Waste & Recycling Industry Fire Forum Report

10 August **2017**

Contents

Foreword

Fires in the waste and recycling sector are a major issue for the industry and the community.

The industry participants recognise that action is vital to reduce the incidence and severity of fires and for the success and sustainability of the sector and its ability to serve its important role in society.

The Forum was a great opportunity for those within the sector and other stakeholders to tackle the issue with a collaborative spirit.

We would like to thank all who attended and contributed to discussion. We were heartened by the goodwill and commitment shown by all involved.

As a consequence of the Forum, there is a good deal to be done, but we are conÿdent we can make early progress on the first of these actions and can draw on other research and overseas experience.

We look forward to continued collaboration within the sector and with other stakeholders as we move to solving this issue.

Gayle Sloan
CEO
Waste Management Association of Australia

David Singh
President
Australian Council of Recycling

"What can we do together

that we cannot do alone?"

Background

The last decade has seen numerous waste fires in Australia. In the past year we have seen a number of large fires again bring the waste and recycling sector into the national media.

Waste fires pose a serious risk to people, the environment and the economy. They also place considerable strain on the reputation of the industry in the eyes of the community, regulators, insurers, financiers and investors.

As a direct consequence of recent fires, insurers are becoming reluctant to provide cover for the sector, financiers are starting to look closer and asking questions, agencies have commissioned reports to gain insight.

The sector recognises that it needs to act now to resolve these issues so it can develop its own solutions rather than having solutions forced upon it. These need to be national, industry-wide solutions which strike a balance between the needs of all parties.

On August 10th 2017, 55 people* from across the waste and recycling industry, local and state government, EPA, fire services and insurance attended a forum supported by ACOR and WMAA and facilitated by IAG Risk Partners, to start the conversation on how they could work collaboratively to meet the challenge:

"How can we work together to lead the waste and resource recovery industry, to mitigate risk and reduce the incidence and severity of fires, in order that it can be viable, and prosper into the future sustainably"

This report presents a summary of the written outputs from the Forum plus the content of discussions in plenary sessions and in table groups on the day, which have been synthesised and refined by IAG Risk Partners to develop a proposed way forward.
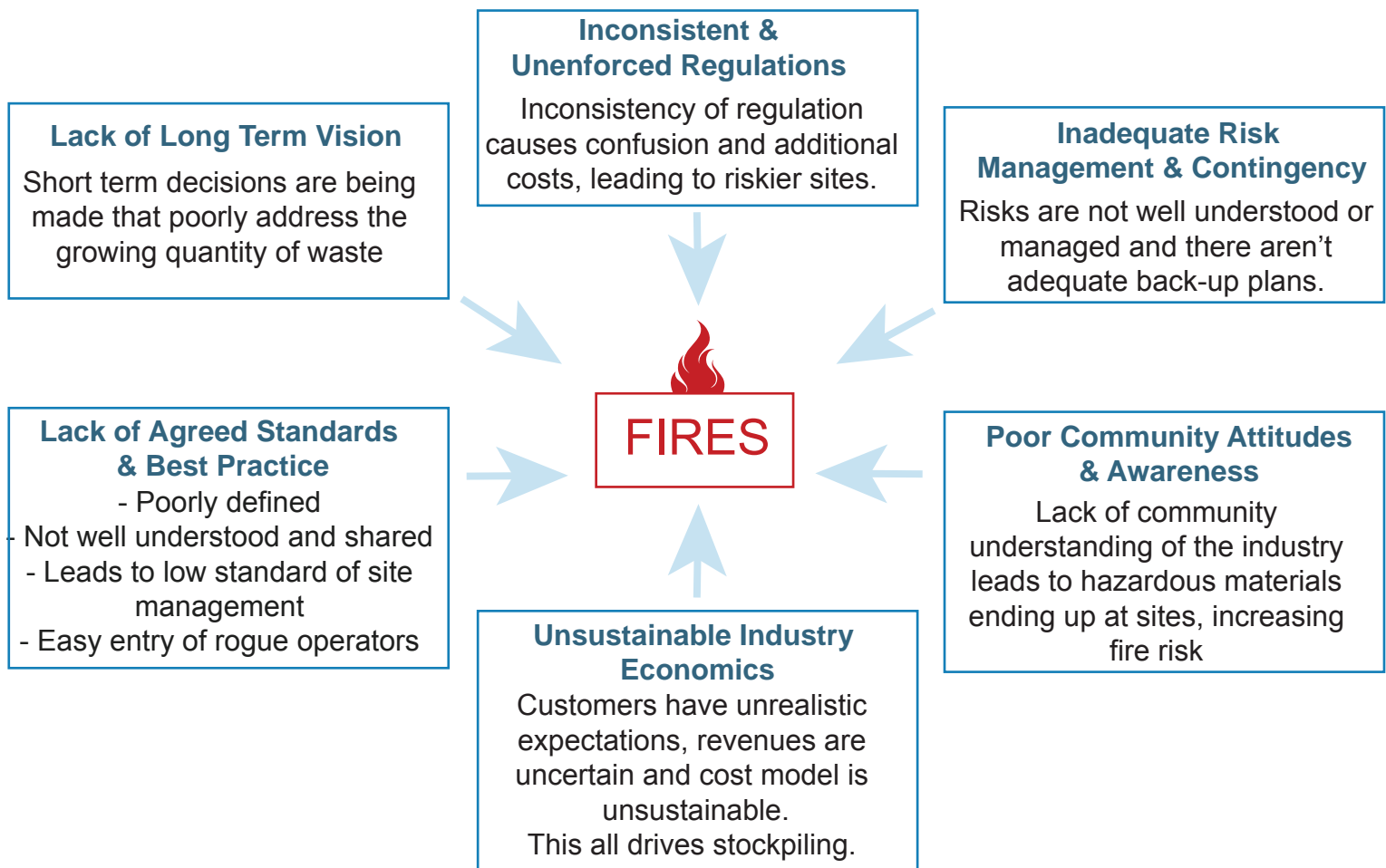
Impacts of Fires

The Forum attendees explored the range of impacts that the fires have on the industry, community, emergency services and insurers. These impacts are listed in Appendices B and C.

This highlighted the breadth and scale of the effects of these fires, which reinforced the need for effective action to reduce both their frequency and their severity.

Underlying Causes Leading to Fires

The Forum nominated many factors which cause fires in the industry, as listed in Appendix D, but underlying these factors six fundamental causes were identified:

Inconsistent & Unenforced Regulations
Inconsistency of regulation causes confusion and additional costs, leading to riskier sites.

Lack of Long Term Vision
Short term decisions are being made that poorly address the growing quantity of waste

Inadequate Risk Management & Contingency
Risks are not well understood or managed and there aren't adequate back-up plans.

FIRES

Lack of Agreed Standards & Best Practice
- Poorly defined
- Not well understood and shared
- Leads to low standard of site management
- Easy entry of rogue operators

Poor Community Attitudes & Awareness
Lack of community understanding of the industry leads to hazardous materials ending up at sites, increasing fire risk

Unsustainable Industry Economics
Customers have unrealistic expectations, revenues are uncertain and cost model is unsustainable.
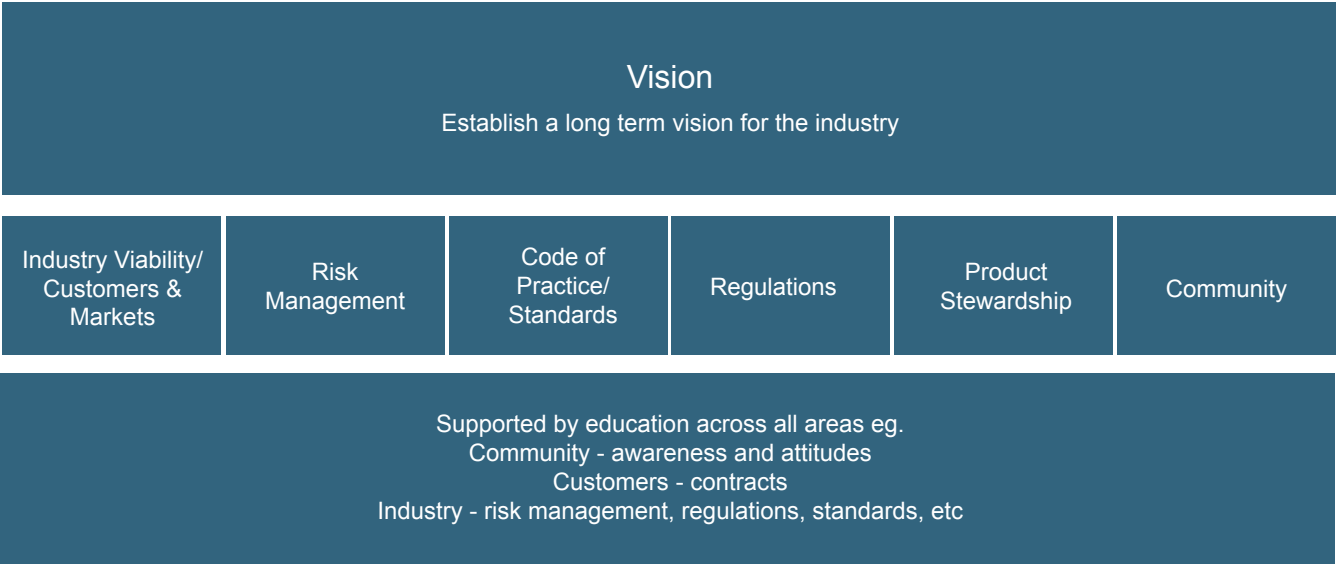This all drives stockpiling.

These underlying causes have a greater impact on the industry than just causing fires. Addressing them will make fundamental improvements to the viability of the industry.

Areas for Action

The Forum then identified a range of solutions to address these underlying causes: these are shown in Appendix E.

As some of these solutions identified overlap, we have re-grouped them into 7 areas for action as depicted below:

Vision					
Establish a long term vision for the industry					
Industry Viability/ Customers & Markets	Risk Management	Code of Practice/ Standards	Regulations	Product Stewardship	Community
Supported by education across all areas eg. Community - awareness and attitudes Customers - contracts Industry - risk management, regulations, standards, etc					

These action areas are described in more detail in the following pages.

Vision

Description

Develop a long term vison for the industry which the industry owns and which is agreed by all parties and is based on the industry being seen as an essential and valued service to society, having regard for expected future quantities and types of waste and future community expectations and aligning with government's long term plans for such issues as the environment, sustainability and urban planning.

The vision needs to create the environment for an industry which is viable over the long term, can be ahead of social changes rather than merely reacting to them, can withstand fluctuations in economic cycles, and which is attractive for investment and employment

The vision would also establish principles for the other areas of action.

Challenges/Barriers

◄ Pressure of short term issues may crowd out consideration of longer term

◄ Need to resolve differing priorities and needs of various parties and achieve compromise

◄ Engaging other parties not represented at the Forum

◄ Gaining appropriate level of support from Government

Who would need to be involved

Industry

Government (State, Federal and Local)

Regulators

Customers

Retailers

Manufacturers

ACCC

Funders

Insurers

Suppliers

Fire brigades

Description

Action in ...
the industry relates ...

This includes the following key initiatives:

◄ Adjusting pricing to allow for the cost of operators implementing minimum standards, as ... ed elsewhere in this report.

◄ Changing the paradigm around contracts, to gain growth and more flexibility for market conditions

◄ Exploring other mechanisms for managing commodity price risk eg hedging

◄ Linking gate fees to commodity prices, to reduce the incentive for stockpiling

◄ Changing contracts to take account of reuse in procurement criteria

◄ Creating sustainable markets for commodities

◄ Educating customers, including local government re the above.

Solutions relating to these individual initiatives, as discussed at the Forum, are described in Appendix E2

Challenges/Barriers

Each of the above initiatives involves its own challenges, but the major challenge may be changing procurement criteria for local government which may result in higher prices

Who would need to be involved

Industry

EPA

Federal government

Innovators

Manufacturers

Commodity purchasers

Local government, guided by state government eg re procurement criteria

Risk Management

Description

Build awareness and understanding of risks and how to manage them, including mitigation, response and recovery. This includes preparing contingency plans for actions if something goes wrong.

Build a strong risk management culture throughout the industry and educate staff about how to manage risks

Key initiatives:

◄ Build understanding of common risks in the sector

◄ Develop industry approaches for managing risk, responding to and recovering from incidents

◄ Develop risk management culture and educate staff

◄ Develop contingency response to manage stockpiles during disruptions (refer Appendix E3 for details

   as discussed at the Forum)

Challenges/Barriers

◄ Achieving collaboration

◄ Higher costs

◄ Cultural change for operators and their staff

Who would need to be involved

Industry

Government (Local plus State)

Risk Management advisor

Some suggested first steps

1. Develop a sector risk profile to understand key risks faced by operators in each area of the industry

2. Prioritise these based on industry

3. Develop appropriate responses, i.e. the contingency plan and standards would be part of this.

Code of Practice and Standards

Description

This is about the sector developing a set of principles and operating practices for safe operation of facilities, that can be easily understood and applied across each industry. Then, there is a need to work with state regulators to determine how they can be added to regulations to enable enforcement.

A set of minimum standards would be required but to ensure operators went above minimum, a tiered approach could be utilised with reward mechanisms. As operators progress up the tiers, they get better benefits and are seen in a more favourable light by customers. These standards should become a requirement to get insurance or finance, which in turn would make them a pre-requisite for contracts, such as council contracts require operators to have insurance.

These do not need to be developed from scratch as a lot of work has already been done overseas in this space, e.g. the WISH guidelines from the UK – see Appendix G for a link.

Challenges/Barriers

◄   Agreeing the sectors standards

◄   Cost to develop: will cost more at least in the short term

◄   Need to manage trade-offs e.g. standards may reduce competition, may stifle innovation, may lead to higher prices

◄   Current commercial relationships that may impact implementation

◄   Different types of materials and different types of facilities, which lead to a very broad range of risks and standards to define

◄   The need for consistent regulations as well to deal with operators who don't comply (see next page.)

◄   Industry push back: will impact margins, some won't see as necessary

◄   Voluntary approach – value must be demonstrated, encourage involvement.

Who would need to be involved

Sector, including representatives of various industry types (eg metals recycling, AWT, MRF, composters, liquid) and appropriate bodies (including insurers, State regulators, EPA, fire and rescue) to develop the standards

Some suggested first steps

◄   Pull together a clear understanding of what the current regulations are across the states and who is responsible for enforcing each.

◄   Complete a gap analysis and review of these.

◄   Review the guidelines created overseas to see how they could be utilised here.

◄   Contact Insurance Council of Australia to facilitate a discussion with the insurance industry to understand its requirements, to enable operators in the waste and recycling industry to become more insurable.

Harmonising Regulations

Description

This action area is about developing a harmonised/uniform approach to regulations (all facets of waste management i.e. site based/transport/product stewardship) including pricing e.g. landfill levies across Australia.

Some actions are already underway and should continue eg. engaging government to achieve consistent landfill levies. Others require action first by the industry eg. to develop a set of standards.

This would require agreement from each state/territory but could be made easier due to the work done through creating initial industry standards and agreeing on their enforcement with states already

Challenges/Barriers

◄ Agreeing the national standard, including pricing

◄ Lack of continuity of key players in government

◄ With all the different bodies involved across the states, who would lead this process and how could clear roles and responsibilities be adopted across the states?

Who would need to be involved

Sector representatives working with appropriate bodies to develop the standards

Federal and state/territory regulators

Federal and state/territory environment ministers and their departments

Suggested next steps to get started

Develop the set of sector standards first

Product Stewardship

Description

This area is looking at how to target the products themselves, to reduce the generation and improve the management of waste, through providing a full cradle-to-grave process for products. Product Stewardship requires producers to take a full lifecycle view of what happens when their product is no longer useful and discarded, placing the responsibility of the management of that product throughout its lifecycle.

One example of how to fund changes needed, is through a levy attached to a product that can then be used to help manage its disposal or find innovative ways to repurpose the product at its end of life. Currently there are already arrangements in place for products such as tyres, televisions, computers and mobile phones, among others, so this idea involved extending these programs to other products as well.

Challenges/Barriers

◄ National leadership is required

◄ Possible cost to customers or Producers to fund a levy

◄ Gaining support and buy-in from all the required parties

◄ Determining the best way to manage the product's end of life

Who would need to be involved

Industry

Minister for Environment

Manufacturers

Government may be required to mandate suppliers to manage Product Stewardship.

Description

We need to help the community understand its role in a sustainable waste cycle. This includes members of the community:

◄ Not discarding hazardous waste and having easy-to-access, alternative options for disposal

◄ Being more selective in the products they purchase

◄ Reusing rather than throwing away

◄ Having a better understanding of what is recyclable and how/where to dispose of it.

◄ Encouraging innovation regarding new ways to utilise waste

◄ Having an understanding of the intricate process involved in managing waste and the issues that come from being a throw-away society.

Challenges/Barriers

◄ People not necessarily understanding the cost of processing their waste. To consumers, the cost of disposal is cheap as we just throw it away and it disappears

◄ The cost of developing an education program

◄ Who would need to be involved and who would run this?

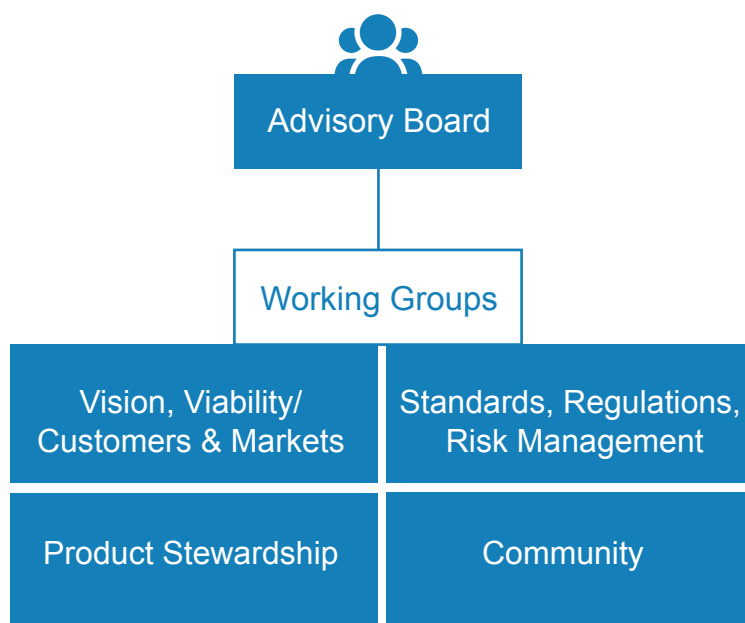## Who would need to be involved

Industry

Councils

State Government

Schools

Manufacturers/Producers

Coordination and Governance

◄ It is apparent that this is a complex problem with no single solution, which therefore needs action on many fronts

◄ These actions have many interconnected elements so they need to be coordinated as an overall program, and key external parties eg state and federal governments need to be engaged about the program as a whole

◄ An Advisory Board is proposed to provide overall coordination and governance, including engagement with government, media and other external parties. The Advisory Board could act as a single voice for the industry, to coordinate messaging and manage reputation issues

◄ The Advisory Board would be supported by working groups to take action on specific areas of action

◄ As having one working group for each action area may be unwieldy, an approach may be to have 4 working groups, addressing the action areas as shown in the diagram below.

Advisory Board

Working Groups

Vision, Viability/ Customers & Markets	Standards, Regulations, Risk Management
Product Stewardship	Community

◄ Appendix F provides more details of these arrangements, as discussed at the Forum

◄ It has been agreed between ACOR and WMAA that Gayle Sloan will take the lead in establishing the Advisory Board.

◄ Membership of the Board and working groups will be drawn from parties represented at the Forum, as well as any other relevant parties not involved to date.

Next Steps

Key next steps for the program as a whole are to:

- ◄ Form the Advisory Board

- ◄ Agree its Charter

- ◄ Develop approach for funding the program, including the potential for government funding

- ◄ Connect with other key parties that weren't involved with the Forum

- ◄ Establish governance arrangements for working groups, establish working groups

- ◄ Working groups to develop work plans for their solution areas

In relation to the individual solution areas, in order to get early results initial priority might be given to:

- ◄ High-level thinking about the Vision, to set the parameters for the other working groups.

- ◄ Those solutions which are more within the control of the industry eg development of standards and first steps to improve risk management.

Appendices

Appendices

Attendees

▶ Industry

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SKM

Greg Blattman
SuezEnvironment

Ian Bock
SuezEnvironment

Paul Antony
Cleanaway

John Barksby
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Wayne Russell
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Karl Schroder
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Richard Pittard
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Nathan Lopez
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Sergio Puente
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Liverpool Council

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Dianne Tierney
Shellharbour City Council

Shannon Gorman
Mackay Regional Council

Richard Marks
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Greg Sheehy
EPA NSW

Adam Faulkner
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ACT NOWaste

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Jeremy Stubbs
Fire & Rescue NSW

Greg Wild
Fire & Rescue NSW

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Geoff Jowett
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Rory Fegan
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Mick Forbes
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▶ Insurance

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David Johnstone
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Dan Pritchard
Dynamiq

Karl Sullivan
Insurance Council Australia

Nick Wiesener
Insurance Council Australia

▶ Facilitators

Tamie McNiece
IAG Risk Partners

David Bradley
IAG Risk Partners

Rebecca Callahan
IAG Risk Partners

Impacts of Fires

Industry	Community	Emergency Services
Cost of Premiums	Environment (Air, Runoff)	Resources drain
Cost of claims	Health and Safety (Community)	Health and Safety (Firefighters)
Lack of insurance	Stress	Long duration (Emergency Management, Fire services)
Downtime/Interruption to service		
Scrutiny from Regulator		
Uncertainty - what is standard?		
Contracts breaches/future contracts		
Employees/safety		
Cost of managing claim		
Profitability		
Licensing fee increases due to risk based legislation		
Capital cost to increase standards		
More regulation		
Potential class actions		
Unable to take Government contracts		
Reputation/ Loss of Confidence		
Compliance		
Risk to human & structural integrity		
Unemployment		
Industry viability and sustainability		

Insurance Impacts

Waste & Recycling Performance.
CGU ISR I CI Portfolio Analytics

2015 to March 2017 (2yrs)

ALL INDUSTRY

Premium: $7.6 mill

Losses: $70.55 mill

LR% to EP   927%

Freq/Pol Cnt N/A

Waste & Recycling Performance.
CGU ISR I CI Portfolio Analytics

2010 to March 2017

ALL INDUSTRY

Premium: $26.67 mill

Losses: $85.01mill

LR% to EP   319%

Freq/Pol Cnt 42.4%

Insurance Impacts

Waste & Recycling Performance.
CGU ISR I CI Portfolio Analytics

2010 to March 2017

Loss Type - ALL INDUSTRY

TYPE	No.	%	$$	%
Fire:	18	33.9	$77.9 mill	77.89
Storm:	16	30.2	$16.2 mill	16.19
Flood:	1	1.9	$4.3mill	4.3
Other	18	33.9	$1.61mill	1.6
TOTAL	**53**		**$100.01mill**	

What about the "total" cost of fires?

If we used this as a proxy…. What would the total cost of fires in the Waste Industry look like 2010 to Mar 2017

Consequential	Response	Anticipation	Total cost
$1,250 mill	$525mill	$906mill	$2,681mill

Impact

X 4

Total Cost of Fire in Australia (Graeme D Thomp. – QF&RS)
Anticipatory costs – Prevention & mitigation 55%
Responsive costs – Extinguishing and clearing up 30%
Consequential costs – Property, BI, Fatalities / Injuries, Healthcare &
Environmental 15%

*Assumes IAG 15% market share

Table 1. Lack of Long Term Vision for a Sustainable Industry

Poor management or low standard by rogue operators	Lack of ongoing good housekeeping
Poor housekeeping of sites	Lack of understanding of good practices for site management

Table 2. Unsustainable Industry Economics

Lack of capacity in industry	No common vision	Natural waste strategy - waste industry not mentioned?
We need to ensure sustainability of the industry - Essential Industry	Incentives - Charge to collect/Pay to get rid of * Predatory Pricing – Return on investment?	

Table 3. Inadequate Risk Management and Contingency Planning

Management of risk of different material types	Contingency planning isn't always done	Fires will happen, need good controls in place
Inadequate mitigation of risks due to natural causes	Changing environmental impacts (Climate Change)	Trucks keep coming
Attitudes to waste management - Lack of awareness/hazard awareness in management - Lack of education/Community and Industry	Lack of cooperation between operators	Wrong incentive or understanding on entry, then corners are cut when don't make money $

Table 4. Lack of Agreed Standards and Best Practices

Stockpiling driven by - Low prices or no market for product - Inflexible contracts - Unsustainable expectations by council and operators	Unsustainable market demand	Cost pressures

Table 5. Poor Community Awareness and Attitudes

Inconsistent regulation across states	Requirements/Regulations keep changing	Material Waste Strategy - Viable industry not mentioned

Table 6. Inconsistent and Unenforced Regulations

No planning for future products/Product stewardship
- Product producers don't think of end of life

The underlying causes were investigated by participants in table groups to determine what solutions the industry and other stakeholders could put in place, to address these issues. More detail of these solutions is in the pages following.
In the list below, we have also identified some additional solutions, building on what the forum participants were able to develop within the time frame of the workshop

Underlying Cause	Solutions Identified	Description	Additional Solutions
Lack of long term vision for a sustainable industry	Establish a long term vision	Establish a common vision, shared by all stakeholders, for a viable and sustainable waste & recycling industry	
	Education and awareness for consumers and customers	Educate consumers and customers on the role of the industry, and their part in a sustainable waste cycle	
	Harmonised regulations (including pricing)	Develop harmonised/uniform approach to regulations for all facets of waste management	
Unsustainable Industry Economics	Sustainable end market creation (e.g. glass, paper)	Create domestic end markets for commodities to provide certainty for future use of commodity	Learn how other industries which have fluctuating commodity prices manage this risk eg using hedging
	- Increase contract flexibility - Reduce stockpiling through linking gate fees to commodity prices - Educate customers about sustainable pricing and the need to take account of reuse in procurement criteria		
Inadequate Risk Management and Contingency Planning	Contingency response to manage stockpiles during disruptions	Comprehensive industry approach to deal with disruptions	Build understanding of common risks in the industry. Develop industry approach for managing, responding to and recovering from risks Develop risk management culture and educate staff
	Mandate fire service consultation		
Lack of Agreed Standards and Best Practice	Standards – including stockpile management	Develop a set of standards that are easily understood, agreed and applied across the industry, to improve the safety of sites.	
	Fire suppression/containment		
	Human Element (Hot works)		
Poor Community Awareness and Attitudes	Advance Disposal Fee	Developing economic instruments to change behaviour. Like increasing the funding available for recycling specific items, through attaching a fee for the recycling of the item on the purchase of a product.	Utilise Government funding of university PHD students to work on industry problems. E.g. innovative ways to use an excess of glass.
	Easy Disposal Location	Some fires are because a dangerous good was disposed in a recycling bin. Giving people an easy disposal method and potentially an incentive for utilising this method, may help improve recycling and reduce the amount of hazardous goods in rubbish.	
Inconsistent and Unenforced Regulations	Industry led codes of practice	Develop harmonised/uniform approach to regulations (all facets of waste management ie site based/transport/ product stewardship) and including pricing eg landfill levies.	
	Waste Stewardship	Develop a way to target the products themselves to reduce the waste issue, through providing a full cradle to grave process for them. All new products would need to have a product stewardship statement, lifetime analysis and meet certain metrics.	

LACK OF LONG TERM VISION FOR A SUSTAINABLE INDUSTRY

DESCRIPTION

There is not a common vision, shared by all stakeholders, for a viable and sustainable waste and recycling industry, despite its essential role for society. For example, the Federal Government's National Waste Policy makes no mention of the need for a viable industry.

As a consequence decisions on such issues as locations for facilities are made with a short term focus, resulting in a lack of capacity in the industry and more impacts on local communities as urban development expands. As well, various parties have widely differing expectations of what the industry should deliver, in terms of services, acceptable environmental and community impacts and costs.

SOLUTION

Establishing a long term vision

DESCRIPTION

The vision needs to be based on the industry being seen as an essential and valued service to society, having regard for expected future quantities and types of waste, future community expectations and aligning with government's long term plans for such issues as the environment, sustainability and urban planning.

It needs to create the environment for an industry which is viable over the long term, can be ahead of social changes rather than merely reacting to them, can withstand fluctuations in economic cycles, and which is attractive for investment and employment In developing the vision there may be scope to learn from other similar industries eg mining re their focus on their social licence and managing impacts on the community.

The vision needs to set out principles regarding:
- Planning for the industry including capacity and locations
- Minimum standards for operators including site design and operating practices supported by enhanced risk management and in time, harmonised regulations which enable the industry to meet community requirements
- Steps to improve long term viability of the industry with changes to customer relationships and creation of sustainable end markets
- Product stewardship, with producers having responsibility for whole of product life cycle and transparency of what people dispose of (eg transparent rubbish bins?)
- Education of consumers and customers regarding their role in a sustainable waste cycle

These aspects need to be developed in detail as per other specific solutions which are described in other pages of this Appendix.

CHALLENGES/BARRIERS

Pressure of short term issues may crowd out consideration of longer term
Need to resolve differing priorities and needs of various parties and achieve compromise
Gaining appropriate level of support from Government

WHO NEEDS TO BE INVOLVED?

Many parties: industry, Government (State and Federal), regulators, customers, retailers, manufacturers, ACCC, funders, insurers, suppliers, fire brigades

SOLUTION OWNER
- Industry (Federal Government to sponsor)

DESCRIPTION

There is not a common vision, shared by all stakeholders, for a viable and sustainable waste and recycling industry, despite its essential role for society. For example, the Federal Government's National Waste Policy makes no mention of the need for a viable industry.

As a consequence decisions on such issues as locations for facilities are made with a short term focus, resulting in a lack of capacity in the industry and more impacts on local communities as urban development expands. As well, various parties have widely differing expectations of what the industry should deliver, in terms of services, acceptable environmental and community impacts and costs.

SOLUTION

Education and Awareness for consumers & customers

DESCRIPTION
Educate and build awareness of consumers and customers of the role of the industry, and their part in a sustainable waste cycle

CHALLENGES/BARRIERS
- Achieving behaviour change across the community
- Reaching people of non-English speaking backgrounds
- Frequent change of government

WHO NEEDS TO BE INVOLVED?
- Consumers and local/state government
- Resource recovery operators
- Emergency services
How: workshops and/or working groups, brochures/pamphlets in multiple languages

HOW TO ENSURE ENGAGEMENT
- Update legislation to accommodate future behaviours and technology
- Undertake communications through channels appropriate to audiences

SOLUTION OWNER
Authority at Federal level - Department of the Environment?
Waste industry

DESCRIPTION

There is not a common vision, shared by all stakeholders, for a viable and sustainable waste and recycling industry, despite it being an essential industry for society.

For example, the Federal Government's National Waste Policy makes no mention of the need for a viable waste and recycling industry.

As a consequence decisions on such issues as locations for facilities are made with a short term focus, resulting in a lack of capacity in the industry. As well, various parties have widely differing expectations of what the industry should deliver, in terms of services, acceptable environmental impacts and costs.

SOLUTION

Harmonised Regulations (including pricing)

DESCRIPTION

Develop harmonised/uniform approach to regulations (all facets of waste management ie site based/transport/product stewardship) and including pricing eg landfill levies. Gain agreement from each state/territory: develop standard, implement.

In the short term, as harmonised national regulations are likely to take a long time to establish, should have industry code of practice which each state can adapt as required, coupled with enforcement of state regulations to tackle rogue operators

CHALLENGES/BARRIERS
- Agreeing the national standard
- Assessing current status and deciding on actions for each, for sites that are above, at or below standard
- Current commercial relationships that may impact implementation
- Lack of continuity of key players ion government
- Cost!

WHO NEEDS TO BE INVOLVED?
- Federal and state/territory environment ministers
- Federal and state/territory regulators
- Industry involvement
- Waste producers: re absorbing/managing potential cost

SOLUTION OWNER
- Waste industry (owner)
- Government (sponsor)

SOLUTION

Other solutions - Mentioned in discussion

Reassess optimal size of facilities ie Super MRF v satellite MRF (do smaller and more facilities lead to less risk or double risk?)

UNSUSTAINABLE INDUSTRY ECONOMICS

DESCRIPTION

The economics of the industry are not sustainable, as many customers have an unrealistic expectation of low prices due to their perception that the end product has a higher value than it does. In reality there may be limited (if any) sustainable markets for end product in Australia (or overseas).

Customer expectations have also been influenced by some contracts which pay for waste rather than charging to collect it, these contracts being predicated on prices for product which are proving to be not sustainable.

In addition commodity prices can change dramatically and quickly, and the industry is not well-placed to respond due to long term and inflexible contracts.

These factors in turn lead to stockpiling which increases the severity of fires

SOLUTION

Sustainable end market creation (eg glass/paper)

DESCRIPTION

Create domestic end markets for commodities to provide certainty for future use of commodity.

For example Government could mandate or incentivise use of commodities from recycling in commercial products, and companies which do not comply may not receive incentives or may be taxed more heavily, with taxes collected being used to reinvest in new markets.

The amount of incentives or taxes could be tied to prices of substitutes (eg imported glass.)

Local government could assist to enforce standards through the tender process, by requiring waste companies to be accredited according to the extent to which their commodities are used in products. Compliance could be verified by an independent 3rd party providing a stamp of approval. See diagram at right.

Another approach could be to encourage innovation to find entirely new uses for commodities.

CHALLENGES/BARRIERS
- Ensuring that the industry has a voice in determining this approach
- Political will
- Shifting local government purchasing approach to take account of reuse of commodities
- Government understanding of industry
- The need for a mandatory approach for reuse of commodities to give certainty and encourage investment
- Stimulating successful innovation

WHO NEEDS TO BE INVOLVED?
Mandated approach
 - All levels of government: set by National and state, enforced by local
 - Enforcement though minimum standards in tender process (EPA, local government, 3rd party stamp of approval)

- Commodity purchasers and manufacturers
Innovation approach: industry. Government and innovators

SOLUTION OWNER
- Industry
- Government (Federal and State)

DRAW IT / SKETCH IT
Visualise your solution in action
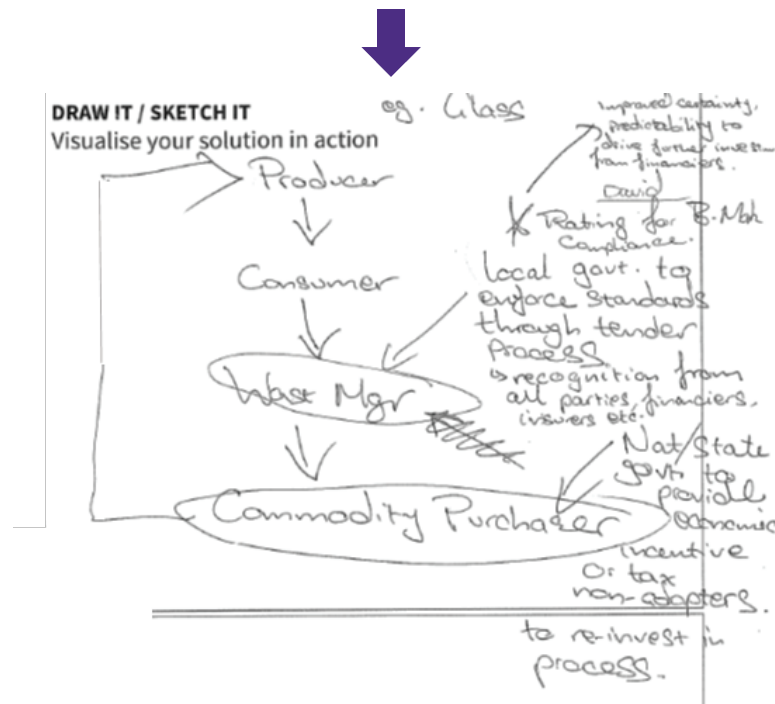
SOLUTION

Other solutions - Mentioned in discussion

Change the paradigm around contracts (and diversion targets), to gain more flexibility for market conditions

Reduce stockpiling through linking gate fees to commodity prices (index)

Educate customers about sustainable pricing and the need to take account of reuse in procurement criteria

INADEQUATE RISK MANAGMENT & CONTINGENCY PLANNING

DESCRIPTION

Some operators in the industry lack awareness and understanding of risks and how to manage them, including preventing or minimising scope for human error. Particular risks may include those from different material types and from natural causes eg lightning or spontaneous combustion, or from increased numbers of extreme hot days due to changes in climate.

Fires will happen, but some operators lack the controls which are needed to be able to mitigate, respond and recover effectively.

Companies in the industry don't always prepare contingency plans for actions if something goes wrong, and there is a lack of cooperation between operators, which limits the fallback options available: meanwhile "the trucks keep coming".

There is not a strong risk management culture throughout the industry and there is a lack of education of staff in the industry about how to manage risks. Operators entering the industry may have wrong incentives or understandings, so may cut corners on risk management when they don't make money

SOLUTION

Contingency response to manage stockpiles during disruptions

DESCRIPTION

Response needs to deal with disruptions caused by a range of factors including surges in demand eg major storms, equipment breakdowns and lack of demand for end commodities.

Contingency plan would have several elements:

- Coordination within regional groups of councils to identify spare capacity at transfer stations and to redirect waste in event of disruption
- Collaboration between operators of MRFs to accept waste which cannot be accepted by other operators, with regulated or agreed pricing
- Council tenders to require operators to have contingency plans
- Risk-based storage limits (by material type) for MRFs and commodity stockpiles, with trigger levels at which operators would need to activate industry contingency plan (an extension of current risk based licences in NSW under Protection of Environment Operations Act)
- Dedicated regulated landfill sites for contingency storage of specific end commodities, enabling later recovery of commodities prior to sale
- Councils initiating waste to have responsibility to support contingency needs throughout the process chain (rather than just the council where an affected MRF is located)

CHALLENGES/BARRIERS

- Different gate fees by location for landfill:
  address via regulated pricing in contingency situations
- Logistics of transfer

- Transparency of availability of spare capacity: coordination needs to address this
- Funding provision for contingencies –waste levy could help fund eg State/federal
- Misuse of contingency landfill: needs to be very well regulated, with 24 hour security

WHO NEEDS TO BE INVOLVED?
- Regional organisations of councils
- State/local/federal government, to achieve national approach

SOLUTION OWNER
Industry
Federal & State Government

DESCRIPTION

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SOLUTION

Mandate fire service consultation

DESCRIPTION

There was a general consensus that there is inconsistency across the industry (and size of operations) in regard to pre-fire planning and consultation with the fire services.

Enhanced fire safety awareness across the industry could be achieved by mandating annual consultation sessions between sites and the fire service enabling Pre-Incident Plans (PIP) to be prepared/updated at each site, these plans could include the following information:
- Site image/layout, location of fire services equipment, available water supply
- Hazardous areas, environmental concerns, location of key assets
- Initial Fire Emergency Response Steps, etc.

Expectation would be that annual inspections are conducted and reviewed following any significant site changes.

CHALLENGES/BARRIERS
- Not currently mandatory
- Changes in site staff and/or management
- Physical site changes that make original pre-incident plan redundant

These challenges/barriers could be reduced by legislating process and mandating that each site must appoint an emergency liaison contact.

WHO NEEDS TO BE INVOLVED?
- Federal Government
- State EPA consensus
- Site Managers, Fire Services
- Possibly Insurers could assist by auditing the initiative

SOLUTION OWNER

Industry bodies and government to establish the regulatory requirements

Site manager for implementation at individual sites

LACK OF AGREED STANDARDS & BEST PRACTICE

DESCRIPTION

Standards and best practice within the industry are not well disseminated and hard to enforce which sometimes leads to a low standard of site management and easy entry to rogue operators. Poor housekeeping and ongoing maintenance/management of sites and lack of understanding of good practices for site management increase the risk of incidence and severity of fires.

SOLUTION

Standards - including stockpile management

DESCRIPTION

Develop a set of standards that can be understood, applied and enforced across the industry. A set of minimum standards would be required but to ensure people went above minimum, a tiered approach could be used with reward mechanisms. As you go up the tiers you get better benefits and are seen in a more favourable light by customers.
The minimum standard is used only as a base to entry.

As different materials behave differently, this needs to be taken into consideration. For different materials, the following may be required:

- Understanding the different materials and their fuel load
- Understanding stockpiling management for that fuel load e.g. max heights, distances between them and barriers, distance from high risk areas etc.
- How to manage fuel suppression and containment for that material
- Education of the standards with the relevant groups
- A way to monitor the implementation of the standards (potentially through insurance audits: to add weight it must be in contracts and performance based)

These do not need to be developed from scratch as a lot of work has been done in this space overseas, e.g. WISH guidelines from the UK (See Appendix G.)

CHALLENGES/BARRIERS

- Different products – cars, paper, plastics
- Facility size
- Design to the minimum/highest risk
- Defining full range and risks (very broad)

- Different material, different fuel load
- Getting existing sites up to standards
- How/cost to develop: will cost more at least in the short term
- Need to manage trade-offs eg standards may reduce competition, may stifle innovation, may lead to higher prices
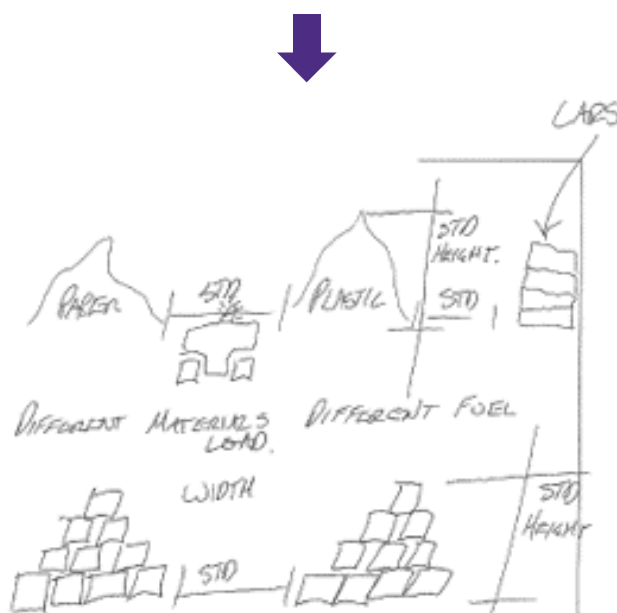
WHO NEEDS TO BE INVOLVED?

Industry (including reps from metals recycling, AWT, MRF, Composters, liquid)
Insurers
EPA, Fire and Rescue

SOLUTION OWNER

Industry with insurance company oversight

DESCRIPTION

Standards and best practice within the industry are not well disseminated and hard to enforce which sometimes leads to a low standard of site managemen t and easy entry to rogue operators. Poor housekeeping and ongoing maintenance/management of sites and lack of understanding of good practices for site management increases the risk of incidence and severity of fires.

SOLUTION

Fire Suppression / Containment

NOTE: *This solution is delving into detail in one of the areas from the Standards solution*

It is important to understand how to manage fire suppression and containment for different materials, this solution focussed further on what is required for this.

- *Separation – Distance/Barrier – Height and width of pile*
- *Internal –* Sprinkler, hydrant, hose reel, foam system as required
- *External –* Hydrant, Monitor, Foa**m**
- *Note: -* Sufficient foam or MOU with neighbour on site Fire service approved
- Fire service approval audited
- Accredited fire safety person at each site.

Audit of accountabilities
- Stockpiling (interlace)
- Hot work permit
- Hydrant pressure test
- Emergency plan – how does this look, e.g. inventory list, list of wardens, control systems, who is trained, who will be effected, How will an emergency be contained (what can you do to manage a risk), consequence management, relief recovery.
- Separation, Active, passive fire suppression
- Fit for purpose
- Community effected
- Audit prior to occupancy and after move in
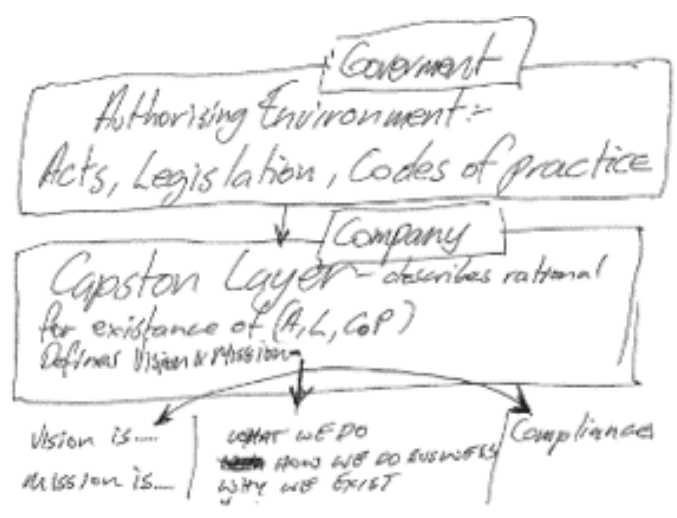
CHALLENGES/BARRIERS

- No compliance
- Insurance company oversight
- Authorising authority audit process

WHO NEEDS TO BE INVOLVED?

Fire service, Local Government, EPA, Insurance, Work Safe, Stakeholder working group

SOLUTION OWNER

Industry should lead, however Vision/Mission should be shared with all stakeholders as above.

DESCRIPTION

Standards and best practice within the industry are not well disseminated and hard to enforce which sometimes leads to a low standard of site managemen t and easy entry to rogue operators. Poor housekeeping and ongoing maintenance/management of sites and lack of understanding of good practices for site management increases the risk of incidence and severity of fires.

SOLUTION

Human Element - Hot Works

NOTE: *This solution is delving into detail in one of the areas from the Fire Suppression/Containment solution*

Dedicated hot work permit system in place. Ensure rest watch times are adhered to. Sign off permit is important that it fosters involvement of key people to the permit.
Constant fire watch and monitoring of the area.

CHALLENGES/BARRIERS

Ensure adequate separation/clearance of combustibles in proximity of hot work.
If it cant be achieved wet down the area and/or use fire blankets. On fire days don't complete hot works.

WHO NEEDS TO BE INVOLVED?

- All personnel to be trained on hot work procedures and ensure third parties are conversant with the process.
- Tool box discussions

SOLUTION OWNER

All personnel and third parties engaged on site need to have responsibility for hot work processes, procedures.

POOR COMMUNITY AWARENESS & ATTITUDES

DESCRIPTION

Lack of community understanding of the industry and awareness of what it entails, leads to an increase in fires. People do not sort their items correctly which can cause fires or they send items that could be recycled to landfill. There is a lack of understanding in the community of the risks of the items they throw in their bins and little money to help fund awareness programs or innovative ways to deal with the waste.

There is also a lack of planning around product stewardship. Product producers do not think of what happens at a product's end of life and as we are an increasingly throw away society, the level of waste to manage is increasing enormously.

SOLUTION

Advance Disposal Fee

DESCRIPTION

Developing economic instruments to change behaviour. Like increasing the funding available for recycling specific items through attaching a fee for the recycling of the item on the purchase of a product. E.g. an electric drill that has a lithium battery has a charge added which goes into setting up the infrastructure and processes needed to handle that high hazard waste.

The tyre industry currently do this, tyres have a 25cent levy on tyres. They use this to fund new markets for recycled tyre e.g. rubber used as bitumen. They used the levy to fund innovation by the industry bodies which has enabled them to become make changes in old industries or move to new.

CHALLENGES/BARRIERS

People do not understand the cost of processing their waste. To consumers, the cost of disposal is cheap as we just throw it away and it disappears

WHO NEEDS TO BE INVOLVED?

- Product Manufacturers
- Government (may need to mandate this)
- Business factor it into their business
- Industry Bodies utilise the funding to develop new ways of dealing with waste and developing awareness programs.

SOLUTION OWNER

Government

SOLUTION

Easy disposal location

DESCRIPTION

Utilising the money from the advance disposal fee, the industry could look at ways to make it easier for the community to recycle items and understand hazardous versus non hazardous items.

For dangerous goods, most of the fires are because a dangerous good was disposed in a recycling bin. Giving people an easy disposal method and potentially an incentive for utilising this method, may help improve recycling and reduce the amount of hazardous goods in rubbish.

The money could be used to look at:
- More evolved collection system, e.g. is there a way to enable truck drivers to detect dangerous goods (lithium batteries) within the truck or bin?
- Free pick up solution
- Drop off centre
- New ways of managing/disposing the waste

CHALLENGES/BARRIERS
- High rates due to additional work required by councils.
- Costly for collection drop offs.

WHO NEEDS TO BE INVOLVED?
- Councils
- Industry
- Retailers?
- Manufacturers
- The community

SOLUTION OWNER

An owner would be required to set up the new solutions and determine how the advance disposal fee could be best utilised.

INCONSISTENT & UNENFORCED REGULATIONS

DESCRIPTION

The inconsistency in regulations and the way they are enforced across states, causes confusion and additional costs within the industry, leading to riskier sites. The National Waste policy currently doesn't help to address this or help industry players work their way through the confusion.

SOLUTION

Industry led codes of practice (Waste COPS)

DESCRIPTION

As it would be extremely hard to harmonise regulations across states, this idea suggests developing a code of practice to adopt nationwide with nuances for states where required.
These would need to be enforced by each state jurisdiction. i.e. during development applications initially then enforced through the EPA ongoing.

These standards may become a requirement to get insurance or finance which in turn would make them a pre-requisite for council contracts, as council contracts require operators to have insurance.
 This would help raise the bar to entry for rogue or inexperienced entrants. This could lead to rewards for best practice which have not been in place previously.

Regulations generally play to the lowest common denominator, these standards could be used to help push things from the front, rather than acting reactively.

CHALLENGES/BARRIERS

All states establishing consistent environment, fire, planning regulations is unrealistic, but development and adaption of agreed licensing standards is more viable.

With all the different bodies involved across the states, who would lead this process and how could clear roles and responsibilities be adopted across the states?
Whilst an industry led set of min standards is desirable, (see Appendix E4) consistent regulations are also required to deal with operators who don't comply.

Industry push back: will impact margins, some won't see as necessary
Voluntary approach – value must be demonstrated, encourage involvement.
Local government doesn't award contracts on nice to haves, it must be mandated.

WHO NEEDS TO BE INVOLVED?

How to enforce: needs engagement from all and coordination as currently different regulators are looking at different parts of adherence to guidelines which causes confusion.
Industry has a part to play in increasing awareness of standards and enforcement.
State and commonwealth regulators.
Industry, as well as the key government bodies.

SOLUTION OWNER
- Industry bodies
- Enforcement agencies

DESCRIPTION
The inconsistency in regulations and the way they are enforced across states, causes confusion and additional costs within the industry, leading to riskier sites. The National Waste policy currently doesn't help to address this or help industry players work their way through the confusion.
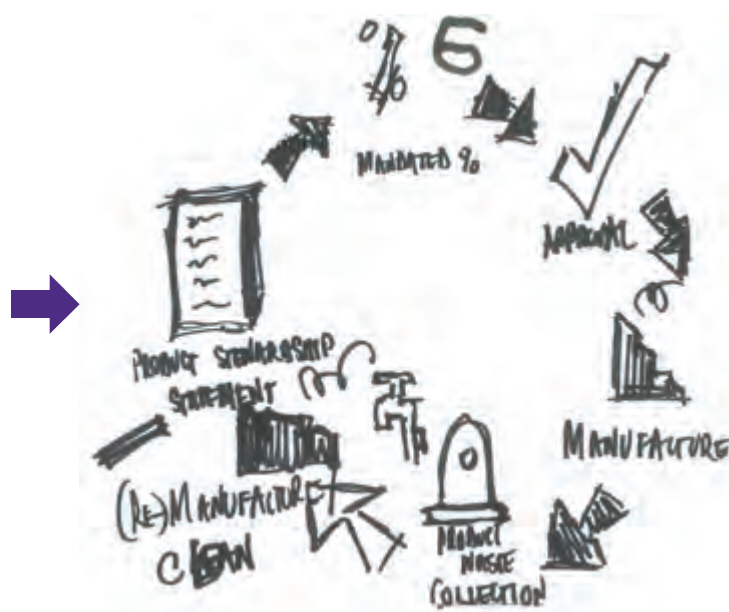
SOLUTION

Waste stewardship

DESCRIPTION
This solution is looking at how to target the products themselves to reduce the waste issue, through providing a full cradle to grave process for products. All new products need to have a product stewardship statement, lifetime analysis and meet certain metrics. If they do not comply to this then back to the drawing board.

There is an existing product stewardship program at Commonwealth level for TVs and computers developed through the National Waste Policy. A starting point would be to review what worked and what could be improved from the initial National Waste Policy and start extending this to a new set of products.

This idea connects with the Advance Disposal Fee idea (See Appendix E5,) as the advance disposal fee could be a way to help manage the lifecycle of a product.

CHALLENGES/BARRIERS
Charge to customers to enable levy
Environment ministers

WHO NEEDS TO BE INVOLVED?
- Industry
- Minister Environment - national
- Waste processors
- Manufacturers
e.g Unilever

SOLUTION OWNER
Federal Government

Overall Co-ordination and Governance

Which person/steering group should co-ordinate further action?

Advisory Board comprising the following and guided by a clearly defined charter/MoU:

- Industry
- Insurance industry
- Government: federal, state and local
- Fire and Rescue
- EPA
- Worksafe?
- Rep from each segment of the industry

What other key parties should be involved?

- Finance providers
- Secondary processors
- Other regulators eg planning

What are the extra requirements regarding strategy?

- Media and PR strategy (both reactive and proactive)
- Strategy for engagement with industry and externally
- Government liaison
- Crisis management/social media strategy
- Funding model, for development of the strategy and ongoing (perhaps funded from landfill levy?)
- Recognition as a key plank of national waste strategy
- Innovation
- Rogue trader taskforce/enforcement by government
- Procurement model which recognises sustainability accredition

Next steps?

- Establish an Advisory Board/committee
- Establish working groups to address areas for action and extra requirements regarding strategy

NOTES

- Need to aim high
- Will require a good deal of effort and commitment
- Will require financial contribution from industry members (as well as potentially government)

Links to Previous Documents

Author	Title	Link
Chief Fire Officers Association (UK)	Fire Futures Forum: Waste Management Facility Fires, 27 November 2013	http://www.cfoa.org.uk/17512
Environmental Protection Agency, Ireland	Guidance Note: Fire Safety At Non-Hazardous Waste Transfer Stations, December 2013	https://www.epa.ie/pubs/reports/waste/guidanceon firesafetyatnonhazardouswastetransferstations /Fire%20Safety%20at%20Non%20 Hazardous%20Waste%20Transfer%20Stations.pdf
Fire Services Commissioner, Victoria	Towards Improved Fire Management in Landfill Sites: A Review by IRS Services, July 2012	http://files.em.vic.gov.au/EMV-web/Fire_ Management.pdf
Department of the Environment, Water, Heritage and the Arts, Australia	National Waste Policy	http://www.environment.gov.au/protection/ national-waste-policy
EcoRecycle Victoria	Guide to Best Practice at Resource Recovery & Waste Transfer Facilities, July 2004	http://www.zerowaste.sa.gov.au/Content/Uploaded/ Generic/Documents/pdf/ TransferStations/guide_waste_transfer_resource_ recovery_station.pdf
Sustainability Victoria	Guide to Best Practice at Resource Recovery Facilities	http://www.sustainability.vic.gov.au/services-and-advice/local-government/resource-recovery-centres-best-practice
Fire Protection Research Foundation (USA)	Hazardous Waste Treatment, Storage, and Disposal: Facility Fire Code Gap Analysis, 2015	http://www.nfpa.org/news-and-research/fire-statistics-and-reports/research-reports/hazardous-materials/hazardous-waste-treatment-storage-and-disposal-facility-fire-code-gap-analysis
Marsh (UK)	Marsh Project Risk Insights: What's The Problem With Waste?	https://www.marsh.com/uk/insights/ research/marsh-project-risk-insights-whats-the-problem-with-waste.html
UTS Institute for Sustainable Futures (prepared for the Department of	Waste Fires in Australia: Cause for Concern?	http://www.environment.gov.au/protection/ publications/waste-fires-australia
Waste Industry Safety and Health (WISH) Forum (UK)	Reducing Fire Risk At Waste Management Sites	https://wishforum.org.uk/?page_id=33