

**Dangerous Goods (Explosives) Regulations 2022**

Regulatory Impact Statement

WorkSafe Victoria  
January 2022

**Deloitte**  
Access **Economics**

# Contents

Glossary	3
Executive summary	4
1 Background	9
1.1 Introduction	9
1.2 The role of explosives in our society	10
1.3 Legislative and regulatory framework	12
1.4 Current review of Victoria’s dangerous goods laws	15
1.5 About this RIS	16
1.6 Structure of the report	17
2 Problem statement	18
2.1 Overview of the problem	18
2.2 The nature of the risk posed by explosives	18
2.3 Extent of the problem	19
2.4 The residual problem that is addressed by the current Regulations	22
2.5 Objectives of the proposed Regulations	24
3 Options	26
3.1 Options development	26
3.2 Options	26
4 Impact analysis of preferred option	29
4.1 Approach to measuring impact	29
4.2 Estimates of impact	32
4.3 Break-even analysis	38
5 Small business and competition impacts	40
6 Implementation and evaluation strategy	46
6.1 Implementation plan	46
6.2 Evaluation Strategy	47
Appendix A: Proposed summary of changes	49
Limitation of our work	53

# Glossary

<b>Acronym</b>	<b>Full name</b>
AEC	Australian Explosives Code
CPI	consumer price index
current Regulations	<i>Dangerous Goods (Explosives) Interim Regulations 2021</i>
DG Act	<i>Dangerous Goods Act 1985</i>
NPV	net present value
OHS Act	<i>Occupational Health and Safety Act 2013</i>
OHS Regulations	<i>Occupational Health and Safety Regulations 2017</i>
RBA	Reserve Bank Australia
RIS	Regulatory Impact Statement
SMS	safety management system
VSL	value of a statistical life

# Executive summary

The purpose of this Regulatory Impact Statement (RIS) is to analyse the effectiveness and impacts of the existing *Dangerous Goods (Explosives) Interim Regulations 2021* (the current Regulations) and of the proposed *Dangerous Goods (Explosives) Regulations 2022*.

The current Regulations are made under the *Dangerous Goods Act 1985* (the DG Act) and will sunset on 19 June 2022. The DG Act prescribes a range of provisions that apply to all dangerous goods. These provisions aim to minimise potential harm arising from misuse or mishandling of dangerous goods.

Certain dangerous goods, such as explosives, are deemed to carry specific risks that require more tailored regulatory provisions. As such, the current Regulations prescribe a range of controls intended to mitigate the hazards associated with explosives. These obligations pertain to all stages of an explosive's life cycle, including their:

- manufacture
- storage
- sale
- transport
- import
- use, and
- disposal.

If the current Regulations were to sunset without being replaced, there would be no measures prescribed to manage the dangers specific to explosives (as distinct from other dangerous goods).

It is important to note this RIS is being undertaken concurrently with a broader and comprehensive review of the *Dangerous Goods Act 1985* and all associated regulations ('the Review'). The Review is being conducted independently of WorkSafe and may give rise to material amendments to the current Regulations in the near future. As such, material changes to the current Regulations are not considered through this RIS; the only option that is considered is the status quo. Alternative feasible options are not being considered by WorkSafe so as to mitigate unnecessary logistical burden on industry and government that would result from multiple material changes to the regulatory framework within a short period of time.

## Problem statement

Given the serious risk that explosives pose, the current Regulations set out a clear framework of minimum standards and practices for all persons who engage in activities involving explosives.

In the absence of regulation, safe interactions between people and explosives will rely on both commercial incentives as well as the broader legislative framework for dangerous goods. These regulatory mechanisms alone will be inadequate in filling the role that the current Regulations provide to address the specific risks posed by explosives.

While incidents involving explosives are rare in Victoria, when they do occur the consequences can be catastrophic. As such, if the current Regulations are allowed to sunset it is likely that explosives incidents would increase, exposing Victorians to a greater risk of serious harm.

Explosives have the capacity to cause severe and large-scale damage at any point of their lifecycle if they are not handled or stored safely. This is due to the hazardous nature of explosives, which are concentrated forms of energy that can produce extreme amounts of heat, pressure and gas when ignited. These reactions ('explosions' hereafter) have the capacity to cause significant harm to people, property and the environment. Serious injuries, deaths and extensive property damage are all potential outcomes resulting from an explosion.

### **Direct and indirect harm to people, property and the environment**

Explosions caused by the unsafe handling or storage of explosives can pose substantial **direct** harm to individuals, employers and the community. This includes but is not limited to:

- serious injury (i.e. burns, traumatic head injury and loss of limb)
- death
- building damage
- destruction of equipment, resources or capital, and
- damage to community property.

The **indirect** harms imposed by explosions are more varied and can be far reaching. These costs may include the following:

- loss of worker income and future earnings
- medical and rehabilitation costs
- diminished quality of life following lasting injury
- psychological distress incurred by families and friends of victims
- time spent caring for victims
- lost workplace productivity and morale
- employee turnover
- costs to employers and community associated with investigations, claims and legal penalties, and
- burden on the health system, and social welfare payments.

### **Extent of the problem**

WorkSafe data on claims and incidents related to explosives can be used to demonstrate the degree of prevalence of explosives related harm in Victorian workplaces. It is important to note that this is a representation of the harm that occurs in the presence of controls imposed by the current Regulations. It is difficult to accurately estimate the counterfactual scale of the problem that would prevail in absence of regulation, but it would be expected that the frequency and severity of these dangerous incidents would increase for the reasons outlined below.

Further, while severe accidents may be infrequent and of low probability (based on data provided by WorkSafe, there have been 15 reported deaths associated with explosives in the past decade), it is their potential to cause death, injury and catastrophic property damage that warrants a regulatory response.

### **The residual problem that is addressed by the current Regulations**

The current Regulations serve a number of important functions in mitigating the residual problem associated with explosives. The residual problem refers to the portion of the problem that would exist in the absence of regulation after accounting for other frameworks (such as the DG Act and the OHS Act and Regulations) which are in place.

Regulations governing explosives directly are necessary to address the serious and explicit risks that explosives carry. Without specific regulations pertaining to explosives, the safety of worker and the broader community would be contingent upon commercial incentives and the broader dangerous goods legislative framework. As such, it is likely that these risks would elevate due to a sub-optimal level of risk control and increased accessibility to explosives.

The following risks and considerations relate to the residual problem that is addressed by the current Regulations:

- without the current Regulations there would be no prescriptive framework to provide clear processes for the management of risks specific to explosives, and support WorkSafe Victoria's inspections
- in the absence of current Regulations there would be no mechanism to restrict access to explosives and ensure that those who interact with explosives are trained and competent
- without current Regulations WorkSafe would be less able to direct resources to mitigate the risk of explosions in high volume areas or during high usage events
- without current Regulations the Australian Explosive Code would not be in effect

- market incentives are insufficient to ensure the optimal level of risk control and mitigation, and
- the broader obligations in the DG Act and the OHS Act do not go far enough to address the specific risks posed by explosives.

## Objectives of the proposed Regulations

The primary objective of the current Regulations and the proposed Regulations is to reduce the risk of explosive incidents and resulting death, injury and property damage. A secondary objective is to promote security by reducing the accessibility of explosives to those who might intentionally misuse them to cause harm.

By definition, the objectives of the proposed Regulations should support the objectives set out by the DG Act. The broad purpose of the DG Act is to:

- promote the safety of people and property in relation to storing, handling, manufacturing, transporting, transferring, selling, importing, disposing of and using dangerous goods, and importing explosives into Victoria
- ensure associated risks and security concerns are properly managed and incidents are reported immediately to the emergency services and inspectors
- regulate and, where necessary, prevent the import, export, supply and disposal of dangerous goods, and
- protect the health and safety of workers and the general public.<sup>1</sup>

The proposed Regulations aim to support the objectives set out by the DG Act by prescribing duty holders' obligations for ensuring the safety of people and property in relation to:

- the manufacture, storage, sale, transport, use, disposal and import of explosives
- the management of risks arising out of security concerns associated with explosives
- the safe location of vessels containing explosive while in port, and
- prohibiting the misuse of explosives.<sup>2</sup>

The proposed Regulations also seek to minimise regulatory burden by clarifying the types of licences prescribed under the proposed Regulations and certain obligations in order to promote ease of compliance.

## Options

The status quo (remaking of the current Regulations) is the only option that is analysed in this RIS, and is compared to a base case scenario where the current Regulations sunset and no new regulations are implemented.

The context of the broader Review of Victoria's dangerous goods legislation makes for unique circumstances relating to the assessment of options. As noted above, because of the Review currently underway, the option being considered in this RIS is the status quo along with some changes to modernise and clarify the structure and language of the current Regulations.

Ultimately, the clarifications aim to improve the usability of the current Regulations and may simplify compliance for duty holders.

Given the proposed Regulations entail no material change, the status quo will feature the same obligations and requirements that exist under the current Regulations. Specifically, the proposed Regulations will remain prescriptive in nature and provide detailed provisions concerning obligations duty holders must satisfy to ensure explosives are handled and stored safely at all times.

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<sup>1</sup> WorkSafe Victoria, *Dangerous Goods Act and regulations* <<https://www.worksafe.vic.gov.au/dangerous-goods-act-and-regulations>>

<sup>2</sup> WorkSafe Victoria, *Dangerous Goods Act and regulations* <<https://www.worksafe.vic.gov.au/dangerous-goods-act-and-regulations>>

## Impact analysis of preferred option

The proposed Regulations present a cost to individuals and duty holders wishing to interact with explosives in that they must expend time, money and resources to meet obligations as well as fulfil licensing requirements. This is done to protect these individuals and the wider community from the risk posed by explosives.

This RIS provides an estimate of these costs on a yearly basis, based on the best available data regarding the number of current licence-holders and a range of credible and conservative assumptions.

Key assumptions were made around attribution, which is the percentage of particular compliance costs that are solely attributable to the proposed Regulations as opposed to the broader legislative framework.

Attribution assumptions for specific regulatory requirements differ based on the views of stakeholders in relation to whether or not they would continue to practice each safety requirement in the absence of regulation.<sup>3</sup>

The modelled attribution assumptions are both conservative and feasible. As such, the estimated impacts in this RIS are considered to be at the upper range of the feasible impacts of the proposed Regulations.

This RIS estimates that the total economy wide impact of the proposed Regulations on stakeholders is up to \$3.5 million per year, and \$29 million in present value terms over a ten-year horizon, compared to a base case in which the current Regulations were not remade.

### Feasible range of total impact

The estimated total economy wide impact is sensitive to the attribution assumption. For sensitivity testing, the attribution assumptions could be lowered to less conservative percentages, such as those used in the previous RIS, while the upper end can be computed by significantly increasing the percentages.

If lower attribution assumptions are adopted, specifically those presented in the previous RIS, the average annual cost associated with the proposed Regulations would be approximately \$2 million (NPV of \$16.7 million).

The assumptions made through this RIS and the resulting estimate of overall impact (\$3.5 million per year) are thus considerably more conservative than that of the previous RIS.

### Break-even analysis

The impact analysis in Chapter 4 concludes that the proposed Regulations are expected to yield net benefits for society on the basis of breakeven analysis. Breakeven analysis is used because the benefits of the proposed Regulations are harder to determine with confidence or accuracy than the costs.

Given the current net present value of a statistical life (VSL) of around \$6 million and the annual average cost of the proposed Regulations of around \$3.5 million, the proposed Regulations would 'break-even' and yield a net social benefit provided they reduce the number of deaths due to explosives incidents by less than one per year.<sup>4</sup>

## Small business and competition impacts

The proposed regulatory changes are anticipated to have a disproportionate impact on small businesses in some instances. The proposed changes may also have a small impact on

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<sup>3</sup> This consultation was conducted when the Regulations were last remade in 2011. Given there has been little change to the composition and risk profile of the explosives industry since then, WorkSafe believe these assumptions are still relevant and appropriate for the purpose of modelling costs in this RIS.

<sup>4</sup> The VSL is an estimate of the value society places on an anonymous life. Calculated based on Deloitte analysis and adjustment for CPI of a meta-analysis of VSL estimates, including Abelson (2007), which forms the basis for the Commonwealth's Office of Best Practice Regulation guidance note on VSL, [Australian Safety and Compensation Council](#).

competition. However, at an aggregate level these impacts are expected to be immaterial. Despite these impacts, the regulations are warranted because of the potentially fatal impacts these dangerous goods can impose.

### **Implementation and evaluation strategy**

Responsibility for implementing and enforcing the proposed Regulations will primarily sit with WorkSafe. It is expected that existing tasks to implement and enforce the current Regulations will continue once the proposed Regulations take effect. Once the proposed Regulations are in place, WorkSafe will undertake a range of communication activities to assist stakeholders and the general public to understand and comply with the proposed Regulations including the minor changes from the existing Regulations.

Given the context of the broader review of the Dangerous Goods legislative framework, the evaluation of the proposed Regulations will be folded into the response to the review of the Dangerous Goods legislative framework which may result in material changes to the proposed Regulations.

As a result of this broad review, WorkSafe will not be undertaking an extensive evaluation strategy at this time. Consideration to a suitable and comprehensive evaluation strategy will be given when the explosives regulations are remade substantially post the Review.



# 1 Background

This chapter provides context to the proposed regulatory changes and the explosives industry.

## 1.1 Introduction

The purpose of this Regulatory Impact Statement (RIS) is to analyse the effectiveness and impacts of the existing *Dangerous Goods (Explosives) Interim Regulations 2021* (the current Regulations) and of the proposed *Dangerous Goods (Explosives) Regulations 2022*.

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Certain dangerous goods, such as explosives, are deemed to carry specific risks that require more tailored regulatory provisions. As such, the current Regulations prescribe a range of controls intended to mitigate the hazards associated with explosives. These obligations pertain to all stages of an explosive's life cycle, including their:

- manufacture
- storage
- sale
- transport
- import
- use, and
- disposal.

If the current Regulations were to sunset without being replaced, there would be no measures prescribed to manage the dangers specific to explosives (as distinct from other dangerous goods).

Inadequate control of explosives would increase the likelihood of harm that they can cause at each stage of their life cycle. In the absence of regulatory obligations, duty holders face less incentive to undertake the necessary safety precautions specific to explosives. Further, the sunset of the current licensing scheme would mean explosives would be more likely to be acquired by those who might intentionally or unintentionally misuse them.

This RIS considers the extent to which the current Regulations, and the proposed remaking of those regulations, are effective and proportionate in addressing the risks associated with explosives.

It is important to note the process of this RIS is being undertaken concurrently with a broader and comprehensive review of the *Dangerous Goods Act 1985* and all associated regulations ('the Review'). The ongoing review is being conducted independently of WorkSafe and may give rise to material amendments to the current Regulations in the near future. As such, material change to the current Regulations will not be considered through this RIS; the only option that will be considered is the status quo. Alternative feasible options are not being considered by WorkSafe so as to mitigate unnecessary logistical burden on industry and government that would result from multiple material changes to the regulatory framework within a short period of time.

## 1.2 The role of explosives in our society

### 1.2.1 What are dangerous goods and explosives?

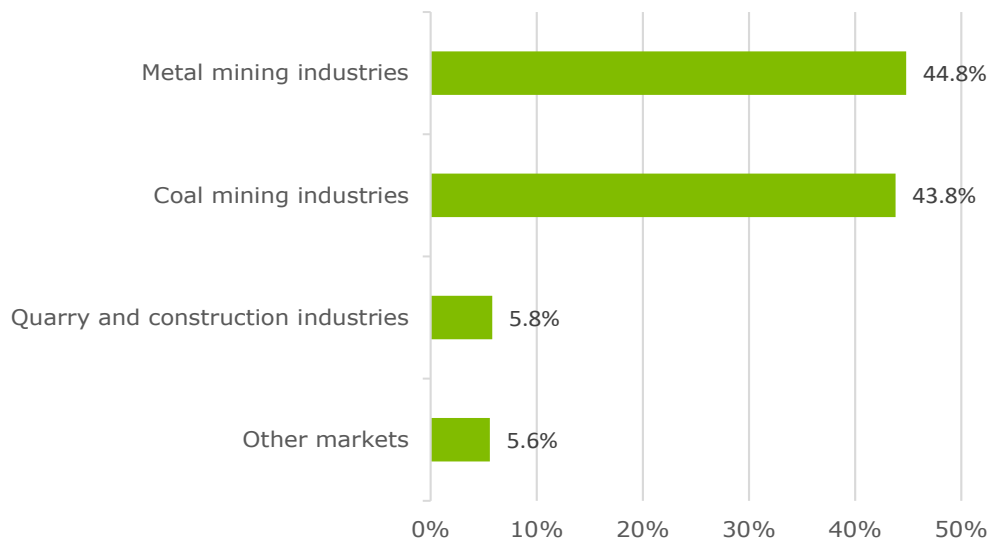
Dangerous goods are defined as substances which pose a significant risk of harm to people, property and the environment due to their hazardous properties. Dangerous goods may be explosive, corrosive, flammable, combustible, oxidising or water reactive.

Explosives are deemed to be a special class of dangerous goods in that they are a form of concentrated energy and consequently pose unique threats compared with other dangerous goods. Specifically, explosives are chemical compounds or mixtures that produce high levels of heat, gas and pressure when they are ignited or decompose rapidly.

### 1.2.2 What are the legitimate uses of explosives?

Activities involving explosives include their manufacture, import, storage, sale, transport, use and disposal. The use of, and consequently demand for, explosives across Australia is dominated by the mining industry followed by the quarrying, demolition, construction, entertainment and defence industries.

Chart 1.1: Share of total revenue, explosives manufacturing in Australia



Source: IBIS World Industry Report, Australia Industry (ANZSIC) Report C1892, 2020

As illustrated in Chart 1.1, mining accounted for nearly 90 per cent of explosives manufacturing revenue in Australia in 2020-2021. The most commonly used commercial explosives within the mining sector are ammonium nitrate-fuel oil mixtures, emulsions or water gels.<sup>5</sup> Other forms of commercial explosives used by the mining industry include nitro-glycerine-based dynamite and gelignite, but these have become less common over the years as a result of declining ammonium nitrate prices, which can be used as a substitute.

The mining sector generally uses explosives to loosen rock and coal, while the quarrying industry uses explosives to extract surface materials such as limestone. The construction sector largely utilises explosives for demolition or site levelling.

Other common forms of explosives include pyrotechnic products. Pyrotechnic products serve a range of purposes in entertainment and defence such as firework displays, special effects, signal flares and smoke flares.

<sup>5</sup> IBIS World Industry Report, Australia Industry (ANZSIC) Report C1892, 2020

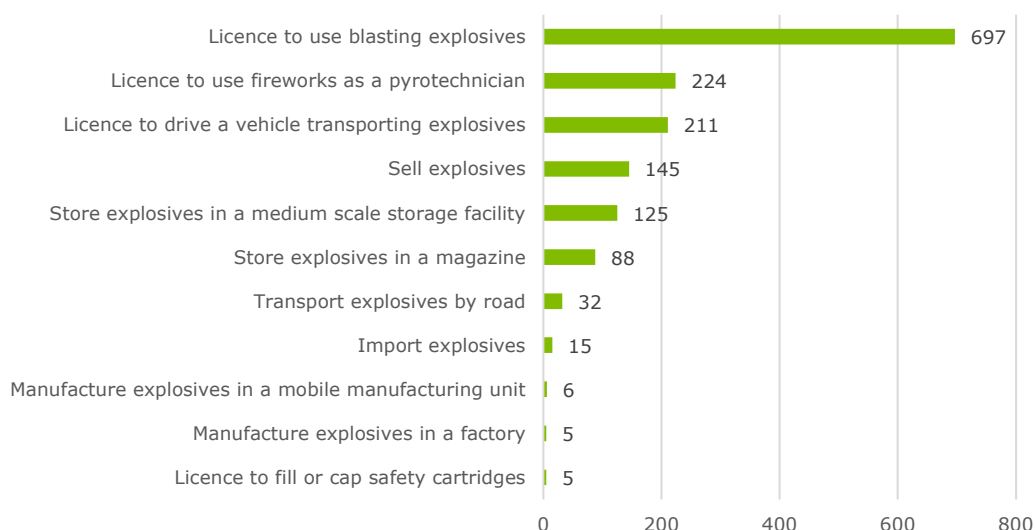
### 1.2.2.1 The Victorian explosives industry

The explosives industry in Victoria is relatively small compared with most other states, largely because the mining industry is the predominant user of explosives and but is relatively small in Victoria. Approximately 8.6 per cent of explosive manufacturing businesses reside in Victoria (compared with 34.2 per cent in Queensland)<sup>6</sup>, and the Victorian mining industry accounts for approximately 4.3 per cent of Australian mining jobs.<sup>7</sup>

Chart 1.2 shows the number of explosives licence holders in Victoria, broken down by the various types of licences. A licence to use blasting explosives is the most commonly held with 697 licensees. This is representative of the number of individuals who are permitted to undertake blasts primarily for use in mining, quarrying, construction, demolition and excavation. Also noteworthy are the 224 individuals licenced to use fireworks as a pyrotechnician and the 211 persons licenced to drive a vehicle transporting explosives.<sup>8</sup>

There are five entities licenced to manufacture explosives in a factory, and six permitted to manufacture explosives in a mobile manufacturing unit. This indicates that there is a relatively small number of manufacturers producing Victoria’s explosives output. Additionally, there are 15 active licences to import explosives into Victoria.

Chart 1.2: Number of explosives licence holders by type of licence, 2021



Source: WorkSafe Victoria

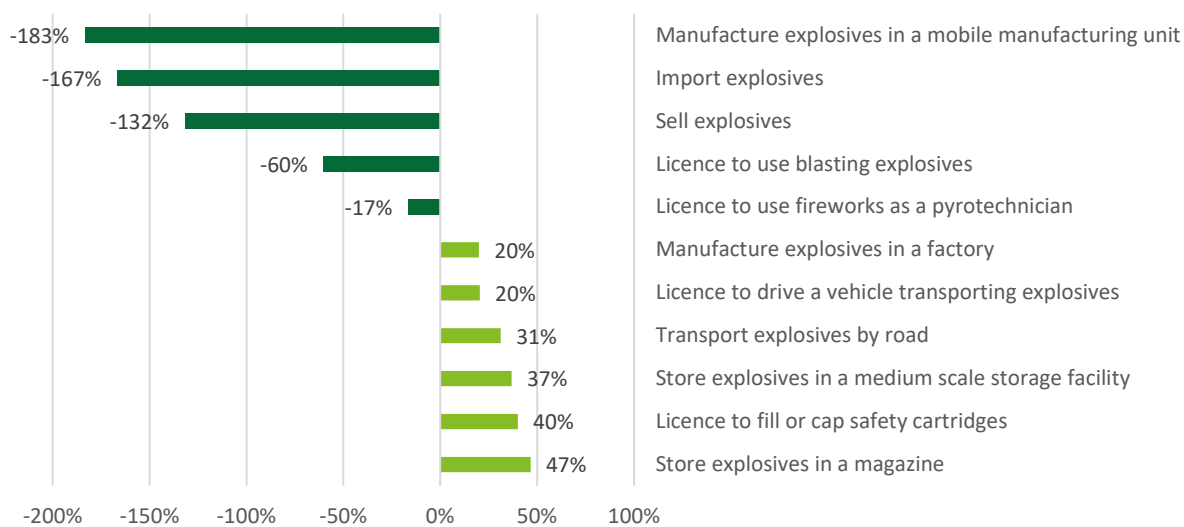
There has been a steady decline in the explosives industry over the past 10 years with the total number of explosives licences falling by 33 per cent on average between 2009 and 2021 (Chart 1.3). Licences involving the manufacture of explosives (either in a factory or a mobile manufacturing unit) and sales of explosives have seen the steepest decline during this time.

<sup>6</sup> IBIS World Industry Report, Australia Industry (ANZSIC) Report C1892, 2020

<sup>7</sup> Australian Bureau of Statistics, Employed persons by State, Territory and Industry division of main job (ANZSIC)

<sup>8</sup> The long-term impacts of COVID-19 on the fireworks industry are currently unclear.

Chart 1.3: Percentage change in the number of explosive licences, by type (2009-2021)



Source: RIS for *Dangerous Goods (Explosives) Regulations 2011*, WorkSafe claims data

While the explosives industry in Victoria is comparatively slight, it is the uniquely hazardous properties of explosives that give the capacity for even a single incident to cause severe harm to the community. The nature of this problem and the need for regulation is outlined in Chapter 2 of this RIS.

### 1.3 Legislative and regulatory framework

#### 1.3.1 Victorian approach to regulating dangerous goods

In Victoria, dangerous goods are regulated by the *Dangerous Goods Act 1985* (the DG Act) and supporting regulations. The DG Act aims to address the risks that dangerous goods pose in the community by imposing conditions on all stages of the dangerous goods life cycle. This includes the manufacture, storage, transport, sale and use of dangerous goods.

To this end, it includes provisions and powers which pertain to inspection and enforcement, licences, reporting of incidents and security concerns, in addition to miscellaneous provisions specific to explosives. Namely, the DG Act defines explosives and prescribes what constitutes an offence involving an explosive. The DG Act also outlines specific obligations relating to the import of explosives into Victoria.

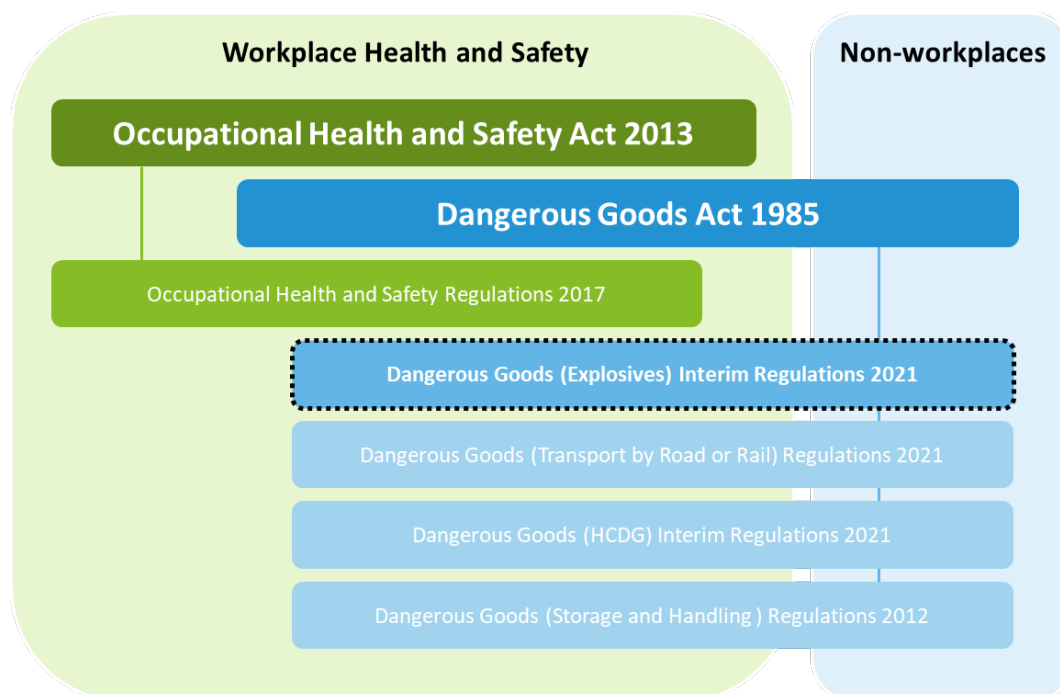
The DG Act is supported by regulations which deal with the various risks posed by specific types of dangerous goods or with risks that arise in specific contexts. There are four sets of regulations made under the authority of the DG Act:

- *The Dangerous Goods (Storage and Handling) Regulations 2012*
- *The Dangerous Goods (Transport by Road or Rail) Regulations 2018*
- *The Dangerous Goods (High Consequence Dangerous Goods) Regulations 2016*
- *The Dangerous Goods (Explosives) Interim Regulations 2021* (the Regulations).

The *Occupational Health and Safety Act 2013* (OHS Act) supports the operation of the Dangerous Goods framework by imposing a general duty for all employers to provide a working environment to their employees which is safe and without risks to health. This intersects with the Dangerous Goods framework as, in many cases, those who interact with dangerous goods (including explosives) do so while at work. The *Occupational Health and Safety Regulations 2017* (OHS Regulations) are made under the OHS Act and these provide specific detail for managing complex risks in the workplace (e.g. manual handling, asbestos). This includes a number of provisions relating to the risks associated with hazardous substances at work. Hazardous substances and

dangerous goods are classified differently and are therefore covered by separate legislation.<sup>9</sup> As a result, many hazardous substances are also classified as dangerous goods and, in these cases, both sets of legislation apply. Despite overlaps in the classification of many substances, each piece of legislation complements the other to ensure comprehensive control of all risks.<sup>10</sup> The dangerous goods regulatory framework is summarised in Figure 1.1.

Figure 1.1: Dangerous goods regulatory framework



Source: Deloitte Access Economics

### 1.3.2 Victorian approach to regulating explosives

The current Regulations are prescriptive in nature and provide detailed provisions concerning compliance activities and obligations duty holders must undertake to ensure explosives are handled and stored safely at all times.

The following table is a non-exhaustive summary of the obligations prescribed by the current Regulations as they relate to certain interactions involving explosives.

<sup>9</sup> Hazardous substances and dangerous goods are classified according to different criteria. Hazardous substances are classified on the basis of health effects while dangerous goods are classified on the basis of physiochemical effects such as fire, explosion and corrosion on property, the environment or people.

<sup>10</sup> WorkSafe Victoria, Compliance code for Hazardous substances (2019)

Table 1.1: Summary of obligations prescribed by the current Regulations

<b>General</b>	<ul style="list-style-type: none"> <li>• Requirement to report certain incidents involving explosives i.e. those that involve theft</li> <li>• Signage must be kept in good order/legible</li> </ul>
<b>Manufacture</b>	<ul style="list-style-type: none"> <li>• Requirement to possess a relevant licence</li> <li>• Requirements to prepare a safety management system (SMS)</li> <li>• Obligations related to minimum standards of buildings and appliances</li> </ul>
<b>Storage</b>	<ul style="list-style-type: none"> <li>• Requirement to possess a relevant licence (specific to both type and quantity)</li> <li>• Requirements related to signage, packaging, security and cleanliness</li> <li>• Obligation to store minimum quantities</li> <li>• Requirements specific to the quantity stored (i.e. related to maintenance of buildings)</li> </ul>
<b>Transport</b>	<ul style="list-style-type: none"> <li>• Requirement to possess a relevant licence</li> <li>• Requirements specific to land transport (i.e. transport must meet requirements of the Australian Explosives Code<sup>11</sup>)</li> <li>• Requirements related to ports (i.e. development of an emergency plan and berthing requirements)</li> </ul>
<b>Import</b>	<ul style="list-style-type: none"> <li>• Requirement to possess a relevant licence</li> </ul>
<b>Sale</b>	<ul style="list-style-type: none"> <li>• Requirement to possess a relevant licence</li> <li>• The licensee must only sell to a person who holds a relevant licence</li> <li>• The licensee must only sell explosives of the type specified by their licence</li> <li>• Requirements related to record keeping</li> </ul>
<b>Use</b>	<ul style="list-style-type: none"> <li>• Requirement to hold a relevant licence requiring proof of competency/training</li> <li>• Requirement to prepare a blast management plan</li> <li>• Obligations related to the safe storage of explosives at a blasting site and precautions to be taken after a blast</li> </ul>
<b>Fireworks</b>	<ul style="list-style-type: none"> <li>• Use of fireworks requires possession of a licence or supervision of a licensee</li> <li>• Provisions related to the management of firework displays (i.e. distance requirements and notification periods)</li> </ul>
<b>Disposal</b>	<ul style="list-style-type: none"> <li>• Requirements to hold a relevant licence</li> <li>• Requirement to dispose or render harmless explosives in a manner that does not cause injury or damage</li> </ul>

Source: Dangerous Goods (Explosives) Interim Regulations 2021

The current Regulations also set out provisions related to the various licences. The current Regulations outline the process for applying for a licence including particular requirements (e.g. age and security requirements) and any information that must accompany an application. The current Regulations also prescribe other matters relevant to licensing such as duration as well as the nature of conditions and limitations an authority may tie to licences (e.g. the provision of certain information or training requirements). Further, the current Regulations also prescribe fees that accompany licences.

<sup>11</sup> Australian Explosives Code means the "Australian Code for the Transport of Explosives by Road and Rail", published by SafeWork Australia

WorkSafe additionally provides non-statutory guidance material to assist duty holders in meeting their obligations under the DG Act and Regulations.

### **1.3.3 Regulatory frameworks in other Australian jurisdictions**

For the most part, states and territories outside of Victoria regulate explosives in a similar manner. Specifically, they define a similar set of business activities involving explosives (i.e. manufacture, sale, transport) and prescribe analogous obligations and requirements related to safety and licensing.

There are differences as to the particulars of some obligations across jurisdictions. For example, South Australian regulation requires two days' notice be provided to the Chief Inspector before a ship carrying explosives may enter a port, while Victorian regulation requires that 'advanced notification' be provided to the port master.

The broadly similar nature of explosives regulation across Australia reflects a shared intention in recent decades to harmonise explosives laws. The Australian Code for the Transport of Dangerous Goods by Road and Rail (ADG Code) developed by the National Transport Commission is another example of this intention, with all states and territories incorporating the principles of the ADG Code as they relate to the transport of dangerous goods more broadly.

The Australian Explosives Code<sup>12</sup> (the AEC) was prepared by the Australian Forum of Explosives Regulators which includes WorkSafe Victoria. The main objective of the AEC is to provide a uniform basis for the Commonwealth, State and Territory legislation governing the transport of explosives and is designed to apply to all road and rail transport in Australia. The AEC is incorporated into various parts of the current Regulations. For example, regulation 112 of the current Regulations requires a person transporting explosives by road or rail to do so in accordance with the applicable requirements of the AEC, demonstrating the Victorian Government's commitment towards the national agreement.

## **1.4 Current review of Victoria's dangerous goods laws**

### **1.4.1 About the Review**

In April 2020, the Minister for Workplace Safety announced a comprehensive review of Victoria's dangerous goods laws. The Review is ongoing and is part of the Victorian Government's response to a number of high-profile incidents involving the illegal stockpiling of chemicals across Melbourne.

The Review is intended to consider contemporary issues and challenges in the management of dangerous goods, including risks and their impact on the safety of people and property.<sup>13</sup> The process of the Review includes extensive stakeholder consultation.

### **1.4.2 Implications for the proposed Regulations and this RIS**

The ongoing nature of the Review has implications for the proposed Regulations and the process of this RIS. The Review, which is due to conclude in the near term, is expected to suggest amendments to the DG Act with potential consequential changes to the current Regulations (or to suggest changes to the current Regulations themselves). As the Review is being conducted independent of government, WorkSafe is unable to anticipate any specific recommendations the Review may make or the response of government to those recommendations. Consequently, the only option that is being considered in relation to the proposed Regulations is the status quo, along with some specific changes to modernise and clarify the language of the current Regulations. A summary of these changes is included in Appendix A. None of these changes are anticipated to impact or influence the behaviour of duty holders.

Feasible options outside of the status quo are not being considered by WorkSafe or through this RIS so as to avoid unnecessary logistical burden on industry and government that would result from multiple material changes to the regulatory framework within a short period of time.

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<sup>12</sup> The document known as the Australian Code for the Transport of Explosives by Road and Rail

<sup>13</sup> Andrew Palmer QC (2020). *Independent Review of the Dangerous goods Act 1985 and associated regulations, Consultation Paper*

Given the only feasible option being assessed through this RIS is the status quo, this RIS process provides an opportunity to assess the effectiveness and appropriateness of the status quo in regulating explosives. This will be a useful reference in the consideration of impacts of any changes in response to recommendations made by the Review should government wish to adopt them.

Further, due to the extensive public consultation which has been carried out through the Review, further consultation by WorkSafe during the development of the RIS has been focused on providing stakeholders with an overview of the project and timeline. This included inviting explosives stakeholders to review the summary of proposed changes as well as presentations to the Dangerous Goods Stakeholder Reference Group meeting and WorkSafe's biennial Pyro Forum.

## 1.5 About this RIS

This RIS has been prepared in accordance with the *Victorian Guide to Regulation*,<sup>14</sup> which provides a best practice approach to analysing any proposed regulatory intervention. This RIS estimates the impact of the proposed Regulations on Victorian businesses and community.

Key steps in the process to introduce the proposed Regulations are:

- preparation of the RIS (this document),
- public comment on the proposed Regulations, and
- addressing public comment.

The key purpose of this RIS is to assess the impact of resetting the current regulations for managing the risks to people and property associated with explosives. In spite of the unusual context of this RIS, assessment of the status quo still provides a valuable opportunity to analyse the effectiveness and regulatory impact of the current regime. The general approach to the assessment is as follows:

### Identification of the nature and extent of the problem

This involved consideration of the nature and extent of the problem that the proposed Regulations aim to address, including the need for government intervention, the risks of non-intervention and the objectives of such intervention.

### Identification of the options to achieve the objectives of the proposed Regulations

The proposed Regulations, and the only option considered in this RIS, were developed by WorkSafe in the context of the ongoing broader Review. This option, the status quo, will inform the examination of costs and benefits associated with the proposed Regulations.

Feasible options outside of the status quo are not being considered by WorkSafe or through this RIS as they are likely to differ from amendments that may arise from the Review. This is so as to avoid unnecessary logistical burden on industry and government that would result from multiple material changes to the regulatory framework within a short period of time.

### Assessment of the costs and benefits

Assessment of the costs and benefits under the status quo, relative to the Base Case, was undertaken consistent with the requirements of the *Victorian Guide to Regulation*. The analysis included the analysis of benefits to businesses, employees and the Victorian community from reduced probability of harm caused by explosives. It also included the costs to businesses of complying with regulations, and costs to government of implementing and administering regulations. The analysis reflects data held by WorkSafe Victoria, data gathered through independent research and information provided through public submissions to the Review.

### Assessment of the other impacts

We have considered the likely impacts of the preferred option on small businesses and general competition among businesses. This part of the RIS draws on stakeholder consultations undertaken through the Review.

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<sup>14</sup> Commissioner for Better Regulation (2016). *Victorian Guide to Regulation: A handbook for policy-makers in Victoria*, Accessed at: <http://www.betterregulation.vic.gov.au/Guidance-and-Resources>



### **Implementation, enforcement and evaluation**

These sections describe the arrangements for implementation, enforcement and evaluation of the preferred option.

#### **1.5.1 Public comment**

The proposed Regulations and this RIS will be released via Engage Victoria for a 28-day public comment period to provide duty holders, employees, other interested parties and members of the public with the opportunity to consider and provide feedback on the proposed Regulations and RIS.

WorkSafe Victoria will consider all submissions received during public consultation and prepare a formal Response to Public Comment document which will detail the submissions received, and WorkSafe Victoria's response.

### **1.6 Structure of the report**

This structure of the remainder of the report is as follows:

- Chapter 2: Problem statement
- Chapter 3: Identification of options
- Chapter 4: Impact analysis of preferred option
- Chapter 5: Small business and competition impacts
- Chapter 6: Implementation and evaluation strategy

## 2 Problem statement

This chapter outlines the nature and extent of the problem the current Regulations address, and the expectation that these problems would worsen in the absence of any regulation.

### 2.1 Overview of the problem

Given the serious risk that explosives pose (section 2.2), the current Regulations set out a clear framework of minimum standards and practices for all persons who engage in activities involving explosives. However, the current Regulations are due to sunset in June 2022.

In the absence of regulation, safe interactions between people and explosives will rely on both commercial incentives as well as the broader legislative framework for dangerous goods. These regulatory mechanisms alone will be inadequate in filling the role that the current Regulations provide to address the specific risks posed by explosives (section 2.4).

While incidents involving explosives are rare in Victoria (section 2.3), when they do occur the consequences can be catastrophic. As such, if the current Regulations are allowed to sunset it is likely that explosives incidents would increase, exposing Victorians to a greater risk of serious harm.

### 2.2 The nature of the risk posed by explosives

Explosives have the capacity to cause severe and large-scale damage at any point of their lifecycle if they are not handled or stored safely. This is due to the hazardous nature of explosives, which are concentrated forms of energy that can produce extreme amounts of heat, pressure and gas when ignited. These reactions ('explosions' hereafter) have the capacity to cause significant harm to people, property and the environment. Serious injuries, deaths and extensive property damage are all potential outcomes resulting from an explosion.

#### 2.2.1 Direct and indirect harm to people, property and the environment

Explosions caused by the unsafe handling or storage of explosives can pose substantial **direct** harm to individuals, employers and the community, this includes but is not limited to:

- serious injury (i.e. burns, traumatic head injury and loss of limb)
- death
- building damage
- destruction of equipment, resources or capital, and
- damage to community property.

The **indirect** harms imposed by explosions are much more varied and far reaching. These costs may include the following:

- loss of worker income and future earnings
- medical and rehabilitation costs
- diminished quality of life following lasting injury
- psychological distress incurred by families and friends of victims
- time spent caring for victims
- lost workplace productivity and morale
- employee turnover
- costs to employers and community associated with investigations, claims and legal penalties
- burden on the health system, and
- social welfare payments.

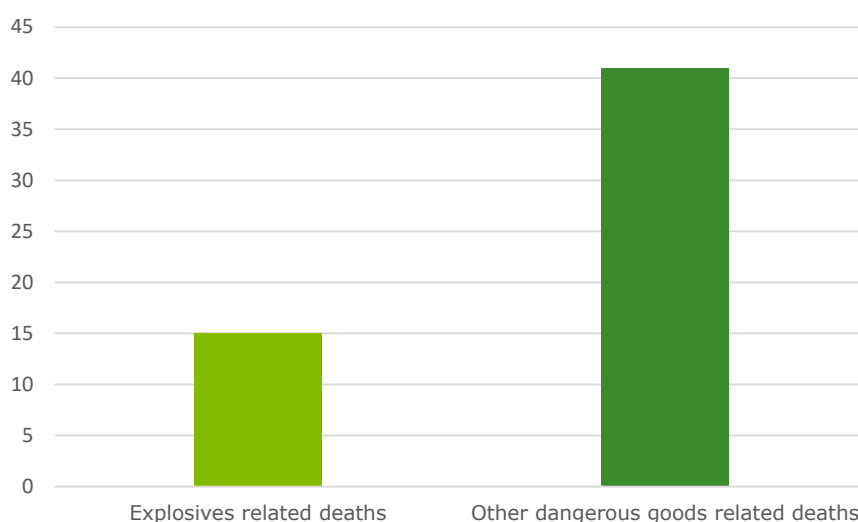
## 2.3 Extent of the problem

WorkSafe data on claims and incidents related to explosives can be used to demonstrate the degree of prevalence of explosives related harm in Victorian workplaces. It is important to note that this is a representation of the harm that occurs in the presence of controls imposed by the current Regulations. It is difficult to accurately estimate the counterfactual scale of the problem that would prevail in absence of regulation, but it would be expected that the frequency and severity of these dangerous incidents would increase, as is elaborated on in section 2.4.

Further, while severe accidents may be infrequent and of low probability, it is their potential to cause death, injury and catastrophic property damage that warrants a regulatory response.

Although relatively infrequent, incidents involving explosives have persisted over time in Victoria. As illustrated by Chart 2.1, over the past decade, there have been 15 fatalities caused by explosives in Victoria. This is in comparison to 41 fatalities caused by other dangerous goods. While this number may appear slight, it should be acknowledged that the social and economic cost of a single death is substantial. Specifically, the current net present value of a statistical life (VSL) is estimated to be approximately \$6 million.<sup>15</sup>

Chart 2.1: Fatalities in Victoria caused by explosives and other dangerous goods (2011-2021)



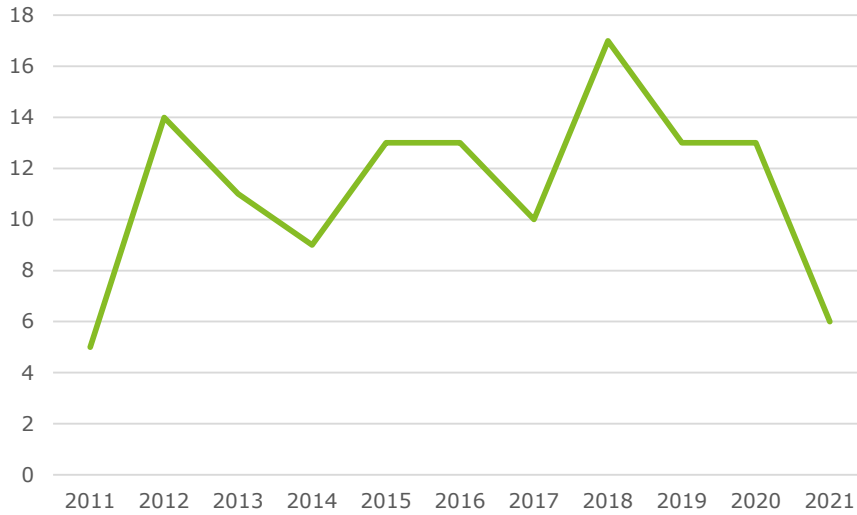
Source: WorkSafe Victoria

More prevalent than fatalities arising from explosives is injury. Although, injury from explosives is still considered infrequent relative to other instances of workplace injury. Chart 2.2 illustrates that the number of claims per year associated with explosives-related injuries has fluctuated fairly cyclically between 2011 and 2021, with a median of 13 claims per year. The number of claims declined significantly over 2020 and 2021, likely due to continued general decline in the explosives industry, in addition to the stringent restrictions, work from home orders and economy-wide business shut-downs as a result of the COVID-19 pandemic (particularly within industries such as construction, where there is a comparatively high number of explosives related injuries per worker). COVID-19 also had a particularly notable impact on activity in the fireworks industry. While shutdown periods were similar in 2020 and 2021, the number of claims continued to fall in 2021. It is also important to note this data is reported by calendar year, and includes claims as at 1 October 2021 (meaning data for 2021 is incomplete).

<sup>15</sup> The VSL is an estimate of the value society places on an anonymous life. Calculated based on Deloitte analysis and adjustment for CPI of a meta-analysis of VSL estimates, including Abelson (2007), which forms the basis for the Commonwealth’s Office of Best Practice Regulation guidance note on VSL, [Australian Safety and Compensation Council](#).

Despite having regulations currently in place over the past decade, the sustained presence of explosives-related injuries demonstrates the risks and potential harm posed by exposure to explosives or explosions if and when they do occur. The extent of this harm is likely to be larger in the absence of regulation. It is important to note that even individual incidents can impose substantial cost on individuals, their families and the community as outlined in section 2.1.1.

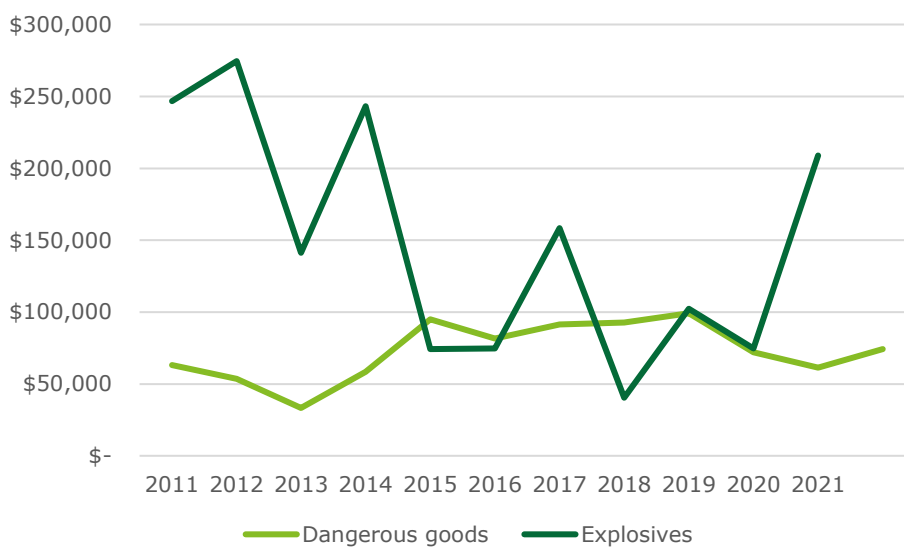
Chart 2.2: Explosives related injury claims over time, 2011-2021



Source: WorkSafe Victoria

While there is a degree of volatility in the value of an explosives-related claim due to the limited number of injuries which occurred between 2011 and 2021 (Chart 2.2), it is apparent that the average value of explosives-related claims is notably above that of other dangerous goods. Over the past decade, the average cost of an explosives-related claim was \$132,000. This is in comparison to an average \$74,000 for claims resulting from other dangerous goods. From this, it could be inferred that while explosives incidents are infrequent, they are typically of greater severity than that of other dangerous goods.

Chart 2.3: Average value of claim over time by regulation, 2011-2021



Source: WorkSafe Victoria

The 'Other Services' industry has seen the largest number of explosive related injury claims relative to the number of workers since 2011, as depicted in Chart 2.4.<sup>16</sup> Almost all of these injuries have occurred in the repair and maintenance subdivision of the 'Other Services' industry. The 'Wholesale Trade', 'Construction' and 'Mining' industries see the next largest number of explosive related injury claims per 100,000 workers. This is expected, given the 'Construction' and 'Mining' industries are among the primary users of explosives (see Chart 1.1).

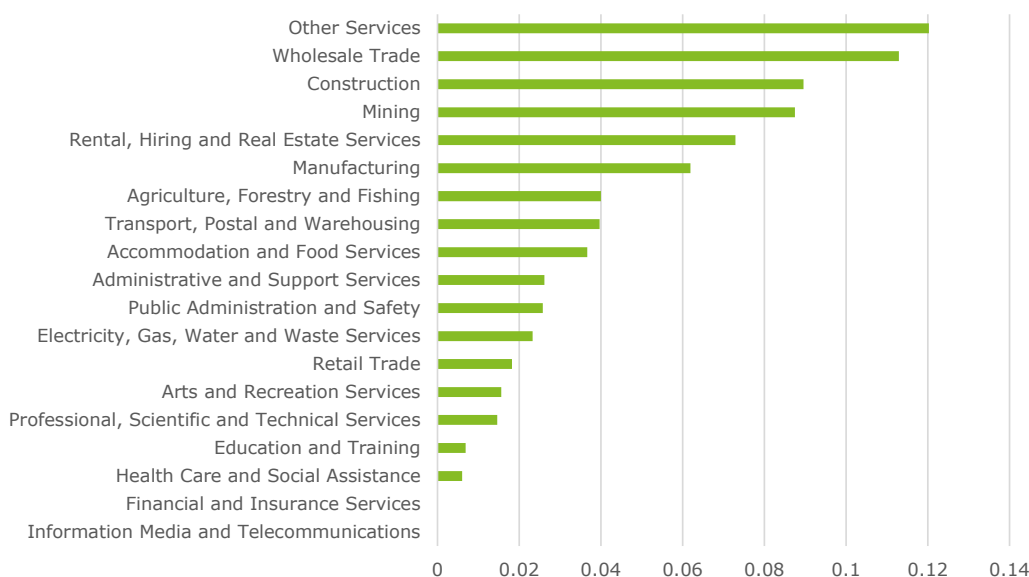
Interestingly, the 'Other Services' and 'Wholesale Trade' industries are not prominent users of explosives. The high prevalence of explosives-related injury claims within these industries may be due to the following reasons:

- the injuries may have resulted from an explosion but the explosion itself was not directly caused by explosives products,
- mis-categorisation of claims resulting from human error<sup>17</sup>,
- or claims bias (during the completion of the claims or during filtering).<sup>18</sup>

Further analysis of WorkSafe claims data suggests that many injuries in the 'Other Services' industry have occurred during the use of equipment or machinery that exert high pressure (such as air and water pressure) in order to repair or maintain motor vehicles. In the 'Wholesale Trade' industry, explosions have occurred during the use of large industrial machinery or during the processing of construction materials, paints and metal scrap.

This may indicate that the current Regulations and industry are effective in reducing incidents in targeted settings but also that explosions can occur in a multitude of varied circumstances due to human error and faulty equipment.

Chart 2.4: Number of explosives related injuries by industry per 100,000 workers, 2011-2021



Source: WorkSafe Victoria

It is also worth noting that, based on data collected by WorkSafe, a number of incidents involving explosives occur that do not lead to harm to an individual but rather cause harm to property or the environment. This, in addition to the data presented relating to deaths and injuries caused by

<sup>16</sup> According to the ANZSIC 2009 Division, Subdivision, Group and Class Codes and Titles, the 'Other Services' industry includes repair and maintenance (automotive and machinery), personal services and private households.

<sup>17</sup> Either due to the individual processing the claim information not understanding the injury or industry, or not having sufficient information or time to process the claim.

<sup>18</sup> In this case claims bias refers to underlying beliefs or assumptions as to what caused an injury which leads to the mis-categorisation of a claim.

explosives, illustrates that even in the presence of regulation, explosives still impose non-negligible costs and harm on the Victorian community. It is difficult to estimate the precise extent to which this harm would increase in the absence of regulation but, given the potentially catastrophic outcomes that can arise from explosive related incidents, even a slight increase would likely justify regulation. This break-even point will be discussed in further detail in Chapter 4.

## 2.4 The residual problem that is addressed by the current Regulations

Explosive incidents that cause wide scale injury, death and damage are rare in Victoria (Chart 2.1 and Chart 2.2). This is largely due to the stringent regulatory framework that currently governs all interactions between people and explosives.

The current Regulations serve a number of important functions in mitigating the residual problem associated with explosives (section 2.4.1, section 2.4.2, section 2.4.3, section 2.4.4). The residual problem refers to the portion of the problem that would exist in the absence of regulation after accounting for other frameworks (such as the DG Act and the OHS Act and Regulations) which are in place.

Regulations governing explosives directly are necessary to address the serious and explicit risks that explosives carry. Without specific regulations pertaining to explosives, the safety of worker and the broader community would be contingent upon commercial incentives (section 2.4.5) and the broader dangerous goods legislative framework (2.4.6). As such, it is likely that these risks would elevate due to a sub-optimal level of risk control and increased accessibility to explosives.

### 2.4.1 Without the current Regulations there would be no prescriptive framework to provide clear processes for the management of risks specific to explosives, and support WorkSafe Victoria's inspections

The current Regulations provide detailed and prescriptive duties for managing explosives safety. Specifically, the current Regulations provide a clear framework of minimum standards for all activities involving explosives (e.g. manufacture, storage, transport, sale, use, import and disposal). This prescriptive framework assists licensees in clearly understanding their obligations, supports WorkSafe's inspections and enforcement, and leaves less room for interpretation of the duties set out in the DG Act and OHS Act which apply to dangerous goods and workplace safety more broadly.

The current Regulations set out duty holders' obligations in the specific context of explosives. Some of these obligations apply broadly to all explosives. For example, the current Regulations include general provisions which relate to the security of explosives (controlling access), fire precautions, incident reporting, and signage requirements, among others. The current Regulations also describe duty holders' obligations which apply solely to the control of risks associated with specific activities that involve explosives (e.g. manufacture, storage, transport, sale, fireworks, use and disposal).

### 2.4.2 In the absence of current Regulations there would be no mechanism to restrict access to explosives and ensure that those who interact with explosives are trained and competent

The licensing scheme imposed by the current Regulations is proactive by nature, ensuring that explosives are available only to those that have a legitimate purpose to interact with them. The intention of a proactive regulatory approach is to minimise and prevent incidents of harm from occurring in the first instance. Mandated security checks during the issuing and renewal of all licences lessens risks to public security by substantially limiting the availability of explosives to those that might misuse them to intentionally cause harm.<sup>19</sup> In absence of regulation, such individuals would have increased access to explosives increasing the risk of harm to society.

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<sup>19</sup> ASIO's 2020-21 Annual Report highlights that violent extremists continue to pose a threat, and Australia's national terrorism threat level is "probable". In the absence of regulation, and particularly licensing requirements which restrict sale, these groups would have increased access to explosives which could increase the probability of them causing harm. <<https://www.asio.gov.au/australias-security-environment-and-outlook.html>>

Further, the licensing scheme minimises the risk of accidental misuse of explosives. It does so through provisions in the current Regulations allowing for WorkSafe to set standards relating to training and competency assessments. For example, to acquire a licence to use blasting explosives one must complete training and pass an assessment. This acknowledges that the safe management of explosives often considers a specialised set of skills or technical expertise. As such, the absence of licensing would enable the use (or any other activity) of explosives by an individual who is not adequately trained in necessary safety measures increasing the likelihood of harm occurring.

#### **2.4.3 Without current Regulations WorkSafe would be less able to direct resources to mitigate the risk of explosions in high volume areas or during high usage events**

The current Regulations set out requirements for safely transporting explosives and include specific provisions which restrict explosives from being transported in or through the central business district of Melbourne without required approvals. The current Regulations also contain provisions which require pyrotechnicians to notify WorkSafe of the intended discharge of fireworks.

This information gives WorkSafe advance warning, helping them to proactively mitigate the risk associated with the transportation or discharge of certain explosives in high volume areas (e.g. the central business district of Melbourne) or during high usage events (e.g. New Year's Eve). This information can also be used by WorkSafe to quickly advise emergency resources in the event that a serious incident involving explosives occurs. As such, in the absence of the current Regulations, WorkSafe would not have access to this information, leaving the regulator less able to respond appropriately to the risk and placing the general public at a higher risk of harm.

#### **2.4.4 Without current Regulations the AEC would not be in effect**

The current Regulations provide for the incorporation of the AEC, an external instrument which sets out the requirements for the transport of explosives by road and rail in Australia. As described in section 1.3.3, the Victorian Government have committed to applying the standards set out in the AEC as a part of a nationally agreed upon approach to the transportation of explosives. The AEC aims to standardise safety requirements across Australia, acknowledging that transport of explosives often occurs across jurisdictional borders.

#### **2.4.5 Market incentives are insufficient to ensure the optimal level of risk control and mitigation**

Duty holders have an incentive to self-enforce safety standards due to the extensive direct and indirect costs that explosions impose (including damage of property and reduced productivity as a result of employee injury). Additionally, due to the length of time regulations have been in place, behaviour surrounding explosives handling may be standardised and ingrained in duty holders' behaviour. As such, if the current Regulations were to sunset, it is likely that duty holders would continue to interact with explosives in a relatively safe manner, particularly in the short-term. It is expected that this would generally be the case across all the industries and activities which involve explosives. An exception could be fireworks, as their illegal use for entertainment purposes would be likely to increase in the absence of regulation.

However, this degree of incentive is insufficient to elicit the optimal level of risk mitigation from a societal perspective, as not all of the costs associated with an explosion will be sustained by the duty holder. Specifically, a significant portion of these costs will be imposed on the employee and the community, such as increased burden on the healthcare and social-welfare systems. Data from Safe Work Australia shows employers only bore 5 per cent of the cost associated with work-related injury and disease in 2012-13 (of which injuries accounted for 45 per cent).<sup>20</sup>

As a result, without a set of minimum standards in place, duty holders may underinvest in safety protocols and standards as both employees and the community subsidise a substantial portion of the costs related to unsafe practice involving explosives. This carves out a clear role for

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<sup>20</sup> Safe Work Australia (2015) The cost of work-related injury and illness for Australian employers, workers and the community 2012-13

government intervention in ensuring duty holders adopt a level of safe practice that would not otherwise be obtained.

#### **2.4.6 The broader obligations in the DG Act and the OHS Act do not go far enough to address the specific risks posed by explosives.**

In the absence of the current Regulations, there would be little reference to the safe management of explosives in the legislative framework for dangerous goods (section 1.3.1).

While the OHS Act sets out a general duty for all employers to provide a working environment to their employees which is safe and without risks to health, the risk of harm posed by explosive incidents spans beyond the working relationship between employer and employee. Similarly, the OHS Regulations contain specific obligations for employers to control risks associated with hazardous substances in their workplace (section 1.3.1). As such, only employers have obligations under the OHS framework. Therefore, the limited scope of the OHS framework leaves the general public with less protection against the potential harm caused by explosive incidents.

In the absence of the current Regulations, the management of explosives would be covered by the broad safety requirements for dangerous goods under the DG Act (section 1.3.1). This includes a small number of provisions relating to explosives including the definition of explosives, reference to licensing requirements for explosives, requirements in relation to their import into Victoria, and offences in relation to negligence when handling explosives.

The Consultation Paper for the Independent Review of the Dangerous Goods Act and associated regulations suggests that broad safety requirements can be problematic when applied to subject matter as complex as explosives which often require specific skills and technical expertise to be managed safely.<sup>21</sup> Alone, the requirements in the DG Act offer little guidance to duty-holders who may have less resources and expertise to manage the complex and specific risks posed by explosives. As such, additional detail and prescription is required to support duty holders to safely interact with explosives. This is consistent with the rationale behind the range of other regulations which have been made under the DG Act to manage both specific types of dangerous goods and specific activities involving dangerous goods.

## **2.5 Objectives of the proposed Regulations**

The primary objective of the current Regulations and the proposed Regulations is to reduce the risk of explosive incidents and resulting death, injury and property damage. A secondary objective is to promote security by reducing the accessibility of explosives to those who might intentionally misuse them to cause harm.

By definition, the objectives of the proposed Regulations should support the objectives set out by the DG Act. The broad purpose of the DG Act is to:

- promote the safety of people and property in relation to storing, handling, manufacturing, transporting, transferring, selling, importing, disposing of and using dangerous goods, and importing explosives into Victoria
- ensure associated risks and security concerns are properly managed and incidents are reported immediately to the emergency services and inspectors
- regulate and, where necessary, prevent the import, export, supply and disposal of dangerous goods
- protect the health and safety of workers and the general public.<sup>22</sup>

The proposed Regulations aim to support the objectives set out by the DG Act by explaining duty holders' obligations for ensuring the safety of people and property in relation to:

- the manufacture, storage, sale, transport, use, disposal and import of explosives

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<sup>21</sup> Palmer, A. *Consultation paper - Independent Review of the Dangerous Goods Act 1985 and associated regulations* (October 2020)

<sup>22</sup> WorkSafe Victoria, *Dangerous Goods Act and regulations* <<https://www.worksafe.vic.gov.au/dangerous-goods-act-and-regulations>>



- the management of risks arising out of security concerns associated with explosives
- the safe location of vessels containing explosive while in port
- prohibiting the misuse of explosives.<sup>23</sup>

The proposed Regulations also seek to minimise regulatory burden by clarifying the types of licences prescribed under the proposed Regulations and certain obligations in order to promote ease of compliance.

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<sup>23</sup> WorkSafe Victoria, *Dangerous Goods Act and regulations* <<https://www.worksafe.vic.gov.au/dangerous-goods-act-and-regulations>>

# 3 Options

This chapter outlines the set of options considered in this RIS.

## 3.1 Options development

As part of a standard RIS process, it is necessary to consider different options that could achieve the Victorian Government's objectives. The *Subordinate Legislation Act 1994*, the *Subordinate Legislation Act Guidelines*,<sup>24</sup> and the *Victorian Guide to Regulation* recommend that this includes considering a range of approaches, including co-regulation and non-regulatory approaches, and those that reduce the burden imposed on business and/or the community.

However, the context of the broader Review of Victoria's dangerous goods legislation makes for unique circumstances relating to the assessment of options. Specifically, an exploration of material amendments to the current Regulations through this RIS process is largely unwarranted. This is because WorkSafe is not considering any options aside from the status quo due to the ongoing independent Review and recommendations that may arise. This is discussed in detail in section 1.4.2.

## 3.2 Options

### 3.2.1 Base Case (current Regulations sunset on 19 June 2022)

The Base Case is a counter-factual scenario used to provide a common point of comparison for all options. In the context of this analysis, the Base Case represents a scenario where the current set of Regulations relating to explosives sunset on 19 June 2022 and no new approach is implemented.

In the absence of new Regulations, explosives would only be subject to the provisions of the DG Act that apply to all dangerous goods. This would likely result in the reduced practice (in terms of frequency and effectiveness) of safety precautions specific to explosives and the unique threat they pose.

As discussed in section 2.4.5, there is significant incentive for duty holders to enforce their own safety standards. Consequently, there is reason to believe that duty holders may continue to undertake a number of risk management and control activities that they currently have in place under the current Regulations. However, as individuals and society bear majority of the costs associated with accidents, duty holders are unlikely to continue performing sufficient risk control measures to achieve the optimal level of safety investment and attention.

Further, in the absence of the licensing scheme inherent in the current Regulations, access to explosives would be expected to increase and oversight of explosives by WorkSafe and other enforcement entities would be reduced.

### 3.2.2 The status quo

The only option being considered by WorkSafe and through this RIS is the status quo. The status quo involves remaking the current Regulations with immaterial changes, namely various modernisations and clarifications to the language of the current Regulations.

Ultimately, the clarifications aim to improve the usability of the current Regulations and may simplify compliance for duty holders.

Given the proposed Regulations entail no material change, the status quo will feature the same obligations and requirements that are outlined in section 1.3.2. Specifically, the proposed Regulations will remain prescriptive in nature and provide detailed provisions concerning

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<sup>24</sup> Office of the Chief Parliamentary Counsel, *Subordinate Legislation Act Guidelines*.

obligations duty holders must satisfy to ensure explosives are handled and stored safely at all times.

Table 3.1 includes a non-exhaustive summary of the obligations which will remain prescribed within the proposed Regulations as they relate to certain interactions involving explosives.

Table 3.1: Summary of obligations prescribed by the proposed Regulations

<b>General</b>	<ul style="list-style-type: none"> <li>Requirement to report certain incidents involving explosives i.e. those that involve theft</li> <li>Signage must be kept in good order/legible</li> </ul>
<b>Manufacture</b>	<ul style="list-style-type: none"> <li>Requirement to possess a relevant licence</li> <li>Requirements to prepare a safety management system (SMS)</li> <li>Obligations related to minimum standards of buildings and appliances</li> </ul>
<b>Storage</b>	<ul style="list-style-type: none"> <li>Requirement to possess a relevant licence (specific to both type and quantity)</li> <li>Requirements related to signage, packaging, security and cleanliness</li> <li>Obligation to store minimum quantities</li> <li>Requirements specific to the quantity stored (i.e. related to maintenance of buildings)</li> </ul>
<b>Transport</b>	<ul style="list-style-type: none"> <li>Requirement to possess a relevant licence</li> <li>Requirements specific to land transport (i.e. transport must meet requirements of the Australian Explosives Code)</li> <li>Requirements related to ports (i.e. development of an emergency plan and berthing requirements)</li> </ul>
<b>Import</b>	<ul style="list-style-type: none"> <li>Requirement to possess a relevant licence</li> </ul>
<b>Sale</b>	<ul style="list-style-type: none"> <li>Requirement to possess a relevant licence</li> <li>The licensee must only sell to a person who holds a relevant licence</li> <li>The licensee must only sell explosives of the type specified by their licence</li> <li>Requirements related to record keeping</li> </ul>
<b>Use</b>	<ul style="list-style-type: none"> <li>Requirement to hold a relevant licence requiring proof of competency/training</li> <li>Requirement to prepare a blast management plan</li> <li>Obligations related to the safe storage of explosives at a blasting site and precautions to be taken after a blast</li> </ul>
<b>Fireworks</b>	<ul style="list-style-type: none"> <li>Use of fireworks requires possession of a licence or supervision of a licensee</li> <li>Provisions related to the management of firework displays (i.e. distance requirements and notification periods)</li> </ul>
<b>Disposal</b>	<ul style="list-style-type: none"> <li>Requirements to hold a relevant licence</li> <li>Requirement to dispose or render harmless explosives in a manner that does not cause injury or damage</li> </ul>

The proposed Regulations will remake provisions related to the various explosives licences with minor changes to the title of licences. The obligations of duty holders will not change. Specifically, and as is the case under the current Regulations, the proposed Regulations will outline the general process for applying for any explosives licence including particular requirements (e.g. age and security requirements) and any information that must accompany an application. The proposed Regulations will also continue to outline requirements that are particular to certain licence types. For example, to acquire an explosives driver licence one must provide evidence of medical fitness,

while to acquire a licence to manufacture explosives one must provide detail on the premises where explosives will be manufactured.

Like the current Regulations, the proposed Regulations will also prescribe other matters relevant to licensing such as duration as well as the nature of conditions and limitations an authority may tie to licences (e.g. the provision of certain information or training requirements). Further, the proposed Regulations will continue to prescribe fees that accompany licences.

# 4 Impact analysis of preferred option

This chapter applies economic analysis to consider the costs and benefits of the preferred option

The Victorian Guide to Regulation requires a RIS to provide clear advice on the potential effects of options to inform a final decision about the regulations.

As previously outlined, this RIS is considering only one option, assessed against the Base Case in which the current Regulations sunset and are not remade.

The proposed Regulations prescribe a range of compliance activities and licensing requirements specific to the varying activities involving explosives. These obligations are summarised in Table 3.1.

The proposed Regulations present a cost to individuals and duty holders wishing to interact with explosives in that they must expend time, money and resources to meet obligations as well as fulfil licensing requirements. This is done to protect these individuals and the wider community from the risk posed by explosives.

## 4.1 Approach to measuring impact

This RIS provides an estimate of these costs on a yearly basis, based on the best available data regarding the number of current licence-holders and a range of credible and conservative assumptions.

As discussed, there is an incentive for duty holders to self-regulate so as to protect themselves, their employees and their businesses from dangers and costs inherent in the handling and use of explosives.

Estimating the impact of the proposed Regulations (compared to the costs of activities that duty holders would undertake anyway in the absence of the current Regulations) requires estimating the proportion of costs associated with all explosives safety activities that duty holders currently undertake which are solely attributable to the proposed Regulations, as opposed to costs that are incurred as a result of the broader legislative framework or commercial incentive.

Given the relatively low expected impact of the proposed remaking of the current Regulations, and the context discussed above regarding the ongoing independent review of the regulatory framework, historical information from 2011 on the proportion of costs attributable to the current Regulations was used to make conservative 'attribution' assumptions in this RIS associated with the various obligations<sup>25</sup> (see Table 4.1). WorkSafe considers that the information and assumptions on attribution from 2011 are still relevant in this context based on their understanding that current practice, industry standards and the risks presented by explosives have not materially changed since then. Since 2011, the explosives industry generally has been in a steady decline, WorkSafe has transitioned to digital licence applications and licence fees have remained steady except for CPI.

Attribution assumptions for specific regulatory requirements differ based on the views of stakeholders in relation to whether or not they would continue to practice each safety requirement

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<sup>25</sup> Lower end attribution assumptions in 2011 varied from 1.22 per cent to 9.9 per cent. The lowest attribution assumption used in this impact analysis is 20 per cent.

in the absence of regulation.<sup>26</sup> For example, the costs associated with a licence would be 100 per cent attributable to the proposed Regulations as, in the absence of current Regulations under the Base Case, the licensing scheme would no longer exist. On the other hand, costs relating to activities such as manufacturing or storage have lower attribution scores as stakeholders indicated that they would undertake relatively safe practices due to commercial incentives to avoid harm to their employees or to their property. In the case of the proposed Regulations, a level of attribution to the proposed Regulations is used as duty holders’ adherence to safety requirements would likely to be sub-optimal when driven by commercial incentives alone (section 2.4)

The modelled attribution assumptions are generally higher than that of 2011 with the intention of being both conservative and feasible. As such, they are deemed to be at the upper range of feasible attribution rates.

Table 4.1: Attribution assumptions

<b>Area of cost</b>	<b>Attribution (2011 RIS)</b>	<b>Modelled Attribution (2021)</b>
<b>Manufacturing</b>		
Duties related to manufacture	6 per cent	20 per cent
Licence to manufacture	9 per cent	20 per cent
Duties related to storage	1 per cent	20 per cent
Licence to store	10 per cent	20 per cent
Sales related duties	50 per cent	50 per cent
<b>Non-factory Manufacturing</b>	25 per cent	25 per cent
<b>Fireworks</b>		
Set-up and establishment	44 per cent	50 per cent
Additional compliance	100 per cent	100 per cent
<b>Transport</b>	50 per cent	50 per cent
<b>Sales</b>	100 per cent	100 per cent
Signage/placarding	50 per cent	50 per cent
<b>Use</b>	100 per cent	100 per cent

Source: Deloitte Access Economics; RIS for *Dangerous Goods (Explosives) Regulations 2011*

It is also conservatively assumed that there has been no technological advancements or improvements in business practice over the past decade that would diminish per business compliance costs. Given a lack of data and inability to accurately estimate any such cost reductions, a conservative approach is preferred.

The exact estimates of specific obligations presented in this RIS are based on estimates provided by WorkSafe in 2011. WorkSafe’s estimates were built on stakeholder feedback (through surveys and consultation) as well as internal WorkSafe expertise. These estimates and aggregate costs have been adjusted to account for historic inflation, real wage growth, and growth in the number of licence holders where appropriate to ensure they are representative of the true costs today.

<sup>26</sup> This consultation was conducted when the Regulations were last remade in 2011. Given there has been little change to the composition and risk profile of the explosives industry since then, WorkSafe believe these assumptions are still relevant and appropriate for the purpose of modelling costs in this RIS.

WorkSafe believe this approach is still appropriate given there has been no significant changes to the explosives industry since the 2011 Regulations were remade.

To account for the entry of new businesses, annual growth rates for each type of licence are assumed to be the same as annual growth over the past decade.

However, there are certain licence types that have decreased in terms of numbers over the past decade. Licence numbers for these types are assumed to be constant over the horizon to provide conservative estimates. To account for the initial costs associated with these licence types, the model applies conservative assumptions in relation to industry turnover. The assumed annual growth rates are summarised in Table 4.2.

Table 4.2: Assumed growth in licence holders

Licence type	Number of licence holders in 2021	Assumed annual growth/turnover
Manufacture at factory	5	2 per cent
Non-factory manufacture	6	5 per cent
Fireworks	224	10 per cent
Transport	32	3 per cent
Sale	145	5 per cent
Use (blasting explosives)	697	0 per cent

Source: Deloitte Access Economics

The net present value (NPV) of impact is calculated based on the expected annual impact over the lifetime of the proposed Regulations (ten years). The annual impact for each year over the lifetime of the proposed Regulations is calculated by adjusting current estimates for future inflation as well as expected growth in the number of licence holders.<sup>27</sup>

The estimates of aggregate annual costs associated with each activity involving explosives are calculated by:

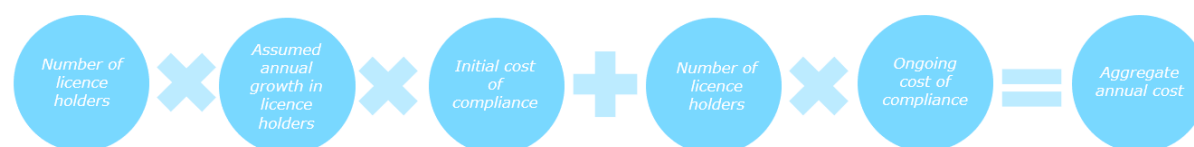
Step 1. Multiplying the current number of licence holders and the assumed annual growth in licence holders over the forward period (as initial costs are only incurred by new licence holders)

Step 2. Multiplying Step 1 by the initial cost of compliance

Step 3. Adding the ongoing annual compliance costs multiplied by the total number of licence holders

See Table 4.2 for assumed growth in licence holders, and the following diagrammatic representation of calculations:

Figure 4.1: Method for calculating aggregate compliance costs associated with each activity



Deloitte Access Economics

Appendix B provides a summary of cost calculations and inputs.

<sup>27</sup> Future inflation is conservatively assumed to be constant at 2.5 per cent, the upper bound of the RBA’s long-term target rate.

## 4.2 Estimates of impact

### 4.2.1 Costs associated with manufacturing explosives

The costs associated with manufacturing explosives were calculated based on estimates previously provided to WorkSafe by licence holders.

#### 4.2.1.1 Costs to factory-based manufacturers

The costs to factory-based manufacturers involving duties related to manufacture include building related costs, fire protection, machinery and signage. Based on previous stakeholder feedback, this is estimated to amount to an attributable ongoing annual cost of around \$98,000 per business.

Requirements associated with maintaining a licence to manufacture are estimated to impose an attributable ongoing annual cost of approximately \$217,000. This includes the costs associated with an SMS, emergency management plans, tools, equipment and protective clothing. A large portion of these costs are expected to be incurred in absence of the Regulations, hence low attribution is assumed (20 per cent).

Duties related to storage includes costs specific to certain building and signage requirements. This is estimated to incur an attributable annual cost of around \$50,000. Further, costs associated with the licence to store include training and protective equipment, which is estimated to amount to \$5,000 per year in attributable cost.

Sales related duties, namely document and recording systems, are expected to cost manufacturers an additional \$6,000 per year, relative to the Base Case.

The above costs have been summarised in Table 4.3. Combined this equates to an estimated annual cost per business of approximately \$380,000. Given there are five active licences to manufacture explosives in Victoria, this indicates an aggregate annual cost associated with manufacturing explosives in a factory of approximately \$1.9 million.<sup>28</sup>

Table 4.3: Summary of annual costs associated with manufacturing explosives per business

	2022 value (attributable)
Duties related to manufacture	\$98,402
Licence to manufacture	\$217,469
Duties related to storage	\$50,431
Licence to store	\$4,969
Sales related duties	\$6,150

Source: Deloitte Access Economics

#### 4.2.1.2 Costs to non-factory manufacturers

Estimates of costs attributable to the proposed Regulations incurred by non-factory manufacturers<sup>29</sup> are limited to those associated with the development and review of an SMS. These estimates are built on those previously developed internally by WorkSafe which were informed by assumptions of the expected labour costs associated with the obligations.

The development of a SMS is estimated to impose an attributable once off cost of \$251, while reviewing the SMS is expected to incur an ongoing annual cost of \$63.

<sup>28</sup> The number of active licences to manufacture at a factory is assumed to grow at 2.26 per cent annually. For the purposes of this explanation the number of licence holders has been rounded to the nearest integer and as such differ to those used in calculation of estimates.

<sup>29</sup> Named, those who manufacture explosives at a place other than a factory, for the purposes of making an explosives mixture at or near a place of use; making an explosives mixture using a mobile manufacturing unit or filling and capping safety cartridges for commercial purposes.



Combining this with the six mobile-manufacturing unit licence holders, and the estimated industry growth over the forward period of 5 per cent, the aggregate annual attributable cost to non-factory-based manufacturers is estimated to be around \$450.

These costs are summarised in Table 4.4.

Table 4.4: Summary of annual costs associated with manufacturing explosives

	<b>2022 value (attributable)</b>
SMS Development (once-off)	\$251
Review of SMS	\$63

Source: Deloitte Access Economics

#### **4.2.1.3 Summary of cost to manufacturers**

The initial and ongoing compliance costs associated with the proposed Regulations for both factory-based manufacturers and non-factory-based manufactures are summarised in Table 4.5.

Table 4.5: Summary of initial and recurring annual costs associated with manufacturing explosives, per business

	<b>Factory based manufacturing</b>	<b>Non-factory manufacturing</b>
Initial compliance cost (once off)	\$0	\$251
Ongoing compliance	\$377,422	\$63

Source: Deloitte Access Economics

Combining the above estimates, the yearly cost to manufacturers of explosives attributable to the proposed Regulations is approximately \$1.9 million.

Extending this over the lifetime of the proposed Regulations and accounting for growth in licence holders yields a net present value (NPV) of around \$17.2 million.

#### **4.2.2 Costs associated with fireworks**

In 2011, WorkSafe generated cost estimates for the fireworks sector associated with the current Regulations based on estimates received from businesses operating in the fireworks sector. This RIS builds on these estimates, accounting for inflation and change in the number of licence holders, and conservatively adjusting the attribution assumptions.

Major cost items identified through the survey were developing and maintaining emergency management plans and the cost of obtaining and renewing relevant licences.

Estimates of these costs were broken down into set up and establishment, remaining compliant, and additional compliance.<sup>30</sup> These estimates are summarised in Table 4.6 below.

<sup>30</sup> Additional compliance includes obligations that arose as a result of amendments made to the previous Regulations in 2011, including new requirements related to storage, outdoor displays and clearance distances. These requirements will persist under the proposed Regulations.

Table 4.6: Summary of annual costs associated with fireworks, per business

	2022 value (attributable)
<b>Set up and establishment costs (once off)</b>	\$49,124
<b>Remaining compliant</b>	\$25,293
<b>Additional compliance (once off)</b>	\$11,685
<b>Additional compliance</b>	\$6,765

Source: Deloitte Access Economics

The additional and ongoing compliance costs associated with fireworks have been summarised below in Table 4.7.

Table 4.7: Summary of initial and recurring annual costs associated with fireworks, per business

	2022 value (attributable)
<b>Initial compliance cost (once off)</b>	\$60,810
<b>Ongoing compliance</b>	\$32,058

Source: Deloitte Access Economics

There are 224 active licences to use fireworks as a pyrotechnician. However, the majority of these licensees work for corporate entities, and it is assumed that it is the corporate entities that incur these compliance costs. Given it is estimated there is a maximum of 14 such corporate entities<sup>31</sup>, and combining this with the above costs in Table 4.7, and the estimated industry growth over the forward period of 10 per cent, the estimated annual cost imposed on the fireworks sector by the proposed Regulations is approximately \$524,000.

Given the proposed Regulations have a lifespan of 10 years, the NPV of these costs over this period is approximately \$4.2 million.

#### 4.2.3 Costs associated with transporting explosives

The regulatory burden associated with transporting explosives is largely comprised of the administrative cost of acquiring a licence, in addition to the cost of complying with the standards that must be met to be eligible for such a licence. The administrative costs are outlined in section 4.2.6 alongside that of other licences.

Compliance costs are predominantly those specific to meeting the requirements of AEC. As outlined above, WorkSafe determined these costs based on estimates provided by stakeholders through a survey in 2011. They are estimated on a per 'fleet' basis. Accounting for inflation, and imposing conservative attribution assumptions, yields the following updated estimates in Table 4.8.

Table 4.8: Summary of annual costs associated with transporting explosives

	2022 value (attributable)
<b>Initial compliance cost (once off)</b>	\$38,951
<b>Ongoing compliance</b>	\$4,613

Source: Deloitte Access Economics

<sup>31</sup> It is assumed that the proportion of corporate entities relative to the number of licence holders is approximately 6 per cent. This was informed by the proportion presented in the previous RIS.

Given there are 32 licenced fleets, and taking into account the estimated industry growth over the forward period of 3.36 per cent, this suggests that the aggregate annual cost imposed on transporters of explosives, attributable to the proposed Regulations, is around \$196,000. Allowing for growth over time in the number of licenced fleets (3.36 per cent), these costs represented as an NPV calculated over the lifetime of the proposed Regulations are approximately \$1.8 million.

#### 4.2.4 Costs associated with sales of explosives

Estimates of the costs related to selling explosives were previously generated based on survey responses. Using these responses, the approach was to calculate average costs for specific aspects of the current Regulations relevant to holders of sales licences. These obligations and updated estimates are outlined below in Table 4.9.

Table 4.9: Summary of annual costs associated with sales of explosives

	2022 value (attributable)
<b>Signage/placarding (once off)</b>	\$1,845
<b>Signage/placarding</b>	\$492
<b>Recording of sales data (once off)</b>	\$1,845
<b>Recording of sales data</b>	\$369
<b>Storage requiring magazine</b>	\$3,690

Source: Deloitte Access Economics

The initial and ongoing compliance costs associated with sales, per business, have been summarise in Table 4.10.

Table 4.10: Summary of initial and recurring annual costs associated with sales, per business

	2022 value (attributable)
<b>Initial compliance cost (once off)</b>	\$2,214
<b>Ongoing compliance</b>	\$4,551

Source: Deloitte Access Economics

There are currently 145 active licences to sell explosives in Victoria. However, WorkSafe estimated in 2011 that 60 per cent of these businesses incur a negligible share of costs due to being small hardware stores or gun clubs that sell small quantities of cartridge ammunition in addition to their main business. The majority of obligations specific to the sale of explosives do not apply to the sale of cartridge ammunition. This assumption that 60% of businesses incur negligible costs is assumed to be unchanged from 2011 given there have been no major changes to industry over this time period. With the above costs only applying to 40 per cent of licence holders, and the number of licensees being conservatively assumed to stay constant over the lifetime of the proposed Regulations, the estimated annual attributable cost relevant to sales of explosives is around \$270,000.

In NPV terms over the 10-year horizon, this is approximately \$2.2 million.

#### 4.2.5 Costs associated with using explosives

The proposed Regulations impose costs specific to the use of blasting explosives largely due to requirements that must be met to obtain and maintain the relevant licence as well the obligation to develop a blast management plan. The costs associated with licensing requirements are predominantly training related.

WorkSafe conducted a telephone survey of the sector in 2011 to obtain estimates of these costs. Updated to account for inflation, these estimates are presented in in Table 4.11 below. Once off costs associated with equipment and meeting licensing requirements were widely deemed by

stakeholders to incur no attributable costs as they were viewed as business imperatives that would be incurred in absence of the current Regulations. Further, ongoing costs associated with licensing are imposed once every five years in line with the necessary frequency of licence renewals. It is thus assumed that on average 20 per cent of licence holders renew their licence each year.<sup>32</sup>

The costs specific to the development of blast management plans is on an industry wide, rather than per business, basis. It was calculated in 2011 on the assumption that there are 500 blasts annually with each plan taking two hours to develop; this is conservatively assumed to stay constant over the horizon.

Table 4.11: Summary of annual costs associated with use of explosives

	2022 value (attributable)
<b>Equipment (once off)</b>	\$0
<b>Licensing (once off)</b>	\$0
<b>Licensing (ongoing)</b>	\$1,134
<b>Blast management plan (annual cost for all industry)</b>	\$62,793

Source: Deloitte Access Economics

The initial and ongoing compliance costs associated with the use of explosives, per business, have been summarised in Table 4.12.

Table 4.12: Summary of initial and recurring annual costs associated with use, per business

	2022 value (attributable)
<b>Initial compliance cost (once off)</b>	\$0
<b>Ongoing compliance</b>	\$1,134

Source: Deloitte Access Economics

There are 697 active licences to use blasting explosives in Victoria. Given the number of such licence holders has diminished significantly in recent years this is conservatively assumed to stay constant over the lifetime of the proposed Regulations. Based on these assumptions, the total attributable cost imposed on the users of blasting explosives is approximately \$220,000 (which includes the annual cost to industry of maintaining blast management plans).

This is equal to an NPV of \$1.8 million over ten years.

#### 4.2.6 Costs associated with licensing

The costs associated with licensing includes the administrative cost imposed on those completing licence applications in addition to the licence fees (see Table 4.13 for a summary of licence fees). There are no changes to the current licence fees under the proposed Regulations.

In 2011, WorkSafe provided estimates of the annual average number of applications for the various types of licence. This is assumed to have stayed constant, which is deemed a conservative assumption given the overall number of licence holders has decreased significantly and two types of licences have grown in prominence only slightly.

The administrative burden on those who complete licence applications can be calculated through an assumption of the time it takes to complete an application. Based on the responses to a telephone survey of industry in 2011, WorkSafe previously estimated this to be 1.5 hours. This

<sup>32</sup> This is based on the assumption that the distribution of licence renewal dates across licensees is even over time.

was estimated to be equivalent to \$76.58 in opportunity cost.<sup>33</sup> Applying a conservative assumption as to real wage growth over time and an overhead multiplier of 1.75 this yields an updated estimate of the cost of completing an individual application of \$145.52. Combining this with the number of licence applications per year gives an annual cost of around \$62,000.

Further, multiplying the estimated number of applications for each type by the relevant fee and aggregating gives an estimate of the annual fee burden, which is approximately \$38,000.

Pairing the cost to industry of completing applications with the annual fee burden gives the overall annual cost specific to licensing applications.<sup>34</sup>

This cost is estimated to be approximately \$100,000. Extending this over the ten-year lifespan of the proposed Regulations and adjusting for inflation yields an NPV of around \$811,000.

#### 4.2.7 Costs to Government

The licensing scheme also imposes costs on Government in terms of administrative cost to process the licence applications.

In 2011 WorkSafe estimated the cost of processing an application by type based on the estimated number of hours it would take to do so. The total cost per year for each licence type is calculated by combining these estimates. These estimates and associated costs converted to 2022 dollars are presented below in Table 4.13.

Table 4.13: Summary of annual costs associated with licence processing and proposed licence fees

	Number of applications (ann. Ave.)	Estimated licence processing cost	Total cost (2011)	Total cost (2022)	Proposed fee per licence
<b>Manufacture at factory</b>	0.8	\$5,101.39	\$4,081.11	\$4,553	\$5,000
<b>Manufacture not at factory</b>	3.4	\$539.36	\$1,833.82	\$2,046	\$312.50
<b>Store explosives</b>	17.2	\$539.36	\$9,276.99	\$10,350	\$500
<b>Sell explosives</b>	60.6	\$272.98	\$16,542.59	\$18,456	\$62.50
<b>Explosives vehicle</b>	14.4	\$176.94	\$2,547.94	\$2,842	\$62.50
<b>Explosives vehicle driver's licence</b>	33.6	\$82.31	\$2,765.62	\$3,086	\$62.50
<b>Transport by rail</b>	0.2	\$513.09	\$102.62	\$114	\$62.50
<b>Use blasting explosives</b>	223.4	\$158.21	\$35,344.11	\$39,432	\$62.50
<b>Use fireworks</b>	52.2	\$153.29	\$8,001.74	\$8,927	\$62.50/\$125/\$300 <sup>35</sup>
<b>Import explosives</b>	8	\$224.96	\$1,799.68	\$2,007.85	\$62.50

Source: Deloitte Access Economics

<sup>33</sup> This was based on an estimate that the average value of an applicant's time was \$51.05. This was derived based on stakeholder estimates of cost associated with completing applications combined with an assumption of how long applications would take to complete.

<sup>34</sup> This excludes aspects relevant to licensing which have already been counted in previous estimates, such as training.

<sup>35</sup> Higher fees apply where an assessment of competency is required and where an exam is required to be undertaken.

Combining the above information provides the total annual cost incurred by WorkSafe in administering and processing licence applications. This equates to an average annual cost of approximately \$92,000 per year. Extending this over the ten-year lifespan of the proposed Regulations and adjusting for inflation yields an NPV of around \$745,000.

Subtracting the expected annual fee revenue (\$38,000, see section 4.2.6) gives the excess cost to government in administering licences that is not recovered through fees, and is thus included in overall impact estimates. This amounts to approximately \$54,000 annually which over a 10-year timeframe yields an NPV of around \$435,000.

#### 4.2.8 Total impact

Summing the estimated annual attributable costs across the various stakeholders presented above gives the expected economy wide impact associated with the proposed Regulations. This annual cost is estimated to be approximately \$3.3 million in 2022, with an average annual cost over the ten-year horizon of \$3.5 million (Table 4.14).

This is equivalent to an NPV of approximately \$29 million over ten years.

Table 4.14: Summary of annual average costs

	Total cost (annual average)
<b>Costs associated with manufacturing</b>	\$2.1 million
<b>Costs associated with fireworks</b>	\$524,000
<b>Costs associated with transporting explosives</b>	\$227,000
<b>Costs associated with sales of explosives</b>	\$270,000
<b>Costs associated with using explosives</b>	\$220,000
<b>Costs associated with licensing</b>	\$100,000
<b>Excess cost to government</b>	\$54,000
<b>Total economy wide impact (2022)</b>	<b>\$3.5 million</b>

Source: Deloitte Access Economics

#### 4.2.9 Feasible range of total impact

The estimated total economy wide impact is sensitive to the attribution assumption. For sensitivity testing, the attribution assumptions could be lowered to less conservative percentages, such as those used in the previous RIS, while the upper end can be computed by significantly increasing the percentages.

If lower attribution assumptions are adopted, specifically those presented in the previous RIS, the average annual cost associated with the proposed Regulations would be approximately \$2 million (NPV of \$16.7 million).

The assumptions made through this RIS and the resulting estimate of overall impact (\$3.5 million annually) are thus considerably more conservative than that of the previous RIS.

### 4.3 Break-even analysis

The break-even analysis below outlines the expectation that the proposed Regulations yield benefits to society that are at least as great as the costs they impose, relative to the Base Case in which there are no regulations.

An exact quantification of benefits provided by the proposed Regulations is difficult given they predominantly manifest in avoided incidents resulting in death or injury that would occur in absence of the proposed Regulations, which is unable to be observed.

Given the current net present value of a statistical life of around \$6 million and the annual average cost of the proposed Regulations of up to \$3.5 million, the proposed Regulations would ‘break even’ and yield a net social benefit provided they reduce the number of deaths due to explosives incidents by less than one per year (over the past decade, there have been 1.5 fatalities caused by explosives in Victoria per year, see Chart 2.1).<sup>36</sup>

Although there is significant incentive for duty holders to self-impose safety measures, it is feasible that there would be an additional one death or more per year under the Base Case given the potential for catastrophic incidents related to explosives. This includes not only avoided fatalities that could occur in a workplace, but also that could occur if explosives were deliberately misused by individuals or groups who were more easily able to obtain explosives in the absence of the regulations.

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<sup>36</sup> The VSL is an estimate of the value society places on an anonymous life. Calculated based on Deloitte analysis and adjustment for CPI of a meta-analysis of VSL estimates, including Abelson (2007), which forms the basis for the Commonwealth’s Office of Best Practice Regulation guidance note on VSL, [Australian Safety and Compensation Council](#).

# 5 Small business and competition impacts

This chapter assesses the small business and competition impacts of the preferred option.

Small businesses may experience disproportionate effects from regulation for a range of reasons. This may include that the requirement applies mostly to small businesses, or because small businesses have limited resources to interpret or meet compliance requirements compared to larger businesses. Small businesses may also lack the economies of scale that allow fixed regulatory costs to be spread across a large customer base.

This chapter considers the small business and competition impacts for regulation in the context of each type of business activity. For the proposed Regulations these effects are not likely to be widespread or significant. This is in part due to specific concessions within the proposed Regulations which accommodate smaller businesses in addition to the way the industry is structured. Generally, the industry is dominated by larger businesses and as such most businesses and correspondingly stakeholders will not be subject to the impacts discussed in this chapter. For example, in the manufacturing of explosives, industry data suggests that the market in Australia is highly concentrated, with two major businesses accounting for over two-thirds of the total market.<sup>37</sup> In Victoria specifically, it is unclear how many businesses in the explosives industry are categorised as being small due to a number of data limitations.<sup>38</sup> Nonetheless, it is important to highlight that these impacts will still prevail to a degree.

The Victorian Guide to Regulation also requires a RIS to assess the impact of regulations on competition. Regulations can affect competition by preventing or limiting the ability of businesses and individuals to enter and compete within particular markets. In undertaking this assessment we have considered questions such as:

- Is the proposed measure likely to affect the market structure of the affected sector(s) – i.e. will it reduce the number of participants in the market, or increase the size of incumbent businesses?
- Will it be more difficult for new businesses or individuals to enter the industry after the imposition of the proposed measure?
- Will the costs/benefits associated with the proposed measure affect some businesses or individuals substantially more than others (e.g. small businesses, part-time participants in occupations etc.)?
- Will the proposed measure restrict the ability of businesses to choose the price, quality, range or location of their products?
- Will the proposed measure lead to higher ongoing costs for new entrants that existing businesses do not have to meet?
- Is the ability or incentive to innovate or develop new products or services likely to be affected by the proposed measure?

*WorkSafe invites all stakeholders with views on the above questions or likely impact of the proposed changes on small businesses and competition to respond to this RIS.*

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<sup>37</sup> IBIS World Industry Report, Australia Industry (ANZSIC) Report C1892, 2020

<sup>38</sup> As explosives are used in a number of industries for a range of different purposes, the number of licences has been used as a proxy for the size of the industry. WorkSafe explosives licensing data does not indicate the size of each licensee. Further, the ANZSIC classification system only includes explosives manufacturing as a stand-alone industry. Manufacturing of explosives makes up approximately 1 per cent of total explosives activity so cannot be used to represent the distribution of business size.



An analysis of small business and competition impacts is provided in the following table. In summary, the proposed regulatory changes are anticipated to have a disproportionate impact on small businesses in some instances. The proposed changes may also have a small impact on competition. However, at an aggregate level these impacts are expected to be immaterial. Despite these impacts, the regulations are warranted because of the potentially fatal impacts these dangerous goods can impose.

Table 7.1: Small business and competition impacts

Proposed Regulations	Impact on small business	Impact on competition
Licensing	<p>Given the majority of licence types are required to be held by businesses, rather than individuals using explosives within a business, it is probable that licensing requirements will have a proportionately higher impact on smaller businesses. This is because the fee and likely time commitment implicit in acquiring a licence is the same regardless of business size.</p> <p>As such, a small business requiring a single licence to store explosives will face a higher proportionate cost to acquire it than a larger business requiring the same licence.</p> <p>It should be noted that the administrative costs associated with acquiring a licence (approximately \$150 per application (see section 4.2.6)) are generally slight and as such this impact would not be significant.</p>	<p>The requirement to acquire any of the various licences is not likely to deter individuals or businesses from entering into the market given the overall cost is slight.</p> <p>Further, incumbent businesses face the same cost as new entrants in terms of licence renewal.</p>
Manufacture	<p>Requirements specific to the manufacture of explosives are expected to have a disproportionate impact on smaller manufacturers. Specifically, fixed costs associated with minimum standards of buildings and appliances as well as developing a SMS are less able to be spread across a broader customer base. However, it is feasible that smaller manufacturers will require a less elaborate SMS and require fewer appliances than larger manufacturers, therefore lowering this impact somewhat.</p> <p>As mentioned above, explosives manufacturing is characterised by a high level of market concentration among large manufacturers, meaning the aforementioned impacts will not be widespread.</p>	<p>The duties related to the manufacture of explosives are not likely to have a material impact on the decision for businesses to enter the market. This is because there is a significant incentive for duty holders to implement many of these measures even in absence of regulation and as such the presence of these requirements in regulation would be unlikely to impact entry decisions. This is due to both general legislative duties under the DG Act as well as for the protection of staff and property.</p> <p>Additionally, the majority of the attributable costs are ongoing in nature and will therefore also be incurred by incumbent businesses.</p>

Proposed Regulations	Impact on small business	Impact on competition
Storage	<p>Obligations relevant to the storage of explosives are unlikely to have a materially disproportionate impact on smaller businesses. This is primarily because particular storage requirements are dependent on the amount of explosives being stored. Specifically, overall compliance costs increase as certain thresholds of storage quantities are exceeded and additional obligations are imposed. Further, many of the costs associated with storage, such as packaging, are variable more so than fixed.</p>	<p>Similar to above, a large proportion of the costs associated with storage obligations would be incurred by businesses regardless of the proposed Regulations and as such the proposed Regulations would be unlikely to impact entry decisions.</p>
Transport	<p>Ongoing compliance costs (approximately \$4,600 per business per year (see section 4.2.3)) associated with the transport of explosives are not likely to impact on small businesses excessively compared with larger businesses. This is due to a majority of these compliance costs being variable and specific to the number of vehicles or employees, such as placarding on rail carriages and driver training requirements.</p> <p>However, it is probable that a smaller business or individual drivers may face proportionately higher costs than a larger business as they may be less likely to realise efficiencies such as group training.</p> <p>Further, stakeholders previously estimated there is a relatively significant initial cost to meet compliance. It is possible that this may not scale proportionately with business size and thus impact on small businesses disproportionately.</p>	<p>Relative to the majority of other interactions with explosives, transport entails a significant initial cost to meet compliance (an initial cost of approximately \$40,000 (see section 4.2.3)). As such, it is possible that this may deter some new entrants from entering the market. However, given the scale of this cost, this is likely only true for potential entrants that are smaller in terms of business size.</p>

Proposed Regulations	Impact on small business	Impact on competition
Sale	<p>Requirements particular to the sale of explosives, namely the duty to maintain written records of sale, are likely to impact small businesses to a great extent than larger businesses. This is because smaller scale businesses are less likely to have an automated record-keeping system which minimises labour costs. Further, a smaller business investing in an automated record-keeping system entails a proportionately higher up-front cost than a larger competitor. However, the overall burden of record keeping is likely to be minimal (\$370 per year (see section 4.2.4)) in any case and so will not involve a substantially disproportionate impact.</p> <p>Additionally, many of the small businesses that sell explosives are small hardware stores and gun clubs that sell ammunition and as such are not subject to the requirement to record sales.</p>	<p>The costs imposed by the proposed Regulations specific to the sale of explosives are comparatively insignificant in terms of regulatory burden (see section 4.2.4) and thus unlikely to materially impact on the decision for businesses to enter the market.</p>
Use (Blasting explosives)	<p>It is not expected that there will be significantly disproportionate costs imposed on small businesses due to the obligations associated with the use of blasting explosives. This is because most of the costs are incurred on a per blast basis and as such are variable in nature. This is true for requirements such as the safety measures that must be taken after a blast and the development of a blast management plan.</p> <p>Further, it is likely that the costs associated with developing blast management plans (average of \$126 per blast (see section 4.2.5)) would reflect the size of the job and as such small-scale operators (such as farmers and small-scale demolition) would incur costs that are proportionate to the size of their operation and are more likely to develop generic blast management plans.</p>	<p>Attributable costs associated with the use of blasting explosives on a per business basis are expected to be relatively small and are therefore unlikely to impact on a business' decision to enter the market.</p>

Proposed Regulations	Impact on small business	Impact on competition
Use (Fireworks)	<p>Duties specific to fireworks which impose costs are mostly related to the management of firework displays, such as separation distances and site security. Given this, costs relevant to these obligations are likely to be variable in nature and scale accordingly with the size of a display. As such, smaller scale businesses are likely to incur costs in proportion to the size of their operation.</p> <p>There is, however, a notable set up and establishment cost according to stakeholders (approximately \$49,000 per business (section 4.2.2)). It is unclear how this cost may scale based on business size but given it is fixed it is possible it may be proportionately higher for smaller businesses.</p>	<p>Given stakeholders previously reported a relatively substantial set up and establishment cost associated with a fireworks business to meet compliance, these obligations may deter some businesses from entering the market.</p>
Disposal	<p>It is feasible that the duty to dispose, destroy or render harmless explosives in a manner which is safe may impose proportionately higher costs on small businesses than larger businesses as the latter may be more likely to have established systems for disposal of explosives as well as exhibit economies of scale in disposing of larger quantities of explosives at once.</p>	<p>There is a substantial incentive for businesses to dispose of explosives in a safe manner regardless of the specific regulatory requirements. It hence follows that the prescription of these requirements in the proposed Regulations would not impact on the decision of businesses to enter the market.</p>

# 6 Implementation and evaluation strategy

This chapter outlines the actions that WorkSafe will undertake to implement and assess both the efficiency and effectiveness of the proposed Regulations.

## 6.1 Implementation plan

The key questions for implementation are:

- What needs to be done?
- When will it be done?
- Who will do it?
- Who will monitor implementation including risk management and identification?

### 6.1.1 What needs to be done?

#### 6.1.1.1 Finalise proposed Regulations

The release of the proposed Regulations and the RIS for a 28 day public comment period will provide key stakeholders and members of the public the opportunity to consider the proposed Regulations and provide feedback. At the conclusion of the public comment period WorkSafe will review and consider each submission, and take account of the feedback on both the proposed Regulations and the RIS in finalising the Regulations.

On behalf of the Victorian Government, WorkSafe will prepare a formal Response to Public Comment document which will detail the comments provided in the Public Comment submissions and a response to those comments.

The Office of Chief Parliamentary Council (OCPC) will then review and settle the proposed Regulations which will then be submitted to the Minister for Workplace Safety for approval as the Minister responsible for the Dangerous Goods (Explosives) Regulations.

#### 6.1.1.2 Summary of implementation tasks

The specific activities to be undertaken by WorkSafe, along with the timing, are summarised below.

As the proposed Regulations constitute a relatively minor update of the current Regulations, it is expected that existing approaches to implement and enforce the Regulations will continue. WorkSafe is responsible for administering the proposed Regulations, which will continue to be enforced by WorkSafe inspectors consistent with current arrangements.

#### 6.1.1.3 Communication

Once the proposed Regulations are in place, WorkSafe will undertake a range of communication activities to assist stakeholders and the general public to understand and comply with the proposed Regulations. This will include (but is not limited to):

- Notification of the making of the proposed Regulations through formal communication channels (e.g. the Victorian Government Gazette and a state-wide newspaper)
- The development of accessible information that explains the changes introduced by the proposed Regulations, includes update of existing guidance and development of new guidance, where appropriate (including the proposed psychological health compliance code).

Additionally, WorkSafe intend to release social media posts, make updates to the WorkSafe website, electronic Direct Mail (EDM) to key employers and other stakeholders, Ministerial and

WorkSafe media releases, and direct communications to key WorkSafe Advisory Committees, including employer and employee representative groups that represent a broad range of industries and businesses across Victoria, and impacted stakeholders and duty holders.

#### **6.1.1.4 Resourcing needs**

WorkSafe has operational resources dedicated to support employers to comply with the Dangerous Goods legislative framework. This includes (but is not limited to) resources to develop guidance materials, information and campaigns, engaging with stakeholders through forums, reference groups and other channels.

Specific to explosives, WorkSafe has a suite of existing guidance materials that support stakeholders to safely interact with explosives and acquire the various licences. This suite of guidance will be updated (as required) to support the effective implementation of the proposed Regulations.

The suite of guidance material relating to explosives includes:

- Information on WorkSafe’s website landing pages
- Licensing information provided on WorkSafe’s website (both webpages and downloadable documents)
- Licensing application forms and online portals to apply, renew or amend explosives licences
- PDF documents including:
  - Explosives travel restrictions (Melbourne Central Business District)
  - Blast management plans: guidance notes
  - Safe distances when using explosives guidance
  - Reference – Applicant for High Consequence Dangerous Goods or Explosives licence
- Notification form for the discharge of fireworks.

#### **6.1.2 Who will be doing it?**

WorkSafe will primarily be responsible for implementation of the proposed Regulations.

#### **6.1.3 Who will monitor implementation?**

Monitoring of implementation, including identification and management of implementation risks, will be undertaken by WorkSafe.

#### **6.1.4 Enforcement and compliance**

WorkSafe will be responsible for enforcing and administering the proposed Regulations and will do so using the same enforcement and compliance systems and processes under the status quo. The minor amendments, namely the clarifications to language and structure, will not require WorkSafe to change the way they use these mechanisms to enforce the proposed Regulations.

Enforcement and compliance-activities will continue to include:

- routine monitoring of licence holders’ compliance with requirements (e.g. through inspections)
- educating stakeholders around the requirements inherent in the proposed Regulations
- investigating information to identify non-compliance and revoke licences where necessary.

## **6.2 Evaluation Strategy**

Given the context of the broader review of the Dangerous Goods legislative framework, the evaluation of the proposed Regulations will be folded into the response to the review of the Dangerous Goods legislative framework which may result in material changes to the proposed Regulations.

As a result of this extensive review, WorkSafe will not be developing an extensive evaluation strategy at this time. Consideration to a suitable and comprehensive evaluation strategy will be given when the explosives regulations are remade substantially post the Review. However, to ensure the proposed Regulations are adequately administered and adhered to in the interim WorkSafe will consider the key methods of evaluation and indicators, outlined in Table 6.1.

Table 6.1 Evaluation framework

<b>Indicator</b>	<b>Method of evaluation</b>
<p>To what extent do the duty holders understand their obligations and how they may comply with the regulations</p>	<p>Qualitative analysis based on stakeholder consultation feedback. Consultation could request information on the number of people needing to seek advice from WorkSafe, professionals or industry organisations.</p> <p>WorkSafe will continue to engage with the Dangerous Goods Stakeholder Reference Group to gauge stakeholder’s understanding of compliance and obligations.</p>
<p>Number of incidents reported</p>	<p>Evaluate the number of incidents reported (increase/decrease) using the baseline of incidents reported over the previous decade.</p> <p>Note: WorkSafe will continue to implement the current compliance and enforcement strategy in line with the requirements of the regulations and expect to see a downward trend in incidents given no material changes in these regulations.</p>
<p>Compliance and enforcement</p>	<p>WorkSafe will also evaluate trends in compliance and enforcement notices, infringements and prosecution rates. Again, WorkSafe will be looking for a long-term decrease to demonstrate the regulations efficacy.</p>



# Appendix A Proposed summary of changes

The majority of amendments to the proposed Dangerous Goods (Explosives) Regulations 2022 (proposed Regulations) are focussed on the modernisation and simplification of the language and structure of the Regulations in order to aid clarity.

## Regulation 5 proposed amendments

- The definition of **propellant** and *Table 82 – Aggregate maximum quantity by type in any storage* have been amended to include a new classification of propellant within the regulations – Propellants UN 509 Hazard Class 1.4C. This is to account for industry changes and the increasing use and storage of this type of propellant.
- The addition of a new definition for **Assessing Fitness to Drive Medical Standards**, to align with the [Dangerous Goods \(Transport by Rail and Road\) Regulations 2018](#), as follows: **Assessing Fitness to Drive Medical Standards** means the "Assessing Fitness to Drive for commercial and private vehicle drivers. 2016 Medical standards for licensing and clinical management guidelines", published by Austroads Ltd, as amended from time to time.
- The definition of **firework** has been reworded to assist with clarity as follows: *Firework means a pyrotechnic device (other than a distress signal) containing an explosive composition that, on functioning, burns or explodes to produce a visual or sound effect.*
- The definition of **magazine** has been removed because it contradicted the definition of magazine in the DG Act. Instead the four references to magazine within the regulations are now **magazine (other than a receptacle)**.
- The definition of **package** has been amended to align with the [Dangerous Goods \(Transport by Rail and Road\) Regulations 2018](#) as follows: *Package, in relation to goods, means the complete product of the packing of the goods for transport, and consists of goods and their packaging.*
- A new definition of **road vehicle** has been added as it was previously undefined. The definition was adapted for the Explosives Regulations as follows: *Road vehicle means any means of transport by land and includes a trailer and a semi-trailer, but does not include a vehicle consisting of a unit or units of rolling stock.*
- A new definition of **unauthorised explosive** has been included as it is currently undefined and will accompany the current definition of authorised explosive as follows: **unauthorised explosive** means an explosive other than an authorised explosive.
- **A new definition of 'driver licence' has also been added: driver licence** means a licence (other than a provisional or learner licence) issued under a State or Territory law authorising the licensee to drive a road vehicle. This confirms that a person must hold a full driver licence to drive an explosives vehicle and aligns with the Dangerous Goods (Transport by Road and Rail) Regulations 2018. This amendment does not impact on any current licences.
- **Licence type terminology and definitions** - WorkSafe have clarified the names of the licences required by the proposed Regulations. Definitions for the following licence types have been added in to regulation 5:
  - Explosives driver licence
  - Explosives vehicle licence
  - Blasting explosive licence
  - Licence to import explosives
  - Licence to sell explosives
  - Licence to store explosives

- Licence to transport explosives by rail

This will not affect any existing licences or current applications.

### Other proposed amendments

- **Regulation 10 - Date of effect of amendments to incorporated documents** – regulation 10(b) has been updated from 6 to 12 months to align with the Dangerous Goods (Transport by Road or Rail) Regulations 2018. This will give duty holders a longer transition period if an amendment to any incorporated code or standard imposes a new obligation or alters an existing obligation.
- **New regulation 19 'Approvals by the Authority'** -Proposed introduction of a new provision in Part 1 to clarify how approvals by the Authority are made. Provision has been drafted to reflect current practice.
- **Regulation 37 - Licence to manufacture explosives** - WorkSafe have also clarified that a licence to manufacture explosives may specify the location where the manufacturing will take place (for example, in a factory, on site, in a mobile processing unit or filling and capping safety cartridges). These amendments reflect current practice and will not change the obligations of licence holders.
- **Regulation 59** – The title of regulation 59 has been updated from 'Requirements for the manufacture of safety cartridges' to 'Requirements for the manufacture of safety cartridges and cartridge ammunition'. This does not change the effect of the regulation.
- **Part 5, Division 2 and 3 reordered** – regulations 67-75 (in the proposed Regulations) have been moved from Division 3 to Division 2 in order to clarify which obligations apply to all persons and which apply to licence holders.
- **Regulation 128 – Damaged, defective or expired explosives** - This regulation has been updated and split into two sub regulations to clarify that explosives that are expired, or damaged, defective or showing signs of deterioration must be disposed of in accordance with Part 11.
- **Part 14 – Licences** – This section of the regulations will contain a number of title changes to improve readability and clarity on the different types of licences. Note: these title changes will not impact the obligations on duty holders.
- **Regulation 176 and 177** – A new regulation has been split out from Regulation 176 (175 in Interim Regulations) to help clarify the different reasons for a licence refusal from the procedure if a licence application is refused.
- **Regulation 212 – Renewal of explosives driver licence** has been updated to include relevant cross references to other regulations.
- **New regulation 193 - Additional authorisations for licences** – A new regulation has been created to consolidate all information about how certain types of licences may also authorise the licensee to perform another action, for example how a licence to manufacture may also authorise a licensee to store, sell or import. This regulation does not introduce any new content.
- **New regulation 195 – Replace licence document** – Previous subregulations 191(4)-(5) have been separated out into a new regulation 195. There are no changes to the content of the subregulations.
- **Regulation 211** - WorkSafe have simplified the drafting of the security assessments required during the renewal of a licence. There will be no change to current processes.
- **Part 15 – Review of decisions** – Regulation 217 (213 in the current Regulations) has been updated to clarify the internal review pathway of decisions made under the proposed Regulations. The list of reviewable decisions in regulation 217 has been amended to only capture decisions made under the proposed Regulations. Decisions about whether to issue, renew, suspend, impose conditions and revoke a licence have been removed from regulation 217 as these decisions are primarily made under the DG Act. Licensing decisions will follow the review pathway in the DG Act and will be reviewable by VCAT. This change is expected to have a minimal impact on stakeholders. It will not change how WorkSafe currently assesses licence applications and informally resolves any issues.

The following decisions will be reviewable decisions under regulation 217:

- a decision to grant, impose conditions, amend, suspend or revoke an exemption;

- a decision to approve or refuse to approve a matter under the proposed Explosives Regulations;
- a decision to direct a licensee to amend a safety management system;
- the decision to authorise or refuse to authorise a purchase of a great amount of explosives;
- a decision to make a determination about a certificate under the proposed Explosives Regulations.

The decision to issue a duplicate licence document has been deleted from regulation 217. It is not necessary for the decision to be reviewable as it only involves the payment of the prescribed fee.

Previous regulation 217 'Notices of decisions must contain a copy of review rights' required WorkSafe to provide a copy of Part 15 with any written notice to the applicant of a licence of any reviewable decision. It has been deleted as licence decisions will now be reviewable under the DG Act.

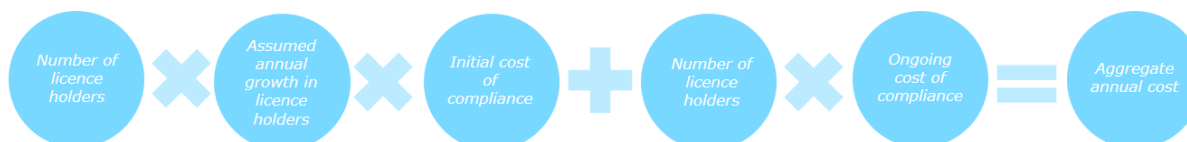
- **New Part 17 Savings and transitional provisions - Regulation 236 - Applications for licences not yet determined** – new regulation 236 has been added to clarify for stakeholders that on and after the commencement date of the proposed Regulations, an application for a licence or renewal of a licence made under the current Regulations that has not yet been determined is taken to be an application for the corresponding licence or renewal of a licence under the proposed Regulations and may be determined in accordance with the proposed Regulations. Current licences, approvals, determinations will not be affected by the making of the proposed Regulations.

# Appendix B: Cost calculations

The following appendix outlines the inputs and calculations that give rise to the aggregate compliance costs across all licensees for each activity outlined in section 4.2.

Figure B.1 provides a diagrammatic representation of the calculations that result in the aggregate annual cost estimates:

Figure A.1: Method for calculating aggregate compliance costs associated with each activity



Deloitte Access Economics

Table B.2 provides a summary of the inputs for each activity that result in estimates of aggregate initial costs across all new licensees and aggregate ongoing costs across all licensees. Combining these yields aggregate annual costs across all licensees.

Table A.2: Summary of inputs and aggregate costs across activities

	Number of current licence holders	Assumed percentage of new licence holders	Initial costs per new licence holder	Aggregate initial costs across all new licensees	Ongoing costs per licence holder	Aggregate ongoing costs across all licensees	Aggregate annual costs across all licensees
Factory based manufacturing	5	2%	\$0	<b>\$0</b>	\$377,422	<b>\$1.9 million</b>	<b>\$1.9 million</b>
Non-factory manufacturing	6	5%	\$251	<b>\$75</b>	\$63	<b>\$378</b>	<b>\$453</b>
Fireworks	14 <sup>39</sup>	10%	\$60,810	<b>\$83,503</b>	\$32,058	<b>\$440,210</b>	<b>\$523,712</b>
Transporting explosives	32	3%	\$38,951	<b>\$43,254</b>	\$4,613	<b>\$152,560</b>	<b>\$195,814</b>
Sales of explosives	145	5%	\$2,214	<b>\$6,421</b> <sup>40</sup>	\$4,551	<b>\$263,965</b> <sup>41</sup>	<b>\$270,385</b>
Using explosives	697	0%	\$0	<b>\$0</b>	\$1,134	<b>\$220,899</b> <sup>42</sup>	<b>\$220,899</b>

Source: Deloitte Access Economics

<sup>39</sup> While there estimated to be 224 active fireworks licensees, it is estimated there are 14 relevant corporate entities that incur these costs, as outlined in 4.2.2.

<sup>40</sup> Only 40 per cent of licensees to sell explosives are assumed to incur costs for reasons outlined in 4.2.4.

<sup>41</sup> Only 40 per cent of licensees to sell explosives are assumed to incur costs for reasons outlined in 4.2.4.

<sup>42</sup> This includes the \$62,793 industry wide cost of creating blast management plans.

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