BALT

Building industry capability to participate in a circular economy in Tasmania

A RESPONSE TO THE TASMANIAN DRAFT WASTE ACTION PLAN

BALT

Business Action Learning Tasmania
Supporting self-reliant industry development, with diverse companies cooperating to improve their profitability, develop their people and grow the Tasmanian economy.

This response to the Tasmanian draft Waste Action Plan focuses on the critical role of industry, particularly the manufacturing industry, as the driver of the circular economy.

In 2018, BALT launched the Business Resource Efficiency Program (BREP), in partnership with the Tasmanian Climate Change Office. BREP is a key action of *Climate Action 21: Tasmania's Climate Change Action Plan 2017-2021*. Throughout 2019, eleven businesses in the north and north-western regions of Tasmania have been working together, learning with and from each other, to reduce their consumption of resources and minimise waste streams. Concepts of sustainable design, including product lifecycle assessment and closed loop manufacturing, have been applied across a relevant cross-section of industries contributing to Commercial & Industrial (C&I) waste streams in Tasmania; agriculture, hospitality and tourism, food and beverage production, service industries (engineering), pharmaceutical goods, and general manufacturing in a range of materials (ie. visual communication, metal products, fibre composites). The outcomes will be presented at a Review Forum in Launceston on 6 December 2019.

Since 2010, Business Action Learning Tasmania (BALT) Ltd has initiated over 30 successful business improvement projects in a range of industry sectors in Tasmania. The award winning Lean Action Learning program has delivered significant sustainability outcomes for participating business, using a collaborative approach to develop solutions[1].

The draft Waste Action Plan proposes to develop capacity to support the establishment of recycling and reuse businesses, pursuing external markets. It is BALT's view that this support would be better directed toward developing the capability of existing businesses to 'close the loop', with support from the local manufacturing industry.

BALT has undertaken independent research over the past decade to inform the development of strategies for regional, economic and workforce development in Tasmania[2]. Lean Action Learning and BREP have attracted international attention and BALT has been invited to contribute to a special issue of an international peer-reviewed journal, Action Learning Research and Practice, titled *Action Learning and Social Change*.

This response to the Tasmanian government's draft Waste Action Plan is based on this body of research and the early outcomes of BREP.

[1] Bell Bay Aluminium, 2013 Sustainable Development Report, page 12
[2] https://businessactionlearningtas.com.au/publications/

1. Moving to a Circular Economy: Government Priorities and Key Sectors

What are the key opportunities for reducing waste, developing our resource recovery industry and shifting to a Circular Economy?

In early 2018, as the first stage in the BALT Business Resource Efficiency Program (BREP), BALT prepared a program mapping and gap analysis report for the Tasmanian Climate Change Office. The analysis sought to identify:

- Key resource efficiency strategies and opportunities that SMEs[3] want to achieve;
- Sectors where the greatest resource efficiencies can be realised;
- At least two suitable regions in which to hold the the Business Resource Efficiency Program;
- An identified network of eligible SMEs in each region.

The report concluded that the key resource efficiency strategies and opportunities that SMEs want to achieve are directly related to reductions in operational costs. Therefore the strategies put forward should focus on opportunities for cost reductions achievable through improved operations, as waste diverted from landfill is unlikely to generate significant cost savings.

The recommended target industries included major producers of Commercial & Industrial (C&I) waste, particularly organic waste, ie. hospitality, food retailers, food production and processing.

In December 2019, the outcomes of BREP will be presented and an evaluation report prepared for the Tasmanian government. Early results show that there are significant opportunities for industry, particularly the manufacturing industry, to support the development of the circular economy in Tasmania. All types of manufacturing and associated industries are well placed to modify, extend and diversify their current offerings, to access and/or create new markets in secondary products.

Examples include:

- Disassembly of organic and technical waste streams for secondary product manufacturing
- Substitution of virgin materials to utilise technical waste streams produced in-house or by other industries in the region
- Processing of organic and technical waste streams to increase material value, as defined by the customer, and create efficiencies, eg. reduce volume or weight for transport
- Application of principles of sustainable design for new product development, eg. dematerialisation, servitisation, and design for disassembly, repair and/or reuse
- Conversion of organic waste to compost or bio-fuel products

[3] SMEs in this case are defined as small to medium enterprises with less than 200 full-time equivalent employees

A number of recommendations will be put forward in the final evaluation, however key issues and barriers emerging for Tasmanian companies to realise these opportunities include:

- Low volumes of waste produced are less attractive to potential buyers
- Transport availability and cost, particularly for sensitive wastes
- Lack of influence on overseas suppliers due to relatively low purchase volumes
- Availability/prioritisation of capital budget for dedicated equipment
- Availability/prioritisation of resources for research and development
- Lack of incentive and slow returns on investment
- Limited influence on and capability in product and manufacturing design

2. Governance

What are the primary waste management and resource recovery roles and responsibilities of governments, industry and the wider community?

Government

BALT consulted widely with all levels of government during the program mapping and gap analysis stage of BREP and has formed a view based on the needs of industry.

Local government needs to engage directly with industry to ensure that businesses are made aware of the options available in their region and provide customised advice and strategies to achieve zero waste. Industry relies heavily on the advice of commercial waste management providers, contracted by local government, which can cause conflicts of interest and knowledge gaps. The intelligence collected through local industry engagement can be fed back to other levels of government to inform research and development initiatives, policy development and funding design. The regional waste management groups, formed by local governments, are well placed to perform this role.

While the nature of Tasmania's political landscape supports the idea of regional governance, greater cooperation across the state would enhance this approach considerably for industry. State government has a role to play in:

- Adjudicating a state-wide strategy that promotes efficient waste management across the three regions
- Developing specific policy instruments and economic levers to influence the behaviour of the waste management industry, local government, the community and general industry
- Advocating at a federal level for specialised programs to meet the needs of Tasmanian industry
- Educating consumers and supporting industry workforce development in sustainable design and operations

All levels of government have a role to play in demonstrating leadership through procurement policies and promotion of good practice. As a customer of industry, government has considerable purchasing power to influence both internal and external suppliers.

Preference should be given to local products and services that utilise recycled materials and suppliers that meet international standards for sustainable practice.

Industry

The role of industry is to develop innovative products and services that facilitate the circular economy, influence customers and supply chains to participate, and provide feedback to government on policy instruments and economic levers.

Concepts of life cycle assessment and product stewardship are not widely understood or practiced by manufacturers in Tasmania. However, there is one notable exception. Envorinex has established vertically integrated plastics recycling facilities in George Town. The system developed is unique in the world, in that there are few, if any, examples of manufacturers recycling recovered materials and making secondary products of equal or higher value than the original product. Envorinex have invested heavily in infrastructure and research and development to build upon their existing knowledge and experience in plastic injection moulding. As demonstrated by Envorinex, it is the role of the manufacturing industry to use their expertise in materials and processes to lead the transition to a circular economy.

Community

The wider community has a role to play in the circular economy as end consumers and primary contributors to municipal waste streams. Preferencing sustainable products and services creates demand and increases returns for manufacturers applying sustainable design principles. Correct separation and preparation of waste at points of use increases the value of materials and decreases required downstream processing. Community activism, such as returning packaging to retailers and manufacturers, can change cultural expectations of waste and influence the supply chain.

3. Data, Innovation Networks and Resource Recovery Targets

What are your key data and information needs on waste and resource recovery?

A state-wide Material Register, including types and volumes of input and output materials and their location would assist industry to understand the secondary market and target their offerings to suit. The register could include virgin material inputs, recycled material available for substitution, and waste streams available for recycling. Manufacturers can search for substitute recycled materials, or identify potential uses for waste streams. Analysis of virgin material use can identify the size and value of potential markets and stimulate investment in the development of new materials from existing waste streams.

The register could be cross-referenced with granular data from landfill operators, including material types and origin, current recovery rates and ‘problem’ wastes.

The Material Register could be populated directly by industry and function as a virtual ‘marketplace’ or exchange for the Tasmanian circular economy.

How can we best use existing research and innovation networks, or establish new networks, to help address our waste and resource recovery challenges?

Research in network development suggests that it is better to build upon existing networks and encourage collaboration and knowledge sharing rather than establish entirely new networks. In cluster theory, this is referred to as *antecedence*[4]. Rewarding and strengthening early adopters at a local level will reinforce difficult work already done, eg. socialising the concept of waste levies. Attempting to create new networks will disaffect key stakeholders, who have undertaken this work.

Local government, particularly in the north of the state, is driving change in waste management at a regional level, through the initiatives of the regional waste management groups (Northern Tasmanian Waste Management Group, Cradle Coast waste Management Group, Waste Strategy South). The introduction of regional waste levies has been well accepted by industry and indicates that there is an appetite for leadership from these networks.

BALT enhances and promotes existing networks by connecting key individuals and sharing information directly with industry. BALT is a world-first learning cluster with nearly 10 years of experience connecting diverse organisations across all regions of Tasmania. The knowledge flows created have produced significant results for the businesses involved. Early outcomes of BREP demonstrate the value of these connections in driving the circular economy and BALT has in-house expertise in network development, sustainable design and innovation management. The BALT framework for collaboration through action learning and the BREP model can be applied to activate existing networks and further develop relationships across industries, supply chains and regional areas.

What are your views and suggestions on the targets presented above?

BALT supports the targets presented however the strategies for achievement of these targets need to be clearly defined and communicated to key stakeholders.

The Government priorities and industry sectors identified in the Focus Areas and Actions do not explicitly include the manufacturing industry and yet it is this industry that makes many of the products used in the priority industries identified (eg. tourism, agriculture, aquaculture, etc.) and the circular economy is predicated upon 'closed loop *manufacturing'*.

Therefore, it is critical that the manufacturing industry is included in developing a strategy for transition to a circular economy. Any investment in R&D and technology transfer must include direct investment into industry-led solutions, or the end result will be a highly sophisticated theoretical model, with very limited implementation or measurable results against the targets set.

For example, eliminating single use and problematic plastics has been the focus of a number of BREP projects. Contaminated plastics from food processing, composite materials and inherited single-use packaging waste from imported components, are all going to landfill. A

[4] The Cluster Initiative Green Book, Sölvell 2003, page 17

range of potential solutions have been investigated, some of which have been implemented. Moreover, a deeper understanding of the problem has been formed. This work cannot be done, and therefore the proposed targets cannot be met, without direct input and cooperation from industry.

Which waste streams would provide the best opportunities to make some early progress on the proposed targets?

Commercial & Industrial (C&I) waste is still by far the greatest contributor to landfill in Tasmania.[5] In 2016, the recovery rate of 59% in this category was significantly lower than that for the best state (South Australia) at 85%[6]. Based on this data, industry will be the greatest contributor to waste levies. Given that the key resource efficiency strategies and opportunities that Tasmanian businesses want to achieve are directly related to reductions in operational costs, the originators of this waste stream can be influenced by economic levers. Reinvesting funds collected into industry-led solutions will counteract increased costs to business and incentivise rapid innovation.

4. Infrastructure Planning

What do you consider are the highest priority infrastructure requirements for waste management and resource recovery in Tasmania?

An opportunity exists to achieve zero waste by following the South Australian example and assisting Cement Australia at Railton to convert to alternative fuels. Bio-fuels from forestry residues and agricultural waste combined with aggregated residual wastes from recycling (ie. “problem” wastes such as fibre composites and highly contaminated waste) could be transformed into Processed Engineered Fuel (PEF) and substituted for coal. This would require significant investment however supporting infrastructure such as rail access are already in place and establishing a PEF facility will create new employment opportunities to offset future job losses in the Tasmanian coal industry.

For smaller businesses, a key inhibitor in pursuing zero waste is the need for capital investment in infrastructure to process waste streams into higher value materials, or develop new products to eliminate or repurpose waste.

Composters, crushers, shredders and perforators are available for purchase off-the-shelf and capital costs range from $3,000 to $30,000. BREP participants have chosen to invest in this equipment, in one case using funding made available under a Northern Tasmanian Waste Management Group grant, however returns on these investments are slow and the cost-benefit is low. In NSW, local governments have established fleets of equipment for lease to local businesses at very low cost, which can be easily offset by reduced waste disposal costs.

[5] Blue Environment and Randell Environmental Consulting, 2018, National Waste Report 2018, p.59, Figure 48

[6] Department of the Environment and Energy & Blue Environment Pty Ltd, 2016, The Australian National Waste Report 2016, p.16, Figure 11

Innovative technology solutions developed in Tasmania, and considered by BREP participants, include a dehumidifier to dry sawdust for bio-fuel and drone swarms to eliminate plastic bird nets. Estimated costs of implementation are between $100,000 and $1m. Funding directed to reduce financial risk, such as low cost loans or subsidies, would encourage industry to invest in this type of new product development to support the circular economy. These products, in themselves, become exportable innovations.

5. Support Resource Recovery across Industry

How can governments, businesses and the community best support the development of the resource recovery industry in Tasmania?

Everyone has a role to play (see Section 2) in developing the circular economy in Tasmania. The resource recovery industry must include all stakeholders when developing solutions. It is important to remember that the resource recovery industry has a vested interest in maintaining profits and much of this is derived from the transport and on-selling of waste. Eliminating waste, or finding more cost effective methods for dealing with waste in-house, may not be in the best interests of commercial operators. The resource recovery industry must be viewed as a servant of general industry and would serve better as a partner or 'broker' of materials, rather than a solutions provider.

6. Education and Community Engagement

Are you aware of any existing education materials that could be adapted for the Tasmanian context? (Please provide examples).

Business Resource Efficiency Program, BALT & TCCO

The Tasmanian Climate Change Office has partnered with BALT to develop BREP, specifically for the Tasmanian context, applying an action learning approach. Action learning builds the capability of participating businesses to develop their own solutions to 'wicked problems'. Collaboration creates knowledge flows across diverse industries, promoting innovation.

In December 2019, BREP will conclude with a Review Forum in Launceston. At the Review Forum, BREP participants will present the outcomes of their individual projects and share the lessons learnt with a wider industry group. Early results are significant and demonstrate the importance of acquiring a deep understanding of the barriers for businesses to achieve zero waste, in order to develop practical solutions to overcome them.

In many cases, shining a light on current practice and facilitating business to business connections has resulted in immediate action. For example, a poultry processor has been sending large volumes of organic waste to deep burial disposal. A BREP site visit to Dulverton Waste Management Centre and conversation directly with the facility manager resulted in the diversion of this waste to compost.

The final stages of BREP include the development of educational tools and resources, which will be made available via the web, these will include:

- A series of videos explaining concepts of resource efficiency
- Case studies of BREP projects
- Waste auditing tools
- A nonconformance reporting tool for capturing waste from rework

BALT education partner, The Action Learning Institute (RTO Provider no. 40676) has undertaken independent research to map BREP activities to Units of Competency from the MSS Sustainability Training Package. Future programs may include nationally recognised vocational qualifications in Sustainable Operations, or a skills set leading to a Certificate IV or Diploma.

BinTrim, NSW EPA

During the waste audit stage of BREP, the facilitator utilised a tool developed by the NSW EPA, called Bin Trim[7]. Bin Trim is an Excel tool, which allows the user to enter estimated waste volumes for various materials and automatically generate an analysis of current and potential recycling.

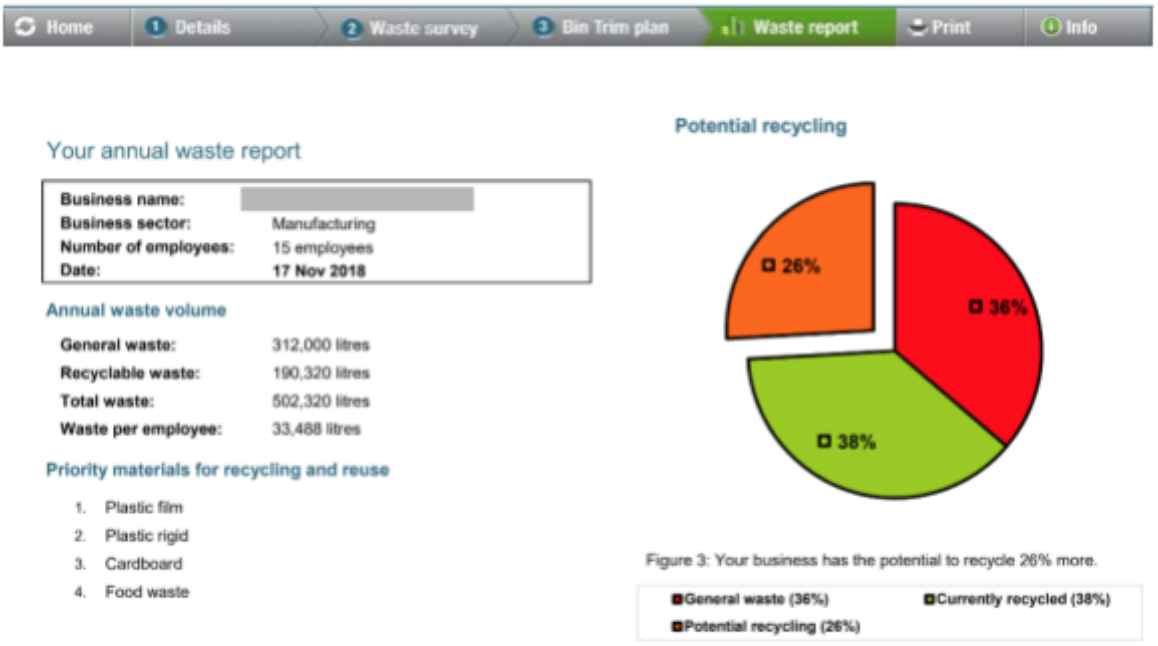

Image: Waste report generated by BinTrim, NSW EPA

The outputs of BinTrim are simplistic and not customised to the Tasmanian context. However, the tool was invaluable in establishing a starting point for businesses to quantify their current waste volumes by material and investigate opportunities for diversion.

[7] Source: NSW EPA website, accessed 7/10/19 https://www.epa.nsw.gov.au/your-environment/recycling-and-reuse/business-government-recycling/bin-trim

7. State and National Policy and Regulatory settings

Which policy or regulatory settings will help us achieve the targets in this Plan and help stimulate the resource recovery industry?

Any policy or regulatory settings adopted must be accompanied by compliance auditing and corrective action. Any unintended consequences must be addressed from a position of continuous improvement. Nonconformance must result in consequences, preferably constructive assistance, such as education or technical advice.

Under these conditions BALT supports the following initiatives:

- **A state waste levy** will have a significant impact on industry prioritisation of waste diversion. There is no stronger incentive for small to medium waste producers to seek alternatives at present. As stated previously, if funds are returned to industry to stimulate activity and pursue the opportunities outlined in Section 1, solutions will quickly emerge. SMEs in Tasmania are entrepreneurial and resourceful but the cost benefits must be clear or they will not be prioritised. Dumping and littering have been identified as unintended consequences of the levy but controls should also be put in place to prevent stockpiling on industrial sites.
- **Government procurement policies** preferencing local products and services that include minimum recycled content or support the circular economy will demonstrate commitment and create demand.
- **Merit criteria for funding grants** should include weighting for recycled content, ISO 14001 certification and/or other substantive contributions to the circular economy.

Do you have other comments on the Draft Waste Action Plan?

BALT welcomes the draft Waste Action Plan and congratulates the Tasmanian government for starting this important conversation.

The draft Waste Action Plan is ostensibly based on the principles of a circular economy. However, the lack of focus on industry and, in particular, the manufacturing industry's critical role in facilitating the circular economy, is a serious omission. BALT is embedded in the manufacturing industry and brings together a diverse cross-section of key sectors, identified in the draft Waste Action Plan, in collaborative projects solving real problems of vital importance.

The lessons learnt through BREP place BALT as a lead organisation promoting the circular economy in Tasmania. There is a clear role for our organisation in education and network development to support the Tasmanian government in delivering a plan for real action.

About BALT

Business Action Learning Tasmania Ltd is a not-for-profit company and a listed charity. BALT's mission is to support self-reliant industry development, with diverse companies cooperating to improve their profitability, develop their people and grow the Tasmanian economy. This mission is built on three pillars; collaborative action learning, achieving important business outcomes, and the awarding of nationally recognised qualifications. The group seeks to achieve this through running programs to implement real business improvement projects with groups of local companies.

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