

(Un) Changing Behaviour:
(New Zealand's delay &
dysfunction in utilising)
Economic Instruments in
the Management of Waste?

**An Open Submission to the
New Parliamentary Commissioner
for the Environment (PCE)**



New Zealand
Product Stewardship Council



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Every attempt has been made, in the development of the content of this submission, to ensure that the views expressed are well-researched, valid, balanced and fair - whilst at the same delivering on the 'critique and conscience' responsibility provided for in the New Zealand Education Act 1989.

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(Un) Changing Behaviour: (New Zealand's delay & dysfunction in utilising) **Economic Instruments in the Management of Waste?**

An Open Submission to the New Parliamentary Commissioner for the Environment (PCE)

This submission is written on behalf of the New Zealand Product Stewardship Council (NZPSC), (see <http://www.nzpsc.nz/About>). The NZPSC is an independent NGO and advocacy group made up of like-minded 'Kiwis' (i.e. environmental researchers, local government and community recycling practitioners) who all volunteer time, to promote positive and effective solutions to New Zealand's waste issues.

SCOPE OF COVERAGE:

This submission critically examines the phase of New Zealand waste policy encompassed in the successive Labour led (1999-2008) and then National led (2008-2017) periods of coalition government, which each encompassed three consecutive electoral cycles. This nearly two decade phase squarely encompasses the initial period of implementation of the Waste Minimisation Act (WMA:2008), which is the key framing and enabling legislation for addressing waste issues in New Zealand.

By virtue of its timing, the critical examination, commentary and recommendations of the 2006 PCE 'Changing Behaviour: Economic Instruments and the Management of Waste' report was directed at the then incumbent Labour led coalition government's management of waste policy. By virtue of that prior coverage and the timing of this NZPSC submission, the primary period of focus is the National led coalition government's tenure over New Zealand waste policy (2008-2017).

It can be observed that the succession of political power resulting from the 2008 election result (notionally from 'centre left to centre right'), corresponds with a marked change in the respective 'New Zealand Waste Strategies' (NZWS:2002 vs NZWS:2010). In particular then, it is this latter, largely unexamined political phase (2008 -2017), which offers up a range of compelling questions which this submission raises and redirects to the office of the PCE.

Specifically this submission does not cover, or infer any finding or questions in respect the current Labour/Green/NZ First coalition (2017 – ongoing) government. Reflecting on the current government's performance around waste issues, can only reasonably be undertaken at some point in the future, once their strategy, policy / programmes and outcomes have fully eventuated.



Executive summary

The New Zealand Product Stewardship Council (NZPSC) requests that the Parliamentary Commissioner for the Environment (PCE) initiate a broad review of the implementation of waste management and minimisation policy in New Zealand. In support of this request, this submission offers a critique of New Zealand's lack of progress in this sphere and highlights multiple 'red flag' issues.

In 2006 the Parliamentary Commissioner for the Environment (PCE) published the *'Changing Behaviour: Economic Instruments and the Management of Waste'* report. This report provided a comprehensive analysis of the potential to utilise a spectrum of economic instruments (EI) to address waste management issues. The report discussed these opportunities relative to New Zealand's unique social, cultural, economic, environmental political context. The report examined barriers to progress, articulated a set of specific concerns and called for *"renewed leadership from central government"* (PCE, 2006). Importantly, the report also offered recommendations on how the challenge of developing and implementing economic instruments could be overcome, so that the benefits of generating progress in resolving waste and other interrelated environmental issues, could flow through to all New Zealanders.

Subsequently in 2008, recognising the fact that New Zealand's waste problems warranted urgent legislative action, Parliament passed the Waste Minimisation Act (WMA:2008), thereby enacting a framework for implementing key economic instruments, as recommended by the PCE. A cabinet paper from that period¹, outlines the background, the package of proposed new measures and the rationale, expectation and optimism associated with the pending WMA:2008 legislation. Notably, in respect of the guidance offered in the PCE's 2006 *'Changing Behaviour'* report, section (5) makes explicit, the expectation that the package of measures making up the WMA:2008 represent: *"a change of focus for waste minimisation activities – from the current, largely voluntary approach, to increased use of regulatory back-up and price-based mechanisms"* and an empowerment of central and local government in order to offer a *"stronger lead on waste minimisation"* (MfE, 2007).

A decade on, New Zealand still relies upon 'voluntary only' approaches to product stewardship / extended producer responsibility (PS/EPR) and poor waste data is still being cited as a key issue. Since its inception, the national waste levy has raised more than *"\$192 million - which has been distributed to national and local initiatives to reduce waste"* (MfE, 2017c). However, that singular objective has not been achieved - and in fact, the polar opposite result has occurred. Exemplifying the disconnect between objective and outcome, the net tonnages of waste reported at levied waste disposal facilities, increased by 20.1% in the three years between the 2014 and 2017 review periods (MfE, 2017c). Common sense suggests that, this result is unacceptable and clearly, some form of independent investigation, explanation and accountability is warranted. Given the failure of this investment to translate into real world environmental progress, the 'fitness for purpose' of the WMF project selection and management processes, must be questioned and if necessary, reformed.

The New Zealand Product Stewardship Council (NZPSC) is an independent group, which is advocates for the employment of effective, mandatory product stewardship / extended producer responsibility (PS/EPR) programmes to address the waste issues associated with end of life products and packaging. The NZPSC argues that New Zealand continues to underutilise market based economic instruments to manage waste issues and largely fails to capitalise on PS/EPR programmes' proven potential to effectively deal with the most acute, product related waste streams.

Based in concern about New Zealand's overarching performance and reputation, the NZPSC requests that the PCE revisit the subject of waste in an updated investigation, that re-examines the conclusions and recommendations of the PCE's 2006 *'Changing Behaviour'* report, as well as the interpretation, implementation and overall impact of the WMA:2008. Crucial indicators of New Zealand's poor performance, a further +10 years of global scientific and technical development in this sphere and mounting international evidence and experience demonstrating the benefit of product stewardship/extended producer responsibility (PS/

1 listed on the MfE website see: <http://www.mfe.govt.nz/more/cabinet-papers-and-related-material-search/cabinet-papers/pol-07-132-towards-sustainable-new>

EPR) schemes – are all factors which combine in lending weight to this call for intervention by the PCE.

In further support of the NZPSC request, this submission is structured around the examining critical aspects of the successive Governments' (1999 – 2017) handling of waste management policy. The submission employs a two-part focus: examining firstly, identifiable omissions around the guidance of the '*Changing Behaviour*' report and secondly the unrealised opportunities inherent to the WMA:2008.

Whilst, each of the sections of this submission (outlined below) are supported by strands of argument and evidence, importantly, each section is also framed as an open question. Based on this spectrum of questions, the submission calls on the PCE to, once again take up the challenge of investigating and reporting on waste policy and to address these concerns. Additionally, the intention is that, this 'open' submission will also function as a public call for New Zealanders to engage with the critical subject of waste and to examine the following crucial questions and concerns:

1. HOW WELL HAS THE GOVERNMENT ADDRESSED THE RECOMMENDATIONS OF THE PCE'S 2006, 'CHANGING BEHAVIOUR: ECONOMIC INSTRUMENTS AND THE MANAGEMENT OF WASTE' REPORT?

- 1.1. Under-utilisation of market based economic instruments in addressing waste issues?
 - 1.1.1. The national waste levy.
 - 1.1.2. Managing the Waste Minimisation Fund (WMF)
 - 1.1.3. Implementing the WMA:2008).
- 1.2. Continued reliance on 'voluntary only' solutions in waste minimisation and management?
- 1.3. A lack of transparency and reciprocity with community consultation, which undermines democratic engagement?
 - 1.3.1. Clarity and accountability around the 'Waste Advisory Board' (WAB) processes?
- 1.4. Deficiencies in government leadership and policy dysfunction, relative to community expectations?

- 1.5. Omissions in reliable baseline waste and resource management data?
- 1.6. New Zealand waste going AWOL?

2. A BROAD RANGE OF OTHER INDICATORS OF POLITICAL MISMANAGEMENT IN NEW ZEALAND WASTE POLICY?

- 2.1. Unjustifiable inconsistency in waste policy?
- 2.2. Rejecting the aspiration and accountability offered by targets?
- 2.3. Vested industry lobbying trumps consultation and community consensus?
- 2.4. The 'Minister Knows Best' + 'Voluntary Only' + A Flawed and Risky Approach to PS/EPR?
- 2.5. The negative impacts of vested industry lobbying?
- 2.6. Comparing New Zealand against international good practice?
- 2.7. A crisis in rural waste management?
- 2.8. Ignoring the proven efficacy of PS/EPR systems?
- 2.9. New Zealand's reversal of the 'polluter pays' principle?
- 2.10. Indicators of New Zealand's tarnished international reputation?

The NZPSC position is that, New Zealand's waste management is not currently working well enough, nor transitioning us fast enough into the huge environmental, social, cultural and economic benefits on offer in a zero waste focussed, circular economy. The dysfunction and delay in New Zealand's journey towards progressive waste and resource management, (evident in the subject period, 1999 – 2017) involves real harm and significant cost to our communities. Therefore, the NZPSC invites all New Zealanders to joins us in challenging the PCE to once again examine and report on New Zealand government's performance around minimising and managing waste.

Background²

Since publishing the influential *'Changing Behaviour: Economic Instruments and the Management of Waste'* report in 2006, there has been an absence of PCE coverage and reporting on the critical issue of waste in New Zealand. The topic of waste is a subject in which in the past the PCE has demonstrated insight, expertise and courage. Waste, clearly falls under jurisdiction of the office of PCE and it is a significant and emotive issue, which ultimately affects every New Zealander.

In additionally framing this submission to the PCE, as an open letter to all New Zealanders, the NZPSC seeks to invoke renewed discussion, comment, critique and focus on the vitally important subject of waste and resource management in New Zealand. Globally, waste is amongst the most challenging and complex anthropogenic problems confronting communities today. Numerous indicators point to the fundamental failure of the conventional waste management paradigm. Whilst, the problem of waste is often examined and responded to on a technological basis, fundamentally waste is a social issue, whose resolution lies with people and communities.

The World Bank reports that globally we generate 1.2 billion tonnes of municipal solid waste (MSW) every year and this amount is projected to double by 2025 (D. Hoornweg, Bhada-Tate, & Anderson, 2012). Given current growth trends in population, urbanisation, affluence and consumption (Mavropoulos, 2010a, 2010b; Troschinetz & Mihelcic, 2009), indicate that the challenge of curbing excessive waste generation as not being achieved. It has been projected that, unless aggressive sustainability scenarios are implemented, 'global peak waste' may not occur until 2100 (D Hoornweg, Bhada-Tata, & Kennedy, 2014). If it takes until 2100 to halt, just the 'increase' in waste generation, it means today's waste issues are just the 'tip of the iceberg', of this impending crisis.

The International Solid Waste Association's (ISWA) – 'Global Waste Management Outlook' (GWMO) aligns with other similar reporting, in estimating that, between 2-3 billion people live below the most basic waste management system benchmarks of, collection and controlled disposal (D-Waste, 2013; D. C. Wilson *et al.*, 2015a). Exacerbating systemic failures in collection and disposal, it is estimated that approximately 41% of the total waste generated globally, involves uncontrolled burning (Thompson, 2014; Wiedinmyer, Yokelson, & Gullett, 2014), which further aggravates concerns around the pollution and climate change impacts of waste.

Internationally and in New Zealand, there is increasing awareness and concern around the interrelated dimensions of the waste crisis (i.e. ocean plastics, disaster waste management, chemical toxicity, expired / used pharmaceuticals, food-waste, organised crime, nuclear waste and emerging 'NBRIC'³ issues), all of which is overlain by geographic, historical, infrastructural and technological, public, personal, cultural, socio-economic complexities (Gutherlet, 2010; ISWA, 2015; Marshall & Farahbakhsh, 2013; Pongrácz & Pohjola, 2004; D. C. Wilson, 2007).

The interrelated aquatic and atmospheric impacts of terrestrially generated waste, is now recognised as affecting the entire global biosphere (Hodzic, Wiedinmyer, Salcedo, & Jimenez, 2012; Moore, 2008; Ryan, Moore, van Franeker, & Moloney, 2009; Thompson, 2014; Wiedinmyer *et al.*, 2014). For example, it has been recently reported that, waste plastic has been found littering the Mariana Trench, the deepest and most inaccessible place on earth⁴. Alongside all other countries, New Zealand shares in the international responsibility to address the global waste crisis. As prosperous, well-educated nation, which is both reliant on our environment and capable of excellence and innovation, we have a unique opportunity to provide leadership in resolving waste issues⁵, yet we are failing in this.

2 Sections of the background, introduction, summary - conclusions draw upon the article *'Future Cities: Exploring the phenomenon of zero waste'* (Hannon & Zaman, 2018).

3 'NBRIC' i.e. nanotechnologies, biotechnologies, information & communication technologies (WEEE/e-waste), robotics and cognitive sciences (Graedel & Allenby, 2010).

4 See: <https://www.stuff.co.nz/world/103815176/plastic-bag-found-in-mariana-trench-deepest-place-on-earth>

5 Ref: related past (Snow & Dickinson, 2001, 2003) and present commentary <https://www.circulareconomy.org.nz/what-we-do/>

Often the subject of waste is perceived as a distasteful and or polarising topic. Society seems transfixed between the pervasive normalisation of our *'throw-way society'* and recoiling from graphic images of environmental crisis and associated the smell, yuck and pollution of dumps and landfills, etc. A more contemporary and constructive perspective on waste management is that, this subject is better understood as being about how resources flow through our economy. All the material resources, which make up products and packaging, accumulate an energy, water, GHG emissions, biodiversity and pollution *'footprint'*.

Aiming for zero waste and a circular economic model, avoids the huge environmental price tag, which is re-incurred when material resources are destroyed via disposal systems and have to be replaced, via further exploitation of natural resource. We all have a stake in ensuring that the products our societies create and we consume, are not the cause of environmental damage and valuable resources going to waste. Rather than viewing waste as a problem, requiring immediate disposal, the concept of zero waste reconceptualises all waste materials as both, resources and as an opportunity, which is literally, too good to waste.

International research and experience demonstrates that waste policy has a crucial role in shifting us away from the *'take-make-waste'* trajectory of our current, mostly linear, socio-economic model (Ellen MacArthur Foundation, 2013). Currently most of the resources flowing through the economy, end up being wasted by, what can be described as a *"flame, flush or fling"* disposal mentality (Seadon, 2010). Today, the big story in waste management is how as we progressively circularise the socio-economic design of our economy and move towards a goal of zero waste.

Numerous cases studies and strategies⁶ now evidence the success and popularity of zero waste approaches and demonstrate alignment and synergy with the circular economy movement (Hogg & Durrant, 2017). Today, a rapidly growing body of science and real-world experience is providing evidence that a zero waste management approach, is one of the most potent and immediate opportunities to progress towards more sustainable development and to address climate change⁷.

The good news is that, the vast majority of New Zealanders love and want to participate in our shared *'kaitiakitanga'* of the natural environment⁸ - and will embrace cost effective, user-friendly eco-action and environmental progress. In the future, a whole new generation of innovative and exciting green products and service systems will be created, as part of an emerging circular zero waste economy. When we effectively design, coordinate and implement market based economic instruments, we empower the critical drivers for this new generation of environmentally sustainable product and service systems.

Tomorrow's green products will involve less non-renewable fossil resources, be easier to reuse - recycle, be less toxic and have a much smaller environmental and social footprint. Current key indicators suggest that, New Zealand is largely missing out on the huge economic and environmental opportunities⁹ that will arise from a more progressive approach to waste management and sustainable development. The simple questions at the heart of this submission are:

Is this really as good as it gets?

Is it time for New Zealand to adopt more ambitious, future focussed and environmentally sustainable waste policies and practices?

6 See: <https://zerowasteurope.eu/category/circular-economy/> and <https://zerowasteurope.eu/%20case%20studies/>

7 See the brief overview of contemporary scientific literature supporting zero waste outlined in the subsequent 'Summary – Conclusions' section of this submission.

8 Ref: <https://econation.co.nz/kaitiakitanga/>

9 For example: it was recently reported that a "Circular economy" could bring \$8b in benefits to Auckland" <https://www.stuff.co.nz/business/industries/103721466/circular-economy-could-bring-8b-in-benefits-to-auckland> and "Early action on climate change would save New Zealand \$30b" <https://www.stuff.co.nz/environment/102781174/early-action-on-climate-change-would-save-new-zealand-30b-report-finds>

Introduction

The New Zealand PCE occupies a unique and privileged leadership role in the timeline of global environmental history. *“For seven years after its establishment, the New Zealand PCE was unique – the only one in the world with the power to examine critically the policy decisions of executive government”¹⁰*. The self-described role of the PCE is as the trusted and respected ‘keeper of the long view’ on sustainability (D. C. Young, 2007). The PCE’s 2006 ‘*Changing Behaviour*’ report presented a compelling case for the appropriate utilisation of economic instruments (EIs) to help minimise and manage waste more efficiently and effectively in New Zealand.

The report outlined some potential economic instruments and interventions available to the government to drive environmental progress on waste. The instruments and interventions, which were discussed included, levies, charges, and taxes, and refund deposit schemes. The report offered international examples of their implementation and described how they might operate in New Zealand. The report also identified specific barriers to the establishment of effective economic instruments, which existed at that time. These included: a lack of supportive legislation and direction from central government, poor waste data, limited implementation of key actions under the then New Zealand Waste Strategy, entitled ‘*Towards Zero Waste and a Sustainable New Zealand*’ (NZWS:2002), an apparent ideological preference for voluntary approaches, rather than mandatory national levies, schemes or regulation, and an overarching reluctance to implement economic instruments *“unless industry wants these policy tools to be used”* (p.46).

The ‘*Changing Behaviour*’ (2006) report formed a particularly important information resource, which retains its relevance today. In order for New Zealanders to be able to embrace new environmental policies, we must first have an understanding of what these are, where and how they have worked internationally and what life in New Zealand would look like with such environmental programmes in operation. Alongside providing background knowledge on economic instruments and a balanced perspective on the objectives of intervention, the report also served to begin the process of articulating what is at stake

and forming the overarching value proposition for environmental progress around waste. While not stated explicitly, the PCE’s 2006 ‘*Changing Behaviour*’ report shed some light on the political dynamics that shroud waste issues. In particular, the lobbying of some vested-interest industry groups, opposing government interventions, aimed at curbing the systematic ‘externalisation’ of costs, in the form of environmental pollution.

The NZPSC view is that, externalised and unaccounted pollution costs, must be addressed and constrained from manifesting in negative future impacts. As well as exemplifying acute economic inefficiency and market failure, unaddressed environmental externalities, represent systemic fiscal exploitation and intergenerational injustice. This is because externalised environmental costs are often an imposition by just a few beneficiaries of short-term profit, which negatively impact, the well-being of all (including future) New Zealanders.

The NZPSC position is that, a large and convincing body of international experience and scientific evidence now exists, which illustrates that the externalised pollution costs associated with end of life products and packaging can be quickly and cost effectively resolved by the intervention of product stewardship / extended producer responsibility (PS/EPR) programmes. However, in spite of the PCE’s guidance, at the time of writing, these specific economic instruments remain peripherally applied in New Zealand.

In providing an excellent overview of waste issues affecting New Zealand and conversely the opportunities on offer in successfully addressing these, the ‘*Changing Behaviour*’ report, might have been expected to have far greater influence upon the imperative of government, than is apparent. Since the report’s publication in 2006, relative to the scale of opportunity, waste management in New Zealand can be considered to be a sphere of considerable underperformance. New Zealand still relies upon a ‘voluntary only’ approach to PS/EPR²¹. Despite, improving waste information being a key focus of both the PCE and the WMA:2008, poor data is still being cited as an excuse for this omission. Since it was introduced in 2009, the \$10 per tonne national waste levy has raised more than “\$192

10 Cited from the ‘Speech to open a Forum to celebrate the Parliamentary Commissioner for the Environment’s first 20 years and to reflect on New Zealand’s sustainability progress’. Source: <https://www.parliament.nz/mi/visit-and-learn/how-parliament-works/office-of-the-speaker/speeches-pre-2013/document/48Speakspeech010320071/speech-to-open-a-forum-to-celebrate-the-parliamentary-commissioner/>

million - which has been distributed to national and local initiatives to reduce waste" (MfE, 2017c), without that outcome being achieved.

In fact, the opposite has occurred, with some publications citing a 35% increase since 2009 (Hoffart, 2018). Exemplifying the disconnect between objective and outcome, the net tonnage of waste reported at levied waste disposal facilities for the 2014 and 2017 review periods, shows this increasing by 20.1% (MfE, 2017c). The public policy failings apparent in New Zealand's management of waste, undermine our domestic environmental and human health and our international reputation.

Whilst the NZPSC seeks to maintain an informed perspective and will continue to advocate for the effective implementation of PS/EPR programmes, we recognise that only the PCE has the independence, mandated authority and resources necessary to research and report on environmental issues in New Zealand and to hold government to account. Therefore, the NZPSC is formally requesting that the PCE initiate a wide-ranging review of waste management in New Zealand. The topic of waste falls within the PCE's jurisdiction and as demonstrated in 'Changing Behaviour' report, this is a work area in which, the PCE has previously demonstrated prescience and expertise.

The NZPSC view is that the New Zealand governments' mismanagement of waste policy, evident in the subject period (1999 – 2017), has well surpassed the threshold of "public concern" that might trigger a PCE investigation. In this respect, New Zealand is failing its citizens and in our international responsibilities in a sphere of activity, which at its most acute, the 'International Solid Waste Association' (ISWA) describes¹¹ as a "global health and environmental emergency" (ISWA, 2017). As a relatively well-developed and wealthy country, with ample capacity and opportunity, we believe it is completely unacceptable for New Zealand to be anything other than proactive and effective in demonstrating good practice and in carrying our share of the burden of global responsibility to address waste issues.

The following two key strands of argument have been developed by the NZPSC, in support of this submission. The first cluster of points, derive directly from unaddressed guidance of the 2006 'Changing Behaviour' report and the second cluster of points relate to a broad overview of the prior decade of neglect and failure around waste management in New Zealand.

1. HOW WELL HAS THE GOVERNMENT ADDRESSED THE RECOMMENDATIONS OF THE PCE'S 2006 'CHANGING BEHAVIOUR: ECONOMIC INSTRUMENTS AND THE MANAGEMENT OF WASTE' REPORT?

In the intervening period since the publication of the 'Changing Behaviour' report, the 'Waste Minimisation Act' (WMA:2008) has been developed, passed into law and is now well into the implementation phase. In respect of a key recommendation of the 'Changing Behaviour' report, this legislation represents a significant point of progress. However, it is concerning that a number of other areas of recommendation appear to have gone unheeded and several related issues are now apparent. The following points appear as critical opportunities to re-examine the report's recommendations and to evaluate the governments' overarching response.

1.1. Under-utilisation of market based economic instruments in addressing waste issues?

"Evidence shows that economic instruments can be effective in reducing waste... Economic instruments for managing waste have not been used to their full potential in New Zealand... deliberate policy choices that have led to economic instruments being little used" (PCE, 2006).

Decades of international experience have proven the efficacy of market based economic instruments in minimising and managing waste. Despite the PCE's clear arguments supporting broad uptake of economic instruments in New Zealand's waste management context, they remain significantly under-utilised. The reasons for and consequences of New Zealand's rigidly unambitious approach to some economic instruments requires examination, so that this learning can flow into future policy debate.

¹¹ ISWA. (2017). 'Let's Close the World's Biggest Dumpsites!' Retrieved from International Solid Waste Association, Austria: <http://closedumpsites.iswa.org/>

1.1.1. The national waste levy

Following the development of the Waste Minimisation Act in 2008, New Zealand has operationalised a national waste levy, which was a key recommendation of the PCE report. The levy fulfils the dual interactive purposes of creating a 'polluter pays' tax and providing a funding stream for waste minimisation projects. The structure of the WMA:2008 provides for 50 percent of the waste levy funds being directed into the contestable Waste Minimisation Fund (WMF), whilst the other 50 percent is redirected back out to local government. In the face of an identified lack of funding in the environmental / conservation space¹², the national waste levy remains New Zealand's only hypothecated 'green tax'. As such, perceptions of success, or failure provides a sentential indicator of likely future acceptance of this mode of tax / economic instrument.

Currently in New Zealand, a diverse spectrum of future tax options are being hotly debated in the general public-media nexus and more formally, by the current 'Tax Working Group'¹³. For reasonable consideration to be given to progressive tax options¹⁴ (i.e. such as calls for a tourist / bed tax, congestion charges, and a bottled water tax¹⁵ etc), it appears critical that the waste levy is - and is perceived to be, a success. Without further explanation, the current failure of the waste levy (or rather the system of management) to achieve the stated objective of minimising waste, jeopardises the likelihood of having a balanced conversation around all future tax options for New Zealand.

Despite feedback garnered within the structured review cycles, supporting an increase, the waste levy, at \$10 /tonne, remains set at an ineffectual level, promoting calls for an independent review and rethink¹⁶. Most recently the Territorial Authority (TLA) Forum, a sector group of WasteMINZ has called for the Waste Disposal Ley coverage to be expanded and the levy rate to be increased in order to "reduce total waste to landfill by up to 3.5 million tonnes per annum" (WasteMINZ, 2018).

Reported amongst the key benefits of applying the economic instruments identified in the PCE's 'Changing Behaviour' report, was the creation and linkage of a financial disincentive to 'wasting', alongside financial incentives to research and develop resource efficiency, recovery and recycling. However, the 'full costing' and 'redistributive' elements of the function of the waste levy are contingent upon a range of critical considerations. For example, accurately valuing and reflecting long-term environmental costs, sufficiency in-terms of the scale of both, the disincentive effect (i.e. of adding a financial penalty to wasting) and conversely the cost and effectiveness of incentivising desired change, whilst mitigating the potential social justice issues and unintended consequences.

In line with the PCE's original appraisal of considerations, the pricing, scope, differentiation, targeting (of both rate and spending) and monitoring & enforcement, have all been identified as contemporary issues requiring attention (D. Wilson, Chowdhury, Elliott, Elliott, & Hogg, 2017).

12 See the PCE call for better environmental funding options reported: <https://www.newsroom.co.nz/2017/05/31/31576/our-birds-are-dying>

13 See: re tourist tax: <https://taxworkinggroup.govt.nz/> + re hotel beds – Auckland: <https://www.stuff.co.nz/business/93238804/Auckland-Mayor-Goffs-bed-tax-passes-10-7> + re bottled water: http://www.nzherald.co.nz/nz/news/article.cfm?c_id=1&objectid=11955105

14 NB: which are promising and widely endorsed, but are recognized as more challenging to design & manage <https://www.eea.europa.eu/highlights/designing-tax-systems-for-a>

15 See: <https://www.nbr.co.nz/article/labour-unveils-25-tourist-tax-plan-jw-207021>

16 See: <http://eunomia.co.nz/waste-disposal-levy-research/> and subsequent media discussion: <http://eunomia.co.nz/eunomia-levy-research-in-the-media/> + WasteMINZ. (2016). *The Waste Disposal Levy: What WasteMINZ members think*. Retrieved from Auckland, NZ: <http://www.wasteminz.org.nz/pubs/the-waste-disposal-levy-what-wasteminz-members-think/>

1.1.2. Managing the Waste Minimisation Fund (WMF)

The NZPSC position is that the current WMF administration model requires investigation, as it is vulnerable to political and ideological mismanagement. Outside of the macro level red flag, around the WMA:2008 objective - investment vs outcome, one indicator pointing to potential management issues, has been incidences of 'Minister initiated applications' (MIA), in excess of what level of executive involvement might have been expected. The questionable and considerable underperformance associated with the current WMA:2008 administration model appears to resonate squarely with the PCE's prior recognition of *"costs associated with implementing economic instruments, which needs to be weighed against the benefits to be gained"* (PCE, 2006 pg. 23).

At this point, New Zealanders appear to retain confidence in the high-level design construct of interrelating disincentives (waste levy) and incentives (WMF) to direct change. However, in order to maintain this public tolerance and confidence, it seems clear that the practical administration of this economic instrument, warrants serious investigation and reappraisal of the administration model.

Fundamentally, this administration model combines and internalises the functions of setting and reviewing the policy agenda, with the operation of issuing of WMF funding, within a single entity, namely, the Ministry for the Environment (MfE). This model appears to contravene early expectations for independence and objectivity (alongside currently, efficacy and return on investment), which were held in the establishment of the WMA:2008. Given the degree of failure resulting from this administration model, now appears as a good junction to, reappraise and rectify this.

A key rationale for such a review is that the WMF dominates the funding landscape in this sphere. It can be argued that an understandable reluctance to 'bite the hand that feeds', appears¹⁷ to have led to a general muting of necessary debate and accountability around waste policy. Science based critical thinking and open policy debate, which is transparently repercussion free, provides the strongest foundation for developing best practice in policies and programmes.

1.1.3. Implementing the WMA:2008

The current administration model by which the WMA:2008 is being implemented, centralises an all-encompassing function within the Ministry for the Environment. MfE's role is inclusive of: developing waste policies, designing and implementing waste minimisation programmes, managing the waste levy collection system, managing the local government WMMP approval process, managing the WMF strategy development and funding selection processes, and managing the legislated and other review processes, etc.

This predominantly 'in-house' mode of operation means that, in essence MfE self-evaluates its own performance. Aside from perceptions of conflict of interest, New Zealand's macro level performance indicators, indicate that the results of this 'one stop shop', WMA:2008 implementation model¹⁸ are sub-optimal.

Further, it can be argued that the WMA:2008 delivery model is fundamentally unsound, as it maintains an unhealthy, imbalance of power and control internalised within a single entity. This model appears to lack the necessary competition of ideas, checks and balances, transparency and independent scrutiny, that is a requirement of other sectors of the economy. The style of performance review, undertaken by MfE, appears

¹⁷ Aside from this general perception, there have also been specific incidences of punitive action undertaken against perceived critics of government policy.

¹⁸ Interestingly, the original design construct of the seminal version of the 'WMA' developed by the Green Party, which drawn out the ballot and then adopted by Labour, was premised upon, far greater separation and accountability of the mechanisms of power, policy and process.

to focus on highlighting positive outcomes, rather than providing a balanced in-depth examination of, for example, the opportunity cost of what has not been undertaken or achieved, which may be more broadly reflective of overall public good.

The reality is that much of New Zealand's experience and expertise in waste minimisation exists outside of central government ministries and over the recent period a perceptible disconnect has emerged, in particular between the views of central and local government. New Zealand's overall poor performance in waste minimisation (MfE, 2017a, 2017c), apparent lack of accountability and relatively high cost of managing this system, indicate that we are not achieving value for money, or the best possible outcome for the long term benefit of all New Zealanders.

Clearly there are multiple spheres of concern behind the general calls for a rethink on how the waste levy, the WMF and the WMA:2008 as a whole is managed (WasteMINZ, 2018; D. Wilson *et al.*, 2017). As New Zealand's pioneering attempt at a progressive, hypothecated 'green tax', the questions hanging of the management and outcome of the waste levy, have critical resonance to the broader economy and to the debate about the future of progressive, 'issue focussed' taxation systems in New Zealand.

1.2. Continued reliance on 'voluntary only' solutions in waste minimisation and management?

"The government's apparent preference, reinforced by vocal sectors of society, for using voluntary measures to manage contentious resource management and environmental issues. Yet we use a more diverse policy mix, including economic instruments and regulation, to modify behaviour ranging from drinking and smoking to driving and dog control. The weight of evidence suggests that, where a significant shift in public behaviour is needed, voluntary measures are not enough" (PCE, 2006 pg. 6).

The PCE questioned the overreliance on voluntary measures for addressing waste issues in New Zealand. New Zealand's approach to product stewardship / extended producer responsibility (PS/EPR) provides a case study, which demonstrates that, since the PCE's 2006 'Changing Behaviour' report, if anything, central government's preference for 'voluntary only' approaches has become more entrenched.

In recognition of their efficacy in achieving more desirable end-of-life solutions for waste products and reducing waste at source (i.e. through incentivising better product design), the WMA:2008 makes provision for the accreditation of product stewardship schemes. The WMA:2008 provides a legislative framework for developing both voluntary and mandatory schemes. In the Act, product stewardship¹⁹ schemes are recognised as encouraging (and where necessary requiring) the people and organisations involved in the lifecycle of a product, to share in the responsibility for managing environmental harm arising from the product, including when it becomes waste (i.e. by giving effect to the priorities expressed in the 'waste hierarchy') (WMA 2008, s 8).

¹⁹ NB: While these schemes are not purely economic instruments (because they may involve a suite of coordinated policy tools), effective product stewardship schemes will almost always rely, in part, on the use of economic instruments, such as deposits and upfront charges, to function.

Foremost, it is notable that technically product stewardship (PS) and extended producer responsibility (EPR) can be understood as being on a spectrum of 'compulsion and control', inclusive of involvement, investment, control and responsibility²⁰. In respect of this, the language and construct selected for formation in the New Zealand WMA:2008 draws on what can be recognised as at the broader, more inclusive / overlapping / collaborative, less regulatory, conception and approach of the spectrum of international models seeking to catalyse the uptake responsibility by producers (Peterson, 2014). Given that in this submission, the combined PS/EPR acronym is used in reference to, what in terms of the New Zealand WMA:2008 legislation, is referred to singularly, as product stewardship.

Since the enactment of the WMA:2008, the provisions relating to mandatory product stewardship schemes have remained almost completely unutilised, bar a series of public consultations that appear not to have resulted in commensurate action. Instead, New Zealand's governments have steadfastly adhered to 'voluntary only' approaches to PS/EPR, despite mounting evidence that 'voluntary only' approaches are neither, environmentally effective, or economically efficient (Auckland Council & WasteMINZ, 2017; CCME, 2014; EPR Canada, 2014; Zero Waste Europe & FPRCR, 2015). The failure to develop and implement a single mandatory product stewardship scheme, represents a huge lost opportunity for New Zealand, especially given that some key product types / classes appear as 'low-hanging fruit', which would have provided an excellent test case and necessary practical experience.

Exclusive reliance on voluntary schemes is not in the national interest, as generally they achieve lower diversion rates, because they lack the coordination, oversight and subsequent economies of scale, inherent to mandatory schemes. In spite of the PCE's guidance to the contrary and mounting public criticism, the New Zealand government remains anchored to this unpopular and unproductive policy setting. The MfE website currently lists 11 functioning (and 2 non-functioning) accredited, voluntary product stewardship schemes²¹. The existing accredited schemes are focussed on, what are regarded as problematic waste / product types (including hazardous /special wastes), whose treatment is a longstanding priority for most developed economies. Whilst, New Zealand's voluntary schemes certainly undertake worthwhile actions and are in themselves credible, in producing a positive intervention / outcome across a range of waste classes, the overall big picture result²² for New Zealand is limited.

Successive government Ministers for the Environment, have offered a spectrum of inconsistent rationales which appear to variously justify and then contradict and then further entrench the 'voluntary only' policy setting of PS/EPR. For example, in 2014 the then Minister for the Environment's diametric analysis put the prior and latter excuses for this failing public policy in sharp contrast. The then Minister's incisive observation²³ centred on the critical perspective of quantitative outcome, namely that: *"Under the 11 voluntary schemes, more than 70,000 tonnes of waste has been diverted from landfill for recycling or safe destruction. These are good results, but this only equates to 1.4 per cent of the total waste stream going to disposal facilities.*

20 See figure 1, pg. 2 (CCME, 2014) or alternatively 'Transitioning Product Stewardship to Full EPR' (EPR Canada, 2014). Alternatively EPR can be described / visualised as a subset of PS (Peterson, 2014 fig 1, pg. 3).

21 See: <http://www.mfe.govt.nz/waste/product-stewardship/accredited-voluntary-schemes> 1- Agrecovery rural recycling programme [Clean, uncontaminated agricultural drums/ IBCs (intermediate bulk containers)], 2- Envirocon [Ready mix concrete], Fonterra Milk for Schools Recycling Programme [Ultra-high-temperature milk cartons (including the straw and straw wrapper)], 3- Fuji Xerox Zero Landfill Scheme [Fuji Xerox branded equipment (printers, copiers, multifunctional devices and accessories), Consumables (toners, print cartridges, waste toner bottles, drums, rollers and fuser oil) and associated packaging], 4- Interface ReEntry Programme [Interface PVC backed carpet tiles], 5- Plasback [Agricultural plastics (including bale wrap, silage wrap, silage pit covers, twine, animal feed/nutrition and crop bags)], Public Place Recycling Scheme [End of life packaging (and where applicable food waste)], 6- Refrigerant recovery scheme [Chlorofluorocarbons (CFCs), hydrochlorofluorocarbons (HCFCs) and hydrofluorocarbons (HFCs)], 7- RE:MOBILE [Mobile & smart phones / data devices (including battery) and accessories such as charging units, data cables, head-sets], 8- Resene PaintWise Paint and paint packaging], 9- Recovering Oil Saves the Environment [Used oil], 10- Sharp Comprehensive Recycling and Waste Reduction Scheme [All of Sharp New Zealand's electrical and electronic products for the home and business. This includes non-Sharp products returned to Sharp & Other products include packaging materials, and obsolete and used parts], 11- The Glass Packaging Forum [Glass packaging]. NB: there are also two accredited voluntary schemes which are non-functioning *Holcim/Geocycle Used Oil Recovery Programme, Kimberly Clark NZ's Envirocomp Product Stewardship Scheme for Sanitary Hygiene Products.*

22 NB: there are a variety of metrics available which comprehensively and independently measure the efficacy (i.e. coverage, accessibility, diversion rates, public awareness and participation, operational standards, monitoring and reporting etc) of PS/EPR schemes at a national context. For example, one widely report approach is the EPR Canada 'report card' see: <http://www.eprcanada.ca/reports/2016/EPR-Report-Card-2016.pdf>

23 <https://www.beehive.govt.nz/release/govt-seeking-feedback-dealing-harmful-waste>

While the focus in New Zealand has been on voluntary schemes, in my view, the time has come to seriously consider appropriate mandatory approaches for selected priority waste streams." However, in spite of the clear logic provided by this Minister, the prior and subsequent Ministerial policy ignored what appears as this common-sense advice, in line with the guidance offered by the PCE.

Given the 'volumetric perspective' offered in this analysis, it is appropriate for scrutiny to be directed beyond 'achievement claims', towards the majority of PS class (hazardous and special) waste materials, which are still not appropriately collected and treated at the end of life stage. In New Zealand, the default perspective promulgated by well-funded PR campaigns of scheme proponents, is to continually focus on and promote the relatively limited outcomes, derived out of the government's rigid 'voluntary only' PS/EPR policy and programmes. It is as clear today, as it was in the 2014 Ministerial analysis, that the vast majority of New Zealand's PS class (hazardous and special) wastes are not captured and do not receive appropriate end of life treatment. These uncaptured and un-treated hazardous and special waste material flows, add to the trajectory of New Zealand's malign legacy of preventable pollution.

Alongside officially accredited voluntary product stewardship schemes, New Zealand has also seen the development of what appear as 'proxy' initiatives, which seem designed specifically to subvert the development of mandatory product stewardship schemes. A well-known example, which has received significant funding from the WMF, is the Packaging Forum's Soft Plastics Scheme. Aside from seeking to supplant and disrupt attempts to ban, or levy plastic bags (or to develop a mandatory product stewardship scheme for soft plastics) the scheme, based on the Forum's own estimates, diverts only around 11% of New Zealand's total soft plastics. *NB: independent commentators dispute this estimate¹⁰⁴ and suggest the diversion percentage as much lower, around 2%.* In respect of either claim, the diversion rate is relatively low, when compared to the at least, approximately 89% of this material class, which is not captured by this scheme.

When considered in light of the deliberately subversive intent of this type of scheme, in acting as 'pressure release valve', offsetting calls for mandatory approaches and delaying the implementation of more effective approaches, such limited outcomes represent a 'conflicted' and inefficient use of the WMF. Furthermore, it is also important to recognise that under the presiding 'voluntary only' PS/EPR policy setting, there has been a concerning level of product stewardship scheme failure and dysfunction. These issues, when considered alongside the perverse outcomes, such as the excessive \$/tonne treatment cost, stemming from minimal economies of scale, illustrate the folly of continuing to ignore the PCE's 2006 guidance, which is now reinforced by accumulating international experience.

The nett result of PS/EPR policy settings, which appear more based on rigid ideology, than international experience, science and consensus, is that more environmental opportunities have been wasted, than realised for New Zealand, over the past decade. Unfortunately, the empirical evidence and the associated implications of this clear failure of policy and management, goes largely unexamined in public discourse. In part, this can be attributed to the masking effect of the voluntary PS schemes self-promotion and lobbying of the vested interest industry groups, some of whom are in receipt of significant levels of public funding.

At a higher political level, rather than heeding the PCE's advice that *"economic instruments contribute to environmental sustainability, whilst also being conducive to economic growth"* (PCE, 2006 pg. 22) the government has numerously promulgated the opposite view, as an excuse for inaction. The presiding dogma appears to have been that assertive environmental action is antithetical to and inevitably undermines economic growth.

1.3. A lack of transparency and reciprocity with community consultation, which risks undermining democratic engagement?

The NZWS "... was cooperatively developed, so this failure undermines the whole process of democratic engagement with government" (PCE, 2006 pg. 5).

In 2009, the New Zealand Ministry for the Environment (MfE) consulted the public to identify potential 'priority products' for mandatory product stewardship. This consultation process relates to a function established in the WMA:2008, by which the Minister for the Environment can declare certain products to be "priority products" and in doing so, trigger the requirement for the relevant 'producers' to develop and seek accreditation for a mandatory product stewardship scheme (WMA 2008, ss 9-10). Of the 166 submissions²⁴ received on this point of consultation, "most" (MfE, 2010b) submitters saw the need for priority products to be designated by the Minister.

Noticeably, a much wider range of product types were proposed by the public as priorities²⁵, than the three initial product types, which had been selected and promoted by MfE²⁶. Subsequently, in 2014, MfE initiated a further round of public consultation²⁷ on 'priority products'. In this instance, the summary of findings²⁸ noted: "the majority of submitters were supportive of priority product declaration, with most submitters wanting it to happen sooner rather than later... All the local government submissions were positive for prompt action on the four proposed – and other – waste streams." (MfE, 2015b).

However, the Minister for the Environment did not act upon these strong indicators of public, local government support for mandatory product stewardship. This repeated rejection of the majority expression of public opinion, risks undermining confidence in the validity of the democratic process of consultation. The following section (1.4) further highlights and examines the disconnect, between public opinion and government policy, that has occurred in this sphere.

As previously pointed out by the PCE, continuing to ignore the results of public consultation, risks undermining confidence in - and ultimately participation in - the whole process of democratic engagement. Positive engagement with the general public and the local councils / environmental NGO's who represent the community, is critical in building understanding of the complex issues around waste and in generating support and participation in the change programmes, which seek to address waste issues.

It is concerning that the PCE's observations in 2006 in relation to MfE's past failure to implement key actions of the NZWS:2002, appear strikingly relevant and applicable today. The relevant description of premise, elements of phrasing, sense of alarm and urgency²⁹ might be similarly applied, in describing the Ministry's present approach to product stewardship. This reinforces the NZPSC view that, the PCE's 2006 comments and guidance have never been fully accepted, nor responded to and that a contemporary investigation into New Zealand's responsiveness to community engagement and according process and 'progress' in addressing waste issues is warranted.

24 See MfE. (2010). Waste Minimisation in New Zealand: Summary of Submissions. Retrieved from Ministry for the Environment, Wellington, NZ: <http://www.mfe.govt.nz/publications/waste/waste-minimisation-summary-submissions/index.html>

25 Alongside Ag chemicals, waste oil, and refrigerant gases, the publically endorsed priority product types were: "tyres, e-waste, packaging (glass, plastic bags and polystyrene) plastics (non-symbol), mercury containing lamps, 'liquid hazardous waste' (ie, household chemicals, paint etc.), treated timber, agricultural bale wrap, batteries, disposable nappies, & EoL motor vehicles" (MfE, 2010b).

26 The three product types selected proposed for further investigation were: agricultural chemicals, refrigerant gasses and used oil.

27 The purpose was reported as: "The Government is considering whether it should intervene to improve the management of four product waste streams: electrical and electronic equipment; tyres; agrichemicals and farm plastics; and refrigerants and other synthetic greenhouse gases.... whether we have correctly identified the four waste streams above as priorities for action... any of these waste streams should be declared as priority products under the Waste Minimisation Act 2008 (WMA), and if so, when"(MfE, 2014).

28 MfE. (2015). Priority waste streams for product stewardship intervention: Summary of submissions. Retrieved from Ministry for the Environment, Wellington, NZ: <http://www.mfe.govt.nz/publications/waste/priority-waste-streams-product-stewardship-intervention-summary-submissions>

29 See: "... partnership with wider society.... trust in, and commitment to our democratic processes... no effective dialogue... This finding does not inspire confidence... loss of confidence may raise questions about government's commitment to the NZWS, and even to other strategies..." (PCE, 2006).

1.3.1. Clarity and accountability around the 'Waste Advisory Board' (WAB) processes?

Another key area of concern is, the lack of information and transparency about how the 'Waste Advisory Board' (WAB) represents the broader views of all New Zealanders to the Minister for the Environment. The WAB is appointed, via a public nomination process and is required to collectivise³⁰ "knowledge, skill and experience", covering: "the WMA:2008, local government, business/industry (including the commercial waste industry), community waste minimisation projects, tikanga Māori". The WAB exercises a wide functional brief, however there has been little disclosure around WAB processes, such as around the content, priorities, approval (or otherwise) and achievement of any proposed annual work programme.

Given the implication that the WAB encompasses a spectrum of societal perspectives, acts as a repository of required expertise and is imbued with considerable representative responsibility, it appears incongruous that the public are not better able to understand and test the performance of this agency in raising and addressing issues and opportunities. For example, it does not appear possible to discern to what extent New Zealand's overall deficiency in minimising waste can be individually or collectively attributed to the WAB and or, the Minister for the Environment and or the Ministry for the Environment.

It is equally unclear if good advice was offered by the WAB, but not acted upon by the Minister, or if the complete opposite occurred. Alternatively, was little or no advice sought by the Minister, or was any advice that was offered by the WAB, treated similarly to that offered by the general public and local government in the official MfE consultation processes²¹⁻²⁵? The lack of transparency, obscures the

opportunity for accountability and improving the overall functionality of the WMA:2008.

Given that the recent style of governance over the waste work area appears quite, 'Minister driven', ideologically partisan, and at times quite illogical, it is concerning that there is so little public transparency around how functional and effective the WAB process is. Questions and concern arise around what appears as an overbearing level of confidentiality applying in WAB protocols. To what extent is this really necessary and or healthy? For example, it is not possible to examine and ensure that the process of Ministerial appointment is not subject to, in a worse-case scenario - misuse, given the "collective view" required of WAB may be weighted to that of the "majority"³¹. Whilst, the WAB terms of references provides opportunity for the Minister to "from time to time, agree to publish advice or reports produced by the Board"²⁹, unfortunately the facility for creating transparency, does not appear to have been utilised.

Amongst the PCE's 2006 guidance was commentary pointing to the necessity of some form of "independent review group" and a direct reference to the large 'Waste Minimisation and Management Group' which advised on the NZWS:2002. The PCE recommended that beyond functions such as advising on strategy, the WMMG should have "responsibility for overseeing, monitoring and reporting on progress..." (PCE, 2006 pg. 57). This recommendation envisions an independent outward facing entity with a voice, which bears witness and provides accountability on behalf of the public.

Instead, it appears New Zealand has ended up with a small, internalised and tightly controlled entity, which seems to operate under a cone of silence. The void of information around the WAB processes, administration, content and dynamic,

30 Sources: <http://www.mfe.govt.nz/waste/waste-advisory-board/functions-board>

31 Ref the WAB terms of reference: <http://www.mfe.govt.nz/sites/default/files/waste/overview/waste-minimisation-act/waste-advisory-board/waste-advisory-board-terms-of-reference.pdf>

risks undermining the general-public's confidence that their best interest is being served. On top of New Zealand's poor performance around waste, the opaque function of the WAB offers little reassurance that, the current interpretation and implementation of the WMA:2008 is sufficiently evidence based, nor that the resulting government actions in the sphere of waste minimisation are genuinely democratic, or fit for purpose, or cost effective.

1.4. Deficiencies in government leadership and policy dysfunction, relative to community expectations?

“Waste management is a significant responsibility of local government... But there are aspects of waste management, particularly policies that discourage the generation of waste in the first place, which are more efficiently addressed by central government. Central government also has a responsibility to ensure that local government has the policy and legislative tools available to it, to meet their waste management functions” (PCE, 2006 pg. 54).

In 2006, the PCE observed that local authorities often wish to implement best practice approaches to waste minimisation and management, but may be limited constitutionally, or may be hindered practically, by underdeveloped national policy. Accordingly, the PCE called for *“renewed leadership from central government”* (PCE, 2006 pg 6) to help tackle this issue. However, evidently a disconnect remains between the on-the-ground aspirations of local authorities (who are legally and practically responsible for managing waste) and the ideology of central government (which directs strategy, policy and funding).

An examination of New Zealand's plastic waste issues puts into sharp relief, the lack of progressive leadership by central government in the development and implementation of waste policies that might otherwise support local government in achieving positive outcomes for the communities they represent. In 2016, Local Government New Zealand³² (the umbrella organisation representing all local councils in New Zealand) announced that New Zealand's Metro councils had *“proposed a remit calling for Local Government New Zealand to endorse the concept of a national-mandated beverage container deposit system... within 2 years... The remit was passed with 90 % in favour”*³³.

In addition, 86% of LGNZ's members supported a national single-use plastic bag levy³⁴. In June 2017, the Mayors of Wellington, Auckland and Dunedin launched an open letter to mayors around the country to call on central government to institute a plastic bag levy, or empower local government to do it themselves. Ninety percent of the country's mayors signed the open letter, before its presentation to the Minister.³⁵ However, these strong democratic statements, which indicate local government, and hence popular community, support for effective interventions to address the issues of packaging and plastic waste, were rejected by central government.

Individual local authorities are not in a constitutional position to implement their own local ban, or levy on plastic bags. Additionally, in order to be effective and efficient, such measures, (including container deposit systems) need to be implemented on a nationwide basis. Accordingly, councils are looking to central government for leadership and action. Since the passing of the WMA:2008, the Minister for the Environment has been in a position to implement a nationwide ban, or levy of plastic bags, or a container deposit system (CDS), using regulatory and other powers under the Act. However, to date, the Government has ignored repeated local government requests and public calls to show genuine leadership and implement economic and or regulatory instruments to address the issue of packaging and plastic waste.

32 See: <http://www.lgnz.co.nz>

33 Ref: <http://www.lgnz.co.nz/news-and-media/2016-media-releases/eight-important-issues-debated-at-local-government-new-zealand-agm/>

34 Ref: <http://www.lgnz.co.nz/news-and-media/2015-media-releases/remit/>

35 See: <http://www.lgnz.co.nz/news-and-media/2017-media-releases/huge-support-for-levy-on-single-use-plastic-bags/>

As has been highlighted previously, the various Ministerial rationalisations justifying inaction, in utilising the full provision of the WMA:2008 (in particular declaring 'priority products', hence requiring mandatory PS schemes) have the appearance of ideology overriding evidence-based assessment. For example, on the issue of single use plastic bags the then Minister for the Environment, the Hon Dr Nick Smith, is cited as opposing the interventions sought by the majority of Territorial Authorities, because these interventions are, *"a bit too nanny state"*³⁶.

In addition, the Minister has characterised the proponents of PS/EPR based interventions, seeking to address the issue of packaging and plastic waste, as: *"over-stating the relative level of harm of plastic bags as compared with other waste streams"*³⁷. The Minister has also presented a volumetric argument against tackling the issue of plastic bags, in arguing that, *"a ban or a compulsory levy cannot be justified when plastic shopping bags only make up 1.5 per cent of litter"*. Adding that, plastic shopping bags *"make up only two per cent of waste going to landfill and only 10 per cent of plastic waste."*³⁷

To frame and confine waste issues on a volume/mass basis and to dismiss concerns around plastic waste, because this material type appears as a small percentage of landfill (t/yr), appears to trivialise the issue and basic considerations of ecosystem science. Put simply, irrespective of volume/mass, non-biodegradable plastic waste is not, in real terms, assimilated and neutralised by a receiving environment. Small amounts of plastic represent a persistent harm and large amounts of plastic equal more long-term harm. The former Minister's statements appear to disregard the

urgency that the growing international scientific consensus accords to addressing plastic waste issues³⁸.

Specifically, in respect of the issues associated with single use plastic bags (SUPBs), recent communication by the 'Retail NZ' (representing >4000 small and large Kiwi retailers)³⁹ calling for the Government to remove legislative barriers and enable a plastic bag levy, shows that far from being the promised 'fast follower'⁴⁰ on environmental matters, the government appears as a 'slow laggard'. Government obfuscation and inertia in the midst of the growing sense of crisis around plastic waste appears out of sync with public expectations and the views of affected businesses. The void in central government leadership, has been filled by a cluster of self-imposed bans and other related actions, by retailers⁴¹ responding to customer and public concern. The result of these well-meaning initiatives, is a confusing and disparate jumble of SUPB scenarios across the retail environment, which further accentuates the mixed messaging and lapse in government leadership.

However, alongside minimising scientifically validated environmental issues and overlooking proven solutions, the then government contradicted its own logic in the subjective selection of what interventions were undertaken around plastic waste. In subsequently, proposing to ban plastic microbeads, which is on a volumetric basis an even a smaller percentage of the waste stream than plastic bags, the minister refutes the flawed volumetric argument, which was previously constructed to justify inaction. An irony in this preference is that the millions of large items of fugitive plastic packaging, impacting the local and global

36 'Plastic bag phase-out plan rubbished' (Jonathon Carson, May 28, 2015) <http://www.stuff.co.nz/environment/68898535/Plastic-bag-phase-out-plan-rubbished>

37 Ministry for the Environment advises against introducing a plastic bag levy' (Rachel Thomas, August 30, 2016) <http://www.stuff.co.nz/environment/83702268/Ministry-for-the-Environment-advises-against-introducing-a-plastic-bag-levy>

38 Wilcox, C., Van Sebille, E., & Hardestya, B. D. (2015). Threat of plastic pollution to seabirds is global, pervasive, and increasing. Proceedings of the National Academy of Sciences of the United States of America, 112(38), 11899-11904. + Moore, C. J. (2008). Synthetic polymers in the marine environment: A rapidly increasing, long-term threat. Environmental Research(108), 131-139. + Moore, C. J., Moore, S., L, Leecaster, M. K., & Weisberg, S. B. (2001). A Comparison of Plastic and Plankton in the North Pacific Central Gyre. Marine Pollution Bulletin, 42(12), 1297-1300. See: 'Microplastic pollution in oceans is far worse than feared, say scientists' <https://www.theguardian.com/environment/2018/mar/12/microplastic-pollution-in-oceans-is-far-greater-than-thought-say-scientists> + The UN has declared war on ocean plastic pollution' <https://www.treehugger.com/environmental-policy/un-says-its-time-tackle-plastic-pollution-aggressively.html>

39 See: <http://www.radionz.co.nz/national/programmes/ninetonoon/audio/201852140/retailers-say-competition-laws-block-charge-on-plastic-bags>

40 See related reporting <http://www.stuff.co.nz/dominion-post/comment/editorials/63187414/Editorial-Time-for-fast-following-on-climate>

41 See: 'NZ plastic packaging declaration' - World Environment day 2018 <https://www.radionz.co.nz/news/national/358901/more-companies-pledge-to-tackle-plastic-waste> + The Warehouse: http://www.nzherald.co.nz/business/news/article.cfm?c_id=3&objectid=11892733 + Mitre Ten: http://www.nzherald.co.nz/business/news/article.cfm?c_id=3&objectid=11931414 + Countdown: http://www.nzherald.co.nz/business/news/article.cfm?c_id=3&objectid=11929377

environment are known to break-up and form secondary micro plastic particles⁴², which now being even reported in drinking water supplies (Mason, Welch, & Neratko, 2018). Adding to this, emerging research illustrates that there is a broad spectrum of primary micro-plastics exacerbating the, already extreme concerns around macro-ocean plastic. (Boucher & Friot, 2017). Both large and small microplastic particles in the ocean, have been shown to act like 'toxic sponges', soaking up and amplifying the impacts of harmful chemicals, which can then enter the food chain, as plastics are ingested by birds and fish⁴³ mistaking this material for food.

Whilst the proposed microbeads ban is an important opportunity to address a critical part of New Zealand's plastic waste issues, this example also illustrates the sometimes ad hoc and lethargic nature of the governments' leadership in the waste sphere. In the process of public consultation, not a single one, of the 16,223 submissions⁴⁴ was absolutely opposed the proposed micro-beads ban. Whilst this consultation may have resulted in important improvements to the proposed regulations, it also highlights the lack of authentic leadership by government, who have in reality, just inertly followed along behind public opinion.

New Zealand's regulatory action on microbeads, has only occurred after prior bans in North America, Canada, UK, Europe, a voluntary phase-out in Australia and or prior, elimination of plastic microbeads by most of the major international manufactures. Far from the Government providing leadership on the issue of microbeads, most of the heavy lifting on this change process, was completed by environmental NGO's⁴⁵. The stark reality behind the apparent

'greenwashing' around this issue is that, the action taken by the New Zealand government, did not occur until there was zero public opposition and therefore zero political risk. As a consequence, little genuine environmental credibility can be ascribed to this action.

The deficit of genuine leadership from central government in New Zealand, illustrated in this brief overview of plastic waste issues, exists in stark contrast with the PCE's 2006 guidance. More broadly, the attitudinal morbidity on display in this sphere, does not line up with the aspirational leadership models which inspire and are sought by New Zealanders (read the world-class success of the All Blacks, Emirates Team New Zealand and Rocket Lab, etc). Given how New Zealand is marketed to the world, it is reasonable to question why, in the environmental sphere, the bar has been being set so low, by those elected to demonstrate leadership. Recent research is now showing that New Zealand is making a sizable contribution to the global issue of ocean plastic⁴⁶ and unless we all carry our share of responsibility to address these problems, the issues and resulting harm will only grow.

International evidence shows that well designed PS/EPR systems will provide practical cost effective solutions across a range of key material / packaging / product types. In reality, multiple priorities do not need to be played off against, or cancel each other out, as individual PS/EPR schemes, can function in separate spheres of the economy, without a negative correlation. The PCE's historic big picture observation that, utilising economic instruments and pursuing environmental sustainability need not be considered mutually exclusive to "economic growth" (PCE, 2006 pg. 22) is still relevant today.

42 Ref: 'WHO launches health review after microplastics found in 90% of bottled water' <https://www.theguardian.com/environment/2018/mar/15/microplastics-found-in-more-than-90-of-bottled-water-study-says> and Ivar do Sul, J. A., & Costa, M. F. (2014). The present and future of microplastic pollution in the marine environment. *Environmental Pollution*, 185, 352-364. + Townend, W. T. (2010). Marine Pollution. *Waste Management Research*, 28, 959-960. + Ryan, P. G., Moore, C. J., van Franeker, J. A., & Moloney, C. L. (2009). Monitoring the abundance of plastic debris in the marine environment. *Phil. Trans. R. Soc. B*(364), 1999-2012

43 Zarfl, C., & Matthies, M. (2010). Are marine plastic particles transport vectors for organic pollutants to the Arctic? *Marine Pollution Bulletin*, 60, 1810-1814. + Boerger, C. M., Lattin, G. L., Moore, S. L., & Moore, C. J. (2010). Plastic ingestion by planktivorous fishes in the North Pacific Central Gyre. *Marine Pollution Bulletin*, 60, 2275-2278. + Sheavly, S. B., & Register, K. M. (2007). Marine Debris & Plastics: Environmental Concerns, Sources, Impacts and Solutions. *J. Polym. Environ.*, 15, 301-305. + New Zealand reporting See: 'Plastic 'being regularly ingested' by fish consumed in New Zealand' <https://www.stuff.co.nz/business/farming/aquaculture/94814758/plastic-being-regularly-ingested-by-fish-consumed-in-new-zealand> and 'Third of turtles found dead on New Zealand beaches had ingested plastic' <https://www.stuff.co.nz/environment/94277174/third-of-turtles-found-dead-on-new-zealand-beaches-had-ingested-plastic>

44 See: <http://www.mfe.govt.nz/sites/default/files/media/Waste/microbeads-summary-of-submissions.pdf> Specifically, it is noted that 16,184 offered "support"; 33 offered "support in part"; 6 were "unclear / not specified" and 0 were "opposed" (MfE, 2017b)

45 For example, the international 'Beat the Microbead' campaign (supported by 84 NGOs from 35 countries).

46 See 'Researchers map plastic patch bigger than Greenland floating in the South Pacific' <https://www.stuff.co.nz/environment/94879644/Researchers-map-plastic-patch-bigger-than-Greenland-floating-in-the-South-Pacific> + 'Plastic 'being regularly ingested' by fish consumed in New Zealand' <https://www.stuff.co.nz/business/farming/aquaculture/94814758/plastic-being-regularly-ingested-by-fish-consumed-in-new-zealand> + "Although we have no data for waste in New Zealand's marine environment... We have only limited information about the effects of marine debris in New Zealand, but one study identified that between 1995 and 2005, the incidence of fur seals and sea lions being entangled in plastic and other debris in Kaikoura was one of the highest rates reported in the world (Boren et al, 2006)." (MfE, 2015a).

New Zealand's track-record on plastic waste, provides an unfortunate illustration of how rigid ideology can apparently outweigh democracy and scientific evidence combined. The de-prioritisation and excuses constructed around failing to implement the proven permanent solutions to plastic waste issues needs to be contextualised by the overarching fact that the government has not under the WMA:2008, actually declared any types of waste a 'priority'. The simple overarching explanation for this inaction is that, holistically the entire issue and opportunity of waste, is not sufficiently well-understood and hence, has not genuinely been viewed as a priority for the government.

1.5. Omissions in reliable baseline waste and resource management data?

"Certainly we need to know what wastes we have if we are to design tools to properly manage them" (PCE, 2006).

Internationally it is recognised⁴⁷ that: *"Data is the lifeblood of decision-making and the raw material for accountability. Without high-quality data providing the right information on the right things at the right time, designing, monitoring and evaluating effective policies becomes almost impossible"* (D. C. Wilson *et al.*, 2015a). One of the critical opportunities provided for in the WMA:2008, was to improve waste management data, which for a long period has been recognised as a crucial barrier to progress. Specifically, the WMA:2008 makes allowance for regulations making it *"mandatory for certain groups to report on waste to improve information on waste minimisation"*⁴⁸. New Zealand's poor waste data was formally recognised as a critical issue, as early as 1997⁴⁹ and this was further highlighted and confirmed a decade later in the PCE's *'Changing Behaviour'* report. Without having been adequately addressed, today New Zealand's waste and recycling data can still

be regarded as limited, fragmented and not yet fully, 'fit for purpose'.

The recent call from TLA's for New Zealand to *"Officially adopt the National Waste Data Framework developed by WasteMINZ and oversee its implementation to enable better planning and monitoring"* (WasteMINZ, 2018) indicates the current inadequacy of New Zealand's system of waste and recycling data. It is doubly concerning that this issue persists despite the improvements enabled via the combination of formal 'Waste Assessments' (WA) and 'Waste Minimisation and Management Plans' (WMMP) mandated under the WMA:2008. Rather than requiring a consistent nationalised approach, the government has left data capture to local government, through the introduction of bylaws and with this, the implied threat of litigation. The nett result of individual TAs navigating their way through this fragmented process, is differing data requirements from district to district and inconsistency in respect of the requirements imposed on industry.

Had the PCE's 2006 recommendation (6.2.2. pg. 55) for *"establishing and maintaining, with the cooperation of local government, a national waste data base to monitor and report on trends in waste..."* been implemented more completely, it seems likely this issue would now be resolved and the data would already be feeding into *"policy development and evaluation"*. Progressive and timely leadership by central government (as envisaged by the PCE 6.4.1) would have eliminated the inefficiency of TAs having to duplicate actions, re-argue essentially the same issues (i.e. perceptions around commercial sensitivity stemming from significant privatisation in this sphere) and would also provide industry with a nationally equivalent set of data requirements⁵⁰.

One of the clearest examples of how WMA:2008's provision to improve New Zealand waste data, has been under-utilised by the Government, is in the work area of e-waste. After considerable time

47 Ref: Global Waste Management Outlook. Retrieved from UNEP ISWA: <http://web.unep.org/ourplanet/september-2015/unep-publications/global-waste-management-outlook>

48 Source: <http://www.mfe.govt.nz/waste/waste-strategy-and-legislation/waste-minimisation-act>

49 The PCE cites both the 'National Waste Data Report' and the 'New Zealand State of the Environment' as highlighting this deficiency (PCE, 2006 pg.55).

50 Professional observation Brent Aitken TDC

and government funding⁵¹ invested into attempted solutions for New Zealand's well documented e-waste problems⁵², a pivotal report⁵³ concluded: *"This study cannot recommend priority product designation..."* The key rationale justifying this finding was that, *"the level of robustness of New Zealand specific data for e-waste products is currently insufficient to satisfy the requirements of the priority product designation criteria..."* and further that, *"the issue of incomplete and inaccurate data on New Zealand's e-waste has made the task of trying to develop a framework for managing the waste stream more difficult"* (SLR Consulting NZ Ltd, 2015).

Instead of an effective, mandatory, product stewardship based, national e-waste recycling programme, designed around international precedents and best practice, New Zealand has only three narrowly focussed, voluntary e-waste recycling schemes⁵⁴ accredited for this material type. This scenario is particularly unacceptable because e-waste is uniformly recognised as hazardous and requiring special 'end of life' treatment (Baldé, V, Gray, Kuehr, & Stegmann, 2017; BAN, 2002; ILO, 2014; Latimer, 2013; Lundgren, 2012; Robinson, 2009; Scruggs, Nimpuno, & Moore, 2016; StEP, 2016; Sthiannopkao & Wong, 2013). This situation has occurred despite New Zealand spending millions on 'government funded' recycling as a stop-gap measure, around the time of the 'Digital Switch-over'⁵⁵ for TVs.

Globally, e-waste is the fastest growing part of the waste stream and is recognised as containing both, scarce resources and numerous toxins⁵⁶. It is accepted that New Zealand already has a large e-waste problem, variously estimated in the region of 80,000 tonnes pa (Gertsakis *et al.*, 2011; SLR Consulting NZ Ltd, 2015). Despite projections of significant growth in the per person e-waste volumes [i.e. from 19 kg per capita in 2015 - to 27.1 kg per capita in 2030] (SLR Consulting NZ Ltd, 2015 pg 21), as far back as 2006⁵⁰ it has been reported that New Zealand was one of few OECD countries without an effective, mandatory, standardised approach to 'end of life' e-waste management (Gertsakis *et al.*, 2011; MacGibbon & Zwimpfer, 2006; NZ ITTV Working Group, 2007a, 2007b; R. Young, 2011).

Historically, an enormous amount of time and energy has been invested by New Zealand's, so-called ITTV sector (in collaboration with all requisite stakeholders) in designing⁵⁷ workable product stewardship schemes, in full anticipation that *"the product stewardship scheme will be supported by central government. This could be in the form of a clear regulatory framework, procurement, enforcement, import licences and/or economic instruments to incentivise scheme membership"*⁵⁸ (Bolton, Clarke, & ITTV working group, 2006). The ITTV sector actively sought and expected government intervention to create mandatory national product stewardship environment and with this an all-encompassing, 'level playing field', with zero 'free-riders'.

51 This appears to be in excess of 20 million dollars [2010: \$750,000 - Ewaste: E-day 2020 Communications Trust Services + \$110,000 - Technology to recycle TVs and Computer Monitors Abilities Incorporated Infrastructure + \$400,000 - E-waste recovery from a nationwide network of collection points RCN and Associates Limited Services + \$550,000 - Sims Recycling Solutions Services. 2011: \$1,071,305 - RCN e-cycle RCN and Associates Limited Education and awareness + \$920,000 - The Warehouse TV Recycling Take Back Promotion The Warehouse Services. 2012: \$11,500,000 - TV Take-back Programme Various Services. 2014: \$4,845,402 - LegacyTV Recycling Sims Recycling Solutions Services + \$170,000 E-waste Product Stewardship SLR Investigation].

52 See: MacGibbon, J., & Zwimpfer, L. (2006). e-Waste in New Zealand: Taking responsibility for end of life computers and TVs. Retrieved from Wellington, NZ: http://www.eday.org.nz/template/e-waste_in_nz_report_final_050706_medium_res.pdf + Gertsakis, J., Hannon, J., MacGibbon, J., Nixon, C., Tripathi, N., Wilkinson, S., & Zwimpfer, L. (2011). eWaste in New Zealand: Five years on. Retrieved from Wellington: http://www.eday.org.nz/template/ewaste_in_nz_2011_final2.pdf

53 See: SLR Consulting NZ Ltd. (2015). *E-waste Product Stewardship Framework for New Zealand: Final Report*. Retrieved from Wellington, NZ: <http://www.mfe.govt.nz/sites/default/files/media/Waste/e-waste-product-stewardship-framework.pdf>

54 See: 'RE:MOBILE', 'Sharp Comprehensive Recycling and Waste Reduction Scheme' and 'Fuji Xerox Zero Landfill Scheme' <http://www.mfe.govt.nz/waste/product-stewardship/accredited-voluntary-schemes/sharp-nzs-recycling-and-waste-reduction>

55 NB: this was largely focussed on defunct and redundant TVs, which is only one of 13 types of e-waste recognised by the EU under the WEEE directive.

56 Baldé, C. P., Wang, F., Kuehr, R., & Huisman, J. (2015). The global e-waste monitor 2014. Retrieved from Bonn, German: <http://i.unu.edu/media/unu.edu/news/52624/UNU-1stGlobal-E-Waste-Monitor-2014-small.pdf> + Herat, S. (2007). Review: Sustainable Management of Electronic Waste (e-Waste). *Clean*, 35(4), 305-310. doi:10.1002/clen.200700022 + Robinson, B. H. (2009). E-waste: An assessment of global production and environmental impacts. *Science of the Total Environment*, 408, 183-191.

57 Including: the key principles, scope recycling process frameworks, working group job descriptions (i.e. secretariat), Governance, auditing and administration and prospective PRO frameworks, education and communications strategies, scheme costs incomes and broader economic impacts and financial modelling identifying then international best practice product stewardship schemes, details such as 'advance payment levy' (APL) rates ranges, Impact of changes in the market, Orphan products, Sector participation, Customs and border capture of APL, Tariff 'Code Classification', Setting up of APL, the then intended commencement of PS scheme, Personal imports and household removals, Re-exports, Necessary definition of for example a 'Television', Data and information transfer, Retailer impacts/requirements and issues, Scheme promotion and publicity further consultation requirements environmental and community considerations, anticipatory government procurement and disposal guidelines (NZ ITTV Working Group, 2007a, 2007b).

58 Principle nine: direct quote from the 'Key Principles for the TV/IT Product Stewardship' document

The veracity of this position appears to be supported by subsequent research and reporting. In 2011, an independently commissioned report entitled, *The Economics of e-Waste: Evaluation of Regulatory Options* provides a relevant observation: "Voluntary approaches to solving the e-waste problem will not work because of the structural (i.e. large number of firms within the industry with frequent entry and exit) and behavioural (i.e. fierce price competition that exists between market participants) market characteristics of e-product retail markets" (Nixon, 2011). Similarly, research examining the public's 'willingness to pay' for end of recycling of e-waste shows there is a significant gap between this and the 'real world' per item, nett recycling cost (Kaye-Blake, Nixon, Byett, & Cocks, 2013).

However, instead of aligning with international experience, scientific evidence, good business and technical practice⁵⁹, the government have rejected the proven and permanent solution of mandatory, national product stewardship programme for e-waste. The New Zealand government's intervention to address e-waste issues have been based on the twin folly of 'picking winners' and government funded e-waste recycling.

The subsequent nationwide TV recycling scheme overseen by the MfE, was, publically derided for the associated financial and technical failures⁶⁰. Avoidable headlines such as these, risk undermining community confidence and the entire ethos of environmental responsibility. Unfortunately, a perverse outcome of the government's dysfunctional approach, is that it can be argued that the eventual full \$/tonne recycling cost and associated problems with these latter schemes, was higher than the previous pioneering, popular, participatory, community based eDay programmes⁶¹ which had been supplanted.

Today, aside from the few well-meaning, but relatively unsupported accredited voluntary and other undocumented e-waste product stewardship schemes, the New Zealand e-waste scenario might be described as a peripherally organised, free-market assemblage, lacking necessary government oversight, intervention, regulation, monitoring and reporting. Overall, the economic instrumentation of this scenario represents an incoherent hybrid made up of some self-actuated product stewardship, some local government funding, some user pays recycling, some scrap-metal funded recovery and indeterminate levels of residual dumping and fly-tipping costs.

A critical irony arising out this scenario is that, most of the large multinational electronics firms, who sell electronic products in New Zealand, already routinely operate cost effective, free at the point of drop-off, high quality (environmental / OSH), mandatory e-waste take-back schemes in the array of other national jurisdictions, where this requirement is the norm.

The reason that New Zealanders do not have these services, is not because the relevant companies can't or won't provide them, or because they and the public oppose this development, or even because it is unaffordable / too technically demanding. The critical barrier is simply that, in spite of a succession of submissions in favour⁶², the Minister for the Environment has refused to declare e-waste a 'priority product' under the WMA:2008. New Zealand's reported 'lack of data'⁶³ may be interpreted as providing a justification for the government's rigid adherence to a 'voluntary-only' policy on e-waste product stewardship. However, both the PCE's *'Changing Behaviour'* report and the provision of the WMA:2008, makes it clear that improving waste data is a critical and central responsibility of central government.

59 For example: StEP. (2016). Guiding principles to develop e-waste management systems and legislation. Retrieved from StEP Initiative, UNU-IAS SCYCLE, UN Campus. Bonn, Germany: <http://www.step-initiative.org/>

60 See for example: 'Official recycling scheme breaks down' <https://www.tvnz.co.nz/one-news/new-zealand/official-recycling-scheme-breaks-down-6044574> + 'Government criticised over TV recycling scheme' <http://www.newshub.co.nz/nznews/government-criticised-over-tv-recycling-scheme-2014080509> + 'Warning for Govt before firm crashed' http://www.nzherald.co.nz/ministry-for-the-environment/news/article.cfm?o_id=116&objectid=11377125

61 See: <http://www.eday.org.nz/> This programme grew over successive iterations from: 2006 (1 location, 1250 drop-offs & 53 tonnes) 2007 (12 locations, 6,900 drop-offs & 415 tonnes), 2008 (30 locations, 16,607 drop-offs & 946 tonnes) and 2009 (38 locations +15 community collections, 16,432 drop-offs & 976 tonnes. At a grant cost of \$240,000 (+ eDay generated substantial support from industry and a broad range of community volunteers) this = \$246 / t diversion cost), 2010 (60 locations - including Rarotonga in the Cook Islands NB: without the same opportunity for community participation - 18,274 drop-offs & 869 tonnes). A grant cost of \$1.3 million this = \$1,496 / t diversion cost). Either the 2009, or more commercialised 2010 eDay model, represents good value for money over the subsequent \$/t diversion cost achieved by the replacement TV Takeback scheme, which was funded by government.

62 Most recently the 'Local government waste management manifesto', developed by the Territorial Authority Forum, a sector group of WasteMINZ as part of five summary points requests "Declare Tyres, **E-waste**, Agricultural chemicals and plastics as priority products, to address problem waste streams" (WasteMINZ, 2018).

Collecting sound and internationally comparable data on e-waste is recognised⁶³ as a cornerstone for developing appropriate national policies and programs to address this issue, which transects multiple

Sustainable Development Goals (SDG)⁶⁴ and is seen as hallmark of contemporary international citizenship. Collectively, the insufficiency of e-waste data, past programme issues and ongoing inadequacy of New Zealand's e-waste management services, provides a 'red flag' over the government's policy dysfunction in this sphere of statutory responsibility.

Recently New Zealand's embarrassing failure to properly manage this waste type, in line with accepted standards and international precedents was exposed at the highest level by the UN 'Global E-Waste Monitor 2017' report (Baldé *et al.*, 2017). It was reported⁶⁵ that the International Telecommunications Union "singled out New Zealand and Australia⁶⁶ as together producing the highest volumes of e-waste in the world, along with... putting little effort into ensuring it was recycled". In the associated media coverage⁶⁷, based upon multiple deficiencies, New Zealand was publically disparaged as, a "laggard" on e-waste. The ensuing discussion shows, just how out of step with good practice New Zealand is on the issue of e-waste⁶⁸. E-waste (mis) management in New Zealand provides another, albeit acute, window into the government's overall neglect and failure in respect of the issues, responsibilities and opportunities associated with waste.

1.6. New Zealand Waste Going AWOL?

"When properly designed and implemented, economic instruments encourage waste reduction."
(PCE, 2006 pg. 9).

The key areas of the PCE's 2006 recommendations which have most clearly been implemented, have in large part been facilitated by the development Waste Minimisation Act (WMA:2008). This legislation was enacted in the last phase of the Labour led coalition government (1999-2008). The WMA:2008 goes a long way in removing prior legislative barriers, getting economic instruments on the policy agenda, empowering local government and making provision for better data and independent advisory review and reporting. As discussed in the previous section 1.1.1, the most notable outcome of the WMA:2008 has been the establishment of a national waste levy of \$10 /tonne. Since the introduction of the waste levy in 2009 "more than \$192 million" of funding has been generated by this market based economic instrument, which has then been "distributed to national and local initiatives to reduce waste" (MfE, 2017c).

The required series of scheduled reviews⁶⁹ (alongside other independent reviews) continue to examine opportunities to improve the design and effectiveness of the waste levy. This economic instrument provides a baseline financial disincentive (albeit limited) for 'wasting'. In parallel, by generating the financial resources for the WMF process, the levy also empowers efforts to minimise waste. Together the combination of waste levy and the WMF process implemented a significant element of what was recommended in the 'Changing Behaviour' report. Outwardly, the levy / WMF combo must be considered functional and certainly provides a foundation for future improvement.

63 ref: The International Telecommunication Union (ITU), the United Nations University (UNU) and the International Solid Waste Association (ISWA) see: <https://www.itu.int/en/mediacentre/Pages/2017-PR68.aspx>

64 See Executive Summary: "A better understanding and better data on e-waste will contribute towards the achievement of several goals of the 2030 Agenda for Sustainable Development. In particular, it will help address the SDGs related to environmental protection (Goals 6, 11, 12, and 14) and health (Goal 3). It will also address Goal 8 that focuses on employment and economic growth, since the sound management of e-waste can create new areas of employment and drive entrepreneurship" (Baldé *et al.*, 2017).

65 See: WasteMINZ e-news <https://www.wasteminz.org.nz/news-events/> dated 15th December 2017 edition 414

66 NB: "Co-regulation is the form of regulated product stewardship implemented in Australia in 2011 for e-waste" (Peterson, 2014).

67 See: <https://www.stuff.co.nz/business/industries/99848483/unbacked-body-singles-out-new-zealand-as-an-ewaste-laggard>

68 See: <https://www.tvnz.co.nz/one-news/new-zealand/new-zealand-one-worlds-biggest-e-waste-contributors-and-only-developed-country-without-regulations-un-report>

69 As required by the WMA:2008 legislation – i.e. 2017, 2014 and 2011 see: <http://www.mfe.govt.nz/waste/waste-disposal-levy/reviewing-waste-disposal-levy>

As discussed in section 1.5, whilst critical issues remain, key outcomes of the WMA:2008 (namely the functions of WA, WMMP and waste levy reporting) have enabled a degree of improvement in New Zealand's waste data. This improvement has rectified some of the problems⁷⁰ in past OECD reporting⁷¹. However, the waste data reporting which has been undertaken, also highlights serious problems in the way that the overall waste levy scheme, enabled by the WMA:2008, was designed and implemented.

Between the 2006 (3,156,000 t/yr) and 2010 (2,532,000 t/yr) time periods when national waste data was reported to the OECD, there is an approximate 600,000 t/yr which 'disappears'. This anomaly, be it material reduction, or relocation is explained as being the result of the "new data from improved methods"⁷² adopted between pre and post waste levy in data gathering and reporting systems. Thereafter the annually reported national waste t/yr data stays relatively steady (2011, 2.5 mt), (2012, 2.5 mt), before beginning to increase in (2013, 2.6 mt), (2014, 2.9 mt) and then reaching 3.2 m.t/yr in 2015⁷⁰⁻⁷².

Whilst the data collection systems of the pre and post levy period may not be directly comparable, it is reasonable to question, where did the missing 600,000 t/yr (and associated potential \$6 million pa of potentially leviable funds) actually go? Under the WMA:2008 only waste materials disposed of under the more rigorous requirements of Class 'A' landfills⁷³ are required to be subject to the additional cost of the waste levy (MfE, 2011). Waste materials entering both 'unconsented cleanfills', as a permitted activity under regional council rules, as well as other managed 'cleanfills' formally consented under the RMA by regional councils⁷⁴ are not required to be subject to the additional cost and monitoring associated with the waste levy process (MfE, 2011).

These classifications and this distinction appears to represent a structural incentive for material previously understood and captured in national data as 'waste' to migrate to other disposal locations categorised under the consented or otherwise permitted activity of cleanfilling. It appears that the financial incentive of avoiding the high cost structures of Class 'A' landfills, which also incur an additional \$10/t waste levy, may be motivating this translocation.

It is unclear to what extent this material migration to alternative disposal locations, was based on a genuine shift in physical reclassification of the material from waste, to cleanfill, vs a notional reclassification based on cost and other considerations⁷⁵. Reporting from that period illustrates an extensive blind-spot in the data, which really limits comprehension of what was really happening with New Zealand waste flows around the time of the introduction of the waste levy. In 2011 the MfE reported that: "Seven regional councils – Auckland, Hawke's Bay, Horizons, Marlborough, West Coast and Otago – do not routinely monitor cleanfills in their regions for compliance with waste composition requirements set out in their regional rules or resource consents" (MfE, 2011). Where monitoring was undertaken, during an 18 month pre and post 2009 levy period, the respective "failure to meet acceptance criteria", non-compliance rates were 30% and 26% (MfE, 2011).

Overall, in respect of the period around the introduction of the waste levy, a general observation was that, "accurate information or reliable estimations of the amount of waste sent to cleanfill facilities" (MfE, 2011) was not available. On this basis, it seems reasonable to question the perception that the waste disposal levy is not having noticeable effect on cleanfill practices in New Zealand. In short, across the time-period in which the waste levy was introduced, there were serious omissions

70 There are numerous gaps in New Zealand's historic reporting to the OECD in even year when NZ waste data is reported the figures are tagged as incomplete see: http://stats.oecd.org/BrandedView.aspx?oecd_bv_id=env-data-en&doi=data-00601-en

71 See: http://www.oecd-ilibrary.org/environment/data/oecd-environment-statistics/municipal-waste_data-00601-en

72 Ref <http://www.mfe.govt.nz/environmental-reporting/waste/solid-waste-disposal-indicator/solid-waste-disposal-2011.html> NB: the website notes that the cited "graph provides data on waste disposal to municipal landfills in 1998, 2002, 2006 and 2010. Due to improved accuracy of waste disposal information for 2010 and high uncertainties for previous estimates, it is not advisable to compare these data and report trends over time."

73 NB: Subsequent reporting refers to these as Class 1 Landfills.

74 In 2011 it was reported that: "Most (sic 'Regional') councils explicitly allow cleanfills as a permitted activity in a regional rule. Cleanfills not able to comply with the conditions of the regional rule require a resource consent." At this time, broadly speaking all regional councils' regional rules require compliance with the MfE's 'Guide to the Management of Cleanfills' or similar a standard. This infers that there is a regime of compliance across the permitted and consented activity of cleanfilling waste material in New Zealand (MfE, 2011).

75 NB: Class A designation existed prior to the introduction of the waste levy (see: <http://www.mfe.govt.nz/sites/default/files/waste-acceptance-criteria-sep03.pdf>). In addition, genuine cleanfill such as soil and other excavated materials have played an important part of managing landfill, for example in forming daily cover and have accordingly attracted discounted tipping fees.

in the New Zealand cleanfill monitoring framework. Where monitoring does occur, reasonable levels of non-compliance, gaps in volumetric and pricing data and analysis exist and there was a significant level of waste material, which exited the national waste data picture, reported to the OECD.

The contemporary report entitled 'A Wasted Opportunity' by consulting firm Eunomia (D. Wilson *et al.*, 2017) illustrate that these historic issues remain unresolved. This report clarifies the current proportionality of New Zealand disposal and recovery pathways. This is: - Class 1 landfill: 3,220,888 t/yr, Class 2 landfill: 2,575,771 t/yr, Class 3 landfill: 64,394 t/yr, Class 4 landfill: 3,799,296, Farm Dumps: 1,362,666 t/yr and Recovery 4,288,743 t/yr. This report states that (based on 2015 data), "approximately 15.5 million tonnes of material is discarded annually, of which approximately 4.25 million tonnes (28%) is recovered, and 3.2 million tonnes (21%) goes to levied (Class 1) disposal facilities. Over half of all waste generated currently goes to sites that are not levied" (D. Wilson *et al.*, 2017). Alternatively, the 2017 MfE, 'Review of the Effectiveness of the Waste Disposal Levy' report (review period 2013 -2016) notes that of the 426 'known' consented waste disposal facilities, only 11% were levied (estimated as capturing "about 30% of New Zealand's total waste stream"), whereas 89% were receiving unlevied waste / clean-fill⁷⁶ (MfE, 2017c).

Currently the positive environmental impact of the waste levy, as a critical market based economic instrument, is quite constrained, because it only applies to a limited amount of the waste material being disposed. A related red flag issue is the reporting of increasing incidences of 'fly-tipping'^{117&126} which includes, what is obviously waste material being dumped on charities. So whilst, the ongoing New Zealand waste disposal data reporting illustrates improvement facilitated by the introduction of the WMA:2008, this data also raises a number of further questions around the effectiveness of the implementation of the waste levy and whether this key market based economic instrument, is driving the expected level of environmental progress.

Confirming the veracity of such questions, the most recent overarching reporting from the MfE illustrates that New Zealand's nett tonnage⁷⁷ of levied waste disposal increased by 20.1% between just the 2010-2013 and 2013-2016 review periods. Alongside this collective national metric, New Zealanders' per person waste generation rate "continues to increase and is among the highest in the OECD – each New Zealander produces an average of 734kg waste per year"⁷⁸. When added to past questions around the process and scope of implementation of the waste levy and the numerous indicators of the underutilisation of PS/EPR in dealing with critical waste classes, such metrics clearly highlight the macro level failure of New Zealand's approach to waste minimisation and management.

New Zealand's systemic failure to reduce waste generation and disposal and conversely, to meaningfully cultivate innovative and value adding opportunities for reusing and recycling of resources, goes way beyond just "indicating that the levy is not currently achieving its objective" (MfE, 2017c). An investigation across the multiplicity of red flags in this this politically and technically complex work area, is clearly required. Only the PCE offers the independence, resources and organisational stature and mandated authority necessary to complete this on behalf of all New Zealanders.

76 Today it is worth considering what is the number cleanfills and rate of cleanfilling being undertaken in non-consented – 'permitted activity' cleanfill sites and also what is the current level of monitoring and non-compliance occurring across both consented and non-consented – permitted activity sites.

77 This is made up of an increase of 16.4% of gross tonnage of waste disposal and a decrease in waste diversion of 6.3% (MfE, 2017c).

78 From the 2017 Briefing to the Incoming Minister for the Environment – 'ENVIRONMENT PORTFOLIO' point 65 pg. 14 see: <https://www.beehive.govt.nz/sites/default/files/2017-12/Environment.PDF>

2. A BROAD RANGE OF OTHER INDICATORS OF POLITICAL MISMANAGEMENT OF WASTE POLICY IN NEW ZEALAND?

The prior Labour led (1999-2008) and then National led (2008-2017) periods of coalition government, each encompassed three consecutive electoral cycles. The Labour and National led periods of coalition government each articulated and implemented their vision and approach to waste minimisation and management via the respective NZWS:2002 and the NZWS:2010 strategies. With the benefit of hindsight, it is now clear that the respective government ideologies, have each resulted in radically different waste management policies and outcomes, which can now be compared and evaluated. In total a period of nearly two decades has passed under the under the jurisdiction of these two dominant (Labour – centre left and National - centre right) political worldviews. The combined timeframe from 1999 to 2017, provides an extended pan-political horizon, which affords the opportunity for a stock-take of New Zealand's overarching approach and progress in addressing waste issues.

Given the election and commencement of a new Labour led coalition government in 2017, now appears as an appropriate junction for the PCE, to evaluate the merits of these starkly difference approaches. Additionally, now also presents as a good opportunity to examine New Zealand's overall performance in minimising and managing waste, relative to international experiences and benchmarks. If the outcomes of this period, which includes what was a radical policy shift between left and right political worldviews, do not measure up, then, as was demonstrated in the confronting 2006 *'Changing Behaviour'* report, the PCE has the opportunity to analyse what has gone wrong and to provide corrective recommendations.

The following section explores a range of broad issues, which the NZPSC believe culminate as a clear challenge to the PCE to undertake research and reporting on the state of New Zealand's waste minimisation / management. Perhaps most importantly, the PCE also has the opportunity to project forward and highlight the long-term benefits, New Zealanders can expect from, whatever future approach might be recommended.

2.1. Unjustifiable Inconsistency in Waste Policy?

Whilst not a complete policy u-turn, in a number of respects the National led government's New Zealand Waste Strategy (NZWS:2010), entitled *"Reducing Harm - Improving Efficiency"* (MfE, 2010a) represented a radical departure from the tenor and substance of the previous, Labour led government's NZWS:2002, entitled *"Towards Zero Waste and a Sustainable New Zealand"* (MfE, 2002). This political 'make-over' of waste strategy, manifested in a high degree of change in approach in the policies, programmes seeking to address waste issues.

An immediate impact of this incongruence, was an apparent undermining the >70% of New Zealand Councils which had in adopted local zero waste policies (ZWNZ Trust, accessed 2015), in accordance with the then framing of the NZWS:2002. Whilst, every successive government inevitably brings a different outlook to the subject of waste management, a reasonable degree of consistency and continuity in approach is desirable, so as to minimise any unnecessary transaction costs, related to extreme, or unjustified reversals in policy direction.

It was observable that, the policy shift away from zero waste, into the more business-centric and risk-based approach of the NZWS:2010, did not involve the same level of public consultation and support, as was provided by the nineteen member 'Working Group', inclusive of industry, local government and community perspectives, which were instrumentally involved in developing and reviewing the NZWS:2002. Furthermore, because the consultative processes, which underwrites policy development, will broadly reflect the same constituent community view, unless drastic changes in public opinion have occurred, radical departures in waste policy, would appear hard to justify.

A reasonable question to ask is, if the same constituent community was consulted for the development of both the NZWS:2002 and the NZWS: 2010 strategies, how did such a starkly different policy perspective emerge? A simple answer may be that, different elements of the community were attributed with a larger influence than others. Specifically, rather than

emphasising the voice of the general public and local government, it appears that in the NZWS:2010 development process, the policy pendulum has swung in favour of the interest and worldview of industry / business lobby groups.

Given the redirection, away from the previously expressed interests of the community, local authorities, and the guidance of the PCE, it reasonable that the outcomes resulting from the drastic policy shift from NZWS:2002 → NZWS:2010, now be evaluated. The NZPSC argues that, in the same fashion that the Labour (1999 -2008) / NZWS:2002 approach was scrutinised, sufficient time has elapsed to enable the PCE to similarly test the National (2008-2017) / NZWS:2010 policy outcomes. As in the 2006 'Changing Behaviour' report, where deficiencies are exposed, these must, in the public interest, be challenged. Similarly, there is an opportunity for the PCE to reset a guiding rationale and to provide recommendations, which address the issues and provide for a consistent future direction.

2.2. Rejecting the Aspiration and Accountability Offered by Targets?

The other significant disparity between the successive NZWS:2002 vs NZWS:2010 waste strategies was that, all of the NZWS:2002's thirty waste minimisation targets were abandoned and not replaced. This occurred under the pretext that they were *"not able to be measured or achieved"* (MfE, 2010a pg 3). In not resetting any transparent, motivational targets in the NZWS:2010, the then National led government's approach, can be seen as involving a much lower level of environmental aspiration and accountability. This is because the development and deployment of well-designed targets provides a simple metric, which variously; assists public understanding across the complexity of waste issues, identifies key priorities and enables progress, or conversely the lack of it, to measured.

Furthermore, the abandonment of targets in the NZWS:2010 also put New Zealand's central government out of step with local authorities that set and utilise waste minimisation targets in their Waste Minimisation and Management Plans (produced every 6 years, as per the requirement of the WMA:2008). Local authorities' ability to achieve waste minimisation targets on behalf of their local community, is greatly compromised by the absence of progressive targets and the associated accountability and leadership from central government. Targets provide the public with an effective test of government competency and thereby, a clear signal if taxpayers are getting value for money. Across numerous spheres of society and the economy, the conversations catalysed in designing and then reporting on targets, illustrate that they function as a fulcrum for healthy debate and democratic accountability.

The general de-emphasis of environmental imperative under NZWS:2010, is evidenced in not only the abandonment of aspirational waste minimisation targets, but also the lessening of progressive policies and programmes¹⁶⁰, which drive their achievement. This situation contrasts with the fact that, in other countries / contexts⁷⁹, which are comparable with New Zealand, the corresponding governments appear able to set, monitor, report on and achieve waste minimisation targets and do rely on the functionality of such targets, to drive progress and maintain accountability. Interestingly, inclusive of ongoing, debate, learning and pragmatism, the global trend in setting waste minimisation targets is for them to be ratcheted upwards⁸⁰. It appears the nett conclusion is that not only is further waste minimisation good for society, the economy and the environment, but well-designed targets are an effective tool to generate and measure progress toward this public good.

The rejection of the entire construct of target setting, to motivate more waste minimisation and better waste management across New Zealand, appears out of sync with internationally recognised good practice. Putting this decision in context, numerous areas of community

79 For example the EU context: *"Turning waste into a resource is one key to a circular economy. The objectives and targets set in European legislation have been key drivers to improve waste management, stimulate innovation in recycling, limit the use of landfilling, and create incentives to change consumer behaviour."* Source: <http://ec.europa.eu/environment/waste/>

80 Again, for example in the EU context the following articles are illustrative: <https://www.eu2017.ee/news/press-releases/eu-sets-new-targets-waste-management> and <http://european-biogas.eu/2017/12/20/european-parliament-council-reach-agreement-waste-targets/>

service (for example health, policing / corrections, welfare) and business performance, are measured against key performance indicators / targets. Yet, this imperative for benchmarking the performance of the waste / resource management sector has been rescinded, rather than as might have been reviewed, revitalised and sought to be delivered. The NZPSC calls on the PCE, as part of a broad spectrum review, to specifically examine the acumen and efficacy of New Zealand's decision to abandon the utilisation of waste minimisation targets.

2.3. Vested Industry Lobbying Trumps Consultation and Community Consensus?

Given that, at the time 70% of local authorities were cited as being engaged in zero waste programmes (ZWNZ Trust, accessed 2015) it is hard argue that the radical change in policy direction between the NZWS:2002 vs NZWS:2010 was a reflection of broad community consensus. Instead the rejection in the NZWS:2010, of the terminology and concept of zero waste, appears as a direct response to partisan business / industry lobbying⁸¹.

Indicative reporting from the time, indicates that business interests, viewed New Zealand's waste strategy (NZWS:2002) as being captured by "environment activism" (Clough, 2007) and needing to be set free from the terminology and aspiration of zero waste. A simple counterpoint to this view is that, by comparison, the development of NZWS:2002 actually enjoyed far greater public involvement and industry / community support⁸², than has been evident for the subsequent NZWS:2010 and the accompanying approach to implementation³³⁻³⁵.

An example of industry alignment and support from the NZWS:2002 period, is provided by the mainstream and relatively conservative Waste Management Institute of New Zealand (WasteMINZ), which convened and promulgated the 'Life After

Waste'⁸³ programme. 'Life After Waste' reflected the theory and concept a zero waste circular economy, which was the focus of the then public campaigning by the Zero Waste New Zealand Trust. In contrast, the NZWS:2010 cut across the broad democratic consensus of the day and appears to directly incorporate, the recommendations of 'Waste or Rationality? Economic Perspectives on Waste Management and Policies in New Zealand' (Clough, 2007) report, which was funded by the influential lobby group, 'Business New Zealand'.

A key recommendation of the 'Waste or Rationality' report's key report was to: "Replace references to 'resource use efficiency' in all policy documents with 'economic efficiency'... Remove all references to 'zero waste from documents expounding serious waste policy'" (Clough, 2007). In effect, this report superimposes a business centric view on the 'economics of waste,' over the then democratic consensus which included and balanced social, cultural and environmental considerations.

The report's argument dismissing the concept of a zero waste goals, appears to rely on combining notions of the law of diminishing returns, and the potential for exponentially rising costs. In layperson terms, the inference is that, whilst the first percentage of waste diversion may occur at a low cost (for example say, \$1 / tonne), achieving the last percentage, to reach 100% waste diversion, could only occur at an exorbitantly high and unaffordable cost (i.e. cost \$billions / tonne). Therefore, it defies economic good sense to aim for a zero waste goal.

Extremism and impracticality is an accusation that is often raised by vested interest groups, lobbying to denigrate and disempower the zero waste movement. However, this is reactionary and incorrect, because whilst, zero waste is inclusive of an activist element, the movement was pioneered in the pragmatic and profit focussed commercial environment

81 The background to this assertion is explored in Hannon, J. B. (2015). Waste vs zero waste: The contest for engaging and shaping our ambient 'waste-making' culture. Paper presented at the Unmaking Waste 2015: Transforming production and consumption in time and place, Zero Waste SA Research Centre for Sustainable Design and Behaviour and the University of South Australia, Adelaide. <http://unmakingwaste2015.org/>

82 Ref: the nineteen member 'Working Group' which was inclusive of (industry / TA / community) perspectives and was instrumentally involved in developing and reviewing the NZWS:2002.

83 See: http://www.nzherald.co.nz/business/news/article.cfm?c_id=3&objectid=225848 NB: In keeping with the consultative ethos of the times the 'Life After Waste' booklet cites the input and participation of over 65 keynote people and New Zealand organisations. Another example of this was the 'Life After Waste Management and Minimisation Plans' presentation developed by Morrison Low for the WasteMINZ Annual Conference in Rotorua, in 2011 see: <https://www.wasteminz.org.nz/wp-content/uploads/3c.Connelly.pdf>

(Murray, 1999, 2002) and is today championed by enlightened elements of the business sector⁸⁴, which including examples from New Zealand (NZBCSD, 2002, 2007; SBC-NZ, 2012)

It is a misnomer that zero waste is rigidly shackled to the absolute end-point of zero⁸⁵. Pragmatically a zero waste goal is about generating focus, urgency and a continuum of effort and progress (UNEP, UNITAR, Hyman, Turner, & Carpintero, 2013), that is routinely subverted within conventional approaches to waste management. The *'Waste or Rationality'* report perpetuates a false dichotomy, as well as grossly misrepresents the theory and practice of zero waste. However, relative to the apparent influence of this kind of thinking, the most troubling counterpoint to this argument, which was clearly evident, even at the time of publication, is simply - reality.

Today, most of what is labelled the 'waste-stream', is in fact a spectrum of increasingly scarce resources, whose value is destroyed by disposal orientated waste management treatments. The current, so-called 'take – make – waste' based lineal economy, progressively accrues social, environment and economic costs, most of which are externalised and not accounted for (EC, 2014; Ellen MacArthur Foundation, 2013; Friends of the Earth, 2014; M. Lehmann, de Leeuw, Fehr, & Wong, 2014; Zero Waste Europe & FPRCR, 2015).

When this market failure is rectified and these significant externalised cost are factored in to consideration, a very different version of economic logic emerges (N. H. Stern, 2006). If resources are wasted in destructive and polluting disposal systems, then the social, environment and economic costs, which are accumulated across the lifecycle of infrastructure, products and packaging etc, are re-imposed though further extraction and pollution of our shared natural capital.

The reality today is that there are now many large successful global business entities, are reporting that they are at or near achieving zero waste⁸⁶. It seems safe to assume that these highly competitive, multi-national companies are not levitating above the questionable economic dogma, which separates environmentalism from rationale behaviour. Given their continued existence, presumably these zero waste industry practitioners are not heedlessly haemorrhaging billions of dollars, for their last few percentages of waste diversion.

Rather, accumulating reports suggest that, this sphere of activity demonstrates high rates of achievability, net economic benefits, whilst at the same time aligning participating organisations with future consumer and community expectations⁸⁷. Now that the data is in and it clear that the outcome of the NZWS:2010 has been increased, rather the minimised waste, the vexed issue and influence of vested interest lobbying deserves a thorough and independent examination.

84 Murray, R. (1999). *Creating Wealth from Waste*. London: Demos. + Murray, R. (2002). *Zero Waste*. London: Greenpeace Environmental Trust. Even in this early stage of the required technology transition, it can be argued that zero waste has already shifted from just being "relatively utopian or visionary concept" to being a "real option" with recycling experts confirming the possibility of "100 per cent recycling and resource recovery" (Crocker & Lehmann, 2012). Building on the contention that the scientific and technical basis for achieving zero waste has already been established (Jessen, 2002; Naisbitt & Aburdene, 1990; Palmer, 2004), Crocker and Lehmann *et al.* identify the redirection of the current momentums of: product and urban design, research and development, infrastructure and investment and community and corporate behaviour as critical, but surmountable barriers to further actualising zero waste (S. Lehmann & Crocker, 2012). Such commentary supports Murray's assertion that, "the economics of zero waste should be seen as an opportunity, not constraint" (2002). A decade on from this statement, the Guardian documents how in achieving its goal of zero waste, the world's largest tyre company's has "proven the business case" for recycling (WBCSD, 2013), alongside how zero waste is "starting to look less like an environmental dream, and more like a business priority" (Barnish, 2013). More broadly, keynote environmental commentators similarly link the benefit of assertive waste minimisation and recycling to the challenge of addressing climate change: "Recycling is already making a major contribution to keeping down emissions. Indeed, its scale is so little appreciated that it might be described as one of the 'best kept secrets' in energy and climate change..." (N. Stern, 2009).

85 "It's important not to get hung up on the zero. No system is 100% efficient" (Snow & Dickinson, 2001) "We have got to get over this idea that we are talking about 100% diversion" (Leroux, 2001). 'Beyond Recycling! Zero Waste ...Or Darn Near' (Lombardi, 2001). "Zero waste is not a literal target. It may not be possible to eliminate every item of waste stream – but we will not know how far we can get unless we try. If do not strive for zero waste, we will continue to make only incremental progress to stem this tide of waste" (Dimino & Warren, 2004). "Zero waste is a goal that we know we can't really get to. But it also is a process with very clear environmental, social and economic benefits. By working through the process you get closer to the goal" (Seldman, N cited in Leroux, 2001).

86 For example, the following have been publically reported: Toshiba 100%, Honda U.S. - 100% & Canada - 98%, Toyota U.S. - 94%, Ricoh - 100%, Xerox - 99.5%, Fujitsu - 100%, Subaru - 99.8%, Suzuki - 100%, Interface - 99%, Boeing S.C. - 100%, MillerCoors - 100%, Anheuser-Busch - 99.2%, Unilever - 100%, Procter & Gamble - 100%, GM - 97%, Goodyear - 100%, DuPont - 100%, UK Tesco - 100%, Sainsbury's - 100%.

87 Barnish, R. 2013. Why businesses are starting to care about zero waste to landfill. The Guardian (13th of Feb), <http://www.theguardian.com/sustainable-business/business-zero-waste-landfill>. + Phillips, P. S , T Tudor, H Bird, and M Bates. 2011. "A critical review of a key waste strategy initiative in England: Zero waste places projects 2008–2009." Resources, Conservation and Recycling no. 55 (3):335-343. + Anderson, R. C. 1998. Mid-course correction. Toward a sustainable enterprise: the Interface model. Atlanta, U.S.: Peregrinzilla Press.

2.4. The 'Minister Knows Best' + 'Voluntary Only': A Flawed and Risky Approach to PS/EPR?

New Zealand's questionable track-record in the management of waste tyres, provides another window into the previous coalition government's illogical and un-business like fixation with 'voluntary only' approaches to product stewardship. The government instigated a large multi-stakeholder investment, via the 'Tyrewise' initiative⁸⁸, which undertook the precursor investigation, national consultation and planning for a New Zealand product stewardship scheme for tyres.

However, this investment was not followed up by declaring tyres a 'priority product', which is the critical designation under the WMA:2008, which requires and enables a mandatory national product stewardship scheme, to function effectively. Under the headline of an 'industry driven solution', the 'Tyrewise' initiative compassed a longstanding programme of activity involving the sector's leaders, experts and key stakeholders who produced a unified plan and call for tyres to be declared a 'priority product'.

For reasons that remain unclear, the then Minister for the Environment rejected this hard-won industry-led consensus, by deciding not to declare tyres a priority product. In response to this David Vinsen, CEO of the IMVIA, publically stated: *"The government has spent hundreds of thousands of dollars over the past four years, in bringing together all groups with an interest in tyre recycling to agree to a solution to tyre the problem... Now it has effectively just walked away from the deal by deciding not to proceed with the declaration of tyres as a 'priority product' under the Waste Minimisation Act 2008... The people at today's conference were angry, frustrated – in fact, pissed off⁸⁹".*

In rejecting the widely supported 'Tyrewise' solution, based as it was upon the recognised success of PS/EPR models, the Minister subverted all of this industry expertise under his 'alternative' plan to address New Zealand's tyre problem. This new 'Minister knows best' solution to New Zealand's tyre problem, essentially amounts to government funded recycling by incineration⁹⁰. Unfortunately, the unnecessary expense and past failures of this 'pick winners' - government funded recycling model (as demonstrated in respect of New Zealand's poor track-record on e-waste⁴⁹) appears not to have been sufficient, to 'red flag' the issues associated with this approach.

Experienced recycling industry commentators have questioned both the design fundamentals⁹¹ the Minister's proposed approach, as well as the large amount of public funding is being spent on a cluster of privately owned companies. The unfortunate irony in this situation is that, actually some other private companies have previously invested in tyre recycling solutions for New Zealand, only for the financial viability of their operations to be undermined by the government's prior inaction and then ultimate rejection of tyres as a 'priority product' and mandatory product stewardship as the best practice solution.

There is considerable risk in overriding the internationally proven, financially sustainable model of mandatory PS/EPR, which had the support of the New Zealand tyre industry, with what appears as a 'Minister knows best' approach. This risk profile extends beyond the continuing media saga around tyre dumps⁹² and tyres fires⁹³. Waikato University Law Professor, Alexander Gillespie is reported as observing: *"The government is misguided in trying to incentivise the industry with grants, and should instead build on internationally-proven producer responsibility models. These models make*

88 See: <https://3r.co.nz/what-we-do/tyrewise/>

89 See from 2015: <http://autotalk.co.nz/news/pissed-off-end-of-life-tyre-debacle>

90 See: 'Government announces tyre recycling plan' <http://www.newshub.co.nz/home/new-zealand/2017/06/government-announces-tyre-recycling-plan.html> + 'Govt plans to burn millions of waste tyres every year' <http://www.radionz.co.nz/news/environment/333558/govt-plans-to-burn-millions-of-waste-tyres-every-year>

91 For example see http://www.nzherald.co.nz/northern-advocate/news/article.cfm?c_id=1503450&objectid=11880773

92 See variously: 'Illegally dumped tyres poisoning environment' http://www.nzherald.co.nz/nz/news/article.cfm?c_id=1&objectid=11471472 +

'Tyre recycler facing court action for not recycling' <http://www.stuff.co.nz/national/crime/78929322/Tyre-recycler-facing-court-action-for-not-recycling> + 'Dodgy dumping a risk as tyres piling up across Hamilton' <http://www.stuff.co.nz/business/90008283/dodgy-dumping-a-risk-as-tyres-piling-up-across-hamilton>

93 Most recently see: 'Cause of massive North Canterbury tyre fire 'unknown', investigation to begin' <https://www.stuff.co.nz/the-press/news/101790124/hundreds-of-tyres-on-fire-in-north-canterbury> + 'Crews work through the night to control huge tyre fire in North Canterbury' http://www.nzherald.co.nz/nz/news/article.cfm?c_id=1&objectid=12002422 + 'Large Canterbury tyre fire still burning' <https://www.radionz.co.nz/news/national/351311/large-canterbury-tyre-fire-still-burning>

it the producers' responsibility to ensure used tyres are collected and recycled appropriately. The cost of collection and recycling are inevitably passed onto the consumer, usually in the form of an inbuilt purchase cost, but by making the problem one for the competitive markets, Gillespie says producers can alter design and components to make them more easily recycled⁹⁴."

2.5. The Negative Impacts of Vested Industry Lobbying?

New Zealand's tyre 'crisis', which is now profiled as being resolved through the government intervention⁹⁵ has arguably, actually been created by successive governments' precipitous neglect and mismanagement of waste policy. Instead of establishing a consistent pattern of effective planning and progress across multiple 'priority' waste types, the government has rigidly adhered to 'voluntary only' approach to PS/EPR. This political ideology appears as being in lock-step with the worldview promulgated by some elements of the business lobby, whose track record evidences consistent opposition to mandatory PS/EPR. This mode of lobbying and influence bearing, is described, by the environmental sociologist Robert Brulle, as resulting in the "*institutionalisation of delay*⁹⁶" on climate / environmental policy.

When stripped of the veneer of plausibility the generic tools of the international lobbying industry are as simple as they are effective: manipulation (aka 'alternative facts'), obfuscation (deny, diffuse /confuse, delay / divert) and denigration (where necessary defame) in the creation of an image of societal / scientific uncertainty⁹⁷. Whilst the practices and impacts of these 'post truth' organisations', have been

exposed in respect of the social reform and the environmental movements (i.e. spheres such as DDT, smoking, acid rain, ozone depletion, U.S. timber wars, leaded petrol, energy and climate change⁹⁸), the similarly malign influence of the packaging lobby, is not as well documented and understood.

New Zealand provides an excellent case study, in which the lobbying of the packaging industry appears to have engineered an ascendant influence over government policy, with the result of subverting the public good, beneath its preference for 'institutional delay' of environmental programmes they oppose. This example bears the hallmarks of an apparent coordinated industry wide global strategy⁹⁹ for engineering influence over public policy, to delay / avoid / undermine the imposition of authentic producer responsibility programmes (Gitlitz, 2013; Morris & Morawski, 2011).

An extremely effective strategy of the New Zealand packaging lobby has been to secure government funding to enable it to play a key role in creating proxy, 'voluntary only' waste minimisation / recycling programmes¹⁰⁰. By cultivating a false impression of reasonable action and progress, in effect, these programmes have ultimately acted as a delaying tactic and substitute for genuine mandatory PS/EPR programmes.

The New Zealand Packaging Forum's Soft Plastic Recycling Project¹⁰¹ appears typical of this genre of scheme, which are designed to substitute for and subvert the kind of mandatory PS/EPR or regulatory measures, which are sought by both popular public petition¹⁰² and the majority of New Zealand's local authorities. Specifically in the sphere of waste, local government has the delegated authority, expertise and experience to

94 Source: <http://www.stuff.co.nz/environment/92515136/NZs-tyre-mountains-keep-growing-in-the-absence-of-recycling-scheme>

95 aka various combination of 'picking winners' – 'Minister knows best' – 'interventions based around government funded recycling'.

96 Brulle, R. J. (2013). Institutionalizing delay: foundation funding and the creation of U.S. climate change counter-movement organizations. *Climate Change*. doi:10.1007/s10584-013-1018-7

97 See: 'On the origins of environmental bullshit' <https://theconversation.com/on-the-origins-of-environmental-bullshit-80955>

98 Oreskes, N., & Conway, E. M. (2010). *Merchants of doubt: How a handful of scientists obscured the truth on issues from tobacco smoke to global warming*. London: Bloomsbury.

99 See: 'Leaked: Coca-Cola's Worldwide Political Strategy to Kill Soda Taxes' <http://observer.com/2016/10/leaked-coca-colas-worldwide-political-strategy-to-kill-soda-taxes/> + 'Coca Cola's secret war against bottle deposit' <https://www.plasticsoupfoundation.org/en/2017/02/coca-colas-secret-war-against-bottle-deposit/>

100 New Zealand examples of this global strategy tool are the 'Public place' and 'Soft plastic' recycling schemes see: <http://www.packagingforum.org.nz/> + controlling litter data, litter research and litter clean-up campaigns see Be a tidy Kiwi <http://www.beatidykiwi.nz/#about>

101 See: <https://www.recycling.kiwi.nz/solutions/soft-plastics>

102 See: '17,800-signature-strong petition calling for a plastic bag levy presented at parliament' July 2017 <https://www.stuff.co.nz/national/95119319/17800signature-strong-petition-calling-for-a-plastic-bag-levy-presented-at-parliament> and 'Petition to ban plastic bags reaches the steps of Parliament' Feb 2018 http://www.nzherald.co.nz/nz/news/article.cfm?c_id=1&objectid=12002887

understand waste issues and to speak to what is genuinely in the public interest. However, in New Zealand, this viewpoint appears to be been subverted in favour of the paradigm and programmes which outwork the presiding interests of the packaging lobby.

Whilst, it must be recognised that, there are positive attributes associated with, the New Zealand Packaging Forum's Soft Plastic Recycling Project, i.e. such as collection network & recycle market development and public and industry awareness raising & behaviour change, there are also risks and issues. The PR programmes of the packaging lobby tend to focus on the positives without examining the downsides of their programs, which are often the beneficiary of generous amounts of public funding¹⁰³.

A balanced account of the nett value of such programmes, will also highlight the associated issues, such as the reported recovery / recycling rates are relatively trivial relative to the total scale of the issue¹⁰⁴. As was illustrated in the issues associated with the government funded e-waste recycling scheme^{49&56&59-60}, the risks associated with this flawed, 'voluntary only' model and proxy 'pick winners' PS/EPR schemes, seem to inevitably manifest. Some of these risks and issues are now being reported¹⁰⁵, in association with the Soft Plastic Recycling Project.

At its most basic, the driving rationale for the packaging lobby's efforts is made explicit in the 'New Plastics Economy: Rethinking the Future of Plastics' report¹⁰⁶ (Ellen MacArthur Foundation & World Economic Forum, 2016). This report cites the UNEP in conservatively estimating the total externalised environmental cost of

plastic packaging at \$40 billion annually, which exceeds the sector's total estimated profit pool, of \$40 billion¹⁰⁷. In short, every dollar of this externalised environmental cost, which is required to be taken responsibility for and internalised within the business model of the companies concerned, equates to less profit.

Part of this externalised cost, which the global plastic packaging industry imposes (by omission and commission) on the environment and society (and the future generally), is ocean plastics. Today "the best research currently available estimates that there are over 150 million tonnes of plastics in the ocean today. In a business-as-usual scenario, the ocean is expected to contain 1 tonne of plastic for every 3 tonnes of fish by 2025, and by 2050, more plastics than fish (by weight)" (Ellen MacArthur Foundation & World Economic Forum, 2016 pg. 7).

Confirming and expanding on this, an independent observation from the International Solid Waste Association (ISWA) is that, "our oceans are already the biggest dumpsite for million tonnes of used plastics per year. But, the visible plastic pollution, so usual in almost every shoreline in the world, is a relatively small problem in comparison to the invisible microplastics¹⁰⁸" (Velis et al., 2017) (ref section 1.4). The IUCN reports that, the "global release of primary microplastics into the ocean was estimated¹⁰⁹ at 1.5 million tons per year" (Boucher & Friot, 2017 pg. 6).

However, as concerning as this is, it is now emerging that micro-plastics contamination now appear to be so ubiquitous that is routinely found in treated drinking water around the world¹¹⁰. Aside from the important

103 Ref: <http://www.mfe.govt.nz/more/funding/waste-minimisation-fund/profiles-of-funded-projects/soft-plastic-recycling-scheme>

104 For example the reports that "Last year Kiwis dropped off over 100 Tonnes of soft plastic bags for recycling. That's a massive 25 million bags" (see: <https://www.recycling.kiwi.nz/solutions/soft-plastics>) vs "Kiwis use around 1.6 billion bags per year. They are used for an average of only 12 minutes, yet each one can take 1,000 years to degrade" (see: <http://www.greenpeace.org/new-zealand/en/press/Greenpeace-launches-campaign-to-ban-single-use-plastic-bags-in-NZ/>). Without being in a position to verify either group's data, this indicates a recycling rate of around 1.5% for soft plastics, which can hardly be said to be addressing the environmental issues associated with this material type.

105 See RNZ: <https://www.radionz.co.nz/national/programmes/ninetoonoo/audio/2018624196/soft-plastic-recycling-scheme-at-risk>

106 See: <https://www.ellenmacarthurfoundation.org/publications/the-new-plastics-economy-rethinking-the-future-of-plastics-catalysing-action>

107 Ref: "A staggering 32% of plastic packaging escapes collection systems, generating significant economic costs by reducing the productivity of vital natural systems such as the ocean and clogging urban infrastructure. The cost of such after-use externalities for plastic packaging, plus the cost associated with greenhouse gas emissions from its production, is conservatively estimated at \$40 billion annually – exceeding the plastic packaging industry's profit pool. In future, these costs will have to be covered" (Ellen MacArthur Foundation & World Economic Forum, 2016 pg. 6).

108 Further: "Microplastics are becoming an 'integral' part of marine ecosystems. Apparently, they can be part of the plankton's food chain, as recent research demonstrated. They are already present, in small but measurable concentrations, in several commercial salts and bottled water. They were identified in Marianna trench, the deepest and probably the most remote part of the planet, 11 km below the sea surface. It seems that we are actually living in a multidimensional and continuously expanding plastic matrix." (Velis, Lerpiniere, & Tsakona, 2017).

109 NB: "The estimate ranges between 0.8 and 2.5 Mtons/year according to an optimistic or pessimistic scenario" (Boucher & Friot, 2017).

110 See: 'Plastic fibres found in tap water around the world' <https://www.theguardian.com/environment/2017/sep/06/plastic-fibres-found-tap-water-around-world-study-reveals> and 'Invisibles the plastic inside us' https://orbmedia.org/stories/Invisibles_plastics

and well-meaning coastal clean-ups, undertaken mostly by concerned citizens, once plastics enters the ocean, it is virtually impossible to fix this issue. It is against this alarming backdrop, that the plastic lobby's insidious PR infused doctrine of inertia and incrementalism, needs to be properly examined.

This is why the consensus of international expertise has moved beyond, just the "traditional focus on waste management" (Boucher & Friot, 2017). Contemporary thinking and effort now focusses 'upstream', on transformative eco-design, whole of lifecycle management and radically reforming global supply chain of plastics. In conjunction, disruptive reform of the entire notion of producer-consumer responsibility, is being sought, in order to 'circularise' the global economy and prevent the 'plasticisation' of the world's oceans (Boucher & Friot, 2017; Ellen MacArthur Foundation & World Economic Forum, 2016; Velis *et al.*, 2017).

However, at some point, these great sounding, high-level notions have to be translated into the real world, rough n tumble of the market economy, which is based on competition and profit. In historically advocating further utilisation of market based economic instruments with waste management, the PCE identified the central purpose of these policy tools as, creating the financial incentives to: "*minimise the creation of waste - encourage more efficient use of resources - avoid or remedy adverse environmental impacts of waste - influence behavioural change among individuals and firms - decouple waste generation from economic growth*" (PCE, 2006 pg.13).

The functional element of economic instruments, such as PS/EPR, is to factor in otherwise 'externalised costs' so that they form a more complete and true price of products and in doing so, form more accurate market signals, which can then translate to consumer behaviour. At the macro level, economic

instruments facilitate 'Principle 16 - Rio Declaration' - aka '*Polluter Pays Principle*' (UNEP, 2002; WHO & UNEP, accessed 2017). The PCE's, 'Changing Behaviour' report identifies these attributes in observing that, the intention of economic instruments is to "*make those people or businesses responsible for causing environmental damage bear the cost of the impacts of that behaviour, and those who benefit from environmentally damaging behaviour pay according to the proportion of the benefits that they receive*"¹¹¹ (PCE, 2006 pg.13).

For over two the decades the central theme of New Zealand packaging industry lobbying has been to maintain the 'voluntary only' approach to PS/EPR²¹. This self-serving imposition on the public good, stands in stark contrast with the tenor of the guidance offered by the PCE and the majority view of local government and the New Zealand public. The resulting flawed policy setting continues to delay the proven benefits of well-designed PS/EPR programmes, flowing through to all New Zealanders, as positive environmental progress. When all the sophisticated PR and curated confusion is stripped away, the regressive and harmful worldview promulgated by plastic packaging industry's lobbying, seeks simply to maintain short-term member company profits, at the expense of the rest of society's long-term wellbeing.

2.6. Comparing New Zealand, Alongside International Good Practice?

New Zealand's limited and dysfunctional approach to PS/EPR can be compared with Canada, where PS/EPR is described¹¹² as an "*environmental success story*" (CCME, 2014). The growing success and popularity of EPR programmes across Canada, is independently monitored and verified¹¹³ and forms the basis for the Canadian Council of Ministers of the Environment's (CCME), Canada-wide Action Plan (CAP) for EPR. In sharp contrast with New Zealand's adherence to '*voluntary only*'

111 Further: "*Economic instruments can bring about change by altering market prices, setting a cap on quantities (for example, of waste to landfill), improving the way a market works, or creating a market where none currently exists. The economic justification for environmental economic instruments is that they 'internalise' previously uncosted environmental effects into a market structure*" (PCE, 2006 pg.13).

112 CCME. (2014). Progress Report on the Canada-wide Action Plan for Extended Producer Responsibility. Retrieved from Canadian Council of Ministers of the Environment. Winnipeg, Manitoba <http://www.ccme.ca/files/Resources/waste/extended/CAP-EPR%20Progress%20Report.pdf> NB please also see table 1 for the summary national overview of approaches and progress across all of the provinces in Canada.

113 See: <http://www.eprcanada.ca/reports/2014/2014-Extended-Producer-Responsibility-Report-Card-EN.pdf>

and hence strictly limited approach to PS/EPR, the CCME-CAP promotes and seeks to grow the national PS/EPR system and to build on this ongoing success story.

Reflecting the developing Canadian experience and community consensus, the CCME concludes that: *"...jurisdictions have been successful in working towards the objectives of CAP-EPR, while working towards a harmonized approach to EPR through the coordination and implementation of policies and programs across the country... EPR as one approach to increase waste diversion, will continue to play an important role in Canada in the years to come. There is an ongoing opportunity to achieve further environmental outcomes with EPR programs in Canada considering the amount of waste that is still going to landfill. CCME looks forward to continued success of EPR programs, and harmonization of EPR approaches by jurisdictions, and in making Canada a world leader in waste diversion"* (CCME, 2014). In short, Canada's ongoing EPR success story is being optimised, embedded and expanded, because it is successful and popular.

In any New Zealand vs Canada comparison, a crucial area of focus must be on the fact that, *"there are now 94 product categories that are covered by legislated EPR programs or requirements (as of July 2014), compared to only about 33 product categories at the time of CAP-EPR adoption in October 2009"* (CCME, 2014). This statement evidences how rapidly and comprehensively Canadians have embraced the efficacy of EPR in addressing waste issues. In contrast, New Zealand has not declared any types of waste, a 'priority product' under the WMA:2008. Consequently, New Zealand only has a small number of waste types covered¹⁹ under a 'voluntary only' approach to PS and with this, only limited volumes of material are collected and processed²¹.

As the Canadian context¹¹⁴ illustrates, one of the opportunities that a comprehensive and successful nation-wide approach

to PS/EPR facilitates, is to be able to then implement, correlated system of landfill and or incineration bans. The combination of PS/EPR and landfill / incineration bans act in concert to, detoxify any residual waste stream destined for disposal. This positive environmental outcome occurs because PS/EPR programmes centrally focus on hazardous and special waste, which without this intervention, are often not otherwise, appropriately collected for recycling and end of life treatment. Well-designed PS/EPR systems will intervene to separately collect and specifically treat these waste materials, according to best practice processes and technologies and internationally recognised OSH / recycling standards.

Effective PS/EPR systems are also recognised as driving 'green' design, which over time will create a new generation of more environmentally sustainable products and productions systems (OECD, 2016). The overall, long-term result of combining comprehensive PS/EPR and landfill/incineration bans is that, the material flows (in the form of products and packaging) through the economy (i.e. households and businesses) become progressively detoxified, more environmentally sustainable. In addition, under a PS/EPR regime the material flows recycled at the end-of-life stage, prior to the formation of any residual 'waste-stream', which is irretrievably lost in value destroying disposal systems.

In the New Zealand context, where we lack proactive, well-planned, comprehensive mandatory national PS/EPR programmes¹¹⁵, most of the toxic substances and scarce resources, which currently exist in the PS/EPR class of materials, remain part of the waste stream. Instead of being intercepted and appropriately treated and recycled within PS/EPR programmes, both harmful substances and valuable resources are, in effect abandoned to the vagaries and distortions of the 'free market'. In reality, without intervention of effective PS/EPR programmes, the majority destination provided by the 'free market'

114 For example see: <https://www.crd.bc.ca/service/waste-recycling/hartland-landfill-facility/banned-items>

115 An interesting perspective to consider is that at this junction is the NZWS:2002 Target for special wastes was: *"By December 2005, businesses in at least eight different sectors will have introduced extended producer responsibility pilot programs for the collection and reuse, recycling, or appropriate treatment and disposal of at least eight categories of special wastes"* (MfE, 2002). It is notable that EPR is terminology which is utilized in the NZWS:2002 and this is recognized is being at the most environmentally assertive end of the PS ↔ EPR spectrum (CCME, 2014).

is the cheapest form of disposal¹¹⁶, rather than necessarily the best. Under New Zealand's dysfunctional waste management model, only a small fraction of the total hazards, toxins and resources will make it to high standard treatment/recycling programmes.

Whilst waste data is mostly poor and the exact picture unclear, New Zealand's default 'free market' disposal pathways appear as involving the following options: expensive modern sanitary landfill (of various classes), or cheaper largely unmonitored clean fills, or the low cost 3Bs (*bury - burn - bulk store*¹²¹⁻¹²²) rural waste scenario or, increasingly the free, illegal option of littering / fly-tipping¹¹⁷. Without the intervention of well-designed mandatory national programme of PS/EPR schemes to intercept the harmful substances contained in many classes of product, the presiding 'free-market' scenario¹¹⁸, results in a 'toxic trickle-down' entering New Zealand's disposal pathways. Given the absence of regulatory controls, the relatively low-cost of disposal presents as key financial driver of, this 'toxic trickle-down' effect, which is compounded by poor public awareness, hence limited environmental responsibility.

However, the good news in this bleak scenario is that, New Zealand's toxic trickle-down can be switched off and in time even reversed, thought the next generation of regenerative green engineering and cradle to cradle sustainable product design (McDonough & Braungart, 2013; McDonough, Braungart, Anastas, & Zimmerman, 2003). This can be achieved by applying the internationally proven suite of

economic instruments (especially mandatory PS/EPR programmes) as was discussed and advocated for in the PCE's 2006 '*Changing Behaviour*' report.

Unfortunately, in the reporting period prior to 2006 and the interval since, New Zealand has failed to effectively and fully, utilise the spectrum and proven opportunity of economic instruments in the management of waste. The nett result is that our environmental performance is less than what it could reasonably be expected to be¹¹⁹. This failure is being negatively reported as another emerging element of New Zealand's so-called 'dirty little secret'¹²⁰. Such descriptions are the antithesis of our national brand and allowing dysfunctional waste policy to continue unaddressed, risks unnecessarily, further undermining our international reputation.

2.7. A Crisis in Rural Waste Management?

Arguably, the agricultural sector is one of the spheres of the New Zealand economy, most negatively impacted by, what is now evident has been, the regressive NZWS:2010 period of waste policy. In 2014, the Waikato Regional Council built on previous research¹²¹ into New Zealand rural waste issues and reported¹²² that, if the average 37 t/yr disposal per property was projected across all 58,071 rural properties, this would equate to > 2.1 million t/yr of wastes generated across rural New Zealand. To put this this data in perspective, the reporting to the OECD for the same year (2014) shows that the rest of the predominantly urban-based New Zealanders (approx. 86%) disposed

116 Which, given the requirement to consider the waste hierarchy, is supposedly our lowest and last priority <http://www.mfe.govt.nz/waste/role-local-government/waste-management-and-minimisation-plans>

117 For example variously: 'Fly-tipping costs public thousands' <http://www.stuff.co.nz/waikato-times/news/6769425/Fly-tipping-costs-public-thousands> + 'Flytipping a \$52,000 headache for Manawatu ratepayers' <http://www.stuff.co.nz/manawatu-standard/news/93076059/flytipping-a-52000-headache-for-manawatu-ratepayers> + Another large fly-tip discovery in Northland' http://www.nzherald.co.nz/northern-advocate/news/article.cfm?c_id=1503450&objectid=11887327 + 'Fly-tipping on rise; anger at dumping' <https://www.odt.co.nz/regions/south-otago/fly-tipping-rise-anger-dumping> NB: most of these examples of fly tipping contain material which might otherwise be covered by PS/EPR and hence entail free to end of life drop-off.

118 NB: which relies on the vagaries of public awareness and good will and the least economically effective option of people choosing to pay for end of life treatment / recycling at the point of disposal, rather having this automatically pre-paid at the point of purchase (i.e. so that end of life drop-off for treatment / recycling is free). Under the so called, 'free-market' model of non-intervention and voluntary only approaches to PS/EPR, the scientifically supported environmentally sound decision making is abdicated in favour of a blunt price based competition with cheap landfill disposal costs (that do not reflect the full externalised environmental impact).

119 See: http://www.oecd-ilibrary.org/environment/data/oecd-environment-statistics/municipal-waste_data-00601-en

120 For example see: <http://www.stuff.co.nz/environment/90613205/new-zealand-showing-environmental-limits-oecd-says> + <http://www.stuff.co.nz/dominion-post/comment/67548448/mike-joy-new-zealands-dirty-little-secret> + <http://www.noted.co.nz/currently/social-issues/a-year-of-living-shamefully-new-zealands-dirty-secrets/> + https://www.huffingtonpost.com/2013/08/06/new-zealand-environment_n_3710859.html + <http://www.independent.co.uk/travel/news-and-advice/new-zealand-tim-smith-environment-problems-lakes-rivers-algae-nitrogen-eutrophication-dairy-industry-a8090481.html>

121 Hepburn, I., & Keeling, C. (2013). NonNatural Rural Wastes D Site Survey Data Analysis: Summary Report Retrieved from Christchurch, NZ: <http://ecan.govt.nz/publications/Reports/NNRW-survey-summary-report-2013.pdf>

122 Matthews, J. (2014). Rural waste surveys data analysis Waikato & Bay of Plenty. Retrieved from GHD Ltd & Waikato Regional Council. Hamilton, NZ: <https://www.waikatoregion.govt.nz/services/publications/technical-reports/tr/tr201455>

of 2.931 million tonnes of solid waste into levied municipal landfills¹²³. Rural waste, clearly forms a large part of New Zealand's overall waste scenario and the associated environmental issues.

Additionally, this research reported that 100% of rural properties surveyed in the Waikato and Bay of Plenty regions 'buried, burned or bulk stored' waste on site (the so-called 3Bs). In addition, 50% of the surveyed rural properties had a burn pile, or farm dump less than 40 metres from a water course or field drain. Such findings illustrate that the New Zealand's rural waste scenario demonstrates an unfortunate correlation to the crisis scenario reported in the Global Waste Management Outlook (GWMO) and other related international findings. For example, globally it is estimated that approximately 41 % of the total waste generated, is treated via open dumps and uncontrolled burning¹²⁴. These primitive disposal practices further aggravate concerns around the resource conservation, pollution and climate change impacts of waste¹²⁵.

Given New Zealand's rural waste situation presents as a significant percentage of the total national waste scenario, it appears that a concerningly large amount of waste is ending up in open dumps, burn pits and rural fly-tipping¹²⁶. A difference between the international development context reported in the GWMO and New Zealand is that, our multitude of micro farm dump/burns sites are distributed across remote areas, so the issues are less concentrated and less visible. However, the accumulative farm waste volume (as % of the total waste stream) and the

associated pollution effect, represents a significant environmental and reputational risk to New Zealand.

In short, rather than living up to the '100% PURE' / 'Clean n Green', image used for marketing purposes, New Zealand can actually be identified as a neglectful co-participant in international waste crisis described in GWMO reporting. What makes this scenario doubly disturbing is that, whilst globally the 'dumpsite' issue is mainly associated with poor, underdeveloped countries, New Zealand cannot hide behind that excuse. It is entirely inappropriate for New Zealand, as a relatively wealthy country, with all our technical capacity and environmental pretence, to have allowed the dysfunctional rural waste scenario to develop, or for it to remain unaddressed.

Alongside the general environmental impacts (waterways, air quality, land contamination) and fire risks^{121&122} associated with rural waste disposal in New Zealand, the relatively low-oxygen, low-temperature conditions typical of pit style, open burning risks generating specific additional toxins. The inefficient and incomplete combustion of materials in burn-pits, is associated with the formation and release of dioxins and other toxic compounds¹²⁷. Dioxin presents a significant environmental and public health risk¹²⁸. The general public and most of New Zealand's export markets are concerned with the potential for dioxin to migrate into food systems¹²⁹. Any unnecessary or accidental generation and release of these compounds should be avoided.

123 See: http://www.oecd-ilibrary.org/environment/data/oecd-environment-statistics/municipal-waste_data-00601-en or <http://www.mfe.govt.nz/more/environmental-reporting/reporting-act/waste/solid-waste-disposal-indicator/quantity-solid-waste> + Ministry for the Environment. (2015). *Environment Aotearoa 2015: Data to 2013* (ME 1215). Retrieved from Wellington, NZ <http://www.mfe.govt.nz/sites/default/files/media/Environmental%20reporting/Environment-Aotearoa-2015.pdf>

124 Wilson, D. C., Rodic, L., Modak, P., Soos, R., Carpintero, A., Velis, C., . . . Simonett, O. (2015). Global waste management outlook: Summary for decision-makers. Retrieved from Austria: + Mavropoulos, A., Newman, D., & ISWA. (2015). *Wasted Health: The tragic case of dumpsites*. Vienna, Austria: International Solid Waste Association.

125 Thompson, A. (2014). Burning trash bad for humans and global warming. *Scientific American*, September. Retrieved from <http://www.scientificamerican.com/article/burning-trash-bad-for-humans-and-global-warming/> + Wiedinmyer, C., Yokelson, R. J., & Gullett, B. K. (2014). Global emissions of trace gases, particulate matter, and hazardous air pollutants from open burning of domestic waste. *Environmental Science & Technology*, 48, 9223-9530.

126 The following article discusses the growing incidences of fly-tipping occurring at the interface of urban and rural contexts: http://www.nzherald.co.nz/nz/news/article.cfm?c_id=1&objectid=11993612

127 Such as the inefficient and incomplete combustion of waste / plastic materials in burn-pits, being associated with the formation and release of dioxins and other toxic compounds See: Sonnevera International Corp. (2011). *Ontario Agricultural Waste Study: Environmental Impacts of Open-Burning Agricultural Plastics*. Final Report. Retrieved from CleanFARMS. Ontario, Canada: http://cleanfarms.ca/wp-content/uploads/2017/07/AgPlasticEnvirolImpactOpenBurning_FINAL_201107.pdf and Enviser Consulting Ltd. (2013). *Ontario Agricultural Waste Management Study – Phase II: Risk Assessment, Collection, Processing and Stewardship Options*. Retrieved from CleanFARMS. Ontario, Canada: http://cleanfarms.ca/wp-content/uploads/2017/07/OntarioStudyPhaseII_FINAL_20130721.pdf + Shibamoto T, Yashura A, Katami T (2007): Dioxin formation from waste incineration. *Rev Environ Contam Toxicol* 190:1–41 + Stanmore B.R., (2004): The formation of dioxins in combustion systems. *Combustion and Flame* 136 pp. 398–427. + Hsieh C.Y., Tsai C.L., Lin Y.Y., Weng Y.M., Ding P. and Yen J.H. (2010): Characteristics of dioxin-like compounds in leachates from landfills containing incineration residues in Taiwan. Retrieved 18 November 2011 from www.niea.gov.tw/windows/file.asp?ID=44

128 Ministry for the Environment (2001): *An Action Plan for Reducing Discharges of Dioxin to Air*. Retrieved 20 November 2011 from: <http://www.mfe.govt.nz/publications/hazardous/dioxin-action-plan-oct01/index.html>

129 Bottemiller H (2012): Food industry concerned about EPA's dioxin limits. Retrieved 20 November 2011 from <http://blog.usfoodsafety.com/2012/01/18/food-industry-concerned-about-epas-dioxin-limits/> + European Commission Scientific Committee on Food (2001): *Opinion of the scientific committee on food on the Risk assessment of dioxins and dioxin like PCBs in food*. Retrieved 18 November 2011 from: ec.europa.eu/food/fs/sc/scf/out90_en.pdf

The state of rural waste in New Zealand begs the question, how did we get here? A thorough investigation into the overarching failures of waste policy, as it applies to rural waste collection and disposal is warranted. The MfE is cited as reporting¹³⁰ that 97% of New Zealanders have access¹³¹ to recycling. Despite making a keynote contribution to the economy, it can be argued that, rural New Zealand is not well served in terms of cost effective, user-friendly waste and recycling services.

Instead, the rural sector faces high waste and recycling costs (i.e. due to higher transport and 'user pays' fee structures) and lower levels of access to services (i.e. a restricted range of drop-off points and recyclable items) when compared with urban New Zealand. This represents a social inequity, with carries associated environmental and economic risks to 'NZ Inc'. Arguably, the nett outcome of this inequity is that, the rural sector receives 2nd rate environmental services, whilst facing escalating public expectations for improved environmental performance.

A confluence of several factors appear to have contributed to the development of this current scenario. For example, changes in land use and farming systems have resulted in increases in agricultural waste (i.e. plastic silage wrap). However, a significant factor appears to be the closure of a large number of semi-managed rural landfills, which was widely reported at the time, as a form of 'environmental progress'¹³². In hindsight, these rural landfill closures occurred without the compensatory development of commensurate, high quality, 'next generation', waste and recycling systems, to substitute for the loss of rural services.

In simple terms, it appears 'turning off the tap' to a relatively small number of rural landfills (justifiably based on poor environmental standards), has occurred without addressing the big picture issues, through effective, integrated national waste minimisation planning. Has fixing one big problem (i.e. low quality, poorly

performing rural landfills) contributed to creating or, exacerbating thousands of widely distributed micro '3B' problems, with no nett environmental gain? Rural landfill closures appears as a contributing factor in the formation of an emerging agricultural waste crisis, where the problems have back-flowed and built-up on the thousands of New Zealand farms, where waste is generated.

A limited number of voluntary product stewardship schemes, such as the AgRecovery and Plasback programmes, do exist for certain problem rural waste streams, such as rural plastics (i.e. chemical containers and silage wrap etc). It is concerning that, recently developed rural waste interventions, being designed and 'modelled' as a solution, appear set to rely heavily on New Zealand's limited and compromised approach to PS/EPR programmes¹³³. What voluntary product stewardship programmes that do exist for the agricultural context, appears out of sync and out of scale with the plethora of waste material types generated in the unique rural business / household context.

The indications are that, however well-meaning or well-managed, the few rural product stewardship programmes currently accredited under the government's rigid 'voluntary only' approach, are no match for the immense task of addressing New Zealand's rural waste issues. Instead of drawing on the international success and cost effectiveness of comprehensive, mandatory 'PS/EPR' programmes (Auckland Council & WasteMINZ, 2017; CCME, 2014; EPR Canada, 2014; Zero Waste Europe & FPRCR, 2015) to address the rural waste crisis, the current New Zealand model appears as an ad hoc mix of, 'pick winners', government funding and user pays recycling programmes. As has been discussed throughout this submission, the track-record of this approach, is at a best mixed and arguably at worse, confuses the situation and delays the development of genuinely effective, financially sustainable, mandatory permanent PS/EPR based solutions.

130 See: <http://www.recycle.co.nz/needed.php>

131 If rural New Zealand is included in this then the concept of 'access' appears in practical terms very elastic.

132 Ministry for the Environment. (2007). Waste Management in New Zealand: A Decade of Progress. Retrieved from <http://www.mfe.govt.nz/publications/waste/>

133 It is concerning that, recently developed rural waste interventions, being designed and 'modelled' as a solution, appear set to rely heavily on New Zealand's limited and compromised approach to PS/EPR programmes. What voluntary product stewardship programmes that do exist for the agricultural context, appears out of sync and out of scale with the plethora of waste material types generated in the unique rural business / household context.

2.8. Ignoring the Proven Efficacy of PS/EPR Systems?

Throughout this submission New Zealand's reliance on a 'voluntary only' based PS/EPR approach has been repeatedly questioned. In simple terms, the value proposition for PS/EPR programmes, is now strongly evidenced in international experience¹³⁴. This experience shows that, when well designed and effective PS/EPR programmes operate, the following generally increase:

- recycling rates,
- waste diversion from landfills and farm dumps,
- the exercise of higher environmental / OSH standards,
- new 'green collar' jobs & businesses opportunities,
- eco-design of new more environmentally products,
- opportunities for R&D around the socio-economic and environmental impacts of waste,
- new long term more finically sustainable recycle markets are developed,
- the diversity, volume and value of reuse pathways,
- material upcycling,
- funding for enviro-education / community programmes and
- waste and resource management data (transparency, monitoring and compliance).

whilst, the following generally decrease:

- rates of chemical pollution,
- littering / fly-tipping,
- nett energy and water usage,
- GHG emissions.

PS/EPR approaches (and, more broadly, market-based economic instruments) appear to carry few downsides, unless incompetently designed and managed. So, it is reasonable to question, why has the New Zealand government maintained such a negative and obstructive view around employing the benefits and success of PS/EPR programmes? Linked to this, why is New Zealand's environmental performance around waste falling behind many of the economies against whom we benchmark and compete?

PS/EPR programmes are generally popular with communities, because they enable accessible, user-friendly, free, end-of-life recycling drop-offs systems for special and hazardous classes of products and materials. A common PS/EPR financial model, involves this environmental service being funded by a cost effective, 'advanced disposal fees' (ADF) paid at the time of purchase¹³⁵. At this junction, the modest additional cost of the ADF, is barely noticeable, relative to the overall purchase price of the product. The instigation of an ADF as part of PS/EPR schemes means that, at the end of life stage, the product can simply be dropped off for free at a network of collection points, linked to a properly funded, high standard recycling system.

Similarly, 'container deposit systems' (CDS) utilise a deposit refund system to financially incentivise the take-back-refund based collection of beverage containers. CDS systems were once part of the social fabric of New Zealand society and currently, are successfully utilised in a growing number of

134 For example see: "Breaking out of the traditional paradigm of post-consumer waste management as government responsibility, extended producer responsibility (EPR) is an innovative policy approach focusing on products instead of waste, which (1) introduces consideration of the entire life cycle of a product, thus also the product's design and production, instead of only its end-of-use stage and (2) transfers, fully or partly, physical and/or financial responsibility for discarded products and the costs involved with their collection and recycling from government authorities (and thereby the taxpayer) onto producers (brand owners, first importers and manufacturers). Essentially, the EPR economic instruments enable creation of the necessary cash flow to organize collection and recycling whereby they internalize the part of the environmental costs of a product involved with the waste stage into the product price." Source (GWMO, 2015).

135 An example of an ADF or 'eco fee' being used in the context of tyre recycling in Canada is: <https://www.tsbc.ca/ecofee.php> However there are many other versions of this system. Further explanation in a New Zealand context (tyres) is offered via: <http://www.wasteminz.org.nz/wp-content/uploads/4c.Hoffart.pdf>

international jurisdictions¹³⁶. A wide range of advocacy and reporting around CDS systems in the context of New Zealand¹³⁷ has ensured that the practicality and value proposition of market based economic instrument is well understood.

Whilst this advocacy has been contested by countervailing reports commissioned and promulgated by the packaging lobby¹³⁸, these opposition arguments have now, largely been independently repudiated (Davies, 2017; Hogg, Elliott, Gibbs, Grant, & Sherrington, 2017; Snow, 2016; Stewart, 2017). In summary, it can now be understood that: *“83% of Kiwis support the establishment of a CDS, Nationally Councils could expect to save up to \$20.9 million per annum on recycling collection costs, Over a 10 year period society would be better off by up to \$645 million, Beverage container recycling rates could increase from as low as 45% up to 82%”* (WasteMINZ TA Forum, 2017).

Pragmatically, local government favour PS/EPR systems, because the associated funding models enable them to more effectively perform their statutory function of managing waste. Whilst local councils are legally responsible for waste management in their communities, they don't actually create or control the majority of waste flows and therefore, cannot in isolation resolve waste issues. PS/EPR systems require the producers of waste, to contribute to addressing the environmental issues associated with their business models. Local government knows that the only real long-term solution for product waste and pollution is for producers and consumers to be centrally involved and responsible for cleaning up the mess, their transactions leave behind.

To maximise the environmental and economic benefits of PS/EPR systems, it is critical for national and local government, producers, retailers, consumers, recyclers and all other relevant stakeholders to collaborate in the design and implementation of these

environmental services. International experience shows that permanent solutions to product waste, lies in future focused eco-design and only mandatory PS/EPR systems, will lock in the key drivers to maximise this potential. Driving enhanced and extensive eco-design will ensure the next generation of products will involve less toxicity and waste and are more easily recyclable. The ultimate outcome of effective, mandatory national PS/EPR systems is to move society up the 'waste hierarchy' and away from the least priority - 'disposal', to the top priority of 'reducing' waste issues at their genesis.

International experience indicates that, once society's natural reluctance to embrace the unknown is overcome, communities rapidly engage with and enjoy PS/EPR systems, as the 'new normal' way of exercising environmental responsibility. Similarly, businesses generally support mandatory PS/EPR systems, because they provide greater certainty around future investment in programmes and technologies. Mandatory PS/EPR creates a level playing field where the businesses compete to improve customer satisfaction and to drive the cost of environmental services down.

Mandatory PS/EPR systems put an end to the perverse outcome, whereby proactive green businesses incur increased costs for providing end-of-life product collection and treatment options, whilst polluting businesses 'free-ride' into higher profits, at the expense of their competitors. The perverse economic outcome of New Zealand's current 'voluntary only' approach to PS/EPR is, by default to financially incentivise the least environmentally sustainable businesses, at the expense of those that do seek to do the right thing, by communities and the environment.

136 For example, a relatively local, longstanding and successful example is: South Australia: http://www.epa.sa.gov.au/environmental_info/container_deposit

137 In particular Envision New Zealand has played a lead role in this communication See: <http://www.envision-nz.com/projects/incentive-to-recycle> + (Envision New Zealand, 2004). Most recently this has been supported by the following report by: WasteMINZ. (2018). Local Government Waste Management Manifesto: Developed by the Territorial Authority Forum, a sector group of WasteMINZ. Retrieved from Auckland: <https://www.wasteminz.org.nz/wp-content/uploads/2018/01/Local-Government-Waste-Manifesto-final-22012018.pdf>

138 In summary see: <https://www.recycling.kiwi.nz/campaigns/voluntary-solutions/> + (COVEC, 2007)

2.9. New Zealand's Reversal of the 'Polluter Pays' Principle?

In New Zealand, the packaging industry lobby has enjoyed a longstanding, privileged and pivotal position in relationship with successive governments¹³⁹. This 'special' relationship has manifested in waste policy and programmes favourable to the waste disposal and packaging industries. This is most evident in the 'institutionalised delay' around the development of mandatory, national PS/EPR programmes. The foundations of New Zealand's commitment to vague and voluntary approaches to waste minimisation were laid in the *'Accord on a Strategy to Minimise Packaging Waste (1996-2001)'*. A further key platform which compounded the lobbyists' arguments against, anything other than a 'voluntary only' approach to waste minimisation, was the signing in 2004 of the *'Packaging Accord'*. This was a multi agent, voluntary commitment to improve the "sustainability of packaging used in New Zealand"¹⁴⁰.

Whilst, the non-renewal of the 'Packaging Accord' in 2009, presents an outward perception of a lessening of packaging lobby influence over national waste policy, when examined more closely, it appears the opposite has been true. For example, in the face of LGNZ and numerous other indicators of popular support for action around 'container deposits systems' (CDS)¹⁴¹ and 'single use plastic bags' (SUPB)¹⁴², the governments' and packaging lobby's preferred policy position remain firmly aligned in opposition.

Beyond this democratic disconnect, it is concerning that New Zealand's waste management policy settings, remain out of sync with both the, now historic guidance in the PCE's 2006 *'Changing Behaviour'* report, as well as contemporary scientific evidence and international experience. Maintaining such a stark disengagement from good

practice, for such an extended period, suggests that New Zealand now offers a compelling case study into, how the anti-environment / pro-industry lobbying, can subvert the long-term public good, beneath short-term narrow private sector, vested interests.

A window into the inner-workings of the lobbyist distortive practices, aimed at manipulating public policy, is the packaging lobby's funding of partisan, self-serving economic analysis¹⁴³ which has counteracted community based, public good advocacy for 'Container Deposit Systems' (CDS)¹⁴⁴. Concerns arise out of both the objectivity of the 'economic analysis' curated by the packaging lobby (i.e. as a blocking manoeuvre for progressing CDS in New Zealand) and the significant financial disparity between the sides of this debate. However, most concerningly, when examined independently, the substance of the packaging lobby's analysis and arguments are found to be substantively flawed (Auckland Council & WasteMINZ, 2017). There is concerning correlation between the packaging lobbyist's misinformation and tactics and the template of other globalised campaigns using 'alterative facts' from funded science sources and economic consultants. Such campaigns create unnecessary confusion and cultivate delay on important health and environmental issues (Oreskes & Conway, 2010).

However, beyond achieving the packaging lobby's stated goal of effecting a two-decade stasis in mandatory PS/EPR programmes, what makes this New Zealand case study so interesting, is the strategy by which packaging lobby exercises policy influence. In this respect, the packaging lobby's paramount success is in re-framing itself from 'problem-polluter' to, 'expert solution-provider'. In New Zealand, the packaging lobby has largely superseded public agencies in collecting and communicating New Zealand's recycling and litter data¹⁴⁵.

139 See: <http://www.mfe.govt.nz/publications/waste/new-zealand-packaging-accord-2004/new-zealand-packaging-accord-2004> + <http://www.packaging.org.nz/page/26/history>

140 See: <http://www.mfe.govt.nz/publications/waste/new-zealand-packaging-accord-2004/new-zealand-packaging-accord-2004> + <http://www.packaging.org.nz/page/26/history>

141 See: <https://kiwibottledrive.nz/>

142 See: <https://www.stuff.co.nz/environment/99520746/kiwis-want-a-ban-on-the-bag-and-legislation-is-looking-increasingly-likely> + <https://www.toko.org.nz/petitions/ban-plastic-bags-in-nz> + 'Carrying our Future' <https://vimeo.com/170876941> + <http://boomerangbags.org/>

143 See: <http://www.glassforum.org.nz/container-deposit-system-analysis/>

144 See: <http://www.envision-nz.com/projects/incentive-to-recycle>

145 For example, see the following media release from 2008 https://www.nzherald.co.nz/nz/news/article.cfm?c_id=1&objectid=10537414

Despite a clear 'conflict of interest', the packaging lobby has positioned itself in the role of 'message manager' on New Zealand's recycling story. Foremost, this concerning because this scenario has allowed the packaging lobby to purvey an erroneous, green-washed storyline of progress¹⁴⁶, which is now being 'reality checked' and challenged on multiple fronts^{67&78&119}. The second is that, in being in the box seat of deciding how New Zealand's recycling data is collected and communicated, the packaging lobby is actually appropriating a story that belongs to someone else, that is, those who actually do the work of recycling in New Zealand.

In New Zealand the bulk of the work of recycling (and any associated achievement) is undertaken by parties other than the packaging lobby, specifically the nationwide network of ratepayer funded local council recycling programs and operations of community and commercial recyclers. An insidious outcome of allowing the packaging lobby to assume message control of New Zealand litter and recycling story, is that the genuinely democratic based organisation representing local government in New Zealand (i.e. LGNZ¹⁴⁷) often holds polar opposite views¹⁴⁸ on waste issues and packaging related PS/EPR policy. On critical occasions, it appears the opinion of local government, has been ignored in favour of the policy worldview promulgated by the packaging lobby.

The other key sector doing the work underwriting New Zealand's recycling statistics are the community and commercial recycling sectors. Groups representing these sectors often oppose and challenge the packaging lobby's misinformation¹⁴⁹ and appear to have a far more proactive and positive view on value of shared responsibility and environmental programs and progress.

The following statement exemplifies this: *"We all need to take responsibility to reduce the waste we personally send to landfills. If we adopt a zero-waste: 100% recycling attitude we can make a huge difference in our lifetime for the next generation.... Compared to other developed countries, NZ has a vague and scattered approach to achieving a zero-waste status¹⁵⁰."*

In allowing the packaging lobby to present itself as the voice of reason and expertise on New Zealand's recycling and litter story, the government has largely abrogated a statutory responsibility to collect and formulate accurate waste, recycling and litter data and to enable this data to communicate an unbiased scientific picture on waste management. To allow this leadership role to be appropriated to any meaningful extent, by a highly partisan industry lobby group, appears as a neglect of public sector responsibilities and expectations for fair play.

Questions of social justice arise, given that the packaging lobby has been afforded a public platform, via which they have promulgated their vested interest policy positions, at the apparent expense for the organisations battling at the frontlines of community waste problems. New Zealand's prolonging of a rigid, 'voluntary only' PS/EPR policy setting, as advocated by the packaging lobby^{152-155&146-147}, exceeds the bounds of common sense and clearly runs counter to international experience, good practice, current trends and balance of socio-economic and environmental science.

Another critical indicator of the inappropriate level of influence afforded to the New Zealand packaging lobby, is the overturning of the internationally accepted 'Principle 16 of the Rio Declaration' - aka the 'Polluter-Pays-

146 See: <http://www.packaging.org.nz/page/146/packaging-mass-balance> and previous iterations of the packaging lobby's PR machine

147 See: <http://www.lgnz.co.nz/>

148 Perhaps the clearest evidence of the democratic disconnect which exists in this sphere is that in 2016, via Local Government New Zealand (the umbrella organisation representing all local council in New Zealand see: <http://www.lgnz.co.nz/>) "New Zealand's Metro councils proposed a remit calling for Local Government New Zealand to endorse the concept of a national-mandated beverage container deposit system... within 2 years... The remit was passed with 90 % in favour." There has also been an 86% support from LGNZ for a national single-use plastic bag levy. However, these extremely strong democratic statement of local government and hence popular community support for EPR/PS, were rejected outright by the then National led coalition Government.

149 See <http://communityrecyclers.org.nz/>

150 Source: <http://www.recycle.co.nz/index.php>

Principle¹⁵¹. The high level of public funding accorded to the packaging lobby illustrates that, in-stead of enacting the 'polluter pays' principle, in this instance New Zealand does the opposite and 'pays the polluters'. This perverse outcome attests to the packaging industry's prowess at lobbying, as well as an inexplicable and unhealthy level of policy capture exercised over the associated governments' minister/ministry. Further, inverting the 'polluter pays' principle, by paying significant amounts of public funding to the packaging lobby, has enabled these groups to roll out programmes that, in effect, act to delay the implementation of genuinely effective waste minimising programmes.

The packaging lobby's assumption¹⁵² and use of the 'LoveNZ' brand is another example of the inappropriate level of influence the lobby exercises. Previously, 'LoveNZ' was the publically owned, national public-spaces recycling brand, associated with the 'Recycling in Public Places Initiative'¹⁵³ (RPPI). This asset transfer illustrates the extent to which, normal conventions and boundaries between public sector and private interest have broken-down and how the latter has been allowed to be superimposed over the former. The design of the original 'LoveNZ' /RPPI programme¹⁵⁴, enabled local government to apply to central government for start-up funding in order to develop recycling collections infrastructure (i.e. bin systems) in public places (i.e. the CBD, events locations, community parks and recreation, sporting and transport facilities, etc).

The then, 'Recycling in Public Places Initiative' funding equation involved a requirement for local government recipients to, thereafter service the newly established recycling infrastructure. This model makes sense, given that local government is the main recycling

service provider / facilitator across New Zealand and hence, has the skills, experience and equipment systems to cost-effectively and successfully manage ongoing programmes. At that time, in comparison with local government, the packaging lobby had little commensurate experience in the direct day-to-day management of recycling services. Today, 'LoveNZ' has been co-opted as part of the public face of the Packaging Forum¹⁵⁵, which along with the according of significant amounts of public funding, has legitimised and greatly amplified the voice of the packaging lobby in public policy debate.

The rates of non-collected waste plastic ingress to the planet's oceans are described as being sentinel of our entering the 'Plastocene'¹⁵⁶. International reporting shows that because of their externalisation of approximately \$40 billion of dollars of environmental costs annually, the global, plastic packaging industry is a massive polluter. It stands to reason that, the New Zealand franchise of this this global industry, is no exception and similarly, albeit proportionally, contributes to waste related pollution. Given the stark reality of New Zealand's > 20% increase in waste to landfill, in just the last three years (MfE, 2017a, 2017c), it is reasonable to now question the economic efficiency, practical efficacy and social justice of publically funding the packaging lobby group's initiatives. In New Zealand the track-record of such initiatives is that they act to mitigate and mask this industry's pollution issues and to supplant and delay more genuine and far reaching environmental progress.

In New Zealand's case, the elevating effect of public funding attributed to the various initiatives / organisations actualising packaging industry strategy, has enabled this lobby for in excess of two decades, present itself as a lead

151 WHO, & UNEP. (accessed 2017). Economic instruments as a lever for policy. Retrieved from <http://www.who.int/heli/economics/econinstruments/en/> + UNEP. (2002). Economic Instruments for Environmental Protection. Retrieved from United Nations Environment Programme. Geneva, Switzerland: <http://www.unep.ch/etu/> + OECD. (2014). Creating Incentives for Greener Products: Policy Manual for Eastern Partnership Countries. Retrieved from OECD - EaP GREEN. Paris, France: http://www.oecd.org/environment/outreach/EN_Policy%20Manual_Creating%20Market%20Incentives%20for%20Greener%20Products_16%20September.pdf

152 Illustrating and verifying this when the term 'LoveNZ' is put into google, the first 6 and only relevant hits direct you to the Packaging Forum's websites and facebook pages.

153 Ref: 'Recycling in public places': Project application form (2008, MfE).

154 Background: In 2008, with the change of government, the 'LOVENZ' - 'Recycling in Public Places Initiative' appeared to die off, until being reincarnated in 2013 under the new management of the Packaging Forum, one of the several interrelated iterations of the New Zealand packaging lobby. See: <http://www.mfe.govt.nz/waste/product-stewardship/credited-voluntary-schemes/public-place-recycling-scheme> + <http://www.recycling.kiwi.nz/>

155 See: <http://www.recycling.kiwi.nz/>

156 See: 'The Immense, Eternal Footprint Humanity Leaves on Earth: Plastics' <https://www.nytimes.com/2017/07/19/climate/plastic-pollution-study-science-advances.html>

agency cultivating and coordinating positive incremental eco-actions. However, in reality these outwardly positive initiatives, act as minimal and distracting proxies, which have actually subverted and supplanted the development of mandatory PS/EPR for containers and packaging. The fact that now 90% of local government support CDS illustrates the extent of the democratic disconnect, between the policies preferred by the packaging lobby and those which are in the community's best interest.

Reversing the polluter pays principle and publically funding the packaging lobby, affords these organisations the façade of being a voice of eco-positive expertise, reason and experience, whilst they have lobbied to substitute an unelected industry imperative, ahead of a genuine democratic agenda. The critical contrast to this scenario is that, by comparison, the New Zealand environmental NGO's and community recycling sector are not afforded a commensurate level of relational privilege with government. Whilst both the respective industry and environmental lobbies can clearly be identified as important (and arguably, equally partisan) stakeholders in waste management policy, only one of these lobby groups is afforded the status and privilege which accrues to significant longstanding public funding. In New Zealand's case, it is both concerning and ironic that major financial resourcing flows to the polluting stakeholder (with a publically declared intent of avoiding mandatory product stewardship programmes), rather than the entities advocating for the environmental and public good.

International consensus and experience illustrates that, the most economically efficient way to drive environmental progress is for governments to utilise market based economic instruments to ensure product prices factor in otherwise 'externalised environmental costs' (i.e. the otherwise invisible social & environment costs of production & transport etc of goods and services).

This model ensures product prices form more complete and accurate market signals influencing the ongoing actions of producers and consumers¹⁵⁷⁻¹⁵⁸. PS/EPR are amongst the most fundamentally, important & powerful economic instruments / interventions available to any government, serious about addressing the issue of waste. This is because PS/EPR effect a shift of 'end of life' product responsibility, from the 'commons' (everybody / government) to the → producer/consumer transactional construct¹⁵⁷.

The key benefits of PS/EPR, as a driver for zero waste and a circular economy, are reported¹⁵⁸ as:

- ✓ *“Reduction in primary resource use and packaging and improved repairability and reusability*
- ✓ *Reduced toxicity and hazardousness and better management of hazards in products - better capture and internalisation of full waste and environmental cost in product prices*
- ✓ *Enhanced: EoL product dismantlability + recyclability + compostability – litter / fugitive waste reduction*
- ✓ *Grow and strengthening of secondary resource 'recyclate' markets - expansion of the recycling and reprocessing economy*
- ✓ *Encourages new green product design with lower ecological footprint (especially re EoL waste) and to promote a service based economy” (Zero Waste Europe & FPRCR, 2015).*

Instead of aligning with and actualising the guidance of the PCE's 2006 'Changing Behaviour' report and sensibly utilising PS/EPR (and more broadly market based economic instruments), to empower these benefits for New Zealand, the government has extensively funded the local packaging lobby (which is franchise of a global scale polluting industry) to in effect, actively campaign against and delay¹⁵⁹ the introduction of PS/EPR and other socio-economic interventions.

157 Sheehan, B., & et al. (accessed 2014). Recycling and zero waste. UPSTREAM: Real change starts at the source. Retrieved from <http://upstreampolicy.org/solutions/recycling-and-zero-waste/> + Spiegelman, H. (2006). Transitioning to Zero Waste - What can local governments do NOW? Within a Zero Waste / EPR planning framework, local governments will get out of the business of managing product wastes. Retrieved from Portland Oregon: http://www.rcbc.ca/files/u3/PPI_Zero_Waste_and_Local_Govt.pdf

158 Zero Waste Europe, & FPRCR. (2015). Redesigning producer responsibility: A new EPR is needed for a circular economy - Executive summary. . Retrieved from Brussels: <https://www.zerowasteurope.eu/zw-library/reports/>

159 See: <http://www.recycling.kiwi.nz/soft-plastics>

2.10. Indicators of New Zealand's Tarnished International Reputation?

Alongside the discussed main 'red flag' issues, numerous other strands of critique¹⁶⁰ exist across New Zealand's waste management performance. The NZPSC position is that these accumulate in justifying this request for the PCE initiate a new '10 years on' - progress review in the authoritative and challenging style of the 2006 *Changing Behaviour: Economic Instruments and the Management of Waste* report. However, perhaps the best thumbnail argument supporting the concerns of the NZPSC, has already been offered by visiting experts who have experience of New Zealand's situation and an understanding of key exemplars and the critical drivers of international progress.

The progress demonstrated in these and other case studies⁸⁴, puts in sharp contrast the opportunity cost of veering away from the environmentally assertive strategy, 'NZWS2002: Towards Zero Waste and a Sustainable New Zealand', into the retrograde and submissive policy settings, advocated by the lobbying of business interests and polluting industries.

Interestingly, two such international perspectives, were reported publically at the annual WasteMINZ conference. These each arise out of jurisdictions which specifically visited New Zealand, studied the NZWS:2002 and have since gone on to become world leaders in contextualising, pioneering and outworking this ethos and approach. The first perspective was offered by Vaughan Levitzke, the Chief Executive of Zero Waste South Australia (ZWSA), who recounted how in the formation of ZWSA¹⁶¹ they researched New Zealand's zero waste campaign, the then NZWS:2002 strategy and contextualised this learning.

Subsequently, ZWSA has gone on to become a recognised global leader in waste minimisation and environmental performance. ZWSA cites that, "81.5 per cent of all waste generated in South Australia was diverted from landfill. This equates to 3.91 million tonnes of material not going to waste¹⁶²". After successfully emulating key aspects of the now abandoned approach articulated in the NZWS:2002, in a keynote conference address his comment in respect of New Zealand was, 'What the hell happened to you guys?'

The second perspective was offered by the similarly inspired and then concerned Iain Gulland, the Chief Executive, Zero Waste Scotland. His perspective was, that the key to unlocking the government and popular community support for an assertive national approach to waste issues in Scotland, was building a developing a robust business case¹⁶³. Establishing an authentic science based, value proposition was the critical precursor underwriting Scotland's adoption of zero waste and latter merging and synergy with the concept of a circular economy.

When Scotland examined the business case for zero waste and a circular economy, the rationale for change became clear and progress followed. In contrast with both of these international exemplars, New Zealand's recent approach to waste minimisation / management appears dislocated from its core scientific and democratic foundations. Further, we have never developed, nor explicated the overarching national business case, for moving towards zero waste and a more sustainable, circular economy.

¹⁶⁰ For example:

The abandonment of the successful and highly regarded and GOVT³ programme without public consultation and adequate independent evaluation of the CBA see: <https://en.wikipedia.org/wiki/Govt3> + <https://www.beehive.govt.nz/release/govt3-walking-talk-climate-change> + http://media.cbsm.com/comments/169056/New_Zealand_Govt3_programme_lessons_learned_2003-2008.pdf

Lack of a genuine science based R&D programme and researchers and the community sector are at a relative disadvantage in how the WMF is being operated in requiring a large proportion of corresponding funding input. This works for big business and the conventional disposal orientated mainstream waste management industry and against all organisations on the financial periphery. This operational model dumbs down the WMF as often genuine innovations thrive on the development periphery. The net result is that the 'haves' are at a structural advantage relative to the 'have nots' in accessing innovation, developmental and change making funding.

The extent to which 'Minister Initiated Applications' have turned the WMF into the appearance of ministerial slush fund to 'fire fires' created by the ridged 'voluntary only' PS/EPR policy setting.

¹⁶¹ See: <http://www.zerowaste.sa.gov.au/> which has now paved the way for <http://www.greenindustries.sa.gov.au/>

¹⁶² See: <http://www.greenindustries.sa.gov.au/SArecycling>

¹⁶³ In fact, this approach by 'Zero Scotland' extends right through to examining the recycling of various product types and business sectors, see: <http://www.zerowastescotland.org.uk/content/how-we-can-support-business-develop-circular-economy-business-models>

Simple overarching indicators, such as the *734kg average waste generated per New Zealander per year*¹⁶⁴ and recent nett increase in excess of 20% of levied waste going to landfill, provide a blunt indication of the folly and associated failure from New Zealand abandoning the assertive zero waste policy approach described in the NZWS:2002. One of the opportunities open to the PCE is to examine New Zealand's poor performance relative to international benchmarks and the trajectory of progress enjoyed by other nationalities.

One way of doing this is to examine international reporting, such as *'Recycling – who really leads the world? Identifying the world's best municipal waste recyclers'* (Eunomia & Resource Media, 2018), which compiles information sourced from Eurostat and the OCED. The first and most basic observation, is that New Zealand (whether on the basis of questionable data or poor performance or other factors?) doesn't feature in the 'Top 25 MSW Recyclers' (based on 'reported recycling rate', pg. 4) globally. Secondly, it is interesting to examine the background of the top three global MSW recycling (based on the 'adjusted recycling rate' methodology, pg. 7), namely: 1- Germany, 2- Taiwan and 3- Wales.

Germany is acknowledged for its global leadership in introducing the national 'Green Dot' system, which pioneered EPR for packaging waste. The 'Green Dot' system works because consumers identifying the logo understand that the manufacturer of the product contributes to the cost of 'end-of-life' recovery and recycling. This EPR system is financed by the Green Dot licence fee paid by the producers of the products. The fee structures of the Green Dot system, encompass the various material types used in packaging (e.g. paper, plastic, metal, wood, cardboard) as well as the costs associated with the respective collection and recycling methodologies. The Green Dot scheme works across curb-side recycling systems provided by local authorities and via containers

in public places (i.e. such as car parks and outside supermarkets). As well as actualising producer responsibility, the Green Dot system incentivises the reduction of packaging, as this saves the cost of licence fees.

In respect of Taiwan's success, in the document *'Zero waste policy for municipal solid waste in Taiwan'* the Taiwan Environmental Protection Administration (TEPA) outlines how their approach followed *"some developed countries 'zero waste' vision"* (Soon-Ching, Shou-Chien, & Ying-Ying, 2007). The TEPA is described as initiating a *"zero waste plan which sets a long-term goal of 75% reduction of MSW by the end of 2020"*¹⁶⁵ Taiwan's world leading resource recycling rate is described as an indication that the county is achieving *"progress towards the goals of Zero Waste program"*¹⁶⁶.

In being based in the UK, the authors of the *'Recycling – who really leads the world?'* report had a particular interest in exploring the national performance of Wales, as this exemplar is not only is this world leading, but the trajectory of progress is remarkable. Wales 'recycling rate change' when plotted relative to that of Germany, shows an a rapid increase from less than 10% in 2000 to over 60% in 2015 (Eunomia & Resource Media, 2018 pg. 11). The authors conclusions include, *"Wales' continuing ambition could see it take top spot... The challenge is on for the rest of the UK to catch up"* (Eunomia & Resource Media, 2018 pg. 12).

Critically, in respect of the New Zealand context where a zero waste strategy was abandoned, the overarching strategy driving Welsh progress is entitled *'Towards Zero Waste'*¹⁶⁷ (TZW). An independent commercial commentary discussing the changing business environment details this as: *"Wales aims to become a zero waste nation by 2050... The Welsh Assembly Government (WAG) has also set a target for Wales to recycle 70% of its waste by 2025"*¹⁶⁸.

164 From the 2017 Briefing to the Incoming Minister for the Environment – 'ENVIRONMENT PORTFOLIO' point 65 pg. 14 see: <https://www.beehive.govt.nz/sites/default/files/2017-12/Environment.PDF>

165 NB: based upon 2001 MSW volumes

166 From: Taiwan's 'Zero Waste and Resource Recycling Promotion' <https://www.epa.gov.tw/ct.asp?xItem=61481&CtNode=35684&mp=epaen>

167 See: http://gov.wales/topics/environmentcountryside/epg/waste_recycling/zerowaste/?lang=en

168 See: <https://www.pwc.co.uk/finance/sustainability/2050-zero-waste-target-set-for-wales.html>

Even this cursory evaluation New Zealand's waste management performance relative to international good practice raises numerous concerns and critical questions, which warrant a more comprehensive and thorough examination by the PCE. Specifically, this cluster of international good practice and success, highlight the importance of PS/EPR systems for packaging (Germany) and the positive role of the aspirational targets and assertive policies, associated with the zero waste policy framing (Taiwan & Wales). In New Zealand's case we have abandoned the latter and aligned to the urging of the packaging lobby have steadfastly resisted the former. As a consequence, New Zealand's waste management performance ranks amongst the worst in the OECD^{78&190}. The issues that New Zealand currently faces as a result of the roll-out of China's successive 'Green Fence', 'National Sword' and 'Blue Sky' import policy applying to recycled materials (WasteMINZ & Eunomia Research & Consulting, 2018) and the complexity and urgency this invokes, is a predictable conflation of the longstanding systematic failure of environmental leadership in respect of waste.

In stark contrast to this failure, it is interesting to examine to spheres New Zealand waste management, which have been accorded international recognition

and acclaim. Under the heading "Auckland crowned zero-waste world champ", it was reported¹⁶⁹ that Auckland Council has been accorded global recognition for its efforts to reduce waste. The 'Cities4ZeroWaste' prize is part of the C40 Cities Bloomberg Philanthropies Awards, which recognise cities that demonstrate climate action leadership¹⁷⁰.

Amidst the growing sense of concern around New Zealand's overall lack of environment imperative and authentic eco-action¹⁷¹, the final word in the waste sphere deserves to go to another standout, internationally recognised, 'Kiwi' environmental achiever, the grass-roots Para Kore¹⁷² programme. In 2016, Para Kore was selected from over 170 participating countries and over 1500 project submissions, as the winner of the 'Energy Globe Award', which is one of the most prestigious environmental prizes worldwide¹⁷³. In contrast to the political abandonment, by central government, of zero waste as a driver for policy and progress, the recognition awarded to Para Kore, not only highlights excellence, but points to the way forward for New Zealand as a whole. 'Te Reo Pūtaiao', the Māori Language Dictionary of Science offers the following definition¹⁷⁴ of 'Para Kore': - "Zero Waste"¹⁷⁵.

169 WasteMINZ e-news 8 December 2017. Edition 413

170 See: <http://www.c40.org/awards/2017-awards/profiles/119>

171 See: <http://www.pce.parliament.nz/our-work/news-insights/environment-commissioner-calls-for-bold-leadership-on-climate-change>

172 For more information see: <http://www.wasteminz.org.nz/pubs/case-study-para-kore-zero-waste-on-marae/>

173 See: <http://www.scoop.co.nz/stories/PA1510/S00479/new-oecd-environment-report-damaging-for-nzs-reputation.htm> and <http://www.pce.parliament.nz/our-work/news-insights/commissioner-releases-mixed-report-card-on-environment> and <http://www.scoop.co.nz/stories/AK1608/S00078/para-kore-wins-energy-globe-award.htm> and <http://www.listener.co.nz/current-affairs/climate-change-current-affairs/great-climate-change-rort/>

174 Source: Te Reo Pūtaiao, a Māori language dictionary of Science, written and published by He Kupenga Hao i te Reo. (2009).

175 It is also important to recognise that both Auckland Council and the Para Kore programme have been recipients of funding from the waste levy. The former as part of the statutory allocation to TAs and the latter via the contestable WMF. Whilst this submission is broadly critical of the performance of past Ministers and the MFE in managing the WMA:2008, it must also be recognised that amongst the numerous indicators of concern, a range of success stories also exist. In these two instances, it is positive to recognise the correlation with zero waste policies and programmes.



Summary - Conclusion

A call for urgent action by the PCE

There is a strong case for the Parliamentary Commissioner for the Environment (PCE) to once again research and report on waste management in New Zealand. More than 10 years has past, since the *'Changing Behaviour: Economic Instruments and the Management of Waste'* report and the negative consequences of not addressing key elements of the PCE's concern and recommendation, are now apparent. This neglect persists, in spite of numerous red flag issues and emerging data which indicates that waste management in New Zealand (evident in the subject period, 1999 – 2017), offers a case study in policy failure and political mismanagement, spanning successive government regimes. As a subset of the international scenario, now being described, even by mainstream commentators as a 'crisis', the rising public concern around New Zealand's increasing rather than minimising waste, clearly exceeds the threshold justifying a PCE investigation.

In real terms, waste management is about, far more than, what we throw away. In the words of Pulitzer Prize winning author Edward Humes, waste connects to *"everything: energy, food, pollution, water, health, politics, climate, economics. Trash is nothing less than the ultimate lens of our private lives, our priorities, our failings our secrets and our hubris"* (Humes, 2012). When countries manage waste well, in essence, they are managing the way resources and toxic hazards, flow through the economy. Today waste can be interpreted as the result of the 'take-make-waste', lineal socio-economic design setting of the modern, globalised economy, aka, the *'throwaway society'* (Ellen MacArthur Foundation, 2013; Jessen, 2003). Waste can be understood as a physical artefact of *"inadequate thinking"*, which fundamentally evidences *"unsustainability of society"* (Seadon, 2010).

Through a future focused, sustainable design lens, unless waste is non-toxic, biodegradable and able to be recovered and assimilated as a technical nutrient for cyclical economic or biological systems, it represents a simultaneous failure of product, production and socioeconomic design (Hawken, Lovins, & Lovins, 1999; McDonough & Braungart, 2002, 2013; Zaman, 2015, 2016; Zaman & Swapan, 2016). Therefore, waste is simultaneously a critical barrier and or conversely an opportunity, to progress towards sustainable development (D. Hoornweg *et al.*, 2012; ISWA, 2009). Any given national waste strategy and associated policies / programme settings, determine which of these outcomes a country visits upon its current and future citizens.

The recent Global Waste Management Outlook (GMWO) report, developed by the International Solid Waste Association (ISWA) and the UNEP, has declared the goal of 100% collection and controlled disposal for urban populations globally (D. C. Wilson *et al.*, 2015b). The driver for this imperative are keynote international reports which describe waste issues as rising to the point of becoming a public and environmental health emergency, warranting an urgent and comprehensive response (D. Hoornweg *et al.*, 2012; Mavropoulos *et al.*, 2017; Mavropoulos, Newman, & ISWA, 2015; UN-Habitat, 2010). The ISWA programme seeking to rectify this situation (Mavropoulos *et al.*, 2017) has set challenging and critically important goals¹⁷⁶, which represent a key first step toward achieving the benchmarks envisioned in modern 'integrated solid waste management' (ISWA. & ABRELPE., 2003; UNEP, 2009).

176 For example: *"As an initial step, aim to: – achieve 100% collection coverage in all cities with a population more than 1 million, – eliminate open burning of municipal solid wastes and similar wastes, and – close large open dumps, replacing them with controlled disposal facilities"* (D. C. Wilson *et al.*, 2015b) see: https://www.iswa.org/fileadmin/galleries/Publications/ISWA_Reports/GWMO_summary_web.pdf.

The overarching sustainable development benefits linked to achieving this GWMO goal, are reported as:

- The opportunity for collective delivery of 50% of the UN sustainable development goals (SDGs),
- 15 to 20% reduction in global GHG emissions,
- Reduction in the 1.3 billion t/yr food waste (which is sufficient to eliminate food poverty twice over),
- Cleaner, better governed and more successful cities globally
- Potential for an estimated 9 to 25 million green jobs in a more circular economy.
- Most significantly the estimated cost of inaction is calculated at 5 to 10 times the cost of the investment required to achieve the GWMO goals (D. C. Wilson *et al.*, 2015b).

This data highlights the inextricable interrelationship between waste management, addressing climate change and sustainable development¹⁷⁷. Interestingly, the GWMO's goal of a 100% collection and 100% end to open dumping, replicates the exact same motivational strategy, which underpins the establishment of a zero waste goal¹⁷⁸. This highlights the intellectual fallacy and improbity of vested interest groups that incorrectly characterised the zero waste movement's goals as extreme, irrational and fundamentally unfit as part of any "serious waste policy" (Clough, 2007). Similarly, the proposal by Norway, at a recent UN environment summit, 'Zero Tolerance' approach for plastic pollution¹⁷⁹ is a reminder of the value of simple stark symbolism, when seeking to galvanise action on extreme issues.

It is also important to recognise that the GWMO baseline goals and projected benefits, are just a starting point for the transformational shift into the holistic lifecycle perspectives, called for in various

sustainable materials management discourses, such as: 'Circular Integrated Waste Management Systems' (CIWMS), zero waste and a circular economy (Cobo, Dominguez-Ramos, & Irabien, 2017 in press; Ellen MacArthur Foundation, 2013; Murray, 2002; Silva, Rosano, Stocker, & Gorissen, 2017; Zaman & Lehmann, 2011a). This perspective, relative to the projected GMWO value proposition, puts in sharp contrast the self-imposed opportunity cost of New Zealand abandoning, the once internationally regarded exemplar of leadership in zero waste policy, practice. This policy undermined the future outcomes which might have been generated by the, then 70% of New Zealand local councils, who had taken up this challenge (ZWNZ Trust, accessed 2015).

When compared to other aspects of the 'sustainability challenge' (such as energy and transport and in New Zealand's case agricultural GHG emissions¹⁸⁰) addressing waste management problems is doable, cost effective and popular. Furthermore, despite the strategic global campaign of opposition, the emergence of many examples of zero waste innovation and best practice, illustrate that this is one sphere of environmental action, where significant progress and success can be generated quickly. Whilst, the zero waste movement has its origins in the commercial context, there are many global examples of local problem solving and positive impacts and progress¹⁸¹ involving the informal sector and grass roots-community based activity. This is equally true in a New Zealand context, where the 'Zero Waste Network' (ZWN aka CRN) represents a largely unrecognised and underutilised repository of excellence, experience and knowledge. A zero waste policy is both analogous and synergistic with the movement for a circular economy and the zero waste 'success factor', can positively influence the community mind-set further supporting other critical sustainable development actions.

In simple terms, scientific literature supports the view that zero waste is:

177 See: "Environmental sustainability is the core issue that will need to be addressed for development to focus on human well-being and yet stay within the limitations of planet's capacity. Environmentally sound waste management is one of the key elements for sustainable development" Wilson, D. C., Rodic, L., Modak, P., Soos, R., Carpintero, A., Velis, C., . . . Simonett, O. (2015). Global Waste Management Outlook. Retrieved from Austria:

178 Albeit at the inverse percentile and in a differing, but related sub-context and promulgated by the conventional waste management industry's peak international organisation, rather than by zero waste community on the periphery of economic influence.

179 See: <http://www.bbc.com/news/science-environment-42190678> which observes that "The UN has already committed to substantial reduction of plastic waste by 2025, but a resolution led by Norway says the long-term aim must be for zero plastic waste." NB: It is encouraging heat the new New Zealand government has recently signed the International 'CleanSeas' campaign <http://www.scoop.co.nz/stories/PA1803/S00113/new-zealand-signs-up-to-international-cleanseas-campaign.htm>

180 In respect of this challenge See 'NZ seventh-worst on emissions of 41 nations' <http://www.radionz.co.nz/news/national/331646/nz-seventh-worst-on-emissions-of-41-nations>

181 See: Allen, C., Gokaldas, V., Larracas, A., Ann Minot, L. A., Morin, M., Tangri, N., . . . Walker, B. (2012). On The Road to Zero Waste: Successes and Lessons from around the World. GAIA, 1-88. <http://www.no-burn.org/> + UN-Habitat. (2010). Solid waste management in the world's cities. London: Earthscan. + Van Vliet, A. (2014 A, B & C). Zero Waste Europe Case Study 1: The Story of Capannori. & Case Study 2: The story of Argenton. Case Study 3: The story of Vrhinika 'Slovenian trailblazers'. Netherlands: Zero Waste Europe. Retrieved from <http://www.zerowasteurope.eu/> + ZeroWIN. (accessed 2013). Zero Waste Industrial Networks Project. from <http://www.zerowin.eu/>

- Successful (Allen *et al.*, 2012; Ecocycle Solutions, 2017a, 2017b; Rosa, 2018; Rosa & Chatel, 2016a, 2016b; Simon, 2015a, 2015b, 2015c; UN-Habitat, 2010; Van Vliet, 2014a, 2014b, 2014c).
- Scientific (Pietzsch, Ribeiro, & Fleith de Medeiros, 2017; SRMG Inc, 2009; Zaman, 2012, 2013, 2014, 2015, 2016; Zaman & Lehmann, 2011a, 2011b, 2013; Zaman & Swapan, 2016).
- Learning & Evolving (Pietzsch *et al.*, 2017; Song, Li, & X, 2014; Zaman, 2015; Zero Waste Europe, 2017).
- Controversial in Challenging the Status Quo (Silva, Stocker, Mercieca, & Rosano, 2016; Zaman, 2015; Zaman & Swapan, 2016).
- Measurable [i.e. the 'Zero Waste Index' (ZWI)] (Zaman, 2013, 2014; Zaman & Swapan, 2016).
- Socially & Culturally Beneficial (Hogg & Ballinger, 2015; ILSR, 2002; S. Kathiravale & Yunus, 2008; S Kathiravale, Yunus, & Abu, 2007; Living Earth Foundation, accessed 2015; D. C. Wilson *et al.*, 2015b).
- A Good Economic Investment (Hood & Ministry of Environment British Columbia, 2013; SRMG Inc, 2009; Zaman, 2016; Zaman & Swapan, 2016).

The zero waste sector's growing track record of rapid 'issue turnaround' (i.e. reaching +75% of stated goals in relatively short timeframes) makes this a priority sphere of activity for addressing climate change and progressing towards the UNs SDGs and a more circular economy (Lombardi & Bailey, 2015; Zaman & Swapan, 2016). To put these zero waste success stories in perspective for New Zealand, where agriculture is the 2nd largest source of greenhouse gas emissions, reports suggest that few immediate scientific solutions exist to reduce these biologically derived emissions¹⁸². This challenging outlook stands in stark contrast to, the 'success factor' associated with the suite of market based economic interventions and policy instruments advocated by zero waste, which are now proving internationally, to drive environmental progress.

182 "There's not a convenient technology to hand that can be used to reduce emissions..." James Renwick Victoria University. "...tough to ask someone to pay for something they could not do anything about". Anders Crofoot, Federated Farmers NZ (Source: Gudsell, K. (2015). Is it time to include farming in NZ's ETS? Radio New Zealand, (27 Oct 2015). <http://www.radionz.co.nz/news/national/288062/is-it-time-to-include-farming-in-nz-s-ets>. "Effective methods of inhibiting methane and nitrous oxide pollution from farm animals (...20% to be considered useful) are at least five to seven years away, the Pastoral Greenhouse Gas Research Consortium says" Source: RNZ. (2015). Push to reduce rural greenhouse gases. Radio New Zealand, 27 Oct 2015. <http://www.radionz.co.nz/news/rural/288130/push-to-reduce-rural-greenhouse-gases>.

183 Ref: <https://www.beehive.govt.nz/feature/briefings-incoming-ministers-environment> See points 65 – 67 – 70 pg. 14 <https://www.beehive.govt.nz/sites/default/files/2017-12/Environment.PDF>

184 NB: the in the foreword by the Associate Minister for the Environment of the 'Review of the Effectiveness of the Waste Disposal Levy 2017' (MfE, 2017c) the reported figure is \$192 million.

185 As above point 73 & 74 pg. 15

There is now mainstream recognition¹⁸³ that: *"New Zealand's current patterns of production, consumption and disposal are unsustainable"* and that, *"the subject of waste is a good way to engage New Zealanders in environmental conversations; waste is highly visible in people's everyday lives; it is emotive"*, and that, *"in the last eight years, the government has invested more than \$179 million¹⁸⁴ in waste minimisation initiatives... but waste levels continue to rise..."* (MfE, 2017a). This appears to be prompting a promising reframing of the policy rhetoric to that of 'transitioning to a circular economy' and recognising the need for a 'new, dynamic and whole government approach'¹⁸⁵. Given this juncture, it is important to recognise that actually all progressive movements in the sustainable waste management sphere, are underwritten by and seeking to actualise the same fundamental design concept. Zero waste, the circular economy, industrial ecology / symbiosis and bioeconomy movements all reject environmental exploitation, pollution, linearity and are all framed in the ecosystem metaphor of infinite circularity.

A 'circular economy' is described as: *"regenerative by intention and design... eliminates the use of toxic chemicals... aims for the elimination of waste through the superior design of materials, products, systems, and, within this, business models"* (Ellen MacArthur Foundation, 2013). Key architects of and advocates for a circular economy, note: *"nature operates according to a system of nutrients and metabolism in which there is no such thing as waste"* (McDonough & Braungart, 2002). Similarly, the discipline of industrial ecology, like zero waste, also seeks to emulate the 'ecosystem metaphor' (Isenmann, 2008; Korhonen, 2004) which recognises that *"nature is a zero waste system ... Nature recycles everything..."* (Snow & Dickinson, 2001; Tobiasson, P). In rejecting the *"concept of waste"* (Graedel & Allenby, 2010) and seeking to loop the *"technosphere back on to itself"* (Bourg & Erkman, 2003) industrial ecology can be seen as combining a bio-mimicry of natural systems (Benyus, 1997) and the syntax of recycling, in progressing the *"ultimate industrial ecology goal of zero waste"* (WMAA & AIEN, 2013).

Similarly, the literature and practice attributed to the global bioeconomy shares in and illustrates the ubiquity, ideal and rhetoric (i.e. 'green', 'cycles', 'zero', 'nature', etc) of the sustainability construct (El-Chichakli, 2016; Loiseau *et al.*, 2016; Maciejczak, 2015; Pfau, Hagens, Dankbaar, & Smits, 2014). Most specifically this connection and overlap is demonstrated in the bioeconomy seeking to reconceptualise and enhance bio-technologies / processes¹⁸⁶ often traditionally utilised to exploit and convert biogenic resources and wastes (Navia & Chamy, 2017; O'Callaghan, 2016; Swinnen & Riera, 2013) and in recognising the potential to contribute toward resolving common issues such as excessive urbanisation, biodiversity and resource exploitation, post-fossil energy and chemical transition, climate change, inequitable and unsustainable economic development (Morganti, 2015; J. C. Philp, Ritchie, & Guy, 2013; Seghetta, Hou, Bastianoni, Bjerre, & Thomsen, 2016; Zuin, 2016). In the same manner as the theories and practices of zero waste, industrial ecology / symbiosis and a circular economy are reflected national and international policy documents (McCormick & Kautto, 2013), others report a growing legacy of publications¹⁸⁷, seeking to realise 'sustainability' benefits, spanning environmental economic and social perspectives, on the bioeconomy.

Given evidence of commonality, integration and a broad recognition of a generalised vision of zero waste (CIWM, 2014; EC, 2014; EEB, 2015; Zaman, 2015), it appears the crucial question is, not which of sustainability's semantic tribes you pick, but pragmatically how can society manage this transition toward zero waste? How can barriers to progress be overcome, what tools can leverage this change (Pollans, 2017) and how steep should the trajectory of progress be? Zero waste argues, not only for radical change making policies and programmes, but also for structuring an ongoing continuum of aspiration, beyond the current boundaries of known technical and socio-economic, possibility. The UNEP specifically argues for this continuum of aspiration and identifies the role that a "zero waste target" plays

in inciting us to continually responding to the: "never-ending nature of waste management tasks – a recognition that there will always be a need for improvement, and that once one target has been achieved, others, more demanding and difficult, will still remain to be tackled" (UNEP *et al.*, 2013).

It is reassuring that increasingly, national waste policy and practice is understood as, and is integrated into the big picture challenges of environmental sustainability, such as addressing 2030 climate change targets, recently signed at COP21 in Paris¹⁸⁸. However, New Zealand's actual priorities¹⁸⁹ and track-record, currently appear well out of step with international good practice and contemporary science. An inescapable perception is emerging that, New Zealand, at the behest of lobby groups representing polluting industries, historically swapped the success and progress of a zero waste approach, for delay and dysfunction in utilising economic instruments to effectively manage waste. The largely unexamined, true cost of waste eludes the majority of our economic calculus and is still not accurately factored into market pricing. This lack of economic sagacity perversely incentivises the sectors of the economy making and managing waste, at the expense of those emerging sectors, which might otherwise drive an increasingly circular economy (Crocker & Lehmann, 2012).

Enabling the makers and managers of waste, to enjoy profitability untroubled by the accounting of their externalised environmental cost, ensures that society remains unnecessarily shackled to the least priorities at the bottom of the waste hierarchy. Utilising market based economic instruments so that market prices more accurately internalise environmental and social reality, remains an underutilised opportunity to empower the universally recognised top priority actions expressed in the waste hierarchy. Given the mounting evidence and serious environmental consequence of New Zealand's poor performance in managing waste, further examination and guidance from the PCE appears more than justified.

186 For example, the cascading levels of extraction of initially high-value-added chemicals and products, then bio-materials and finally 100% bioprocessing of residual biomass via what is described ideally as a 'zero waste' (Asveld, van Est, & Stemerding, 2011; de Besi & McCormick, 2015; Matharu, de Melo, & Houghton, 2016; Navia & Chamy, 2017) and further a CO₂ biosequestration, closed loop, zero emission *bio-refinery* model (Mohan, Butti, Amulya, Dahiya, & Modestra, 2016; Mohan, Modestra, Amulya, Butti, & Velvizhi, 2016; Mohan, Nikhil, *et al.*, 2016)

187 The author cites (EuropaBio, 2011; European Commission, 2012; OECD, 2009; White House, 2012). Additionally, because of the positive opportunities recognised in enhancing variously the: global (Pfau *et al.*, 2014), national, regional (de Besi & McCormick, 2015; Kircher, 2012; McCormick & Kautto, 2013), local and SME scales of the bioeconomy (Henry, Trigo, & Hodson de Jaramillo, 2014; Navia & Chamy, 2017), as well as specific bioeconomic sectors (Johnson & Altman, 2014; Schmid, Padel, & Levidow, 2012) a spectrum of industry reporting and academic literature is now emerging around keynote organisations (El-Chichakli, 2016), strategies, technologies (Asveld *et al.*, 2011; O'Callaghan, 2016), product (J. Philp & Bartsev, 2013; J. C. Philp *et al.*, 2013) and production (J. Philp & Bartsev, 2013) level initiatives.

188 "In July 2015, the New Zealand Government announced that our post-2020 climate change target is to reduce greenhouse gas emissions to 30 per cent below 2005 levels by 2030." See: <http://www.mfe.govt.nz/climate-change/reducing-greenhouse-gas-emissions/new-zealand%E2%80%99s-post-2020-climate-change-target>

189 See: 'Why is waste not a priority? It should be!' Paul Evans CEO of WasteMINZ, Revolve Magazine August 2017 Issue 164.

Key recommendations

Proposals for a future PCE 'waste management in New Zealand' Report

This NZPSC submission argues that it is time for New Zealand to upcycle our '100% PURE' mythology¹⁹⁰ and to convert this into a 'clean green' circular economic reality. The NZSPC believes that a critical step will be for the PCE to act on behalf of all New Zealanders and independently examine and report on waste management in New Zealand.

Towards this end, The NZPSC makes the following recommendations for the design of the PCE research and reporting process.

- Be open, transparent and engage a wide representation of views – especially those of young New Zealanders, who will inherit the unresolved environmental issues of today.
- Draw upon local and international scientific perspectives to provide a robust knowledge basis for examining the alignment and appropriateness of New Zealand's waste strategy, policy settings and programme implementation.
- Draw upon relevant international precedents in order to compare and contrast an appropriate selection of key performance indicators for New Zealand's national waste and material resource management.
- Broadly re-examine New Zealand's utilisation of economic instruments, alongside specifically examining the employment of product stewardship / extended product responsibility approaches to address market failure and drive progress in waste management.
- Examine New Zealand's current approach to collection, analysis and reporting of waste management and material resource flow data and discuss opportunities for improvement.
- Examine the model by which the WMA:2008 is being implemented. For example, considerations such as the separation of governance / executive vs management functions, the quantum and balance (internal vs external agency) of human resources and the composition of required knowledge, skills and experience.
- Examine the relational status and level of influence of vested interest lobby groups (particularly those representing polluting industries) in shaping New Zealand waste management policies and programmes, and explore ways to ensure these better correlate with the wishes of local government and the New Zealand public.
- Develop an holistic national cost benefit analysis (encompassing a balance of social, economic cultural and environmental considerations) which models a reasonable selection of waste diversion and other relevant targets.
- Articulate a politically durable, future proof, national vision to underwrite ongoing material resource – waste management strategies for New Zealand.

¹⁹⁰ Discussed in 'Recycling in New Zealand: not so green, not so clean' (Hoffart, M. 2018) see: <http://pureadvantage.org/news/2018/02/27/recycling-in-new-zealand-not-so-green-not-so-clean/>

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