Management and storage of combustible recyclable and waste material

Policy Impact Assessment

VICTORIA State Government | Environment, Land, Water and Planning

ISBN 978-1-76077-026-6 (pdf/online)

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Policy impact assessment

In accordance with the *Victorian Guide to Regulation*, the Victorian Government seeks to ensure that any new statutory policy, or changes to a statutory policy, are well targeted, effective and appropriate, and that they impose the lowest possible burden on Victorian businesses and the community.

The policy impact assessment (PIA) process involves an assessment of regulatory proposals. A PIA provides information on the need to develop or vary statutory policy, the nature and meaning of policy proposals and their practical impacts and implications. In addition, PIAs explain the intended means of implementing new or varied policy and the likely environmental, social and economic impacts of implementation.

Under section 18A of the *Environment Protection Act 1970*, a PIA must be prepared and made available for examination before a State Environment Protection Policy or Waste Management Policy can be declared or varied.

The process allows members of the community to comment on what is being proposed before it is finalised. Such public input provides valuable information and perspectives, and improves the overall quality of statutory policies. This PIA has been prepared to facilitate public consultation on the Victorian Government's proposed *Waste Management Policy (Combustible Recyclable and Waste Material)*.

A copy of each of the proposed policies is attached to this PIA, and submissions are now invited on these. Unless requested by the author, all submissions will be treated as public documents and may be made available to other parties.

Please submit comments or submissions by no later than 5pm on 1 August 2018 to:

wastepolicy@delwp.vic.gov.au

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Executive Summary

On 13 July 2017, a fire began at SKM Recycling's Coolaroo resource recovery facility. The fire was eventually extinguished on 1 August 2017. Firefighters battled the blaze 24 hours a day over 20 days. This fire highlighted the risk to community and environment posed by inappropriate stockpiling of materials at waste and resource recovery facilities.

The Victorian Government responded by establishing the Resource Recovery Facilities Audit Taskforce, and declaring an interim waste management policy (WMP). This interim WMP enabled the taskforce and Environment Protection Authority (EPA) to take action to improve safety standards at waste and resource recovery facilities.[1] It requires waste and resource recovery facilities to manage and store combustible recyclable and waste material (CRWM) in a manner that minimises risks to human health and the environment from fire.

The interim WMP will expire on 28 August 2018. The Victorian Government proposes to declare an ongoing *Waste Management Policy (Combustible Recyclable and Waste Material)* in accordance with section 18A of the *Environment Protection Act 1970* (EP Act), to replace it. This requires preparation of and consultation on a policy impact assessment (PIA) and draft proposed WMP. The draft WMP is provided at Attachment A.

Prior to the interim WMP, fire risk at resource recovery facilities was governed by a range of legislation, including land use planning, building regulations and standards, fire regulations, environment protection, and occupational health and safety rules. A regulatory gap exists in practice because the several authorities responsible for administering these various pieces of legislation are not well coordinated, and they have inadequate capability and resources to enforce the rules. For example, fire expertise sits with fire agencies that are focused on emergency response and have limited compliance capabilities, while regulatory resources and expertise sit with local government authorities (LGAs) and state agencies that have limited fire safety expertise. The interim WMP bridged this gap by giving EPA specific regulatory powers to preventatively address fire risk management at resource recovery facilities.

The taskforce identified 886 resource recovery sites, and assessed five sites as extreme risk and 188 as high risk. Based on this audit and inspections, the taskforce concluded that while there are some operators demonstrating good practice, the resource recovery sector is generally poorly prepared and ill equipped to manage fire risks.

Key management issues raised by the taskforce include:

- **oversized stockpiles** – the accumulation and configuration of waste is combined with a lack of separation between stockpiles, buildings and boundaries and restricted access for fire appliances;
- **non-operational, inadequate and/or poorly maintained fire-fighting equipment** – poor design practices or re-purposing of sites has resulted in undersized fire protection systems (relative to the fuel load within the stockpiles), with issues including insufficient fire water (capacity and or flow) and poor contingency planning for fire-water run-off;
- **absent or ineffective emergency response procedures** – failure to plan, failure to communicate and failure to train and/or test systems intended to keep personnel safe; and
- **operating issues** – including maintenance and access to firefighting equipment, and waste in inappropriate locations including stormwater systems.

The primary policy objective here is to ***identify the best approach to managing fire risk from combustible recyclable and waste material, in order to minimise risks to human health and the environment as well as broader social costs from fires in waste and resource recovery facilities.***

Options considered included a new WMP, new regulations or amendment of existing regulations such as the scheduled premises regulations, resourcing relevant authorities for preventative interventions, improving inter-agency coordination, better education, and insurance based leverage.

1. Waste Management Policy (Resource Recovery Facilities), declared 29 August 2017, available at: http://www.gazette.vic.gov.au/gazette/Gazettes2017/GG2017S289.pdf

The major legislative overhaul of the EP Act is a key consideration in identifying the regulatory approach from 29 August 2018. A significantly changed regulatory framework is likely.[2] It is anticipated that on commencement of a new Act, this proposed WMP would be repealed and, subject to a consultation and impact assessment process, replaced with a new regulatory instrument, potentially broader in scope. It is anticipated that appropriately flexible and readily adaptable options will be available for this instrument under the future regulatory framework.

A WMP is proposed as it is the most cost-effective, proportionate, and flexible approach, can be implemented quickly, and avoids large upfront administration costs being incurred during the period up to mid-2020 when a new regulatory framework for EPA is expected to commence. The proposed WMP has minimal changes to the scope or intent of the interim WMP, and will be supported by the existing compliance guideline which is also undergoing review. A revised guideline is anticipated to be in place by early 2019.

This proposed WMP is one element of what will become the broader government response to recommendations made by the taskforce. The government's response to these recommendations will be released later in 2018. The proposed WMP will enable continued regulation of fire risk management while these aspects are being developed, and in the period leading up to the new regulatory framework.

Combustible recyclable and waste material (CRWM) is generated through municipal, commercial and industrial, and construction and demolition waste streams.[3] Accumulation of large volumes of stored CRWM can occur at a variety of operational sites broadly termed 'resource recovery facilities'.[4]

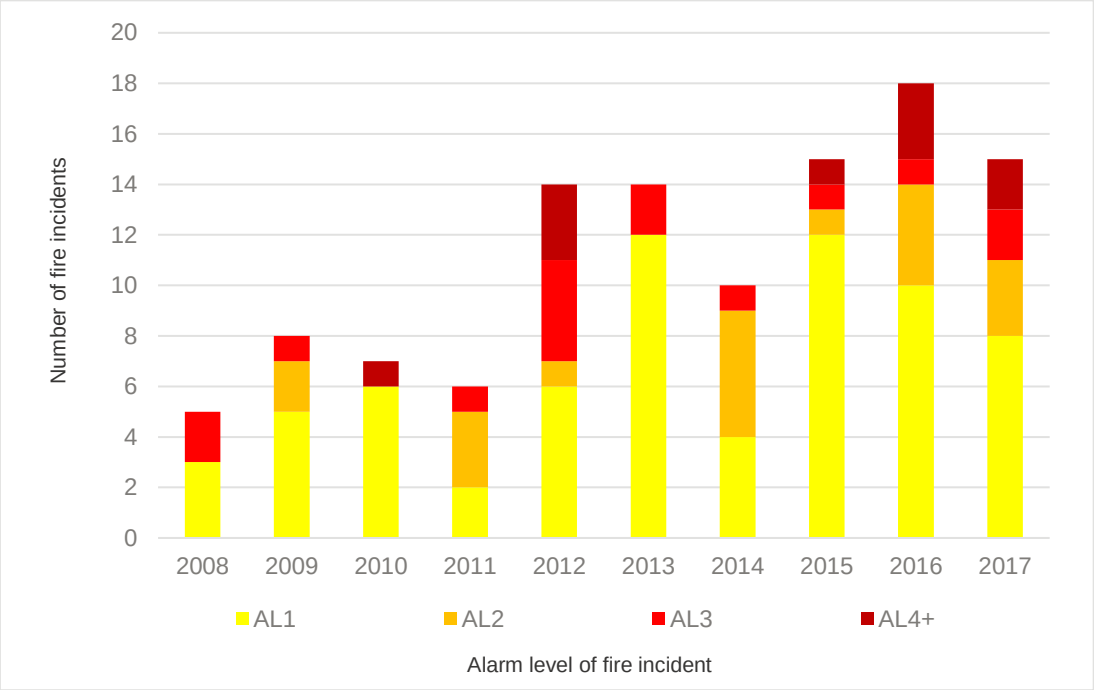
Drivers of CRWM stockpiling include:

- variations in prices or markets for recycled material;
- the nature of municipal recycling contracts, which typically require the facilities to take all of the recyclables collected, regardless of changes to the operator's processing, storage capacity, or market fluctuations;
- access to export markets and changes to those markets, such as China's recent restrictions on import of recyclable materials; and
- tighter regulatory controls in other states driving interstate movement of CRWM to Victorian facilities.

Fire risk is comparatively high at resource recovery facilities. Fires can arise for a number of reasons including poorly maintained equipment on-site, 'hot loads' (consignments of waste arriving already partially burning), arson, or bushfire. Management of stored CRWM is key to reducing the likelihood and consequence of fire. Possible consequences are generally highest in facilities near major urban areas, where most CRWM is stored. Recent fires profiled in case studies presented here make clear that current industry practices pose an unacceptable risk, and current market disruptions are likely to increase this risk. Figure 1 shows that frequency and severity of fires at resource recovery facilities has increased over time.

2. Government Response to the Independent Inquiry, January 2017, https://www.environment.vic.gov.au/sustainability/independent-inquiry-into-the-epa
3. CRWM is defined in the policy as "any paper, cardboard, wood, plastic, rubber, textile, organic material, refuse derived fuel, specified electronic waste, metals, or other combustible material which is considered waste".
4. Definitions of various facility types are provided in section 8.1 of the *Statewide Waste and Resource Recovery Infrastructure Plan,* Sustainability Victoria, 2015, http://www.sustainability.vic.gov.au/swrrip

Figure 1: Resource recovery facilities – fire incidents by alarm level, 2008-2017



Source: MFB and CFA.

The impacts of large CRWM fires include:

- Hazardous air pollutants. The Coolaroo fire created high levels of $PM_{2.5}$, the main pollutant of concern in smoke. Combustion of municipal waste can produce harmful pollutants such as polycyclic aromatic hydrocarbons, heavy metals, and dioxins, depending on the materials combusted.[5]
- Oil, runoff and leachate that can affect soil, waterways and air. Fire water run-off can have significant environmental impacts, entering local waterways, causing fish deaths and contamination with E. coli due to organic material in municipal mixed recyclables.

The costs of response, clean up, and societal and business impacts able to be quantified are estimated to be around $6 million for a high-risk fire, and $34 million - $100 million for another Coolaroo or extreme-risk fire. These are minimum estimates of costs as many social and environmental impacts are excluded.

The major expected benefit of the proposed WMP is a reduction in the frequency and severity of CRWM fires.

Costs expected from the proposed WMP over ten years include compliance costs for resource recovery facilities of around $6.85 million, potential industry transition costs of around $1.73 million and regulatory costs to EPA for compliance and enforcement activity of $1.35 million, for a total cost of $9.93 million.

Break-even analysis is used to describe how many fires would need to be avoided as a result of the proposed WMP in order to generate net benefits. Preventing a single fire of the severity of the recent fire at Coolaroo or two high-risk fires over ten years would be adequate for the benefits of the proposed WMP to exceed the costs. Moderate variations in estimated costs and the numbers of firms required to comply do not alter this overall conclusion.

5. Estimates of the pollutant mix arising from municipal solid waste (including paper, plastics, and wood) combustion are provided by Park, Kim and Jo (2013), 'Release of Harmful Air Pollutants from Open Burning of Domestic Municipal Solid Wastes in a Metropolitan Area of Korea', Aerosol and Air Quality Research, 13: 1365–1372

The PIA discusses the likely impacts of the proposed WMP on small business and competition. The proposed WMP will place new requirements on operators that involve some resource cost, and may therefore create a cost barrier. Firms with business practices that present greater environmental risks and externalise these risks onto the broader community will now compete on a level playing field with responsible operators that are taking due precautions to minimise fire risk. For smaller operators, the WMP is a flexible tool that will allow EPA to apply the guideline requirements proportionately to risk.

The ultimate impact of restrictions is likely to be on upstream parties – commercial and industrial waste generators who may pay higher prices for collection, or municipal councils who may face less choice of recyclers and receive lower prices for recyclables. Relative to broader market trends and the impact of China's trade restrictions, however, this impact is likely to be negligible.

The costs of the proposed WMP are small in comparison to the social costs imposed by CRWM fires, and even a minor reduction in fire risk will warrant imposing these costs on the industry.

The proposed WMP will be implemented by EPA as it incorporates the audit and inspection work of the taskforce into normal operations after June 2018. This additional, ongoing compliance and enforcement activity will continue to be guided by EPA's Compliance and Enforcement Policy.

There is a broader range of work underway which will also continue, to develop markets for recyclables, and to assist industry and LGAs to adapt to market changes driven by China's recent trade restrictions.

The proposed WMP is expected to be evaluated prior to the commencement of EPA's new regulatory framework, around mid-2020. This will establish how well the WMP and its implementation have contributed to the objective of reduced CRWM fire risk. The taskforce audits provide a quality baseline against which to measure policy effectiveness. Re-assessing risk will enable determination of risk reduction effectiveness, while changes to number of statutory notices issued by EPA, and data from response agencies provide good indications of outcomes. Qualitative data from agencies and from industry will also be assessed.

Abbreviations and acronyms

Abbreviation/acronym	Description
CCTV	Closed-circuit television
CFA	Country Fire Authority
CFA Act	*Country Fire Authority Act 1958*
CPI	consumer price index
CRWM	combustible recyclable and waste materials
CUN	clean-up notice
DHHS	Department of Health and Human Services
EP Act	*Environment Protection Act 1970*
EPA	Environment Protection Authority Victoria
FPN	fire prevention notice
Interim WMP	Interim *Waste Management Policy (Resource Recovery Facilities)*
LGA	Local Government Authority
MBS	municipal building surveyors
MFB	Metropolitan Fire Brigade
MFB Act	*Metropolitan Fire Brigades Act 1958*
NPV	net present value
OHS	Occupational Health and Safety
OHS Act	*Occupational Health and Safety Act 2004*
PAH	polycyclic aromatic hydrocarbons
PAN	pollution abatement notice
PE Act	*Planning and Environment Act 1987*
PIA	policy impact assessment
Proposed WMP	Proposed *Waste Management Policy (Combustible Recyclable and Waste Material)*
RIS	Regulatory Impact Statement
Scheduled Premises Regulations	*Environment Protection (Scheduled Premises) Regulations 2017*
Scheduled Premises RIS	DELWP–EPA Regulatory Impact Statement - Proposed Environment Protection (Scheduled Premises) Regulations 2017; EPA publication 1639
Taskforce	Resource Recovery Facilities Audit Taskforce
the guideline	*Management and storage of combustible recyclable and waste materials*; EPA publication 1667
VCAT	Victorian Civil and Administrative Tribunal
VPS4	Victorian Public Service Grade 4
waste tyres RIS	Regulatory Impact Statement - Storage of Waste Tyres; EPA publication 1576
WMP	waste management policy

1. Introduction

1.1 Context – Coolaroo fire, taskforce and interim waste management policy

On 13 July 2017, a fire began at SKM Recycling's Coolaroo resource recovery facility. The fire was eventually extinguished on 1 August 2017. During the fire nearby residents were evacuated from their homes, four people were hospitalised, and 12 required medical attention. At the height of the fire, the Metropolitan Fire Brigade (MFB) and Country Fire Authority (CFA) deployed approximately 54 appliances and 160 firefighters working with emergency service partners. Firefighters battled the blaze 24 hours a day over 20 days.

The fire highlighted the risk to community and environment posed by inappropriate stockpiling of materials at waste and resource recovery facilities.

In response to the fire, the Victorian Government established a taskforce (the Resource Recovery Facilities Audit Taskforce) to audit facilities across Victoria to identify stockpiling risks and make recommendations for actions to reduce this risk. In December 2017 the taskforce provided an interim report to the Government, which is now considering the taskforce's recommendations.[6]

An interim waste management policy (WMP) – the *Waste Management Policy (Resource Recovery Facilities)* – was also declared on 29 August 2017, providing additional powers for the taskforce and Environment Protection Authority (EPA) to take action to improve safety standards at waste and resource recovery facilities.[7]

The interim WMP requires waste and resource recovery facilities to manage and store combustible recyclable and waste material in a manner that minimises risks to human health and the environment from fire. A new EPA guideline outlining an acceptable means of compliance with this requirement was released alongside the interim WMP.[8]

The WMP was declared with reference to section 18B of the *Environment Protection Act 1970* (the EP Act), following certification by the Minister for Energy, Environment and Climate Change that there were special reasons to declare the policy without delay. Accordingly, the ordinary notice and consultation requirements and requirement to prepare a policy impact assessment (PIA) as prescribed by section 18A of the EP Act did not apply at that time.

The interim WMP will expire on 28 August 2018, in accordance with section 18B of the EP Act, which limits interim WMPs to a 12 month duration.

The Government proposes to declare a new ongoing *Waste Management Policy (Combustible Recyclable and Waste Material)* to replace the interim WMP. The draft proposed WMP is provided at Attachment A.

1.2 Environment protection framework reforms

Following the independent inquiry into EPA that was conducted in 2015-16, the Victorian Government committed to modernising EPA to meet Victoria's environment protection challenges now and into the future. The reforms clarify EPA's focus on protecting human health and the environment from the harmful effects of pollution and waste.

Reforms to the *Environment Protection Act 1970* are being delivered in two stages: the first being the *Environment Protection Act 2017,* which focusses on reforming EPA's governance, and the second being a Bill to overhaul the remainder of the 1970 Act which is expected to be considered by Parliament during 2018.

6. Media Release "Taskforce To Audit Recycling Facilities", Minister for Energy, Environment & Climate Change, 15 July 2017. Information about the taskforce is available at: http://www.epa.vic.gov.au/our-work/programs/victorian-government-resource-recovery-audit-taskforce
7. Waste Management Policy (Resource Recovery Facilities), declared 29 August 2017, available at: http://www.gazette.vic.gov.au/gazette/Gazettes2017/GG2017S289.pdf
8. *Management and storage of combustible recyclable and waste materials*, EPA publication 1667.1, available at: http://www.epa.vic.gov.au/our-work/publications/publication/2017/november/1667-1

While the reform of the 1970 Act is subject to Parliament's consideration and approval, the Government response to the independent inquiry makes clear that a significantly changed regulatory framework is intended for the future, including reforms to the permissioning framework.[9]

The WMP proposed in this PIA will therefore need to be re-considered in the context of the new statutory framework. It is anticipated that upon commencement of the new environment protection laws the proposed WMP will be repealed, and its requirements likely transferred to some new instrument (potentially broader in scope than this WMP). It is anticipated that appropriately flexible and adaptable options will be available for this instrument within the future framework. The development of new instruments under the future framework is expected to be subject to a consultation and impact assessment process.

1.3 Scope and timing

Like the interim WMP, the draft WMP and this PIA are limited in their scope to managing fire risks associated with combustible recyclable and waste materials (CRWM) at waste and resource recovery facilities.

In line with the Government's commitment to an EPA focused on prevention of harm, the emphasis of the proposed WMP is on proactively reducing the likelihood and consequences of fires; i.e. on risk mitigation.

Environmental health impacts associated with these facilities other than those relating to fire risk are not covered by the proposed WMP or considered here. Similarly, management of fire risks outside of the waste and resource recovery context is not within scope.

This PIA considers feasible options to manage fire risk in the short term following the expiry of the interim WMP, as a complement to ongoing longer-term work within government to develop fire agency capacity and improve collaboration between agencies and with industry.

While the proposed WMP will by default remain in force for 10 years, in practice the period of operation of the proposed WMP will likely extend only until the state's proposed new environment protection laws (noted above) take effect.

1.4 Outline of the PIA

Section 2 describes the nature and extent of the problems associated with CRWM fire risk, including the drivers of stockpiling and the gaps in the regulatory regime existing prior to declaration of the interim WMP.

Section 3 outlines the policy objectives.

Section 4 identifies options for achieving these objectives and assesses the extent to which each option is capable of doing so in light of expiry of the interim WMP in August 2018. Declaring a new, ongoing, WMP is identified as the preferred option.

Section 5 analyses the impacts of this option relative to a base case where the interim WMP is allowed to expire with no replacement. This includes assessment of regulatory costs, small business impacts, and competition impacts.

Section 6 describes the proposed implementation approach for the proposed WMP.

Section 7 outlines an evaluation strategy.

9. Government Response to the Independent Inquiry, January 2017, https://www.environment.vic.gov.au/sustainability/independent-inquiry-into-the-epa

2. The problem

2.1 Overview

This section outlines the nature and extent of the problem.

It describes the drivers of stockpiling and poor fire risk mitigation in the waste and resource recovery sector (section 2.2), and describes how this exacerbates the risk of fires which have harmful consequences to human health and the environment and high costs to the community (section 2.3).

Section 2.4 describes the gaps in the regulatory regime prior to declaration of the interim WMP, and explains the role of the interim WMP. Section 2.5 discusses results from the taskforce audit, which establish that poor fire risk management practices are widespread across the sector.

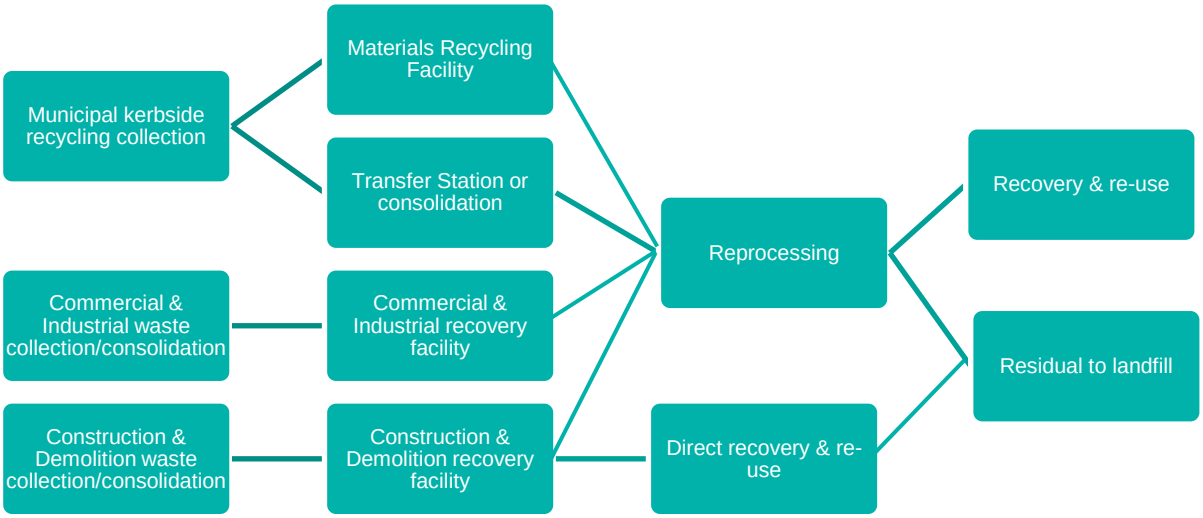
Although data to establish the full costs of fires is only partial, the scale of the impacts of recent fires profiled in case studies below makes clear that current industry practices pose an unacceptable risk. There are grounds to expect these risks to grow as the industry adapts to recent market shocks.

2.2 Industry context and drivers of stockpiling

2.2.1 Resource recovery facilities

Combustible recyclable and waste material (CRWM) is generated through municipal, commercial and industrial, and construction and demolition waste streams.[10] Following collection from the source it is typically moved to facilities for sorting and/or reprocessing, sometimes via transfer stations. The final destination can be domestic or international re-use, and landfill of residual waste. Figure 1 illustrates the movement of CRWM from generation to re-use or disposal. Accumulation of large volumes of stored CRWM can occur at a variety of operational sites in this pathway, broadly termed 'resource recovery facilities'.[11]

Figure 1: Movement of combustible recyclable and waste materials



10. CRWM is defined in the policy as "any paper, cardboard, wood, plastic, rubber, textile, organic material, refuse derived fuel, specified electronic waste, metals, or other combustible material which is considered waste".
11. Definitions of various facility types are provided in section 8.1 of the *Statewide Waste and Resource Recovery Infrastructure Plan,* Sustainability Victoria, 2015, http://www.sustainability.vic.gov.au/swrrip

The resource recovery industry is complex, with a diverse range of business models and waste types. These include highly specialised businesses and others that deal with diverse materials, as well as businesses with varying degrees of vertical integration. Within each waste stream there are a wide array of sorting and reprocessing methods, and a range of outputs.

The taskforce audit identified 886 resource recovery sites in Victoria across a range of facility types including transfer stations, sorting facilities, reprocessors, storage sites, landfills and others.

2.2.2 Inappropriate management of stockpiles

Stockpiling may occur as a part of legitimate operations, for example while consolidating product for shipment or for processing at scale, or while waiting for commodity price fluctuations. It can also occur as a result of illegal activity, where low-cost operators undercut competitors by storing materials on rented land or in rented warehouses without a plan for processing, frequently abandoning the site afterwards.[12]

Management of stored material is key to reducing the likelihood and consequence of fire. Fire incidents are more likely to be contained where stockpiles are well organised with adequate separation distances to allow access for firefighting appliances and prevent fires spreading. Large disorganised piles and absent or inadequate separation distances increase the risk of a small fire spreading.

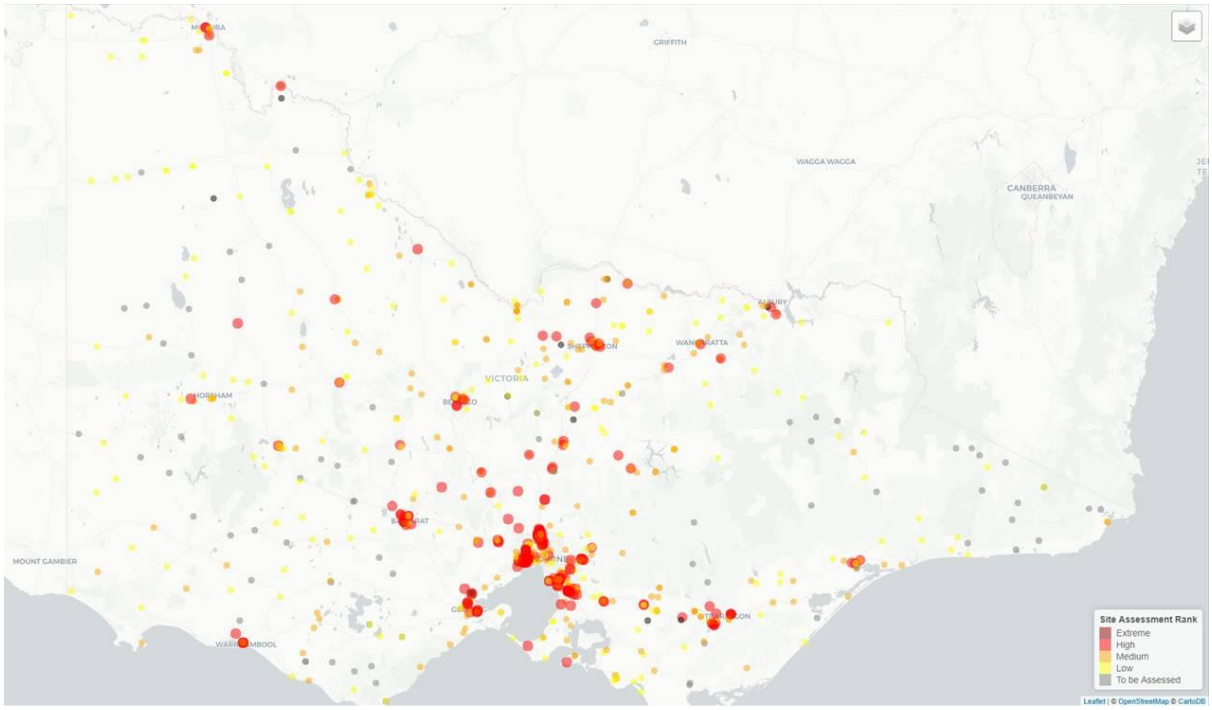
The waste and recycling system is characterised by large volumes of material and high throughput, which means that significant amounts can be accumulated by facilities in a short time. The approximately 30,000 tonnes of material that burnt at Coolaroo in July 2017 is thought to have accumulated between February and June 2017, for example. This presents particular challenges for regulation, as the situation on a given site can change very quickly.

Figure 3 overleaf shows examples of stockpiling practices observed during inspections as part of the taskforce audit.

Risks are generally highest in facilities near major urban areas, where most CRWM is stored and where the consequences of fire are higher, but high-risk sites are not limited to facilities in metropolitan Melbourne. Figure 2 illustrates the locations and risk classification of sites identified by the taskforce (see section 2.5).

12. Illegal disposal of construction and demolition waste and waste tyres in particular have been noted in recent years. See the final report of the Independent Inquiry into the Environment Protection Authority, 2016, p374, http://www.epa-inquiry.vic.gov.au/epa-inquiry-report, and the waste tyre storage RIS at http://www.epa.vic.gov.au/our-work/publications/publication/2014/september/1576

Figure 2: Location and taskforce risk assessment of resource recovery sites



Source: Taskforce

2.2.3 Municipal kerbside recycling contracts

In Victoria, a number of resource recovery facilities are contracted to accept kerbside recycling through long-term arrangements with Local Government Authorities (LGAs). These contracts typically require the facilities to take all of the recyclables collected, regardless of changes to the operator's processing or storage capacity. Councils will separately contract with waste collection providers, paying these providers to conduct kerbside collection and transport to resource recovery facilities.

Unlike in other states, Victorian resource recovery facilities have typically in the past paid a fee per tonne to receive recyclable material from LGAs, since it has had economic value to these facilities as a feedstock for their various operations (sorting, cleaning, recycling, baling for export, etc). The presence of a price signal in contracts between LGAs and recyclers may have led to a focus by recyclers on minimising their input costs and competing for council contracts, and a focus by councils on maximising revenue, with relatively less attention paid to environmental performance on both sides. Many such contracts are currently being renegotiated.

Contracts for municipal recycling can be up to 12 years in duration, leaving the risk of variations in prices or markets for recycled material largely borne by contracted resource recovery facilities, not LGAs.

Figure 3: Examples of stockpiling from taskforce

When thinning profit margins or loss of markets make processing unprofitable, or other incidents occur which limit processing capacity (as in the Coolaroo case study below), diversion of materials to other operators is difficult given the capacity limits and limited cooperation within the industry. Diversion to landfill is prohibitively expensive, as operators who may have paid around $50/tonne to receive recyclables would then be liable for landfill gate fees in the range of $120/tonne.

2.2.4 Other CRWM sources

By tonnage, 63% of the paper, cardboard, glass and plastic waste generated in Victoria comes from the commercial and industrial sector – only 33% is from the municipal waste stream. Commercial and industrial waste generators include the retail and hospitality sector, government, educational institutions, manufacturers and all other industry (aside from construction and demolition).[13]

Relative to municipal waste, recyclable commercial and industrial waste is more likely to be homogeneous with lower contamination levels. Less processing is required to create a saleable product, lowering barriers to entry, and this part of the industry has more players. Operators tend to proliferate when commodity prices are high, and disappear when prices are low.

The state has some visibility of the municipal waste stream state via local government, but there is less oversight of commercial and industrial waste (other than for specific waste types directly regulated, such as prescribed waste and prescribed industrial waste, organic waste, waste tyres, e-waste and glass waste[14]).

Aggregation of combustible waste for the stated purpose of establishing a waste-to-energy operation (e.g. combustion of paper to produce heat[15]) also raises stockpiling concerns, as often there is no requirement to have a viable process to obtain a permit before aggregating the waste.

Construction and demolition waste is predominantly concrete, bricks, asphalt, and wood/timber. This poses lower fire risk than recyclables but, as noted, has raised illegal dumping and site abandonment issues.

2.2.5 Market incentives

Market influences are a significant driver of stockpiling. The price of recovered materials fluctuates in global commodities markets, and access to export shipments and markets varies. Domestic outlets for recovered materials are limited, resulting in storage of processed material while waiting for access to export outlets.

Export markets are significant for Victoria – 44% of paper, 58% of plastic, and 18% of metal are exported, with 80% of this going to just five countries: China, Indonesia, Pakistan, India and Hong Kong.

Ongoing changes in import regulations in China, one of the largest international markets for recovered materials and the dominant market for plastics[16], have driven a steady and significant decline in Australian exports, amounting to a 38% decrease in export volumes to China since 2012.

More recently China has introduced trade restrictions on imports of unprocessed foreign waste by reducing contamination limits for imported material to 0.5%. Prior to this change, which commenced from 1 January 2018, China was accepting around 75% of the 685,000 tonnes of paper recyclables and 25% of the 85,000 tonnes of plastic recyclables exported from Victoria annually.[17] The change is likely to have a significant impact on exports, and it remains unclear whether alternative export destinations are available. Coupled with the predicted growth in waste generated over time, this presents an increasingly important issue.

13. See sections 3.3 and 5.2 of Sustainability Victoria, 2015, *Statewide Waste and Resource Recovery Infrastructure Plan*, http://www.sustainability.vic.gov.au/swrrip
14. Facilities over a certain size threshold which process these waste types are listed as scheduled premises in the Scheduled Premises Regulations, and therefore require works approvals and operating licences. See section http://www.epa.vic.gov.au/our-work/licences-and-approvals
15. See EPA *Energy from waste guideline*, publication 1559.1, Jul 2017, http://www.epa.vic.gov.au/our-work/publications/publication/2017/july/1559-1
16. See International Solid Waste Association, *Global recycling markets for plastic waste: A story for one player – China*, Sep 2014, https://www.iswa.org/fileadmin/galleries/Task_Forces/TFGWM_Report_GRM_Plastic_China_LR.pdf
17. Export figures compiled by taskforce [underlying data source: ABS, International Merchandise Trade Customised Report]

In response to the changed trade restrictions, one Victorian recycler has reportedly invoked a 'force majeure' clause in order to suspend contracts with LGAs.[18] While the full ramifications of the market disruption for the economics of the industry remain unclear, there is potential for it to significantly elevate stockpiling and abandonment risks, particularly in the short term. There is potential for contract terms to shift away from the current standard whereby recyclers make payments to LGAs to purchase material (as a profitable feedstock), and towards recyclers instead receiving payments from LGAs to accept material (as a cheaper alternative for LGAs than landfilling). Such changes could increase the incentives for short-term operators to enter the industry and undercut legitimate recyclers, with stockpiling and eventual abandonment used as an end-point, as has occurred in the waste tyre context.[19]

As well as potentially disadvantaging legitimate recycling operations, thinning profit margins in the industry reduce the inbuilt incentive for facilities to invest in adequate fire risk management to protect the value of their feedstocks. It is this limited private incentive for safekeeping of materials of low market value that makes CRWM fire risk management issues more acute than those relating to stockpiles of higher-value combustibles (e.g. timber yards, plastics production facilities, etc).

2.2.6 Tighter regulatory controls interstate

EPA have indicated that CRWM is sometimes transported to Victorian facilities from other states which have tighter regulatory controls, in particular New South Wales and South Australia, both of which require licences for storage sites and set limitations on storage duration (see section 4.2).

2.3 Fire impacts

2.3.1 Frequency and severity

Fire at resource recovery facilities can arise for a number of reasons: poorly maintained equipment on-site, 'hot loads' (consignments of waste arriving already partially burning), arson, or external sources such as bushfire. MFB and CFA data cross-referenced by the taskforce against resource recovery facilities indicates that fires at these sites with a known cause were most likely due to malfunctioning onsite machinery or human error, although for many fires the causes remained unspecified.

Table 1 shows the frequency of fires at resource recovery facilities over the period 2008-2017, according to the taskforce risk classification of the site. Across the 635 sites for which CFA and MFA call-out data was available there were 136 recorded fires over this period.

Table 1: Fire frequency by risk category for Victorian resource recovery facilities, 2008-2017

Risk category	Number of sites	Number of fires
Extreme	5	14
High	198	65
Medium	274	39
Low	158	18
Total	635	136

Source: Taskforce, MFB and CFA data

18. Visy reportedly invokes "force majeure", Waste Management Review, 31 January 2018, http://wastemanagementreview.com.au/visy-reportedly-invokes-force-majeure-residential-waste-contracts/ ; Recycling on the brink of collapse in Victoria as China ban bites, The Age, 31 January 2018, https://www.theage.com.au/national/victoria/recycling-on-the-brink-of-collapse-in-victoria-20180131-p4yz5f.html

19. Storage of Waste Tyres RIS, Sep 2014, p17-18, http://www.epa.vic.gov.au/our-work/publications/publication/2014/september/1576

Poor fire risk management increases the likelihood of fires starting and growing, and poorly managed stockpiles in particular can result in small fires escalating into larger incidents with significant off-site impacts.

Both the frequency and severity of fires at resource recovery facilities have been increasing over time, as fire service data relating to alarm levels in Figure 4 below shows.

MFB alarm levels range between 1st alarm and 8th alarm, and have an associated resource response which depends on the type of fire (structure, non-structure, HAZMAT, etc). Alarm levels are either raised by the incident controller at a fire to trigger additional resources, or are automatically raised in response to a request by the controller for specific resources. For non-structure fires the 1st through 5th alarm level responses are shown in Table 2. Each level beyond 5th alarm is associated with four additional primary appliances.

Of the fires shown in Figure 4, 61% were 1st level alarms, 17% were 2nd level alarms, 13% were 3rd level alarms, and the remaining 9% (10 over the period) were 4th level or above. The SKM Coolaroo fires in February and July 2017, the only alarms greater than 4th level, were 6th and 8th level alarms respectively.

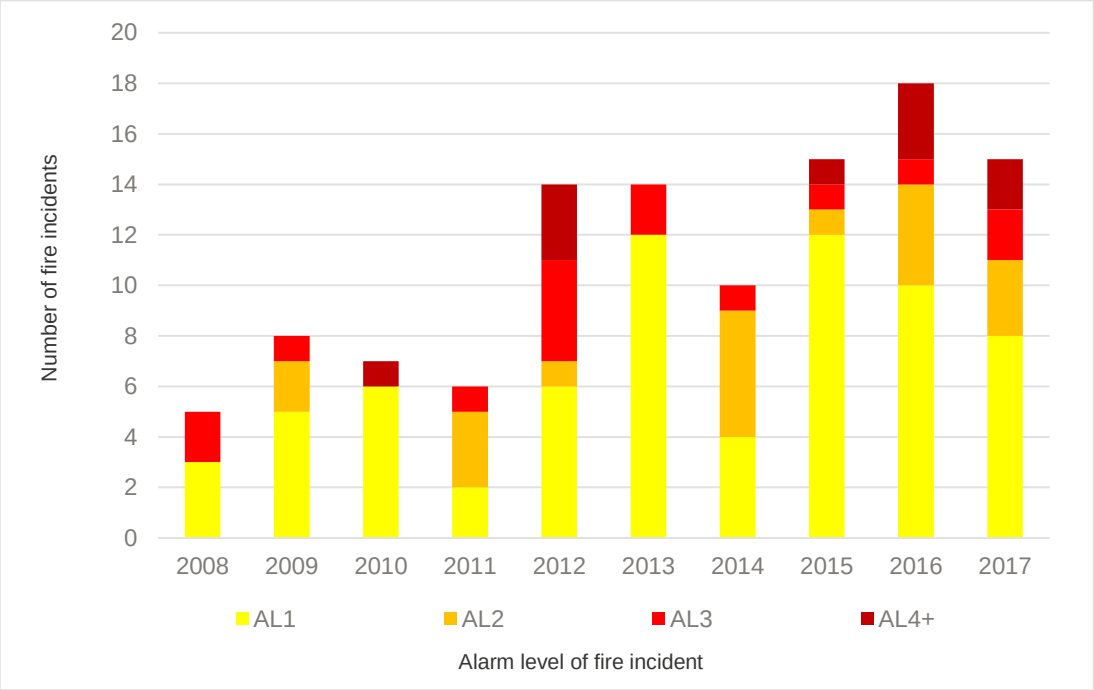
As higher alarm fires generally have a longer duration as well as requiring more appliances and firefighters, the severity of the fire has a greater-than proportional impact on the resource demands of the fire response.

Table 2: MFB Greater Alarm Response System – non-structure fires

Alarm	1st	2nd	3rd	4th	5th	6th, 7th, 8th
Primary appliances	2	5	7	9	11	15, 19, 23
Tankers		1	2	3	4	4
Commanders		2	3	3	4	4
Control units			1	1	1	1
Duty officers			1	1	3	3
Duty officers to ECC					1	1
Commander to ECC					1	1

Source: MFB

Figure 4: Resource recovery facilities – fire incidents by alarm level, 2008-2017



Source: MFB and CFA. Note there are minor differences between datasets used in Table 1 and Figure 4.

2.3.2 Impacts to human health and the environment

Large CRWM fires can burn for days, generating hazardous air pollutants, oil, runoff and leachate that affect the soil, waterways and air. The adverse consequences of poor management have been confirmed by a number of recent fires at facilities in Victoria and elsewhere in Australia.

During the Coolaroo fire, nearby residents were evacuated from their homes, four people were hospitalised and 12 required medical attention. Businesses within the vicinity closed, and local residents were asked to remain indoors or attend the relief centre for respite.

This advice reflected EPA air quality monitoring which observed high levels of airborne small particles, known as $PM_{2.5}$ – tiny particles measuring less than 2.5 micrometres in diameter.[20] Because of their small size, these particles are generally the main pollutant of concern in smoke.

A growing body of research shows $PM_{2.5}$ to be the most significant type of particle pollution. Aside from well-documented effects on respiratory and cardiovascular health, an increasing number of studies now link long-term exposure to $PM_{2.5}$ with adverse birth outcomes, and emerging evidence suggests that long-term $PM_{2.5}$ exposure can have effects in relation to diabetes, neurodevelopment and cognitive function[21].

Combustion of municipal waste can also produce other harmful pollutants such as polycyclic aromatic hydrocarbons (PAHs), heavy metals, and dioxins, depending on the type of materials combusted.[22]

20. See http://www.epa.vic.gov.au/your-environment/air/air-pollution/pm25-particles-in-air for information about EPA monitoring.
21. Kelly and Fussell (2015), 'Air pollution and public health: emerging hazards and improved understanding of risk', Environmental Geochemistry and Health, 37(4) p.631.
22. Estimates of the pollutant mix arising from municipal solid waste (including paper, plastics, and wood) combustion are provided by Park, Kim and Jo (2013), 'Release of Harmful Air Pollutants from Open Burning of Domestic Municipal Solid Wastes in a Metropolitan Area of Korea', Aerosol and Air Quality Research, 13: 1365–1372

Fire water run-off can also have significant environmental impacts. Water used to bring the Coolaroo fire under control entered local waterways, causing fish deaths at a nearby lake due to extremely low levels of dissolved oxygen. High levels of E. coli were observed in local waterways, likely due to contamination of municipal recyclables with organic material.

2.3.3 Other costs

Fires impose significant costs on the state and local government associated with fire-fighting and broader emergency response, clean-up costs, ongoing environmental impact monitoring and mitigation, and responding to immediate and ongoing health impacts.

Larger fires can also impose considerable economic costs on the private sector: there can be considerable damage to buildings and stock on the sites where they occur, as well as costs on businesses affected by shutdowns and evacuations and on business more broadly via insurance risk perceptions and premiums.

Broader social costs aside from health and environmental impacts include disruption to evacuated residents, impacts on local infrastructure, and transport network disruption due to firefighting activities or smoke.

2.3.4 Gauging the costs of fires

Many of the impacts of waste fires described above are difficult to quantify in monetary terms. Fire costs are also generally difficult to recover as the responsible businesses may not be in a financial position to meet their obligations in the aftermath of a fire.

Although environmental and public health impacts are the primary concern for policymakers and regulators, estimating the damage costs of particulate and other pollution from fires is significantly more difficult than gauging the immediate economic costs. This is in part because the amount and composition of combusted materials and the resulting pollutant contents are typically unclear. Damage costs from regular, monitored emissions from industrial processes in contrast are often able to be estimated with more certainty.

To illustrate the magnitude of CRWM fire costs, Boxes 1 and 2 below present case studies and estimates of fire costs on different scales relating to resource recovery facilities in Victoria.

Although not entirely comparable, the costs associated with waste tyre fires are also indicative of the costs of CRWM fires. The 2014 Regulatory Impact Statement (RIS) for waste tyre storage compiled a range of fire cost figures, using estimates from the CFA and actual figures from various Australian and international fires. For the purposes of a break-even analysis, the RIS used cost benchmarks of around $150,000 per small/moderate fire, $3 million per large fire, and $5 million per very large fire (as well as $22 million for an extremely large fire – the equivalent of Australia's largest tyre stockpile at Stawell catching fire). The cost estimates from the case studies used to set these benchmarks generally included emergency and clean-up costs but generally excluded health impacts, nuisance costs, and many environmental costs.[23]

23. Storage of Waste Tyres RIS, Sep 2014, Table 4, p22, http://www.epa.vic.gov.au/our-work/publications/publication/2014/september/1576

Box 1: Ecotec – Somerton

On 20 November 2015, a lightning strike started a fire on a timber pile at a resource recovery site operated by Ecotec Woodwaste in Somerton, an urban area in Melbourne.

The fire lasted six days. At its peak it covered an area of 1,600 square meters, and was 10 meters high.[24] A water bombing helicopter was employed and up to a hundred firefighters were required, including some from Canberra.[25]

The Hume Highway was closed in both directions due to smoke, with a "watch and act" alert for residents in the local area. The mixed nature of the waste meant there was minimal understanding of the precise materials that were being burnt. Residents were initially requested to stay indoors, due to the potential for adverse health effects from inhaling toxic smoke.

The run off from the fire and materials used in the firefighting effort entered local waterways. Despite Melbourne Water placing run-off barriers, approximately 7km of the nearby Merri Creek was contaminated.[26]

Source: http://www.heraldsun.com.au/leader/north-west/firefighters-battle-large-blaze-in-somerton/news-story/a579202645b76eb79aa8b49469f8332b

Prior to the fire, the site operator had been fined $59,000 plus court costs for non-compliance with an order to not add additional material to the site, and had also failed to comply with an order to remove all materials from the site by June 2015.[27]

A number of organisations were affected by the fire or were involved in the response. These are detailed in Table 3 below and the costs incurred by these parties provided where information was available.

24. Waste Fires in Australia: Cause for Concern? Prepared for the Department of Environment, Canberra by the UTS Institute for Sustainable Futures, Sydney, p.16.

25 Canberra Times, 2015, ACT firefighters join Country Fire Authority to fight Somerton tip fire , *Canberra Times*, November 23 2015, http://www.canberratimes.com.au/act-news/act-firefighters-join-country-fire-authority-to-fight-somerton-tip-fire-20151122-gl57w9.html

26 Hume City Council, 2015, Somerton Fire: Community Information. 29 November 2015, http://www.hume.vic.gov.au/About_Us_Contact_Details/Your_Council/Media_Publications_Forms/Media_Releases/Media_Releases_2015/Somerton_Fire_Community_Information .

27 Michell L, 2016, Hume council slams EPA over fire costs, *Star Weekly,* April 18 2016, http://www.starweekly.com.au/news/council-slams-epa-over-fire/

Table 3: Costs associated with Ecotec Somerton fire

Organisation	Involvement	Costs
La Mirage Receptions	Local business	$402,000
Honda	Local business	$109,145
Close the Loop	Neighbouring resource recovery facility	$2,000,000 (estimated)
CFA	Emergency response	$2,300,000 (resource costs only, does not include internal costs and overtime)
MFB	Emergency response	Unknown
SES	Emergency response	Unknown
VicPol	Emergency response	Unknown
Vic Roads	Emergency response – traffic management and alterations to Hume Highway to allow water to be piped to the premises	$242,000
Melbourne Water	Impact management – water testing, work around Merri Creek and fire site	$295,145 (does not include staff time and internal resources utilised)
Yarra Valley Water	Impact management	Not submitted
Hume City Council	Impact management	$30,000 (estimated, does not include staff and internal resources or legal costs)
DELWP	Impact management – environmental rehabilitation works	$1,000,000 (estimated)
Department of Health and Human Services (DHHS)	Impact management	Unknown
EPA	Impact management	Unknown
Victorian Council of Churches	Impact management	Unknown
Red Cross	Impact management	Unknown
Salvation Army	Impact management	Unknown
TOTAL – emergency response, disruption, and clean-up		**>$6,378,290**

Source: Ecotec Fire Impact Summary Report, Hume City Council

Box 2: SKM – Coolaroo

Review of the Coolaroo fire to understand the range of impacts and costs is ongoing, but for the purposes of this PIA an approximate estimate has been prepared using the estimated resource costs of the Somerton fire in Box 1 above and information from the MFB about relative resourcing by alarm level (see section 2.3.1).

The resource costs to the CFA of the six-day Somerton fire, at alarm level 4, were estimated at $2.3 million. Scaling up this cost based on the minimum number of primary appliances attending an 8th alarm fire relative to a 4th alarm fire (23 and 9 respectively), and on the longer duration of the Coolaroo fire (20 days), suggests the fire-fighting costs of Coolaroo could be around 8.5 times larger, or $20 million.

Clean-up of the site alone required transporting around 30,000 tonnes of burnt waste to landfill.[28] Based on a landfill gate fee (inclusive of landfill levy) of $195 per tonne, the resource cost of this could have amounted to around $6 million.

Although the costs to local residents and businesses are as yet unquantified, it is worth noting that around 180 residents and businesses have signed up to a class action against SKM, claiming losses of more than $200,000 for some businesses as a result of shut downs, property damage and clean up.[29]

Although human health and environmental impacts are a major concern, estimation of damage costs is difficult and fire costing therefore generally focuses on direct economic costs. Reported fire costs are therefore generally lower than a true accounting of health and environmental costs would reveal.

To provide indicative estimates for the impacts associated with the Coolaroo fire, a provisional and approximate estimate of damage costs (i.e. the monetised value of health impacts per ton of pollutants released) has been prepared based on:

- **Damage cost parameters** for various pollutants, including particulates, various heavy metals, and PAHs, for the Port Phillip airshed, from the Scheduled Premises RIS[30];
- **Emission factors** (tonnes of pollutants per tonne of combusted waste) for domestic municipal solid waste estimated via laboratory testing[31]; and
- **An estimated 30,000 tonnes of combusted waste** based on reporting from the clean-up.

Based on these assumptions, the damage to human health associated with air pollution from the fire is costed at between $8 million and $85 million. The contributors to this cost are shown in

Table 4.

Particulates, lead, and (in one version of the calculation) PAHs are the most significant pollutants.

The low and high ends of the cost range depend on whether total PAHs are considered or only benzo(a)pyrene, which is often used but not universally accepted as a proxy for the presence of PAHs. Products of incomplete combustion contain PAHs which are a grouping of over 100 different chemicals of which around 17 are of particular concern to human health. As the emission factors were not available for all PAHs of concern, benzo(a)pyrene was used to determine the lower bound damage cost. The lower end of the range is used in the impact analysis in section 5.

28. EPA media release, 'Removal of over 30,000 tonnes of waste from site of Coolaroo fire occurs', 30 Oct 2017, http://www.epa.vic.gov.au/about-us/news-centre/news-and-updates/news/2017/october/30/removal-of-over-30000-tonnes-of-waste-from-site-of-coolaroo-fire-occurs
29. Kayhan, I., 2017, Melbourne recycling fire costs firms $200k, https://www.sbs.com.au/yourlanguage/turkish/en/article/2017/09/27/melbourne-recycling-fire-costs-firms-200k, 17 September 2017.
30. Scheduled Premises Regulations RIS, 2017, Table 25 on p163 http://www.epa.vic.gov.au/our-work/publications/publication/2016/october/1639
31. Park, Kim and Jo (2013), 'Release of Harmful Air Pollutants from Open Burning of Domestic Municipal Solid Wastes in a Metropolitan Area of Korea', Aerosol and Air Quality Research, 13: 1365–1372

Table 4: Coolaroo – estimated damage costs from air pollution

Pollutant	Emissions (tonnes)	Damage cost $/tonne	Cost
PM10	36.0 tonnes	$ 80,276	$ 2,889,936
PM2.5	23.4 tonnes	$ 190,000	$ 4,446,000
Pb	1.5 kg	$ 1,727,447	$ 2,591
Ni	4.5 kg	$ 6,802	$ 31
Cu	1.2 kg	$ 326,631	$ 392
Cd	0.3 kg	$ 51,913	$ 16
Cr	15.9 kg	$ 68,024	$ 1,082
Zn	0.4 tonnes	$ 326,631	$ 130,228
PAHs	33.6 tonnes	$ 2,289,538	$ 76,928,477
Benzo(a)pyrene	*0.7 tonnes*	*$ 136,048*	*$ 96,322*
TOTAL costs including total PAHs			**$ 84,398,751**
TOTAL costs using Benzo(a)pyrene as a proxy for total PAHs			*$ 7,566,597*

Source: EPA estimates

Based on the combination of fire-fighting cost estimates, clean-up costs for the site only, and damage costs, the social costs of the Coolaroo fire could be in the range of $34 million (using the lower-end estimate of damage costs) to over $100 million (based on higher-end damage costs).

Table 5: Summary of costs associated with Coolaroo fire

Category of cost	Estimated Cost
Emergency response	$20,000,000
Business disruption	$200,000
Management and clean-up	$6,000,000
Health	$85,000,000
TOTAL	**$111,200,000**

These broad estimates exclude important costs such as:

- emergency response costs incurred by the Victorian State Emergency Service, Emergency Management Victoria, EPA, Ambulance Victoria, the Red Cross, DHHS, and Victoria Police;
- ongoing management costs and clean-up costs borne by these agencies (particularly EPA) and by Melbourne Water, Yarra Valley Water, Hume City Council, and others;
- the costs of business disruption, and the impacts of the evacuation and other disruption to local residents.

2.3.5 Industry reputation

Information from the insurance industry indicates that the waste industry is increasingly considered a bad risk. Over the last seven years the loss performance from the industry has exceeded 300% of premiums collected, and in the last two years the loss ratio been over 800%. Insurers have been actively moving away from providing cover, with indications that there are currently no local insurers providing property or business interruption cover to the industry.

Facilities that cannot obtain cover through international providers may therefore be unable to secure cover at all, and this could extend to landlords with resource recovery facilities as tenants. The consequences could include facilities being forced to cease operating, or operating regardless without adequate insurance cover, thereby leaving affected parties unable to seek redress for clean-up costs in the event of fire.

Recent fires and publicity of inter-state waste transport issues are also likely challenging community faith in the recycling industry. Local communities are often concerned about having recycling activities nearby, and the poor track record of the industry is to some extent eroding its social licence to operate. For the kerbside recycling industry, which relies on the broad community to play its part by appropriately separating materials, this poses serious concerns both for industry profitability and the viability of the recycling system.

2.4 Regulatory overview

2.4.1 Pre-existing (base case) regulatory framework

Prior to the declaration of the interim WMP on 29 August 2017, resource recovery facilities were governed by a number of different pieces of legislation relating to fire risk, enforceable via different mechanisms and by different agencies.

Analysis by the taskforce of the operation of this regulatory framework has highlighted the overlapping and complementary roles of various agencies and has acknowledged that there was a regulatory gap, where the authorities responsible for enforcing relevant legislation had not adequately developed the capability to pursue enforcement. This lack of enforcement capability is largely due to the tools available being poorly suited to encouraging preventative action, and because resource allocation has often been prioritised to incident response and reactive applications of regulatory tools.

Agency coordination has also been a major limitation to the effective implementation of the pre-existing framework. Local governments have various roles with respect to fire risk, including building compliance, land use planning, fire prevention, environmental health, and local laws, but these are sometimes not well coordinated within councils. Fire expertise sits with the fire agencies, which are focused on emergency response and have limited regulatory capabilities. Conversely, regulatory capability sits with local government and state agencies which have limited fire safety expertise.

The various pieces of legislation applying to the sector and their limitations in promoting fire risk management in this sector are described below.

2.4.1.1 Land use planning

The *Planning and Environment Act 1987* (PE Act) provides the statutory instrument for planning control in Victoria. The PE Act, and the planning schemes for each municipality made under it, set out how land may be used or developed.

Resource recovery facilities are likely to be defined as one or more of the following 'industry' uses under the definitions in the Victorian Planning Provisions:

> a) Transfer station: land used to collect, consolidate, temporarily store, sort or recover refuse or used materials before transfer for disposal or use elsewhere; or
>
> b) Materials recycling: land used to collect, dismantle, treat, process, store, recycle, or sell used or surplus materials.

For applications to use land for resource recovery, recycling, and related purposes (that cannot achieve a 100 metre setback from residential zonings and sensitive uses), EPA is a determining referral authority, meaning referral to EPA is compulsory under the PE Act and comments from EPA must be addressed.

Since September 2017, EPA has applied specific advice and two conditions to planning permits via this referral process. These conditions alert operators of their obligations to comply with the interim WMP and are in addition to the standard suite of conditions relating to EPA concerns such as noise, odour or dust. In summary they specify that CRWM must only be stored for transfer, sale, sorting, reuse, recycling, reprocessing or energy recovery, and that it must be managed and stored on site in a manner that minimises risks to human health and environment from fire. As of mid-November 2017, 12 planning permits have been issued which incorporate these new conditions.

Although EPA is a referral authority, the MFB and CFA are not. This mismatch between where statutory powers lie and where expertise to advise on and enforce planning conditions is located makes the planning system less efficient in promoting appropriate fire risk mitigation than it could be.

The major limitation in using the planning system to improve fire risk mitigation, however, is that applying the statutory controls to existing activities is difficult and time-consuming. While there are mechanisms available to retrospectively apply planning controls, this process is complex, site-specific, and lengthy to administer.

Enforcement against planning permit conditions is also expensive, complex and can take several months to be applied, since the responsible authority (i.e. councils) must apply to Victorian Civil and Administrative Tribunal (VCAT) for enforcement orders.

The Somerton fire profiled above illustrates these difficulties. The landowner was advised by Hume council in May 2014 and then again in September 2014 that use of the land for materials recycling was not permitted and must immediately cease. In October 2014 the landowner was put on notice regarding enforcement. In late December 2014 Hume commenced VCAT proceedings. VCAT issued enforcement orders in January 2015, final orders to remove waste from the site in March 2015, and cost orders in July 2015. Enforcement through the Magistrate's court began in June 2015 and ran until May 2016, during which time (in November 2015) a fire engulfed the site.[32]

2.4.1.2 Building

The *Building Act 1993* sets out the legislative framework for the regulation of building construction, building standards and the maintenance of specific building safety features in Victoria. Standards including fire systems requirements are specified by the *Building Interim Regulations 2017*, the Building Code of Australia, and referenced Australian Standards.

Any resource recovery facility that incorporates buildings is therefore subject to statutory controls for the construction of new buildings, including well-established fire risk management controls, as well as essential safety measures for ongoing use of buildings. Indoor CRWM storage is therefore well covered under the pre-existing regulatory regime, albeit only to the extent that requirements are enforced. Enforcement is by municipal building surveyors (MBSs) or in some circumstances by private building surveyors, the Victorian Building Authority, or fire authorities.

The major issue with application of this framework to CRWM fire risk is that the various standards do not consider open storage yard areas except with respect to outside infrastructure relevant to the building, such as vehicle access and fire services.

Previously applicable building standards may also differ from current standards, requiring enforcement to be site-specific and dependent on the particular building in question. Application of MBS powers in practice is also variable across LGAs.

32. Timeline from Ecotec Fire Impact Summary Report, Hume City Council.

2.4.1.3 Fire services

Governance for fire authorities in urban and rural Victoria is set out in the *Metropolitan Fire Brigades Act 1958* (MFB Act) and *Country Fire Authority Act 1958* (CFA Act). The most applicable power under both Acts is the power to issue a fire prevention notice (FPN), which is typically performed by a local government fire prevention officer. Fire agencies may also apply FPNs directly if local government refuses to or fails to issue a fire prevention notice within the timeframe specified by the chief officer.

The threshold for issuing an FPN is relatively high – an officer must form the opinion that it is necessary to issue an FPN to protect life or property from the threat of fire and that there is no procedure under any other Act that is more appropriate. The use of these notices is subject to the variable and limited resources and capacity of Victoria's local government authorities. Some local government authorities may also be concerned about their capacity to recover enforcement and clean-up costs if a notice is not complied with, or if a site is abandoned after a notice is issued. FPNs are more appropriate for immediate fire risks, such as long grass, and are often applied reactively rather than preventatively.

2.4.1.4 Environment protection

EPA officers have the power to issue pollution abatement notices (PANs) for a variety of reasons under section 31A of the EP Act, and have power to issue clean-up notices (CUNs) under section 62A. PANs and CUNs are remedial notices, not punishments for non-compliance, but non-compliance with the notices themselves is an offence which can subsequently result in a penalty infringement notice or prosecution.

In the absence of any other specific reason, EPA can issue PANs under section 31A on the grounds that a process or activity "has caused or is likely to cause pollution" or "has created or is likely to create an environmental hazard".

To establish this for a potential fire hazard EPA generally requires the expertise of the fire services to assess fire risk.

Proving likely pollution or a likely environmental hazard is difficult, and both PANs and CUNs based on these general pollution offences are therefore more suited for remedial use than for preventative action. If challenged, the notice and requirements go on hold immediately, leaving no regulatory controls in place until the challenge is resolved, which is potentially a period of months. Prosecutions are costly and time-consuming, and obtaining cost recovery through the courts can be challenging. These considerations mean that driving fire risk mitigation through use of the general pollution offences is difficult and inefficient.

2.4.1.5 Occupational Health and Safety

Under the *Occupational Health and Safety Act 2004* (OHS Act), *Public Health and Wellbeing Act 2008*, *Emergency Management Act 1986*, *Emergency Management Act 2013* and *Dangerous Goods Act 1985*, if a WorkSafe Victoria inspector forms a reasonable belief that Occupational Health and Safety (OHS) laws have been contravened or there is an immediate risk to health and safety, they can issue improvement notices or prohibition notices.

As well as the duty to employees under section 21, section 23 of the OHS Act introduces a duty on employers to other persons:

> *An employer must ensure, so far as is reasonably practicable, that persons other than employees of the employer are not exposed to risks to their health or safety arising from the conduct of the undertaking of the employer.*

In the context of waste and resource recovery fire risk, the duty could potentially be deemed applicable in relation to health risks to the general public (the relevant persons) arising from the failure to adequately manage fire risks (the relevant conduct of the employer).

However, it is unknown whether these tools have ever been used to directly address fire risks arising from inappropriate management of CRWM stockpiles.

2.4.2 Interim WMP

The EP Act has since 1985 contained powers to make statutory policies on any aspect of the management of waste, including with respect to generation, transport, storage, containment, recycling, and disposal.

The interim *Waste Management Policy (Resource Recovery Facilities)* was declared on 29 August 2017 and will expire on 28 August 2018. The interim WMP applies to waste and resource recovery facilities, and requires that CRWM must be managed and stored in a manner that minimises risks to human health and the environment from fire. Compliance with the EPA guideline *Management and storage of combustible recyclable and waste material* is deemed to constitute compliance with the policy.

The interim WMP gives EPA statutory powers, not previously available, to support other regulatory bodies managing resource recovery facilities that have risks to human health and the environment from fire. The interim WMP is enforced by EPA officers issuing PANs under section 31A on the grounds that the process or activity being undertaken is non-compliant with statutory policy. Non-compliance with the requirements in the PAN is an offence that can then lead to penalties or prosecution.

The evidentiary burden of establishing breach of policy is significantly lower than for establishing breach of the general pollution offences. This is because determining that a site poses a likely fire hazard that will result in environmental pollution is not as clear-cut as establishing non-compliance with the preventative requirements of the interim WMP (which, through its guideline, is clear about what represents compliance). It allows EPA to take enforcement action on the occupier of a resource recovery facility, provided that EPA is satisfied that the storage or management of CRWM at the facility has caused or is likely to cause a failure to comply with the interim WMP.

As such, EPA has a far stronger tool to induce preventative action. From August 2017 to late November 2017, over the course of 88 inspections of 73 sites, a total of 33 PANs were issued for non-compliance with the interim WMP.

2.5 Fire risk management practices

2.5.1 Taskforce audit approach

After the July 2017 Coolaroo fire, resource recovery facilities were identified and risk assessed by the taskforce based on the likelihood and potential impact of a fire.

Licensed sites and illegal dumping sites being targeted through existing EPA programs were generally excluded from this assessment.

Of 886 sites identified, 562 sites were assessed via aerial imagery and classified as either ‘Extreme’, ‘High’, ‘Medium’ or ‘Low’ risk based on the area and organisation of observed waste stockpiles.[33]

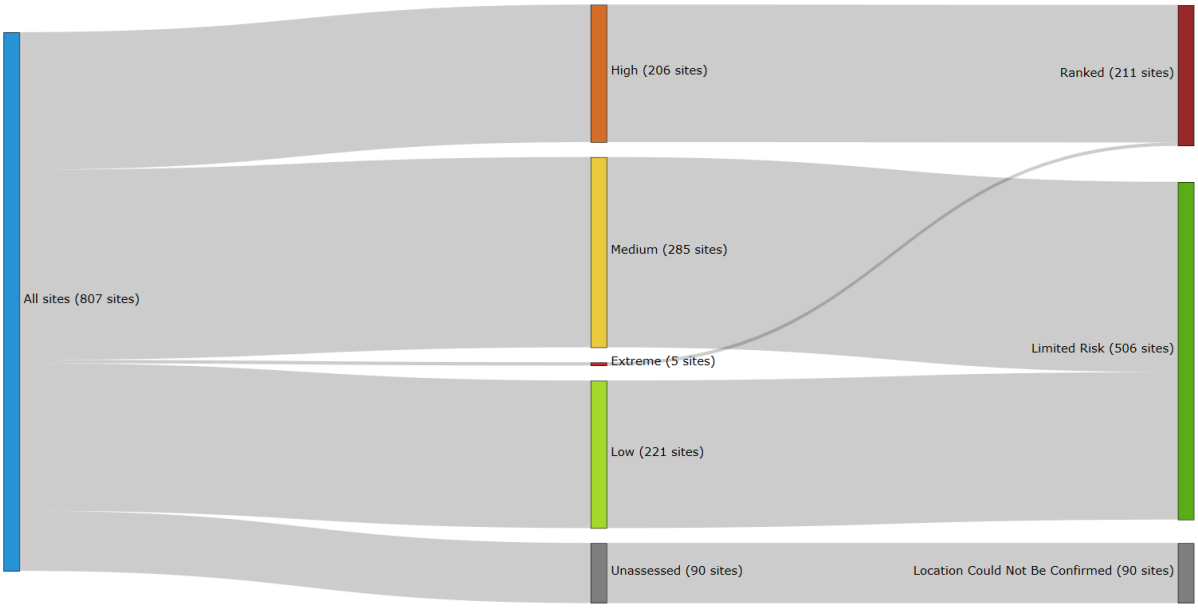
Five sites were classified as extreme-risk and a further 188 as high-risk. For these 193 sites a more detailed secondary assessment of risk was conducted. This assessment was based on a number of considerations including the area and organisation of stockpiles, access for firefighting, proximity to and size of the local community, compliance with planning permissions and WorkSafe requirements, number of previous fires at the site, and the prevalence of fires for the waste type being stored.

The secondary assessment results were used to rank these 193 sites in order of risk.

Figure 5 below illustrates the risk assessment process and overall results.

33. The locations of 141 sites could not be confirmed at the time of the taskforce risk assessment. Some of these have subsequently been located and risk-assessed, and the impact analysis in section 5 uses the most up-to-date risk assessment results.

Figure 5: Taskforce audit assessment of identified sites[34]



The five facilities presenting an extreme risk were material recovery facilities and reprocessors. The remaining high, medium and low risk sites comprised a mixture of reprocessors, resource recovery centres, material recovery facilities, sorting facilities, transfer stations, landfills, storage, and other facility types.

The taskforce's program of inspections involved multi-agency teams with EPA, CFA or MFB, and sometimes LGA or WorkSafe officers. Inspections prioritised the highest-ranked sites, with some follow-up inspections and some inspections of medium- and low-risk sites to validate the initial assessment. During these inspections EPA notices and local government notices were issued where appropriate.

2.5.2 Findings of taskforce audit activities

The classification of 188 sites as high-risk illustrates that the problem is a relatively dispersed one: the problems of waste stockpiling are not confined only to a small number of large operators. This is consistent with the nature of an industry involving relatively low barriers to entry.

More than 70% of the high-risk sites had material stockpiles measuring greater than 2,000 square metres. Only half of the aggregate waste area measured by the audit was stored at the top 60 ranked sites, indicating that half of the identified stockpile area in Victoria is spread amongst hundreds of lower-risk sites.

Based on the audit and inspections, the taskforce concluded that while there are some operators demonstrating good practice, the resource recovery sector is generally poorly prepared and ill equipped to manage fire risks. A wide range of issues were identified at most inspected sites, ranging from minor housekeeping matters to major failings resulting in significant ongoing risk.

Key issues raised include:

- **oversized stockpiles** – the accumulation and configuration of waste is combined with a lack of separation between stockpiles, buildings and boundaries and restricted access for fire appliances;
- **non-operational, inadequate and/or poorly maintained fire-fighting equipment** – poor design practices or re-purposing of sites has resulted in undersized fire protection systems (relative to the fuel load within the stockpiles), with issues including insufficient fire water (capacity and or flow) and poor contingency planning for fire-water run-off;

[34]. Assessment status as at 9 March 2018.

- **absent or ineffective emergency response procedures** – failure to plan, failure to communicate and failure to train and/or test systems intended to keep personnel safe; and
- **operating issues** – including maintenance and access to firefighting equipment, and waste in inappropriate locations including stormwater systems.

The approach of the taskforce has been to strike a balance between regulating significant risks using the statutory tools available to the agencies, including the interim WMP, and educating operators about their responsibilities while allowing lower-risk sites time to comply with the new requirements.

Nonetheless, over the course of 88 inspections of 73 sites conducted to late November 2017, a total of 33 PANs and six other statutory notices were issued across 25 different sites.[35] This illustrates the prevalence of poor fire risk management practices in the industry at present, and the inadequacies of the regulatory regime operating prior to August 2017 to deal with these risks.

2.5.3 Evaluation of the interim WMP

Feedback from taskforce member agencies on the effectiveness of the interim WMP as a tool to address these issues has been positive. Where compliance action has been taken, the interim WMP has enabled effective application of regulatory powers to improve risk management practices at sites.

Taskforce feedback also identified issues to consider in development of the replacement tool, namely a threshold of application (type and scale of operations), and the potential to include limits to stockpiling (volume and/or duration). These issues will be further considered through the consultation process enabled by this PIA, to inform refinement of the proposed tool.

35. The 33 PANs were issued on the grounds of breach of the interim WMP. Two Fire Prevention Notices (FPNs) were issued by local government officers, and EPA also issued two clean-up notices and two notices to produce information.

3. Objectives

The primary policy objective is to ***identify the best approach to managing fire risk from combustible recyclable and waste material, in order to minimise risks to human health and the environment as well as broader social costs from fires in waste and resource recovery facilities.***

The focus is on short term requirements following the expiry of the interim WMP on 28 August 2018, and in particular on whether there is a continuing need for direct regulation to support preventative action (i.e. risk mitigation) in relation to harm from waste fires.

The limited scope of this objective reflects:

- the timeframes available to develop and implement policy given the sunsetting of the interim WMP;
- the likely commencement of a new regulatory structure for EPA around mid-2020; and
- the nature and extent of the problem set out in section 2, noting that that there are existing regulatory tools to address non-fire environmental health risks in the waste and resource recovery sector and fire risks in other contexts.

Interventions to achieve the primary objective must also reflect the best practice principles outlined in the Victorian Guide to Regulation, including that any regulation be:

- cost-effective;
- proportionate to the harm or risk;
- flexible to accommodate new information and changes in technology, markets, risks and community views.[36]

36. Commissioner for Better Regulation (2016), *Victorian Guide to Regulation*, available at http://www.betterregulation.vic.gov.au/Guidance-and-Resources

4. Options

Various regulatory and non-regulatory options have been identified that may contribute towards the policy objective of minimising CRWM fire risks. These are summarised in

Table 6. In addition to these there is a base case option in which the interim WMP is allowed to expire on 28 August 2018 without an alternative regulatory tool replacing it.[37]

Table 6: Overview of options

Type of regulatory option	No.	Description
Explicit government regulation	1	**Waste Management Policy:** declare an ongoing statutory policy based on the interim WMP, and with EPA CRWM guideline as a deemed-to-comply method.
	2	**Regulations:** make a new regulation under the EP Act with prescriptive requirements based on the existing guideline
Extend coverage of existing regulation	3	**Scheduled Premises Regulations**: impose licensing and/or works approval requirements on waste and resource recovery facilities managing or storing CRWM (above a defined threshold).
	4	**Dangerous Goods Regulations**: expand dangerous goods regime or other OHS requirements to cover CRWM.
Work solely within existing regulations	5	**Resourcing additional preventative action:** dedicate additional resourcing to compliance and enforcement using powers already available in the EP Act, CFA Act, MFB Act and PE Act.
	6	**Improving co-ordination:** continue efforts to improve inter-agency co-ordination and establish clear responsibilities for using existing powers
	7	**Voluntary industry self-regulation**: continue encouraging industry bodies in efforts to improve industry standards of fire risk management
	8	**Education**: better resource EPA and/or fire services to educate industry in fire risk management practices (e.g. encouragement to adhere to the EPA guideline)
	9	**Insurance industry leverage:** explore opportunities to align insurance requirements and premiums with fire risk management practices (e.g. via industry accreditation)

4.1 Approaches in other jurisdictions

In NSW, South Australia and Queensland, waste reprocessors above a certain threshold are licensed, with fire risk management requirements generally imposed via licence conditions. South Australia also provides a specific guideline for stockpile management.

A key feature of the NSW and South Australian licence conditions is the imposition of limits on the duration of storage of materials. The NSW regulator has power to impose a levy, akin to the landfill levy, on volumes stored in excess of 12 months.

A summary of inter-state regulations is provided in Table 7 below.

37. Note that with the ministerial power of certifying that there are special reasons for declaring a WMP without delay having once already been exercised in this context, the option of declaring another 12-month WMP based on the same reasons and same certification power is no longer available.

Table 7: Inter-state requirements for waste reprocessors

State	Licensing	Fire risk management conditions	Limits to storage volume	Limits to storage duration	Financial assurance
NSW	Yes (sites storing > 1,000 tonnes or processing > 6,000 tonnes/year)	In development	Applied through licence	Levy applies after 1 year or over the authorised volume[38]	Can be applied
SA	Yes (sites accepting > 1,000 tonnes/year)	Applied via licence conditions to high risk sites. Guideline applies to all sites but not enforced.[39]	Applied through licence	Storage over 6 months must demonstrate appropriateness or move to landfill/another facility	Can be applied
Qld	Yes (sites processing > 5,000 tonnes/year)	Broadly applied through licence, or site-specific	Broadly applied through licence, or site-specific	Not applied	May be applied

4.2 Assessment of options

A qualitative assessment of the options outlined above has led to option 1 being put forward for impact analysis in section 5 below. The following discusses these options in more detail. Refer to Appendix I for multicriteria analysis of the options presented in Table 6 above.

4.2.1 Waste Management Policy – option 1

This option involves re-making the interim WMP as permanent policy under section 16A of the EP Act.

A WMP is the only option for which an impact analysis was completed in section 5. That is because, of the options capable of driving material changes in behaviour and substantial reduction in fire risk, a WMP is likely to be the most cost-effective, proportionate, and flexible. Relative to the other regulatory options it is also able to be implemented quickly, and avoids large upfront administration costs being incurred during the period until around mid-2020 following which a new regulatory framework for EPA is expected to commence.

Key considerations in determining that a WMP is the preferred option are:

- the structure and organisation of the sector and the dispersion of risks, with numerous smaller players present and a large number of high-risk facilities (see section 2.5);
- the current state of profitability of the recycling industry and diminishing business incentives to store material appropriately and manage fire risks well (see section 2.2.5); and
- the potential impact on EPA compliance and enforcement activities if there is no strong regulatory basis for requiring good risk management practices post 29 August 2018.

Feedback from taskforce member agencies has indicated that the interim WMP is an effective tool, which equips EPA with powers to enforce fire risk management at resource recovery facilities. That tells us that replacing the interim WMP with the similar tool of the proposed WMP is likely to be an effective approach.

38. NSW EPA, Nov 2017, Changes to the waste levy framework - Frequently Asked Questions, http://www.epa.nsw.gov.au/your-environment/waste/waste-overview/waste-regulations/poeo-waste-reg-2014/waste-levy-faqs, accessed Feb 2018.
39. EPA South Australia, *Guideline for stockpile management: Waste and waste derived products for recycling and reuse*, April 2017, http://www.epa.sa.gov.au/files/4771349_guidelines_stockpile.pdf

4.2.2 Regulations – option 2

As well as containing express provisions for waste, such as the ability to declare WMPs, the EP Act provides a general power for the Minister to make regulations on a range of matters including "generally the prevention, control, abatement or mitigation of pollution and noise" (section 71(1)(n)).

Regulations for CRWM fire risk management could be made using this power as an alternative regulatory approach to a WMP. This approach would see the content of the CRWM guideline included in the regulation.

Regulations made under sections 72(1) and section 71(3) of the EP Act cannot incorporate guidelines by reference.[40] To use regulations would therefore mean writing the guideline requirements into a schedule to the regulation, thus precluding changes to these requirements over time (without going through another RIS process). The current guideline was established relatively quickly, and this approach would reduce the flexibility of EPA to modify requirements over coming years as risks and appropriate controls become better understood.

Using regulations may also require certain flexibly-worded requirements in the guideline to be written more precisely to meet the style and language standards for subordinate legislation.[41] To do so in the limited timeframe prior to expiry of the interim WMP would be difficult, and risk locking in potentially disproportionate requirements. Currently EPA is able to apply the guideline with discretion and appropriate site-specificity to this highly diverse sector; a regulation could limit this ability.

One benefit of using general regulations instead of the WMP powers is that it allows for cost recovery fees or specific penalties for non-compliance to be imposed. As the relative risks for different facility types and the allocation of future regulatory effort are still being established, it is considered that setting cost recovery fees would be premature (and is not being proposed at this stage). As this greater regulatory oversight of the industry becomes established, cost recovery options may be revisited.

For these reasons option 2 is seen as having minimal advantage and several disadvantages relative to option 1.

4.2.3 Licensing – option 3

The fullest form of regulatory oversight available to EPA is the ability to require works approvals, operating licences, and financial assurance for certain 'scheduled premises'. Under section 19A of the EP Act, the premises and classes of premises specified in the Scheduled Premises Regulations are legally unable to "do any act or thing", including installation or modification of plant, equipment or process, that has environment impact without first gaining approval from EPA.

A licensing requirement for resource recovery facilities could be introduced by amending these regulations to include resource recovery facilities, and by subsequently imposing conditions on these facilities' operations that would include adherence to fire risk mitigation requirements (i.e. the guideline).

The question of whether various types of waste reprocessors should be licensed was considered recently in the 2017 review of the Scheduled Premises Regulations. That review noted the fire hazard associated with stockpiling flammable recyclable and waste materials, but after analysing the overall risks and EPA compliance data relating to various materials suggested that wood, concrete, paper and plastic reprocessors were a relatively lower priority for consideration as scheduled premises than glass and e-waste reprocessors, which had more significant off-site emissions impacts. The impact of including glass and e-waste reprocessors was assessed in the RIS, and large facilities dealing with these waste types were subsequently included in the re-made regulations as scheduled premises.[42]

40. Storage of Waste Tyres RIS, Sep 2014, p59, http://www.epa.vic.gov.au/our-work/publications/publication/2014/september/1576
41. Subordinate Legislation Act 1994 Guidelines, http://www.betterregulation.vic.gov.au/Guidance-and-Resources
42. Glass and e-waste reprocessors were identified as a higher priority due to higher risks of off-site impacts across multiple environmental segments, i.e. ongoing air quality impacts as well as potential for contamination of land and waters. Large e-waste reprocessors were subsequently added to category

Stockpiling of CRWM raises similar issues to waste tyre storage, which has been licensed since 2015.

Waste tyre storage has previously been recognised as presenting a significant fire risk, driven in large part by long-term stockpiling used as an end-point to avoid the costs of recycling. In 2014, following several fires and the tightening of regulations inter-state, an interim WMP for waste tyres was declared which required large waste tyre storage sites to adhere to a guideline newly developed by the MFB and CFA, or to meet the policy requirement to minimise risk to the environment and human health in some other way. This waste tyre WMP and guideline subsequently formed the basis for the CRWM interim WMP declared on 29 August 2017.

The interim waste tyres WMP was not renewed in 2015, but large waste tyre storage sites were instead listed as scheduled premises.[43] The RIS for this amendment considered alternatives to licensing, such as declaring an ongoing WMP or making new regulations, but licensing was seen as the preferred option due to higher expected rates of compliance, the ability to charge fees, flexibility to set site-specific conditions, and alignment with most other jurisdictions.[44]

Although licensing was found to be suitable for waste tyres, this approach would have a number of disadvantages relative to a WMP in the current CRWM context.

Licensing is a flexible tool, allowing EPA to issue site-specific conditions, but would likely not be a cost-effective approach for CRWM fire risk management. CRWM fire risks are dispersed across a large number of sites (see section 2.5). However, the licensing and works approval process is resource intensive, with substantial upfront application costs as well as ongoing reporting requirements. This makes it a more appropriate tool for large premises presenting complex and significant risks than for large numbers of sites with relatively homogeneous requirements.[45]

The number of facilities subject to licensing would depend on the applicability criteria applied (i.e. the types of materials and facilities in scope, and an application threshold based on site size, storage volume, or some other variable). The taskforce audit suggested that around 200 facilities presented high or extreme-level fire risks, and subsequent inspection activity uncovered breaches of the guideline amongst a high proportion of those sites inspected. To licence even a fraction of these sites would therefore involve significant resourcing and regulatory costs whilst leaving many other high-risk sites not covered by direct regulation. Sites that fell below the licence threshold would not be subject to these risk management conditions.

Implementing option 3 within an acceptable timeframe would also be difficult. EPA has limited capacity to assess licence applications and, in addition, careful attention would need to be given to applicability criteria to ensure that the regulatory cost of licensing was only imposed where it was proportionate to risk. As understanding of CRWM risks is still emerging, this process would take time, and a temporary tool such as a WMP may therefore be required in the interim.

Finally, upon the expected commencement of the new EPA regulatory structure around mid-2020, EPA is expected to have access to a flexible range of 'permissioning' tools (compared to the one-size-fits-all EPA licences provided for in the *Environment Protection Act 1970*). This reform might allow for an appropriately 'light-touch' permit style control that could prove more suitable for the hundreds of facilities presenting a CRWM fire risk than the current model of EPA licensing would. Compared to licensing, using a WMP until this point in time will allow EPA to take strong regulatory action in the interim without imposing high upfront regulatory costs.

A02 and large glass reprocessors to category H05. See section 4.2 of the RIS for the Environment Protection (Scheduled Premises) Regulations 2017, http://www.epa.vic.gov.au/our-work/publications/publication/2016/october/1639

43. Only sites with more than 40 tonnes or 5000 Equivalent Passenger Units (i.e. passenger motor vehicle tyres) are classified as scheduled premises. This is the same threshold as was used for the interim waste tyres WMP.
44. Storage of Waste Tyres RIS, Sep 2014, p26, p32, http://www.epa.vic.gov.au/our-work/publications/publication/2014/september/1576
45. The administrative costs to prepare and assess a licence application for existing facilities are in the region of $8,000 per licensee, and 80+ hours or around $6,000 in staff costs per application for EPA. Ongoing reporting requirements create further costs for licensees. See the Storage of Waste Tyres RIS, Sep 2014, p77-78, http://www.epa.vic.gov.au/our-work/publications/publication/2014/september/1576

While there are many similarities between the waste tyre and CRWM contexts – e.g. similar drivers of stockpiling and similar risk mitigation controls – there are important differences that mean the licensing approach adopted for waste tyres in 2015 is not suitable here:

- the consequences of waste tyre fires are different (and in some circumstances potentially more severe), as tyre fires are more difficult to extinguish and cause run-off of oil and a wide range of toxic materials[46];
- tyre waste fire risks are more concentrated – the waste tyres RIS expected only around 25 facilities would require licensing[47];
- harmonising Victoria's regulations for waste tyre storage with other jurisdictions, most of which required licences, was seen as important in light of evidence of inter-state movements of tyres driven by regulatory differences[48].

4.2.4 Dangerous goods regulations – option 4

The Dangerous Goods (Storage & Handling) Regulations 2012 regulate substances capable of causing harm to people and property because of their hazardous properties. These may be corrosive, flammable, combustible, explosive, oxidising or water-reactive or have other hazardous properties.

Some goods covered by the regulations also qualify as hazardous substances, which are classified as such on the basis of health effects only, and which are covered by occupational health and safety regulations. WorkSafe administers both sets of regulations.

A code of practice with practical advice on dangerous goods storage and handling lists a range of duties applying to occupiers of premises where they are stored. These duties include storage requirements (such as separation distances and barriers in accordance with relevant Australian Standards), spill containment requirements, and specific fire risk management controls.

Listing CRWM as dangerous goods would bring resource recovery facilities within the scope of a regulator and an existing code dealing with acute fire risks. It would also likely invoke requirements for the transport of CRWM.

However, it is unclear that this would be a suitable approach given that CRWM is of a different nature to the substances typically covered. Dangerous goods regulations are predominantly for high-risk substances, which are generally manufactured and supplied as such within containers. Many of the requirements in the regulations and code are designed around acute health risks from spills or explosions – not environmental health risks from fires that are not immediately hazardous to employees or other persons. The most easily ignited type of CRWM is paper – which has environmental health impacts only when burnt in large quantities. Some regulatory requirements and existing standards designed around highly-flammable goods would be disproportionate to risk when imposed to CRWM storage.

Although the regulations are based around the flexible standard of taking 'reasonably practicable' measures to minimise risk, this standard and the general requirements outlined in the code of practice could also be hard for resource recovery facilities to interpret in practical terms. This option may therefore impose higher compliance costs on facilities and lead to greater variation in controls being applied across different facilities, unless the existing guideline was explicitly prescribed as an acceptable means of compliance to encourage common practices. In the latter case the main practical difference between option 1 and option 4 would not be in what constituted compliance, but would be the shifting of responsibilities from EPA to WorkSafe.

Option 4 is also unlikely to be implementable in the available timeframe.

46. Storage of Waste Tyres RIS, Sep 2014, p20 and Appendix C, http://www.epa.vic.gov.au/our-work/publications/publication/2014/september/1576
47. Storage of Waste Tyres RIS, Sep 2014, p74, http://www.epa.vic.gov.au/our-work/publications/publication/2014/september/1576
48. Storage of Waste Tyres RIS, Sep 2014, p19, http://www.epa.vic.gov.au/our-work/publications/publication/2014/september/1576

4.2.5 Non-regulatory interventions – options 5 to 9

Increasing resourcing, continuing the co-ordination role begun by the taskforce, encouraging leadership by industry peak bodies, working with the insurance industry, and further engaging in education on good practice are all options with potential to support achievement of the objectives.

Most of these approaches are occurring to some extent through the work of the taskforce, and will continue to do so in future. However, these non-regulatory interventions would likely also prove inadequate to drive substantial changes in behaviour without a regulatory tool also in place.

Incentives for compliance ultimately depend on enforcement. As section 2 discussed, enforcement was difficult prior to August 2017 due to the complex division of powers and responsibilities across various agencies and the largely reactive orientation of the regulatory tools available.

Better resourcing municipal fire prevention officers or EPA without a clearer statutory basis for action would continue to involve the challenges of developing regulatory capability within local government, and of inducing compliance with limited tools.

Timing is also a constraint on achieving the policy objectives using the pre-existing regulatory framework. As section 2.4 explained, the intersection of multiple regulatory agencies with overlapping powers and varying capabilities has raised complex issues of co-ordination and responsibility which have been difficult to resolve. Work to improve co-ordination is on-going, but will take time. Without a regulatory tool in place upon expiry of the interim WMP, ongoing compliance and enforcement activity are likely to be significantly less effective at driving behavioural change, or will require relatively greater resourcing to be effective.

Incentives for voluntary compliance in the current market environment are also low. The sector is characterised by high competition and low margins, and the value of recycling feedstocks has been falling, raising risks that low-cost operators may increasingly undercut and displace legitimate recyclers in future (e.g. by accepting payment for material uneconomic to recycle and stockpiling it as a long-term solution, as has occurred in the waste tyre and skip bin industries).

While the metropolitan municipal resource recovery sector is dominated by SKM, Polytrade, and VISY, the municipal sector outside of Melbourne and the commercial and industrial waste sector are highly dispersed, with many smaller players. There is minimal co-operation within the industry, and a limited ability for reputation mechanisms or industry body leadership in this context to promote high standards across the full breadth of the industry.

While there is potential to use insurance industry leverage to drive improved standards by aligning premiums with, for example, some form of industry or government accreditation received upon demonstration that risk management standards are being followed, the likely timeframes for this intervention reduce its value in the current context.

These factors suggest these non-regulatory solutions as stand-alone measures will not achieve the objectives of managing fire risk in a cost-effective and timely way.

4.3 Preferred option

The preferred option (option 1) involves declaration of a new WMP prior to expiry of the interim WMP. The multicriteria analysis in Appendix I summarises the analysis that identified this as the preferred approach.

A WMP provides EPA with a clear statutory basis to take action against facilities failing to manage and store CRWM in a way that minimises fire risk. Referencing the guideline in this WMP provides facilities with a straightforward and practical means of compliance that avoids the difficulties of interpreting the generally-worded policy requirement, but the WMP also permits facilities to choose alternative means of compliance.

EPA will be able to issue PANs under section 31A of the EP Act against facilities not complying with the requirements of the WMP. Non-compliance with a PAN is an offence under the EP Act that can result in a penalty infringement notice or prosecution. This pathway allows for stronger compliance and enforcement activity than EPA is capable of undertaking by issuing PANs based on breaches of the general pollution offences, for which the evidentiary burden is higher (see section 2.4.1.4). Higher risk of detection and

punishment, with clearer support for compliance, will support behavioural change and level the playing field between best-practice operators and others with poorer standards.

Declaring a new WMP prior to expiry of the interim WMP means that EPA compliance and enforcement activity being conducted at present under the auspices of the taskforce can continue unimpeded, and engagement with industry for education purposes can continue on the same basis as since August 2017.

Relative to the other options, option 1 is expected to be cost-effective and proportionate: it allows EPA to apply the guideline requirements with discretion and to target the highest-risk and most capable facilities first. It is also flexible, in that the guideline may be easily modified over time as understanding of CRWM fire risk and best-practice risk mitigation evolves.

4.3.1 Outline of the draft WMP

The proposed WMP maintains three key elements from the interim WMP: its application, objective and compliance approach.

Application

The proposed WMP applies to all occupiers of premises that are waste and resource recovery facilities managing or storing combustible recyclable and waste material[49], and intends for all operators of facilities in the sector to understand the risk of fire presented on site, and address that risk in a way to minimise it.

This means all operators managing CRWM must:

- consider the guidance
- assess the level of risk of fire on their site
- take appropriate action where necessary.

There is sufficient flexibility in the proposed WMP, the guideline, and EPA's risk-based approach to compliance and enforcement that the risk of disproportionate regulatory burden on small, low-risk businesses is minimal.

Objective

The key policy clause is that "An occupier of a waste and resource recovery facility must manage and store combustible recyclable and waste material, at that facility, in a manner that minimises the risk of fire".

Compliance approach

Compliance with the WMP can be achieved by either following the EPA guideline, *Management and storage of combustible recyclable and waste materials,* publication 1667, or through an approach that minimises the risk of fire to a level equivalent to the guideline. The guideline provides advice on site selection, fire prevention, risk assessment, fire mitigation (infrastructure and other controls), fire risk management planning, and CRWM storage.

The impact analysis presented in section 5 analyses the policy benefit against the costs of compliance with this guideline.

At present the guideline is being reviewed by EPA in consultation with stakeholders in industry and government, and may be amended prior to or after declaration of the proposed WMP (as well as in future).

The draft proposed WMP is at Attachment A and the current version of the guideline is available from EPA's website, http://www.epa.vic.gov.au/our-work/publications.

49. "Waste and resource recovery facilities" means a facility that receives waste including but not limited to combustible recyclable and waste material for the purposes of storage, transfer, sale, sorting, reuse, recycling, reprocessing or energy recovery; and "combustible recyclable and waste material" means any paper, cardboard, wood, plastic, rubber, textile, organic material, refuse derived fuel, specified electronic waste, metals, or other combustible material which is considered waste.

4.3.2 Design considerations

Based on taskforce feedback and initial discussions with key stakeholders, consideration was given to limiting who the obligations under the new tool should apply to by using a numerical threshold, such as waste volume throughput or site area. The proposed WMP does not include such a threshold, as its application by EPA will be flexible and risk-based. Excluding low or medium risk sites from the requirement to manage their risk effectively is not considered adequate. However, compliance and enforcement action undertaken at those sites would be proportionate to the risks they raise. Further flexibility of the proposed WMP is enabled where a site may use alternative means to those outlined in the guideline to comply, as long as they can demonstrate that it adequately addresses fire risk associated with combustible waste.

Imposing limits on the volume or duration of recyclables that may be stockpiled by resource recovery facilities was considered. However, feedback from other states where these limitations are imposed has indicated that such limitations are not essential for effective risk management. As mentioned above, where such limits also act as a threshold for regulatory application, there is potential for operators to design a site to be just below the threshold in order to avoid increased regulatory oversight, while not necessarily managing their risk effectively.

5. Impact analysis

5.1 Overview

Section 4 of this report considered alternative legislative and non-legislative options to achieve the objective and proposed a preferred option, while section 6 further below describes in broad terms how the proposed WMP will be operationalised.

The purpose of this section is to describe the impacts – in particular the expected costs and benefits – of the preferred option.

A 10-year forward evaluation period is used, as per the review period for WMPs in section 19 of the EP Act.[50] Compliance costs incurred by resource recovery facilities and regulatory costs incurred by EPA over this period have been quantified and discounted into net present value (NPV) terms, as described in section 5.2.

The analysis of incremental costs and benefits also includes those arising from the operation of the interim WMP during 2017-18. In other words, the analysis base case is taken as the pre-interim WMP situation, not the expected state of compliance at August 2018.[51]

The expected benefit of the proposed WMP is a reduction in frequency and severity of fires at waste and resource recovery facilities (section 5.3). Given the uncertainty around quantifying this reduction, an overall benefit figure has not been estimated. Instead, a break-even analysis is used to describe how many fires of each type would need to be avoided as a result of the proposed WMP in order to generate net benefits (section 5.4).

Section 5.5 includes a sensitivity analysis to account for uncertainty regarding variables likely to have a greater impact, whilst sections 5.6 and 5.7 describe the impacts on small business and competition respectively. Section 5.8 considers risks that may be created or increased by the preferred option.

5.2 Costs

The costs of the proposed WMP quantified below are of three types:

- compliance costs for resource recovery facilities;
- regulatory costs incurred by EPA for compliance and enforcement activity; and
- transition costs in the event that the WMP triggers firms to leave the industry.

The higher costs imposed on recycling businesses may also indirectly affect upstream parties. For example, these costs may be passed on to commercial and industrial waste generators through higher prices for collection. Section 5.7.1 goes into further detail about these indirect costs.

5.2.1 Compliance costs

5.2.1.1 Who is affected by the policy?

The proposed WMP applies to facilities that manage or store CRWM. The taskforce identified 886 such sites, excluding sites covered by the interim WMP but already licensed.

Section 2 described these facilities and Figure 1 showed their distribution across the state. As noted, the industry comprises a diverse mixture of firms, ranging from large, sophisticated, and vertically-integrated operators (particularly in the municipal recycling sector) through to numerous small businesses with minor reprocessing operations (e.g. sorting) or specialising in particular materials (e.g. organic waste, wood).

Due to this diversity and the limited information available about the industry, characterising those impacted by the proposed WMP is not straightforward. The way in which EPA will apply the proposed WMP will also

50. Although the WMP may only operate for two years before being replaced under the EPA reforms, this remains subject to passage by Parliament. The benefits of compliance actions over that time will also persist for a longer period. Accordingly a full assessment period is appropriate.

51. Note that 2017-18 regulatory and compliance costs are estimated on the same basis as for subsequent years; actual expenditure figures are not used.

vary significantly according to the risk posed. There is consequently no standard set of compliance requirements with similar costs across all firms.

Cost estimates below are therefore based on the taskforce risk categorisation. Both the **share of facilities** incurring compliance costs and the unit **costs of compliance** are assumed to vary by risk category.

5.2.1.2 What are the compliance costs?

Facilities are required by the WMP to manage and store CRWM in a manner that minimises risks to human health and environment from fire.

This requirement is met if the guideline is complied with, or equivalent risk minimisation achieved through other means. Cost estimates are based on the guideline requirements as an upper limit, noting that some facilities may be able to demonstrate compliance using lower-cost measures.

The requirements in the guideline and estimates of associated costs are summarised in Table 8.

Table 8: Guideline requirements and cost ranges

Requirement	Compliance action	Cost range	Source
2. Site selection	Select appropriate site	No cost[52]	
3. Fire prevention	Better housekeeping, equipment maintenance, document management, training	$1,144 - $4,574	Time cost estimate
	Security measures (CCTV installation)	$225 - $900	Serviceseeking.com.au
4. Risk assessment	Conduct risk assessment	$500 - $5,000	Advice from consultant
5.1. Infrastructure and equipment	Fire extinguishers	$150 - $1000	CFA FEM price list
	Detection and warning systems	$200 - $1000	CFA FEM price list
5.2. Water supplies	Where town water is unavailable, a minimum of 2 x 250,000 L tanks	$0 - $82,665	Waste Tyres RIS (CPI[53] adjusted)
5.3. Liquid run-off management controls	Installation of bunding, drainage basin, or catchment pit	$5,000 - $50,000	EPA advice (from electroplaters survey)
5.4. Other emergency management equipment	Arrangements with suppliers to access emergency fire equipment, e.g. excavators	$152[54]	Time cost estimate
6. Fire management	Develop a fire management plan	$1,585 - $6,339	Waste Tyres RIS (CPI adjusted)
7. Storage	Maintain separation distances and stockpile sizes as per guideline either by (1) adjustments over time or (2) removing a portion of stockpiled material upfront	$0 - $578,000[55]	EPA advice

5.2.1.3 Who will incur costs to comply?

Not all facilities will incur all costs listed above, as many will already be operating in accordance with the guideline. Certain requirements will also be irrelevant for some facilities (e.g. the water tank requirement only applies to facilities not on town water supply).

[52] This section requires only that consideration be given to factors when choosing a site to store CRWM; it does not impose specific requirements.

53. "Consumer price index"

54. Such arrangements will be costly to exercise in the event of a fire, and are therefore in the same category of costs as site clean-up, building damage etc, etc but it is assumed that making the arrangements themselves impose only a small administrative burden

[55] These costs have been calculated based on: average observed stockpile areas (converted to volume assuming a height of 2.5 metres); density of 413kg/m^3; disposal cost of $112 per tonne; reduction in stockpile size required of one third.

Compliance costs are assumed to be incurred as follows:

- All facilities are assumed to conduct a risk assessment as a result of the proposed WMP (requirement 4);
- 6 facilities in the high-risk category without access to town water supply are likely to be required to install two 250,000L water tanks (requirement 5.2)[56];
- Three extreme-risk and 18 high-risk facilities are estimated to incur significant storage requirement costs, as they will be required to dispose of a portion of their stockpiled waste to comply (requirement 7) as shown in Table 10 below;
- A certain share of facilities in the medium, high, and extreme risk categories incur each of the other costs listed above in order to meet the remaining guideline requirements (3, 5.1, 5.3, 5.4, and 6), with estimated unit compliance costs for these components varying by risk category as a reflection of the typically greater scale and complexity of higher-risk facilities; and
- Facilities in the low-risk category are unlikely to be inspected and will not voluntarily incur any costs to remedy existing aspects of minor non-compliance with the guideline.

The share and number of firms in each category currently not compliant and expected to change their behaviour (other than for risk assessment, water storage and storage requirements) are shown in Table 9. These figures are based on fire agency observations of non-compliance throughout inspections, and on EPA advice.[57] Sites for which aerial imagery was unavailable to the taskforce have been allocated proportionately across low, medium and high-risk categories. Sites for which locations could not be confirmed have been excluded.

Table 9: Estimated behaviour change by risk category

Risk category	All facilities	Rate of behaviour change	Facilities estimated to change behaviour
Extreme	5	70%	4
High	255	34%	87
Medium	353	21%	74
Low	204	0%	0
TOTAL	**817**	**20%**	**164**

The most significant potential individual compliance cost relates to the storage requirements. As a response to loss of markets, recyclers are currently engaged in a range of approaches to continue storing processed or pre-processing materials, including temporary storage in shipping containers, acquiring new storage sites, etc. Storage requirements imposed via the WMP that cannot be met via adjustments on-site as part of normal turnover of inventory could be met using such approaches, or alternatively by sending material to landfill, moving material on-site using excavators or forklifts, or selling material below cost, etc.

56. This figure was estimated by matching the suburb of the high risk facilities in the taskforce data to DHHS data on town water supply coverage.
57. As a modelling simplification, a binary 'compliant' / 'non-compliant' status is assumed whereby currently non-compliant sites are required to undertake *all* the compliance actions listed. In reality, different sites will present different issues and few sites (even those categorised as extreme risk) will require action to comply with all requirements. Non-compliance rates are therefore akin to an average rate of non-compliance across multiple guideline requirements, and are therefore lower than the proportion of facilities likely to require action in some way to comply.

EPA has advised that notices to address stockpile issues will generally allow storage requirements to be met over time, via adjustments to how materials move through the site as part of normal business turnover, rather than by requiring upfront expenditure. For some extreme-risk and high-risk sites significant costs may be incurred, as some will likely be required to evaluate whether they should remove a portion of the stockpiled material and dispose of it at landfill or exit the market in cases where this option is not viable[58]. The number of firms likely to be affected are discussed in the next section.

The number of firms expected to incur costs to dispose of excess waste at landfill is shown in Table 10 below. These figures are based on the proportion of facilities that received Pollution Abatement Notices (PANs) requiring immediate action to meet storage requirements during the inspections that occurred immediately following the Coolaroo fire.

Table 10: Firms expected to incur costs relating to storage requirements

Risk category	All facilities	Proportion of inspected facilities that received PANs re storage	Facilities estimated to incur costs
Extreme	5	60%	3
High	255	6%	18

The current market context makes it likely there will be consolidation and exit from the industry in coming years. It is difficult to assess whether the WMP itself is likely to trigger any firms exiting the market. However, given the creation of some long-term stockpiles of materials that are uneconomic to process this is a possible outcome.

Given the magnitude of the costs extreme-risk facilities may face in meeting storage requirements, a plausible scenario for illustrative purposes is that one of the three facilities expected to face these costs exits the market. Should this be the case, transition costs estimated at $1.73 million[59] would be incurred by the facility (or some other party e.g. council) to dispose of all waste left on the site.[60]

5.2.1.4 When are compliance costs incurred?

One-off risk assessment costs are assumed to be incurred in year 1 (2018-19). Given the nature of the industry and the current market environment, a zero voluntary compliance rate is assumed for firms not currently meeting guideline requirements. For these firms, compliance costs other than risk assessment are incurred only when required by EPA notices after inspections.

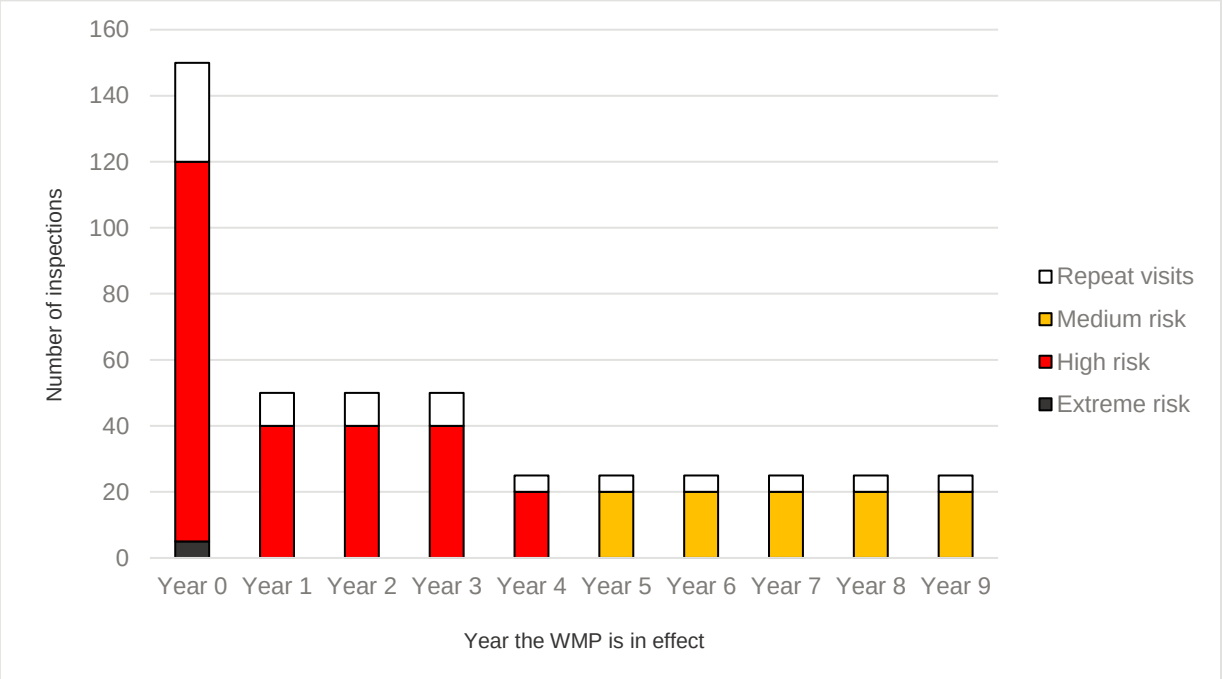
The assumed inspection profile is shown in Figure 6 and is based on EPA advice that activity is likely to be substantially less than the taskforce levels (88 inspections to late November 2017, and around 150 total expected to June 2018). This schedule is also used to estimate the timing of EPA's regulatory costs.

[58] The cost of acquiring land to store excess waste was explored and deemed unlikely to be a viable option. Costs ranged between $200,000 for high-risk sites with a stockpile area of roughly 1000 m^2 to $6,000,000 for sites with stockpile areas of roughly 30,000 m^2.

[59] This cost has been calculated based on the need to remove all stockpiled material at the site and is based on the same assumptions used to calculate the storage requirement costs (see footnote 6).

[60] It is assumed that this facility will incur no other compliance costs (except the initial risk assessment), given that it will be exiting the market.

Figure 6: Assumed inspection schedule



5.2.1.5 Compliance cost summary

Table 11 provides summary compliance cost figures. Unit costs – the estimated costs for a single facility to comply with the guideline if they are not currently doing so – are shown in the top panel. The full range of compliance measures costs from around $500 for low-risk firms to around $650,000 for completely non-compliant extreme-risk firms. The high-risk firms assumed to require compliance action following inspection are expected to incur costs of roughly $25,000-$225,000. These costs are upper bound estimates in the sense that they assume a non-compliant facility is non-compliant for all aspects of the guideline.

The most costly overall compliance requirement is the costs incurred of disposing excess waste at landfill, in order to meet storage requirements. Overall, this accounts for $3.2 million of compliance costs. This is followed by the requirements for liquid run-off controls of around $1.5 million.

The average cost of compliance across the 800+ resource recovery facilities is estimated to be around $8,500. This estimate averages the costs over all facilities in each risk category and is likely a better representation of costs that might be faced for an individual facility, given that many facilities are likely to be non-compliant relating to only some aspects of the guideline. Over 95% of total compliance costs relate to around 250 high and extreme-risk facilities, however, and the average compliance cost for the approximately 550 low and medium-risk facilities is $500 to $1,500.

Table 11: Compliance cost summary by facility risk category

	Risk category of facilities				
	Low	Medium	High	Extreme	TOTAL
Unit costs (2017$)					
Risk assessment	500	1,000	2,000	5,000	-
Water supplies	-	-	82,665	-	-
Storage requirements	-	-	116,000	578,000	-
Fire prevention requirements	-	1,369	2,737	5,474	-
Infrastructure and equipment	-	350	1,000	2,000	-
Liquid run-off controls	-	5,000	15,000	50,000	-
Other emergency management equipment	-	152	152	152	-
Fire management plan	-	1,585	3,169	6,339	-
Total costs (undiscounted)					
Risk assessment	101,822	353,156	510,400	25,000	990,378
Water storage	-	-	495,990	-	495,990
Storage requirements	-	-	2,088,000	1,156,000	3,244,000
Fire prevention requirements	-	29,325	240,670	13,685	283,681
Infrastructure and equipment	-	7,500	87,931	5,000	100,431
Liquid run-off controls	-	107,143	1,318,966	125,000	1,555,108
Other emergency management equipment	-	3,267	13,407	381	17,055
Fire management plan	-	33,957	278,683	15,847	328,486
Total	**101,822**	**534,348**	**5,034,046**	**1,340,913**	**7,011,130**
Total (10-year NPV, 2017$)					**6,853,804**
Average costs (2017$)					
Cost for currently non-compliant facility to comply[1]	500	9,456	24,059 – 222,724*	68,965 – 646,965*	-
Average cost across all facilities in risk category[2]	500	1,513	19,726	268,183	8,582

*Notes: 1. Upper bound cost assuming non-compliance for all aspects of guideline * Ranges are excluding and including water storage/storage requirement costs 2. Cost more likely to be faced for a typical facility with partial non-compliance.*

5.2.2 Regulatory costs

Compliance and enforcement activity to operationalise the proposed WMP and drive improvement in fire risk management will require EPA to incur costs related to:

- preparing and holding training for environment protection officers;
- conducting inspections;
- administering enforcement processes – e.g. notice administration.

One-off costs of policy implementation – e.g. development of the guideline, establishing the taskforce and working group, and conducting the taskforce risk audit – are treated as 'sunk costs' and not included here.[61]

In the absence of detailed resource plans beyond June 2018 (when taskforce activities are expected to transition into EPA business-as-usual) future inspection activity is estimated as a share of taskforce levels, and the cost of this calculated using standard time and cost parameters (see Table 12).

Table 12: Regulatory costs to EPA

Regulatory cost parameter	Value	Source
Training costs		Waste tyres RIS
Time	0.06 FTE	
NPV cost	$8,003	
Enforcement administration costs		
Hours per notice drafted	5	Waste tyres RIS
Hourly cost (EPA VPS4)	$80.14	
Total number of notices	113	
NPV cost	$41,125	
Inspection costs		
Hours per inspection	40	Waste tyres RIS
Hourly cost (EPA VPS4)	$80.14	EPA operational information
Average inspection cost to EPA	$3,205	
Number of inspections: year 0	150	Assumptions based on EPA advice
Number of inspections: years 1 to 3	50	Assumptions based on EPA advice
Number of inspections: years 4 to 9	25	
Repeat inspections share of all inspections	20%	
NPV cost	$1,299,053	
Total (10-year NPV, 2017$)	**$1,348,180**	

61. The rationale for this approach is that since these costs have already been incurred as a result of the Government response to the Coolaroo fire, they are not relevant to making a decision or assessing the impacts of the preferred option.

5.2.3 Cost summary

Table 13 summarises the estimated compliance, transition and regulatory costs associated with the proposed WMP.

Table 13: Summary of estimated costs (10-year NPV)

	TOTAL
Compliance costs to facilities	$6,853,804
Transition costs	$1,730,000
Regulatory costs to EPA	$1,348,180
Total costs	**$9,931,984**

5.3 Benefits

The major expected benefit of the proposed WMP is a reduction in the frequency and severity of waste and recycling fires, and hence avoidance of the range of fire costs described in section 2.3.

This is the only benefit estimated in the impact analysis. However it is possible that compliance actions taken in response to the proposed WMP may also generate co-benefits such as:

- a reduction in pollution of stormwater with waste debris or contaminants due to improved site drainage and liquid run-off measures;
- improved local air quality if storage requirements and better site cleanliness reduce dust or odour emissions from the site;
- safety benefits for workers from reduced fire risk and improved awareness of site risks.

Table 14 provides estimates of the social costs of waste and recycling fires from a variety of sources.

Each of the estimates captures only a partial view of the social costs of fires. In most cases environmental health and amenity damage costs are not included, business disruption and emergency response estimates are incomplete, disruption to local residents is not measured, and the costs to the fire sites themselves (buildings, stock) are not included. These larger fire costs are broadly in line with ranges for waste tyre costs presented in the waste tyre storage RIS, giving some assurance that they are reasonable representations of typical fire costs.

For this reason the fire cost estimates are lower bounds on the true social cost, and the benefits of avoided fires are likely to be significantly higher than the estimates reported here.

Table 14: Fire costs – benchmark figures

Example fire	Alarm level	Estimated minimum costs	Costs included in estimate	Sources of cost data
Typical small fire	1	$4,400	Fire service response only (1 hour, 2 appliances)	MFB
Somerton	4	$6,378,290	Fire service and emergency response (partial), business disruption, environmental clean-up and other impact management	See Box 1, section 2.3.4
Coolaroo July 2017	8	$34,000,000	Fire service response, site clean-up and a lower bound estimate of environmental health damage costs	See Box 2, section 2.3.4

5.4 Break-even analysis

The number of CRWM fires required to be avoided over the 10-year evaluation period in order for the proposed WMP to generate a net benefit is shown in Table 15 below. The fire cost benchmarks used for the break-even analysis are the costs of the Somerton fire (4th alarm level) and the July 2017 Coolaroo fire (8th alarm level).

Table 15: Results of break-even analysis

Fire severity	Number of avoided fires to break-even
4th alarm – Somerton	1.56
8th alarm – Coolaroo	0.29

Avoidance of only a single fire at the 8th alarm level or two fires at the 4th alarm level over the 10-year policy period would be adequate for the benefits of the proposed WMP to exceed the regulatory and compliance costs imposed.

Over the 10-year period from 2008 to 2017 there have been eight 4th alarm fires, a single 6th alarm fire, and a single 8th alarm fire at resource recovery facilities – a total of 10 large-scale fires at the 4th alarm level or above (see section 2.3.1). To generate a net benefit, implementation of the proposed WMP would need to reduce the frequency of these large-scale fires by no more than roughly 10%, even without accounting for the potential for growth in fire frequency and severity as a result of the changing incentives described in section 2.

Another way of expressing this is that the average annual costs imposed by CRWM fires over the last decade appears to have been around 10 times larger than the annualised cost of basic risk mitigation measures. Based on the estimates above, this is a clear example of where preventative action is more efficient than responding to harm and there is a strong case for implementation of the proposed WMP on cost/benefit grounds. In summary, this analysis indicates the proposed WMP will easily reduce the frequency of large-scale fires by more than the break-even value of 10% given the current prevalence of fires of this nature, and the short-term increase in risks from current market disruption. The proposed WMP is also expected to reduce the severity of any fires that do occur, thereby further avoiding costs to the community.

5.5 Sensitivity analysis

It is clear that moderate variations in compliance costs will not alter this overall conclusion. However sensitivity tests were performed to test the following high-impact variables:

- volume sizes of stockpiles
- rates of behaviour-change for businesses
- health damage costs of fires.

The assumption about the height and therefore volumes of stockpiled materials drives the two biggest cost components – compliance costs for storage requirements and transition costs. The calculation of disposal costs assumes stockpile heights of 2.5 metres. If these costs are calculated based on stockpile heights of 4 metres, there is a significant increase in overall costs of roughly $3 million. Even with this addition, the break-even calculation requires only 2 fires at the 4th alarm level or 0.4 fires at the 8th alarm level to be avoided for the proposed WMP to generate net benefits.

The main analysis assumes that, aside from performing the risk assessment, business owners will only change their behaviour once they are inspected. This is the most likely scenario based on advice from EPA that business owners are for the most part either unaware of the WMP or reluctant to change their behaviour unless directed to. It is possible, however, that the rate of behaviour-change has been under-estimated due

to the lack of data, or the potential for over-compliance. Should the rate of behaviour-change be increased by 10% in each category[62], this would increase the aggregate compliance cost by roughly $650,000 and result in a minor increase in the average fires required to be avoided.

As referred to in Box 2, the upper bound estimate of the health damage costs of air pollution from the Coolaroo fire is around $100 million. Including this estimate implies the break-even point would be satisfied at an even lower number of avoided fires, requiring a reduction of only 0.10 fires at the 8th alarm level.

Table 16 - Sensitivity break-even analysis

	Number of avoided fires to break even			
Fire severity	Main analysis	Upper-bound stockpile height	Upper-bound rate of behaviour-change	Upper-bound health damage costs
4th alarm – Somerton	1.56	2.02	1.66	NA
8th alarm - Coolaroo	0.29	0.38	0.31	0.10

Significant increases in even the most costly impacts have only a minor effect on the break-even analysis. At most, avoidance of only two fires at the 4th-alarm level or 0.4 fires at the 8th alarm levels are required for the benefits of the proposed WMP to exceed the regulatory, transition and compliance costs. This is equivalent to a 15 per cent reduction based on the number of high-impact fires from the last ten years.

5.6 Small business impact assessment

Regulatory requirements can create a disproportionate burden on small businesses that do not have the administrative capacity or legal expertise to effectively navigate the regulatory environment.

Good regulatory practice will see any necessary requirements made easy to understand and comply with via their wording and application by the regulator.

Many of the 800+ facilities covered by the proposed WMP are small businesses (see section 2.2).

However as has been noted, the flexible wording of the proposed WMP and guideline, EPA's risk-based enforcement policy (see section 6.3) and the discretion and proportionality able to be applied by EPA in practice, will likely mean the burden of the WMP on small businesses meeting imposed requirements will be low. Many of the compliance costs listed above are proportionate to the scale of the site, and impacts on small business *per se* will be minimal.

Where small businesses are operating in sensitive areas, e.g. adjacent to residential areas or sensitive waterways, EPA's requirements will be more stringent for small and large business alike (see section 6 for a description of EPA's compliance and enforcement approach).

Where small businesses are operating with low-cost business models achieved through poor environmental risk-mitigation practices, application of the WMP will make it harder for these businesses to compete. This is discussed further below.

Both the protection of sensitive areas and restrictions on environmentally-risky business practices are necessary elements of achieving the policy objectives, and are not expected to unduly impact small businesses relative to larger operators. As the Coolaroo fire and taskforce risk assessment results showed,

[62] 80% for extreme-risk; 44% for high-risk; 31% for medium-risk

fire risks are substantively related to the size of the operation, and risk-based compliance and enforcement will therefore naturally target larger sites.

5.7 Competition assessment

As a matter of good regulatory policy, and to fulfil the requirement of the Competition Principles Agreement to which Victoria is a party, it is necessary to consider the impact of any restrictions to competition posed by the preferred option and demonstrate that:

- the Government's policy objectives can only be achieved by restricting competition; and
- the benefits of any restrictions outweigh the costs.

Restrictions on competition are generally undesirable, as they can have adverse effects on consumers (through reduced choice and/or higher prices) and on the broader economy (through reduced opportunities or incentives for businesses to invest and innovate, leading to lower productivity and employment growth).[63] In some cases restrictions on competition can also impact suppliers (through reduced choice of downstream markets and/or lower prices).

5.7.1 Restrictions on competition

To determine whether competition will be restricted, various decision frameworks and tools are available such as the OECD's *Competition Assessment Toolkit*, the Commonwealth Office of Best Practice Regulation *Competition and Regulation Guidance Note*, and the NZ Treasury's *Best Practice Impact Analysis Guidance Note*.[64]

These all involve similar criteria centring on restrictions to:

- **entry** – limitations on starting business or on the type or number of new businesses;
- **ability to compete** – limitations on expansion, price competition, product or contract innovation, etc;
- **incentives to compete** – dampening of price signals to invest, develop markets, etc; and
- **information and choice** – limitations on how practical it is for contracting parties (e.g. downstream consumers or upstream suppliers) renegotiate terms, source other suppliers, etc.

The proposed WMP places no restrictions on the nature of contracting in the sector, nor directly alters price signals faced by contracting parties, and is therefore expected to have no impacts on the incentive for firms to compete or on information and choice.

However by placing new requirements on operations that involve some resource cost, the WMP may create a cost barrier that makes it more difficult for new entrants to establish (guideline-compliant) operations, or for existing firms to expand by making fuller use of existing sites, establishing new sites, or moving into certain sensitive locations that may be closer to their suppliers or customers.

The proposed WMP may also restrict the ability of firms with certain low-cost business models to compete. In particular, firms with business practices that present greater environmental risks and externalise these risks onto the broader community will now compete on a level playing field with responsible operators that are taking due precautions to minimise fire risk.

The ultimate impact of these restrictions is likely to be on upstream parties – commercial and industrial waste generators who may pay higher prices for collection, or municipal councils who may face less choice of recyclers and receive lower prices for recyclables. Relative to broader market trends and the impact of China's trade restrictions, however, this impact is likely to be negligible.

63. Commissioner for Better Regulation (2016), *Victorian Guide to Regulation*, available at http://www.betterregulation.vic.gov.au/Guidance-and-Resources

64. OECD *Competition Assessment Toolkit*, http://www.oecd.org/competition/toolkit ; Commonwealth Office of Best Practice Regulation *Competition and Regulation Guidance Note*, Feb 2016, https://www.pmc.gov.au/sites/default/files/publications/010-Competition-Regulation.pdf ; NZ Treasury *Best Practice Impact Analysis Guidance Note,* June 2017, http://www.treasury.govt.nz/regulation/impact-analysis/ia-bestprac-guidance-note.pdf

5.7.2 Appropriateness of restricting competition

To determine whether these competition impacts are warranted requires determining whether alternative means of achieving the policy objectives are available, and whether the benefits outweigh the costs.

As section 4 established, and has been noted throughout, the WMP is a flexible tool that will allow EPA to apply the guideline requirements proportionately to risk. The costs imposed on new entrants and small businesses at the competitive fringe is likely to be less than the costs imposed on dominant established players, and the reduction in competitive tension created by smaller players relatively minor.

The rebalancing of the industry towards more responsible operators is a necessary and desirable restriction in order to achieve the policy objectives. To the extent the policy penalises de facto landfilling, i.e. long-term stockpiling with a likely end-point of abandonment, thus imposing on-going fire risk and amenity issues on the broader community, this is helping to achieve the fire risk mitigation objective as well as supporting more general environmental protection goals.

As established earlier in section 5, the regulatory and compliance costs of the proposed WMP are small in comparison to the social costs imposed by CRWM fires, and even a minor reduction in fire risk will warrant imposing these costs on the industry.

5.8 Policy risks

This section considers risks that may be created or increased by the preferred option.

5.8.1 Inappropriate disposal (dumping, stockpiling)

A key risk associated with the proposed WMP is the potential for operators offering lower prices than legitimate operators to accept recyclables, with the intention of illegal dumping or inappropriate stockpiling and subsequent abandonment of the material. This risk is largely driven by the variable market for recyclable materials. EPA's priorities for compliance resource allocation will shift in response to broader regulatory priorities and risks over time, and may not be responsive to this market context.

The taskforce's work to develop both greater visibility of CRWM movement and greater regulatory capability, coupled with the proposed WMP, will enable better control of this risk. LGAs and the community are also becoming more aware of the importance of contracting legitimate operators for their waste removal and management.

5.8.2 Increased landfilling of recyclables

If resource recovery facilities are unable to manage the volume of CRWM they have onsite within the stockpile management requirements, there is a risk that material could be sent to landfill as a cost-effective option for moving it on from the site.

While this is a legitimate disposal option to reduce fire risks, other environmental impacts may be increased. The waste hierarchy, which guides waste management systems around the world, preferences resource recovery over landfilling of this material because that allows more efficient use of natural resources in the economy and reduces the impacts of resource extraction and manufacturing industries. Further, if this practice became widespread, the impact to community participation in recycling behaviours could be significant.

In the short term, landfilling of some portion of this material may prove unavoidable. The global and domestic recycling industry is adjusting to market disruptions caused by China's changed trade restrictions, which is leading to a short-term spike in stockpiling of CRWM. However, the short and medium-term responses from state government to this challenge will, in tandem with the proposed WMP, help industry to create preferable outcomes for recyclables.

5.8.3 Unreasonable financial burden on resource recovery operators

To be deemed compliant with the proposed WMP, some requirements of the supporting guideline may impose a significant financial burden on resource recovery facility operators in the medium to low risk

categories, which could be considered unreasonable. However, the flexible approach that the guideline enables will allow EPA compliance officers to apply the proposed WMP appropriately for the level of risk. It is therefore not anticipated that this flexible approach would impose unreasonable burden.

6. Implementation

6.1 Introduction

EPA Victoria will be responsible for ongoing administration and enforcement of the proposed WMP, and co-ordinating with related agencies to support risk assessments and develop other aspects of the regulatory framework for managing these sites.

A significant effort has been dedicated to policy development, capability building, industry engagement, and compliance and enforcement by the taskforce. It is important to note that implementation of the proposed WMP, which is substantively similar to the interim WMP, will therefore be less challenging than is ordinarily the case for implementation of an entirely new policy. The work of the taskforce has developed a baseline of knowledge and resources that EPA will build on as regulatory responsibility for this issue shifts to a business-as-usual operational activity.

The following sections outline the relevant activities of the taskforce and the transition to EPA, the broad regulatory approach EPA will take, and other relevant activity within government.

6.2 Taskforce activities

The taskforce was asked to oversee a risk-based audit program of joint agency inspections of resource recovery facilities to identify and take regulatory action to reduce fire risk from stockpiling.

The taskforce led the development of the EPA guideline, in consultation with around 35 different stakeholder groups. It has also developed a fact sheet relating to the risks of storage and abandonment of waste on leased land.[65] It has led education and industry engagement by distributing information about the guideline via key industry and local government bodies, dedicated web pages, media releases, and presentations to industry and government forums.

The taskforce has conducted 88 multi-agency inspections of 75 different sites (to late November 2017), and inspections are ongoing.

In support of that inspection program the taskforce developed a risk assessment scoring system that allows for ranking of sites to prioritise compliance actions. The scoring system used a dataset sourced from various agencies and compiled by the taskforce.

The establishment of the taskforce has also facilitated improved collaboration between agencies and significantly improved cross-agency co-regulation of fire risks. An inter-agency working group with representatives from EPA, DELWP, MFB, CFA, Emergency Management Victoria, Sustainability Victoria and WorkSafe Victoria has been established to support the taskforce, an arrangement that will continue in some form as responsibility transitions to EPA.

6.3 Transition from taskforce to general EPA operations

The taskforce is currently supported to continue enforcing compliance against the interim WMP until June 2018. After this, those inspection and risk assessment aspects of the taskforce's work will be incorporated into EPA's broader inspections program.

The risk assessment and audit methodology developed by the taskforce will be adapted to assessing compliance with the proposed WMP, and will continue to be developed over time as knowledge improves. The compliance guideline is also being reviewed by EPA, in consultation with industry. EPA will continue to provide general support to comply via promotional campaigns, meetings with industry associations, and development of appropriate informational material.

Transition planning to embed this additional compliance and enforcement activity into EPA's general operational activities will include activities within EPA such as prioritising sites for compliance assessment,

65. EPA fact sheet number 1680, Nov 2017, *Landowners fact sheet: Storage and abandonment of waste*, http://www.epa.vic.gov.au/our-work/publications/publication/2017/november/1680

establishing standard operating procedures for inspections, developing training materials to maintain ongoing regulatory capability, and allocating adequate resources for the above.

6.4 EPA compliance and enforcement

Ongoing EPA activity will be conducted in accordance with the *Compliance and enforcement policy*, a publicly-available document which articulates EPA's approach, method and priorities for ensuring compliance with legislation and carrying out compliance and enforcement powers.

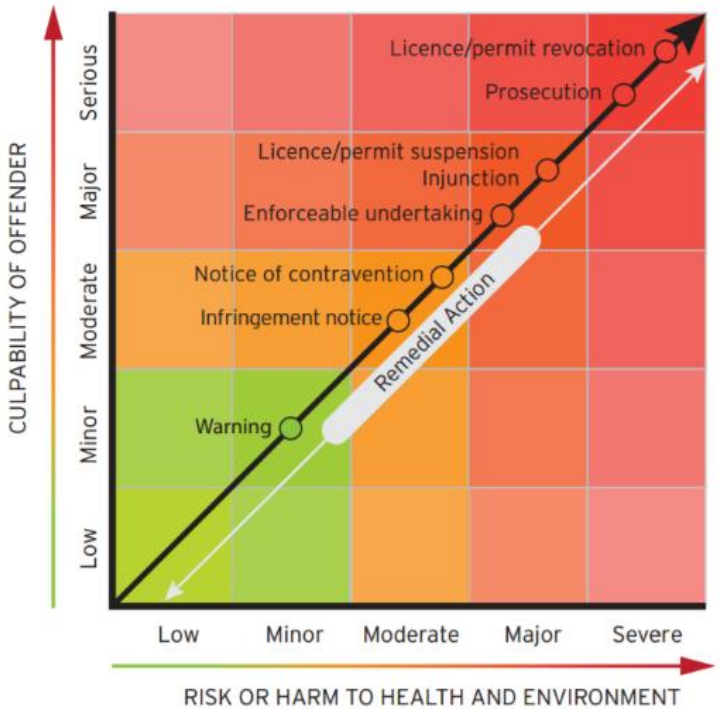
EPA uses a balanced regulatory approach, with a mix of compulsory and voluntary methods. Enforcement, when required to compel compliance, can involve both remedying the problem (i.e. stopping non-compliance with the law and preventing harm) and/or applying punishments for breaking the law.

Remedial notices, such as pollution abatement notices (PANs) and clean up notices, are legal directions to carry out works, stop activities or carry out investigations. As noted earlier, notices can be issued in response to non-compliance with a WMP, but are not themselves punishments. Notices ensure there is a formal record that EPA has required action to remedy a risk or prevent further harm, and that people are treated consistently. Notices will often hold recipients to a given timeframe to comply with the requirements. Notices may also be accompanied by other enforcement measures, and failure to comply with a notice can subsequently lead to enforcement, such as an infringement notice or prosecution.

Penalty infringement notices are generally applied where an offence is of a well-defined nature and presents a low level of danger to the environment and human life. More serious incidents are prosecuted through the courts, particularly where serious harm or risk to the environment, human health or welfare occurs, or where repeated offences have occurred.

EPA's escalating hierarchy of enforcement action, which ranges from issuing warnings to prosecution or licence revocation (if relevant), is illustrated in Figure 7. The ultimate objective of enforcement further up the hierarchy – penalties and prosecution – is to induce behavioural change by altering the economic incentives for non-compliance. Enforcement of the WMP will therefore be a critical element in reducing CRWM fire risk mitigation; it is the link between the more straightforward evidentiary path to penalties and prosecutions the WMP provides and the ultimate policy objective of reducing fire risk in the sector.

Figure 7: EPA's enforcement response[66]



6.5 Broader Government activity relating to the sector

The taskforce provided an interim report to the Government in December 2017 containing a number of recommendations for actions that government can take to reduce risk of fire at recycling facilities.

One of these recommendations – to assess and determine an appropriate regulatory regime to replace the interim WMP – has led to the proposed WMP, and the Government is now considering the other recommendations made by the taskforce and developing a response.

The Government is also currently working with the recycling industry, local government and other stakeholders on options to address the impacts of the trade restrictions recently imposed by China (see section 2.2.5), and has announced that a recycling industry taskforce will be established to develop a strategic plan for industry transition. A $13 million package has also been announced to support councils and industry with ongoing kerbside collection of household recyclable waste, giving time for councils and their contractors to develop longer-term solutions and renegotiate contracts.[67]

While these current issues are being addressed, longer-term work to fund research programs to find new uses for recycled products, education programs to increase recycling, and provide grants and support to encourage investment in recycling infrastructure continues in line with the roadmap laid out in the Government's *Statewide Waste and Resource Recovery Infrastructure Plan*.[68]

66. *Compliance and enforcement policy,* publication 1388.3, Dec 2017, http://www.epa.vic.gov.au/our-work/compliance-and-enforcement/ce-policy
67. Minister for Energy, Environment & Climate Change media release, Stepping In To Support Industry And Councils With Recycling, 23 Feb 2018, https://www.premier.vic.gov.au/stepping-in-to-support-industry-and-councils-with-recycling/
68. Sustainability Victoria, 2015, *Statewide Waste and Resource Recovery Infrastructure Plan*, http://www.sustainability.vic.gov.au/swrrip

7. Evaluation

Subject to passage by Parliament, a new regulatory framework for EPA will commence around mid-2020 (see section 1.2). This is approximately two years after commencement of the proposed WMP, and will be a suitable juncture at which EPA will be able to assess the effectiveness of the proposed WMP, and to consider whether and how to continue directly regulating CRWM fire risk.

The purpose of the evaluation will be to establish how well the proposed WMP, and the implementation activity outlined above, have contributed towards the objective of reducing CRWM fire risk.

The work of the taskforce in establishing risk measures, compiling data, and inspecting sites has established a good quality baseline for measuring policy effectiveness.

Two types of indicators can inform the evaluation: compliance and risk measures, and outcome measures.

Policy compliance and fire risk can be measured:

- By re-assessing a sample of sites against the baseline assessment results established by the taskforce, using the tools developed by the taskforce, namely:
    - The initial risk classification approach used to categorise 600+ sites based on aerial imagery; and
    - The secondary risk assessment tool used to risk-score 193 extreme and high-risk sites using data from CFA, MFB, and other agencies;
- EPA data on notices issued (PANs and CUNs) and the frequency of high-risk issues such as inappropriate stockpiling being identified in later inspections relative to 2017-18 levels.

The state of industry compliance will also be regularly assessed via EPA's annual compliance planning, which is used to inform priorities for the coming year.

Outcomes can be measured using:

- MFB and CFA call-out data, including frequency and alarm level, for fires at facilities covered by the proposed WMP, relative to the rates observed in the 2008-2017 period (see section 2.3.1).

In all these cases the data used will either be data already routinely collected by EPA, CFA and MFB, or data generated for the evaluation exercise.

These indicators will be supplemented with qualitative information including:

- EPA views on compliance performance, awareness and attitudes;
- CFA and MFB assessments of the severity of fires that have occurred, and the potential risks averted where small fires have been quickly contained by the fire services;
- Industry views on progress: following Coolaroo, an industry forum was convened and resulted in a report, and the same or similar grouping of industry representatives could revisit this report and assess steps taken and progress in improving industry standards.

Fire risk is difficult to quantify, and the connection between policy compliance and the intended outcomes in terms of reducing the frequency and severity of fires is subject to significant variability, and is influenced by other factors (such as the economic situation of the sector). The perspectives of the fire services, EPA and industry on whether the proposed WMP appears to be driving the desired behavioural change will thus be as significant in evaluating the impact of the proposed WMP as quantitative measures are.

Appendix I: Multicriteria analysis of options[69]

Type of regulatory option	No.	Description	Criteria				
			Flexibility of application	Strength of legal power	Proportionate to risk	Potential to be in place by 29 August 2018	Future adaptability
Explicit government regulation	1	**Waste Management Policy:** declare an ongoing statutory policy based on the interim WMP, and with EPA CRWM guideline as a deemed-to-comply method.	**Good**	**Good**	**Good**	**Good**	**Good**
	2	**Regulations:** make a new regulation under the EP Act with prescriptive requirements based on the existing guideline	**Moderate**	**Good**	**Moderate**	**Good**	**Moderate**
Extend coverage of existing regulation	3	**Scheduled Premises Regulations**: impose licensing and/or works approval requirements on waste and resource recovery facilities managing or storing CRWM (above a defined threshold).	**Moderate**	**Good**	**Further analysis required**	**Not possible**	**Moderate**
	4	**Dangerous Goods Regulations**: expand dangerous goods regime or other OHS requirements to cover CRWM.	**Potentially good**	**Moderate**	**Potentially good**	**Unlikely**	**Moderate**
Work solely within existing regulations	5	**Resourcing additional preventative action:** dedicate additional resourcing to compliance and enforcement using powers already available in the EP Act, CFA Act, MFB Act and PE Act.	**Good**	**Moderate**	**Moderate**	**Unlikely**	**Moderate**
	6	**Improving co-ordination:** continue efforts to improve inter-agency co-ordination and establish clear responsibilities for using existing powers	**Good**	**Moderate**	**Moderate**	**Unlikely**	**Moderate**
	7	**Voluntary industry self-regulation**: continue encouraging industry bodies in efforts to improve industry standards of fire risk management	**Good**	**Low**	**Low**	**Unlikely**	**Good**
	8	**Education**: better resource EPA and/or fire services to educate industry in fire risk management practices (e.g. encouragement to adhere to the EPA guideline)	**Good**	**Low**	**Low**	**Unlikely**	**Moderate**
	9	**Insurance industry leverage:** explore opportunities to align insurance requirements and premiums with fire risk management practices (e.g. via industry accreditation)	**Good**	**Low**	**Low**	**Unlikely**	**Good**

69. See Appendix II for definition of criteria used in this analysis.

Appendix II: Definition of criteria used in multicriteria analysis of options

Criteria	Description
Flexibility of application	Ability to tailor compliance measures to the broad range of resource recovery facilities captured by the tool
Strength of legal power	Enforceability, and clarity of roles and responsibilities, for an appropriately resourced and experienced regulator.
Proportionate to risk	Compliance requirements imposed are appropriate to the risk posed and not excessive
Potential to be in place by 29 August 2018	Likelihood of the tool being ready to commence once the interim WMP expires (on 28 August 2018)
Future adaptability	Ease of adapting the tool to the future environment protection laws framework, anticipated to commence mid-2020

Attachment A: Draft Proposed *Waste Management Policy (Combustible Recyclable and Waste Material)*

ENVIRONMENT PROTECTION ACT 1970

WASTE MANAGEMENT POLICY (COMBUSTIBLE RECYCLABLE AND WASTE MATERIAL)

ORDER IN COUNCIL

The Governor in Council under section 16A of the **Environment Protection Act 1970** and on the recommendation of the Environment Protection Authority, declares the Waste Management Policy (Combustible Recyclable and Waste Material).

This Order comes into effect on 29 August 2018.

Dated:

Responsible Minister:

Lily D'Ambrosio
Minister for Energy, Environment and Climate Change

Clerk of the Executive Council

ENVIRONMENT PROTECTION ACT 1970

WASTE MANAGEMENT POLICY (COMBUSTIBLE RECYCLABLE AND WASTE MATERIAL)

1. Objective

The objective of this Policy is to ensure that combustible recyclable and waste material is managed and stored in a manner that minimises risks to human health and environment from fire.

2. Commencement

This Policy will come into operation on 29 August 2018.

3. Revocation

The Waste Management Policy (Resource Recovery Facilities), as published in Government Gazette No. S289 on 29 August 2017, is revoked.

4. Definitions

In this Policy-

combustible recyclable and waste material includes paper, cardboard, wood, plastic, rubber, textile, organic material, refuse derived fuel, specified electronic waste, metals, and any other combustible material which is waste;

licensed waste tyre storage site means premises of a type numbered A09 (waste tyre storage) in Column 1 of the Table in Schedule 1 to the Environment Protection (Scheduled Premises) Regulations 2017, the occupier of which holds a licence issued by the Authority under section 20 of the **Environment Protection Act 1970**;

licensed landfill means premises of a type numbered A05 (landfills) in Column 1 of the Table in Schedule 1 to the Environment Protection (Scheduled Premises) Regulations 2017, the occupier of which holds a licence issued by the Authority under section 20 of the **Environment Protection Act 1970**;

specified electronic waste has the same meaning as in the Environment Protection (Scheduled Premises) Regulations 2017;

waste and resource recovery facility means a premises that receives waste including, but not limited to, combustible recyclable and waste material for the purposes of storage, transfer, sale, sorting, reuse, recycling, reprocessing or energy recovery.

5. Application

This Policy applies to waste and resource recovery facilities in Victoria, other than licensed waste tyre storage sites or licensed landfills.

6. Management and storage obligation

An occupier of a waste and resource recovery facility must manage and store combustible recyclable and waste material, at that facility, in a manner that minimises the risk of fire.

7. Compliance

An occupier of a waste and resource recovery facility complies with clause 6 if the combustible recyclable and waste material is managed and stored-

a) in accordance with the Authority's publication *Management and Storage of Combustible Recyclable and Waste Materials – Guideline*, as in force from time to time and published on the Authority's website; or

b) in a different manner that minimises the risk of fire to a level equivalent to the *Management and Storage of Combustible Recyclable and Waste Materials – Guideline.*

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