

# Productivity Commission Inquiry into Opportunities in the Circular Economy

The Vinyl Council of Australia and its members are supportive of efforts to transition Australia to a more circular and sustainable economy, and we are keen to play our part as appropriate. Doing so aligns with our core purpose and is consistent with our past and ongoing efforts to advance the sustainability of the PVC industry in Australia.

## Information request 1 Circular economy success stories and measures of success

[Australian case studies of circular economy activities already occurring,](#)

### Case Study 1. [PVC Recycling in Hospitals](#)

A pilot scheme by Vinyl Council of Australia proved that non-infectious PVC hospital waste (PVC tubing, oxygen masks, IV bags) could be separated at source and redirected from landfill to recycled products, such as play mats, garden hoses, gumboots. Following conclusion of the pilot, [Baxter Healthcare](#) has assumed responsibility for the on-boarding and logistics cost associated with the scheme. After more than 10 years of operation, the scheme collects and recycles approximately 20% of the PVC IV bags placed on market.

#### Challenges:

- The scheme is not profit making and is dependant on the continued financial sponsorship of Baxter Healthcare.
- While there is demand for expansion of the scheme, the costs and returns from onboarding small and remote hospitals is prohibitive.
- For various reasons, collections fell during the COVID-19 pandemic but have not yet returned to the pre-pandemic peak.
- Locally produced r-PVC is often not competitive against imported r-PVC, or virgin PVC resin.
- Export of locally produced r-PVC is not profitable.
- The competitiveness of Australian manufacturing against imports is challenging and has, over the course of decades, led to a 'hollowing-out' of Australia's manufacturing base, restricting the potential local market.

### Case Study 2. [Recovinyl](#)

While not an Australian example, Recovinyl is an initiative of the European PVC industry that operates an accreditation system for recyclers who recover PVC wastes. Recovinyl has been very successful in driving up PVC recovery and recycling across Europe over the past 20 years. Companies that recycle PVC waste as well as converting companies that purchase recycled PVC to manufacture new PVC products, may be certified.

Recycling companies register the volume of post-industrial and/or post-consumer material that they are recycling each month and receive a payment for every tonne of material reprocessed, provided they submit verifiable data. The data is maintained in a confidential database, and, where annual volumes exceed 3000 tonnes, Recovinyl arranges for an obligatory third-party verification audit. The collected data is aggregated and published annually.

By certifying the quality and quantity of the recycled PVC that is produced and purchased, Recovinyl stimulates the supply of post-consumer and post-industrial PVC waste being recycled in Europe, creating a demand for recycled PVC material in the converting industry. The approach has a two-fold benefit in incentivizing recovery of waste and accurately reporting data.

Recovinyl has driven the recovery of PVC wastes such that in 2023, a total of 737,645 tonnes of PVC waste (both post-industrial and post-consumer) was recovered and recycled in the EU-27, plus Norway, Switzerland and the United Kingdom, equivalent to around 24.3% of the total PVC waste generated in 2023 in the EU-27, Norway, Switzerland and the UK (VinylPlus, 2024).

By contrast, the Australian PVC recovery rate for 2021-22 is estimated at 1.8%. (Kyle O'Farrell, 2024) Among the reasons for this dramatic contrast are:

- High reliance on imported PVC finished goods highlights an ongoing and significant challenge with respect to increasing recovery of PVC scrap 48.6% of PVC products were manufactured overseas (Kyle O’Farrell, 2024).
- Assuming recovered PVC waste is to be incorporated into new and similar products, then a significant proportion of this material must be returned into overseas supply chains but Basel Convention rules governing the transboundary movement of hazardous wastes effectively define PVC scrap as Hazardous waste rendering the export of unprocessed PVC waste effectively impossible.

## Information request 2 Priority opportunities to progress the circular economy

Opportunities in Australia to improve environmental and economic outcomes through greater adoption of circular economy activities.

Messaging is important: Dialogue around Circular Economy is often focused on ‘diversion from landfill’ or recycling. This focus on recycling distracts from the imperative to Reduce the use of virgin materials.

The growth in consumption of plastics over recent decades reflects the ability for plastics to perform essential function while consuming fewer resources than the materials they have replaced. Unfortunately, the low cost of plastics has also permitted product designers to discount durability as an important design consideration and supported the proliferation of single use plastic products. A key element of a successful circular economy is product durability which must become a key consideration in product design.

A major challenge for Australia is the need for measures to incentivize the development, investment and implementation of technology in the recycling space to support sorting and separation of the full range of materials, particularly plastics used. Continued policy measures are required to address inconsistent waste collection approaches and MRF sorting limitations. A long-term plan that addresses the technology gaps and the appropriate use of waste to energy solutions so that material sorting and reprocessing can expand as technologies become available.

Analysis of which circular opportunities provide the greatest scope to improve environmental and economic outcomes in Australia

and why, including information on:

- metrics used to inform this analysis
- modelling or analysis relating to the potential benefits and costs of implementing specific circular economy opportunities at the sector, product or supply chain segment level (including, but not limited to, life cycle assessments or cost-benefit assessments)
- the distribution of benefits and costs, and whether they will occur in the short, medium or long term.

Information on specific opportunities and risks for Australia resulting from international developments, including circular economy policy.

In 2021–22, there were an estimated 3.92 million tonnes of plastic products consumed in Australia. ... Of this, 59% of consumption was through imported finished and semi-finished goods, with only 41% of consumption through local manufacturing using either virgin resins (both locally manufactured and imported) or recycle-based resins. (Kyle O’Farrell, 2024) Of the major plastic types, only PP is still manufactured in Australia, contributing less than 2.5% of total consumption.

It is estimated that during the 2021–22 year there were 2.8 million tonnes of plastic products reaching end-of-life in Australia. Of this, an estimated 1.2 million tonnes (43%) were from packaging related applications (Kyle O’Farrell, 2024)

This data “highlights an ongoing and significant challenge with respect to increasing recovery of scrap plastics. As 59% of plastic products were manufactured overseas, and assuming recovered plastics are to be incorporated into new and similar products, then a significant proportion of this material must be returned into these overseas supply chains”. (Kyle O’Farrell, 2024)

While open trade in goods has undoubtedly lifted living standards in Australia and its major trading partners, recently imposed trade restrictions on international movement of plastic waste are likely to result in poor

investment decisions. Plastics recyclers frequently complain that their products are not competitive with imported virgin or recycled alternatives. The requirement for local processing of plastic waste prior to export- introduced in July 2022- brings the overhead of Australia's high labour and inland transportation costs. Even if a processor could build sufficient scale, it remains unlikely that the processed output could be competitive on international markets.

Manufacture of virgin plastics in Australia has largely ceased because the local market is too small to support globally competitive manufacture of these materials in Australia. Without these critical petrochemical assets, the viability of advanced recycling technologies - which return plastic waste its original chemical building blocks - is highly doubtful.

### Information request 3 Hurdles and barriers to a circular economy

The main reasons businesses and consumers have not adopted circular economy practices to date.

The following contributions relate specifically to the circularity of plastics.

#### *Quality of Recycle Streams*

To produce the highest quality recycled polymers, recyclers require high quality supply of recovered plastic waste. With the enormous diversity of plastic products placed on market, the key challenge is sorting (refining) waste streams to a sufficiently high standard to be suitable for production of a recycled plastic capable of competitively substituting for the virgin alternative. This is often more easily achieved in a post-industrial/pre-consumer waste stream than in MSW or C&D wastes because;

- a) fewer people are required to possess the specific skills and knowledge required to segregate waste into high quality streams, and,
- b) the people involved in the sorting process are familiar with the limited variety of products that must be handled/sorted.

It is not realistic to expect that householders can develop the skills and knowledge required for high quality separation at source to achieve an acceptable quality of reclaimed plastic waste for more than a few very common materials, such as PET bottles and HDPE milk bottles. Most households lack the skills and knowledge to separate landfill waste from recyclable and FOGO waste.

The current system of kerbside collection of 'recyclables' from households is fundamentally broken.

The Australasian Recycling Label (ARL) attempts to provide the consumer with simplified instructions for disposal of packaging but ultimately sends a confusing message about what can and cannot be recycled. For a package to qualify for the ARL 'recyclable' label, '80% of the population must have access to kerbside recycling that will accept the package for recycling'. Unfortunately, the decision to accept an item for recycling is dictated by the willingness and capability of Material Recovery Facilities (MRF) linked to the kerbside collection. The profit imperative drives MRF's to accept waste streams that require minimal processing to be converted to fungible recycling streams.

Obliging MRF's to adopt BAT sortation technology and accept the full range of plastic packaging in kerbside collection would permit simpler messaging to households regarding source separation.

While initiatives like Container Deposit Schemes (CDS) provide a nominal financial incentive for additional consumer engagement and education, they address a very narrow range of plastic waste and further reinforce the false belief that most plastic products cannot be recycled.

### Information request 4 Governments' role in the circular economy

The PC is seeking views and information on the following.

The extent to which policy or regulatory changes (national, state and territory, or local; or for specific sectors, products or supply chains segment level) could better enable the pursuit of circular economy activities.

Priority should be given to removing unnecessary barriers in Australian Standards that impede greater uptake of recyclate. Manufacturers seeking to use recycled content in their products need clarity on what is acceptable. Standards should specify the performance outcomes they seek to ensure and not exclude or discriminate adversely against the use of secondary materials. Where the use of recycled content may compromise a critical performance parameter or adversely affects durability, Standards should explicitly address this and establish acceptable parameters.

Risks associated with the use of recycled materials - for example, contamination impeding product performance, health & safety risks, legacy additives - should be addressed in Standards. Understanding and appropriately managing these risks should not preclude the use of recycled content in new applications. Appropriate standards development may stimulate innovation in product design; for example, we have seen the development of triple layer co-extruded pipe and profile products, designed to enable the use of recyclate in the middle layer sandwiched between virgin polymer layers.

Building codes, approvals systems and tools should be leveraged to support and incentivise greater life cycle thinking as it relates to the built environment and the materials used in construction. This should include looking at how buildings can be made to be more 'flexible' or 'modular' to support the changing needs of the community or its users to prolong building life (avoid waste). Making changes to a building use does not always require demolition or deconstruction and recognizing the durability of building products and materials should be encouraged. To maximise the recovery of building materials, deconstruction should be favoured over demolition with demolition contracts requiring recovery and recycling.

Incentives aimed at reducing churn of fit-out materials, facilitating the establishment of sustainable product stewardship initiatives for fit-out materials and encouraging the reuse of these materials in new fit-out products.

## References

- Kyle O'Farrell, G. C.-S. (2024). *Australian Plastics Flows and Fates Study 2021–22 – National Report*. Blue Environment Pty Ltd. Department of Climate Change, Energy, the Environment and Water.
- VinylPlus. (2024). *2024 Progress Report - Reporting on 2023 Activities*. Brussels: Vinyl Plus. Retrieved October 31, 2024, from [www.vinylplus.eu/wp-content/uploads/2024/05/VinylPlus-Progress-Report-2024-web.pdf](http://www.vinylplus.eu/wp-content/uploads/2024/05/VinylPlus-Progress-Report-2024-web.pdf)