

Submission to the Victorian State Government Parliamentary Inquiry into Recycling and Waste Management

Submitted by:

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Responsibility of the Victorian Government to establish and maintain coherent, efficient and environmentally responsible approach to solid waste management across the state including assistance to local councils

Create a system that encourages households to reduce their waste disposal into the municipal collection schemes:

In our household we dispose of approximately 1 bin of rubbish every 6 to eight weeks. Prior to the increased focus within the household, the landfill contribution was a full bin per week, and a full recycling bin per fortnight.

This reduction has been achieved through raised awareness of environmental issues, and protection of native habitat as a motivator. We have introduced within the household vigilant composting, reuse of containers and bottles, a reduction in purchase of packaged products and a strong focus on recycling. We recognise that we can still do better.

It is obvious that not many households are as dedicated as we are in this space. In observing bins on collection day in our neighbourhood, it is very common to see overflowing bins on a regular basis, often with recycling comingled in with that destined for landfill.

With the focus we have on reducing our contribution to landfill, it is frustrating that as a household we continue to pay the same collection contribution through council as those families who place an exorbitant burden on the waste collection system. If councils could consider a financial benefit or subsidy to families that wish to have a fortnightly collection or monthly collection that would be a great start (for example, bins of a particular colour be collected once per month, and the household have a reduction in rates). This may motivate people to consider their waste collection and improve use of the recycle collection, rather than comingled the content of the bins.

This concept could be introduced as a pilot program within particular shires, and then based on evidence gathered considered for rollout across the state.

The introduction of a ban on placing electronic waste in rubbish collection is a great initiative in the Baw Baw shire, which we celebrate.

Short term solutions to recycling and waste management crisis

Inclusion of compost/food waste into greenwaste collection

As a household we believe there is an opportunity for shire councils to include plant based food compost into green waste collection. Food waste is essentially biodegradable and compostable, and wet green waste is an area of concern in terms of landfill. When wet greenwaste / food waste enters the landfill stream, it produces a higher contribution of green house gases such as methane. Food waste that is contained in plastic bags becomes anaerobic and does not break down or compost. By including plant based food waste into the green waste system it will contribute to a reduction in landfill, an improved system to reuse a valuable resource (circular economy), contribute to an improved structure and nutrient (quality) of soil products for potential sale back to the consumer or the agricultural industry.

Sterilisation (steam) techniques are available within the horticultural industry to assist prevention of weed and plant germination in the end user product.

There are numerous business in Victoria, such as Pinegro in Morwell, who may have interest and capacity to introduce this industrial opportunity. Dutson Down's waste recycling facility may also have capacity to further this concept, already using technologies to process biowaste through a sludging process operating on site.

Biochar

Biochar is described as charcoal produced from plant matter and stored in the soil. The product has capacity to also be stored in the soil as a means of removing carbon dioxide from the atmosphere. The word describes the combination of biomass and charcoal. Biochar is a stable solid, rich in carbon and can endure in soil for thousands of years.

Biochar has remarkable properties that can essentially store large quantities of other chemical or nutrient components within its structure.

Biochar has many industrial applications such as:

- within the agricultural industry to assist reduce fertiliser run off, reduce acidity in the soil, prevent transfer of soil based disease and improve soil condition.
- can be used in the manufacturing industry to improve carbon footprint outcomes (ie: in the sole of runners)
- as a filtration product to address water born pollution (ie: coca cola and other polluting companies are utilising biochar internationally to address environmental damage caused by their operations)
- commonly used internationally as a form of cooking, so has a potential for export

Biochar is made from solid biomass via a process called pyrolysis. A byproduct of the process is the generation of pyrolytic gases, which can be utilised toward heat or energy generation. which is a

process that utilises heat to convert biomass (including wet biomass) - extracting pyrolytic gases at the same time.

There are several key contacts in the Victorian Bioenergy space who have the skills and competence to further advise on this concept, alternately I am happy to speak to a member of the parliamentary inquiry should further information be required.

- Kelly Wickham, previously of Sustainability Victoria and Policy expert at the Department of Environment, Land, Water and Planning on waste to energy projects.
- Liz Hamilton of the Bioenergy Network Victoria
- Andrew Lang of the World Bioenergy Association (Board Member)
- Geoff Andrews of Genesis Now (Sub contractor to Sustainability Victoria)

Long term solutions to recycling and waste management system

Improved and reevaluated pre school, primary and secondary school educational program

Introduction of gardening and composting programs in schools as part of the curriculum - Designed to promote awareness and habit formation in children, and create a composting culture. This could be achieved through introduction of green waste bins in the school yard and a scheduled compost collection by students, aligned to class based activities. Outcomes of the program would include an improved awareness of composting in the home environment and pressure on older generations to participate in appropriate bin sorting behaviours.

Competition within shire councils for the schools who can achieve the least waste - as demonstrated on the ABC program "War Against Waste" school children can be incredibly enthusiastic in a competition setting, and as demonstrated on the program, capable of creating change within their schools. This initiative is an activity that raised social consciousness of families and children, and may have capacity to contribute to life long habitual change.

Actual recycling opportunities

With limited expertise in the recycling industry, this household can only contribute by stating that we believe there is an opportunity to explore and innovate around the use of plastics in our society.

CAT HTR Technology has been developed at the University of Sydney by Professor Thomas Maschmeyer - this technology breaks plastics down into smaller components which can then be separated into higher value components such as waxes, lubrication oils, fuels and gases, thus creating a marketable product that can be sold at a higher value. This technology was researched and developed within Australia and capitalises on the countries science capabilities and innovation. Information is available at the University of Sydney website effective 25 March 2019:

<https://sydney.edu.au/news-opinion/news/2019/03/25/plastic-pollution-and-the-technology-to->

[beat-it.html](#) The business supporting this activity is in start up phase, so there may be an opportunity to secure the industry within Victoria as a new innovation.

There is also a growing movement of use of recycled plastic in developing building products (ie: plastic formed bricks) to contribute to the construction industry. Numerous examples of companies operating in this space within Australia are available on line. Some sort of feasibility study should be undertaken as to the potential market share available within the Australian industry, to support the viability of such initiatives in a contemporary setting.

Cleaning and sorting capabilities potential to expand recycling

Co-mingling of non recyclables into the recycling system creates a problem with machinery unable to effectively and efficiently sort waste.

This problem is exacerbated by the public incorrectly placing their waste into the recycling bin - whether as a result of carelessness, lack of education, or complacency. Reeducation of the public may need to occur, with people often confused about what is recyclable. The labling system on plastic packaging needs to be standardised - some products are not recyclable in Australia, and still carry a recycle logo, which creates confusion. In lieu of creating capacity to recycle these products, a standard system or labling is required to combat this scenario, and essentially contribute to cleaning up the recycling stream. Alternately better labling inside recycle bins would assist people to identify the correct items to place in the bin.

Waste audits should be undertaken across shire council areas, to identify the types of items that are being placed in recycling. Systematic evaluation of neighbourhoods and notices that this audit is occurring may raise awareness of residents and businesses to "do the right thing" in their recycling.

Penalties should be introduced for people and harsher penalties for businesses who routinely place non recyclables in the recycling stream, such as used nappies, candles, ceramic cups, crockery, fake plastic flowers, car parts, plastic bags, wooden picture frames, pillows and clothing etc.

Further work should be undertaken in exploration of utilising human labour to sort residual waste that is left over after the machine sorting process is complete and prior to its transfer to landfill stations. This will come with a cost, but may be accommodated through an environmental Federally funded work for the dole type activity.

Better enable use of recycling in local manufacturing

There may be opportunity to better promote the Federal Governments taxation offsets in Research and Development, targetted toward exploration of use of recycled products within the manufacturing stream.

An improvement to funding for Sustainability Victoria in the space of innovations and innovation promotion across industries, to showcase what is possible with businesses. A successful program has been offered by SV for several years in promoting concepts within the bioenergy space, which

has grown traction across the state. This initiative promotes business opportunities and international innovations in the space for businesses to consider integrating or introducing to their operations (ie: alternate methods of heat generation from waste, reuse of products and biowaste etc)

Consider providing support of industry to undertake research into international innovations in the space, or to develop their own solutions on how recycled products can be embedded into the process of manufacture. This may include financially assisting businesses with a genuine concept to travel overseas to explore and connect with innovators and technology that is demonstrated as successful for integration into their operations. This may be a similar framework to that offered by Australian Government in exploring opportunities for international export, but this would be based on exploring opportunities for recycling innovation in our manufacturing processes.

Business model and economic challenges facing the industry

The cost of labour to efficiently convert waste to a sustainable commercial opportunity must be a key consideration in the economic challenges that face industry. The need for the end product to be cost competitive while incorporating these labour costs is a key challenge.

Businesses may benefit if a tool could be developed to assist cost scoping exercises (such as a generic costing sheet) that will calculate the end product unit price given a range of known variables and excluding marketing costs (ie: energy costs, transport costs, wage costs, admin costs, infrastructure costs, product/resource cost, packaging etc).

Experience in the development of key documents for a business establishing in the space of conversion of wood waste product to a bioenergy product proved extraordinarily complex, with the ability to simply do a brief costing exercise requiring up to days of complex calculations. Some tools for the average small business operator (if possible) may assist to reduce some of these barriers - if it could be created as a generic type of framework that can be developed per sector.

Quantifiable benefits into job creation and green house gas reductions

This submission incorporates aspects of innovations to assist green house gas reduction by:

- The concept of creating a biochar industry, which captures greenhouse gas and allows for the capture of heat generating gases - which can be used in the process
- The concept of increasing the uptake of composting across Victoria through education programs targetted to school aged children
- The introduction of plant based food waste into the Green waste stream, diverting resources from landfill and subsequent contribution of methane to the greenhouse gas output

Circular economy in Victoria

Work needs to be undertaken to reduce the stigma of reusing plastic containers and jars within the household - for example containers such as lidded yoghurt containers, margarine containers, icecream containers all make excellent food storage alternatives, which usually are freezer, dishwasher and microwave safe. They prove useful in sharing of food with friends, as they are not missed if never returned to you.

There is a growing movement of businesses who are moving into the space of encouraging customers to reuse containers and bags etc in the purchase of food products (for example herbs and spice jars can be refilled from bulk purchase outlets). These initiatives should be encouraged across the retail sector to reduce packaging entering the waste stream.

Use of sustainability fund and how it can be used to fund solutions to the waste crisis

Sustainability Victoria should be provided broader scope to support business innovation in the space of recycling. As mentioned, support of businesses to explore recycling innovation could be a new initiative, along with expansion of funding to the bioenergy network.

Strategies to reduce waste generation and better manage all waste such as soft plastics, compostable paper and pulp, commercial waste including:

- **Product stewardship**

Manufacturers and retailers need to be accountable in finding solutions to reduce the waste problem in Victoria, Australia and in some cases globally.

Penalties need to be introduced for businesses who choose to ignore these obligations to our environment and be accountable for their contribution of damage to natural habitat, be it through pollution to the waterways, forests or even their contribution to landfill.

Industries have for too long transferred their duty of care to the consumer - for packaging and product that they receive profit for, and that may linger for hundreds of years in our environment.

Stewardship concepts could include:

- Supermarket "scruntable plastic" recycling is currently available at Woolworths and Coles, but should be available at all chain stores, such as IGA and Foodworks
- Electronic and furniture stores accountable for dealing with waste packaging product (ie: returning to source or arranging recycling disposal) of cardboard, foams etc.
- Accountability of businesses and manufacturers particularly in the sales tactic of selling printers (for example) with ink at a price lower than the replacement

cartridges. This scenario generates a culture of a throw away society. The strategy should be banned from marketing techniques. This scenario could be applied to many products including mobile phones on battery replacement, availability of ventolin cartridges for those who already have a dispenser, replacement parts for many machines (ie Vacuums, computers etc)

- Charging business for their environmental impact by way of a tax - this could be funded to invest in employment opportunities for people within the waste management stream
- Music and games retailers should explore a return scheme for unwanted / needed disc covers and discs, for the use of reusing to consumers

Container deposit scheme

- A container deposit scheme should be introduced across the state. This scheme should encompass bottles, cans and could go as far as other containers such as milk containers. This concept has been in place in South Australia for a long period of time, and historically was in place in Victoria. The concept is a great one with the opportunity for people to collect containers littered within the environment for a monetary return. This also encourages children to collect the litter as a form of pocket money - while cleaning up the planet.
- **Banning single use plastics**
 - The charge of 15c - 30c per bag needs to be increased, as the amount is so minimal it is not enough to create change. Given that plastic bags were free until the introduction of this fee, there is a perception that retailers are making a profit from the multiuse bags, this profit should be contributed back to environmental projects and waste reduction initiatives, not lining the pockets of major enterprise.
- **Government procurement policies**
 - Environmental focus in government procurement could be strengthened in the space of tender responses, by giving the criterion more emphasis and a weighting in the evaluation framework (currently DHHS do not rank in tenders, which may be common across other departments)
- **Other items of comment**
 - The waste generated as a result of the Myki scheme is a constant frustration to our household. The large quantity of paper receipts that are left at the machines on balance check or purchase could be prevented by an increased awareness message, such as "please think of the environment" at the time of asking for receipt. Promotion of Myki

card recycling also needs to be strengthened, and expiry dates removed from the system to reduce the need to replace functioning cards.

- The culture and lack of accountability within Op Shops in disposal of waste is a major concern. Unwanted goods are often perfectly functional but disposed of - often by inappropriate means, such as within recycle bins. While there is an understanding that a percentage of donations is essentially rubbish under the guise of a donation, there is also much of the donations disposed of unnecessarily under the perception that "it won't sell" or "we have too many already". An improved distribution or sharing of the donated resources across charity organisations could help address this issue - such as collaboration and use of the resources by way of contribution to homeless networks, family violence agencies, support for community garage sales, neighbourhood house networks etc. The state government could encourage these collaborations through grant funding to assist establish the schemes on a place based or local level.
- Transparency needs to be generated regarding the collection and disposal of hard rubbish (curbside collection). Many items are perfectly able to be reused, but the councils instruct that it is illegal to reclaim the items. This should be addressed to reduce the amount of items going to landfill, and to encourage a "reuse or repurpose" culture - hence contributing to a circular economy within the state.

We thank you for the opportunity to submit our comments to this important initiative and respectfully trust that the information will be considered in the overall context of the inquiry.

Yours faithfully

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