



THE HON. **WARREN ENTSCH** MP
Special Envoy for the Great Barrier Reef



DISCUSSION PAPER

Convenience vs. Conservation

**Tackling the prominence of single use plastics in the
age of modern, convenience driven economies**

November 2019

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Further information is available from:



Office of the Hon Warren Entsch MP
Special Envoy for the Great Barrier Reef

200 Mulgrave Road, Westcourt, QLD 4870
PO Box 14, Bungalow, QLD 4870
Telephone: +617 4051 2220
Email: warren.entsch.mp@aph.gov.au

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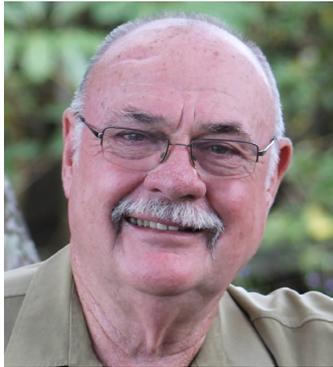
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Contents

- 1** Message from the Special Envoy
- 2** Introduction
- 3** The problem
- 5** Global challenges
- 6** Local solutions
- 8** The pilot program
- 11** Concluding thoughts
- 12** Continuing the dialogue

MESSAGE FROM THE

Special Envoy for the Great Barrier Reef



I was deeply honoured to be appointed as the Special Envoy for the Great Barrier Reef following the Prime Minister's announcement on 26th of May 2019. I've always been passionate about this magnificent natural wonder and that will come as no surprise to many given it's right on the doorstep of my electorate of Leichhardt.

Since my appointment I have been engrossing myself in mountains of research, consulting with stakeholders and have attended many briefings with industry bodies, and government agencies—who have oversight on the Reef and our broader environment. It is clear to me that the Great Barrier Reef is an ecosystem under pressure, facing ever increasing challenges to maintain its viability.

In my role as Special Envoy for the Great Barrier Reef, I will seek to engage with stakeholders and advocate for positive policy development that will serve to help our natural environment. It seems very apparent that in making the necessary positive changes that there is a real potential to simultaneously leverage many opportunities for economic growth. In my view helping the environment doesn't have to cost the earth!

While the work in this area is of paramount importance, I certainly won't be hand-wringing about impending mass human extinctions. Instead I will be trying to find practical solutions to the challenges we face as a nation and indeed as custodians of the natural environment around us. I want to work to bring people together, irrespective of political persuasion, in pursuit of the common good. With this document I intend to spark a discussion around how we ought to grapple with the challenges we face and identify the steps we can take to address them.

In what is to be my final term in the Australian Parliament, I wish to dedicate my focus to the reduction of single-use plastics. I have been inspired by the work of a young girl from my electorate, Molly Steer who has created the *Straw No More* campaign. She focuses on solutions, not slogans and she has proven to be a passionate and effective advocate. I wish to emulate her proactive, hands on approach in order to affect real change in the eradication of single use plastics from our environment.



I hope you will join me in this important discussion and I thank you in anticipation of your interest and support with the work ahead.

Best regards,

A handwritten signature in blue ink, appearing to read 'Warren Entsch'.

The Hon Warren Entsch MP

Special Envoy for the Great Barrier Reef
Federal Member for Leichhardt

Introduction

Plastic... it's everywhere

The utilisation of plastic has been growing exponentially for many decades. This incredibly versatile resource has an almost limitless multitude of use cases and it is ever-present in all aspects of our daily lives. From the packaging surrounding our food, the cars we drive to the clothes we wear and everything in between.

While this incredible and revolutionary material has helped to advance various industries over many decades. In the same span of time, plastics have also become a dominate and pervasive waste by-product from manufacturing processes and consumerism the world over. As a consequence of these advances, single use plastics have become ubiquitous and are discarded en masse. Resulting in their presence throughout our environmental ecosystems in innumerable quantities.

Disturbingly the prevalence of plastic has become such an integral part of most manufacturing processes that a complete and utter disconnect has emerged. Little thought is given to the dichotomy between product shelf life and the time frame the packaging encasing a particular product takes to break down. For instance fresh produce that might last a few days or a week, is wrapped in plastic that could take decades or even centuries to break down.

Invariably some of these plastics will find their way into our environment, not only do they ruin its natural beauty they are also easily ingested by wildlife of all sizes. Typically plastic debris is exposed to UV light and water based abrasions. Over time they begin to disintegrate into smaller and smaller sized microplastics, becoming increasingly harder to remove from the environment. Consequently these microplastics become far easier for small aquatic animals to consume.

The problem is compounded when each level of the food chain is able to ingest varying sizes of plastic directly and/or consume prey that have ingested microplastics. The results can be seen in the photos and footage of necropsies performed on birds and aquatic life with plastic litter filling their stomachs and intestinal tracts.

Inevitably some of these animals are consumed by humans and we too ingest these microplastics. While it is not entirely clear the long term health effects of microplastic ingestion, there is no suggestion that consuming plastics in this manner provides any benefit to humans or animals alike.

This is a global problem and while Australia might not be the worst offender, particularly with respect to purposeful dumping of waste into our oceans and waterways, we certainly have an obligation to ensure we are dealing with our own waste responsibly. In the past Australia has been reliant on other nations to handle its waste, by exporting significant quantities of it overseas. However, the prospect of exporting waste is fundamentally unsustainable and fast becoming an irresponsible luxury of the past.

China and Malaysia have previously been in receipt of vast quantities of global waste (Australia's included) but are no longer interested in accepting the world's waste. Forcing Australia and many other nations to grapple with their waste generation. In Australia we produce approximately 67 million tonnes of waste per year.¹ Equating to around 2.7 tonnes for every person per year.

This abundance of waste suggests quite clearly that Australia hasn't got the balance right. There are still a degree of ill-informed or careless consumers, coupled with recycling market forces both playing a significant role in exacerbating Australia's waste challenges. Consumers might be under the impression that some of the plastics they interact with are biodegradable. While that may be the case, it stands to reason that the additives in such plastics may only serve to hasten the transition of large plastic waste into microplastics—which arguably poses a greater potential for harm if irresponsibly disposed.

The global pursuit of convenience has ultimately contributed significantly to the challenges we now face. Some manufacturers may resist the necessary change, but regardless it's abundantly clear that the era of single use plastics must come to an end.

1 Department of the Environment, *National Waste Policy 2018*, p. 15.

The problem

Single use plastic waste and marine ecosystems

Recent ructions within the Australian waste management industry have prompted greater public interest around the inner workings of the industry. Various media exposés have helped to start a conversation and a necessary period of introspection around the waste Australia generates. These reports have typically indicated that although as a nation we might deem ourselves to be good at recycling, outdated practices, market forces and a lack of education are all contributing to a rather bleak outlook.

While, globally, waste management industries struggle to come to terms with the increasing reluctance of other nations to accept exported waste, Australia must now resolve to do something more productive and sustainable with its own waste. Australia, and indeed the rest of the developed world, needs to better understand and manage the duality of consumerism. The pursuit of economic opportunity without regard for the intangible consequences has brought us these waste challenges. Environmental conservation efforts must be balanced against the convenience and consumerism that underpins our society.

The downside of our ever increasing need for convenience is that it continues to add pressure to the already diminished hopes of environmental conservation efforts across the globe. This disconnect between convenience and conservation becomes more apparent when individual's lives are examined and how as a collective, their actions (or lack there of) are incrementally contributing to our national waste challenges and the corresponding environmental impact.

The National Waste Policy 2018, agreed to by the Environment Ministers of each State, Territory and Federal Government, indicates that there is an estimated 150 million tonnes of plastic in our marine environment. This staggering amount of waste is still growing and it is predicted that by 2050 ocean plastic will surpass the total weight of all the fish in the world's oceans.²

“ Each year, at least 8 million tonnes of plastics leak into the ocean – which is equivalent to dumping the contents of one garbage truck into the ocean every minute. If no action is taken, this is expected to increase to two per minute by 2030 and four per minute by 2050.

World Economic Forum - Rethinking the future of plastics

Growing global concern and increasing awareness are assisting with curtailing bad behaviours from industry and consumers alike. But it is only by ceasing such damaging practices entirely and pursuing more circular economies that we will be able to have a reduced impact on the environment. We should seek to align economic activities with environmental outcomes and strive for better waste management practices and growth in recycling industries.

During this transitional phase the Australian Government's focus should be on correcting market failures and providing leadership, product stewardship and coordinating efforts nationally. Developing recommendations for best practice and potential legislative change might form part of an expanded vision for how waste producing industries ought to be operating—particularly if they themselves are unable to realise the substantial change required.

While efforts to recycle and re-purpose waste play an important role in the waste management process, we must acknowledge that these actions are merely a treatment for a symptom, rather than addressing the underlying condition. We must also turn our focus to reducing and avoiding the generation of waste all together. Examining the types of waste generated from fast moving consumer goods (FMCG) and address the unsustainable nature of particular products and packaging (be they plastic bags, food packaging or disposable water bottles etc.) Is it perhaps as a consequence of applicable health standards that we are surrounded by plastic waste? Do such standards adequately serve their purpose, or do they act more as cumbersome red tape stifling product and packaging innovation?

Regardless, these are the same protective plastics that are found in our oceans, strewn across beaches and are mistakenly finding their way into the diet of marine life the world over. Though it is not just animals that are suffering as a result of our fascination with plastic and its entrenched usage. Humans are also ingesting microplastics, whether it's in the marine life we consume or the water we drink. A 2018 study tested samples from 259 bottles of water, obtained from 19 locations in 9 different countries, the results indicated that 93 per cent of samples contained microplastics.³

Global production of plastic trends look set to continue their current trajectory and with behemoth distributor Amazon now entering the Australian marketplace—it is likely that our waste from packaging will only continue to increase. As more and more Australians choose to purchase their goods online, there will be a commensurate increase in the amount of packaging that is used to transport those goods to individual consumers. It is therefore critical that our packaging is sustainable.

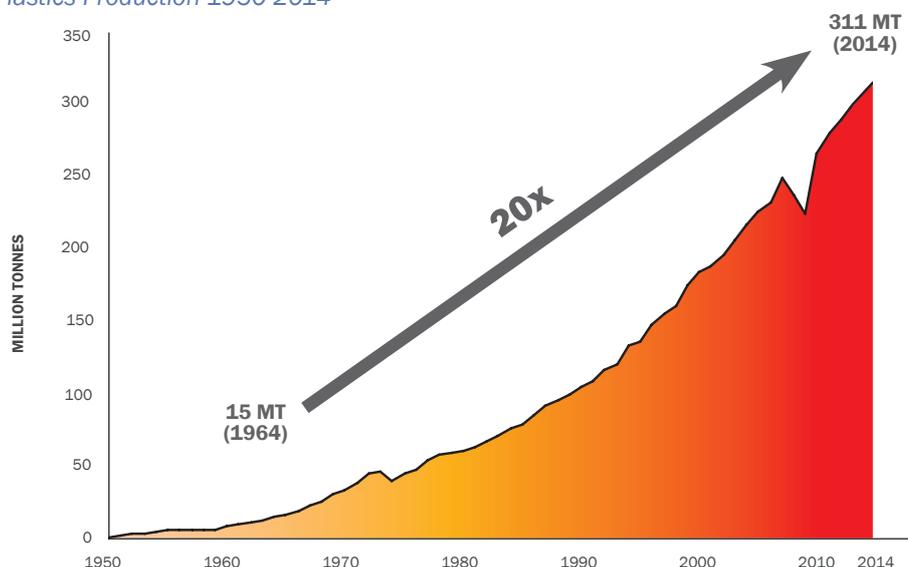
Single use plastic for packaging purposes has long been a cost effective option for manufacturers and distribution services alike. Industry-led initiatives are a positive step toward addressing this problem, but legislative instruments may be required to prohibit usage, as we have seen in some state jurisdictions. The World Economic Forum has indicated that it intends for policy makers to help steer innovation and investment toward creating materials and formats that reduce the negative environmental impact of single use plastic packaging.⁴

If we are to continue utilising plastic as a primary production material, then we must at least explore new avenues to reduce its harm on the environment or perhaps enable and incentivise the extension of its usable life. Such a large scale problem requires a multifaceted approach. So while we must tackle the unsustainable production levels, and encourage recycling behaviours further. We must also encourage manufactures to redesign how products are made and what they're made from, so sustainability and environmental impacts are considered first and foremost.

This shift in mindset has seemingly not occurred organically as yet, perhaps if we were to fully quantify precisely the socio-economic impact of ocean based plastic leakage. This would better enable manufacturers to visualise their impact on the environment through a cost model of sorts. Being able to put a number on this could also help better substantiate private and public sector investment in recycling and reclamation initiatives.

At present single use plastic packaging has significant drawbacks, some we have yet to ascertain precisely the cost. But even if recycled, currently single use plastics are likely only recycled into lower-value applications. Subsequent recycling efforts thereafter are often unlikely and impractical. This is evident when we examine global plastic recycling rates, as they are typically substantially lower than the recycling rates for paper, steel and iron.

Growth in Global Plastics Production 1950-2014⁵



3 Frontiers in Chemistry, *Synthetic polymer contamination in bottled water*, Sherri A. Mason Et Al. 2018.

4 The World Economic Forum, *The New Plastic Economy: Rethinking the future of plastic*, 2016.

5 PlasticsEurope, *Plastics - The Facts 2015*.

Global challenges

Influencing and supporting Asia

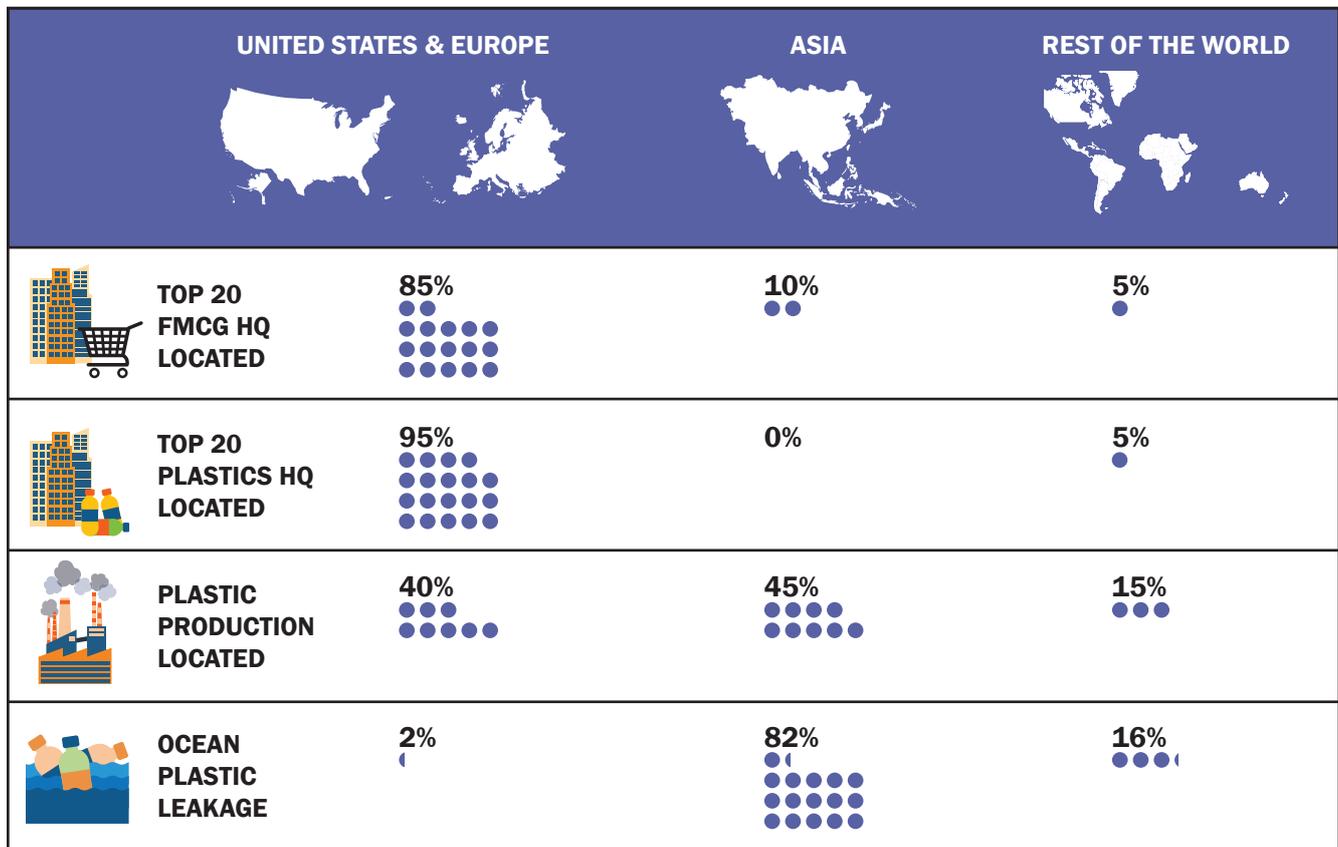
The graphic below illustrates the dichotomy of plastic production and plastic ocean leakage, the disconnect is particularly evident in Asian markets. Nations throughout parts of the Asia Pacific region are contributing the vast majority of ocean plastic leakage.

For years many countries have been shipping their waste to these Asian markets, so the blame for the leakage ought not solely be leveled at Asia. This global waste challenge has been exacerbated further by insufficient investment in recycling processes both locally and abroad. Resulting in large amounts of waste headed for suboptimal end-of-life solutions like incineration, landfill or worst of all, leaking into the ocean.

It's clear that leveraging international relations must form a critical part of our plan to stop plastic leaking into the ocean. While foreign affairs and international relations are out of the scope of this discussion piece, diplomacy remains an integral part of the equation when working towards a global solution.

Australia is currently implementing a ban on the export of its waste, following a COAG announcement from the Prime Minister and Premiers in August 2019. Environment Ministers recently agreed that waste plastic exports would be phased out by 1 July 2021. This is the first step in a series of government initiatives focusing on improving domestic waste management and forging a path to a more circular economy within Australia.

Distribution of Plastics Headquarters, Production and Leakage⁶



⁶ The World Economic Forum, *The New Plastic Economy: Rethinking the future of plastic*, 2016. PlasticsEurope, *Plastics - The Facts 2015*; Statista; ICIS Supply and Demand; J.R. Jambeck Et Al., *Plastic waste inputs from land into the ocean 2015*.

Local solutions

Regional opportunity through pilot programs

Given the nature of the challenges we face, it's necessary to test and develop new strategies to manage our waste more appropriately. As such we should consider the importance of trialling new approaches through the implementation of pilot programs aiming to address the gaps in regional areas. Government assistance is likely required to support and develop these efforts, arguably in such areas the most benefit to communities and the environment can be derived.

When we consider the prospect of escalating present recycling efforts in regional areas we must also ensure that our island neighbours are involved. Not just in the Torres Strait and Papua New Guinea but further afield in the Pacific region—as they no doubt face similar challenges with containing and managing their waste. It also stands to reason that the infrastructure in these areas leaves a lot to be desired. In providing support and guidance to our neighbours we may find opportunities for reciprocity that may prove valuable, particularly in securing necessary economies of scale for regional recycling initiatives.

For countries who have made waste a priority, like Sweden for instance, less than 1 per cent of their household waste ends up in landfill.⁷ They even import waste from other countries, however this is primarily to maintain uptime on their extensive array waste to energy initiatives. Reliance on this particular technology is contentious and is arguably not vastly more desirable than sending the same waste to landfill. While there are benefits from an energy generation perspective, emission remain part of the equation.

In considering what Australia's response should be and how local solutions ought to be implemented, the waste hierarchy should guide decision making. Our focus should be on efforts and initiatives that provide the most long term benefit to the environment rather than those that favour and aid in the ease of consumerism.

The Waste Hierarchy



The pilot program should focus on the areas that we can influence with the least amount of resistance and shortest lead times. For instance, remote communities in Cape York typically do not recycle, most waste generated heads to landfills operated by local Councils. These landfills are typically below the ideal specifications for environmental protection but are often the only option available to communities for disposal.

By addressing the challenges in regional areas, we will enable communities to take ownership of their waste management practices, improve local environmental outcomes and in the process we will help to diversify Australia's regional economies. These small inland and coastal communities are already producing large quantities of waste and are suffering with a lack of sustainable disposal options. Supporting local councils to implement basic recycling facilities in their communities will allow for collection and sorting of recyclable waste at a minimum. Whether or not secondary recycling processes like shredding and washing should happen within the communities themselves remains to be seen.

⁷ Avfall Sverige, *Swedish Waste Management 2018*, p. 9.

Nevertheless developments in regional waste management will provide a great avenue to bolster the autonomy of communities but also divert valuable waste away from landfill increasing economic opportunity. It's probable that in the pursuit of supporting regional waste management the implementation of the pilot and the associated infrastructure should be modular and transportable. There are great examples of advances in these areas, for instance within the Australian Precious Plastics community there is some great work being done. Students from Monash University have created a fully modular and transportable integrated plastics recycling unit, which has the footprint of a 1x1m pallet. This is in contrast to the original 40 foot shipping container concept. It illustrates that an end-to-end recycling solution of varying size and capacity is very attainable.



It is important to acknowledge that a practical solution only addresses one aspect of the array of challenges—it all begins with education. When we think about recycling, we might initially feel that it's a pretty familiar exercise. As it's one many of us have been doing for decades. But the reality is that the education surrounding recycling hasn't quite gone beyond the dreamy idealism of the 80s and 90s. In reality waste facilities the world over are receiving massive amounts of material, largely driven by rampant unabated consumerism, compounded by packaging inefficiencies and contamination challenges.

For sometime we've been without a consistent recycling labeling scheme in Australia. The ambiguity around what packaging or packaging elements are recyclable has inevitably resulted in confusion among consumers. Incorrect disposal occurs and further complicates the viability of the recycling process. The Australian Packaging Covenant Organisation is working in conjunction with Planet Ark and other stakeholders to implement a new Australasian recycling labeling scheme. Quite a number of manufacturers have already begun utilising the new and improved recycling labeling. Clear, concise and consistent labeling enables consumers to make better choices regarding the disposal of their waste.

Australasian Recycling Label logo and label examples:



By providing clear information about the opportunities to recycle product packaging through this labeling scheme, we will better educate consumers and enable them to make better disposal decisions. Packaging is a huge part of our waste streams, if we can reduce rates of contamination and harness our waste more effectively will improve economic opportunities and environmental benefits.

“ Globally plastic packaging waste is worth \$80 billion to \$120 billion per year... Change will be driven by economy and if we can find those economic incentives then I'm sure we can actually get things happening.

Professor Stephen Smith - National Marine Science Centre

Improving education ensures consumers understand the role they play in the viability of the recycling process. In illustrating how the waste we individually generate interfaces with waste management infrastructure, we are able to convey the importance of getting that process right and the benefits of doing so. The higher the quality of feedstock that can enter a Material Recovery Facility (MRF) the more efficient the process is and ultimately results in reduced downtime and contamination. Education will ultimately lead to improvements in consumer waste related behaviour.

In addition to improving consumer education initiatives, the following key areas also warrant further consideration from government:

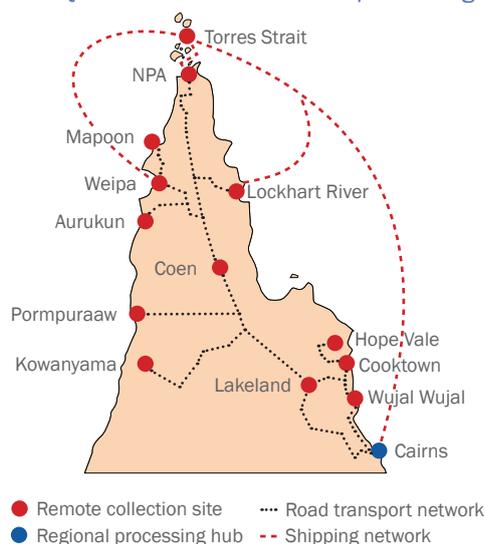
- Research and development into sustainable plastics and alternatives, particularly those that exhibit reduced environmental impact.
- Improving product designs through product stewardship initiatives, promoting reuse and shifting manufacturing trends away from single use
- More efficient collection and sorting processes and technologies.
- Discouraging the usage of virgin plastic feedstock in manufacturing processes and government contracts.
- Incentivising the usage of recycled feedstock.

The pilot program

Fixing the gaps in regional areas

Illustrated in the map below are the most prominent locations for the collection of recyclable waste. Cairns is already very much the gateway to Cape York, as such a broad range of services for communities across Cape York rely on Cairns as the primary industrial centre and logistics hub. Leveraging these preexisting logistic networks operating across Cape York is an advantageous strategy and could present sufficient backload opportunities, at least initially until a critical mass warrants any new logistics network expansion.

Far North Queensland collection and processing sites:



Cairns is a prime target for advancements in waste management not only due to its unique positioning with respect to opportunities in Cape York. But also the critical importance of the two natural world heritage areas that Cairns is nestled between. Ensuring that we maintain the beauty and sustainability of our local natural environments is of the utmost importance.

Cairns could be set up as a regional recycling processing hub, utilising backload opportunities through existing transportation networks there is a greater possibility of attaining the required economies of scale. This would enable the region to harness its waste more effectively and provide a more sustainable end-of-life solution for waste that would otherwise be destined for landfill.

There are a growing number of technological advancements that present significant economic opportunity for waste plastic beyond the traditional notion of recycling. For instance pyrolysis or gasification processes can be used to create synthetic fuel and gas. This fuel and gas option is of particular interest, with a Norwegian company, Quantafuel claiming that for every tonne of plastic waste they put through the process, 800 litres of synthetic diesel can be reclaimed.⁸ There is enormous potential for this technology to create synthetic fuels that can supplement our reliance on traditional fossil fuels whilst also enabling us to appropriately manage plastic waste. This synthetic fuel is also said to burn more efficiently and with up to 66 per cent less greenhouse gas emissions, also adding further weight behind the decision to invest in further research and development of this technology domestically.

Governments and private enterprise alike should leverage the current momentum generated from the recent COAG announcement to ban the export of Australian waste. Such a strong policy position requires a commensurate response and will prompt investment in initiatives that will bridge the gap created and build upon existing infrastructure and current methodologies. In order to be a leader in global best practice we must first focus inwards and set our own house in order. Extensive research has been undertaken in Australia on the state of the industry and now what is required is to begin the process of investing in new initiatives aiming to rectify the waste challenges that we now more intimately understand.

Potential employment benefits of a regional recycling waste management pilot program

When we direct a larger proportion of our waste away from landfill and focus on increasing recycling initiatives there is also an increase in the proportion of jobs created. For every 10,000 tonnes of waste that is sent to landfill there are approximately 2.8 direct jobs. As opposed to 9.2 direct jobs if the same amount of waste was recycled instead.⁹

8 Forbes, *How a Norwegian clean energy company is combatting marine pollution from plastics*, 28 Jun 2018.

9 Department of the Environment, *National Waste Policy 2018*, p. 7.

Using these job creation metrics and applying them to Cairns Regional Council domestic waste data, the following table illustrates a significant increase in potential employment opportunities. Recycling initiatives create over 225 per cent more employment opportunities for the same proportion of waste processed, as compared to landfill.

Cairns Municipal Solid Waste (MSW) Opportunity ¹⁰			
Estimated Population	MSW p/a in 2017	MSW sent to landfill	MSW sent to recycling
162,451	100,000 t	40,048 t	59,952 t
		11 Jobs	55 Jobs

The example above doesn't take into consideration other headline waste streams like commercial and industrial waste, as well as construction and demolition waste. Nor does it reflect the total waste generated by the Far North Queensland population, which is estimated to be approximately 285,000¹¹. It is also important to acknowledge that across Queensland, municipal solid waste represents only approximately 28% of all headline waste generated.¹²

There is an opportunity for growth in employment across waste management and recycling industries if we can continue to divert more waste away from landfill. This is an appealing prospect particularly in respect of regional jobs. People across areas in Far North Queensland have traditionally experienced reduced employment prospects and remote communities throughout have been without appropriate waste management processes and infrastructure.

How the pilot program could work in Far North QLD?

By leveraging the waste that is being generated across Far North QLD, transporting it along existing logistics networks we can re-shape the way in which the waste industry in Fare North QLD operates. In designing how these regional communities would interface with the centralised waste management infrastructure in Cairns, there will likely be some logistical challenges—particularly in the Torres Strait. A local hub could be set up in a central location to manage collection from the more satellite island locations.

For instance, Horn Island would likely be the most logical site to manage collections from the remainder of the outer islands in the Torres Strait region. With subsequent transport arrangements for larger quantities of waste taking place after initial collection from neighbouring islands has occurred. Such a facility on Horn Island would require the appropriate capability and capacity to facilitate more advanced logistical operations but in addition would also likely require compacting machinery to bale potentially a range of waste types as required. These bales would then be transported via identified backload channels and delivered to the central processing facility back in Cairns. There the processing of the waste continues through more efficient and technically advanced recycling methods.

The central facility in Cairns would accumulate and process waste from across Far North Queensland. More advanced processing techniques and technologies could be implemented including perhaps sorting polymer types by near infrared spectroscopy, another advancing technology. Such improvements in sorting and processing significantly aid the quality control and subsequently improve the grade of recyclable plastics able to be sold to manufacturers or into other markets. Cairns Regional Council has recently approved \$6.9 million for the design and construction of a new MRF to service Cairns and the broader Far North Queensland region. The new MRF will increase processing capacity and will help to divert up to 85% of waste away from landfill. Council states that the new facility will be one of the most technically advanced MRFs in Queensland.¹³

Improving national best practice to improve viability

In reaching the required economies of scale to enable a truly circular economy, we will likely also need to influence and encourage manufacturers of products and packaging to reduce the array of plastics that they use. For instance one common example is milk bottles and milk bottle lids. Although they form part of one product and one purpose, there are often two types of plastic utilised in the product packaging design. Some recycling facilities prefer lids to be on and other facilities prefer the two are separated. These nuanced differences also contribute to the confusion among consumers, when disposing of such waste.

10 Cairns Regional Council, *Waste Reduction and Recycling Strategy 2018-2027*.
 11 Australian Bureau of Statistics, Data by region, Statistical Area 2 across FNQ.
 12 Queensland Government, *Recycling and waste in Queensland 2018*, p. 6.
 13 Cairns Regional Council, *New MRF gets green light*, 14 August 2019.

By streamlining the types of plastic utilised in manufacturing processes it removes extra layers of complexity both for the recycling infrastructure but also for the consumers who are providing waste feedstock. Processing efficiencies can be gained by encouraging manufacturers to re-design their products so as to simplify the plastic types utilised in product development.

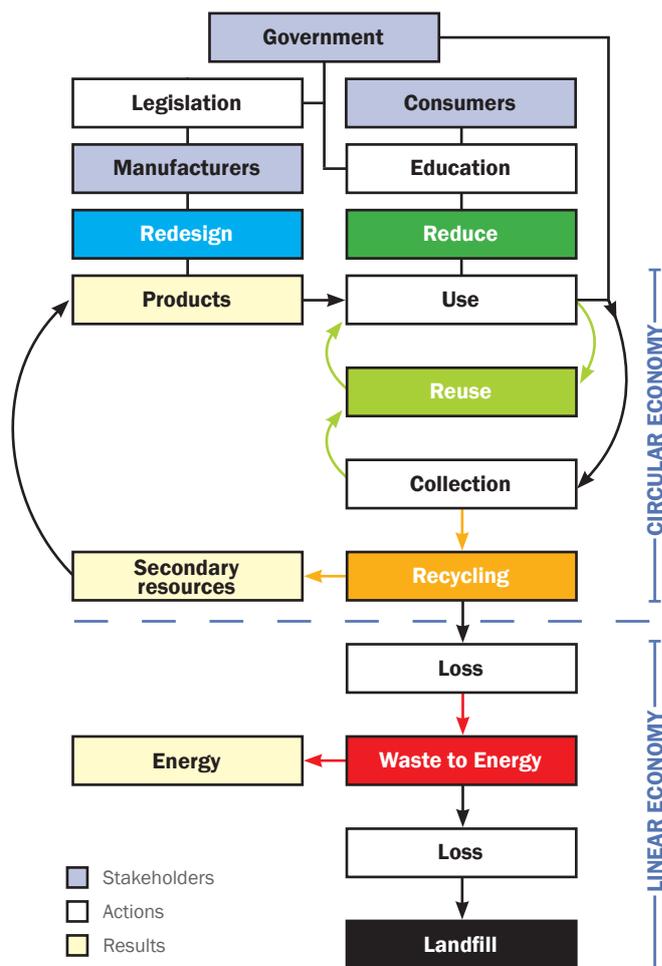
In general there are seven types of plastics that all serve different but yet similar purposes. Encouraging manufacturers to utilise recycled plastic, in place of virgin feedstock also ought to be considered as another mechanism to promote positive change. Whether or not these types of broad changes can be implemented by a willing industry alone or whether legislative instruments are necessary remains to be seen. To help move this process along governments should focus on providing product stewardship to manufacturers and other stakeholders. Guiding them on design decisions impacting the product lifecycle with the aim of achieving better outcomes for the environment and improving the viability of recycling operations as a whole.

Implementing circular economic principles

The purpose of a circular economy is to ensure that waste materials are retained wherever possible at their highest value within the economy. The principles of the waste hierarchy dictate that consumers ought to firstly avoid waste and reduce what they use, then reuse, or re-purpose waste, instead of immediate disposal. Recycling follows at the next level down, followed by waste to energy and landfill respectively. Finding new and innovative ways to encourage these higher order waste solutions is central to achieving a circular economy.

A more coordinated response is likely required if we are to make the necessary changes to facilitate the transition to a circular economy. Manufacturers and other key stakeholders should not be so insular. Operating in isolation arguably results in inefficient resource utilisation, lost productivity and missed economic opportunities for partnering and collaboration. Ensuring that industry, government and consumers are all on the same page, will amount to better economic and environmental outcomes. It's about getting the settings right across all aspects of the waste lifecycle, from start to finish. Everyone has a role to play, whether it's a consumer declining to use single use plastic, disposing of their waste responsibly or for manufacturers, choosing to design products and packaging in a more sustainable way.

Linear and Circular Economies



Regardless of the particular aspect within the waste management process, we must alter the status quo, both in Far North Queensland and across the nation. We must shift mindsets and upend economic drivers that support the linear economy. We can help to transition the economic value away from virgin material to instead favour the usage of recyclable materials that will help to foster growth in the circular economy. It won't necessarily be easy or inexpensive, but it's what we have to do in order to make the change away from the linear economy. Dialing in the right policy settings through calculated regulation is a likely course of action that will assist with transitioning Australia to a circular economy.

“ The shift to a circular economy means using less virgin material and more recycled inputs, reducing a company's exposure to ever more volatile raw material prices and increasing resilience. The threat of supply chains being disrupted by natural disasters or geopolitical imbalances is reduced because decentralised operators provide alternative materials sources.

Ellen MacArthur Foundation, The Circular Economy in Detail

Concluding thoughts

and things to consider

While Australians are passionate about the conservation of the immense natural wonder of our country's diverse environments, we must be conscious of our own unsustainable consumption. The linear practices that have enabled us to enjoy these benefits as a first world country are at odds with the natural world around us. Plastic is everywhere, production has increased twenty-fold since the 1960s and the indications are that it will double again in the next two decades.¹⁴ Plastic permeates every aspect of our daily lives and it's not going anywhere—this reality is inescapable. But it doesn't mean that we can't make meaningful changes to help mitigate its unsustainable production levels and the impact on the environment.

Shifting business practices and consumer mindsets away from short term gains and instant gratification is an important part of implementing circular principles. By examining our take-make-dispose system and stripping back the layers, we can see it for what it truly is... wasteful. The cost of convenient consumption comes at a hefty price, while not always felt upfront, it's one where longer term externalities are ignored in favour of quick wins and profiteering. But economic growth doesn't have to come at the expense of being responsible and environmentally conscious—they are not necessarily mutually exclusive.

It just means we have to re-align our principles and prioritise efforts that work towards minimising the waste from our consumption as a nation. The trouble is at this point our consumption is seemingly insatiable and while the waste piles up around us we cannot resign ourselves to utilising landfills and other half measures. We must make a concerted effort to change for the better and in turn, encourage and assist our closest neighbours with their own waste challenges. The pursuit of economic prosperity need not be at odds with environmental considerations, if we harness our waste appropriately we can potentially overhaul its value in our economy. In the process we'll create new economic opportunities, industries and products that have a reduced impact on the environment.

The Prime Minister's and Premiers' recent announcement to ban waste exports of plastic, tyres, paper and glass from Australia is a terrific step in the right direction. Through the implementation of the ban we will create a growing need to deal with and manage our waste more appropriately here at home. As we forge ahead with the waste export ban we should also be attempting to scale back our reliance on landfill, choosing instead to focus on higher order genuine recycling efforts and other waste management opportunities that continue to emerge with new technological advancements.

Some countries across Europe, including Germany, Switzerland, Sweden, and the Netherlands, amongst others have already made significant inroads in reducing their reliance on landfill. Most of these countries sit at around 3 per cent of waste to landfill or less, by contrast Australia is somewhere in the order of 40 per cent.¹⁵ The timing is right to begin the process of reducing our own reliance on landfill. By creating an environment where investment is encouraged, new technologies can flourish and industries can grow through the development of supporting infrastructure—we can work towards offsetting the initial cost of restricting our utilisation of landfill.

It's fair to say that cutting back on waste is not as easy as simply wanting to, but without addressing these issues now, the potential of new and complex challenges arising poses significant risk to economies and ecosystems alike. Our oceans will continue to choke along with their inhabitants, our food and water supplies are seemingly already compromised by the increasing prevalence of microplastics. All the while global economies chug along, meeting supply and demand, unaware or apathetic to their impact beyond the supermarket register and the checkout web pages. The consequences of inaction might not be immediate, but they are well known and quantifiable. If Australia is to make meaningful change towards a more sustainable future, we will all have a role to play in managing our waste. There are big challenges ahead, but they are not insurmountable.

14 The World Economic Forum, *The New Plastic Economy: Rethinking the future of plastic*, 2016 p. 6.

11 15 ABC News, *Landfill is not a long-term solution for waste management in Australia* - Paul Klymenko - Planet Ark.

Continuing the dialogue

Got big ideas? We'd love to hear about them!

The Office of the Special Envoy for the Great Barrier Reef is accepting submissions on the issues and topics that this discussion paper raises. The input gathered throughout this process will help to inform various reports to government that the Special Envoy for the Great Barrier Reef has been tasked with undertaking.

We welcome the opportunity to review your input and believe it is integral part of making informed decisions. Whether it's regarding the creation and ongoing viability of any potential pilot program or perhaps implementing other new waste management concepts in Australia. We look forward to hearing from you.

Interested in making a submission?

Submissions must be received no later than the 21st of February 2020 in order to receive consideration. Unfortunately late submissions cannot be considered.

Submissions can be made

By email: warren.entsch.mp@aph.gov.au

By post: Warren Entsch MP
PO Box 14
BUNGALOW QLD 4870

For other enquiries please feel free to reach out

By phone: 07 4051 2220



The Hon Warren Entsch MP

Special Envoy for the Great Barrier Reef

200 Mulgrave Road, Westcourt QLD 4870

Phone: 07 4051 2220

Email: warren.entsch.mp@aph.gov.au

Web: www.warrenentsch.com.au