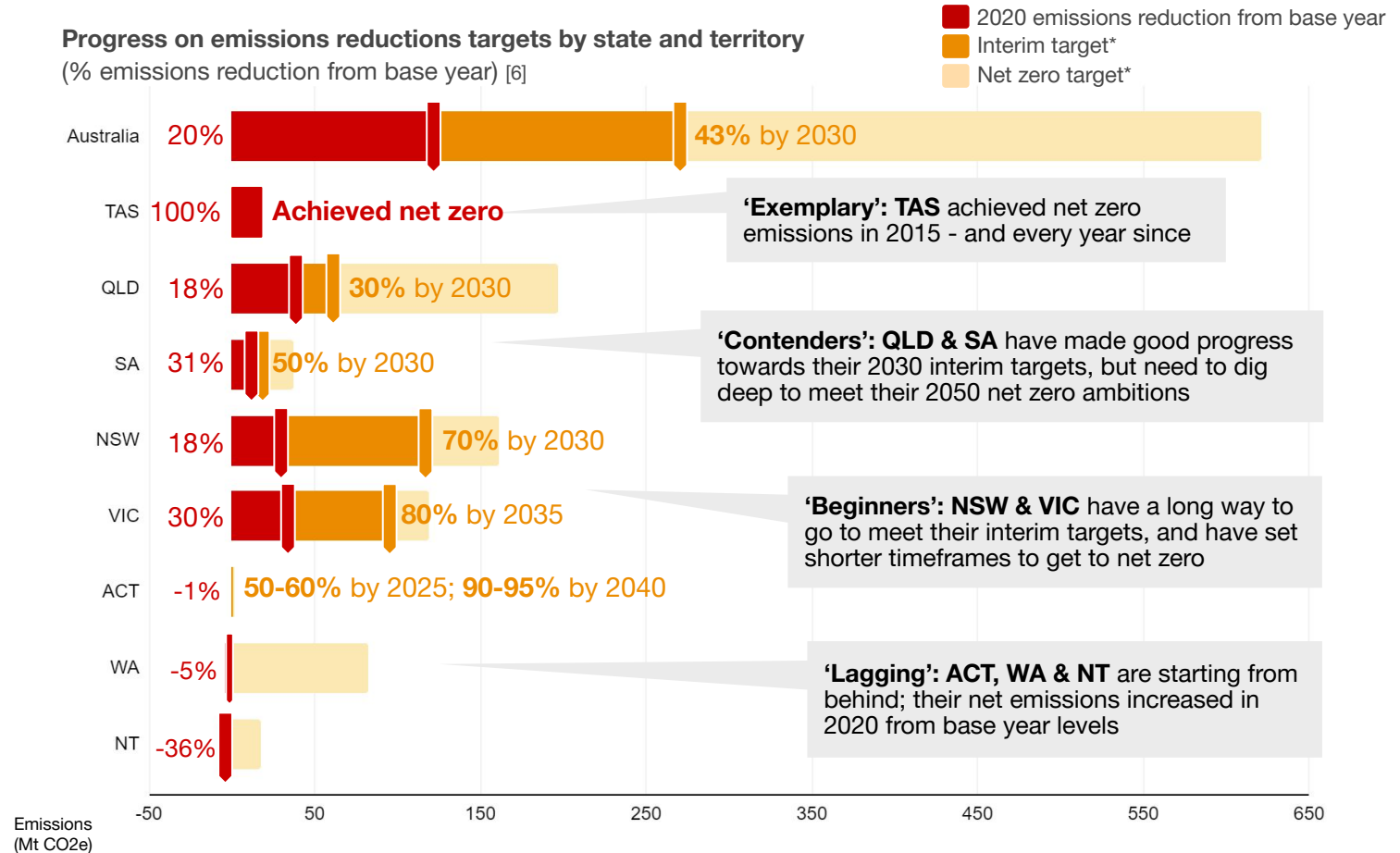
Most state and territory governments have set similarly ambitious targets, with Queensland, Victoria and New South Wales recently committing to going further and faster on emissions reduction:

- **QLD:** 30% emissions reduction below 2005 levels by 2030; net zero by 2050 [1]
- **VIC:** 80% emissions reduction (on 2005 levels) by 2035; net zero by 2045 [2]
- **NSW:** 70% emissions reduction (on 2005 levels) by 2030; net zero by 2035 [3]

Whilst Australia's greenhouse gas emissions are trending downwards, these efforts are potentially insufficient to achieve the Paris Climate Agreement target (limit global warming to 1.5°C by the end of the century).[4]

Scope 3 emissions account for as much as 65–95% of most organisations' greenhouse gas impact, so addressing scope 3 is a crucial component of reaching net zero emissions by 2050.[5]

Progress on emissions reductions targets by state and territory
(% emissions reduction from base year) [6]



* Earlier timeframes for net zero have been committed by NSW (2035) and VIC/ACT (2045). ACT's ambition is 50-60% emissions reduction (on 1990 levels) by 2025; 90-95% by 2040; and net zero by 2045. WA and NT have not set interim targets.

Industry and Governments have started transitioning to circular supply chains

But not at the pace or scale needed to meet Australia's net zero targets in time



Australian market is still maturing; some 'ready' solutions are promising

- **Technology readiness levels are early prototype or pre-commercial stage** for recycling and reprocessing personal protective equipment (PPE) and medical consumables
- **The market is rapidly evolving** - some technologies will become operational in the next 1-3 years, with ongoing prototyping and R&D



Material composition remains a challenge for technology solutions - both here and globally

- Limited solutions for some stock, owing to **items not being designed for reuse and recycling**: e.g. multiple component parts, fused items that require separation, sortation or washing
- Some recycling and re-processing capabilities are only available offshore - and are **years away from seeding or scaling in Australia without additional stimulus**



Limited information on emissions and landfill

- Inconsistencies exist in **what and how to measure environmental impact** make it difficult to assess the relative environmental impact of different solutions
- Proxies can be % materials to landfill and CO2 equivalent emissions
- Need to understand the **carbon profile** of the recycling process to ensure that this is **net carbon reducing**



Many steps exist in the sustainability value chain; a 'single solution' option is unlikely

- **End-to-end integration** does not currently exist across the sustainability and circular value chain
- **Need strong coordination** of the network of suppliers (logistics, processors, manufactures etc.) to seamlessly integrate the value chain
- **Strategic partnerships** and strong systems integration are critical to solution implementation



The market needs certainty of demand to support scale-up

- The market will respond to demand - **steady and ongoing supply of used items** is a key enabler
- Market is seeking **demand certainty** to inform investment and decisions to seed and scale
- Work to engage, seed and establish the market is critical to move to **cost parity** (relative to landfill) - and ultimately a **revenue stream** for recycled items

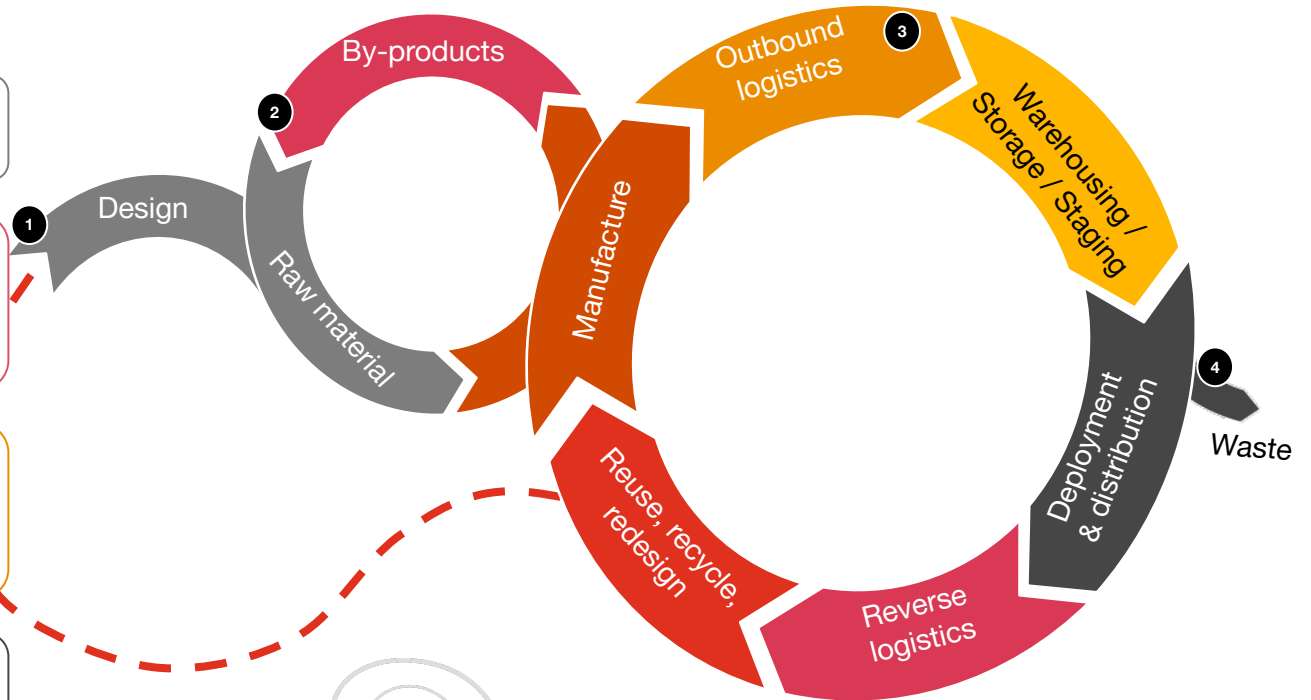
Organisations need to act now to reconfigure and augment their supply chains - and reap the benefits of circular supply chains

Reconfiguring to a circular supply chain requires significant and sustained effort to reap medium to long term benefits such as hitting sustainability targets, removing waste disposal costs and generating new revenue streams

Used products from one organisation can be valuable inputs for another, to be circulated through the supply chain. Circularity is increasingly becoming the way to gain competitive advantage through investing in sustainability and improving brand value. This innovation is set to further grow shareholder value and bring benefits associated with localising supply chains, reducing supply dependencies and complexity - all by rethinking 'waste' as a reusable and ultimately valuable resource.[7]

Four key considerations to going circular

- 1 Assess your end to end value chain and product flows**, to identify gaps and opportunities for better resource recovery and waste reduction in the value chain
- 2 Set targets and timeframes to incorporate circularity into your supply chain strategy and own it**; flow this through to your sourcing criteria to contemplate 'cradle to grave' aspects of your supplier strategy and the products your organisation is procuring
- 3 Be transparent about tracking and reporting** the net of circular supply chain costs and carbon emissions (e.g. inputs purchase price vs. output product value) - measure this and report it to all stakeholders (executives, employees, customers, suppliers, activists, shareholders, regulators)
- 4 Where resource circulation is not possible, make sure 'waste' is appropriately catalogued, valued, and sorted** in line with local regulatory requirements and legislation (e.g. local Environment Protection Authority regulations)




[7] [PwC Report \(2021\). Circular supply chains: Circulating waste into a resource](#)

PwC has supported clients to design and execute circular supply chain strategies

In a health setting, this has included converting hand sanitiser and disinfectant wipes into valuable material inputs

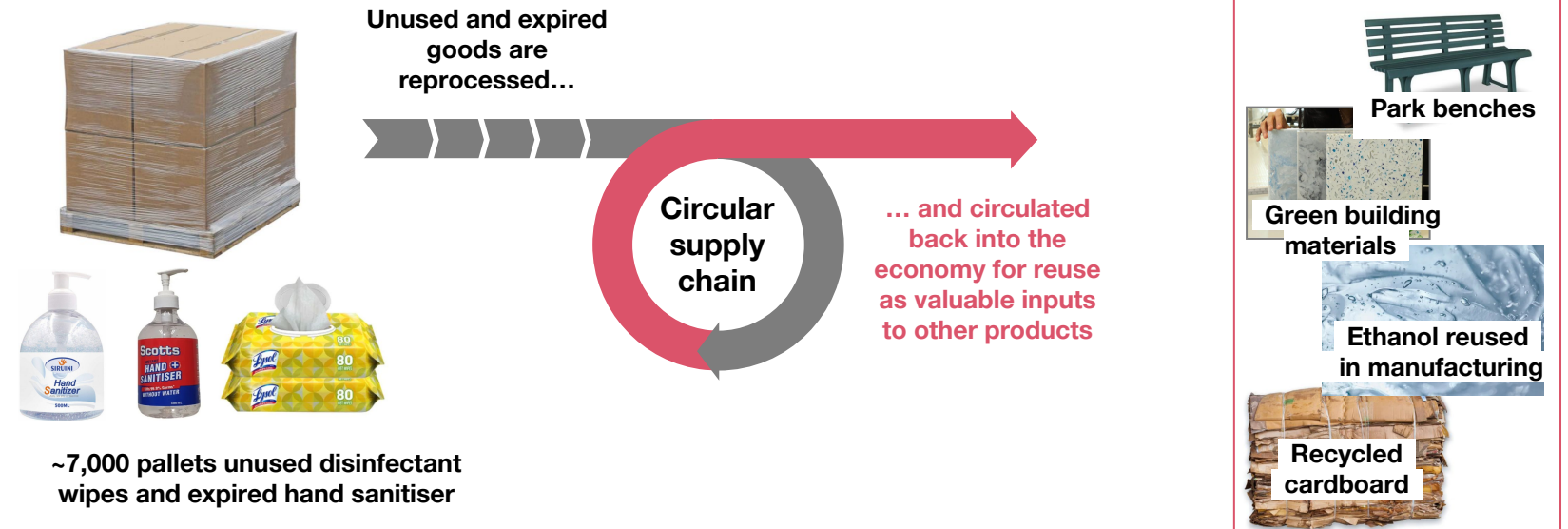
Circular supply chain strategy and operations

PwC's support included:

-  Circular supply chain **vision, strategy and operations** design
-  **Inventory analysis** to prioritise for resource recovery
-  Market analysis and **market engagement** (EOI / RFI)
-  Product **samples testing** to support technology trials
-  **Due diligence and risk assessment** of market proponents
-  **Go-to-market design** to support rapid implementation

Example circular outputs include 3D printing filament, park benches, green building materials and recycled materials

Hospital consumables circulated back into the economy as inputs to other end products or manufacturing processes



The benefits of circular supply chains for medical consumables extend well beyond the hospitals

Individual hospitals benefit from circular supply chains, as do other Health system stakeholders, supply chain operators and local communities



Contribute to achieving sustainability targets



Improved performance on ESG metrics like emissions reduction



Reduced inventory holding costs



Remove waste disposal costs by avoiding landfill



Reducing logistics costs



Increase in Australia's R&D sector



Promoting low carbon products



Increase local and sovereign manufacturing capabilities and capacity



Helping technology solutions reach commercial or industrial scale



Promote new strategic partnerships



Supporting local business, including start-ups

Taking circularity forward



Gyanam Sadananda
Partner, Sydney



Oliver Sargent
Partner, Sydney



Liza Maimone
Chief Operating Officer,
Melbourne



Varya Davidson
Partner, Sydney



Sarah Stewart
Partner, Melbourne



Jon Chadwick
Partner, Melbourne



Isabelle Stooke
Director, Sydney



Jessica Wong
Senior Manager, Sydney

PwC commits to net zero by 2030

PwC announced a science-based commitment to achieve net zero greenhouse gas (GHG) emissions by 2030.

Circular supply chains are an important part of net zero ambitions. At PwC, our net zero ambition will require us to reduce our total emissions by 50% over this decade. We are doing this by assessing our supply chains and the way we procure, driving energy efficiency improvements in our offices.

PwC's commitment to net zero builds on our 2018 environment ambition to drive efficiencies, go 100% renewable, and offset 100% air travel emissions from FY19 and residual energy use by FY22. It is also an extension of our commitment to be carbon neutral, which we have continued since 2008.

We recognise that healthy environmental ecosystems are of great importance to First Nations populations globally and acknowledge Aboriginal and Torres Strait Islander peoples' profound spiritual connection to land.

To find out more visit www.pwc.com.au



pwc.com.au/environment-social-governance/circular-supply-chains

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