

Summary of policy impact assessment

Under the *Environment Protection Act 1970*, a policy impact assessment (PIA) must be conducted to lay out the objectives and impacts of a change to policy.

In addition, PIAs explain the intended methods of implementing new or varied policy and the likely environmental, social and economic impacts associated with its implementation. The *Managing e-waste in Victoria* PIA outlines the rationale for a change in policy towards e-waste in Victoria. The PIA has been prepared to facilitate public consultation on the Victorian Government's proposed policy approach, which will be implemented by both modification of an existing waste management policy (WMP) and creation of a new waste management policy.

A copy of the *Managing e-waste in Victoria* PIA and the proposed WMPs can be accessed at www.engage.vic.gov.au and submissions are now invited on these. Unless requested by the author, all submissions will be treated as public documents and could be made available to other parties. The public consultation process allows members of the community to comment on what is being proposed before the PIA is finalised. Such public input provides valuable information and perspectives, and improves the overall quality of statutory policies.

A summary of the key points and findings of the *Managing e-waste in Victoria* PIA is provided below.

Chapter 1 – Introduction to e-waste

Electronic or electrical waste, known colloquially as 'e-waste', is waste created when electronic and electrical equipment is discarded. E-waste includes, but is not limited to, televisions, computers, mobile phones, kitchen appliances and white goods. These items contain both valuable and hazardous materials that can be recovered and reused, or managed appropriately once discarded. Approximately 109,000 tonnes of e-waste were generated in Victoria in 2015; this is expected to increase to approximately 256,000 tonnes by 2035.

In Australia, the e-waste reprocessing industry has grown over the last decade. Once collected, consolidated and sorted, e-waste is often stored for a period before it is taken to landfill or reprocessed. The Victorian e-waste reprocessing industry currently comprises 16 facilities with one of the following broad capabilities:

- manual disassembly into intact subcomponents for sale as feedstocks for further reprocessing and or recovery; or
- mechanical processing including crushing, shredding, magnetic, density, optical or x-ray sorting into sorted feedstocks for further reprocessing and or recovery.

Of the 106,000 tonnes of e-waste generated in Victoria in 2014, 50 per cent was reprocessed by an e-waste reprocessor or metal recycler.

Chapter 2 – Current difficulties with recycling e-waste

On a global scale, the potential wealth relating to e-waste is substantial. Governments and industry are being urged to see the opportunity in e-waste recycling to create new income streams while improving environmental sustainability. Major impacts associated with losing e-waste to landfill include the permanent loss of valuable non-renewable materials including precious and rare metals, environmental harm and human health risks relating to leaching of hazardous materials contained within e-waste, and virgin resource extraction, i.e., mining, resulting in potential intergenerational inequity.

There are several economic, policy and behavioural barriers that make e-waste recycling uneconomical for the private sector, resulting in a large percentage of e-waste being inappropriately stockpiled or lost to landfill. Such barriers existing at various points in the waste chain include: a lack of understanding within households of the hazards associated with e-waste in landfill, the potential value of its components or firms available to take e-waste; reduction of available feedstock due to illegal pathways such as dumping and stockpiling; and the cost of recycling e-waste can be greater than the revenue from recovered materials, making disposal to landfill cheaper.

Despite these barriers, consultation with the recycling industry suggests there is capacity to process greater volumes of e-waste if more feedstock can be provided. Fundamentally, this indicates that the reprocessing activity is profitable. However, the private sector cannot undertake the necessary pre-processing activities (i.e. collection, sorting, storage, transport) at sufficiently low cost to make recycling e-waste profitable overall.

Chapter 3 - Policy objectives and interventions

The Andrews Labor Government is committed to banning e-waste from landfill in Victoria and is developing an approach to achieve this policy objective. The Government's policy approach aims to:

- increase e-waste resource recovery;
- reduce harm to the environment and human health associated with its disposal; and
- support jobs and investment in the recycling industry.

Globally, there are numerous regulatory and non-regulatory interventions currently adopted to prevent e-waste going to landfill. Regulatory interventions, including mandating e-waste recycling and prohibiting dumping of e-waste to landfill, use legal frameworks to define responsibilities and require actions and penalties. Non-regulatory interventions, such as market development, community education and awareness programs and technology and waste infrastructure upgrades, are not written into legislation or subordinate instruments. Rather, they are driven by factors that aim to drive behavioural change and support alternatives to landfill. Jurisdictions that operate a well-functioning e-waste management system typically use a mix of regulatory and non-regulatory interventions.

An analysis of both regulatory and non-regulatory interventions relating to e-waste recovery (specific to Victoria), found several complementarities between the various interventions. This suggests a 'package' of interventions is more effective than any single intervention on its own. A landfill ban (regulatory intervention) is the centrepiece of the Victorian Government's proposed policy approach. When paired with measures that educate the community, provide households with appropriate disposal options, and ensure availability of sufficient e-waste feedstock to the reprocessing industry, this option has been shown to drive increased recycling rates. A landfill ban itself only applies to landfill operators, so requirements that specify how e-waste should be managed outside of landfill, along with non-regulatory interventions, will also need to be adopted to ensure the policy's effectiveness.

Chapter 4 – Impact analysis

A landfill ban on e-waste would be legislated by amending an existing WMP which specifies how landfills in Victoria must be located, designed and managed. To prescribe how e-waste must be managed upstream of landfill, a new WMP has been developed. The new WMP sets out how those involved in the generation, collection, storage, handling, transport, reuse, repair or reprocessing of e-waste must manage e-waste safely and prevent it from entering landfill.

As part of the PIA, risks associated with the new policy approach were identified. Identified risks included illegal and harmful disposal of e-waste, financial burden on e-waste collectors and inadequate recovery of e-waste relating to current recycling processes. A range of mitigation measures to reduce these risks were also identified.

A cost-benefit analysis of the proposed policy package is the central analytical component of the PIA. Its purpose is to help identify if the proposed policy provides net benefits to the Victorian community, and if so, which policy option is likely to provide the greatest net benefits. Five options for a package of policy measures were considered to determine which would deliver the best outcome for Victoria, in relation to the total costs and benefits from 2017 to 2035.

The options used to model the costs varied depending on two key design questions:

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- whether a comprehensive landfill ban on all e-waste or a partial ban focusing on the most hazardous items is preferable;
- what type and coverage of collection sites and services is most appropriate (low, medium or high levels of access).

All options include the new management requirements for e-waste, an education and communication campaign, transfer station storage infrastructure upgrades, and a state-administered collection service.

Table 1 demonstrates the package of interventions relating to each option, the total tonnes of e-waste diverted from landfill between 2019 to 2035 and a summary cost-benefit results for each option.

Table 1 – Options analysed in the cost-benefit analysis

	Option 1a	Option 1b	Option 1c (PREFERRED)	Option 2	Option 3
Landfill ban	All e-waste	All e-waste	All e-waste	Hazardous items only	No ban
Collection service and improved e-waste storage infrastructure at transfer stations	High access	Low access	Medium access	High access	High access
Legislated requirements for e-waste management	✓	✓	✓	✓	✓
Education / communications plan	✓	✓	✓	✓	✓
Total tonnes e-waste diverted from landfill relative to business as usual conditions (2019-2035)	922,000	520,000	573,000	393,000	664,000
Total costs (\$m)	-\$433.6	-\$242.0	-\$266.8	-\$195.0	-\$314.0
Total benefits (\$m)	\$453.7	\$252.4	\$280.1	\$138.5	\$318.7
Net present value (benefits – costs) (\$m)	\$20.1	\$10.4	\$13.3	-\$56.5	\$4.7

The analysis shows that the social benefits and costs of each option are significant. The three options with the comprehensive landfill ban on all e-waste (1a, 1b, 1c) produce the greatest net benefit, mostly due to the value of material recovered from recycling, which makes up roughly 90 per cent of total benefits. This addresses the objective of increased recovery of resources.

While Option 1a is forecast to generate the greatest net benefit from 2017 to 2035, Option 1c is the **preferred** policy package option. This is due to the kerbside collection service offered under Option 1a imposing a significant cost of \$65 million to 2035 (compared with \$8 million under 1c), which will fall primarily on local councils. Analysis of the impact on various stakeholders reveals that all options (except for Option 2) will significantly benefit the e-waste processing/recycling industry. Option 1c is expected to generate \$172 million in processing expenditure from 2017 to 2035, and an additional 31 full-time equivalent jobs for the industry. This addresses the objective of supporting jobs and investment in the recycling industry. Whilst Option 1c does not drive as much diversion of e-waste from landfill as the options with kerbside recycling i.e., high access collection service, it still delivers a significant improvement in recycling rates (approximately 50 per cent increase in e-waste recycling

compared with projected rates in the absence of government intervention). Furthermore, this option is a cost-effective collection model with significantly lower public costs overall.

Chapter 5 – Implementation of preferred option

The preferred policy package is not only a regulatory change but a package of interdependent measures that must be delivered strategically to prevent inadvertent outcomes. To ensure successful implementation of the preferred policy package, the E-waste Working Group (which determined the preferred option) will continue to play a core role in the delivery of the e-waste landfill ban. Consultation with key stakeholders, including the education and awareness campaign, continued governance and the administration of compliance and enforcement requirements are also key measures required for successful implementation. Timing of deliverables, budgets relating to resource requirements and the roles and responsibilities of key agencies have also been identified.

Chapter 6 – Evaluation strategy

An evaluation strategy will be developed alongside the preferred policy package to enable the Victorian Government to measure the effectiveness of the preferred policy package in achieving its objectives, including mechanisms for improvements, whilst ensuring the integrity of Victoria's environmental framework. The strategy will monitor and assess information at various stages of the project's life to determine the policy's performance against its long-term objectives and expected intermediate outcomes.

Chapter 7 – Stakeholder consultation

The development of the preferred policy package has been led by the E-waste Working Group in consultation with a wide range of stakeholders. Consultation activities to date have been both general and targeted and will continue during and after the implementation of the preferred policy package to ensure ongoing monitoring and improvement.

For further detail please see *Managing e-waste in Victoria – policy impact assessment* and the proposed waste management policies at www.engage.vic.gov.au.

