



Dangerous Goods (Storage and Handling) Regulations 2022

Regulatory Impact Statement

WorkSafe Victoria
March 2022

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Glossary

Acronym	Full name
ABS	Australian Bureau of Statistics
ADG Code	Australian Code for Transport of Dangerous Goods by Road and Rail
ANZSIC	Australia and New Zealand Standard Industrial Classification
Code of Practice	WorkSafe Code of Practice for storage and handling of dangerous goods 2013
current Regulations	<i>Dangerous Goods (Storage and Handling) Regulations 2012</i>
DG Act	<i>Dangerous Goods Act 1985</i>
EP Act	<i>Environment Protection Act 2017</i>
EP Regulations	<i>Environment Protection Regulations 2021</i>
FTE	full-time equivalent
GHS	Globally Harmonized System of Classification and Labelling of Chemicals
HSR	health and safety representative
NPV	net present value
OCPC	Office of Chief Parliamentary Council
OHS Act	<i>Occupational Health and Safety Act 2004</i>
OHS Regulations	<i>Occupational Health and Safety Regulations 2017</i>
OHS RIS	2017 Occupational Health and Safety RIS
proposed Regulations	<i>Dangerous Goods (Storage and Handling) Regulations 2022</i>
PV	present value
RIS	Regulatory Impact Statement
SDS	safety data sheet
VSL	value of a statistical life
WHS	Workplace Health and Safety

Executive Summary

The purpose of this Regulatory Impact Statement (RIS) is to analyse the effectiveness and impacts of the existing *Dangerous Goods (Storage and Handling) Regulations 2012* (the current Regulations) and of the proposed *Dangerous Goods (Storage and Handling) Regulations 2022* (the proposed Regulations).

The current Regulations are made under the *Dangerous Goods Act 1985* (the DG Act) and commenced on 1 December 2012. The Regulations establish legal duties for manufacturers and suppliers of dangerous goods as well as occupiers of premises where dangerous goods are stored or handled.

Due to the serious risk associated with the storage and handling of dangerous goods, the current Regulations provide detailed, performance-based duties for storing and handling dangerous goods safely. In the absence of regulation, the safe storage and handling of dangerous goods would rely on commercial incentives as well as the broader legislative framework for dangerous goods. However, these alone are inadequate to address the serious and specific storage and handling risks that dangerous goods pose. As such, it is likely that in the absence of regulations these risks would elevate due to a sub-optimal level of risk identification and control.

It is important to note this RIS was developed concurrently with a broader and comprehensive review of the *Dangerous Goods Act 1985* and all associated regulations ('the Review'). The Review was conducted independently of WorkSafe and may give rise to material amendments to the current Regulations in the near future. As such, substantive 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 substantive changes to the regulatory framework within a short period of time.

Problem statement

Dangerous goods pose harm to people, property, and the environment because of their hazardous properties. Dangerous goods may be explosive, corrosive, flammable, combustible, oxidising, water reactive or have other hazardous properties.

Incidents and injuries involving dangerous goods mishandling or poor storage may cause serious harm over the short or long term and be costly to compensate. The widespread usage of dangerous goods across multiple industries means if the current Regulations are allowed to sunset, it is likely that incidents of harm would increase, exposing Victorians to greater risk.

Direct and indirect harm to people, property and the environment

Improper storage and handling of dangerous goods can pose substantial direct harm to people, property or the environment. This includes but is not limited to:

- serious injury (i.e. burns, poisoning)
- death
- building damage
- destruction of equipment, resources or capital
- environmental damage, and
- damage to community property.

The **indirect** harms imposed by dangerous goods 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 dangerous goods can be used to demonstrate the degree of prevalence of dangerous goods 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. Harm can also occur in non-workplace settings (for example, to property owners who may store or handle dangerous goods for legitimate reasons¹) however, WorkSafe does not regulate non-workplace settings. Therefore, there is no available data on the extent to which the general public may be at risk of incidents involving dangerous goods.

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.

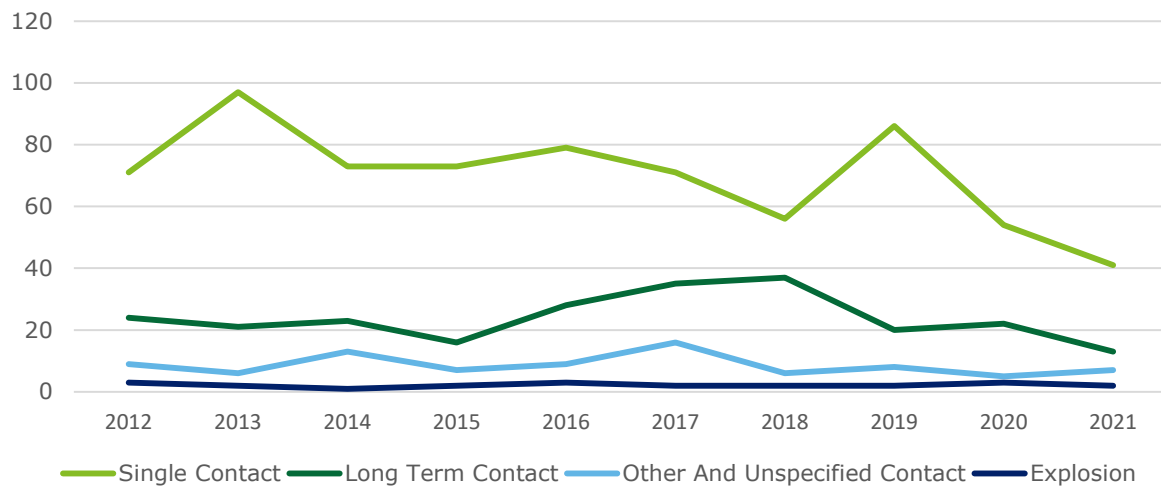
Harm caused by dangerous goods can occur due to single, long-term or other contact with dangerous goods as well as explosions (although this is rare). Chart i indicates that on average, there are 24 injuries per year due to long term contact with dangerous goods and 70 injuries per year due to single contact with dangerous goods. An additional 9 claims per year, on average, result from other or unspecified contact with chemicals or substances and approximately 2 more, on average per year, from explosions. In total, there are approximately 105 injuries per year caused by dangerous goods that result in a work-related claim. It follows there may be non-work-related injuries not captured in this data. This is relatively small in comparison to the total number of annual claims administered by WorkSafe, accounting for less than 1 per cent of total claims per year.

Despite making up the majority of total claims, Chart i illustrates that claims for single contact with dangerous goods had been declining over the lifespan of the current Regulations. This is with the exception of a spike in single contact dangerous goods claims caused by major chemical fires in 2018. Over the same time period, long term contact with dangerous goods related claims more than doubled between 2015 and 2018. This was followed by a steady decline in from 2018 onwards. The period since 2018 coincides with amendments made to the Dangerous Goods (Transport by Road and Rail) Regulations that reflected changes to the Australian National Dangerous Goods code. It is feasible that these changes led to improved compliance due to complementary Regulations focusing attention on the risks associated with dangerous goods, although there is limited evidence with which to test this.

A sharp decline in the yearly number of claims from 2020 for both long term and single contact injury claims is likely the result of industry shutdown and workforce disruptions due to COVID-19. Lockdown restrictions and a shift to working-from-home across multiple industries reduced the use of dangerous goods across Victoria. The number of claims across the lifespan of the current Regulations indicates an ongoing need to regulate the storage and handling of dangerous goods.

¹ This may include the storage and handling of gases (e.g. butane and propane) used for barbeques, portable stoves and heaters (Class 2 Dangerous Good). Another example includes the storage and handling of pool chlorine and spa sanitising agents (Class 2 Dangerous Good), or large quantities of diesel, gasoline or petrol (Class 3 Dangerous Good).

Chart i Number of dangerous goods claims, by year (2011-2021)

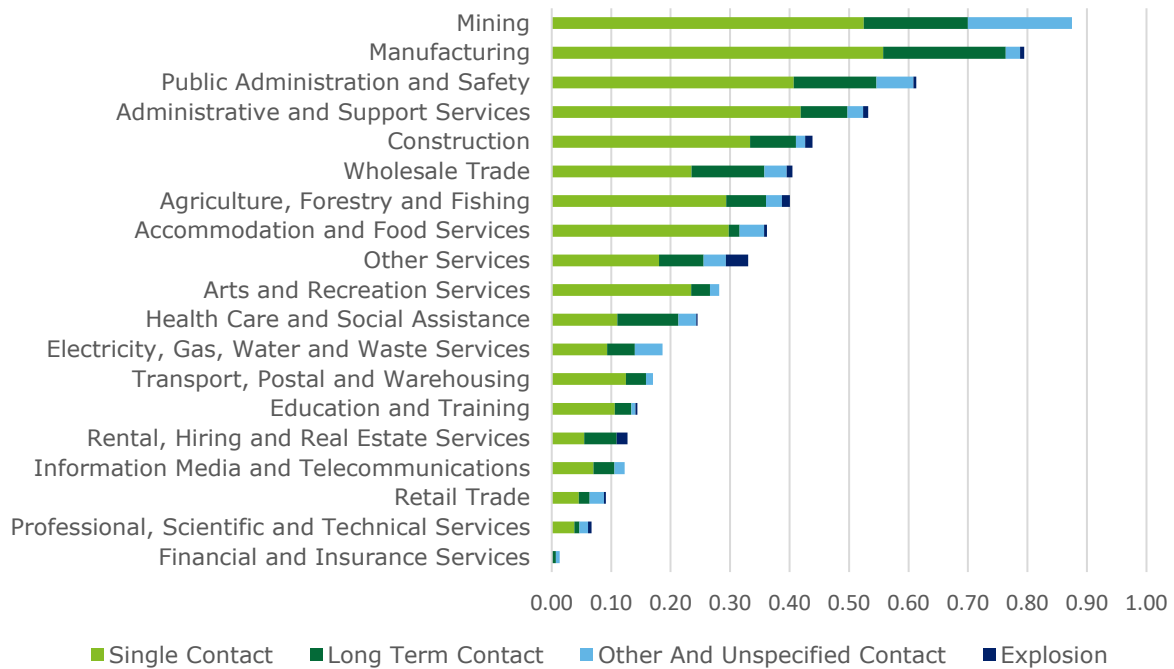


Source: WorkSafe Claims Data

Chart ii indicates that since 2012, most dangerous goods claims are concentrated in the mining and manufacturing industries (at approximately 0.9 and 0.8 claims per thousand employees respectively). The public administration and safety, administrative and support services² and construction industries all sit at 0.4 to 0.6 claims per thousand employees from 2012-2021. This is consistent with a greater likelihood of exposure to handling and storage of dangerous goods in mining and manufacturing relative to other industries.

² This industry includes building cleaning services and pest control services which are both likely to store and handle high quantities of dangerous goods.

Chart ii Number of dangerous goods claims, by industry and mechanism of injury, per '000 employees (2012-2021)



Source: WorkSafe Claims Data

Objectives of the proposed Regulations

The primary objective of the current Regulations and the proposed Regulations is to reduce the risk of harm associated with the unsafe storage and handling of dangerous goods that may result in direct harm to people, property or the environment.

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.³

The proposed Regulations aim to support the objectives set out by the DG Act by outlining duty holders' specific obligations for ensuring the safety of people and property by providing for the safe storage and handling of dangerous goods.

Options

The context of the broader Review of Victoria's dangerous goods legislation makes for unique circumstances relating to the assessment of options. Therefore, the status quo (remaking of the current Regulations, with some minor clarifications) 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.

³ WorkSafe Victoria, *Dangerous Goods Act and regulations* <<https://www.worksafe.vic.gov.au/dangerous-goods-act-and-regulations>>

Ultimately, the amendments aim to improve the current Regulations by simplifying and modernising the drafting style.

Given the proposed Regulations entail no substantive change, the status quo will feature the same key obligations and requirements that exist under the current Regulations. Specifically, the proposed Regulations will remain performance based in nature and provide detailed obligations that duty holders must satisfy to ensure dangerous goods are handled and stored safely at all times.

Impact analysis

The proposed Regulations present a cost to manufacturers, and suppliers of dangerous goods as well as occupiers of premises who store and handle dangerous goods in that they must expend time, money and resources to meet their obligations. This is done to protect duty holders, their workers and the wider community from the risk posed by dangerous goods.

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

WorkSafe welcomes feedback from stakeholders related to the appropriateness of these assumptions. Submissions can be made in response to this RIS via Engage Victoria for a 28-day public comment period.

Given the context discussed above regarding the independent Review of the regulatory framework, historical information from 2012 in addition to data from the 2017 Occupational Health and Safety RIS (OHS RIS) was used to make a number of conservative assumptions around attribution, rates of compliance, cost efficiencies and the percentage of businesses who would meet certain requirements in absence of regulation.⁴ These assumptions combine with updated estimates of per business compliance costs and businesses numbers to yield economy wide costs.

These assumptions are intended to reflect the cost of compliance and only includes costs directly attributable to the dangerous goods storage and handling regulations. The costs that businesses would incur when storing and handling dangerous goods in the absence of regulations are not included.

Total cost of proposed Regulations

This RIS estimates that the total economy wide impact of the proposed Regulations is approximately \$11.64 million per year on average with a net present value (NPV) over the lifetime of the proposed Regulations of approximately \$94.78 million. This is compared to the base case where the current Regulations expire and are not remade, meaning compliance costs of activities attributable to the Regulations would be zero.

Break-even analysis

A break-even analysis approach has been used to analyse the impacts of the proposed regulatory amendments. This approach has been used as there is limited data available to quantify the benefits associated with the proposed Regulations with a reasonably degree of certainty.

This break-even analysis approach has identified how many injuries or illnesses would need to be avoided or, alternatively, the number of lives saved for the benefits of the proposed changes to outweigh the costs or at a minimum, break-even.

Notwithstanding that it is reasonable for the proposed Regulations to break-even in terms of either injuries or fatalities, a broader purpose of the DG legislative framework is to mitigate the risk of significant and severe incidents causing multiple fatalities and injuries due to the improper storage

⁴ Deloitte Access Economics (2017), Technical Appendix to RIS for proposed Occupational Health and Safety Regulations 2017 and Equipment (Public Safety) Regulations 2017

and handling of dangerous goods. As the likelihood and scale of such incidents are difficult to estimate, these benefits have not been quantified. However, WorkSafe consider the benefits of preventing high consequence events involving dangerous goods to be substantial and fundamental to the need for regulation.

Avoided injuries

WorkSafe claims data indicates that, on average over the past decade, the value of a single claim involving dangerous goods is approximately \$41,000. Given the annual average costs of the proposed Regulations are up to \$11.64 million, the benefits will outweigh the costs if approximately 284 additional claims are avoided per year – that is, if in the base case without the Regulations there were a total of 389 claims per year, on average, comprising the 105 claims already observed in the presence of the Regulations plus the additional 284 claims. This is considered feasible given the size of the at-risk population.

It is estimated that up to 658,000 Victorian employees per year may be at risk of harm if dangerous goods are not handled or stored safely. It is therefore reasonable to anticipate that an additional 1 in 2,300 at risk employees could suffer an injury or illness in the absence of regulations for the storage and handling of dangerous goods. This reflects the number of employees within the at-risk population (658,000) divided by the annual number of additional injuries or illnesses that would need to be avoided to break-even (284).

When using WorkCover claim values as a proxy for harm associated with injuries, it is important to note that the value of a claim does not quantify all potential benefits (e.g. shortening of a life, cost of retraining). Therefore, the analysis of this RIS is likely to be conservative in weighing benefits against costs.

Avoided fatalities

Alternatively, the number of fatalities avoided (or number of lives saved) can also be used as a proxy for benefits. Given the current net present value of a statistical life of around \$6 million⁵ and the annual average cost of the proposed Regulations of up to \$11.64 million, the proposed Regulations would “break-even” and yield a net social benefit provided they reduce the number of deaths due to incidents involving dangerous goods by at least two per year. This is in comparison to the base case where the current Regulations expire and are not remade.

This break-even point is considered feasible as over the past decade (during the lifespan of the current regulations) there has been approximately one death per year, on average, caused by incidents that have occurred over the same time period.⁶ It is reasonable that, in the absence of regulation, fatalities could increase by at least two per year given the severity of harm associated with the improper storage and handling of dangerous goods and the sizeable at-risk population of Victorian workers.

Small business and competition impacts

By maintaining the status quo, the proposed Regulations are anticipated to have a relatively greater impact on small businesses in some instances. The proposed Regulations 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 serious impacts these dangerous goods can impose. Whilst continuing the Regulations imposes a higher level of costs in comparison to allowing them to lapse, these Regulations also provide certainty to small business in relation to the safety requirements for storage and handling of dangerous goods.

⁵ 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 by the Australian Safety and Compensation Council of VSL including Abelson (2007), which forms the basis for the Commonwealth’s Office of Best Practice Regulation guidance note on VSL.

⁶ Data on fatalities sourced from WorkSafe Victoria. This estimate may understate the number fatalities which occur in the presence of regulation as it does not include fatalities that are yet to occur as a result from incidents in the past decade.

Implementation and evaluation strategy

Responsibility for implementing and enforcing the proposed Regulations sits 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 impact and outcomes of the broader Review are known.

1 Background

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

1.1 Introduction

The purpose of this Regulatory Impact Statement (RIS) is to analyse the effectiveness and impacts of the existing *Dangerous Goods (Storage and Handling) Regulations 2012* (the current Regulations) and of the proposed *Dangerous Goods (Storage and Handling) Regulations 2022* (the proposed Regulations).

The current Regulations are made under the *Dangerous Goods Act 1985* (the DG Act) and commenced on 1 December 2012. The Regulations establish legal duties for manufacturers and suppliers of dangerous goods as well as occupiers of premises where dangerous goods are stored or handled.

In accordance with their ten-year life span, the current Regulations are set to expire on 27 November 2022. If they were to sunset without being replaced, measures prescribed to manage the specific hazards related to the storage and handling of dangerous goods would be reduced.

It is important to note the process of this RIS was undertaken concurrently with the Independent Review of the *Dangerous Goods Act 1985* and regulations ('the Review'), announced in April 2020 by the then Minister for Workplace Safety, the Hon. Jill Hennessy MP. The Review, led by Andrew Palmer QC, was conducted independently of WorkSafe and may give rise to material amendments to the Regulations in the near future. As such, material changes 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.

Consequently, this RIS considers the extent to which the current Regulations, and the proposed Regulations, are effective and proportionate in addressing the risks associated with the storage and handling of dangerous goods.

1.2 The role of dangerous goods in our society

1.2.1 What are dangerous goods?

Dangerous goods are substances and articles which pose a significant risk of harm to people, property and the environment due to their hazardous properties.⁷ Dangerous goods may be explosive, corrosive, flammable, combustible, oxidising, water reactive or have other hazardous properties.

Examples of common dangerous goods include:

- flammable liquids (petrol, kerosene, turpentine, flammable paints etc.)
- corrosives (formaldehyde, hydrochloric acid)
- flammable gases (butane, liquefied petroleum gases)
- non-flammable, non-toxic gases (compressed air, carbon dioxide)
- substances which on inhalation as fine dust may endanger health (asbestos)
- explosives.

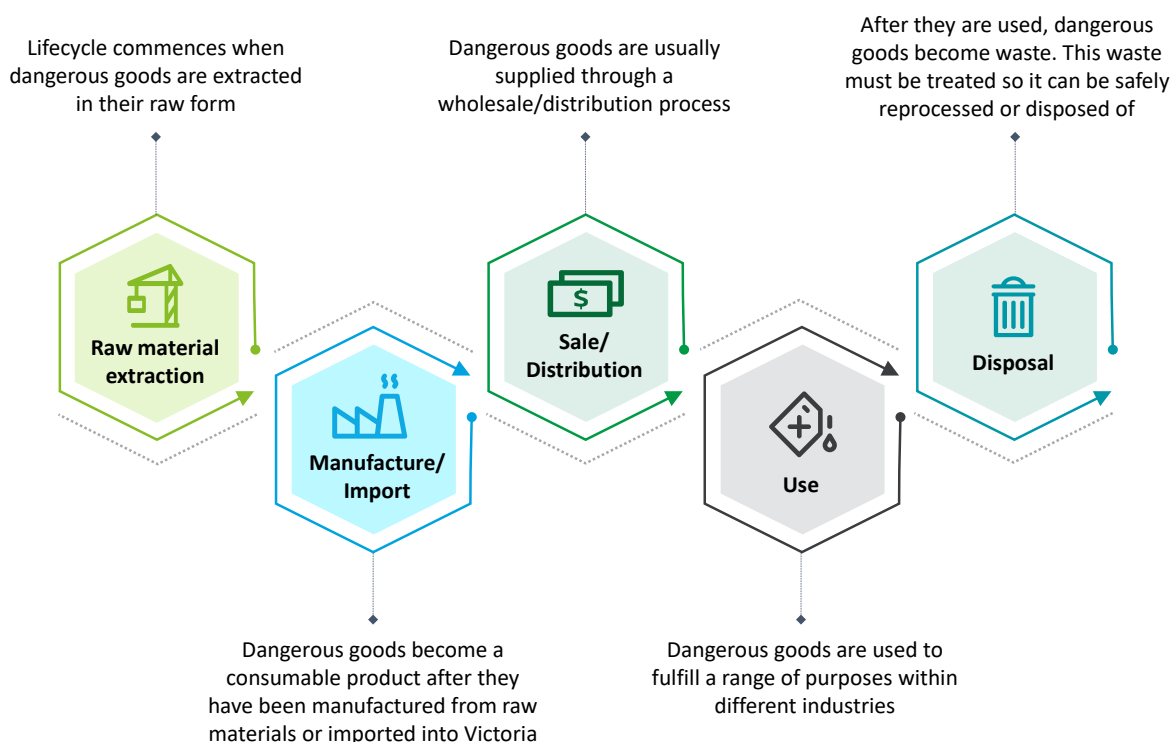
⁷ Under the current Regulations, the definition of dangerous goods is specific and subject to many qualifications according to the Australian Code for the Transport of Dangerous Goods by Road & Rail.

In all Australian jurisdictions, dangerous goods are classified into nine classes by the Australian Code for the Transport of Dangerous Goods by Road and Rail (ADG Code).⁸ This classification is used to distinguish between types of dangerous goods under the Victorian legislative and regulatory framework for dangerous goods (section 1.3). The classification of dangerous goods under the ADG Code is summarised in Appendix A.

1.2.2 The lifecycle of dangerous goods

During their “product life” dangerous goods typically pass through five stages (Figure 1.1). The storage and handling of dangerous goods is required at each stage of their lifecycle.

Figure 1.1 Stages of the dangerous goods lifecycle



Source: Adapted from Palmer, A. *Independent Review of the Dangerous Goods Act 1985 and associated regulations Consultation paper* (October 2020)

1.2.3 What are the legitimate uses of dangerous goods in Victoria?

In Victoria, dangerous goods are manufactured and supplied to a range of industries for different reasons and to varied extents. The current Regulations cover manufacturers, suppliers, occupiers and premises that store or handle dangerous goods:

- **manufacturers** are duty holders who manufacture dangerous goods
- **suppliers** are duty holders who supply dangerous goods
 - **first supplier**, means a person who has not manufactured goods in Victoria and is, or intends to be the first person to supply goods in Victoria to another person⁹
- **occupiers**, means in relation to any premises (other than licensed premises that are a vehicle or boat) includes a person who:
 - a) is the owner of the premises
 - b) exercises control at the premises under a mortgage, lease or franchise; or

⁸ National Transport Commission, *Australian Code for the Transport of Dangerous Goods by Road & Rail, Edition 7.7* (2020)

⁹ Regulation 5, Dangerous Goods (Storage and Handling) Regulations 2012 (current Regulations)

- c) is normally or occasionally in charge of or exercising control or supervision at the premises as a manager or employee or in any other capacity—
- and, in relation to licensed premises that are a vehicle or boat, includes a person who—
- d) is the owner of the vehicle or boat; or
- e) is in charge of the vehicle or boat;¹⁰

Industries that are likely to store and handle dangerous goods are summarised in Table 1.1.

Given the wide-ranging uses for dangerous goods, the number of businesses in these industries will be used as a conservative proxy for the size of the dangerous goods market in Victoria. As such, it is possible that there is up to 39,000 businesses who may store or handle dangerous goods, making up approximately 18 per cent of total businesses in Victoria.¹¹

This is an illustrative estimate of the size of the dangerous goods market, given that each industry may store or handle dangerous goods in varying quantities. It is noted that not all of the businesses within each subdivision or class listed below will use dangerous goods.

Table 1.1 List and size of industries likely to store and handle dangerous goods, excluding sole traders (2020)

ANZSIC Division	Subdivision/Class	Number of businesses	Percent of total VIC businesses
Agriculture, forestry and fishing	Agriculture	12,097	5.81%
Mining	All subdivisions	334	0.16%
Manufacturing	Leather tanning, fur dressing and leather product manufacture	66	0.03%
	Pulp, paper and paperboard manufacturing	45	0.02%
	Petroleum and coal product manufacturing	64	0.03%
	Basic chemical and chemical product manufacturing	382	0.18%
	Polymer product and rubber product manufacturing	749	0.36%
	Primary metal and metal product manufacturing	466	0.22%
	Fabricated metal product manufacturing	2,185	1.05%
	Printing	1,268	0.61%
	Fixed Space Heating, Cooling and Ventilation Equipment Manufacturing	107	0.05%
Electricity, Gas, Water and Waste Services	Electricity supply	72	0.03%
	Gas supply	28	0.01%
	Water supply, sewerage and drainage services	96	0.05%
	Waste collection, treatment and disposal services	566	0.27%

¹⁰ Regulation 3, *Dangerous Goods Act 1985*

¹¹ These figures exclude sole traders.

ANZSIC Division	Subdivision/Class	Number of businesses	Percent of total VIC businesses
Construction	Non-Residential building construction	1,257	0.60%
	Painting and decorating	1,376	0.66%
	Plumbing supply and services	3,799	1.82%
Wholesale Trade	Industrial and agricultural chemical product wholesaling	428	0.21%
	Other hardware goods wholesaling	861	0.41%
	Pharmaceutical and toiletry goods wholesaling	338	0.16%
Retail Trade	Fuel retailing	578	0.28%
	Supermarket and grocery stores	1,602	0.77%
Transport, Postal and Warehousing	Warehousing and storage services	239	0.11%
Professional, Scientific and Technical Services	Scientific testing and analysis services	302	0.14%
Administrative and Support Services	Building and other industrial cleaning services	2,432	1.17%
	Building pest control services	171	0.08%
Public Administration and Safety	Public order and safety	750	0.36%
Education and training	Higher education	52	0.02%
	Secondary schools	55	0.03%
Health Care and Social Assistance	Hospitals	107	0.05%
Arts and Recreation Services	Swimming pool operation	259	0.12%
Other services	Automotive body, paint and interior repair	1,616	0.78%
	Hairdressing and beauty services	3,326	1.60%
	Laundry and dry-cleaning services	528	0.25%
Total		38,601	18.53%

Note: Agriculture is a ANZSIC Subdivision that has been included to represent farming businesses.

Source: WorkSafe, Australian Bureau of Statistics 'Counts of Australian Businesses, including Entries and Exits, June 2017-June 2020', Catalogue 8165.0

1.3 Legislative and regulatory framework

1.3.1 Victorian approach to regulating the storage and handling of dangerous goods

In Victoria, dangerous goods are regulated by the *Dangerous Goods Act 1985* (the DG Act). 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. In doing so, a broad objective of the DG Act is to prevent one-off, high consequence events associated with the improper storage and handling of dangerous goods (e.g. a chemical spill or explosion that causes severe harm to multiple workers).

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. As such, there are several sets of regulations made under the authority of the DG Act. The regulations currently in effect include:

- *The Dangerous Goods (Storage and Handling) Regulations 2012* (the current Regulations)
- *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*.

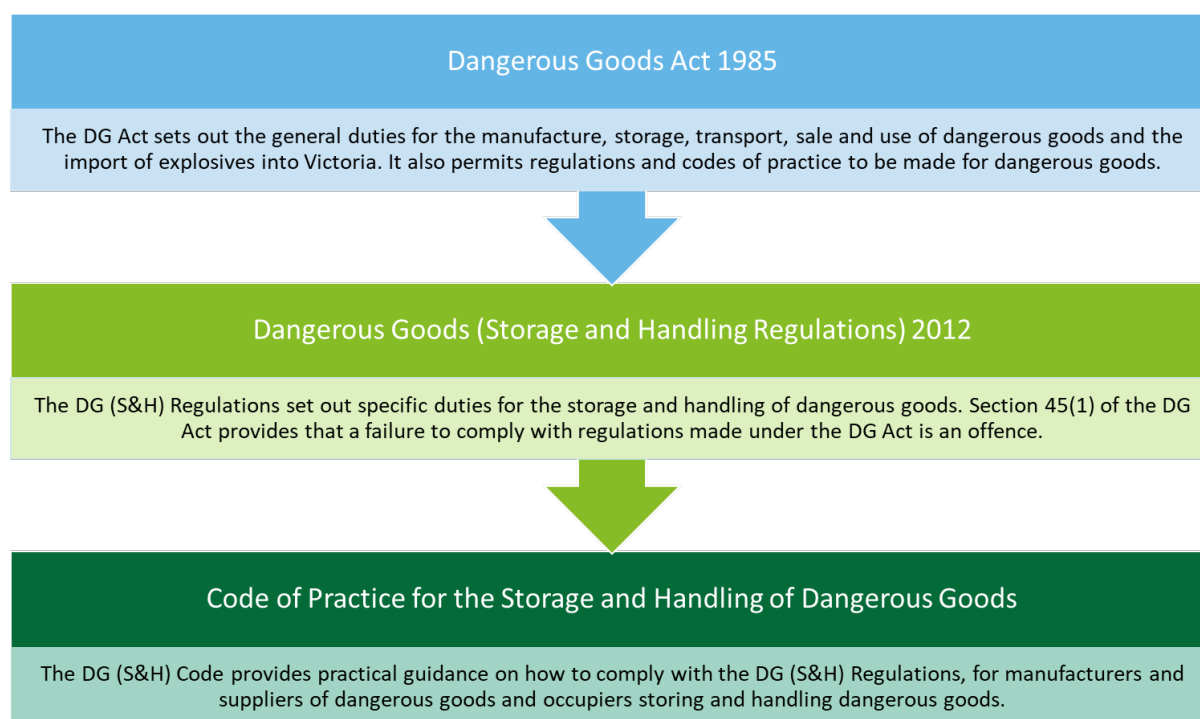
As mentioned above, the current Regulations are prescriptive in nature and provide detailed provisions concerning compliance activities and obligations duty holders have to ensure dangerous goods are handled and stored safely at all times. The WorkSafe Code of Practice for storage and handling of dangerous goods 2013 (the Code of Practice) provides duty holders with practical information on how to comply with their obligations under the current Regulations.

The following types of dangerous goods are covered by the current Regulations:

- Classes 2-5 (including gases, flammable liquids, flammable solids, oxidising substances and organic peroxides, see Table A.1)
- Class 6.1 (including toxic substances, see Table A.1)
- Classes 8-9 (including corrosive substances and other miscellaneous dangerous goods, see Table A.1)
- Goods too dangerous to be transported (goods listed in Appendix A of the ADG Code)¹²
- C1 combustible liquids (a liquid dangerous good with a flashpoint greater than 60°C but not greater than 93°C and a fire point less than its boiling point).

Not all dangerous goods are covered by the current Regulations. Notably, the storage and handling of explosives (class 1) are covered by separate regulations, the *Dangerous Goods (Explosives) Regulations Interim Regulations 2021*. The exclusion of other dangerous goods is outlined in section 6 of the current Regulations.

Figure 1.2 Victorian legislative framework for the storage and handling of dangerous goods



¹² National Transport Commission, *Australian Code for the Transport of Dangerous Goods by Road & Rail, Edition 7.7* (2020)

Source: WorkSafe Victoria, *Code of Practice for the Storage and Handling of Dangerous Goods* (2013)

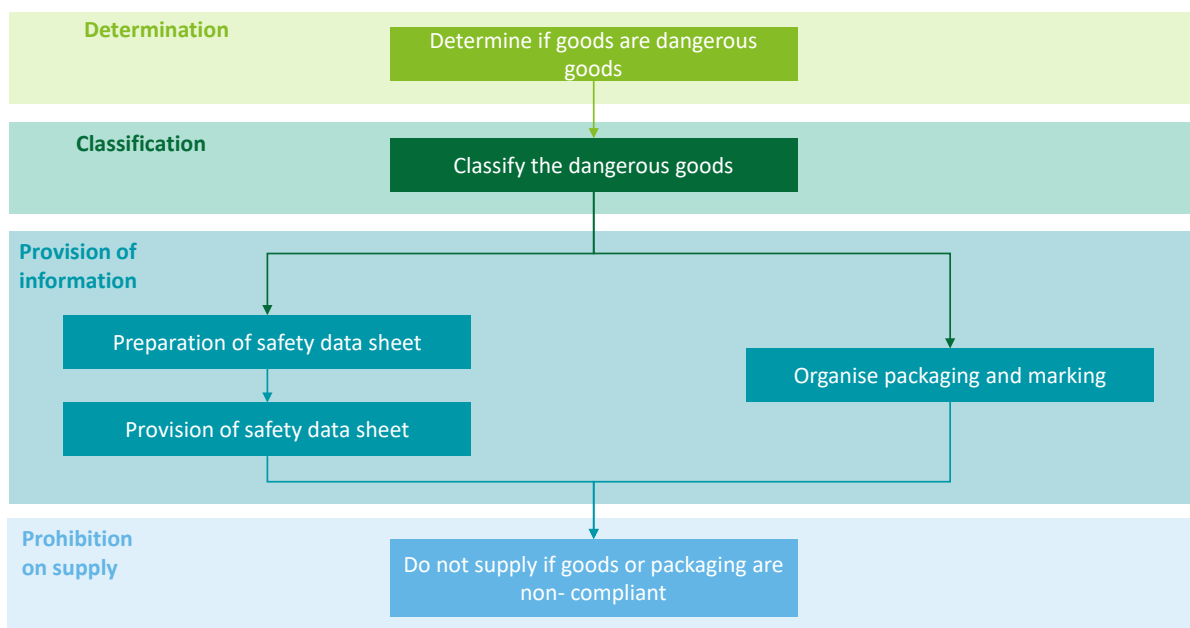
1.3.1.1 Duties of manufacturers and suppliers

Under the current Regulations, those who manufacture and supply dangerous have a number of obligations to ensure the safe storage and handling of dangerous goods. This includes:

- determining whether or not the goods supplied or manufactured are dangerous goods
- classifying dangerous goods by assigning them with appropriate class, subsidiary risk and packaging group
- ensuring dangerous goods are appropriately packed, marked and labelled
- preparation and provision of safety data sheets, and
- prohibiting supply if necessary.

These duties are summarised in Figure 1.3 and outlined in specific detail, including each relevant section of the current Regulations, in Appendix A.

Figure 1.3 Duties of manufacturers and suppliers



Source: Adapted from WorkSafe Victoria, *Code of Practice for the Storage and Handling of Dangerous Goods* (2013)

1.3.1.2 Duties of occupiers

Occupiers of premises at which dangerous goods are stored and handled also have numerous duties under the current Regulations. This includes obligations to:

- consult with workers and health and safety representatives (HSRs)
- provide relevant induction, information, training and supervision in relation to the storage and handling of dangerous goods
- obtain safety data sheets
- keep a register of dangerous goods stored and handled at their premises
- ensure the dangerous goods are appropriately packed, marked and labelled while at their premises
- identify and control hazards in relation to the storage and handling of dangerous goods
- design any new premises, plants, processes or systems of work to eliminate risk
- provide fire protection on the premises
- prepare and respond to emergencies
- to prepare a manifest, display appropriate placards
- notify WorkSafe if the quantity of dangerous goods stored or handled at the premises exceeds the "Manifest Quantity", if ceasing to occupy a premises with manifest quantities, or if quantities decrease below manifest amounts in Schedule 2 of the current Regulations.

The obligations of occupiers are outlined in specific detail, including reference to the relevant sections of the current Regulations, in Appendix C.

1.3.2 Broader regulatory framework for dangerous goods

1.3.2.1 The OHS Act and associated regulations

The *Occupational Health and Safety Act 2004* (OHS Act) supports 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.

The *Occupational Health and Safety Regulations 2017* (OHS Regulations) are made under the OHS Act and regulate specific hazards in the workplace including hazardous substances.

Hazardous substances and dangerous goods are defined differently and are therefore covered by separate legislation.¹³ However, many hazardous substances are also classified as dangerous goods and as such both the OHS Regulations and current Regulations apply. Duty holders who occupy premises where dangerous goods are stored or handled, may be deemed to have complied with Part 4 risk control provisions under the current Regulations if they demonstrate compliance with Part 4.1 (hazardous substances) of the OHS Regulations.

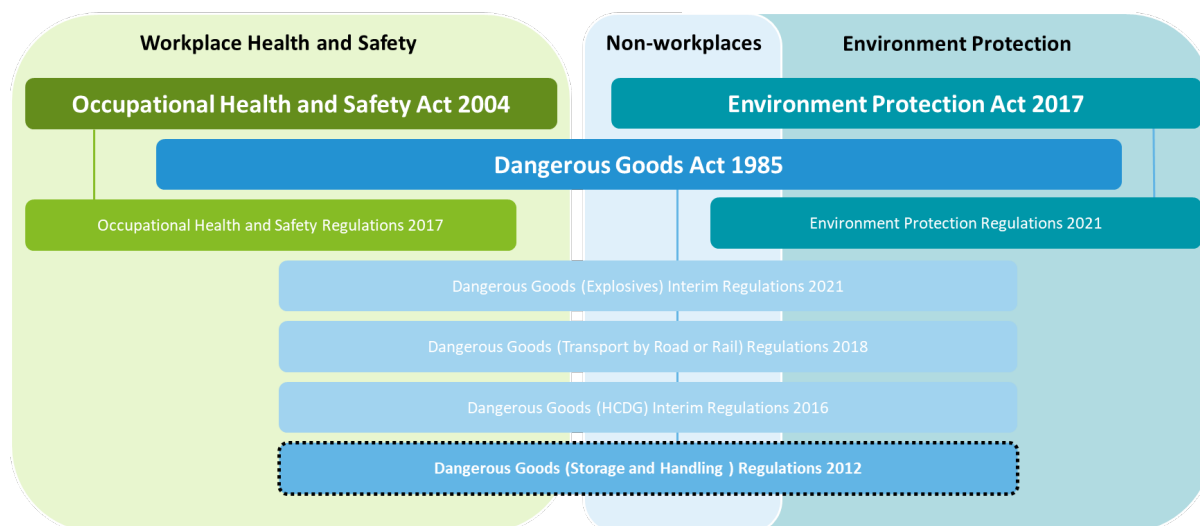
1.3.2.2 The EP Act and associated regulations

The *Environment Protection Act 2017* (EP Act) and associated regulations intersect with the Dangerous Goods framework as dangerous goods that are improperly stored or handled have the potential to cause harm to human health or the environment. Furthermore some dangerous goods are considered priority waste under the *Environmental Protection Regulations 2021* (EP Regulations) in certain circumstances such as spills.

Priority waste is a subset of industrial waste (e.g. processed food waste, e-waste and liquid organic wastes), which under the EP Regulations must be classified and properly disposed of. Under the DG Act, certain kinds of priority waste are dangerous goods, and are subject to DG regulatory obligations such as identification, notification, and safe storage and handling.

Goods may be both dangerous and hazardous. Hence, the EP Act and regulations often overlap with the OHS Act and regulations in the regulation of dangerous goods.

Figure 1.4: Dangerous goods regulatory framework



Source: Deloitte Access Economics

¹³ Hazardous substances and dangerous goods are classified according to different criteria. Dangerous goods are classified on the basis of immediate physical or chemical effects; such as fire, explosion, corrosion and poisoning on property, the environment or people. 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.

1.3.3 Regulatory frameworks in other Australian jurisdictions

In other jurisdictions, the regulation of workplace health and safety has been harmonised under the model Workplace Health and Safety (WHS) legislation. This package of legislation includes the model WHS Act, the model WHS Regulations, model Codes of Practice and a National Compliance and Enforcement Policy. Victoria's workplace health and safety framework, including the DG Act, are largely consistent with the broader national model owing to compliance with the globally harmonized system (GHS) of classifying and labelling chemicals, and Australian Dangerous Goods Code (ADG Code).

Duties relating to hazardous chemicals in model WHS legislation are defined within Part 7.1 of the model WHS Regulations. As mentioned above, although characterised differently, many hazardous chemicals are also classified as dangerous goods. For the most part, the model WHS laws regulate the storage and handling of dangerous goods in a similar way to Victoria.

Specifically, for manufacturers, suppliers and importers, the model WHS Regulations define a similar set of obligations for the storage and handling of dangerous goods (i.e. classification, preparation and provision of safety data sheets, packing, labelling, etc.). The model WHS Regulations also define analogous obligations for occupiers (referred to as 'persons conducting businesses or undertakings') including:

- safety data sheets
- register and manifest of dangerous goods
- placards
- control of risk
- induction, information, training and supervision
- prohibition, authorisation and restricted use.

1.4 Recent review of Victoria's dangerous goods laws

1.4.1 About the Review

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

The Review was 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.¹⁴ The process of the Review includes extensive stakeholder consultation.

1.4.2 Implications for the proposed Regulations and this RIS

The nature of the Review has implications for the proposed Regulations and the process of this RIS. The Review, which concluded in December 2021 (report forthcoming), 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 E. None of these changes are anticipated to materially impact or influence the behaviour of duty holders, and therefore will not significantly affect the expected impact of the proposed Regulations.

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.

¹⁴ 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 current Regulations in regulating the storage and handling of dangerous goods. 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 limited to providing summary text to the Dangerous Goods Stakeholder Reference Group.

1.5 About this RIS

This RIS has been prepared in accordance with the *Victorian Guide to Regulation*,¹⁵ 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 the storage and handling of dangerous goods. 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 maintain the status quo and are the only option considered in this RIS. They were developed by WorkSafe in the context of the 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 currently being considered by WorkSafe or through this RIS as they would likely 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. While the proposed Regulations largely maintain the status quo and contain no material changes, some non-material changes to modernise and clarify the language of the current Regulations are proposed.

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 during the storage and handling of dangerous goods. 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.

¹⁵ 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>

Assessment of the other impacts

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

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

This section explains the scale and nature of the problem as well as the current understanding of the causes of the problem, based on available literature and data.

2.1 Overview of the problem

Given the complex and severe risk that dangerous goods pose (section 2.2), the current Regulations set out a clear framework of obligations for all manufacturers, suppliers and occupiers who store and handle dangerous goods. However, the current Regulations are due to sunset in November 2022.

In the absence of regulation, the safe storage and handling of dangerous goods will rely on commercial incentives as well as the broader legislative framework for dangerous goods and occupational health and safety. For a number of reasons, these mechanisms alone will be inadequate in filling the role that current Regulations play to address the specific risks posed by the improper storage and handling of dangerous goods (section 2.4).

While incidents involving dangerous goods are not common in Victoria, they can pose significant direct and indirect harm if and when they do occur. As such, if the current Regulations are allowed to sunset, it is likely that incidents involving dangerous goods would increase, exposing Victorians to a greater risk of serious harm, including the risk of unlikely events with significant and severe consequences.

2.2 The nature of the risk posed by dangerous goods

If not stored and handled correctly, dangerous goods can pose a significant risk of harm to people, property and the environment due to their hazardous properties. Dangerous goods may have flammable, corrosive, toxic or poisonous properties and therefore pose a risk to those involved in handling them, as well as a risk to the environment or property where they are stored. Mishandling and poor storage of dangerous goods can lead to injury, damage to property, and death.

Strict regulation is therefore important to minimise potential harm, and the existing regulations are effective at ensuring safe handling and storage of dangerous goods. Without a regulatory framework, there may not be sufficient incentive for persons to mitigate potential risks in the storage and handling of dangerous goods (see section 2.4). This may lead to an increase in harmful incidents due to mishandling and poor storage of dangerous goods.

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

The unsafe handling or storage of dangerous goods can impose substantial **direct** costs on individuals, employers and the community, this includes but is not limited to:

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

The **indirect** costs imposed by dangerous goods 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
- environmental damage including water ways and air pollution
- burden on the health system, and
- social welfare payments.

2.3 Evidence of the problem

2.3.1 Extent of the problem

Data gathered from WorkSafe provides an overview of the frequency and severity of claims and incidents related to dangerous goods, and their associated costs. It is important to note that the current levels of claims and costs are reflective of existing regulatory settings. It is difficult to determine an accurate estimate of incidents of harm which would occur in the absence of regulation, except to say that the frequency and severity of cases would likely increase.

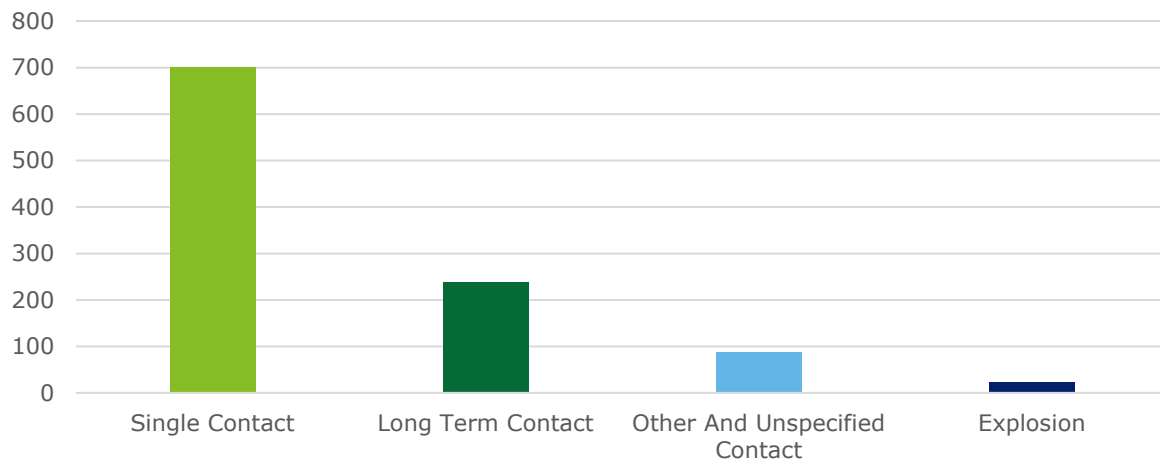
Dangerous goods claims are not limited to single instances of harm and, therefore, the current Regulations also aim to protect individuals against dangerous goods that are also hazardous substances which may also be harmful if persons experience prolonged exposure.¹⁶ Chart 2.1 illustrates that between 2012 and 2021, approximately 700 dangerous goods claims were a result of single contact with chemicals or substances (reflecting 67 per cent of total claims), and approximately 240 resulted from long-term contact with chemicals or substances (23 per cent of total claims). This highlights the importance of ensuring regulations protect against long-term exposure to dangerous goods that are also hazardous substances, which may be less damaging in the short term but nonetheless dangerous with prolonged exposure.

Dangerous goods claims can also be made for injuries that result from explosions.¹⁷ However, claims of this nature are rare (making up only two per cent of total claims) and may not be fully attributable to the storage and handling dangerous goods.

¹⁶ Due to data limitations, we note that not all claims for long-term contact with chemicals and substances may be attributable to improper or non-compliant storage and handling of dangerous goods as covered by the current Regulations. However, we also note that at least some will be attributable and are therefore included in this analysis to illustrate the feasible harms in relation to dangerous goods, and accordingly the feasible benefits attributable to the proposed Regulations.

¹⁷ This is only where explosions did not involve the use of explosives. Claims involving explosives are currently attributable to the *Dangerous Goods (Explosives) Interim Regulations 2021*.

Chart 2.1 Number of dangerous goods claims, by mechanism of injury (2012-21)



Source: WorkSafe Claims Data

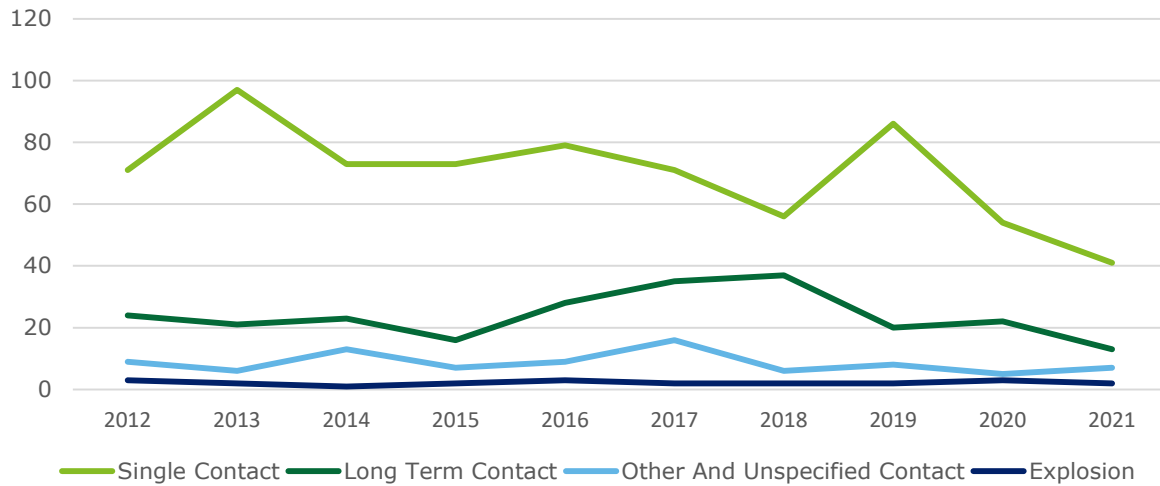
Chart 2.2 indicates that on average, there are 24 injuries per year due to long term contact with dangerous goods and 70 injuries per year due to single contact with dangerous goods. An additional nine claims per year, on average, result from other or unspecified contact with chemicals or substances and approximately two more, on average per year, from explosions.

In total, there are approximately 105 injuries per year caused by dangerous goods that result in a work-related claim. It follows there may be non-work-related injuries not captured in this data. 105 injuries per year is relatively small in comparison to the total number of annual claims administered by WorkSafe, accounting for less than one per cent of total claims per year.

Despite making up the majority of total claims, Chart 2.2 illustrates that claims for single contact with dangerous goods had been declining over the lifespan of the current Regulations. This is with the exception of a spike in single contact dangerous goods claims caused by major chemical fires in 2018. Over the same time period, long term contact with dangerous goods related claims more than doubled between 2015 and 2018. This was followed by a steady decline in from 2018 onwards. The period since 2018 coincides with amendments made to the Dangerous Goods (Transport by Road and Rail) Regulations that reflected changes to the Australian National Dangerous Goods code. It is feasible that these changes led to improved compliance due to complementary Regulations focusing attention on the risks associated with dangerous goods, although there is limited evidence with which to test this.

A sharp decline in the yearly number of claims from 2020 for both long term and single contact injury claims is likely the result of industry shutdown and workforce disruptions due to COVID-19. Lockdown restrictions and a shift to working-from-home across multiple industries reduced the use of dangerous goods across Victoria. The number of claims across the lifespan of the current Regulations indicates an ongoing need to regulate the storage and handling of dangerous goods.

Chart 2.2 Number of dangerous goods claims, by year (2012-2021)



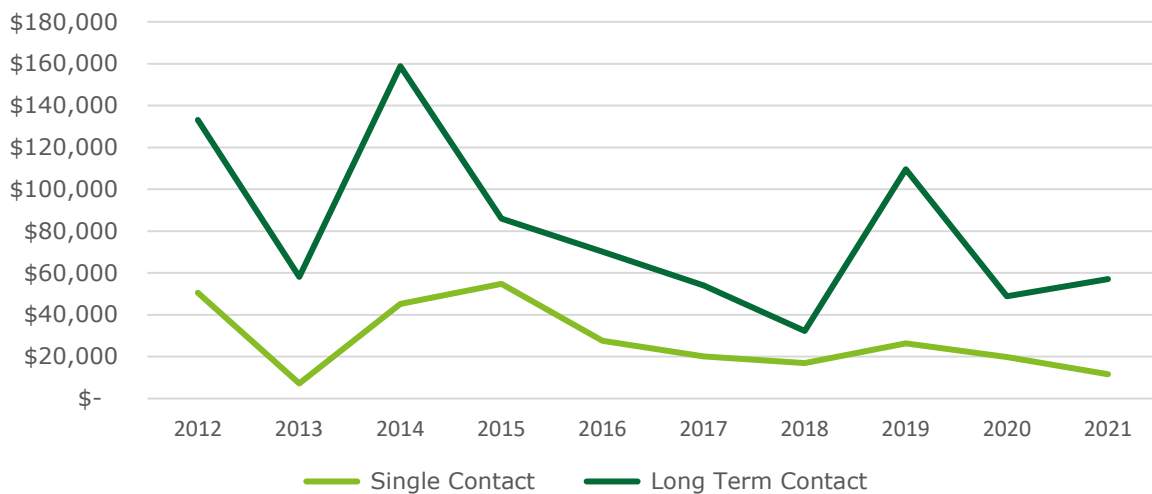
Source: WorkSafe Claims Data

Chart 2.3 indicates that claims for long term exposure have a higher average value than claims for single contact. The average values of a single claim for both single contact and long-term exposure have moved during this period over a wide range. This is likely due to the broad scope of the current Regulations which cover a range of dangerous goods, each of which require different forms of use and storage. As a result, the severity of injuries can be highly varied based on the specific circumstances of an incident.

WorkSafe claims data indicates that the average value of a long-term claim over the past 10 years has been approximately \$77,500, with the average ranging between \$32,000 and \$159,000 in individual years. In comparison, the average value of single contact claims over the past 10 years has been approximately \$28,500, with the average ranging between \$7,000 and \$55,000 year to year.

Over the lifespan of the regulations, the value of a single claim for dangerous goods (on average, including all mechanisms of injury) is approximately \$41,000.

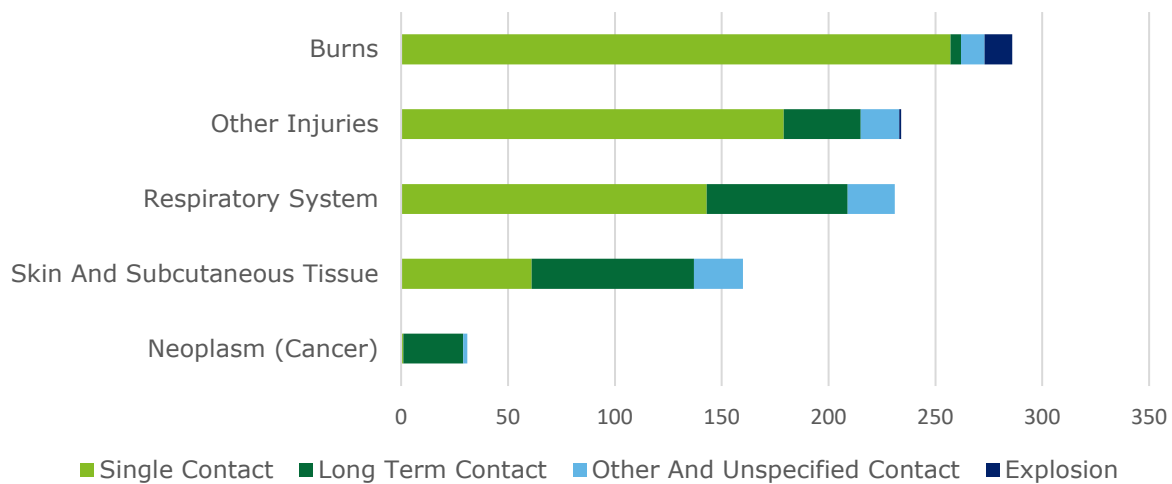
Chart 2.3 Average value of a dangerous goods related claim, by year (2012-21)



Source: WorkSafe Claims Data

The top five injuries claimed in relation to dangerous goods involve burns, other injuries (including poisoning and toxic effects of substances)¹⁸, the respiratory system, skin and subcutaneous tissue and cancer (Chart 2.4). Many claims involving burns and other injuries are the result of single contact with dangerous goods. Like single contact claims, these make up the majority of total claims. In comparison, Chart 2.4 suggests that claims involving injury to skin, or the development of cancer are commonly the result of continued exposure to dangerous goods that are also hazardous substances over time.

Chart 2.4 Number of claims, by mechanism of injury and injury type (2012-21)



Source: WorkSafe Claims Data

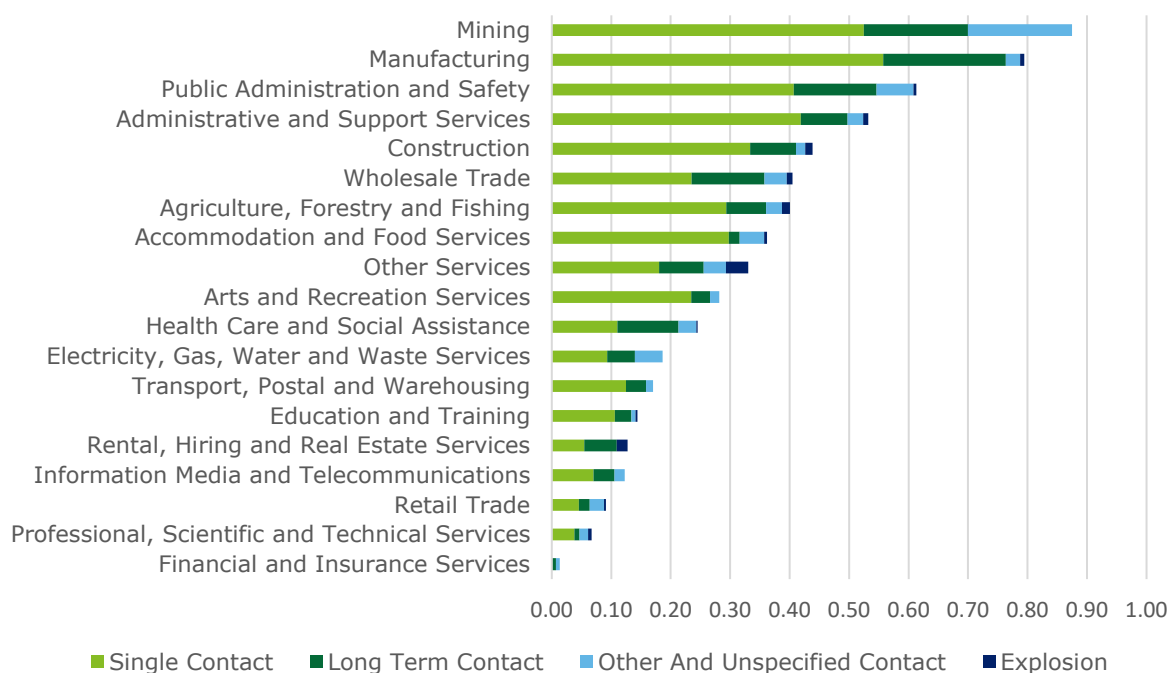
Chart 2.5 indicates that since 2012, most dangerous goods claims are concentrated in the mining and manufacturing industries (at approximately 0.9 and 0.8 claims per industry respectively). The public administration and safety, administrative and support services¹⁹ and construction industries all sit at 0.4 to 0.6 claims per thousand employees from 2012-2021. This likely reflects a greater exposure to handling and storage of dangerous goods relative to other industries.

The number of dangerous goods claims caused by explosions is broadly spread across industries suggesting that there is a risk of explosions in most industries. This reinforces the need for risks to be managed across all sectors, not just those with higher rates of claims for single and long term contacts, particularly in cases where explosions have the potential to cause multiple fatalities or injuries.

¹⁸ WorkSafe Victoria, VCODE: The nature of injury/disease classification system for Victoria (2008). Other injuries are most likely to include poisoning and toxic effects of substances including solvent toxicity, vapour toxicity, acid poisoning and asphyxiation due to gases, fumes and vapours.

¹⁹ This industry includes building cleaning services and pest control services which are both likely to store and handle high quantities of dangerous goods.

Chart 2.5 Number of dangerous goods claims, by industry and mechanism of injury, per '000 employees (2012-21)



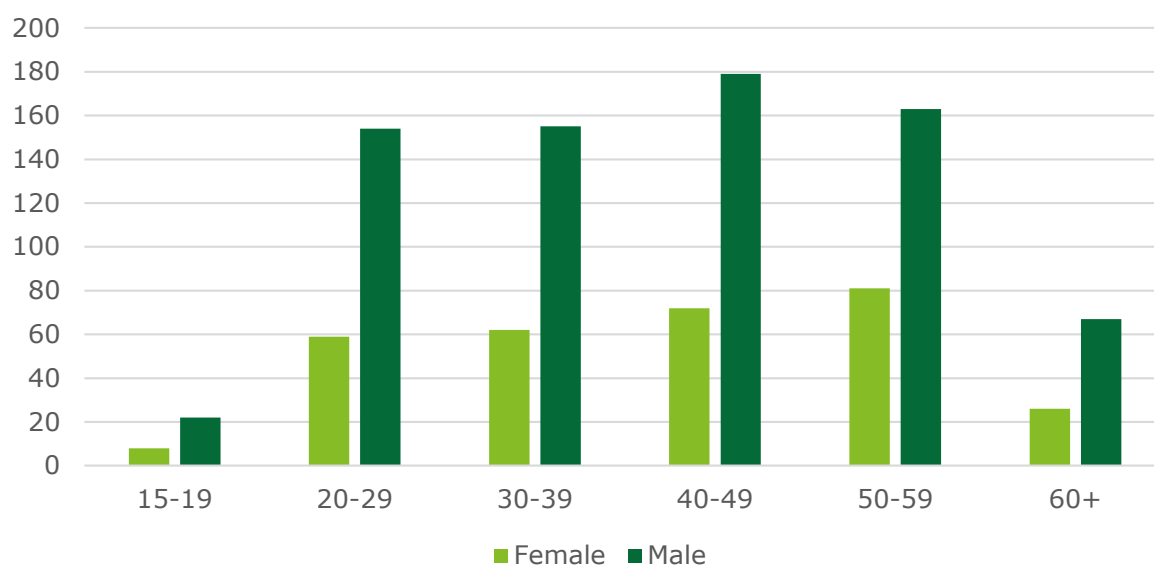
Source: WorkSafe Claims Data and Australian Bureau of Statistics Labour Force, Australia, Detailed

Industries with the least number of claims per thousand workers include financial and insurance services, professional, scientific and technical services and retail trade. This is indicative of limited exposure to dangerous goods for the average worker in these industries, and potentially additional regulatory frameworks, procedures and precautions for handling dangerous goods in the case of scientific and technical services. For example, laboratories have an additional set of safety procedures and regulations for storage of dangerous chemicals.

Across all age brackets, male employees are at a greater risk of exposure to harm from dangerous goods, as demonstrated in Chart 2.6. This may be because industries with the greatest number of reported claims tend to have a male-dominated workforce. ABS data indicates that in 2019-2020, industries with the highest proportion of males aged 20-74 include construction (87.3 per cent), mining (83 per cent) and manufacturing (72.5 per cent).²⁰ As observed in Chart 2.5, these industries also have the highest proportion of dangerous goods claims per thousand workers. In a similar vein, those industries with the lowest claim rates tend to be female dominated.

²⁰ Australian Bureau of Statistics, Gender Indicators, Australia (2020), <https://www.abs.gov.au/statistics/people/people-and-communities/gender-indicators-australia/latest-release>

Chart 2.6 Number of dangerous goods claims, by age and gender (2012-21)



Source: WorkSafe Claims Data

2.3.2 At risk population

As mentioned above, dangerous goods may pose a significant risk to workers and members of the public if not stored and handled appropriately. In an attempt to estimate the size of the at-risk population, data on the number of employees within each ANZSIC sub-division has been used as a proxy. This aims to quantify the number of people who may interact with dangerous goods on a regular basis as well as those employees who may be in close proximity to dangerous goods.

As a result, it is estimated that up to 658,000 Victorian workers a year may be at risk of harm if dangerous goods are not handled or stored safely. This is approximately 28 per cent of the Victorian labour force.

It is noted here that this is a best estimate only and is not a perfect proxy for the following reasons:

- Available data only reports the number of FTEs within ANZSIC subdivisions, and not all employees within the included subdivision will deal directly with the storage and handling of dangerous goods. Assumptions on the number of businesses in each subdivision have been made by WorkSafe to inform the impact analysis in chapter 4 of this RIS.
- The risk of exposure to dangerous goods extends beyond the number of employees (for example, patrons interacting with the business or members of the general public may be exposed to incidents involving dangerous goods if they are within a certain proximity to the event). Harm can also occur in non-workplace settings (for example, to individuals who may store or handle dangerous goods in their homes) however, WorkSafe does not regulate non-workplace settings. WorkSafe has no data on the extent to which the general public may be at risk of incidents involving dangerous goods.

Table 2.1 Fulltime employees within each industry subdivision likely to store or handle dangerous goods (as of August 2021)

ANZSIC Division	Subdivision/Class	Number of employees (000s)	Percentage of total VIC employed persons (full-time)
Agriculture, forestry and fishing	Agriculture	34.7	1.48%
Mining	All subdivisions	10.6	0.45%
Manufacturing	Textile, leather, clothing and footwear manufacturing	6.8	0.29%
	Pulp, paper and paperboard manufacturing	6.7	0.29%
	Petroleum and coal product manufacturing	0.7	0.03%
	Basic chemical and chemical product manufacturing	12.1	0.52%
	Polymer product and rubber product manufacturing	17.0	0.72%
	Primary metal and metal product manufacturing	17.1	0.73%
	Fabricated metal product manufacturing	17.0	0.72%
	Printing	9.6	0.41%
	Pump, compressor, heating and ventilation equipment manufacturing	2.6	0.11%
Electricity, Gas, Water and Waste Services	All subdivisions	39.2	1.67%
Construction	Non-residential building construction	11.8	0.50%
	Building completion	38.3	1.63%
Wholesale Trade	Mineral, metal and chemical wholesaling	3.9	0.17%
	Timber and hardware goods wholesaling	7.9	0.34%
	Pharmaceutical and toiletry goods wholesaling	7.0	0.30%
Retail Trade	Fuel retailing	1.2	0.05%
	Supermarket and grocery stores	24.6	1.05%
Transport, Postal and Warehousing	Warehousing and storage services	20.7	0.88%
Professional, Scientific and Technical Services	Scientific research services	13.2	0.56%
Administrative and Support Services	Building Cleaning, Pest Control and Other Support Services	28.0	1.19%

ANZSIC Division	Subdivision/Class	Number of employees (000s)	Percentage of total VIC employed persons (full-time)
Public Administration and Safety	Public order and safety	47.3	2.02%
Education and training	Tertiary Education	50.3	2.14%
	School Education	94.7	4.03%
Health Care and Social Assistance	Hospitals	69.3	2.95%
Arts and Recreation Services	Sports and physical recreation	11.0	0.47%
Other services	Automotive Repair and Maintenance	33.5	1.43%
	Hairdressing and beauty services	14.6	0.62%
	Laundry and dry-cleaning services	6.8	0.29%
Total		658.2	28.0%

Source: Australian Bureau of Statistics 'Employed persons by Industry group of main job (ANZSIC), Sex, State and Territory', Catalogue 6291.0.55.001 (October 2021)

2.4 The residual problem that is addressed by the current Regulations

While large-scale incidents involving dangerous goods are not common in Victoria (section 2.3.1), this is largely due to the stringent regulatory framework that currently governs the storage and handling of dangerous goods.

The current Regulations serve a number of important functions in mitigating the residual problem associated with the storage and handling of dangerous goods. In the absence of regulation, the safe storage and handling of dangerous goods would rely on both commercial incentives (section 2.4.2) as well as the broader legislative framework for dangerous goods and occupational health and safety (section 2.4.3). However, these alone are inadequate to address the serious and specific risks that dangerous goods pose (section 2.4.1). As such, it is likely that these risks would elevate due to a sub-optimal level of risk identification and control.

2.4.1 Without the current Regulations there would be no performance-based framework to provide clear processes for the management of risks specific to the storage and handling of dangerous goods

Due to the serious consequences associated with dangerous goods, the current Regulations provide detailed and performance-based duties for storing and handling dangerous goods safely. As such, the current Regulations provide a clear framework of obligations for manufacturers and suppliers of dangerous goods, as well as those who occupy premises which may store or handle dangerous goods.

The current Regulations provide value over and above the broader regulatory framework by outlining the specific obligations of duty holders who may store and handle dangerous goods throughout the product lifecycle. This may include, for example, specific placarding, manifest and fire protection requirements where significant quantities of dangerous goods are present at a premise. In this way, the level of detail specified within the current Regulations and the Code of Practice allows for consistency across multiple worksites and familiarisation with specific requirements and leaves less room for interpretation of the general duties set out in the DG Act, OHS Act and EP Act which apply to dangerous goods, broader workplace safety and environment protection.

2.4.2 Market incentives are insufficient to ensure the optimal level of risk control and mitigation

Duty holders are incentivised to self-enforce safety standards due to the extensive direct and indirect costs that dangerous goods impose (including damage of property and reduced productivity as a result of employee injury).

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, the environment, emergency response workers and the community, such as increased burden on the healthcare and social-welfare systems. Data from Safe Work Australia shows that employers only bore 5 per cent of the total cost associated with all work-related injury and disease in 2012-13 (of which injuries accounted for 45 per cent).²¹ This is an example of a negative externality where the private cost of safely storing and handling dangerous goods (cost to duty holders) is less than the potential cost to society if an incident was to occur (in this case the harm posed to workers, community and the environment).

In summary, duty holders may underinvest in safety protocols and standards as employees and the community subsidise a substantial portion of the costs related to unsafe storage and handling of dangerous goods. Therefore, in the absence of the current Regulations, these negative externalities would be expected to increase, carving out a clear role for regulation in ensuring duty holders adopt a level of safe practice that would not otherwise be obtained.

2.4.3 The broader obligations in the DG Act and the OHS Act do not go far enough to address the specific risk posed by the improper storage and handling of dangerous goods

In the absence of the current Regulations, the safe storage and handling of dangerous goods would be regulated by the broader regulatory framework for dangerous goods (section 1.3.2). This includes the DG Act and the OHS Act and associated regulations. The EP Act and associated regulations also intersect with these acts. However, without the current Regulations, this broad regulatory framework lacks the detail required to mitigate the specific risks associated with the improper storage and handling of dangerous goods.

The OHS Act and OHS Regulations are limited in scope; they outline general duties in which all employers have to provide a working environment to their employees which is safe and without risks to health. Additionally, all employers and self-employed persons must ensure their conduct does not generate risks to the health or safety of persons other than employees. The risk of harm from dangerous goods extends beyond the risk posed to employees, affecting both the environment and wider community. A further limitation of the OHS Regulations is that they are reactive by nature; they primarily respond to incidents of physical harm.

The DG Act promotes the safety of people and property in relation to storing, handling, manufacturing, transporting, transferring, selling, importing, disposing and using dangerous goods through broader duties and obligations relating to dangerous goods, whilst the current Regulations outline specifically how duty holders can ensure the health and safety of workers and the general public through safe storage and handling of dangerous goods.

The current Regulations support the objectives of the DG Act by specifying manufacturers, suppliers and occupier duties in relation to the storage and handling of dangerous goods (e.g. classification, labelling, placarding, signage, manifest require). Without the current Regulations, manufacturers, suppliers and occupiers would only be beholden to the broader OHS Act and Regulations. The current Regulations detail how to support the objectives of the broader regulatory framework in the DG Act.

Additional detail and prescription also support duty holders to safely store and handle dangerous goods. For example, on-the-ground workers who may be moving, using or storing dangerous

²¹ Safe Work Australia (2015) The cost of work-related injury and illness for Australian employers, workers and the community 2012-13

goods are protected by pre-emptive measures such as labelling and signage which reduce risks and the potential for confusion. Further, third parties such as emergency services also benefit from specific duties (such as those associated with fire protection systems, Manifest Quantity and fire protection quantity) by ensuring they have the information necessary to safely enter a site. Generally speaking, the current Regulations reduce risks in addition to ensuring preparedness for incidents and emergencies.

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.

2.4.4 Without the current regulations WorkSafe would be less able to direct resources to mitigate the risk of dangerous goods when stored at high volumes

There are some important detailed duties and requirements stated in the current Regulations, which would likely not be fulfilled in their absence. For example, the current Regulations require occupiers who store and handle dangerous goods in excess of the Manifest Quantity,²² who do not operate a major licensed or hazardous facility under the OHS Regulations, to notify WorkSafe of the presence of those goods and other specified changes that alter the risk profile of the site. There are no equivalent provisions in the broader regulatory framework which require notification if the quantity of dangerous goods stored and handled exceeds this quantity.

Without the current Regulations and these notification requirements, WorkSafe would not receive timely information about the existence of dangerous goods, or changes at the premises that may alter the risk profile of the site. In the absence of these notification duties WorkSafe would not be able to apply a risk-based approach to assess the risk profile of sites, identify the highest risk sites and target regulatory oversight activities accordingly.

2.5 Objectives of the proposed Regulations

The primary objective of the current Regulations and the proposed Regulations is to reduce the risk of harm associated with the unsafe storage and handling of dangerous goods that may result in death, injury and property damage.

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.²³

²² Notifiable goods are dangerous goods that are stored and handled in quantities that exceed the relevant quantities specified as the 'Manifest Quantity'. The Manifest Quantity is equal to the total of the quantities (kg or L) that are specified in Regulation 11 for different UN Classes of Dangerous Goods. Additional notification requirements include:

- the maximum storage capacity for dangerous goods at the facility changes by 20 per cent or more
- change of occupier name and/or contact details
- change in the control or ownership of the premises
- change of occupier contact details
- change in the principal activity involving dangerous goods
- changes in the class of dangerous goods being stored
- the introduction of new plant or modifications to existing plant at the premises.

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

The proposed Regulations aim to support the objectives set out by the DG Act by specifying duty holders' obligations for ensuring the safety of people and property by providing for the safe storage and handling of dangerous goods.

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*,²⁴ 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 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 27 November 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 Regulations relating to the storage and handling of dangerous goods sunset on 27 November 2022 and no new regulations are implemented.

In the absence of new regulations, dangerous goods would only be subject to provisions of the DG Act and the relevant sections of the EP and OHS Acts and Regulations. The EP and OHS Regulations in combination with the DG Act maintain some requirements for duty holders to properly store and handle dangerous goods. However, relying on these frameworks alone is likely to result in reduced practice of safety precautions specific to dangerous goods storage and handling. Without the regulatory framework to guide occupiers, manufacturers, and suppliers on their specific duties and requirements (e.g. classification, labelling, placarding, signage, and manifest requirements) there may be an increased risk from dangerous goods.

As discussed, there is incentive for duty holders to enforce their own safety standards (section 2.4.2). 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, the workers, the community and the environment bear the majority of the costs associated with accidents. Data from Safe Work Australia shows that 74 per cent of costs are borne by workers and a further 21 per cent of costs are borne by the broader community.²⁵ Therefore, duty holders are unlikely to continue performing sufficient risk control measures to achieve the optimal level of safety investment and attention. However, without WorkSafe communicating regulatory requirements and appropriate safety practice, it is likely that knowledge and awareness of safety practices will subside over time.

3.2.2 The status quo (remake the current Regulations)

The only option being considered by WorkSafe and through this RIS is the status quo. The status quo involves remaking the current Regulations as is, subject to modernisations and clarifications to the language of the current Regulations that do not materially change their operation (see

²⁴ Office of the Chief Parliamentary Counsel, *Subordinate Legislation Act Guidelines*.

²⁵ Safe Work Australia (2015) The cost of work-related injury and illness for Australian employers, workers and the community 2012-13

Appendix E for a summary of these changes).²⁶ Ultimately, the amendments aim to improve the current Regulations by simplifying and modernising the drafting style.

Given the proposed Regulations entail no material change, the status quo will feature the same obligations and requirements that are outlined in Appendix B and C. Specifically, the proposed Regulations will remain prescriptive in nature and provide detailed provisions concerning compliance activities and obligations duty holders must undertake to ensure dangerous goods are handled and stored safely at all times.

Under the current regulations, occupiers, manufacturers and suppliers are beholden to specific requirements which ensure the risk posed by dangerous goods is adequately mitigated.

Manufacturers and suppliers are currently required to undertake the following actions when storing and handling dangerous goods:

- determine if goods are dangerous
- classify goods
- pack, mark, and label goods
- prepare and provide safety data sheets
- prohibit supply where necessary.

Occupiers are currently required to undertake the following actions when storing and handling dangerous goods:

- consult with workers whose health or safety is likely to be affected
- train, supervise, induct, and provide information to workers and visitors
- obtain safety data sheets
- keep a register of goods
- identify and mark hazards
- control risks, facilitate risk control
- protect against fire and be prepared for emergency
- prepare a manifest if number of DG is above the manifest quantity
- prepare placards if the quantity of DG is above placarding quantity
- notify WorkSafe if storing dangerous goods in excess of the Manifest Quantity or in other prescribed circumstances such as changes in quantities
- establish a fire protection system if the quantity of DG exceeds fire protection quantity.

These specific requirements are only outlined in the Regulations. Regulations have legal force as the Act provides that a failure to comply with the Regulations is an offence under the Dangerous Goods Act, making them mandatory to adhere to. Whereas the Code of Practice or Compliance Code is not mandatory and aims to provide practical guidance on how to comply with the regulations. Maintaining the current Regulations means manufacturers, suppliers and occupiers will continue to receive guidance on complying with their obligations under the DG Act to mitigate risk in the storage and handling of dangerous goods.

²⁶ WorkSafe notes that in one case, the proposed regulations change the requirements for manufacturers or first suppliers of dangerous goods to label inner packaging in accordance with the to the Globally Harmonized System of Classification and Labelling of Chemicals (GHS). The current Regulations state that duty holders *may* label inner packaging in this way. WorkSafe does not consider that this will have any meaningful impact on duty holders' behaviours or costs because duty holders are likely to already comply with this duty in absence of regulation – labelling inner packaging in accordance with the GHS is required under legislation in all other states except Western Australia. As such, this requirement is not modelled in section 4.

4 Impact analysis of preferred option

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

4.1 Approach to impact analysis

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 specific to the varying activities involving the storage and handling of dangerous goods. These obligations are summarised in section 3.2.2. As such, the proposed Regulations present a cost to manufacturers and suppliers of dangerous goods as well as the occupiers of premises which store and handle dangerous goods in that they must expend time, money and resources to meet obligations. This is done to protect duty holders, their workers and the wider community from the risk posed by dangerous goods.

The annual cost associated with the proposed Regulations is expected to be around \$11.64 million per year on average with an NPV over the lifetime of the proposed Regulations of approximately \$94.78 million. This estimate was calculated using the method detailed in section 4.2.

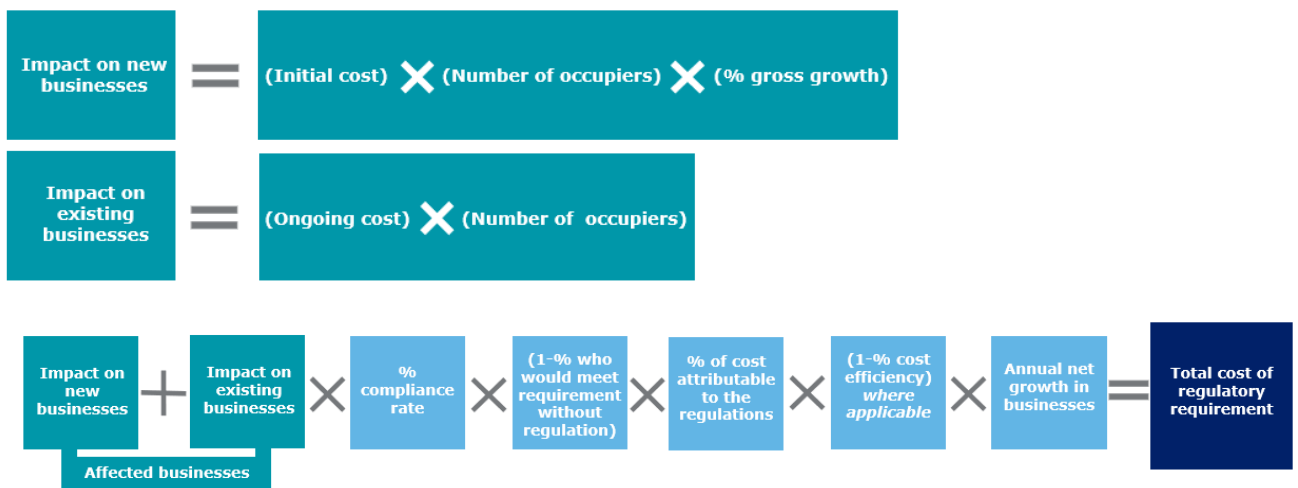
A break-even analysis approach has been used to analyse the impacts of the proposed regulatory amendments (section 4.5). This approach has been used as there is limited data available to quantify the benefits associated with the proposed Regulations with a reasonably degree of certainty.

This break-even analysis approach has identified how many injuries or illnesses would need to be avoided or, alternatively, the number of lives saved for the benefits of the proposed changes to outweigh the costs or at a minimum, break-even.

4.2 Approach to estimating costs

This RIS provides an estimate of costs on a yearly basis, based on the best available data regarding the number of businesses that are subject to the current Regulations and a range of credible and conservative assumptions.

Figure 4.1 Approach to estimating costs



Note: An “occupier” refers to a person who owns, exercises control over or regularly supervises a premises which stores and handles dangerous goods.

Source: Deloitte Access Economics

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 storage and handling of dangerous goods.

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 relevant 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, commercial incentive or an intrinsic interest in protecting employee wellbeing.

Given the context discussed above regarding the independent review of the regulatory framework, historical information from 2012 in addition to data from the 2017 OHS Regulations RIS was used to make a number of conservative assumptions around attribution, rates of compliance, cost efficiencies and the percentage of businesses who would meet certain requirements in absence of regulation.²⁷ These assumptions combine with updated estimates of per business compliance costs and businesses numbers to yield economy wide costs, as illustrated above in Figure 4.1.

Given many of these assumptions are based on previous data, WorkSafe welcomes stakeholder feedback regarding their accuracy and relevance. Submissions can be made in response to this RIS via Engage Victoria for a 28-day public comment period.

These assumptions are intended to reflect the cost of compliance and only include costs directly attributable to the dangerous goods storage and handling regulations. The costs that businesses would incur when storing and handling dangerous goods in the absence of regulations are not included. Costs do not include those attributable to other regulations or in meeting requirements under the Dangerous Goods Act. This is to ensure only the residual problem is considered in the model. For example, manufacturers would be required to prepare and supply an equivalent safety data sheet (SDS) for provision to customers in other Australian jurisdictions or overseas and only a portion of that cost can be attributed directly to Victorian storage and handling regulations.

²⁷ Deloitte Access Economics (2017), Technical Appendix to RIS for proposed Occupational Health and Safety Regulations 2017 and Equipment (Public Safety) Regulations 2017

Costs are only calculated for compliant businesses, because non-compliant businesses do not incur costs associated with meeting regulatory requirements.

Costs do not include sunk costs or costs incurred previously. For example, initial costs such as building a storage facility are only included for new businesses entering the market, and only ongoing maintenance costs are counted for businesses with existing facilities.

The exact estimates of the costs of specific regulatory obligations presented in this RIS are based on the per-business estimates of costs in the previous RIS in 2012. These estimates were built on stakeholder feedback (largely consultation) as well as internal WorkSafe expertise. These estimates and aggregate costs have been adjusted to account for historic inflation, real wage growth, efficiency gains where appropriate and growth or decline in the number of businesses ensure they are representative of the true costs today.

WorkSafe considers that the information and assumptions from 2012 are still relevant in this context based on their understanding that current practice, industry standards and the risks presented by dangerous goods have not materially changed since then. Further, WorkSafe provided advice to inform the modelling around efficiency improvements that have occurred as a result of technological advancements over the past decade.

Further, as the regulator for workplace health and safety, WorkSafe only records claims and incident data for workplaces. Given the availability of data, compliance costs are only measured for workplaces because measuring the number of non-workplaces storing dangerous goods in regulation level quantities is not possible.

As such, the costs of compliance measured within this RIS do not include property owners who may be subject to compliance activities but are not employers. The cost of compliance with the proposed Regulations may be understated for this reason. Although data is insufficient to produce a point-estimate, WorkSafe advise the number of non-workplaces subject to compliance activities is likely to be very limited given a number of exclusions for non-workplaces set out in Regulation 6(k).²⁸ This supports the appropriateness of the approach taken in this RIS, which focuses on the costs to workplaces.

For further detail on these key assumptions see section 4.3. Per business cost estimates are shown in section 4.4.

Given many of these assumptions and estimates are based on previous data, WorkSafe invites stakeholders to provide feedback that may help inform any subsequent changes to the status quo that may be made in response to the Review. Submissions can be made in response to this RIS via Engage Victoria for a 28-day public comment period.

4.3 Key cost assumptions

4.3.1 Number of affected businesses

Several assumptions around volume, or the number of businesses that will be subject to the proposed Regulations, were made to estimate the economy wide impacts. Only the number of businesses affected by the proposed Regulations are included in the total costs of the regulatory requirement.

WorkSafe reviewed each industry class within the ANZSIC Divisions of ABS data to determine industries affected by Regulation; the business numbers of these industries were categorised into small business (1-19) and large business (20-200+) categories (excluding sole traders). Within the

²⁸ Regulation 6(k) provides exclusions for the storage or handling of dangerous goods at non-workplaces for particular uses or quantity thresholds. Therefore, for the Regulations to apply to a non-workplace a person would need to store, for example, more than; 50L of class 2 goods which includes gases such as butane and propane, 100kg of pool chlorine and spa sanitising agents which are also class 2 goods, or 250L of class 3 goods such as diesel, gasoline or petrol.

affected industries, WorkSafe considered the number of businesses that are expected to attract duties under the Regulations given their status as occupiers, manufacturers, and suppliers of Dangerous Goods. WorkSafe additionally informed assumptions around the proportion of overall businesses that would store 'placard quantities'. Further, historic WorkSafe data informed assumptions as to the percentage of businesses that would be subject to particular requirements such as placarding quantities and manifest quantities. Of those businesses with a regulatory duty, WorkSafe determined the percentage whose compliance is contingent on Regulatory requirements, hence measuring the percentage of activity attributable to the regulations. Costs are only measured for those businesses who are expected to be compliant, see figure 4.2 for an outline of the population of compliant businesses.

Figure 4.2 Population of compliant businesses



Source: Deloitte Access Economics

4.3.2 Growth rates

The model accounts for the growth rate of industry over time to ensure that costs reflect the expansion or contraction of industries subject to Regulation. The net increase in number of businesses and new businesses as a percentage of existing businesses is calculated using ABS data counts of Victorian business who store or handle dangerous goods, including entries and exits in 2020.

Growth rates are based on an average annual growth in business entry and exit over the past 10 years, and also informed by WorkSafe's knowledge of industry growth and shifting trends in dangerous goods manufacturing. Growth rates are broken down by the number of manufacturers, suppliers, and occupiers and by small and large business size.

4.3.3 Wages/opportunity cost of time

The opportunity cost of time taken to fulfil duties and obligations under the Regulations is calculated using the time taken to complete tasks and an estimate of average weekly earnings and hourly wage rate of employees in affected sectors.

For example, the administrative burden on those who must undertake manifest quantity notification, safety training, safety data sheet supply and emergency preparation duties under the

Regulations can be calculated through an assumption of the time it takes to complete the tasks, based on industry consultation conducted by WorkSafe in 2012.

Average weekly earnings and wage rates are calculated based on ABS data of average weekly earnings and number of hours in a working week, for full time adults in 2022, for each group of manufacturers and suppliers.²⁹ To update the 2012 figure, a conservative assumption as to real wage growth over time and an overhead multiplier of 1.75 has been used, based on The Department of Treasury and Finance's *Regulatory Change Measurement Manual*.

4.3.4 Compliance assumptions

Compliance assumptions for small and large businesses were informed by the 2017 OHS RIS.³⁰ Compliance rates for the current Regulations are likely to be higher than those for the OHS Regulations given:

- commercial incentives to avoid the severe risk of harm associated with the unsafe storage and handling of dangerous goods (section 2.4.2, section 3.2.1) are arguably stronger
- businesses may already be compliant with other parts of the regulatory framework (e.g. *Dangerous Goods (Transport by Road or Rail) Regulations 2018*)
- the performance-based nature of the Regulations may be simpler to comply with than some of those in the OHS framework.

Please see Appendix D for specific assumptions made.

4.3.5 Attribution assumptions

The proportion of impact attributable to regulations for compliance activities were informed by data from the 2017 OHS RIS.³¹ These assumptions are considered conservative as the costs associated with the storage and handling of dangerous goods are less likely to be attributable to the Regulations than that for broader OHS activities. This is given the scale of commercial incentives to avoid the severe risk of harm associated with the unsafe storage and handling of dangerous goods, regardless of the Regulations (section 2.4.2, section 3.2.1). Please see Appendix D for specific assumptions made.

WorkSafe welcomes feedback from all stakeholders related to the appropriateness of these assumptions. Submissions can be made in response to this RIS via Engage Victoria for a 28-day public comment period.

4.3.6 Cost efficiency assumptions

Cost efficiency assumptions account for the fact that when undertaking certain activities, businesses may gain efficiencies because they are able to do similar activities to meet a range of obligations as well as leverage technology.³² The cost efficiency assumptions have been informed by previous work undertaken for WorkSafe in relation to the Occupational Health and Safety Regulations in addition to updated advice from WorkSafe.³³ Please see Appendix D for the specific assumptions made.

²⁹ Average weekly earnings relevant to all employees is used rather than managerial earnings as the majority of compliance activities are assumed to be undertaken by an employee below the managerial level.

³⁰ Deloitte Access Economics (2017), Technical Appendix to RIS for proposed Occupational Health and Safety Regulations 2017 and Equipment (Public Safety) Regulations 2017

³¹ Ibid

³² The Productivity Commission released a report in 2020 outlining the capacity for existing technology to increase efficiency in regulatory compliance – Productivity Commission (2020), 'Regulatory Technology'.

³³ Allen Consulting Group for WorkSafe Victoria (2007), 'Regulatory Impact Statement Responding to the proposed occupational health and safety regulations 2007 and Proposed equipment (public safety) regulations 2007 regulatory package', Volume 2: Technical Appendix to the RIS

4.3.7 Discount rate assumptions

As required by the Victorian Guide to Regulation, the impact of regulatory changes over the lifetime of the proposed regulations (10 years) was calculated and discounted to present value (PV) terms based on a four per cent real discount rate.

4.3.8 Baseline number of injuries and fatalities under the status quo

In some cases, injuries and fatalities can eventuate years after an incident involving dangerous goods has occurred. This is due to the progressive nature of some injuries or illnesses that can result from long-term exposure to dangerous goods.

For the purposes of the breakeven analysis, the baseline number of injuries and fatalities that occur each year under the status quo only include those that have been caused by incidents that have occurred during the same period (the lifespan of the current Regulations).

Injuries and fatalities that have occurred during this period but are the result of incidents that occurred prior to 2012 have taken place under previous regulatory settings that differ from the status quo. For this reason, these injuries and fatalities lie outside the scope of this RIS and have been excluded from analysis.

It is assumed that 105 claims would occur each year under the proposed Regulations (the same as the average over the past decade). This is a proxy for the number of injuries and illnesses and is based on claims data provided by WorkSafe. In addition, it is assumed that one fatality would occur each year under the proposed Regulations (the same prevalence as over the past decade). This is based on the fatalities data provided by WorkSafe. A growth factor has not been applied to this baseline due to a lack of evidence to suggest that claims or fatalities would grow over time in the presence of Regulations.

4.4 Analysis of costs

4.4.1 Costs associated with manufacturers and suppliers

Under the proposed Regulations, both manufacturers and suppliers are required to classify dangerous goods as well as prepare and supply SDSs for dangerous goods to customers and occupiers (Appendix B). Retailers must also ensure containers for dangerous goods are fit for purpose, marked with the name of the dangerous good and are not ordinarily used to contain foodstuffs.

The costs associated with the determination and classification of dangerous goods and the container requirements for retailers are not quantified in this RIS as these activities are expected to be undertaken even in the absence of the current Regulations.³⁴ This is in part because these requirements would still apply under the current regulatory framework through the *Dangerous Goods (Transport by Road or Rail) Regulations 2018* and ADG Code.

The compliance costs (both initial and ongoing) to manufacturers and suppliers associated with preparing and supplying SDSs have been estimated for small and large businesses. This has been based on historic WorkSafe data and previous stakeholder consultation. WorkSafe conducted a telephone survey of the sector in 2012 to obtain estimates of these costs. Those estimated costs have been updated to account for inflation. A detailed description of the assumptions used to estimate these costs is included in Appendix D.

The estimated costs to manufacturers and suppliers associated with the proposed Regulations are:

- an average annual cost of \$3.45 million per year, or
- \$28.03 million in present value over the life of the Regulations.

Specifically, the requirements to prepare and supply SDSs under the proposed Regulations are estimated to impose the following costs (summarised in Table 4.1) on manufacturers and suppliers

³⁴ This assumption is based on stakeholder consultation undertaken for the previous RIS. WorkSafe have advised that there has been no material change in business practices to their knowledge since then, and that on this basis this assumption is still appropriate.

of dangerous goods. These costs are driven by the time take to assemble the information required to complete or revise the SDS³⁵ and to supply this SDS to a purchaser as required.³⁶ As such, the costs of preparing and supplying SDSs will vary depending on the frequency of revision and the complexity of the information required. See Appendix D.2 for a detailed breakdown of these calculations.

Table 4.1 Compliance costs for manufacturers and suppliers, by compliance activity

Compliance activity	NPV (\$m)	Annual cost (\$m)
Preparation of SDSs	3.93	0.48
Supply of SDSs	24.10	2.97

Source: Deloitte Access Economics

Table 4.2 summarises the estimated per business attributable costs imposed by the proposed Regulations on manufacturers and suppliers of different sizes. For each compliance activity, there is a proportion of manufacturers and suppliers that would be likely to meet the requirements and incur the per business costs (see Appendix D) even in the absence of regulation. These costs are not included in the total estimate of impact (Table 4.1) as they are not attributable to the proposed Regulations.

Table 4.2 Initial and ongoing costs (attributable) to manufacturers and suppliers per business, by business size

	Initial cost (\$)	Ongoing annual cost (\$)
Small manufacturers or suppliers		
Preparation of SDSs	0	359
Supply of SDSs	0	1,275
Large manufacturers or suppliers		
Preparation of SDSs	0	461
Supply of SDSs	0	3,433

Source: Deloitte Access Economics

4.4.2 Costs associated with occupiers

The proposed Regulations impose costs specific to the storage and handling of dangerous goods largely due to requirements for safety and risk control (Appendix C).³⁷

There are a number of costs incurred by occupiers of premises where dangerous goods are stored and handled. These include hazard identification, consultation, induction and training, creating a register of dangerous goods, purchasing equipment for clean-up, establishing and maintaining fire protection systems, purchasing and maintaining bulk dangerous goods containers, placarding,

³⁵ An SDS is a document that provides health and safety information about dangerous goods to purchasers. An SDS must include the product (its name, ingredients and properties), who manufactured or imported the product, how the product can affect one’s health and how to use and store it safely.

³⁶ A SDS must be supplied to a purchaser on the first supply of a dangerous good or on the first occasion of supply after each revision to the SDS.

³⁷ To control risk, occupiers must eliminate the risk associated with the use of the dangerous goods or reduce the risk by substitution of less dangerous goods, reducing the quantity of dangerous goods stored or handled, isolation of the dangerous goods from persons, use of engineering controls, use of administrative controls and use of PPE.

administering manifest notifications, administering the emergency plan for manifest quantities, and emergency services advice for fire protection.

These costs have been estimated for small and large businesses in terms of both initial and ongoing costs, based on historic WorkSafe data and previous stakeholder consultation. The costs have been updated to account for inflation. See Appendix D for further information on how each of these individual cost estimates are calculated.

The estimated costs to occupiers associated with the proposed Regulations are:

- an average annual cost of \$8.18 million per year, or
- \$66.76 million in present value over the life of the Regulations.

Table 4.3 provides a breakdown of these costs by each compliance activity.

Table 4.3: Compliance costs for occupiers, by compliance activity

Compliance Activity	NPV (\$m)	Annual cost (\$m)
Hazard identification	1.90	0.23
Control of risk – small quantities ³⁸	5.70	0.7
Control of risk – large quantities	42.25	5.17
Consultation, induction and training	11.39	1.40
Register of dangerous goods	0.22	0.03
Equipment for clean-up	1.43	0.18
Fire protection system – small quantities ³⁹	0.51	0.63
Fire protection system – large quantities	0.18	0.02
Placarding	1.69	0.21
Manifest notification	1.45	0.18
Emergency plan for manifest quantities	0.44	0.01

Note: Whilst duty holders have obligations in relation to bulk dangerous goods containers and emergency services advice for fire protection, these have been excluded from this summary table as previous consultation data indicated 100 per cent of relevant businesses would meet their requirements even in the absence of regulation, hence no attributable cost is incurred. As discussed in 4.2, WorkSafe invites stakeholder feedback related to the appropriateness of these cost estimates.

Table 4.4 summarises the estimated per business attributable costs imposed by the proposed Regulations on occupiers of different sizes. For each compliance activity, there is a proportion of occupiers that would be likely to meet the requirements and incur the per business costs (see

³⁸ Due to control of risk obligations being performance based and dependent on quantity and type of dangerous good stored, it is difficult to quantify the cost. It is also the case that there are small occupiers (such as petrol stations) who hold large quantities of dangerous goods and vice versa. As a result, cost estimates have been split into both small and large occupiers and those that store small and large quantities for the purpose of modelling these differences. Note, large quantities are defined for the purposes of modelling as those which incur higher costs to the duty holder in relation to control of risk and fire protection system obligations, and are not equivalent to manifest, placard or bulk quantities that are defined through the proposed Regulations.

³⁹ Due to fire protection system obligations being dependent on quantity and type of dangerous good stored, it is difficult to quantify the cost. It is also the case that occupiers who greatly exceed the fire protection quantities will incur different costs compared to those who slightly exceed the threshold. As a result, cost estimates have been split into both small and large occupiers and those that store small and large quantities for the purpose of modelling these differences. Note, large quantities are defined for the purposes of modelling as those which incur higher costs to the duty holder in relation to control of risk and fire protection system obligations, and are not equivalent to manifest, placard or bulk quantities that are defined through the proposed Regulations.

Appendix D) even in the absence of regulation. These costs are not included in the total estimate of impact (Table 4.1) as they are not attributable to the proposed Regulations.

Table 4.4: Initial and ongoing costs (attributable) to occupiers per business, by business size

	Initial cost (\$)	Ongoing cost (\$)
Small occupiers		
Hazard identification	11	37
Control of risk – small quantities	554	172
Control of risk – large quantities	13,838	1,268
Consultation, induction and training ⁴⁰	-	233
Register of dangerous goods	25	6
Equipment for clean-up	123	36
Fire protection system – small quantities	25	6
Fire protection system – large quantities	224	6
Placarding	53	6
Manifest notification ⁴¹	-	2,298
Emergency plan for manifest quantities	49	7
Large occupiers		
Hazard identification	30	726
Control of risk – small quantities	1,38	1,268
Control of risk – large quantities	89,039	13,838
Consultation, induction and training ⁴²	-	6,286
Register of dangerous goods	123	30
Equipment for clean-up	738	219
Fire protection system – small quantities	77	304
Fire protection system – large quantities	3,075	304
Placarding	344	829
Manifest notification ⁴³	-	3,930
Emergency plan for manifest quantities	49	38

Note: Whilst duty holders have obligations in relation to bulk dangerous goods containers and emergency services advice for fire protection, these have been excluded from this summary table as previous consultation data indicated 100 per cent of relevant businesses would meet their requirements even in the absence of regulation, hence no attributable cost is incurred. As discussed in 4.2, WorkSafe invites stakeholder feedback related to the appropriateness of these cost estimates.

⁴⁰ There is no initial cost associated with consultation, induction and training as the costs reflect time spent training/inducting new employees on an ongoing basis as they are hired as well as other recurring costs such as record keeping.

⁴¹ Initial costs would be incurred where a new business must notify WorkSafe for the first time, however as this initial requirement is no different to the ongoing notification requirements, they have been included in the model via the ongoing costs.

⁴² There is no initial cost associated with consultation, induction and training as the costs reflect time spent training/inducting new employees on an ongoing basis as they are hired as well as other recurring costs such as record keeping.

⁴³ As above.

4.4.3 Estimates of the total cost to businesses

Combining the estimates of costs across manufacturers and suppliers with that of occupiers yields the expected economy wide impact associated with the proposed Regulations. This annual cost is expected to be around \$11.64 million per year on average with an NPV over the lifetime of the proposed Regulations of approximately \$94.78 million.

4.4.4 Costs to government

As the regulator for workplace health and safety in Victoria, WorkSafe has an obligation under the DG Act and supporting framework to mitigate the risk of harm posed by dangerous goods. Under the status quo, WorkSafe meets this obligation by monitoring and enforcing the requirements set under the current Regulations for safely storing and handling dangerous goods.

This is a preventative approach which aims to avoid large-scale and potentially catastrophic incidents involving dangerous goods. The current Regulations provide an appropriate mechanism to manage and avert these risks for the reasons discussed in section 2.4. In particular, this RIS has established that, in the absence of the current Regulations, the broader OHS framework does not go far enough to address the serious and specific risks posed by the unsafe storage and handling of dangerous goods.

Under the base case, where the current Regulations expire and are not remade, WorkSafe would still be obligated to mitigate the risk of harm associated with dangerous goods under the DG Act. However, WorkSafe would need to rely on businesses following general duties and obligations under the OHS Act and DG Act to operate safely. WorkSafe's monitoring and response to risks and issues involving dangerous goods would be limited to other general, and less appropriate tools to address specific risks associated with poor storage and handling. Monitoring, inspection and enforcement activities would be at least as intensive as current activities, and would likely require greater activity in the absence of proactive notification duties and other obligations imposed under the current Regulations. For this reason, WorkSafe estimate that the ongoing costs to government, in terms of time and effort spent, would be at least as great under the base case.

Further, as the proposed Regulations maintain the status quo there are unlikely to be any material costs associated with initial implementation.

Therefore, no costs to government associated with the proposed Regulations have been quantified in this analysis.

4.5 Break-even analysis

As mentioned above, a break-even approach to analysing benefits has been adopted. This involves identifying the level of benefits which would be required to exceed costs, and then ascertaining whether these benefits have a reasonable likelihood of being achieved.

The break-even analysis assesses the benefits to society from improved health and safety outcomes for those who store and handle dangerous goods. These benefits are estimated in comparison to the base case. Here, the base case assumes that the current Regulations sunset and are not remade.

Therefore, the primary benefits of the proposed Regulations will be a reduction in harms to people who store and handle dangerous good. These benefits will be considered in the form of avoided injuries or illness or, alternatively, the number of lives saved.

4.5.1 Avoided injuries and illnesses

Due to the difficulty of quantifying the broader range of benefits from the proposed Regulations, data on the value of WorkSafe claims for injuries and illnesses involving dangerous goods can also be used as a proxy for the benefits of avoiding an injury or illness involving dangerous goods. This is considered appropriate as the value of a claim is an actuarially determined sum which aims to compensate injured employees for the degree of harm sustained as a result of their work. For this reason, the value of a claim is assumed to be representative of the total harm associated with the

workplace injury or incident and therefore, a reasonable proxy for the benefit of avoiding that harm. This RIS therefore uses those claims values rather than alternative methods for valuing injury or illness to consider the potential benefits of the proposed Regulations.⁴⁴

As outlined in Chapter 3, the proposed Regulations will maintain the status quo by remaking the current Regulations with only very minor amendments. Therefore, the proposed Regulations will continue to provide a performance-based obligations framework for managing the specific and serious risk posed by the storage and handling of dangerous goods. The benefit of the proposed Regulations is therefore measured in relation to the number of claims avoided.

WorkSafe claims data indicates that, on average over the past decade, the value of a single claim involving dangerous goods is approximately \$41,000. This is an average across all claims (involving single contact, long-term contact and unspecified contact with dangerous goods as well as explosions) to account for the fact that the nature of the injury will give rise to different payments.

Given the annual average costs of the proposed Regulations of up to \$11.64 million, the benefits will likely outweigh the costs if an additional 284 claims are avoided per year (approximately). This is in addition to the approximate 105 claims that currently occur each year (on average).⁴⁵ In other words, if the current Regulations are to expire, it is feasible that there could be 389 claims for injuries or illnesses caused by dangerous goods each year.

4.5.1.1 Unquantified benefits

It is important to note that the value of WorkSafe claims only represents a sub-set of the avoided harms and thus provides a conservative estimate of benefits. Therefore, even under the assumption that the value of a claim is equivalent to the harm sustained, the break-even point is likely to underestimate the range of feasible benefits or avoided harms.

The broader set of avoided harms may include (but is not limited to):

- the shortening of life
- pain and suffering to affected workers, their families and carers
- impact on ability to participate in normal activities of life, for example physical activities
- costs of retraining.

Further, as with costs, this method may understate benefits as it does not account for the avoided injuries and illnesses which occur in non-workplaces or involve members of the general public (third parties to incidents involving the unsafe storage and handling dangerous goods). However, given the availability of data, quantifying the number of non-workplaces or members of the general public who may be impacted by the Regulations is not possible.

4.5.2 Avoided fatalities

Alternatively, the number of fatalities avoided (or number of lives saved) can also be used as a proxy for benefits. Given the current net present value of a statistical life of around \$6 million⁴⁶ and the annual average cost of the proposed Regulations of up to \$11.64 million, the proposed Regulations would “break-even” and yield a net social benefit provided they reduce the number of deaths due to incidents involving dangerous goods by at least two per year. This is relative to the

⁴⁴ Other methods may include Quality Adjusted Life Years (QALYs) Disability Adjusted Life Years (DALYs), Years of Life Lost (YLLs) or Years Lived with a Disability (YLDs).

⁴⁵ According to data provided from WorkSafe in relation to claims, there have been approximately 105 injuries or illnesses per year caused by contact with dangerous goods.

⁴⁶ 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 by the Australian Safety and Compensation Council of VSL estimates, including Abelson (2007), which forms the basis for the Commonwealth’s Office of Best Practice Regulation guidance note on VSL.

average number of fatalities that have occurred annually during the lifespan of the current Regulations.⁴⁷

4.5.3 Likelihood of breaking-even

It is difficult to accurately estimate the counterfactual scale of the problem that would prevail in the absence of regulation, but it would be expected that the frequency and severity of these dangerous incidents would increase for the reasons outlined in Section 2.4.

Here, although there is an incentive for duty holders to self-impose safety measures, it is feasible that if the current Regulations were to sunset and not to be remade (the base case) there would be an additional 284 injuries or illnesses or, alternatively, an additional two lives lost as a result of unsafe storage and handling of dangerous goods. This is given:

- it is estimated that up to 658,000 Victorian employees a year may be at risk of harm if dangerous goods are not handled or stored safely. It is therefore feasible that an additional 1 in 2,300 at risk employees could suffer an injury or illness in the absence of regulations. This reflects the number of employees within the at-risk population (658,000) divided by the annual number of additional injuries or illnesses required to break-even (284).
- the risk of severe harm associated with dangerous goods combined with the scale of the at-risk population suggests that it is also feasible that approximately 1 in 330,000 at risk employees could lose their life in the absence of regulations. This reflects the number of employees within the at-risk population (658,000) divided by the annual number of additional avoided fatalities required to break-even (2).
- this does not account for the potential avoided harm that incidents involving dangerous goods can cause to society at large.

Notwithstanding that it is likely for the proposed Regulations to, at least, break-even in terms of either injuries or fatalities, the purpose of the proposed Regulations is also to mitigate the risk of significant and severe incidents involving dangerous goods. As the likelihood and scale of such incidents are difficult to estimate, these benefits have not been quantified. However, WorkSafe consider the benefits of preventing high consequence events involving dangerous goods to be substantial and fundamental to the need for regulation.

⁴⁷ Data on fatalities sourced from WorkSafe Victoria. Over the past decade, during the lifespan of the current regulations, there have been approximately one death per year, on average, caused by incidents that have occurred over the same time period. This estimate may underestimate the number of fatalities which occur in the presence of regulation as it does not include fatalities that are yet to occur as a result from incidents in the past decade.

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 duty holder. For the proposed Regulations these effects are not likely to be widespread or significant. The proposed Regulations maintain the status quo of the current regulations therefore the impact on small business is unlikely to change relative to the current Regulations. Additionally, much of the cost imposed by the proposed Regulations would be incurred by businesses regardless of the proposed Regulations, because many businesses are already required to properly store and handle dangerous goods, under their broader obligations under the DG Act, and because the safety of employees and capital is beneficial to the long-term prosperity of business (it is assumed that 80 per cent of activity is likely to occur even in the absence of regulation).

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. Submissions can be made in response to this RIS via Engage Victoria for a 28-day public comment period.

An analysis of small business and competition impacts is provided in the following table. In summary, renewal of the Regulations (with only minor changes) are anticipated to have a continued impact on small businesses in some instances. Renewal of the Regulations 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 serious impacts these dangerous goods can impose.

Proposed regulations	Impact on small business	Impact on competition
Manufacturer and supplier duties	<p>Manufacturers and suppliers of dangerous goods are subject to the same safety duties regardless of business size. As such, the fixed costs associated with minimum standards of compliance and preparing SDSs are less able to be spread across a broader customer base, which may disproportionately impact smaller manufactures and suppliers.</p> <p>However, for the most part small businesses hold less quantities of dangerous goods compared to large businesses. The smaller quantity means less time is required to determine if goods are dangerous, classify, pack, mark and label dangerous goods, and prepare and provide SDSs. The smaller quantity means less labels and packing tools are required to be purchased, and less resources are required to carry out processes associated with labelling and packing.</p> <p>The impact on small business is therefore proportional to the size of the business, and the amount of dangerous goods they store and handle and is of no greater burden than the existing regulations as the proposed regulations maintain the status quo.</p>	<p>The requirement to abide by classification, labelling and other safety regulations is not likely to deter businesses from market entry given the overall cost is relative to the quantity of dangerous goods stored. Further, all businesses are held to the same standards and requirements and therefore, the regulations should not have an adverse impact on competition. Moreover, some of the obligations also exist under the ADG Code and as such any impact on competition resulting from such obligations would not be attributable to the proposed Regulations.</p> <p>Additionally, the duties related to the manufacturing of dangerous goods are not likely to have a material impact on the decision for businesses to enter the market because there is a significant incentive for duty holders to implement many of these measures even in absence of regulation. 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. The majority of attributable costs are ongoing in nature and will therefore also be incurred by incumbent businesses.</p>
Occupier duties	<p>Small businesses who fall under occupier duties for dangerous goods are subject to a range of safety obligations such as training, supervising, registering goods, identifying hazards, planning for emergencies, placarding, and notifying WorkSafe if storing dangerous goods in excess of the Manifest Quantity.</p> <p>Obligations relevant to the storage of dangerous goods are unlikely to have a materially disproportionate impact on smaller businesses. This is because 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. As with manufacturers and suppliers, occupiers who store and handle less dangerous goods are subject to less cost.</p>	<p>As above, a large proportion of the costs associated with the storage and handling of dangerous goods would be incurred by businesses regardless of the proposed Regulations and as such the proposed Regulations would be unlikely to impact entry decisions.</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 report 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 (Storage and Handling) Regulations.

6.1.1.2 Summary of implementation tasks

The specific activities to be undertaken by WorkSafe, along with the timing, are summarised below (Table 6.1).

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, and they will continue to be enforced by WorkSafe inspectors consistent with current arrangements.

Table 6.1 Summary of WorkSafe implementation activities

#	What needs to change to implement the legislative change?	Change process: People, Process, guidance or Technology	Required change actions or deliverables
1	New regulation title and/or section references	Guidance (external)	Review all external facing guidance materials (including the Code of Practice) that reference the existing DG regulations and replace reference with new title (and/or section references, where required)
2	New regulation title and/or section references	Process (internal guidance, information forms)	Review all internal facing guidance materials, policies and/or procedures that reference the existing DG regulations and replace reference with new title (and/or section references, where required)
3	Forms, templates and webtext and portal and licensing stock/cards (myWorkSafe)	Process	Review existing web content and/or forms / templates to ensure its currency (incl. referencing correct title of new regulations), this includes any online notification forms and/or templates
4	Standard Phrases and standard letters (CRM/Fieldlink)	Technology	Review standard phrases to update reference to regulation title and/or section reference (where necessary)
5	Team Talk Notes	Process	Draft for inspectorate, Advisory, enforcement and internal review (investigations and prosecutions)
6	Field Manual	Process	Review and update to any reference in Field Manual, ensuring correct reference of DG Regulation title
7	Duty holder and stakeholder communications at making and commencement	Process	Development and delivery of internal and external duty holder / stakeholder communications at making and commencement of regulations
8	Training and education (inspectorate and enforcement)	Process	Confirm whether any changes or updates are required to OHS inspectorate training and education materials (for future sessions)
9	Internal Review Unit	Process	Confirm whether any materials from IRU are impacted by change to regulation title
10	Delegations and authorisations	Process	Development and issuing of necessary delegations and authorisations.

Source: WorkSafe Victoria

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. Noting that the changes to the Regulations will be very minor, 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 remade Regulations

Additionally, WorkSafe intend to release social media posts, make updates to the WorkSafe website, Electronic Direct Mail 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 dangerous goods, WorkSafe has a suite of existing guidance materials that support stakeholders to safely interact with dangerous goods. 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 dangerous goods includes:

- Information on WorkSafe's website landing pages
- Advice and guidance papers on WorkSafe's website on how to identify, label, record, placard and generally manage the risks associated with storing and handling dangerous goods
- Contact details necessary for notification mandate, and for emergency preparedness

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.

Enforcement and compliance-activities will continue to include:

- educating stakeholders around the requirements inherent in the proposed Regulations
- investigating information to identify non-compliance
- monitoring occurrences of hazardous incidents for any significant increase

6.2 Evaluation Strategy

Given the context of the broader review of the Dangerous Goods legislative framework, the evaluation of the 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 for the remade Regulations at this time. Consideration to a suitable and comprehensive evaluation strategy will be given if the dangerous goods 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 6.2.

Table 6.2 Evaluation framework

Indicator	Method of evaluation
To what extent do the duty holders understand their obligations and how they may comply with the regulations	<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>
Number of incidents reported	<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>
Compliance and enforcement	<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 ADG Code Classification of dangerous goods

Table A.1 ADG Code Classification of dangerous goods, by class and division

Class	Division
Class 1: Explosives	Division 1.1: Substances and articles which have a mass explosion hazard
	Division 1.2: Substances and articles which have a projection hazard but not a mass explosion hazard
	Division 1.3: Substances and articles which have a fire hazard and either a minor blast hazard or a minor projection hazard or both, but not a mass explosion hazard
	Division 1.4: Substances and articles which present no significant hazard
	Division 1.5: Very insensitive substances which have a mass explosion hazard
	Division 1.6: Extremely insensitive articles which do not have a mass explosion hazard
Class 2: Gases	Division 2.1: Flammable gases
	Division 2.2: Non-flammable, non-toxic gases
	Division 2.3: Toxic gases
Class 3: Flammable liquids	
Class 4: Flammable solids	Division 4.1: Flammable solids, self-reactive substances solid desensitised explosives and polymerizing substances
	Division 4.2: Substances liable to spontaneous combustion
	Division 4.3: Substance which in contact with water emit flammable gases
Class 5: Oxidising substances and organic peroxides	Division 5.1: Oxidising substances
	Division 5.2: Organic peroxides
Class 6: Toxic and infectious substances	Division 6.1: Toxic substances
	Division 6.2: Infectious substances
Class 7: Radioactive material	
Class 8: Corrosive substances	
Class 9: Miscellaneous dangerous and article, including environmentally hazardous substances	

Source: National Transport Commission, *Australian Code for the Transport of Dangerous Goods by Road & Rail, Edition 7.7* (2020)

Appendix B Duties of manufacturers and suppliers

Table B.1 Summary of manufacturers and suppliers obligations

Duty	Section of Regulations	Summary of obligation
Determination of dangerous goods	Section 13(1)	Requires that “a manufacturer or first supplier of goods, who suspects or has reasonable grounds for suspecting that the goods are dangerous goods, must determine whether or not the goods are dangerous goods as soon as possible” or in the case of a manufacturer, before handling the goods or supplying them to any person or in the case of a first supplier, before supplying the goods to any person.
Classification of dangerous goods	Section 13(2)	<p>In determining whether goods are dangerous goods, the manufacturer or first supplier must ensure that the goods are assigned either:</p> <ul style="list-style-type: none"> • the appropriate class, subsidiary risk and packaging group in accordance with the Dangerous Goods (Transport by Road or Rail) Regulations 2018 (which use the ADG Code classification system) or corresponding legislation, or • a hazard class according to the Globally Harmonized System of Classification and Labelling of Chemicals (GHS).
Packing, marking and labelling of dangerous goods	Section 14 Section 15	<p>Requires that manufacturers and first suppliers, before supplying the dangerous goods to any person, ensure that the condition of the dangerous goods and the packaging of the dangerous goods complies with the <i>Dangerous Goods (Transport by Road or Rail) Regulations 2018</i>.</p> <p>The package marking of the dangerous goods must also comply with the <i>Dangerous Goods (Transport by Road or Rail) Regulations 2018</i>.</p>

Duty	Section of Regulations	Summary of obligation
Preparation and provision of safety data sheets	Section 18 Section 19 Section 20 Section 21 Section 22 Section 23	<p>Provisions which mandate that manufacturers and suppliers prepare and provide a safety data sheet (SDS).</p> <p>Preparation of SDSs SDSs must be prepared for all dangerous goods covered under the Regulations except for C1 combustible liquids.⁴⁸ There is also an exemption for those in transit or stored and handled at a retail outlet in consumer packages that remain sealed and unopened until sold.</p> <p>For dangerous goods that may be unstable, except under controlled storage conditions and/or when made up of a particular chemical composition, the SDS should also provide details of those conditions and/or specify the recommended proportion and safe limits for each chemical making up the dangerous goods.</p> <p>The Regulations also specify the information to be included on a SDS as well as that each SDS is to be reviewed as often as necessary to ensure the information in it remains accurate and current.</p> <p>Provision of SDSs Manufacturers and suppliers must provide the safety data sheet on or before the first occasion that the dangerous goods are supplied to any:</p> <ul style="list-style-type: none"> • person to whom the dangerous goods are supplied for use, and • occupier of premises where those dangerous goods are store and handled. <p>If the SDS is revised, a copy must be provided to the user when the dangerous goods are next supplied. There is no requirement to send a copy of the revised SDS to all previous purchasers of the dangerous goods.</p>
Prohibition on supply	Section 16 Section 17	<p>A manufacturer or supplier must not supply dangerous goods if they suspect, or have reasonable grounds for suspecting, the:</p> <ul style="list-style-type: none"> • condition of the dangerous goods or the packages of the dangerous goods do not comply with the packaging requirements • package marking or labelling for the dangerous goods do not comply with the marking and labelling requirements, or • Container the dangerous goods are to be supplied in is leaking or likely to leak.

⁴⁸ Under the OHS Regulations duty holders need to prepare a SDS for C1 combustible liquids that are 'hazardous substances'.

Appendix C Duties of occupiers

Table C.1 Summary of occupier obligations

Duty	Section of Regulations	Summary of obligation
Consultation	Section 24	<p>Occupiers must, so far as reasonably practicable, consult with persons engaged by the occupier to work at the premises whose health or safety is likely to be affected by the dangerous goods and with their HSRs (if any) regarding:</p> <ul style="list-style-type: none"> • Hazard identification and risk control • Induction, information provision and training • Any proposed alterations to structures, plant, processes or systems of work likely to increase the risk to those workers.
Induction, information, training and supervision	Section 25 Section 31	<p>Occupiers must ensure that all persons involved with the storage and handling of dangerous goods at their premises, and any health and safety representative of that person, are provided with induction, information, training and supervision. This must be:</p> <ul style="list-style-type: none"> • in a language or manner appropriate to the person; and • relevant to the tasks undertaken by the person and the risk associated with those tasks. <p>The induction, information and training provide must include instruction on the:</p> <ul style="list-style-type: none"> • nature of the hazards and properties of the dangerous goods and the processes used for the identification and control of the risks associated with the person’s tasks • the purpose, use and maintenance of the measures for the control of those risks • the systems of work and the conduct of the persons at the premises in so far as the systems of work and conduct of persons may affect storage and handling of dangerous goods • the operation of the emergency plan for the premises and any procedures and equipment that may be required for use in the event of an emergency • the proper use and fitting of personal protective equipment <p>Occupiers must also ensure visitors to the premises are provided with sufficient information, safety instructions and supervision to ensure that any risk to them or other persons on the premises, which is associated with the storage and</p>

Duty	Section of Regulations	Summary of obligation
		handling of dangerous goods, is reduced so far as is reasonably practicable.
Obtaining safety data sheets	Section 56	An occupier must obtain the current safety data sheet for dangerous goods stored and handled at their premises on or before the first time the dangerous goods are supplied to the premises. There is also an exemption for dangerous goods in transit or stored and handled at a retail outlet in consumer packages that remain sealed and unopened until sold.
Register	Section 60	<p>Occupiers must ensure that:</p> <ul style="list-style-type: none"> • a register is kept and maintained for the dangerous goods stored and handled • the register contains a list of all dangerous goods stored and handled at the premises and, if required, a SDS for each of the dangerous goods • the register is readily accessible to any person engaged by the occupier to work at the premises and any other person who is likely to be affected by the dangerous goods on the premises.
Marking	Section 57-59	<p>Packaging</p> <p>If occupiers receive a package of dangerous goods, during the period that the dangerous goods remain in the pack, occupiers must ensure the package marking remains in a legible form and is not removed, defaced or altered.</p> <p>If the dangerous goods are removed from the package and the original package marking remains, occupiers must ensure the container forming part of the package is not used to contain dangerous goods other than dangerous goods of the type that was on the package when it was first received.</p> <p>Transfer containers</p> <p>If dangerous goods are transferred into a portable container for use at the premises, occupiers must ensure:</p> <ul style="list-style-type: none"> • the container into which the dangerous goods are transferred is clearly labelled with the class, subsidiary risk and product name of the dangerous goods, or • if this is not possible, another means of clearly identifying the dangerous goods is used. <p>This requirement does not apply if the dangerous goods transferred are to be used immediately and the portable container is cleared in accordance with section 39 of the Regulations.</p> <p>Pipework</p> <p>Occupiers must ensure that pipework containing dangerous goods is marked to ensure, so far as is reasonably practicable, the dangerous goods are clearly identifiable by works at the premises.</p>

Duty	Section of Regulations	Summary of obligation
Hazard identification	Section 26	<p>Occupiers must identify any hazard associated with the storage and handling of dangerous goods at their premises, having regard to what they know or ought to reasonably know about the hazard.</p> <p>When identifying hazards, occupiers must have regard to the following factors:</p> <ul style="list-style-type: none"> • hazardous properties inherent to the dangerous goods, including a SDS for the dangerous goods available to the occupier, • chemical and physical properties of the dangerous goods, including physical state, viscosity, vapour pressure, chemical energy, particle size, solubility, electrical conductivity, reactivity, combustion products and concentration • manufacturing and transport processes at the premises involving the dangerous goods, including the temperatures and pressures to which the goods are subjected, physical processes such as separation, mixing, absorption and changes of state and processes involving chemical reaction • structures, plant, systems of work and activities used in the storage and handling of dangerous goods at the premises • physical location and arrangement of areas, structures and plant used for the storage and handling of dangerous goods at the premises • structures, plant, systems of work and activities not used in the storage and handling of dangerous goods at the premises but that could interact with the dangerous goods • the chemical and physical reaction between dangerous goods and other substances and articles the dangerous goods may come into contact with at the premises • types and characteristics of incidents associated with dangerous goods.
General risk control duties	Section 27 Section 30	<p>Controlling risk at premises</p> <p>Occupiers have a general duty to ensure any risk associated with the storage and handling of dangerous goods at their premises is eliminated or, if it is not reasonably practicable to eliminate the risk, is reduced so far as reasonably practicable. To do so, the occupier must consider eliminating or reducing the risk associated with the storage and handling of dangerous goods by:</p> <ul style="list-style-type: none"> • substituting other goods, or other dangerous goods, that have a lower risk associated with their storage and handling • reducing the quantity of dangerous goods stored or handled. <p>Controlling risk to workers</p> <p>Occupiers must not rely solely on administrative controls or personal protective equipment to eliminate or reduce risk to persons engaged by the occupier to work at the premises, unless it is not reasonably practicable to</p> <ul style="list-style-type: none"> • eliminate the use of dangerous goods or the risk associated with the use of dangerous goods • reduce the risk associated with the use of dangerous goods by:

Duty	Section of Regulations	Summary of obligation
		<ul style="list-style-type: none"> - the substitution of other dangerous goods that have a lower risk associated with their storage and handling - the use of engineering controls - isolation of the dangerous goods from persons <p>Reviewing and revising risk controls</p> <p>Occupiers must ensure any risk control measures implemented at their premises are reviewed and if necessary revised:</p> <ul style="list-style-type: none"> • before any alternation is made to a process or system of work that is likely to result in changes to risk associated with storage and handling of dangerous goods • following an incident • if for any other reason the risk control measures do not adequately control the risks.
Specific risk control duties	Sections 32-44 Section 52	<p>Occupiers are also subject to a number of specific duties regarding risks associated with particular aspects of the storage and handling operations such as:</p> <ul style="list-style-type: none"> • stability of dangerous goods • isolation of dangerous goods from persons and property off the premises • interaction with other substances, plant and processes • condition and repair of plant and structures • containers for bulk dangerous goods • clearing decommissioned receptacles • protection from impact • spill containment • transfer of dangerous goods • ignition sources and hazardous areas • ventilation and atmospheric emissions • security.
Designing out risk	Section 29	<p>Occupiers must not use new premises, or new plant, processes or systems of work at a premise, for the storage and handling of dangerous goods unless the occupier has first ensured these have been designed to eliminate risk.</p> <p>Premises, plan, process and systems of work are new if:</p> <ul style="list-style-type: none"> • they have not previously been used for the storage and handling of dangerous goods, or • they have been previously used for the storage and handling of dangerous goods, but they will be changed in a way

Duty	Section of Regulations	Summary of obligation
		that ought reasonably be expected to create a new or different hazard or risk associated with that use.
Fire protection	Section 53-54	<p>Occupiers must ensure that there is a fire protection system for their premises that:</p> <ul style="list-style-type: none"> • is designed and constructed for the types and quantities of dangerous goods at their premises and the conditions under which these are stored and handled, and • uses firefighting media which is compatible with the dangerous goods at their premises and effective in controlling incidents involving these dangerous goods. <p>Occupiers are also required to ensure the fire protection system for their premises is:</p> <ul style="list-style-type: none"> • properly installed, tested and maintained • at all times accessible to persons on the premises and to the emergency services authority • capable of being used without adaptation or modification with the equipment used by the emergency services authority.
Emergency preparation and response	Section 55 Sections 62-64	<p>Emergency plans</p> <p>If the quantity of dangerous goods stored or handled at the premises exceeds the 'Manifest Quantity' in Schedule 2 of the Regulations, occupiers must develop, implement and maintain a written emergency plan which reduces the risk associated with an emergency, so far as is reasonably practicable.</p> <p>Responding to an emergency</p> <p>Occupiers are required to respond immediately to emergencies at their premises, investigate incidents and review and revise risk controls taking into account the results of investigations. Occupiers may also report the incident to the emergency services authority who can assist them in controlling the risks associated with the incident.</p>
Manifest	Sections 45-46	<p>Occupiers must ensure a manifest is prepared if the quantity of dangerous goods stored or handled at the premises exceeds the 'Manifest Quantity' in Schedule 2 of the Regulations.</p> <p>An occupier must ensure that the manifest is kept on the premises in a place where it is readily accessible to the emergency services authority.</p>
Placards	Section 47-51	<p>Occupiers must display 'HAZCHEM' outer warning placards at their premises, if the quantities of dangerous goods stored and handle at the premises exceed the "Placarding Quantity" in Schedule 2 of the Regulations. This requirement does not apply if the premises are a retail outlet, and the dangerous goods are a flammable gas or liquid used to refuel a vehicle.</p>

Duty	Section of Regulations	Summary of obligation
Notification	Section 66, 66A	<p>If occupiers store and handle dangerous goods in excess of the 'Manifest Quantity' in Schedule 2 of the Regulations and are not an operator of a major hazard facility licensed or registered under the OHS Regulations, occupiers must ensure WorkSafe is notified of the presence of those goods and further notification following periodic timeframes or certain changes in circumstances.</p> <p>This notification must contain:</p> <ul style="list-style-type: none">• the name of the occupier• the physical address of the premises where the dangerous goods are stored and handled• the occupiers contact details• the nature of the principal activities involving the dangerous goods• the class and the maximum quantity of the dangerous goods sorted and handled in bulk or as packaged dangerous goods• descriptions and details of the maximum quantity of any C1 combustible liquids stored and handled in bulk or as packaged dangerous goods• the product name and maximum quantity of goods too dangerous to be transported.

Appendix D Technical appendix

D.1. General detailed assumptions

D.1.1. Business growth rates

Table D.1 indicates net growth in the number of businesses in each duty holder category (manufacturing, supplying, occupying) for both small and large businesses. The growth is calculated by average industry entry and exit rates over the past ten years and converted into a percentage per annum.

Table D.1 Net growth in the number of businesses, % p.a.

Duty and business size	% p.a.
Manufacturers	
Small business	-0.03%
Large business	-0.46%
Occupiers	
Small business	0.05%
Large business	-2.42%

Source: Deloitte Access Economics based on Australian Bureau of Statistics, Count of Australian Business, including entries and exits, (June 2010 to June 2020), 2012 RIS

Table D.2 sets out new businesses as a percentage of existing businesses into the model, broken down into duty holder category for both small and large businesses as a percentage per annum (the average is taken from the past 10 years). This is intended to account for potential growth or shrinkage of different industries, which may affect the number of businesses impacted by the Regulations.

Table D.2 New businesses as a percentage of existing businesses

Duty and business size	% p.a.
Manufacturers	
Small business	1%
Large business	0%
Duty and business size	
Occupiers	
Small business	9%
Large business	1%

Source: Deloitte Access Economics based on Australian Bureau of Statistics, Count of Australian Business, including entries and exits (2020)

D.1.2. Wage rates

Table D.3 indicates the wage rates for different duty holder categories, taking the average weekly earnings and hourly wage rate of full-time workers from ABS data for affected industries. The table includes the on-cost and overhead multiplier of 1.75 as recommended in Appendix D of the Department of Treasury and Finance’s *Regulatory Change Measurement Manual*. This value represents the opportunity cost to the business of the employee/owner’s labour.

Table D.3 Wage and additional cost assumptions

Average weekly earnings	
Manufacturers	\$1,608.80
Overall	\$1,737.10
Additional costs	
On-costs	
Overheads	1.75
Hourly wage rate	
Chemical manufacturers/suppliers	\$68.67
Overall - all industries	\$74.14

Source: Deloitte Access Economics, ABS wage rate data, Victorian Guide to Regulation

D.1.3. Volume assumptions

Figure D.1 Definitions for quantities of Dangerous Goods

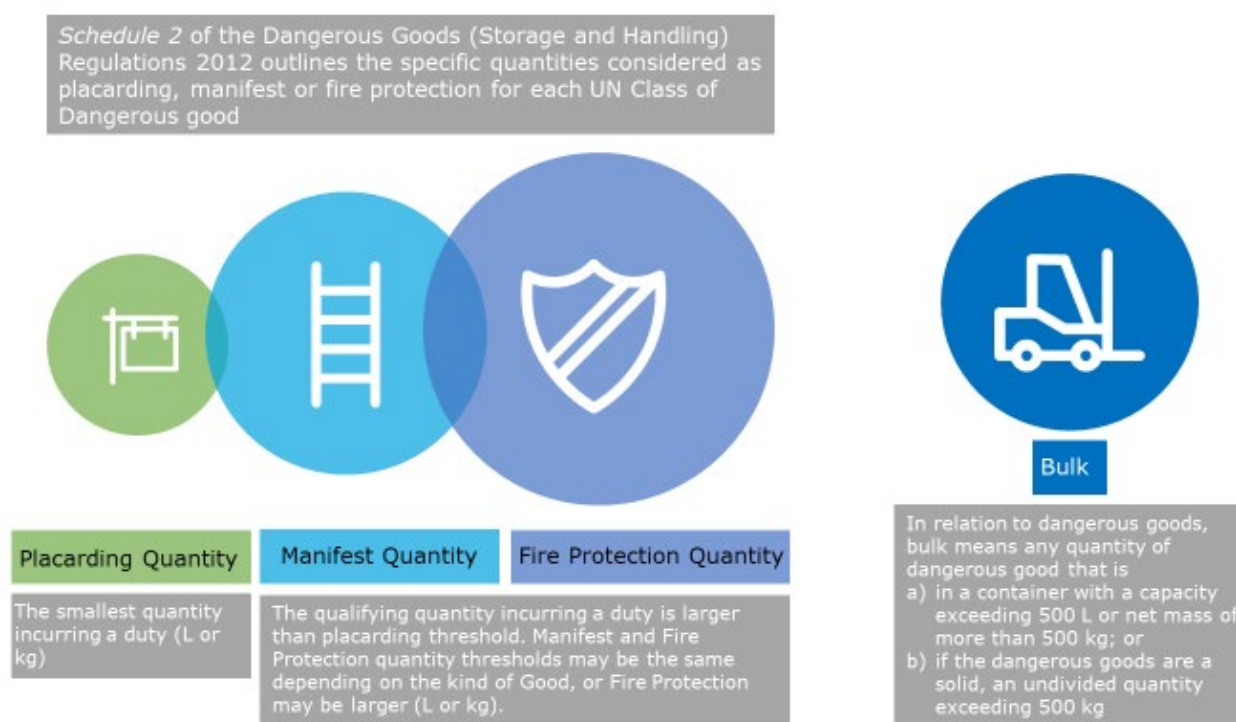


Figure D.1 outlines the differing threshold definitions for quantities of dangerous goods which incur placarding, manifest or fire protection duties. A full list of the exact quantities which incur these duties can be found in Schedule 2 of the Dangerous Goods (Storage and Handling) Regulations 2012 and differs between DG UN Class. Figure D.1 also outlines the definition of ‘bulk’ dangerous goods.

Costs associated with control of risk and fire protection system obligations are dependent on the quantity and type of dangerous good stored; some small occupiers (e.g. petrol stations) may hold large quantities of dangerous goods and vice versa. Therefore cost estimates have been split into small and large occupiers and those that store small and large quantities. This will account for the variation in cost as a result of incurring placarding, manifest and fire protection duties. Table D.4 sets out the number of businesses in different duty holder cohorts; occupiers, manufacturers, suppliers, and retailers for small and large businesses, as well as the proportion of businesses who store bulk, placarding, manifest and large quantities of dangerous goods.

Table D.4 Number of businesses impacted

Number of occupiers	24,213
Small business	22,704
Large business	1,508
Number of manufacturers/suppliers	4,448
Small business	3,951
Large business	497
Number of businesses who store bulk dangerous goods	2,875
Proportion of businesses who store a placarding quantity	8%
Manufacturers	0%
Occupiers	50%
Number of businesses who store manifest quantities	2,816
Proportion of occupiers who store large quantities	
Small business	5%
Large business	40%

Source: Deloitte Access Economics based on WorkSafe assumptions

D.1.4. Compliance assumptions

Table D.5 outlines the proportion of businesses that will comply with the Regulations. These assumptions ensure that costs are only estimated for businesses that actually undertake compliance activities and is reflective of the likelihood that there are many businesses that don't comply either because they are unaware of obligations or intentionally not complying.

Table D.5 Proportion of businesses that comply with regulations

Type of business	Assumption
Small business	69%
Large business	89%

Source: 2017 OHS RIS

D.1.5. Attributability assumptions

Table D.6 outlines the level of attributability different regulatory duties have to the Regulations. This input is designed to ensure the model only accounts for the residual problem when costing the Regulations, for example 20 percent of hazard identification is attributable to the regulations, which suggests 80 percent of hazard identification activity is likely to occur even in the absence of regulation.

Table D.6 Proportion of impact attributable to regulations

Compliance activity	Assumption
All requirements	20%

Source: 2017 OHS RIS

D.1.6. Assumptions of cost efficiency

0 outlines the assumptions of cost efficiency included in the model, to account for the efficiency gain incurred by businesses after tasks are repeated or refined. The efficiency assumptions also account for instances where multiple obligations can be undertaken at once, for example training and emergency preparedness requirements can be undertaken during a broader training session covering more OHS duties. Based on WorkSafe expertise, efficiency assumptions are considered to be applicable to hazard identification, consultation, induction and training, record keeping and the preparation and supply of safety data sheets.

Table D.7 Assumptions of cost efficiency

Compliance activity	Assumption
Hazard identification	10%
Consultation, induction, and training	10%
Record keeping	10%
Safety data sheets	40%

Source: WorkSafe consultation data

D.2. Assumptions used in the calculation of compliance costs for manufacturers and suppliers

D.2.1. Preparation of SDSs

Table D.8 outlines the costs associated with preparing SDSs. A manufacturer or first supplier of dangerous goods are required to prepare and provide an SDS, and the SDS must be revised and reviewed each time new information is available, or every five years. The cost is only applicable to the creation of new or the revision of existing SDSs and is calculated through cost to prepare multiplied by amount produced or revised each year. The input also accounts for the percentage of small and large businesses who are likely to meet the requirements without regulation.

Table D.8 Inputs for preparation of SDSs

Cost to prepare a new SDS	
Small business	\$1,402.24
Large business	\$738.02
Number of new SDSs produced each year	
Small business	1
Large business	2
Cost to revise an SDS	
Small business	\$350.56
Large business	\$184.50

Number of revisions to SDSs made each year	
Small business	0.56
Large business	1.5
% who would meet requirements without regulation	
Small business	50%
Large business	50%

D.2.2. Supply of SDSs

Table D.9 inputs the assumptions used to estimate the costs incurred by manufactures and suppliers in supplying SDSs to purchasers. Supply of SDS to a purchaser is required on the first supply of a dangerous good or on the first occasion of supply after each revision to the SDS. Retailers who supply dangerous goods in consumer packaging are exempt from this requirement.

Table D.9 Inputs for supply of SDSs

Time to supply an SDS	
All	1 hour
Number of SDSs supplied each year	
Small business	92.84
Large business	250

D.3. Assumptions used in the calculation of compliance costs for occupiers

D.3.1. Summary of cost per business (initial and ongoing)

Table D.10 and Table D.11 provides a summary of initial and ongoing costs per business, broken down into the different costs associated with fulfilling occupier duties under the Regulations.

Table D.10 Occupier duty cost per small business, by compliance activity

Small businesses (1-19 employees)	Initial	Ongoing
<i>Hazard identification</i>	\$ 55.31	\$ 184.38
<i>Control of risk - small quantities</i>	\$ 2,460.06	\$ 762.52
<i>Control of risk - large quantities</i>	\$ 61,501.55	\$ 5,637.74
<i>Consultation, induction and training</i>	\$ -	\$ 1,164.43
<i>Register of dangerous goods</i>	\$ 123.00	\$ 30.75
<i>Equipment for clean-up</i>	\$ 615.02	\$ 182.23
<i>Fire protection system - small quantities</i>	\$ 123.00	\$ 30.75
<i>Fire protection system - large quantities</i>	\$ 1,120.87	\$ 30.75
<i>Bulk dangerous goods containers</i>	\$ -	\$ -
<i>Placarding</i>	\$ 264.46	\$ 68.57
<i>Manifest notification</i>	\$ -	\$ 370.72
<i>Emergency plan for manifest quantities</i>	\$ 244.68	\$ 37.07
<i>Emergency services advice for fire protection</i>	\$ -	\$ -

Source: WorkSafe consultation data

Table D.11 Occupier duty cost per large business, by compliance activity

Large businesses (20-200+ employees)	Initial	Ongoing
<i>Hazard identification</i>	\$ 148.94	\$ 3,628.66
<i>Control of risk - small quantities</i>	\$ 6,150.15	\$ 5,637.74
<i>Control of risk - large quantities</i>	\$ 395,730.37	\$ 61,501.55
<i>Consultation, induction and training</i>	\$ -	\$ 31,432.43
<i>Register of dangerous goods</i>	\$ 615.02	\$ 147.60
<i>Equipment for clean-up</i>	\$ 3,690.09	\$ 1,093.36
<i>Fire protection system - small quantities</i>	\$ 384.14	\$ 1,522.16
<i>Fire protection system - large quantities</i>	\$ 15,375.39	\$ 1,522.16
<i>Bulk dangerous goods containers</i>	\$ -	\$ -
<i>Placarding</i>	\$ 1,718.97	\$ 4,189.63
<i>Manifest notification</i>	\$ -	\$ 741.45
<i>Emergency plan for manifest quantities</i>	\$ 244.68	\$ 189.07
<i>Emergency services advice for fire protection</i>	\$ -	\$ -

Source: WorkSafe consultation data

D.3.2. Assumptions per compliance activity

Per business initial and ongoing costs for each compliance activity are reported in Table 4.4. The assumptions per compliance activity reported below in this Appendix were used to generate the estimates in Table 4.4.

D.3.2.1. Hazard identification

Occupiers of a premise where dangerous goods are stored or handled must ensure that they identify hazards associated with storing and handling dangerous goods.

Table D.12 outlines the assumptions used to estimate the per business costs associated with identifying hazards. These estimates were provided through previous consultation and inflated to reflect 2022 dollars.

Table D.12 Inputs for hazard identification

Initial cost of hazard identification	
Small business	\$55.31
Large business	\$148.94
Ongoing cost of hazard identification	
Small business	\$184.38
Large business	\$3,628.66
% would meet requirements without regulation	
Small business	86%
Large business	80%

D.3.2.2. Control of risk

Occupiers are required to ensure that risks associated with storing and handling dangerous goods are controlled, either through eliminating the risk or reducing it so far as is reasonably practicable.

Table D.13 lists the assumptions used to estimate the costs associated with controlling risks. Due to control of risk obligations being performance based and dependent on quantity and type of dangerous good stored, it is difficult to quantify the cost. It is also the case that there are small occupiers (such as petrol stations) who hold large quantities of dangerous goods and vice versa. As a result, cost estimates have been split into both small and large occupiers and those that store small and large quantities. This allows for costs to vary based on quantity stored in addition to the size of the business. This reflects that costs also vary based on business size due to factors such as economies of scale. Cost estimates are based on previous consultation and inflated to 2022 dollars

Table D.13 Inputs for control of risk

Initial cost of controlling the risk	
Small quantity	
Small business	\$2,460.06
Large business	\$6,150.15
Large quantity	
Small business	\$61,501.55
Large business	\$395,730.37
Ongoing cost of controlling the risk	
Small quantity	
Small business	\$762.52
Large business	\$5,637.74
Large quantity	
Small business	\$5,201.43
Large business	\$61,501.55
% would meet requirements without regulations	
Small quantity	
Small business	85.70%
Large business	75.00%
Large quantity	
Small business	100.00%
Large business	33.00%
Other assumptions	
% control costs incurred due to regulations	23%

D.3.2.3. Consultation, induction, training and supervision

Occupiers must consult with any person involved in the storage and handling of dangerous goods and provide appropriate induction, information, training and supervision.

Table D.14 shows the assumptions that were used to estimate the costs associated with consultation, induction and training. The assumptions are sourced from previous consultation and

advice provided by WorkSafe. Dollar figure assumptions have been inflated to 2022 dollars. Estimates of wage rates in Table D.3 combine with the below assumptions in Table D.14 on time spent to yield per business cost estimates.

It is assumed there is no attributable cost associated with supervision as appropriate supervision is likely to occur in absence of regulation through general duties and managerial practice.

Table D.14: Inputs for consultation, induction and training

Time spent on induction (hour per new employee)	
Small business	1.00
Large business	2.00
Number of new employees per annum	
Small business	2
Large Business	3.5
Time spent on consultation and training (hour pa per business)	
Small business	11.15
Large business	388.5
Other costs associated with consultation, induction and training (pa)	
Small business	\$227.41
Large business	\$2,460.06
Proportion of businesses incurring other costs associated with consultation, induction and training (% of businesses)	
Small business	83%
Large business	86%
% who would meet requirements without regulation	
Small business	83%
Large business	88%

D.3.2.4. Register of dangerous goods

Occupiers who store and handle dangerous goods in a package of such a size that it must be marked under the ADG Code are required to keep register of those dangerous goods.

Table D.15 outlines the assumptions used to estimate the costs associated maintaining such registers, which were based on advice provided by WorkSafe and previous consultation in 2012. Cost estimates have been inflated to 2022 dollars.

Table D.15: Inputs for register costs

Initial cost to establish DG register (\$ per business)	
Small business	\$123.00
Large business	\$615.02
Annual cost of maintaining the register (\$ per business)	
Small business	\$30.75
Large business	\$147.60

% who would meet requirements without regulation	
Small business	87.5%
Large business	63.6%

D.3.2.5. Equipment for clean-up

Occupiers must ensure that equipment and materials are appropriately available onsite to allow for the clean-up and containment of reasonably foreseeable escapes, spills or leaks involving dangerous goods.

The assumption used to estimate the costs associated with equipment for clean-up are outlined below in Table D.16, which are based on previous consultation data. Cost estimates have been inflated to 2022 dollars. Ongoing costs are in per annum terms after accounting for the 3.38 number of years before equipment needs to be replaced.

Table D.16: Inputs for equipment for clean-up costs

Initial cost of having clean up equipment on site	
Small business	\$615.02
Large business	\$3,690.09
Number of years before clean up equipment needs to be replaced	
All businesses	3.38
Ongoing cost of replacing/maintaining clean up equipment	
Small business	\$182.23
Large business	\$1,093.36
% who would meet requirements without regulation	
Small business	80%
Large business	90%

D.3.2.6. Fire protection

Occupiers must ensure that a fire protection system is designed and constructed for premises where dangerous goods are stored and handled. The nature of this system (such as certain required equipment) is dependent on the types and quantity of dangerous goods stored and handled.

See D.3.2.11 for obligations on premises exceeding relevant 'Fire Protection Quantity'.

Occupiers must have a fire protection system under other building regulations and as such only specific costs associated with dangerous goods are attributable in this case.

Table D.17 shows the assumptions used to estimate the costs associated with fire protection systems which were informed by previous consultation. Cost estimates have been inflated to 2022 dollars.

Due to fire protection system obligations being dependent on quantity and type of dangerous good stored, it is difficult to quantify the cost. It is also the case that there are small occupiers (such as petrol stations) who hold large quantities of dangerous goods and vice versa. As a result, cost estimates have been split into both small and large occupiers and those that store small and large quantities.

Table D.17: Inputs for fire protection systems

Initial cost of fire protection system small quantities	
Small business	\$492.01
Large business	\$1,536.55
Initial cost of fire protection system large quantities	
Small business	\$4,483.46
Large business	\$61,501.55
Ongoing cost of fire protection system	
Small business	\$123.00
Large business	\$6,088.65
% who would meet requirements without regulation	
Small business	66.7%
Large business	90.0%
Other assumptions	
% of costs attributable given potential double counting between the cost of fire protection systems and control mechanisms more generally	25%

D.3.2.7. Bulk dangerous goods

Occupiers who hold bulk containers of dangerous goods are required to ensure such containers are provided with appropriately stable foundations and support, fit for purpose and to carry out inspections. However, previous consultation data indicated 100 per cent of such businesses would meet these requirements even in absence of regulation, hence no attributable cost is incurred.

D.3.2.8. Placarding

Occupiers who store and handle dangerous goods at or above 'Placarding Quantities' must ensure that appropriate placards are displayed, maintained and updated as necessary.

Assumptions used to estimate the costs associated with placarding requirements are displayed in Table D.18. These assumptions were based on previous consultation, and dollar estimates have been inflated to reflect 2022 dollars. Replacement frequency assumptions inform ongoing costs associated with replacing signs.

Table D.18: Inputs for placarding requirements

Average number of signs per business	
Small business	2
Large business	13
Initial cost of one hazchem sign	
All businesses	\$132.23
Ongoing maintenance cost of placards	
Small business	\$2.46
Large business	\$624.22

Proportion of businesses incurring ongoing maintenance cost of placards %	
Small business	50%
Large business	50%
Replacement frequency (number of years before replacement)	
Small business	10
Large business	20
% who would meet requirements without regulation	
Small business	50%
Large business	67%

D.3.2.9. Manifest notification

Table D.19 outlines manifest notification requirements to account for the regulatory duty for occupiers who store or handle quantities of packaged dangerous goods that exceed the 'Manifest Quantity' (equal to the total of the quantities that are specified in Regulation 11 for different UN Classes of Dangerous Goods).

Table D.19: Inputs for manifest notification requirements

Time spent notifying to WSV (hours per notification)	
Small business	1
Large business	2
Frequency of notification (years)	2
Time spent maintaining and revising manifest (hours pa per business)	
Small business	26
Large business	52
% who would meet requirements without regulation	
Small business	83.2%
Large business	69.0%

D.3.2.10. Emergency plan for manifest quantities

Occupiers who store or handle dangerous goods in quantities that exceed 'Manifest Quantities' are required to develop an emergency plan in consultation with emergency services.

Table D.20 outlines the assumptions which are used to estimate the costs associated with emergency plans, which have been informed by previous consultation data. Assumptions of time spent are combined with relevant wage assumptions in Table D.3 to yield per business cost estimates.

Table D.20: Inputs for emergency service requirements

Initial time spent in establishing emergency plan (hours pa per business)	
Small business	3.3
Large business	3.3

Ongoing time spent in reviewing and updating emergency plans (hours pa per business)	
Small business	0.5
Large business	2.55
% who would meet requirements without regulation	
Small business	83%
Large business	69%

D.3.2.11. Emergency services advice in development of fire protection systems

Occupiers who store or handle dangerous goods exceeding the 'Fire Protection Quantity' are required to seek guidance and advice from emergency service providers and integrate said advice during the development of an emergency plan.

Previous consultation with business revealed that occupiers holding such quantities would meet these requirements regardless, hence there are no associated costs attributable to the proposed Regulations.

Appendix E Summary of changes

E.1. Summary of proposed changes

The Dangerous Goods (Storage and Handling) Regulations 2012 (current Regulations), made under the Dangerous Goods Act 1985, are due to sunset on 27 November 2022.

The current Regulations set out the legal duties for manufacturers and suppliers, and for occupiers of premises where dangerous goods are stored or handled. The current Regulations will be replaced by the proposed Dangerous Goods (Storage and Handling) Regulations 2022 (proposed Regulations).

Please note, it is not proposed to alter existing duty holder obligations in the proposed Regulations.

The majority of changes modernise and simplify language used in the proposed Regulations to improve clarity. It is also proposed to amend the structure of the current Regulations to align with modern drafting practices. This includes removing references to subdivisions and restructuring the regulations into Divisions, and the creation of a new Part 5 (with subsequent renaming of Parts 6 and 7).

Formatting and drafting have been modernised throughout, for example amending formatting from (i), (ii) to (a), (b) and consequential number changes or references to the numbering of the regulations have also been made.

Below is a summary of the specific amendments WorkSafe is proposing to make to the current Regulations.

E.2. Part 1 – Preliminary

E.2.1. Regulation 1 – Objective

- It is proposed to amend this regulation to provide a more complete list of objectives: 'to provide for the health and safety of people, property and the environment in the manufacture, storage, transfer, use, handling, sale and disposal of dangerous goods.'
- The revoked interim regulations will also be removed.

E.2.2. Regulation 3- Commencement

- The date for the proposed regulations will be updated to read 26 November 2022.

E.2.3. Regulation 4 – Revocation

- This regulation will be updated to revoke earlier regulations.

E.2.4. Regulation 5 – Definitions

- The 2011 Regulations definition will be removed.
- A new definition of article will be added as follows: 'article means a manufactured item, other than a fluid or particle, that—
(a) is formed into a particular shape or design during manufacture; and
(b) has hazardous properties and a function that are wholly or partly dependent on that shape or design—
and includes batteries, aerosols, gas-filled lighters, seat belt pre-tensioners and refrigerating machines;'
- References to AS 1940:2004 will be updated to 'AS 1940:2017'
- The definition of C1 combustible liquid will be modernised by replacing 'less than' with 'lower than' and 'declared' with the word 'determined'.
- The definition of commencement day will be removed to reflect modern drafting practices.

- The definition of compatible will be amended to improve clarity, and will be amended from 'they' to read 'the substances or items'. There will also be a change from 'fire, explosion, harmful reaction' to 'fire, explosion or harmful reaction'.
- The definition for control temperature will be updated to reflect a revised or later edition of the Manual of Tests and Criteria.
- The definition of current SDS will be modernised, with 'complies with' reworded to 'prepared in accordance with' (emphasis added):
'current SDS means the most recent SDS of a manufacturer or first supplier that has been—
(a) prepared in accordance with regulation 19 or 20; and
(b) if applicable, reviewed and revised in accordance with regulation 21'
- The definition of emergency will have a grammatical change from 'an explosion, fire, harmful reaction' to read 'an explosion, fire or harmful reaction'.
- The definition of emergency services authority will be updated. The reference to the Metropolitan Fire and Emergency Services Board to be replaced with Fire Services Victoria to reflect the new organisation established on 1 July 2020.
- The standard in the definition for fire point will be updated to read 'AS 1940:2017'.
- The definition for GHS (Globally Harmonized System of Classification and Labelling of Chemicals) will be amended to more specifically refer to regulation 5 of the Occupational Health and Safety Regulations 2017 (OHS Regulations).
- The definition of handling will be reworded as follows: 'handling, in relation to goods, includes...' and the word dangerous will be removed from the term 'dangerous goods' to read 'goods' in subregulation (a) and (b).
- The definition of hazardous substance will be updated to refer to regulation 5 of the OHS Regulations.
- The definition of health and safety representative will be referenced to the same meaning as in the Occupational Health and Safety Act 2004 (OHS Act).
- The definition of IBC (intermediate bulk container) will be reworded to read 'IBC or intermediate bulk container'.
- The definition of isolation will have the words 'in relation to the isolation,' removed to simplify wording. The word 'either' in relation to distance or a physical barrier has also been removed, as the term 'or' is sufficient.
- The definition of packaged dangerous goods will be reworded to remove the words 'goods too dangerous to be transported' based on modern drafting principles.
- The definition of premises has been removed and incorporated into regulation 6(m).
- The definition of product name will have the word 'the' added to read 'to the dangerous goods'.
- The definition of reasonably practicable will be amended for clarity as follows (emphasis added on changes): 'reasonably practicable means reasonably practicable having regard to—
(a) the likelihood of any hazard or risk concerned eventuating; and
(b) the degree of harm to persons or property that would result if any hazard or risk eventuated; and
(c) what the person concerned knows, or ought reasonably to know, about any hazard or risk and any ways of eliminating or reducing the hazard or risk; and
(d) the availability and suitability of ways to eliminate or reduce any hazard or risk; and
(e) the cost of eliminating or reducing any hazard or risk;'
- The definition of registered medical practitioner will be removed as the term is defined in section 38 of the Interpretation of Legislation Act 1984 which applies to all Victorian legislation.
- A new definition of road vehicle will be added to align with the Dangerous Goods (Transport by Rail and Road) Regulations 2018, as this term was previously not defined. It means: 'a vehicle that does not consist of a unit or units of rolling stock.'
- The definition of Safe Work Australia will be amended from 'established under section 5' to read 'established by'.
- The definition for SDS will be amended to 'safety data sheet required to be prepared under regulation 19' to de-capitalise and to add a definition of what an SDS is.
- The definition of stabiliser has been reformatted from 'dangerous goods that overcomes' to be set out as subregulation (a) and (b) as follows: '...dangerous goods; and (b) overcomes the chemical instability...'

- The definition of workplace will be simplified so that rather than defining what it is, it will refer to the meaning in the Occupational Health and Safety Act 2004 as follows: 'workplace has the same meaning as in the Occupational Health and Safety Act 2004.'

E.2.5. Regulation 6 – Application

- The regulation will be modernised to have 'or' added to the end of each sub-regulation.
- Subregulation (b) will be updated to refer to 'Part 4 of the Dangerous Goods (Explosives) Interim Regulations 2021' rather than the previous version of the regulations (which will then be updated again to read Dangerous Goods (Explosives) Regulations 2022 after June 2022).
- Subregulation (e) will be amended from 'dangerous goods in the form of an appliance or plant that forms part of a vehicle' to read 'dangerous goods in the form of plant that is part of a vehicle...'
- Subregulation (i) and (k) will be modernised to reference the incorporating document (the ADG Code).
- Subregulation (j) will be removed as 'receptacles' will be dealt with in proposed changes to regulation 38.
- Regulation 6(k)(i) will also be amended as follows:
'(k) the following dangerous goods at premises that are not a workplace—
(i) compressed gas of UN Class 2.1 or UN Class 2.2 and compressed oxygen that—
(A) are in one or more containers with an aggregate capacity of not more than 50 L; and
(B) as a whole form part of a welding set or are used or intended to be used with a portable flame torch;'
- The definition of 'premises' will be removed from the definition section and instead added into regulation 6(m). Regulation 7 – Incorporation of references
- The title will be amended to include 'Incorporated and adopted documents'.
- There are other minor changes proposed such as 'a document' to 'any document'; 'application, adoption or incorporation' to read 'incorporation or adoption'; sub-regulation 2(a) to be followed by an 'or' at the end of the sentence between sub-regulation 2(a) and (b); the words 'may choose to comply' to read 'may comply'; and the 'date on which' to be added for clarity.
- The wording of regulation 7(3) has been clarified by adding 'prevails to the extent of the inconsistency'.

E.3. Part 2—Provisions applying generally

E.3.1. Regulation 9 – Exemptions

- Wording will be added for clarity as follows: 'in accordance with this regulation'.
- There will also be minor rewording throughout this regulation to modernise and clarify language. For example, 'a person or premises or activity' will be amended to: 'any person, premises, activity or other thing, or any class of person, premises, activity or other thing'.
- It was unclear what the word 'administrative' added in regulation 9(3)(b); if something is required by the regulations then it is a legal (not merely an administrative requirement). This word will therefore be removed to improve clarity.
- The wording 'must specify, as the case requires—' will be added given that presumably not all of Regulation 9(5)(c)(i) to (iii) will be covered in an exemption.
- The words 'has been' will be reworded to 'is' throughout regulation 9(5)(c)

E.3.2. Regulation 10 – Determinations – Classification etc. of certain dangerous goods

- Regulation 10(1)(a) will be reworded to state 'in accordance with these Regulations and the Dangerous Goods (Transport by Road or Rail) Regulations 2018 (DGTRR). This proposed change will clarify that the procedures set out in the DGTRR are to apply in relation to goods being dealt with under these regulations.
- There will be changes to the grammatical tense of phrases such as 'must state' to read 'states' and 'must identify' to 'identifies' and 'may include' to 'includes'.
- It is proposed to clarify that the 'notice' is the notice of the determination and to reference the relevant subregulation, as follows: regulation 10(4) 'A determination takes effect on the day on which the notice of the determination is published in the Government Gazette in accordance with subregulation (3), or on any later day specified in the notice.'

E.3.3. Regulation 11 – Determination of quantity of dangerous goods

- Given the linkage with section 45, it is proposed to specify who is required to comply with this (i.e. 'a person'). Therefore, words to emphasise the linkage with section 45 will be added: (1) If these Regulations require a person to determine a quantity of dangerous goods, the person must determine the quantity in accordance with this regulation.
- Subregulation 11(2) will be amended to remove the words 'in a container' so that it reads 'In relation to packaged dangerous goods that are'.
- Subregulation 11(4) will be reworded to clarify 'things' so that it reads: 'In relation to dangerous goods that are not referred to in subregulation (2) or (3), the quantity is to be determined by the net quantity of the part of an article or thing that is in itself dangerous goods.'

E.3.4. Regulation 12 – Compliance with Occupational Health and Safety Regulations

- It is proposed to update the reference as follows: '...Divisions 3 to 9 of Part 4' to reflect renumbering throughout Part 4. Words have been added to clarify an occupier who is also an employer: 'if the occupier is also an employer'.

E.4. Part 3—Duties of manufacturers and suppliers

E.4.1. Regulation 13 – Determination of dangerous goods

- The wording will be amended so that subregulation 13(1)(a) refers to 'handling the goods' and that the words 'or supplying them to any person' can be removed for simplicity as the definition of handling already includes supply.
- The note will be updated to include the words 'handling goods includes manufacturing the goods'.
- Subregulation 13(2) is proposed to be slightly re-structured.
- Subregulation 13(3) is proposed to be slightly reworded from 'A manufacturer or first supplier complies with...' to be more comprehensive and read: 'If a manufacturer or first supplier has determined that goods are dangerous goods, the manufacturer or first supplier There will also be an amendment to remove 'or corresponding legislation' from 13(3)(b) as the GHS does not have corresponding legislation.
- Regulation 13(4)(b) will be removed as per subregulation 13(3)(b).
- Regulation 13(5) will be amended to refer to 'Parts 4 and 5 do not apply to the handling of' rather than 'Part 4 does not apply to any handling of' which is a consequential change due to the restructure and inclusion of Part 5.

E.4.2. Regulation 14- Packing – manufacturer and first supplier

- The reference to subregulations (2) and (3) will be removed so that it states 'A manufacturer...'
- Regulation 14(1) will refer to 'regulation 13(3)' because subregulations (1) and (2) are not cumulative regulations and it is therefore proposed that they are disconnected.

E.4.3. Regulation 15 – Marking and labelling – manufacturer and first supplier

- Regulation 15(1) will no longer refer to regulation 13(2) for the reasons noted above, and will clarify 'must ensure that the marking on the packaging for the dangerous goods complies with...'
- Subregulation (2) is reworded to clarify obligations in relation to GHS and state that: 'A manufacturer or first supplier of dangerous goods who has assigned or classified dangerous goods under regulation 13(3) must ensure that any inner packaging for the dangerous goods is labelled in accordance with the GHS before supplying the goods to any person.'
- Subregulation (4) and (5) will be removed as these are no longer relevant.

E.4.4. Regulation 16 – Prohibitions on supply

- The wording is proposed to be re-worded so that emphasis is placed on compliance with regulation 14 and 15.
- Slight re-word to state 'dangerous goods or the marking or labelling of packaging'.

E.4.5. Regulation 17 – Application of regulations 16(a) and (b) to retailers

- This heading will be reworded to clarify and simplify the heading. It now reads as follows: '17 Regulations 16(a) and (b) does not apply to retailers.'

- The wording in the regulation will also be slightly changed to modernise the language to current drafting practice. For example, regulation 17(2) will include the additional words: (2) If a supplier who is a retailer supplies packaged dangerous goods into a container provided by the purchaser...
- Subregulation (b)(i) will be amended so that the words 'that it holds' is removed from 'dangerous goods that it holds'.

E.4.6. Regulation 18 – Application to C1 combustible liquids

- It is proposed to reword the heading to clarify in a modern drafting style that '18 Division does not apply to C1 combustible liquids'.

E.4.7. Regulation 19 – Preparation of SDS

- Regulation 19(1) will state in full 'a safety data sheet' rather than the 'an SDS'.
- Will be slightly reworded to reflect modern drafting practice and has added 'email address' to update the list of required information and to clarify that 'address' is referring to 'business address'.
- Subregulation (e) will be amended to read 'one or both of the following' and to remove the 'or' between (e)(i) and (ii). It is proposed to also remove the words '13(2)(b)(ii) in accordance with the GHS' and replace it with '13(3)(b)'.
- It is proposed to rearrange the wording in (h) to modernise the drafting.
- Regulation 19(4) will also be amended to modernise the language to read as follows: '...that disclosing the generic name for an ingredient in accordance with subregulation (3)(b) would breach commercial confidentiality'.

E.4.8. Regulation 22 –Supply of SDS

- Wording will be changed to clarify that 22(2)(c) is 'a retailer referred to in regulation 17' as well as other minor rearrangement of words to align with modern drafting.

E.4.9. Regulation 23 –Information to registered medical practitioner

- Regulation 23(1)(b) will state that the medical practitioner is referring to a 'registered medical practitioner' and remove references to the patient's gender by referring to 'the practitioner's patient'.

E.5. Part 4 – Duties of occupier

E.5.1. Regulation 24 – Consultation with workers

- It is proposed to reword the heading for Regulation 24 to remove the reference to 'workers' as this term is not used in the relevant Dangerous Goods legislation. The heading now reads: Consultation

E.5.2. Regulation 25 – Induction, information, training and supervision

- Additional words will be added to clarify that instruction will be 'in relation to' and a new subregulation (b) will be added to refer to 'the processes used for the identification and control of the risks associated with the person's tasks; and'

E.5.3. Regulation 26 – Identification of hazards

- The phrases 'Without affecting the generality of' and 'when identifying hazards' will be modernised as follows: '(2) Without limiting subregulation (1), in identifying hazards'.
- Modern formatting will also be used in regulation 26(c) to split out the sub-regulation into (c)(i) and (ii).
- There will also be some additional words inserted such as 'an SDS' will be amended to 'information in an SDS' and 'reactions between the dangerous goods' to clarify the meanings. Certain words will also be modernised whereby 'activities' will be reworded to 'practices'.

E.5.4. Division 3 – Risk control – general duty

- It is proposed to reword the Division 3 heading to simplify the intention in line with modern drafting as follows: Division 3—General duty to control risk

E.5.5. Regulation 28 – Relationship with Divisions 4 and 5

- It is proposed to delete this regulation as it is ambiguous and does not provide clarity in relation to which risk it intends to mitigate.

E.5.6. Division 4 – Risk control – specific duties

- It is proposed to re-word the heading for Division 4 from 'Risk Control- specific duties' to 'Design'.

E.5.7. Regulation 29 - Design of new premises, plant, processes and systems of work

- It is proposed to simplify Regulation 29(2) by removing the words 'For the purposes of'. The words 'have regard to the provisions of this Part' will also be removed as this causes confusion as to what 'have regard' means. 29(3)(a) and (b) will also be redrafted to simplify and modernise the wording as follows:
'(3) In this regulation, new, in relation to premises, plant, processes or systems of work, means that the premises, plant, processes or systems of work—
(a) have not been previously used for the storage and handling of dangerous goods; or
(b) have been altered in a way that is likely to create a new or different hazard or risk associated with that use.'

E.5.8. Regulation 30 - Risk to workers

- It is proposed to amend the heading of Regulation 30 to remove the word 'workers' and replace it with 'Risk to persons engaged by the occupier' as the term 'workers' is not used in Dangerous Goods legislation.

E.5.9. Regulation 33 - Stability

- It is proposed to remove the phrase 'affecting the generality of' and replace as follows: 'Without limiting subregulation (1)'.
• Regulation 33(3)(a) and (b) will be removed and instead incorporated into regulation 33(2)(a) and (b) as it makes it simpler to have all requirements directly noted in the subregulation 33(2). It now reads (emphasis added to changes):
(a) if the stability of the dangerous goods is dependent on the maintenance of levels of stabilisers—those levels are maintained, having regard to the stabiliser levels specified by the manufacturer of the dangerous goods (if any); and
(b) if the dangerous goods are required to be stored or handled at or below a particular control temperature—they are stored or handled at or below that temperature, having regard to the relevant control temperature specified by the manufacturer (if any).
• Regulation 33(4) will amend 'in relation to' to read 'in respect of'.

E.5.10. Regulation 34 - Isolation

- Wording will be simplified by removing the phrase 'affecting the generality of' to modernise drafting, to read as follows: 'Without limiting regulations 27 and 28'.

E.5.11. Subdivision 4 – Plant and structures

- It is proposed to reword the heading to Subdivision 4 from 'Plant and structures' to read 'Division 7—Structures, plant and containers'.

E.5.12. Regulation 38 - Containers for bulk dangerous goods

- The wording, 'Without limiting the generality of regulation 37' will be removed and amended as follows: "An occupier of premises..."
• Subregulation (f) will also be clarified from 'the person who subsequently becomes the occupier' to read '...the person who subsequently manages and controls the premises'.

E.5.13. Regulation 39 - Clearing of decommissioned receptacles

- The wording, 'Without limiting the generality of regulation 37' will be removed and amended as follows: '(1) An occupier of premises where...'
• Subregulation (1)(a) will also be amended from 'is no longer intended to be so used; or' as follows: '(a) is no longer intended to be used in connection with dangerous goods; or'
• Regulation 39 will include a new sub-regulation (3) to clarify when a receptacle is no longer subject to the requirements under the regulations, as follows: '(3) An occupier of premises is not subject to any further requirements under these Regulations with respect to a receptacle that has been cleared by the occupier in accordance with subregulation (2)."

E.5.14. Regulation 40 – Protection from impact

- This regulation will be amended to refer to 'structure, plant, container or pipework' to include references to container or pipework also.

E.5.15. Regulation 41 - Spill containment

- The word 'the' will be removed from the phrase 'premises the dangerous goods'
- This regulation will be modernised by altering the order of the wording to read (emphasis added): '(3)(b) as soon as is reasonably possible, the dangerous goods and any resulting effluent are cleaned up and disposed of or otherwise made safe.'

E.5.16. Regulation 42 - Transfer of dangerous goods

- The wording of this regulation will be slightly re-arranged to enhance readability and the drafting will be modernised. Changes are proposed as follows: '(1)(a) from one area to another area...' '(2) In eliminating or reducing risk in accordance with subregulation (1), the occupier must have regard to, as relevant...'
- A slight re-word to: '(2)(b) the compatibility of the pipework at the premises with...'

E.6. Part 5 – Preparedness for incidents and emergencies

E.6.1. Regulation 45 - Manifests to be maintained

- Wording will be added at the start of the subregulation (1) and (2) to link the schedule back to the relevant regulation, as follows: '(1) For the purposes of section 30(1) of the Act,'
- Column references will be added for ease of reference, for example, '...relevant quantities specified in Column 5 headed 'Manifest Quantity' in the table in Schedule 2 are premises of the prescribed class...'
- Wording will be clarified in subregulation (3) by adding the words as follows: '(3) An occupier of premises prescribed in subregulation (1)...' as this is a clearer than the term 'prescribed premises' and 'place' has been updated to refer to 'location or place'.

E.6.2. Regulation 47 - Outer warning placards

- Words will be added to reference the column numbers in the table in Schedule 2.
- Regulation 47(2) was slightly reworded from 'not apply to' to read 'in respect of'.
- Regulation 47(2)(b) will have the words 'one of both of' removed and instead state: "are one or both of—
(i) a flammable gas; or
(ii) a flammable liquid; or.
(iii) a combination of a flammable gas and a flammable liquid." (Emphasis added to additional wording).

E.6.3. Regulation 48 - Placarding requirements

- Column references will be added for ease of reference.
- Minor rewording, for example, from 'which' to 'that'.

E.6.4. Regulation 49 – Different location permitted

- The formatting will be amended and minor grammatical changes such as 'with the placards' to read 'to the placards'.

E.6.5. Regulation 51 - Placards in place on commencement date

- This regulation has been removed completely as it was a transitional provision.

E.6.6. Regulation 53 Fire protection—general

- The wording of subregulation (2) is proposed to be re-worded to reorder the regulation for clarity, as follows: 'If any of the components of the fire protection system are rendered unserviceable or inoperative, the occupier must, ensure that—'.

E.6.7. Regulation 54 Fire protection—premises exceeding relevant Fire Protection Quantity

- Slight reword in regulation 54 (2)(a) to read 'or' instead of 'and'.

E.6.8. Regulation 55 Planning for emergencies

- This regulation will be amended to specify a column number for ease of reference.

- It will also be amended by reordering the words to read 'reduces the risk associated with an emergency'.
- The words 'the generality of' will also be removed so that it reads, as follows: 'Without limiting this regulation...'

E.6.9. Regulation 56 - Currency and accessibility

- This will be reformatted, and with minor grammatical changes such as 'where permitted' to read 'if permitted'.
- Subregulation (2) will be simplified from 'Subject to subregulation (3)' to read 'Subregulation (1) does not apply in respect of dangerous goods that are'.
- Wording will be amended for clarity as per modern drafting practices, including: '(3) Despite subregulation (2), an occupier of premises to which subregulation (2) applies—'
- At the start of (3)(a) and (b) it will read 'if the occupier', and then (a) and (b) to be separated by ';or' instead of an 'and'.
- Regulation 56(4) will clarify 'an occupier' to read 'occupier of premises'.

E.6.10. Regulation 57 - Packages received

- Additional words will be added for clarity from 'a package of dangerous goods that is marked' to read 'dangerous goods and the packaging is marked' and other changes from 'package' to 'packaging'.
- Words will be added to reference the relevant subregulation as follows (emphasis added): 'the occupier referred to in subregulation (1) must...'

E.6.11. Regulation 58 - Transfer

- Words will be added for clarification purposes as follows (emphasis added): '56 Transfer (1) If dangerous goods are transferred into a portable container for use at the premises, the occupier of those premises must ensure that—'
- This regulation will also be reformatted.

E.6.12. Division 8 - Register

- The heading for Division 8 will have additional words added for clarity to amend "Register" to read: "Register of dangerous goods"

E.6.13. Regulation 60 - Register of Dangerous goods

- Additional words "who is" will be added for an occupier "who is, an employer".
- Slight reword from 'in relation to' to read 'in respect of' for modernisation purposes.

E.6.14. Regulation 61 - Prescription of dangerous goods under section 32 of the Act

- The heading will be amended to 'Dangerous goods for the purposes of section 32 of the Act'.
- Additional words will be added at the start of regulation 61(1) and (2), respectively: "For the purposes of section 32(2)(a) of the Act" and "For the purposes of section 32(2)(b) of the Act." This now echoes the heading; that this is for the purposes of section 32.
- Additional words added '(other than dangerous goods of UN Class...) that is' and 'without resulting in physical injury' as 'physical' will narrow the prescription to physical injuries only.

E.6.15. Regulation 62 - Response to emergencies

- Will be slightly re-formatted from (1)(b) and (1)(c) to "1(b) and (c)".

E.6.16. Regulation 63 - Investigation of incidents

- The words to be re-arranged to clarify and modernise them as follows: 61(b)(iii) readily available to the Authority on request.

E.7. Part 5 - Notification

E.7.1. Regulation 66 - Notification to Authority

- The regulation will be updated to refer to the new EPA Act, as follows: "Environment Protection Act 2017"

E.8. Part 6 – Savings and transitional provisions

E.8.1. Regulation 70 Continuing effect of notifications—Dangerous Goods (Storage and Handling) Amendment (Notification) Regulations 2021

- This is proposed to be deleted as the regulation expired on 1 July 2021 and no longer has effect.

E.9. Schedules

E.9.1. Schedule 2 clause 1

- Words will be amended from “For the purposes of the table below” to “For the purposes of the table in this Schedule” to be more specific.

E.9.2. Schedule 2 clause 2

- Words will also be amended to “In the table in this Schedule” as this is more specific than “In the table below” and additional words of “combined total, determined in accordance with regulation 11” will be added to reference back to the relevant regulation.

E.9.3. Schedule 2 clause 3

- The “Note” will be removed and inserted into Schedule 2 clause 3 as follows: “For the purposes of item 3 in the Table in this Schedule, where UN Class 9 dangerous goods do not have a Packing Group assigned to them, they are taken to be assigned to Packing Group III.”

E.9.4. Schedule 3

- The title of Schedule 3 will be amended from ‘Schedule 3— Information to be contained in a manifest’ to read ‘Manifests under section 30 of the Act’.
- The heading will be amended from “Information to be contained in a manifest maintained under section 30 of the Act— “and simplified to “Information to be contained in a manifest”.

E.9.5. Schedule 3 clause 1

- Formatting changes will be made from (a), (b), (c) to (1), (2), (3).
- The ‘date when’ to be amended to ‘the date on which’.

E.9.6. Schedule 3 clause 5

- The heading will be amended to: “5 Packaged dangerous goods and dangerous goods in IBCs” to reference dangerous goods in IBCs as these are not technically “packaged goods” and should therefore be noted separately.

E.9.7. Schedule 3 clause 7

- There will be a minor grammatical change from “documentation” to “documents”.

E.9.8. Schedule 4 clause 2(1)

- Wording will be amended to include the words: “Subject to clause 3(4)” at the start of clause (2) to follow modern drafting practices.

E.9.9. Schedule 4 clause 2(2)

- The word “and” will be removed from the end of (a), (b) and (c), separated only by a “;” Schedule 4 clause 3(1)
- Wording will be amended to remove the words: “Subject to subclause (4)” to follow modern drafting practices.

E.9.10. Schedule 4 clause 3(2)

- The word “and” will be removed from the end of (a), (b) and (c), separated only by a “;” and will be restricted into (2) (a); (2)(b) and (3).

E.9.11. Schedule 4 clause 3(3)

- Will be slightly reworded so that “other than” and “or, if” will replace the words “except” or “except where” to modernise the drafting and make it clearer, including by removing the words ‘in which case the lettering must be’.

E.9.12. Schedule 4 clause 3(4)e

- Wording will be slightly amended to modernise the drafting. For example, “in accordance” is to read “that accords” and “a” to become “the” and the word “and” to be added between “dangerous goods and that contains”.

E.9.13. Schedule 4 clause 4(1) and (5)

- Slight formatting changes to separate the wording into (a) and (b) and so forth.

E.9.14. Schedule 5—List of dangerous goods of UN Class 2.2 not exempted from section 32 of the Act

- The heading will be simplified and clarified as follows: “Schedule 5—List of dangerous goods of UN Class 2.2 not prescribed dangerous goods for the purposes of section 32 of the Act”
- Reword from ‘Dangerous goods from UN Class’ to ‘Dangerous goods of UN Class’.

E.10. Endnotes

- The Endnotes and Table of Applied, Adopted or Incorporated Matter will be updated accordingly.

Limitation of our work

General use restriction

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