



Vision 2031

The 10 Year Roadmap for
Australia's World Leading
Organics Recycling Industry





Contents

Introduction	2
01. The Context: Why Recycle Organics?	8
02. The Starting Point: Australia's Organics Recycling Industry Today	14
03. The Possible Future: The Best Industry We Can Be	20
04. The Inputs: Quality In, Quality Out	28
05. The Industry: Turning Australia's Organics Waste into a National Resource	34
06. The Outputs: World Class Products Improving Australia's Soils	38
07. The Roadmap to 2031	44
Glossary	51

Introduction

Organics recycling is important for many reasons. Organics comprise about half of our national waste stream.

If Australia “gets organics recycling right”, we have a good chance of meeting our national and state objectives for waste reduction and recycling, landfill reduction, and carbon reduction. If we do not get it right, we will not achieve those targets.





The Australian Organics Recycling Association (AORA), the national voice of the organics recycling industry, saw COVID-19 as an opportunity. It gave us the time and capacity to reposition the future of AORA and the industry with greater national collaboration and significant growth. The visible evidence of this change is in four foundational documents:

- **AORA Strategic Plan 2020-23¹** (commenced July 2020)
- **The Economic Contribution of the Australian Organics Recycling Industry²** (launched March 2020)
- **Australian Organics Recycling Industry Capacity Assessment: 2020-21³** (launched January 2021)
- This 10 Year National Industry Strategy.

AORA Strategic Plan 2020-23

The new AORA Strategic Plan refocused AORA as a member-centric organisation with a core focus on influencing public policy in favour of a stronger, better and more profitable Australian organics recycling industry.

This document has been delivered in support of this vision and mission.

Our vision

Recycling and reuse of organic materials within a circular economy is widely understood and supported by Australians.

Our mission

AORA works with all stakeholders to facilitate an operating environment which maximises the recycling and reuse of organic materials, and promotes the benefits of compost, soil conditioners and mulches across the Australian community and business.

¹ AORA Strategic Plan 2020-23, Australian Organics Recycling Association Limited 2020

² The Economic Contribution of the Australian Organics Recycling Industry, Australian Organics Recycling Association Limited 2020

³ Australian Organics Recycling Industry Capacity Assessment: 2020-21, Australian Organics Recycling Association Limited 2021

The Economic Contribution of the Australian Organics Recycling Industry

AORA's recent economic contribution study showed that in 2018-19 Australia produced 14.6 million tonnes of organic waste, of which 5.6 million tonnes went to landfill; 7.5 million tonnes were recycled; and 1.5 million tonnes recovered as energy.

Australia's overall organic recycling rate was 51.5%. South Australia has the highest organics material recycling rate at 78.9% and the Northern Territory the lowest rate at 19%.

The industry provides 4,845 jobs to Australian residents, paying over \$366 million in wages and salaries; the average wage of each employee is \$75,540. The industry has a collective turnover above \$2 billion; supply chain value over \$1.9 billion; and \$724 million in industry direct value add to the economy each year.

The industry's environmental contribution is just as significant. Greenhouse gas savings from organics recycling tops 3.8 million tonnes of CO₂ annually: equivalent to planting 5.7 million trees or taking 876,663 cars off the road.

These figures showcase what the industry is achieving now. Even greater economic and environmental benefits await in the future.

The study asks the question: what if we stepped up our national recycling rate of organics?

At a national organics recycling rate of 95%, the industry would deliver 4,094 more jobs; \$309 million more in wages; and an extra \$612 million in industry direct value add to the economy every year.

At the same time, we would remove an additional 3.2 million tonnes of CO₂ annually: equivalent to planting 4.8 million trees or taking 741,524 cars off the road.

What is important to note, is that this is without including the benefits of the industry's products to agricultural productivity and soil quality, drought proofing, and reduction of chemicals and pesticides in agriculture.

To realise these enormous economic and environmental benefits we need two factors in place:

1. The right policy settings from governments; and
2. Industry capacity to take up the opportunities.

Neither of these is inevitable, which is why AORA delivered our second industry study, addressing industry capacity.

Australian Organics Recycling Industry Capacity Assessment: 2020-21

This report provides an independent and robust assessment of the industry's ability to step up as an economic, employment and environmental provider of benefit.

To commence the work, AORA conducted a national industry survey to establish baselines for the study on the industry's existing and potential capacity. Amongst the headline results was the predominance of two feedstock sources for the industry: Councils (51.5%) and commercial contracts (47.4%). The content of organic feedstock reflects this: garden organics (52.2%); waste grease (14.8%); timber (7.7%); food organics (5.2%); and other organics (15.3%).

The industry's major output products include composted soil conditioners (40.1%); soil and soil blends (33.7%); composted mulches (11.2%); and pasteurised mulches (10.7%). The two major end use markets are urban amenity (52.5%) and intensive agriculture (26.2%).

Industry satisfaction with its performance is strong, with 75% of businesses indicating they are somewhat, mostly, or very satisfied with their overall performance.

The performance of the industry, in line with recycling rates, varies greatly across different states and territories. However, there remain significant obstacles to the growth of the industry in every jurisdiction. The most significant of these includes regulatory policy uncertainty; contamination of input material; Government policy (such as waste and recycling strategies); business licensing and operating permits; development applications (time, cost and politicisation); Government procurement failing to support organic recycling products; and short council contract periods.

Internal issues such as access to technology, labour costs, logistics and access to finance are minor obstacles to growth.

Businesses in the industry currently occupy 49.2% of their operating sites on average; if they were not constrained by obstacles, they would occupy 73.6% of their operating sites. The current industry can process 51% more organic materials given the physical capacity of their sites, if unconstrained by obstacles. Industry businesses on average would invest \$9.3 million each over the next five years, if unconstrained by obstacles.

The major obstacles to growth are external to the industry and within the control of governments. That is why this 10 Year National Industry Strategy is so important.

Vision 2031: The 10 Year Roadmap for Australia's World Leading Organics Recycling Industry

This, our fourth foundational document, outlines a 10 year strategy for the Australian Organics Recycling Industry – a roadmap designed to take the industry from its existing solid base to recognition as a world leader.

At each of these stages, the industry is committed to delivering better results for our community. Importantly, Australian governments are significant players at each stage of the process. Only a whole-of-government and industry commitment will deliver the significant benefits on offer.

This document answers the two key questions:

1. **How do we get to 80% recycling of organics by 2026 and 95% by 2031?**
2. **How do we remove the obstacles to growth?**

This document is neither an academic study nor a technical analysis of organics recycling in Australia. It has been designed to capture the practical knowledge and common sense of the Australian Organics Recycling Industry and to show a clear and achievable path to its significant growth.



Peter Wadewitz
National Chair
AORA



Peter Olah
National Executive Officer
AORA

May 2021

01.

The Context

Why Recycle Organics?

This document outlines a 10 year roadmap for the Australian Organics Recycling Industry (AORI) – a roadmap designed to take the industry from a solid existing base to recognition as a world leader in the recycling and reuse of organics waste streams, for its innovative and efficient processing into desirable products, and for the relevance, quality, and economic and environmental value of these products.



At each of these stages, our industry is committed to delivering better results for our community. Importantly, Australian governments at all levels are significant players at each stage of the process.

A true partnership, where ambitious strategic objectives are served by common sense and consistent approaches to legislation, regulation, policy, community relations, approvals and investment is key. Only a whole-of-government and industry commitment to a true, long-term partnership will deliver the significant benefits on offer.

Uniquely among recycling streams, the supply of the organics recycling industry's products such as composts and mulches does not always meet demand. Despite the strong performance of the industry in many states, there remains an untapped supply of feedstock and unmet demand for the quality products of organics recycling. Vitally, this demand for our industry's products is domestic, and usually local to the production process.

In light of the recycling crisis following the China Sword bans, it must be remembered that there are parts of the Australian recycling industry which are consistently delivering on their promises.

Our industry's products are needed for programs to meet state and national targets to reduce waste to landfill, mitigate the impacts of drought, retain water, improve soil quality, address soil salinity, improve agricultural productivity, and to deliver the benefits of soil carbon capture.

Importantly, the circular economy works best in organics recycling because it is, in effect, the industrialisation of a natural process.

The risk to the organics recycling industry is not an offshore decision or export bans. The risk is siloed decision making in different arms of government working against agreed strategic goals and stifling better economic and environmental outcomes.



Australia's National Waste Policy⁴ outlines 14 key national objectives, all of which are relevant to the future of the organics recycling industry. Within the 14 objectives, 11 are central to the future of organics recycling:

Strategy

1

Waste avoidance

Deliver coordinated actions that help the community and businesses avoid and minimise waste, including through better design, reuse, repair, and sharing of products and services.

Strategy

5

A common approach

Implement a common approach towards waste policy and regulation, particularly in relation to national opportunities to support development of markets for recycling.

Strategy

2

Design

Design systems and products to avoid waste, conserve resources and maximise the value of all materials used at every stage of a product's life.

Strategy

7

Increasing industry capacity

Identify and address opportunities across municipal solid waste, commercial and industrial waste, and construction and demolition waste streams for improved collection, recycling and energy recovery.

Strategy

3

Knowledge sharing, education and behaviour change

Implement coordinated knowledge sharing and education initiatives, focused on the waste hierarchy and the circular economy, that address the needs of governments, businesses and individuals, and encourages the redesign, reuse, repair, resource recovery, recycling and reprocessing of products.

Strategy

8

Sustainable procurement by governments

All Australian governments consider environmental issues in their approach to goods and infrastructure procurement and promote demand for recycled materials and products containing recycled content.

⁴ 2018 National Waste Policy: less waste more resources, Commonwealth of Australia 2018

Strategy

9

Sustainable procurement by business and individuals

Businesses and individuals in Australia take environmental issues into account when purchasing or manufacturing goods and services, and promote domestic demand for recycled materials and products containing recycled content.

Strategy

10

Plastics and packaging

Reduce the impacts of plastic and packaging on the environment and oceans, reduce plastic pollution, and maximise benefit to the economy and society.

Strategy

11

Sound management of chemicals and hazardous waste

Manage and regulate chemicals and wastes throughout their lifecycle to minimise environmental and human health impacts and meet Australia's national and international obligations.

Strategy

12

Reduce organic waste

Reduce organic waste, including garden and food waste, by avoiding their generation and supporting diversion away from landfill into soils and other uses, supported by appropriate infrastructure.

Strategy

14

Market development and research

All Australian governments and businesses generate and report information to support creating and maintaining markets for recycled materials, both domestically and internationally.

The National Food Waste Strategy⁵ supports an objective of halving Australia's food waste by 2030. Most states and territories have similar plans and objectives.

Each of the recommendations made in this document touches on one or more of these objectives.

This document is AORA's 10 year national vision for the recycled organics industry. It targets significant improvements and growth for a sector which is already delivering well. Importantly, we believe that most of the benefits outlined in this document can and should be achieved within a medium timeframe of three to five years, rather than at the end of the 10 year horizon.

Amongst those ambitious objectives is a national target of less than 5% of organic waste to landfill by 2031. This document also addresses the greatest industry challenge, which is contamination of the feedstock.

AORA supports a greater state and national focus on systemic and behavioural improvements to achieve better source separation. We support national bans on all non-compostable single-use plastics and persistent chemicals – the sooner the better.

Above all, this industry vision calls for genuinely integrated decision making by all governments, reflecting the needs of a production cycle in a circular economy, and with greater long-term certainty around supply, operations and demand.

This document has been informed by the data and conclusions of two industry studies commissioned by AORA from Australian Economic Advocacy Solutions:

1. **The Economic Contribution of the Australian Organics Recycling Industry**, published in March 2020, demonstrates the economic and environmental benefits of the Australian Organics Recycling Industry to the national economy, and the economies of each state and territory.
2. **Australian Organics Recycling Industry Capacity Assessment: 2020-21**, published in January 2021, is a robust assessment of the industry's ability to step up as an economic, employment and environmental provider of benefit.

Excerpts from these reports are used throughout this document to show the valuable contribution already made by the Australian Organics Recycling Industry, and the significant economic and environmental benefits which would flow over the next 10 years from collaborative and cooperative approaches to the industry's future.

⁵ National Food Waste Strategy: Halving Australia's food waste by 2030, Commonwealth of Australia 2017

02.

The Starting Point

Australia's Organics Recycling Industry Today

In 2020, AORA commissioned a report entitled *The Economic Contribution of the Australian Organics Recycling Industry*, which was undertaken by Australian Economic Advocacy Solutions. The report demonstrates our industry's significant contributions - economic and environmental - to our nation.



The Australian Organics Recycling Industry in 2018-19 recycled 7.5 million tonnes of organic material.

Over the last decade the recycled tonnage has grown by 3.4% annually, versus a population growth rate of 1.4%. Our national organic recycling rate was 51.5% - roughly 298 kilograms of recycled organic material for every Australian.

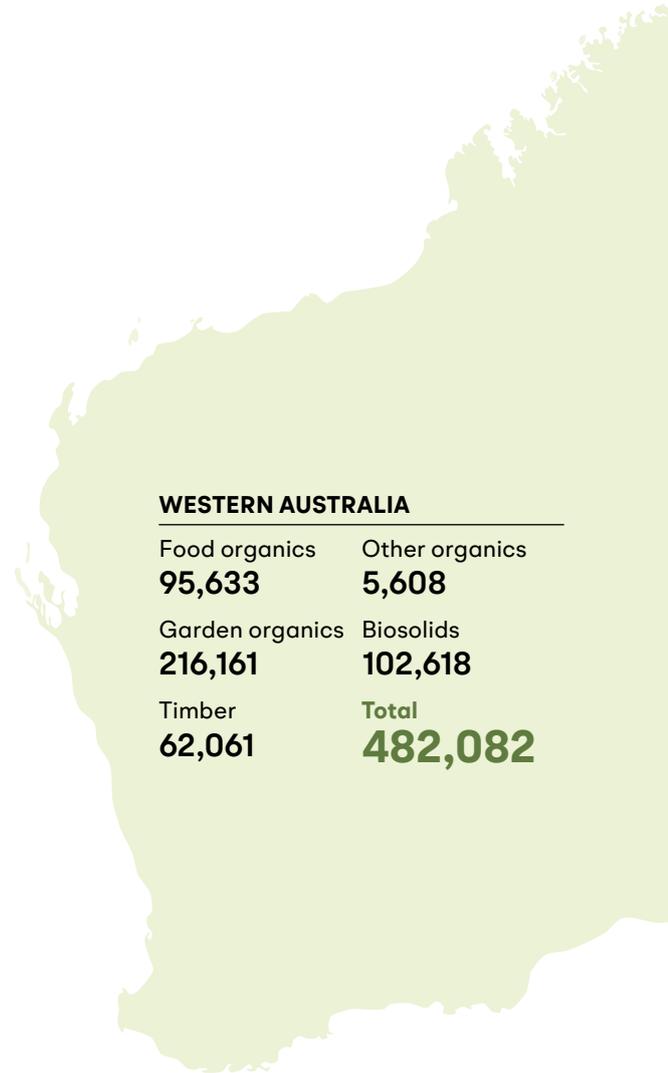
The industry has 305 operating businesses; pays over \$366 million in wages and salaries and an additional \$35 million towards superannuation; and provides an average livelihood to each employee industry of \$75,540 which compares favourably to national average weekly earnings of \$64,390.

The industry has a collective turnover of over \$2 billion and provides \$1.9 billion in benefit across its supply chain. It contributes \$724 million in industry direct value add to the Australian economy, with a further \$579 million value added through flow-on demand for goods and services, and 4,070 indirect jobs provided through flow on activity.

On the environmental side, the greenhouse gas savings from organics recycling is approximately 3.8 million tonnes of CO₂ annually. This is equivalent to planting 5.7 million trees or taking 876,663 cars off the road.

However, these benefits are not nationally consistent, with some jurisdictions doing significantly better than others.

New South Wales accounts for the largest tonnage of organic material being recycled in Australia at present with 2,759,515 tonnes (36.7% of total) in 2018-19. Victoria is the next largest with 1,490,119 tonnes (19.8%) followed by South Australia with 1,259,966 tonnes (16.8%) and then Queensland with 1,118,328 tonnes (14.9%) of organic material recycled.



WESTERN AUSTRALIA

Food organics	Other organics
95,633	5,608
Garden organics	Biosolids
216,161	102,618
Timber	Total
62,061	482,082

Figure 1: Tonnes of Organic Material Recycled 2018-19

AUSTRALIA-WIDE

Food organics	Other organics
539,455	1,415,670
Garden organics	Biosolids
3,124,825	1,410,590
Timber	Total
1,028,283	7,518,824

Source: National Waste Report, AEAS

NORTHERN TERRITORY

Biosolids

22,358

Total

22,358**QUEENSLAND**

Food organics

70,975

Garden organics

608,092

Timber

106,262

Biosolids

332,998

Total

1,118,328**SOUTH AUSTRALIA**

Food organics

8,223

Garden organics

300,428

Timber

254,308

Other organics

570,542

Biosolids

126,465

Total

1,259,966**NEW SOUTH WALES**

Food organics

290,885

Garden organics

1,134,617

Timber

292,954

Other organics

746,007

Biosolids

295,052

Total

2,759,515**AUSTRALIAN CAPITAL TERRITORY**

Food organics

158

Garden organics

252,606

Timber

21,547

Total

274,311**VICTORIA**

Food organics

39,361

Garden organics

566,846

Timber

291,152

Other organics

93,512

Biosolids

499,249

Total

1,490,119**TASMANIA**

Food organics

34,220

Garden organics

46,075

Biosolids

31,850

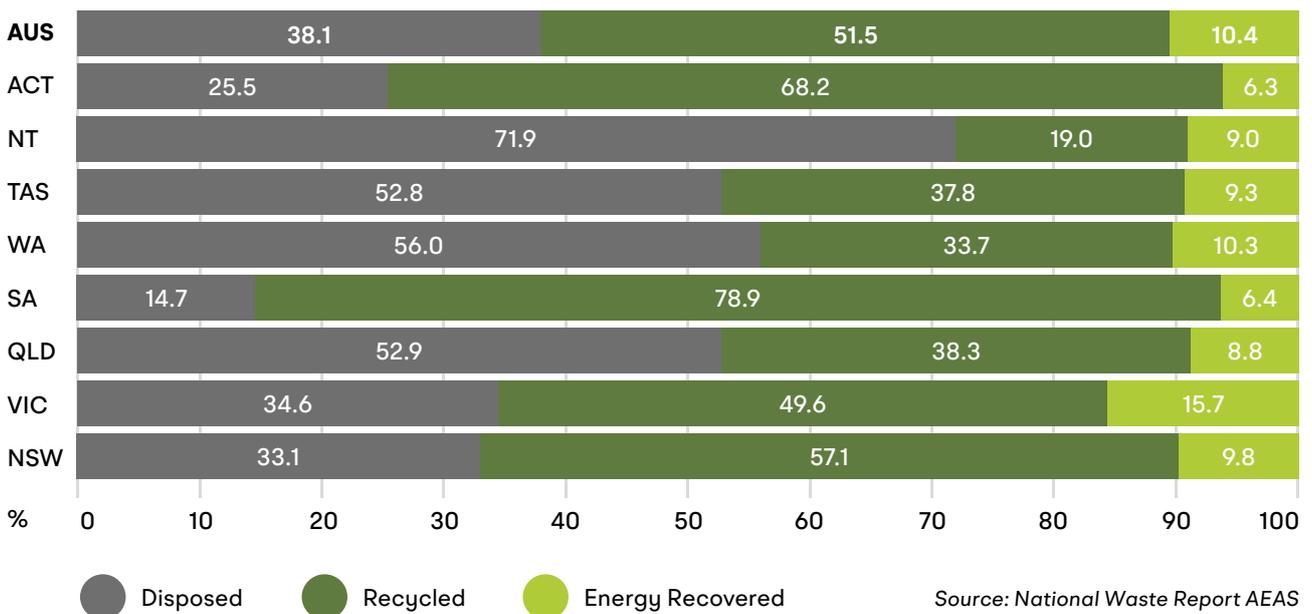
Total

112,144

On a per capita basis, South Australia is the Australian leader, recycling 722 kilograms per person each year followed by the Australian Capital Territory, recycling 646 kilograms each year. They compare to the Australian average of 298 kilograms per person.

South Australia currently has the highest organics material recycling rate at 78.9%, followed by the Australian Capital Territory (68.2%), New South Wales (57.1%), Victoria (49.6%), Queensland (38.3%) Tasmania (37.8%) and Western Australia (33.7%). The Northern Territory had the lowest organics recycling rate at 19% in 2018-19.

Figure 2: Organic material recycled & energy recovered rates in 2018-19
(percentage of total)



Of the total 305 organics recycling businesses operating in Australia, New South Wales has 112, Victoria 60, Queensland 45, South Australia 51, Western Australia 20, Tasmania 5, the Northern Territory one and the Australian Capital Territory has 11. The average organic recycling business has 15.9 full-time employees.

The industry employed 4,845 Australians in 2018-19, with New South Wales organic recycling businesses

employing 1,778, Victoria employing 960, Queensland employing 720, South Australia employing 812, Western Australia employing 311 and Australian Capital Territory employing 177.

One direct job is supported for every 1,550 tonnes of organic material recycled in Australia.

Table 1 : Economic contribution by State in 2018-19 (\$ millions)

	NSW	VIC	QLD	SA	WA	TAS	NT	ACT	AUS
Employment at end of June	1,778	960	720	812	311	72	15	177	4,845
Wages and salaries	134	73	54	61	23	5	1	13	366
Sales	748	404	303	342	131	30	6	74	2,038
Expenditure	691	373	280	315	121	28	6	69	1,882
Capital expenditure	64	35	26	29	11	3	1	6	175
Operating profit before tax	84	45	34	38	15	3	1	8	229
Industry value added	266	144	108	121	46	11	2	26	724

Source: AEAS

On a per capita basis, South Australia is the Australian leader, recycling 722 kilograms per person each year followed by the Australian Capital Territory, recycling 646 kilograms each year.

Importantly, the three tiers of government have extensive involvement, participation, and ownership of parts of the organic recycling industry across the supply chain: as a law and policy maker, a regulator and licensor, having authority over land use, environmental and other approvals, as an owner, aggregator and collector of feed stock, as an owner and operator of processing facilities, as a major customer for end-use products, and as infrastructure provider.

A successful Australian Organics Recycling Industry is great for the nation economically and environmentally, and a positive for governments in each of these roles.

03.

The Possible Future

The Best Industry We Can Be

Much of the recent industry and government focus on Australian recycling has been on problems: the impact of the Chinese Government's *Green Fence* and *China Sword* policies on several global waste streams reliant on exports to China for many years; problematic cross-border issues based on differential landfill policies and costs; and problems across the supply chain from the cost of collection to illegal dumping.



Throughout these recent challenges, one stream has continued to perform well: the organics recycling sector.

Our sector has grown at more than double the rate of population growth for well over a decade. Its feedstock is domestic, is processed locally, and its environmental and economic benefits spread to all Australians. Organics recycling in Australia boasts significant economic benefit multipliers locally and nationally, has consistently delivered on its promises, and does not export its problems.

The reasons for this are simple: organics recycling is an exemplar of the circular economy at its best. It is the industrialisation of a natural process; one which has been utilised by humans since the dawn of

agriculture some 12,000 years ago. Unlike most recycling streams, the nature of the organic feedstock and products requires a strong emphasis on localised supply chains: much of the product is sourced, processed and utilised within the same community.

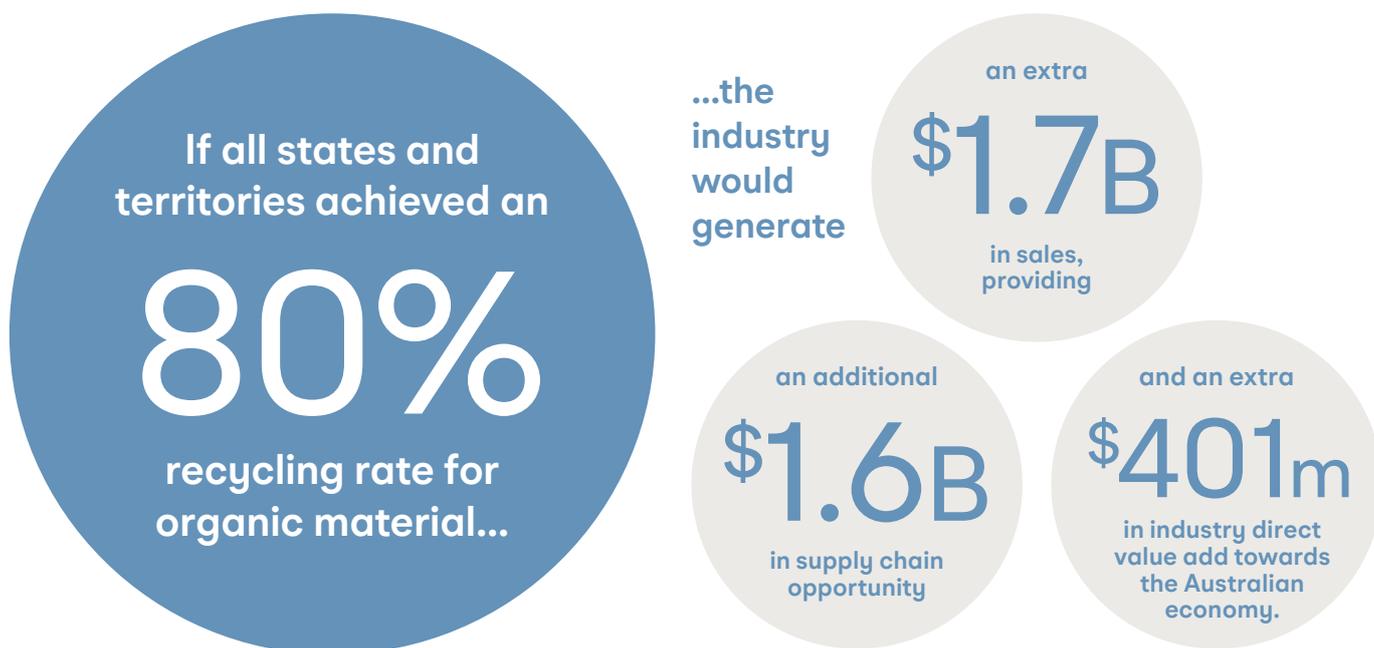
The data shows that organics recycling is the success story of the Australian recycling industry. This is important, as organics make up the largest part of the Australian waste stream.

This success has been achieved despite an operating environment of complex and contradictory

policy and regulation, short term approvals, restrictive licensing, and consequent uncertainty about investment, borrowing and employment.

Much is being achieved, but we would achieve much more if piecemeal planning and regulation were eliminated.

The Economic Contribution of the Australian Organics Recycling Industry report models the economic and environmental contribution available if current organics recycling rates were to be increased.



This would result in 2,682 extra jobs paying \$203 million in livelihood to Australians.

An additional 2,102,377 tonnes of greenhouse gas emissions would be saved, equivalent to 3,144,006 trees planted or 486,021 cars taken off the road each year.

Going further, to an ultimate national organics recycling rate of 95%, the industry would generate an extra \$1.7 billion in sales providing an additional \$1.6 billion in supply chain opportunity with an extra \$612 million in industry direct value add towards the Australian economy. This would deliver 4,094 extra jobs paying \$309 million in livelihood to Australians.

An extra 3,208,451 tonnes of greenhouse gas emissions would be saved: equivalent to 4,797,587 trees planted or 741,524 cars taken off the road each year.

These benefits are based on 2018-19 figures. As the waste stream expands with population and economic growth, the potentials for increasing benefits from organics recycling grow also.

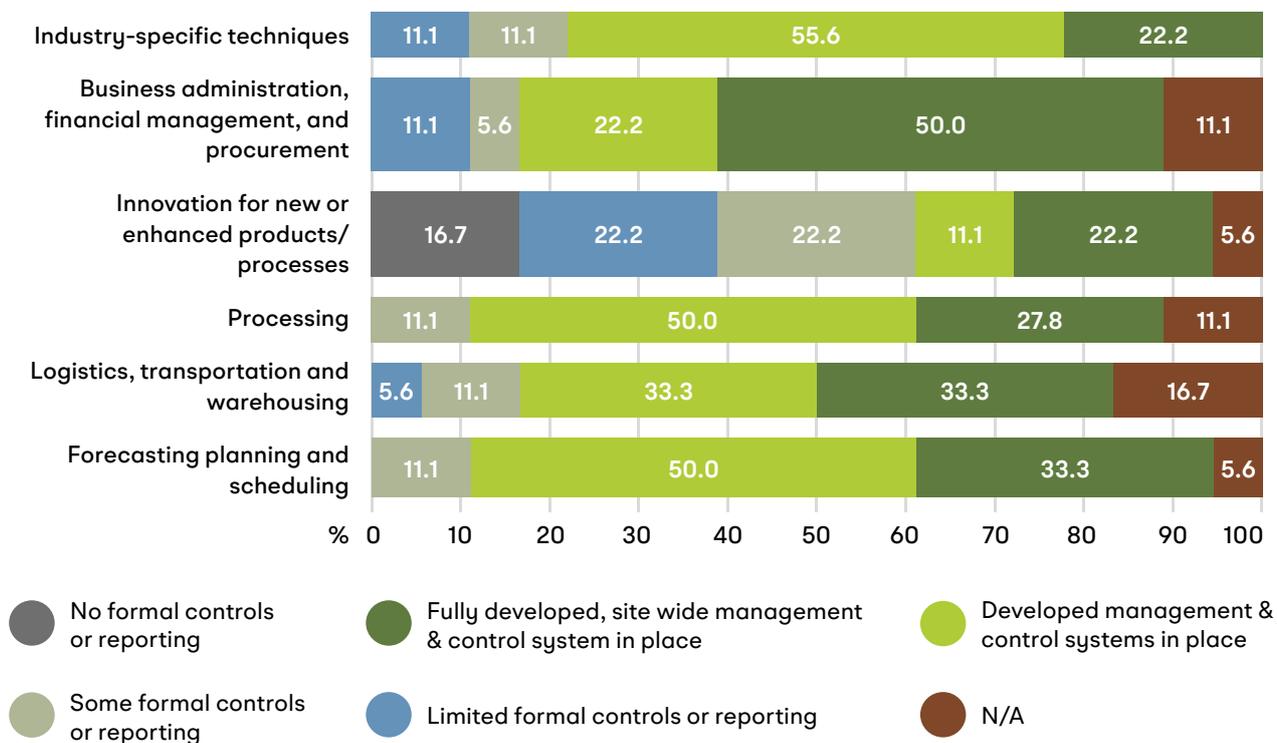
These opportunities for significant gains in waste stream reduction, soil improvement, drought proofing, water retention, and carbon capture, must not be lost to a focus on other, more problematic recycling streams.

As an exemplar of the circular economy, the Australian Organics Recycling Industry's capacity to achieve highly beneficial results in a relatively short timeframe is unmatched. This is demonstrated in AORA's recent industry report, Australian Organics Recycling Industry Capacity Assessment: 2020- 21.

Ours is an industry with great maturity and strong indicators of business stability and capacity for growth. Industry satisfaction with its performance is strong, with 75%

of businesses indicating they are somewhat, mostly, or very satisfied with their overall performance. The industry's current stage of development for a range of core business functions appears to be very mature indicating strong readiness to seize opportunities.

Figure 3: Industry Maturity

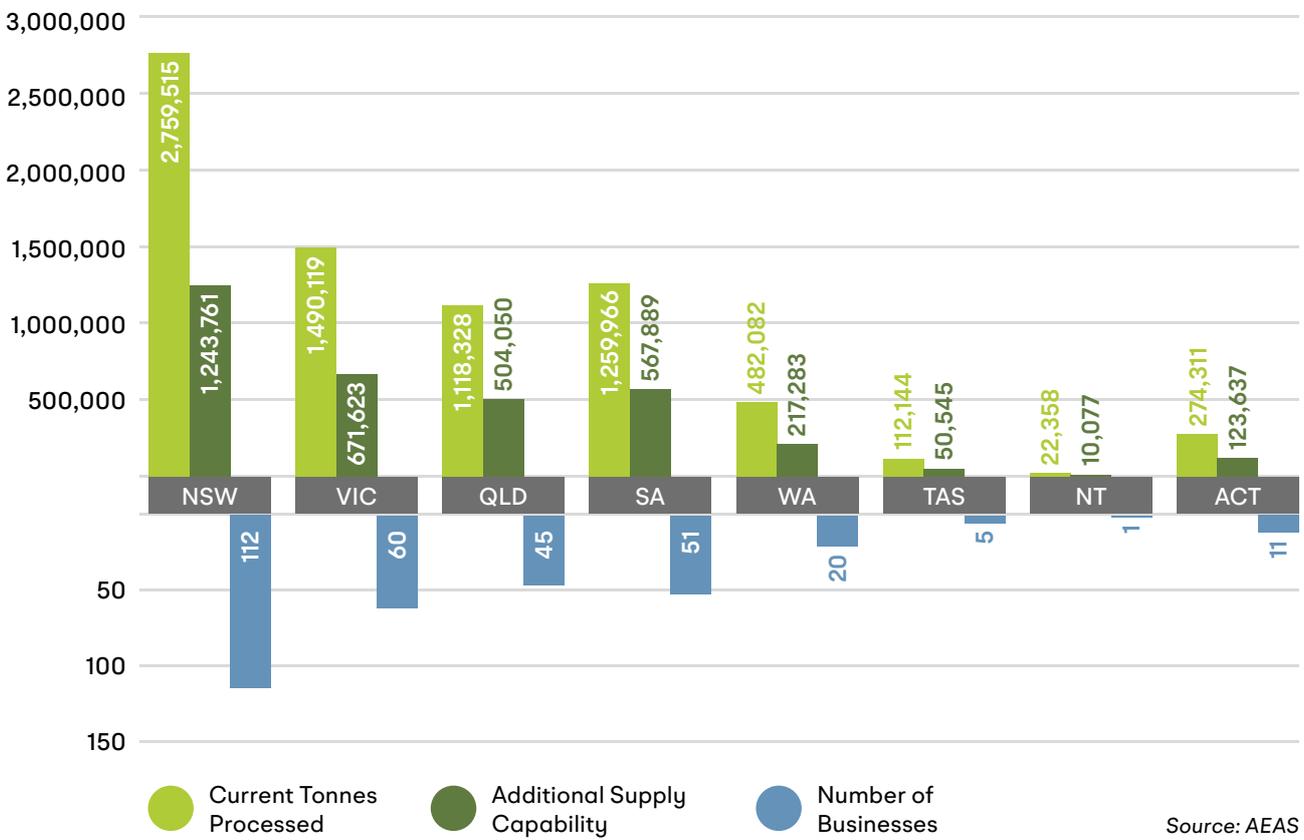


Source: AEAS

Businesses in the industry currently occupy 49.2% of their operating sites on average; if they were not constrained by obstacles, they would occupy 73.6% of their operating sites. The current industry can process 51% more organic materials given the physical capacity of their sites, if unconstrained by obstacles. Industry businesses on average would invest \$9.3 million each over the next 5 years, if unconstrained by obstacles.

The performance of the industry, in line with recycling rates, varies greatly across different states and territories.

Figure 4: Current Tonnes Processed and Additional Supply Capacity by State



The report states that:

1.

The industry is capable of processing an additional 51 per cent of organic materials given the physical capacity of their existing operations. Based on the current additional capacity of the industry, it is estimated to be able to provide an additional 3.8 million of collective processing capacity each year.

2.

Based on this modelling, only SA and the ACT are capable of meeting the required capacity for each of the 70 per cent, 80 per cent, 90 per cent and 95 per cent recycling rates. NSW is capable of meeting required capacity for an 80 per cent recycling rate but is not positioned to meet either a 90 per cent or 95 per cent recycling rate. All other States and Territories have shortfalls for meeting required capacity for 80 per cent, 90 per cent and 95 per cent recycling rates.

3.

Given that shortfalls in process capacity exist, this report confirms both growth for the existing industry and room for new industry businesses.



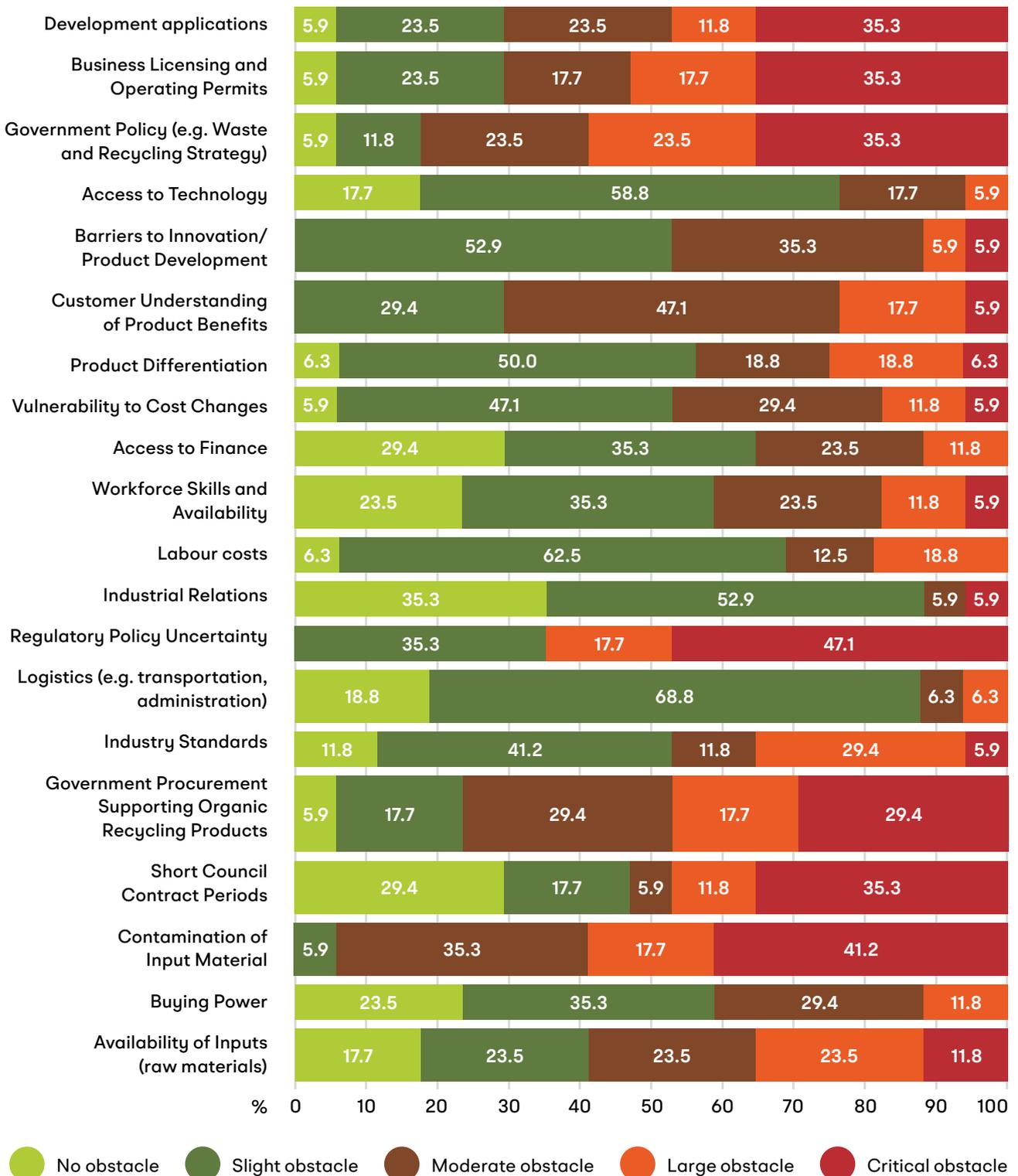
However, there remain significant obstacles to the growth of the industry in every jurisdiction. The largest of these includes regulatory policy uncertainty; contamination of input material; Government policy (such as waste and recycling strategies); business licensing and operating permits; development applications (time, cost and politicisation); Government

procurement failing to support organic recycling products; and short council contract periods.

Internal issues such as access to technology, labour costs, logistics and access to finance are minor obstacles to growth.

Figure 5: Industry Obstacles to Growth

Source: AEAS



Most importantly, the major obstacles to growth – the biggest roadblocks to achieving the economic and environmental benefits available – are external to the industry and within the control of one or more tiers of government. The benefits on offer will not be realised without a much closer and more collaborative relationship between governments and the industry.

AORA, on behalf of the Australian Organics Recycling Industry, commits to achieving an 80% organics recycling rate nationally and in each jurisdiction by 2026, and 95% by 2031 at the latest.

AORA calls on Federal, State, Territory and Local Governments to partner with the industry to achieve this.

04.

The Inputs

Quality In, Quality Out

At a time of stress in our recycling systems, organics recycling continues to quietly deliver on its promise.

The supply of quality feedstock to the processor gate is a key – in many ways, the key – component of the organics recycling supply chain. Clean, source separated feedstock without plastics, chemicals and other contaminants is central to the growth of organics recycling rates.



Governments play a multitude of roles here across all three tiers: a planner of national, state and local waste strategies; a controller of the collection process; the aggregator and owner of the waste streams; a regulator of the process and the feedstock; a customer of waste collection companies; a specifier and contract manager; a community educator; and a supplier to the processors.

It is beyond question that the process of waste collection, up to the point of feedstock delivery to recycling processors, is broadly under government control.

Sadly, it is also the greatest handbrake on a better organics recycling performance nationally.

The single greatest issue facing the industry is the contamination of feedstocks, overwhelmingly by plastics. Other contaminants include glass, metals, treated timbers, and persistent chemicals which do not readily break down in the composting process (or in nature).

There are many reasons for this including a generation of community members trained to co-mingle recycling streams, an unusual reluctance by some governments to move more quickly on banning single use plastics, a “race to the bottom” with the continual awarding of short term, price-based contracts by councils, a lack of product stewardship, and a failure to invest in long-term, national or state based community education programs about waste management.

Whilst testing and processing technology can address a fraction of the contamination problem, it is expensive and does not necessarily remove all contaminants consistently. Contaminated feedstock leading to contaminated products is anathema to the industry and would quickly destroy community trust in the industry and its products.

Unless the feedstock contamination issue is addressed at source, it will be economically unfeasible to significantly improve on current organics recycling rates.

Some contaminants – notably many metals, glass and durable plastics – will remain in the market well into the future. This type of contamination will have to be dealt with through a combination of community education and behavioural change, stronger product stewardship models, and improved processes and systems.

Others, especially non certified compostable single-use plastics and persistent chemicals, pose an environmental threat well beyond the organics recycling industry, and are replaceable or able to be eliminated from the market. For the recycling industry, they are a genuine commercial threat to the industry’s viability and sustainability. They must be expeditiously banned across all Australian jurisdictions.

The trends here are positive:

- the National PFAS Position Statement, last updated in October 2019, agreeing to a phase out of per- and polyfluoroalkyl substances (PFAS) nationally.
- the South Australian banning of PFAS firefighting foam from 30 January 2020.
- the first tranche of single-use plastics was banned in South Australia from 1 March 2021, with more to be banned a year later.
- the first tranche of single-use plastics to be banned in Queensland from 1 September 2021.
- PFAS firefighting foam banned in NSW except in catastrophic circumstances by September 2022.
- the first tranche of single-use plastics to be banned in Victoria by 2023.
- the **National Plastics Plan**⁶, released on 3 March 2021, which includes the phasing out of a number of problematic single-use plastics by July and December 2022.



**More needs to
be done, more
consistently and
more quickly.**

⁶ DAWE 2021, **National Plastics Plan 2021**, Department of Agriculture, Water and the Environment, Canberra, December. CC BY 4.0

The Roadmap for Inputs

- 4.1** Government policy, legislation and regulation governing organics waste collection and supply to processors will be aligned to national and state strategic objectives for landfill and waste reduction.
-
- 4.2** Government policy, legislation and regulation in this sector will be nationally standardised and consistent to the full extent possible.
-
- 4.3** Each state/territory will develop plans to show how its collection systems will ramp up to collect at least 80% of organics for recycling by 2026 and 95% by 2031 and publish annual performance reports against those plans.
-
- 4.4** In the absence of successful outcomes in any jurisdiction from 4.3 above, a ban of unprocessed organics to landfill will be implemented in that state/territory by 2026.
-
- 4.5** Each state/territory will guarantee its collection infrastructure delivers feedstock free of contaminants for recycling.
-
- 4.6** Nationally consistent legislation will enforce strict product stewardship requirements on the producers of materials which act as contaminants to organic feedstocks.
-
- 4.7** Each state/territory will guarantee the delivery of feedstock to processors on economic terms which are realistic, and on contracts of sufficient length to provide certainty for investment and employment by processors.

-
- 4.8** Each state/territory will design and deliver a broad based and ongoing community education program to teach and encourage sorting at source of waste streams.
-
- 4.9** These community education programs will include clear guidance on what is acceptable in organics waste streams (such as certified compostable packaging) and what is not.
-
- 4.10** Waste levies will be standardised nationally, and the funds fully directed towards those areas delivering the greatest benefits in waste reduction and recycling.
-
- 4.11** Following the substantive delivery of the community education programs, each state/territory will implement a well policed and consistently applied system of fines for residents and businesses which contaminate the organic waste collection system.
-
- 4.12** All governments will implement a ban on all single-use plastics which are not certified compostable.
-
- 4.13** All governments will implement a ban on persistent chemicals.
-

05.

The Industry:

Turning Australia's Organics Waste into a National Resource

The core of Australia's organics recycling industry are the facilities and businesses which process the feed stock into a variety of products, primarily composts and mulches, which are of significant economic and environmental value.



Governments are a key player in the production stage of our industry. They play a number of roles including ownership and/or operation of organics processing facilities, price setting of inputs and outputs, control of the legislation, regulation and policy covering the operation of processing facilities, and land use and environmental approvals for the facilities. There are several other areas of Government involvement which vary greatly between states and local governments.

It is in the interests of governments and the industry to better collaborate, and to consistently align those collaborative efforts to agreed national and state

objectives for waste reduction and a circular economy. Subsequently all decision making, at all levels of government and industry, must align to the achievement of those objectives.

Due to the nature of the feedstock and end products, it is strongly preferable for major organic recycling processing facilities to be located no more than 90 minutes travel time from their largest input and end user markets. Adding additional travel distance significantly affects the financial and environmental viability of the supply chain.

The Roadmap for Industry

- 5.1** Government policy, legislation and regulations governing organics industry processors will be aligned to national and state strategic objectives for landfill and waste reduction.

- 5.2** Each state/territory will be responsible for ensuring its approvals guarantee sufficient industry capacity to deliver to the national and state objectives by creating an environment for long term certainty around investment and employment.

- 5.3** Each state/territory will recognise recycling facilities as a critical industry requiring clear planning pathways, designated precincts and protected buffer zones.

- 5.4** Each state/territory will ensure that recycling operator requirements are included in state infrastructure plans and funded to ensure processing capacity is available to meet expected future demand.

- 5.5** All government decisions will take place with a clear triple bottom line understanding of their costs and benefits, and a genuine appreciation of the economics of the industry.

Where this occurs, it has a negative impact on the industry's capacity to meet stronger national objectives for waste stream reduction and resource recovery, and consequently reduces the capacity to meet end user demand for the product. Obviously the economic, environmental and employment costs of such failure can be significant.

To avoid this outcome, state governments must ensure that their planning codes allow for and actively promote the development of facilities within this travel distance window. Further, state governments must ensure that local governments are acting within both

the letter and spirit of the codes, to ensure that there are no undue or inappropriate delays or refusals.

If any of the steps above fails, then the capacity of the industry to meet strong resource recovery targets and demand for quality product is likely to falter. This product shortfall negatively impacts the capacity to meet state and national targets to mitigate the impacts of drought, retain water, improve soil quality, address soil salinity, assist in bushfire recovery, improve agricultural productivity, and deliver the benefits of soil carbon capture.

-
- 5.6** Each state/territory government will mandate, and require local governments to support, zoning and approvals allowing for organics processing facilities within a maximum 90-minute travel radius of all significant population centres.
-
- 5.7** Such zonings and approvals will recognise that organics recycling is growing at a rate faster than population growth, and new facilities need to be rapidly approved to match this.
-
- 5.8** An ongoing national funding stream equivalent to \$12 million per annum will be provided for the purpose of industry capacity development, to ensure that innovative and effective practices form the core of industry leadership going forward.
-
- 5.9** All governments, through a COAG process, will work with AORA to deliver a national set of minimum quality standards to be delivered by all organics recycling processors.
-
- 5.10** A COAG-based process, in partnership with the industry, will oversee and monitor activity on an ongoing basis to define and encourage best practice.
-

06.

The Outputs:

World Class Products Improving Australia's Soils

The products of organic recycling, such as composts and mulches, provide economic and environmental benefits in a number of ways. The process of recycling in itself provides benefits such as the diversion of significant tonnages from landfill.



Organics recycling reduces greenhouse gas emissions by decreasing the amount of energy, particularly fossil fuels, used by industry to make products compared with using virgin raw materials. It also reduces emissions of greenhouse gases by diverting recovered materials from landfills which biologically decompose in landfills and generate methane.

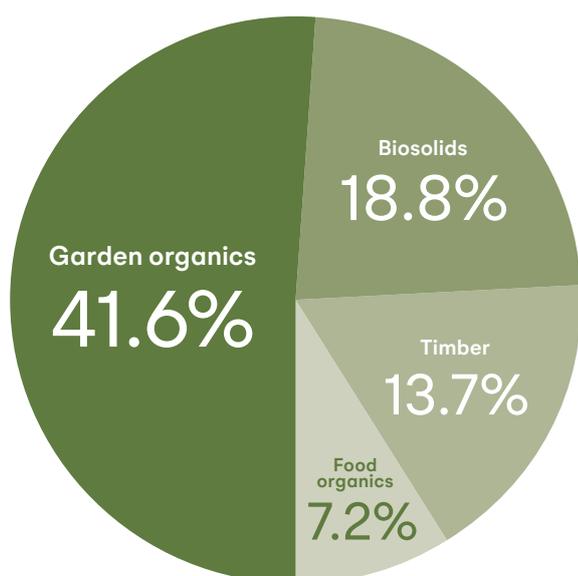
Diversion from landfill

The Australian Organics Recycling Industry in 2018-19 recycled 7.5 million tonnes of organic material. This recycled tonnage has grown by 3.4% annually over the last decade and compares to Australia's average population growth rate of 1.4% pa over the same period.

Organics recycling is the largest contributor in productive landfill diversion to recycling.

Garden organics (at 41.6%) make up the largest portion of organic materials recycled nationally, followed by biosolids (18.8%), timber (13.7%) and food organics (7.2%).

Australia's overall organic material recycling rate in 2018-19 was 51.5%, equating to 298 kilograms of recycled organic material for each person in Australia.



Soil quality, water retention and drought mitigation

Composts and mulches directly address the significant issue of poor and declining soil quality in Australia, as well as buffering the effects of climate change in agriculture. These products:

- improve the carrying capacity of soil for nutrients and water, thereby reducing water loss from soils (improving water use efficiency by 30% or more in many cases, and reducing cropping risk)
- suppress weed growth, destroy weed seeds and pathogens, help to control the spread of weeds and diseases, and assist in managing biosecurity risks
- protect soils against wind and water erosion
- reduce soil temperature fluctuations (increasing root growth and healthy soil biology)
- reduce the need for synthetic fertilizers and pesticides, and the carbon emissions from their manufacture and use
- make soils more resistant to nutrient leaching, thereby protecting our water reserves and the aquatic environment.

Carbon capture

The Australian Organics Recycling Industry currently removes greenhouse gases equivalent to approximately 3.8 million tonnes of CO₂ annually. This is equivalent to planting 5.7 million trees or taking 876,663 cars off the road.

The industry's products also improve the capacity of soil to hold carbon, adding to this carbon contribution. One tonne of composted garden organics applied to agricultural land sequesters approximately 0.5 tonnes of CO₂ equivalent. This higher carbon load aids the capacity of soil to carry and hold nutrients and water, increasing productivity and decreasing water usage.

Soil salinity

Sodium can bond with chlorine in soil to form salt. Saline soils can reduce the availability of water to plants and even cause plant death. Under irrigation, it is normal for salinity to build up during the season when water inputs may carry a salt load, and evaporation concentrates salts in the upper soil.

Salinity is often managed with good rainfall or leaching irrigation to flush salts through. However, the efficiency of leaching can be impaired when the soil has poor structure. One of the most commonly seen effects of compost use is improved soil structure and water infiltration. Better infiltration ensures water is able to move into the soil and percolate through it, rather than pooling on the surface, evaporating or running off slopes before it can do its job.

Salts are then more easily flushed away with improved water infiltration. Compost also improves plant growth in saline soils. This is particularly helpful in situations where farmers have to wait for rains to flush out salt.



Soil compaction

Soil is made up of large and small particles of soil and organic matter as well as pockets of air. These components give soil its structure.

The pockets of air in soil are often called pores and the amount of space in the soil determines its porosity. Small pores (micropores) are important for water storage, while large pores (macropores) are important for water infiltration and drainage, air movement and root growth.

When the soil structure is disturbed, soil can become compacted and porosity lost. Even a thin seal or crust, often just formed by raindrops on bare soil, can reduce infiltration rates and increase run off and erosion. Once this occurs it is difficult to remedy and tillage or mechanical action is needed.

Adding compost at this time helps to maintain the macropore structure created by tillage as organic matter coats the clods and holds the macropores together. Monitoring soil and plant nutrient levels after compost application will also ensure that lower levels of fertiliser application and irrigation are required.

The role of Government

Governments are a key player in moving the finished products of our industry to their end users. The various roles include monitoring standards for products via Environmental Protection Authorities or equivalent agencies; approval for the products themselves and their various uses; legislation and regulation of the supply process; as a purchaser of the product for use on government owned lands or through initiatives such as drought proofing or soil improvement programs; and as the owner or supplier of the distribution logistics in many cases.

Unfortunately, the involvement of Governments in this part of the organics recycling supply chain has been fraught with inconsistency both within and across jurisdictions. This unpredictability has had a negative impact both on industry and end user confidence, and on the confidence of banks and other finance providers to invest in the industry.

One recent example, the decision of the NSW EPA in 2018 to effectively ban Mixed Waste Organic Outputs (MWOO), is instructive. The ban itself directly affected relatively few industry operators. The ramifications of the decision, and its inconsistency with other government decisions in NSW and nationally have been detrimental.

Whether the MWOO ban was the correct decision or not, the contradictory decision making it portrayed has increased the perception of sovereign risk. This makes it

more difficult for the industry to invest in any new facility which often requires amortisation of capital costs over a 10 year plus period.

Put simply, governments and the industry must work together to do better.

The Roadmap for Outputs

-
- 6.1** Government policy, legislation and regulations governing organics recycling industry products will be aligned to be nationally consistent.
-
- 6.2** The National Soil Improvement Strategy and Drought Mitigation Strategy will incorporate a long-term component of government funding for subsidised (or free) soil conditioners for those primary producers most likely to benefit from them, but unable to afford the cost.
-
- 6.3** Government procurement standards and practices nationally will be aligned to ensure the purchase of quality soil conditioners meeting the Australian Standard.
-
- 6.4** All governments will work with the industry to deliver a broader end user understanding and acceptance of the Australian Standard (AS4454) as a minimum requirement for all composts intended for unrestricted use.
-
- 6.5** The Federal Government will fund and collaborate with the industry to develop and deliver an industry-led product certification system, beyond the Australian Standard, to provide greater clarity to end users on the value and limitation of different products.
-
- 6.6** An ongoing national funding stream equivalent to \$8 million per annum will be provided to support product development, research, seminars and workshops, to ensure that the industry understands and innovates its product lines to deliver to the emerging requirements of its major end user groups, especially in the agriculture industry.
-

07.

The Roadmap to 2031

This is our roadmap to take the industry from its existing solid base to recognition as a world leader. This document has been designed to capture the practical knowledge and common sense of the Australian organics recycling industry and to show a clear and achievable path.





The Inputs

4.1

Government policy, legislation and regulation governing organics waste collection and supply to processors will be aligned to national and state strategic objectives for landfill and waste reduction.

4.2

Government policy, legislation and regulation in this sector will be nationally standardised and consistent to the full extent possible.

4.3

Each state/territory will develop plans to show how its collection systems will ramp up to collect at least 80% of organics for recycling by 2026 and 95% by 2031 and publish annual performance reports against those plans.

4.7

Each state/territory will guarantee the delivery of feedstock to processors on economic terms which are realistic, and on contracts of sufficient length to provide certainty for investment and employment by processors.

4.8

Each state/territory will design and deliver a broad based and ongoing community education program to teach and encourage sorting at source of waste streams.

4.9

These community education programs will include clear guidance on what is acceptable in organics waste streams (such as certified compostable packaging) and what is not.

4.4

In the absence of successful outcomes in any jurisdiction from 4.3 above, a ban of unprocessed organics to landfill will be implemented in that state/territory by 2026.

4.5

Each state/territory will guarantee its collection infrastructure delivers feedstock free of contaminants for recycling.

4.6

Nationally consistent legislation will enforce strict product stewardship requirements on the producers of materials which act as contaminants to organic feedstocks.

4.10

Following the substantive delivery of the community education programs, each state/territory will implement a well policed and consistently applied system of fines for residents and businesses which contaminate the organic waste collection system.

4.11

All governments will implement a ban on all single-use plastics which are not certified compostable.

4.12

All governments will implement a ban on persistent chemicals.

The Industry

5.1

Government policy, legislation and regulations governing organics industry processors will be aligned to national and state strategic objectives for landfill and waste reduction.

5.2

Each state/territory will be responsible for ensuring its approvals guarantee sufficient industry capacity to deliver to the national and state objectives by creating an environment for long term certainty around investment and employment.

5.3

Each state/territory will recognise recycling facilities as a critical industry requiring clear planning pathways, designated precincts and protected buffer zones.

5.7

Such zonings and approvals will recognise that organics recycling is growing at a rate faster than population growth, and new facilities need to be rapidly approved to match this.

5.8

An ongoing national funding stream equivalent to \$12 million per annum will be provided for the purpose of industry capacity development, to ensure that innovative and effective practices form the core of industry leadership going forward.

5.9

All governments, through a COAG process, will work with AORA to deliver a national set of minimum quality standards to be delivered by all organics recycling processors.

5.4

Each state/territory will ensure that recycling operator requirements are included in state infrastructure plans and funded to ensure processing capacity is available to meet expected future demand.

5.5

All government decisions will take place with a clear triple bottom line understanding of their costs and benefits, and a genuine appreciation of the economics of the industry.

5.6

Each state/territory government will mandate, and require local governments to support, zoning and approvals allowing for organics processing facilities within a maximum 90-minute travel radius of all significant population centres.

5.10

A COAG-based process, in partnership with the industry, will oversee and monitor activity on an ongoing basis to define and encourage best practice.

The Outputs

6.1

Government policy, legislation and regulations governing organics recycling industry products will be aligned to be nationally consistent.

6.2

The National Soil Improvement Strategy and Drought Mitigation Strategy will incorporate a long-term component of government funding for subsidised (or free) soil conditioners for those primary producers most likely to benefit from them, but unable to afford the cost.

6.3

Government procurement standards and practices nationally will be aligned to ensure the purchase of quality soil conditioners meeting the Australian Standard.

6.4

All governments will work with the industry to deliver a broader end user understanding and acceptance of the Australian Standard (AS4454) as a minimum requirement for all composts intended for unrestricted use.

6.5

The Federal Government will fund and collaborate with the industry to develop and deliver an industry-led product certification system, beyond the Australian Standard, to provide greater clarity to end users on the value and limitation of different products.

6.6

An ongoing national funding stream equivalent to \$8 million per annum will be provided to support product development, research, seminars and workshops, to ensure that the industry understands and innovates its product lines to deliver to the emerging requirements of its major end user groups, especially in the agriculture industry.

Glossary

For consistency, this document generally uses terms as defined in *Australia's National Waste Policy*.

Australian Organics Recycling Association (AORA)

is the national representative association of the Australian Organics Recycling Industry

Australian Organics Recycling Industry (AORI)

includes businesses and facilities across the supply chain of Australian organics recycling.

Certified compostable products are those which are compliant with the current Australian Standards AS 4736 or AS 5810.

Circular economy aims to change the patterns of natural resource use in the economy in order to achieve sustainable growth by slowing, narrowing or closing material loops.

Contaminants are any non compostable items in the organics waste stream.

Energy recovery is the process whereby a substantial portion of the embodied energy in a waste is recovered.

Food waste is food that does not reach the consumer or reaches the consumer but is thrown away.

Municipal solid waste is waste produced by households and council operations, including hard waste collections, street sweepings, and waste dropped off at waste and resource recovery facilities by members of the public.

Organic wastes are those wastes derived from material that was once living, excluding petroleum-based materials. Unlike most waste streams, they have an inherent economic and environmental worth at all stages of the supply chain.

Persistent chemicals are herbicides, pesticides and other compounds which do not readily break down in the composting process or in the natural environment (also known as persistent organic pollutants).

Processor is the facilities and businesses which transform feedstock into valuable products such as composts and mulches.

Product is an article or substance that is manufactured or refined for sale.

Product stewardship is the process of taking responsibility for the life cycle impacts, flows and fates, of products or materials. This may involve business, governments and consumers sharing responsibility.

Recovered rate is the percentage of total waste that is either recycled or has energy recovered from it.

Recycling is the conversion of materials that would have otherwise been disposed of into new materials. For data reporting purposes in this document, recycling:

- includes all materials processed for recycling, whether they are quickly sold or used, or stockpiled for later sale or use
- excludes materials in stockpiles of unprocessed waste materials
- excludes residuals that are sent to landfill or otherwise disposed of.

Repair is the alteration of a product or material to correct damage or fault, maintaining its use. This may be applied to products or materials before or after they have become waste.

Reprocessing is the processes for converting recovered materials into new products.

Resource recovery is making use of a waste material, including recycling of waste matter and recovering energy or other resources from waste.

Reuse is the reallocation of a product or material without reprocessing or remanufacture. This may be applied to products or materials before or after they become waste, including via sale of goods from a tip shop.

Waste is any material which has finished initial use and entered a waste stream. This includes the waste which is recycled as well as the waste sent to landfill.

Waste and resource recovery industry includes businesses and organisations involved in collecting, sorting, processing, trading, transporting and disposing of waste.



**Australian Organics
Recycling Association (AORA)**

PO Box 585, Hove SA 5048
admin@aora.org.au
0434 625 472

aora.org.au

ABN 17 158 519 736

Version 1.1: adopted as policy by the AORA Board on 13 April 2021.

© Australian Organics Recycling Association Limited; April 2021.

This work is copyright. Apart from any use permitted under the Copyright Act 1968, no part may be reproduced by any process, nor may any other exclusive right be exercised, without the permission of the Australian Organics Recycling Association Limited.

This publication (and material sourced from it) should be attributed as Vision 2031 - The 10 Year Roadmap for Australia's World Leading Organics Recycling Industry, Australian Organics Recycling Association (AORA) 2021.

Authorised by Peter Olah, South Brisbane, for the Australian Organics Recycling Association.

Printed on 100% recycled paper – Impact by Ball & Doggett.



