

Regulatory Impact Statement: Proposed Building for Climate Change amendments to the Building Act 2004

Coversheet

Purpose of Document	
Decision sought:	<i>Approval to amend the Building Act to support emissions reduction in the building and construction sector.</i>
Advising agencies:	<i>Ministry of Business, Innovation and Employment</i>
Proposing Ministers:	<i>Minister for Building and Construction</i>
Date finalised:	<i>2 September 2022</i>
Problem Definition	
<p>This Regulatory Impact Statement (RIS) considers a legislative change designed to address three core policy problems, each of which is considered a barrier to the building and construction sector reaching near-zero emissions by 2050:</p> <ol style="list-style-type: none">The building regulatory system does not enable consumers and Government to easily understand the energy efficiency of buildings. Consumers that lease or rent building space, and the Government have limited information on the energy performance of existing buildings. This may limit socially optimal investment by building owners in energy efficiency.The building regulatory system does not incentivise action on construction and demolition waste minimisation. There are inconsistent requirements for people to consider, recognise or reduce the social cost of construction and demolition waste (information, regulatory and externality issues).There is a lack of clarity and focus on climate change for building and construction sector stakeholders and regulators. The purposes and principles of the Building Act 2004 (the Act) do not clearly or sufficiently focus on New Zealand’s climate change goals as set out in the Climate Change Response Amendment Act 2019 (the Zero Carbon Act). <p>Each of these core policy problems also intersect with a general issue around limited access to good quality information on building emissions and climate resilience.</p>	
Executive Summary	
<p>The Zero Carbon Act requires all sectors of the New Zealand economy to contribute to reducing net emissions of all greenhouse gases, except biogenic methane, to zero by</p>	

2050. As the building and construction sector is a key driver of emissions in energy, industry, and waste, it is crucial to decarbonise the sector.

New Zealand's first [Emissions Reduction Plan](#) (ERP) was published in May 2022. The ERP contains strategies, policies, and actions to meet New Zealand's first emissions budgets, as required by the Zero Carbon Act.

Currently, there is work underway as part of the Ministry of Business, Innovation, and Employment's (MBIE's) broader [Building for Climate Change \(BfCC\) programme](#) to reduce emissions within the existing legislative framework. However, legislative change is also being considered to enable Government and the sector to enact key building and construction actions of the ERP. These actions seek to address problems in the sector by clarifying and strengthening how the Act supports, and provides tools and powers to progress emissions reduction and climate resilience.

This RIS provides a high-level summary of the problems being addressed, the options proposed and their associated costs and benefits, and the proposed arrangements for implementation and monitoring.

The objectives of the proposals are to:

- **Objective 1 (Energy Efficiency):** Enable consumers, those that lease or rent building space, and the Government to have better information on the energy performance of existing buildings to improve energy efficiency across the building stock.
- **Objective 2 (Waste Minimisation):** Enable more consistent requirements for people to consider, recognise or reduce the social and environmental cost of construction and demolition waste (information, regulatory and externality issues).
- **Objective 3 (Align focus on climate change in Act):** Align the focus for both the building sector and regulators to support building emissions reduction and climate resilience.

Industry consultation has informed the objectives and proposals in this RIS. Many of the proposals were consulted on by the Climate Change Commission and during the ERP consultation process. Further targeted stakeholder engagement was also undertaken, with stakeholders broadly supporting the proposals.

What options are being considered?

MBIE has considered a range of options to address the objectives outlined above. The objectives are distinct and are likely to respond differently to different interventions, so this RIS considers the options to address each objective separately. The preferred options have been highlighted in bold below.

Options to address Objective 1 (Energy Efficiency)

Currently, the building regulatory system does not enable consumers and Government to easily understand the energy efficiency of buildings. This makes it difficult for consumers to understand the energy efficiency or running costs of buildings they may wish to rent or buy, and for government to target initiatives or set requirements for buildings that are major energy users. Enabling better information provision and transparency across the sector is

an opportunity to lift the energy efficiency of existing buildings. To address this, the following options were considered:

- 1a – Status quo
- 1b – Provide greater non-regulatory support to encourage adoption of voluntary energy performance rating systems
- **1c – Amend the Act to require buildings to hold an energy performance rating**
- 1d – Amend Act to do the above, plus set a minimum acceptable energy performance level

Options to address Objective 2 (Waste Minimisation)

Though data on construction and demolition waste is currently unreliable and incomplete, by some estimates it could account for up to 40 to 50 per cent of all material going to landfill. This results in adverse emissions impacts, primarily from the embodied emissions required to produce materials that are then not used and from the decomposition of organic materials. Despite this, the existing Principle (p) in the Building Act, is the only current requirement in the building regulatory system that encourages the consideration or minimisation of construction and demolition waste. To address this, the following options were considered:

- 2a – Status quo
- 2b – Provide greater non-regulatory support to encourage adoption of voluntary or Council-mandated waste minimisation requirements
- **2c – Amend the Act to require a Waste Minimisation Plan (*without mandating minimum waste minimisation requirements*)—the changes will aim to enable better waste management and improve the quality of information on emissions**
- 2d – Amend the Act to require Waste Minimisation Plans and set minimum requirements on waste minimisation and diversion from landfill

Options to address Objective 3 (Align focus on climate change in Act)

It is unclear in legislation what ‘sustainable development’ requires. Additionally, there may be confusion as to whether it incorporates modern climate change goals, specifically promoting emissions reduction and climate resilience in line with climate change goals as set out in the Zero Carbon Act. While many of the existing principles in the Act align with the climate change outcomes we are seeking to achieve, they are often not considered by those performing duties under the Act and have not been built on through building performance requirements. This suggests that the principles may be insufficiently clear where they relate to climate change goals as set out in the Zero Carbon Act. This is a barrier to the building regulatory system’s ability to contribute towards our climate change goals. To address this, the following options were considered:

- 3a – Status quo

3b – Amend the Act’s purposes and principles and enable the collection of information to align the sector and regulators’ focus on building emissions reduction and climate resilience

We consider that a **combination of options 1c, 2c and 3b** will best meet the objectives of the RIS. These enable legislative actions to support consistent and sustainable emissions reduction and climate resilience, while having flexibility and without being overly burdensome for the sector.

The purpose of this RIS is to provide high-level direction for next steps. If Cabinet agrees to the proposed options and legislation is progressed, the next steps (e.g. regulations) will come to Cabinet following passage of the Bill and engagement with the public. MBIE is developing an implementation plan that will outline what will be done to achieve the benefits of the proposed changes. This may include information and education campaigns to support the industry in understanding the impacts of and reasoning behind the proposed legislative changes. The implementation plan will ensure that changes are progressively implemented according to Cabinet decisions, and the sector is ready when the regulations come into force on or after mid-2024.

Analysis of options

The options were analysed using a high-level multi-criteria analysis (MCA) followed by a cost-benefit analysis (CBA) of the remaining options. The MCA was implemented to compare how each option aligns with common dimensions of regulatory system effectiveness.

Options 1b to 1d, 2b to 2d and 3b each achieve the objectives to a greater degree than the status quo. However, Options 1c, 2c and 3b achieve all objectives at least as well, and in most cases better than the other options. For instance, the impact of WMPs may be more likely to occur sooner where Option 3b might be combined with Options 1c and 2c, as amendments to the purposes and principles of the Act could signal the need for the sector to move to this approach, encouraging earlier uptake. Furthermore, stakeholders indicated support for the measures in Options 1c, 2c and 3b.

This combination of options (1c, 2c, 3b) is proposed by MBIE and is assessed in detail in the CBA.

Detailed Cost Benefit Analysis

Table 3 summarises the results of the CBA. The full CBA, including the methodology, is provided in a supporting document.

This analysis includes assumptions about policy design that could be progressed under the enabling legislative proposals. These can be further refined through policy development and engagement prior to implementation. The analysis also includes assumptions around how the proposals may change behaviour – for instance, while the proposals analysed would not require people to invest in energy efficiency upgrades or achieve a certain degree of waste reduction, we have assumed they will cause some voluntary uptake of such services.

Analysing the preferred options' impacts from 2023 to 2050, total monetised costs are \$5,650 million and total monetised benefits are \$5,687 million. The net cost to society is therefore estimated at \$37 million and has a benefit-cost ratio (BCR) of 1.00.

However, as the options consider enabling legislative changes, each component within this option is subject to a number of sensitivities that could result in greater net quantified benefits or in some cases costs. Further, there are a number of benefits that have the potential to be significant but have not been able to be reliably quantified due to data constraints at this time. These benefits are described qualitatively in more detail in the attached CBA and should be considered alongside the quantitative analysis.

Limitations and Constraints on Analysis

Key areas of uncertainty/limitations are around:

1. Exact policy design/application. This package of changes analysed would be intended to set enabling frameworks to reduce the building and construction sector's emissions and support the construction of more climate resilient buildings. Many of these proposals would require detail or regulations to be developed before they are implemented. Any such requirements would be brought to Cabinet for consideration in due course following engagement with the sector and, potentially, separate regulatory impact analysis.
2. Available data regarding expected volumes, savings, and costs. Data around construction and demolition waste volumes and practices is currently poor. New Zealand-based information about the costs of energy efficiency investments or possible volumes is also inconsistent. For the purposes of analysis, international data has been used and information from smaller New Zealand-based studies has been extrapolated.

Key assumptions

1. Finer details of the initiatives can be determined through subsequent design or regulation. The analysis has therefore assumed certain design features in keeping with the outlined intent, though as described in the Cabinet paper *Proposed Building for Climate Change Amendments to the Building Act 2004* it is intended that certain aspects be considered further. This is also described in the implementation section. Any adjustments would need to be considered at the time of analysing the impacts of proposed regulations, and this will allow for tailoring and further consultation where appropriate.
2. Best estimates have been used and assumptions documented, supplemented by sensitivity analysis around key uncertainties that would make a material difference to the resulting analysis. Analysis was focused on the major impacts noting that sensitivity analysis should allow for any further impacts that have not been able to be explored in greater depth.
3. General consultation was undertaken as part of the ERP and National Adaptation Plan (NAP) process, which included engagement with Māori. Further focused engagement also took place with a targeted cross-industry stakeholder group and with several existing stakeholder forums, such as the Building Advisory Panel and the Construction Sector Accord.

4. Risks are highlighted in the analysis. These can then be managed and mitigated through legislative drafting, subsequent regulations and guidance, and implementation.
5. Timeframe for implementation. The assumption is that initiatives or legislation could be introduced in 2023 and progressively implemented to 2025.

Responsible Manager(s) (completed by relevant manager)

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Ministry of Business, Innovation, and Employment



23 August 2022

Quality Assurance (completed by QA panel)

Reviewing Agency:	Ministry of Business, Innovation, and Employment
Panel Assessment & Comment:	Amendments completed – primarily around making the information clear to the reader. Assessed as now meeting all requirements.

Section 1: Diagnosing the policy problem

This section provides background to this Regulatory Impact Statement (RIS) and the problem of emissions from the building and construction sector. It provides context on the current regulatory settings.

Context and background of the problem

It is estimated that in 2018, the building and construction sector was responsible for 15 per cent of all New Zealand's domestic emissions (except biogenic methane). As well as direct emissions, much of this contribution comes from the emissions the sector drives in other sectors such as energy, industry, and waste.

The Zero Carbon Act requires that:

'Net accounting emissions of greenhouse gases in a calendar year, other than biogenic methane, are zero by the calendar year beginning on 1 January 2050 and for each subsequent calendar year.'

To achieve this, all sectors of the economy will need to reduce emissions from all greenhouse gases, except biogenic methane, to net zero by 2050. As the building and construction is a key contributor to these emissions, reaching this goal requires decarbonisation of the sector.

To this end, in April 2022, Cabinet invited the Minister for Building and Construction to report back to Cabinet Economic Development Committee to seek policy decisions on a *Building (Climate Change Response) Amendment Bill* [CAB-22-MIN-0080.01 refers]. This Bill will seek to introduce enabling legislation and new regulation-making powers to the Act, which will enable the building system to better respond to climate change.

Consultation and engagement have informed options being considered

In 2020, the Ministry of Business, Innovation, and Employment (MBIE) publicly consulted on two emissions reduction frameworks that proposed measures to reduce the embodied carbon and improve the operational efficiency of new buildings. MBIE received 374 submissions from across the building and construction sector, with feedback on the frameworks being largely positive.

In 2021, the Government consulted to inform New Zealand's first Emissions Reduction Plan (ERP). The consultation sought feedback on a range of proposals, including proposals to lift existing buildings' energy performance and support construction waste minimisation. The consultation included a targeted webinar with a Māori audience. The ERP consultation document's building and construction section received at least 278 submissions, including at least 85 organisations. MBIE analysed a subset of key organisations' submissions, and found most submitters supported the proposals.¹

¹ The submissions were selected from a list provided by the Ministry for the Environment based on involvement with the building and construction sector and were made up of long-form submissions and email response submissions.

In 2022, MBIE convened a targeted stakeholder group of representatives from across the sector to discuss the proposals.² This group has met seven times across two months. MBIE also engaged the Building Advisory Panel to provide independent strategic advice on issues facing the construction sector. These engagements have resulted in constructive feedback on the proposals and broad support from across the sector.

Significant agency consultation has also informed the proposals. The Ministry for the Environment (MfE) has been engaged in the development of the waste minimisation proposals, and the Ministry of Justice in the development of offences and penalties. Impacted agencies such as the Ministry of Housing and Urban Development and Kāinga Ora: Homes and Communities have been involved.

Support for the Government's overarching priorities

The Government's priorities for its current term are designed to help progress a cohesive Government work programme, to assist prioritising portfolio initiatives and resourcing, and to communicate the Government's agenda. These priorities relate to three objectives. Of relevance to this RIS are *Objective 2: Accelerating the Recovery* (Objective 2) and *Objective 3: Laying the Foundation for the Future* (Objective 3).

Objective 2's focus is to accelerate New Zealand's economic recovery by investing in people, jobs, small businesses, infrastructure, and global trade. The Objective outlines a five-part economic plan. Point five of this plan is to 'prepare for the future by making the most of our competitive advantage in renewable energy and waste production.'

Objective 3's focus is on reshaping the economy to be more productive, more sustainable, and more equitable. Part of the Objective is to take further action on climate change, including a focus on sustainability and pursuing carbon neutrality. While this objective does not mention the building and construction sector specifically, its broader focus on climate change and carbon neutrality is in line with reducing the sector's emissions.

The current policy setting

New Zealand's building and construction sector is regulated under the *Building Act 2004* (the Act). The Act is intended to protect the public's safety and property, lift the sector's performance, and promote sustainable development. The Act also establishes compliance with the Building Code, which sets the minimum performance standards buildings must meet. All building work in New Zealand must comply with the Building Code.

Energy performance

The Building Code sets the mandatory functional requirements and performance criteria that all new building work must comply with. Clause H1 of the Building Code sets objectives, functional requirements and performance requirements to support the energy efficiency of buildings. This clause requires enclosed spaces where temperature or humidity are modified to provide adequate thermal resistance and to limit uncontrollable airflow in certain buildings.

² This group included representatives from Wellington City Council, Selwyn District Council, Institute of Architects, BRANZ, Property Council New Zealand, Certified Builders, Registered Master Builders, New Zealand Green Building Council, Kāinga Ora, and the Ministry for the Environment.

It also sets out physical conditions likely to affect energy performance, and requirements for hot water systems, artificial lighting and heating, ventilation and air conditioning systems.

This Building Code clause was introduced in 1992 and strengthened in 2008, meaning that buildings constructed before those dates did not need to comply with such energy efficiency requirements.

Under the Equipment Energy Efficiency (E3) programme, New Zealand regulates the energy efficiency of products sold in New Zealand. E3 develops two measures which cover products for home, commercial and industrial use:

- Minimum Energy Performance Standards (MEPS) – these require products to meet minimum energy efficiency standards to be sold in New Zealand; and
- Mandatory Energy Performance Labelling (MEPL) – this helps consumers compare energy efficiency and running costs of different products when deciding what to buy.

MEPS and MEPL regulations encourage New Zealanders to develop, import and sell more energy efficient products. However, these measures do not regulate the energy efficiency of buildings.

The BRANZ Building Energy End-Use Study final report (2014) offers insight into the stock, operation and management of New Zealand's non-residential buildings. It confirmed historic research that total energy use is strongly related to floor area – in broad terms, larger buildings use more energy. It also found significant diversity in non-residential building construction, size, location, ownership, management and use, and similarly significant diversity in energy use, performance, and building management.

Enabling better information provision and transparency across the sector is an opportunity to lift the energy efficiency of existing buildings. Currently, tenants and building owners have limited information about the energy performance of buildings. This makes it difficult for them to understand or compare the energy efficiency or running costs of buildings they may wish to rent or buy. Building owners also have limited incentive to invest in energy efficiency features or retrofits such as insulation, efficient building services, or low-carbon designs or materials beyond minimum Building Code performance requirements. Finally, government has limited understanding of buildings' energy use at a system level. This constrains our ability to target initiatives or set requirements for buildings that are major energy users.

Waste minimisation

The primary legislation for waste in New Zealand is the Waste Minimisation Act 2008 (WM Act). The WM Act introduced a waste disposal levy of \$10 per tonne on municipal waste from 2009. This had little impact on behaviours in the construction the sector as the majority of construction and demolition waste goes to cleanfills and other disposal sites which are not currently subject to the waste disposal levy.

Since 2021 the waste disposal levy has been progressively increasing and expanding to waste facilities such as construction and demolition landfills. When the waste disposal levy finishes rising in 2024, it will provide a more significant price signal to reduce waste while also generating revenue to invest in improving the waste system (including infrastructure) and generating more data about construction and demolition waste quantities.

The Ministry for the Environment (MfE) is progressing a significant waste reduction work programme centred around Government's focus on transitioning towards a low waste, low emissions, more circular economy. through for improving foundational aspects of waste. This

work programme includes reforming the WM Act, developing a waste strategy and long-term infrastructure plan, and improving data availability and collection to support a transformation of the waste system in New Zealand. The Waste Minimisation Fund, supported by the waste disposal levy, and funding through the Covid Response and Recovery Fund have supported construction and demolition waste projects and resource recovery infrastructure.

The existing Principle (p) in the Building Act, is the only current requirement in the building regulatory system that encourages the consideration or minimisation of construction and demolition waste.³ This principle has not been built on through other regulatory requirements.

Some councils have established bylaws that require waste minimisation plans to be provided with building consent applications.⁴ Other councils are actively exploring developing their own bylaws.⁵ While many of these council-led initiatives have promising waste reduction potential, they vary by council and have been challenging for territorial authorities to enforce.

Though data on construction and demolition waste is currently unreliable and incomplete, by some estimates it could account for up to 40 to 50 per cent of all material going to landfill. This results in adverse emissions impacts, primarily from the embodied emissions required to produce materials that are then not used and from the decomposition of organic materials.

Purposes and Principles of the Act

Section 3 of the Act states the following purposes:

- *to provide for the regulation of building work, the establishment of a licensing regime for building practitioners, and the setting of performance standards for buildings to ensure that:*
 - *people who use buildings can do so safely and without endangering their health,*
 - *buildings have attributes that contribute appropriately to the health, physical independence, and well-being of the people who use them,*
 - *people who use a building can escape from the building if it is on fire, and*
 - *buildings are designed, constructed, and able to be used in ways that promote sustainable development.*
- *to promote the accountability of owners, designers, builders, and building consent authorities who have responsibilities for ensuring that building work complies with the Building Code.*

³ Subsection 4(2)(p) of the Building Act 2004 states that persons performing functions or duties, or exercising powers conferred under the Act must consider the need to facilitate the reduction in the generation of waste during the construction process.

⁴ Wellington City Council, Hamilton City Council, New Plymouth District Council and Selwyn District Council

⁵ Auckland City Council and Dunedin City Council

It is unclear in legislation what ‘sustainable development’ requires. Additionally, there may be confusion as to whether it incorporates modern climate change goals, specifically promoting emissions reduction and climate resilience in line with climate change goals as set out in the Zero Carbon Act.

Section 4(2) of the Act also contains a set of 17 principles that are to be applied when the Minister, Chief Executive, a territorial or regional authority, or under subpart 6B of Part 2 of the Act, a person who may designate land or a “responsible person”⁶ performs functions, duties, or exercises powers under the Act.

Relevant in the context of emissions reductions are the following six principles:

- *the importance of ensuring that each building is durable for its intended use,*
- *the costs of a building (including maintenance) over the whole of its life,*
- *the need to facilitate the efficient use of energy and energy conservation and the use of renewable sources of energy in buildings,*
- *the need to facilitate the efficient and sustainable use in buildings of
 - *materials (including materials that promote or support human health), and*
 - *material conservation,**
- *the need to facilitate the efficient use of water and water conservation in buildings, and*
- *the need to facilitate the reduction in the generation of waste during the construction process.*

While many of the existing principles in the Act align with the climate change outcomes we are seeking to achieve, they are often not considered by those performing duties under the Act and have not been built on through building performance requirements. This suggests that the principles may be insufficiently clear where they relate to climate change goals as set out in the Zero Carbon Act. This is a barrier to the building regulatory system’s ability to contribute towards our climate change goals.

What is the policy problem or opportunity?

Three core policy problems are relevant to this RIS. Note that each of these core policy problems also intersect with a general issue around limited access to good quality information on building emissions and climate resilience.

- **The building regulatory system does not enable consumers and Government to easily understand the energy efficiency of buildings.** The information available on building energy efficiency is inconsistent and not comparable. This makes it difficult for consumers (those that lease or rent building space) and the Government to access comparable information on a building’s energy performance. This means there is limited ability and incentive for building occupiers to consider information to reduce energy usage and improve the resilience of New Zealand’s energy system. Three key stakeholder groups are impacted:

⁶ As defined in section 133BB(1).

- **Consumers** – Consumers can find it difficult to obtain information on, or understand, the energy efficiency of buildings they may wish to buy or rent (information asymmetry problem). Buildings with high energy efficiency are unable to differentiate themselves from others, and consumers are unable to allow energy efficiency to influence their consumption choices.
- **Building owners selling, renting or leasing buildings** – These stakeholders have limited incentive to invest in energy efficiency features or retrofits such as insulation, building service designs, or materials with lower embodied carbon. That is, there is limited reward for those leasing to ensure energy efficiency due to uncertainty over the ability to recover such costs (potential market failure) and not facing the full costs of existing arrangements (externalities, including emissions that go beyond the direct consumers).
- **The Government** – Government has a limited understanding of buildings' energy use at a system level (information asymmetry/problem). An information gap exists that limits the Government's ability to target initiatives effectively. The gap makes it difficult to effectively target building policy interventions related to emissions reduction and energy efficiency.
- **The building regulatory system does not incentivise action on construction and demolition waste minimisation.** Construction and demolition waste is considered inconsistently and effort to reduce it is often not prioritised. By some estimates building and construction waste could contribute to around half of the waste going to landfill. The amount of expensive building materials going to landfill indicates that cost and consistency efficiencies can be gained from reducing waste. The lack of specific requirements for waste are likely to result in greater emissions from embodied carbon of construction materials than other options. Further, market failures are resulting in the overproduction of construction and demolition waste. These arise from negative externalities, where the production of construction waste imposes negative effects on unrelated third parties. We consider the following market failures to be present:
 - **Information asymmetry** – Building owners having limited information on the quantity of waste produced, relative to the parties generating the waste. As the costs are ultimately borne by the building owners—who have limited oversight of the unnecessary costs—and not the parties producing the waste, there is limited incentive for waste minimisation.
 - **Costs of waste are not borne by the parties involved in the construction activity** – Not all contributors to the waste bear the cost of waste, leading to overproduction. For example, designers have limited incentive to minimise waste as their revenue is fixed, i.e. regardless of the waste produced and cost to the owner their revenue will remain the same, or their revenue may decrease if they redesign a project to minimise waste and the building owner may be less satisfied with the outcome. This cost is the negative externality present in the market for construction waste.
- **There is a lack of clarity and focus on climate change for building and construction sector stakeholders and regulators.** The purposes and principles of the Act do not clearly or sufficiently reflect New Zealand's climate change goals as set out in the Zero Carbon Act. This lack of clarity does not enable building practitioners to understand their roles and responsibilities in relation to climate

change and may limit the ability for to progress building performance requirements to support emissions reduction. A lack of clearly understood legislative purpose may result in unclear or inconsistent policies, investments and changes in practice to reduce emissions and ensure buildings are climate resilient.

- Currently, the Act has the purpose of ensuring that ‘buildings are designed, constructed, and able to be used in ways that promote sustainable development’. However, the legislation is not clear on what ‘sustainable development’ requires. The definition is open to interpretation and does not explicitly reflect the climate change goals set out in the Zero Carbon Act, which could limit or confuse future action to reduce emissions.
- Persons carrying out functions under the Act, as described under ‘current policy settings’ above, must adhere to the set of principles set out in section 4 of the Act. However, the status quo for waste and energy efficiency indicates they are inconsistently considered or applied. The principles also lack clarity in how they relate to the climate change goals set out in the Zero Carbon Act. This lack of clarity is a barrier to the building regulatory system’s ability to contribute to the climate change goals.

There is also limited information available on building emissions and climate resilience. This issue cuts across all the core policy problems. Currently, the Government does not have the necessary information to ensure the building and construction sector contributes to the goal of net zero carbon emissions by 2050. Information is required to inform policy decisions and programmes. For example, emissions and climate resilience data can be used to inform the costs and benefits of extending energy performance rating requirements. In addition, without accurate information, there is limited ability to track the progress of the sector and amend ineffective policy decisions. As the Act currently stands, there is no power to enable information on building sector emissions and climate resilience to be collected.

Feedback from the consultation and engagement described above has supported the nature of the problems as described here.

What objectives are sought in relation to the policy problem?

The policy problems above are interconnected, in that they all consider the building and construction sector’s response to climate change. However, they have discrete causes and drivers, and would respond differently to different interventions.

This RIS therefore has three objectives to address the range of problems outlined above:

- Objective 1 (Energy Efficiency): Enable consumers, those that lease or rent building space, and the Government to have better information on the energy performance of existing buildings in such a way that improves energy efficiency across the building stock (addresses problem 1);
- Objective 2 (Waste Minimisation): Enable more consistent requirements for people to consider, recognise or reduce the social and environmental cost of construction and demolition waste (addresses problem 2); and
- Objective 3 (Align focus on climate change in Act): Align the focus for both the building sector and regulators to support building emissions reduction and climate resilience (addresses problem 3).

Section 2: Deciding upon an option to address the policy problem

What criteria will be used to compare options to the status quo?

We use the following criteria to assess options, which are broadly aligned with the common dimensions of regulatory system effectiveness outlined by the Treasury:

- **Effective** - to what extent does the option deliver the intended outcomes and impacts
- **Efficient** - to what extent does the option minimise unintended consequences and undue costs and burdens
- **Durable and resilient** - how well does the option cope with variation, change and pressures
- **Fair and accountable** - how well does the option respect rights and deliver good process

As part of this analysis, we have considered whether options meet the objectives of this RIS, and if so, which best support the objectives and are expected to provide the greatest net benefits (considering both qualitative and quantitative benefits). Consideration has been given to distributional impacts and views of stakeholders raised during consultation.

What scope will options be considered within?

The scope of the options considered in this RIS are only options that support the objectives stated above. That is, changes to the Act unrelated to climate change have not been considered, nor have those that address alternative problems (including those that form part of the wider BfCC package that would not require legislative change).

What options are being considered?

A suite of 11 options is considered in this RIS. Because the objectives are distinct and are likely to respond differently to different interventions, the options are considered separately on a per objective basis.

Options to address Objective 1 (Energy Efficiency)

- 1a – Status quo
- 1b – Provide greater non-regulatory support to voluntary energy performance rating systems
- 1c – Amend the Act to require buildings to hold an energy performance rating
- 1d – Amend the Act to require buildings to hold an energy performance rating and meet a minimum acceptable energy performance level

Options to address Objective 2 (Waste Minimisation)

- 2a – Status quo
- 2b – Provide greater non-regulatory support to voluntary or Council-mandated waste minimisation requirements

- 2c – Amend the Act to require a Waste Minimisation Plan to be submitted when seeking a building consent (*without* mandating minimum waste minimisation requirements)
- 2d – Amend the Act to require a Waste Minimisation Plan, with mandatory waste minimisation requirements, to be submitted when seeking a building consent

Options to address Objective 3 (Clarify role of climate change in Act)

- 3a – Status quo
- 3b – Amend the Act’s purposes and principles and enable the collection of information to align the sector and regulators’ focus on building emissions reduction and climate resilience

Alternative options not considered in depth

Several other options were briefly examined as solutions to the problems stated above. While these would address the problems, they each had attributes that meant they were inadequate (not in scope or would not address the objectives), and we consequently chose to exclude them from further analysis.

We summarise the alternative options and the reasons for their exclusion in Table 1 below. We note that for the problems inherent in the purposes and principles of the Act, no alternative solutions were considered.

Table 1: Alternative options considered

Problem	Alternative solution	Reason for exclusion
All problems.	Develop full and prescriptive legislation to address each problem (as opposed to progressing enabling legislation).	Legislation of all the options would not be sufficiently flexible to adapt to processes and options as required.
Consumers, building owners, and the Government have limited information on the energy performance of existing buildings.	Set requirements for building owners to self-report specific information on energy performance.	This would be similar to the energy performance rating, more difficult for non-technical stakeholders to engage with, and significantly more difficult to achieve consistency and compliance across the sector.
There are no standard and enforced requirements in the building regulatory system that encourage the consideration or minimisation of construction and demolition waste.	Adjust waste disposal levy that applies to construction and demolition waste. This would internalise the negative externality. ⁷	The waste levy has only recently been adjusted to cover construction and demolition waste. We are therefore looking at what is needed alongside the levy, which may

⁷ The negative externality arises from the social cost of construction and waste being greater than the private cost, resulting in overproduction, or in this case, more waste than the socially optimum outcome.

		<p>be hard to tailor perfectly to the externality in all cases.</p> <p>In addition, price alone is not the only market failure. There is also a significant information asymmetry that leads to costs being passed on. The costs of waste do not always fall upon the party best able to influence waste outcomes (e.g., sub-contractors).</p>
It is unclear that the current purposes and principles of the Act enable actions to drive emissions reduction, such as capping operational emissions and embodied carbon.	Publish a sector-wide announcement to inform the sector of the potential for upcoming regulatory change aimed at reducing emissions.	Does not set a long-term or predictable framework for change and may create potential for legal challenge.
Building emissions and climate resilience information is limited.	Ask sector participants to report or release information.	The proposals allow for this but the regulations that will apply to requirements are intended to consider what information is of sufficient value to warrant the cost of provision. Including through regulation allows greater ease of adjustment where this may be appropriate.

Describe the options in detail

The following section describes the 11 options in detail, as they correspond to each of the three objectives.

Objective 1: Enable consumers, those that lease or rent building space, and the Government to have better information on the energy performance of existing buildings in such a way that improves energy efficiency across the building stock

- *1a – Status quo*

Under this option, there will be no changes to the Act or regulations to assist the building and construction sector to achieve the goals stated in the ERP. Existing industry processes and initiatives to understand and improve buildings' energy efficiency, such as Building Code minimum performance requirements for new buildings and voluntary energy rating schemes like NABERSNZ (the New Zealand equivalent of the National Australian Built Environment Rating System), Home Star and Greenstar, will be relied on to reach near-zero emissions.⁸

⁸ NABERSNZ is a system for rating the energy efficiency of existing office buildings. Home Star is a system for rating residential buildings at the design stage. Greenstar is a system or rating commercial buildings at the design stage.

Limited information about existing buildings' energy performance would be available to support consumer decision-making and would be limited incentive for building owners to understand or lift their buildings' energy performance.

- *1b – Provide greater non-regulatory support to voluntary energy performance rating systems*

Under this option, there will be no changes to the Act or regulations to assist the building and construction sector to achieve the goals stated in the ERP. Existing industry processes and initiatives will be relied on to reach near-zero emissions.

Additional non-regulatory support such as communications, guidance or financial incentives would be offered to support uptake of existing energy performance initiatives like NABERSNZ, Home Star and Greenstar.

- *1c – Amend the Act to require buildings to hold an energy performance rating*

Under Option 1c, the pathway to achieving near-zero emissions will be assisted using several key requirements focused on requiring energy performance ratings and improving the quality of information. The requirements include amending the Act to:

- *Introduce building energy performance rating requirements.* Owners of certain buildings will be required to hold and display a current energy performance rating. It is expected that regulations that specify requirements apply to new and existing commercial, public, industrial, and large multi-level apartment buildings in the first instance, based on these buildings' greater relative emissions on a per building basis, and therefore greater potential benefit. There may be building size thresholds to exclude cases where the requirements would be unduly onerous. Those leasing building space will be incentivised to invest in energy usage improvements as a higher rating can be rewarded in the market. This requirement provides an opportunity to improve the existing and future building stock's energy performance.
- *1d – Amend Act to require buildings to hold an energy performance rating and set a minimum acceptable energy performance level*

In addition to the requirements set in Option 1c, this option would also set a minimum acceptable energy performance level that buildings must exceed to be rented or sold. It could be an offence to sell or rent a building that has been rated as having energy efficiency at a lower level than the acceptable threshold. This threshold would be set in regulations at a later date (following separate regulatory impact analysis) and reviewed regularly to drive progressive improvement in the performance of the existing building stock.

This option would functionally require buildings with poor energy performance to be upgraded if their owner is to receive benefit from them.

Objective 2: Enable more consistent requirements for people to consider, recognise or reduce the social cost of construction and demolition waste (information, regulatory and externality issues)

- *2a – Status quo*

Under this option, there will be no changes to the Act or regulations to assist the building and construction sector to achieve the goals stated in the ERP. Existing industry and Government processes and initiatives to reduce construction and demolition waste, such as some existing Council-mandated waste minimisation plan requirements, will be relied on to reduce waste and reach near-zero emissions. Some level of increased information collection will be enabled under the Waste Minimisation Act.

- *2b – Provide greater non-regulatory support to voluntary or Council-mandated waste minimisation requirements*

Under this option, there will be no changes to the Act or regulations to assist the building and construction sector to achieve the goals stated in the ERP. Existing industry and Government processes and initiatives to reduce construction and demolition waste will be relied on to reach near-zero emissions. Some level of increased information collection will be enabled under the Waste Minimisation Act.

Additional non-regulatory support such as communications, guidance or financial incentives would be offered to support uptake of existing waste minimisation resources such as the BRANZ REBRI toolkit, or waste management services such as Green Gorilla.⁹

- *2c – Amend the Act to require a Waste Minimisation Plan (without mandating minimum waste minimisation requirements)*

Under this option, the pathway to achieving near-zero emissions will be assisted using several key requirements focused on waste management and the quality of information. The requirements for Option 2c include amending the Act to:

- *Require Waste Minimisation Plans.* Building consent applicants and those demolishing buildings would be required to develop and provide a Waste Minimisation Plan that outlines how they have considered designing out waste, and how re-use, recycling, and waste reduction will be realised during construction. Consistent but flexible minimum standards for these Waste Minimisation Plans could be set to enable tailoring to local circumstances, particularly around each area's waste management and resource recovery facilities. Regulations could specify to which building types and demolition projects these requirements apply.
- Waste Minimisation Plan would be required at the same time as a building consent application is submitted, though the consent's approval will not depend on the plan.

⁹ BRANZ's Resource efficiency in the building and related industries (REBRI) toolkit focuses on reducing the amount of building material wastes generated at construction and demolition sites that would otherwise be sent to landfill. Green Gorilla provides Auckland-based commercial waste collection, recycling & diversion services.

- Under this option there would be no required or minimum amount of waste that must be reduced or diverted from landfill. The process of developing the Waste Minimisation Plan would in of itself enable waste minimisation.

Penalties and infringement notices will be introduced to support compliance with these requirements. These are provided in Appendix One: Proposed offences and penalties.

- *2d – Amend the Act to require Waste Minimisation Plans and set minimum requirements on waste minimisation or diversion from landfill*

In addition to the requirements set in Option 2c, this option would also set a minimum amount of waste that must be reduced or diverted from landfill in order for the building consent to be provided (for instance, 20-25% less waste than the average construction site). It could be an offence to not reduce or minimise waste to the level set out in the Waste Minimisation Plan. This threshold would be set in regulations at a later date (following separate regulatory impact analysis) and reviewed regularly to drive progressive improvement in waste minimisation and consider expanding waste infrastructure.

Objective 3: Align the focus for both the building sector and regulators to support building emissions reduction and climate resilience

- *3a – Status quo*

Under this option, there will be no changes to the Act or regulations to assist the building and construction sector to achieve the goals stated in the ERP.

3b – Amend the Act’s purposes and principles and enable the collection of information to align the sector and regulators’ focus on building emissions reduction and climate resilience

Key changes under Option 3b include:

- *Amending one of the Act’s purposes to focus on promoting emissions reduction and climate resilience.* The amendment will enable building work, building practitioners, and buildings’ performance standards to be regulated to reduce emissions and ensure climate resilience. It will send a signal that the sector needs to consider climate change and the emissions implications of their decisions. As part of these changes, it will be clarified that they provide grounds for regulation in the Building Code to be created to reduce the operational and embodied carbon emissions of buildings.
- *Introducing new climate change principles to the Act.* The principles will be reorganised and contextualised in a modern climate change framework. Three new/reorganised principles are proposed around:
 - The need to ensure that buildings minimise whole-of-life embodied carbon emissions.
 - The need to ensure that buildings have a high level of operational efficiency while having attributes that contribute appropriately to the health, physical independence, and well-being of the people who use them.

- The need to ensure that buildings are built to be resilient to changing climate conditions.
- *Providing MBIE with the ability to collect information on building emissions reduction and climate resilience.* This information will be required to support emissions reduction, climate resilience, and enable consumers to assess and compare the embodied carbon, operational efficiency, and climate resilience of buildings. The information will assist future policies and track progress towards achieving near-zero emissions. It will also allow consumers to alter their consumption choices.

Multi-criteria analysis of options against objectives

A multi-criteria analysis (MCA) was conducted by MBIE. The MCA compared the options, depending on the extent to which they meet the objectives described in Section 1.

Options 1c, 2c, and 3b each achieve the objectives to a greater degree than the status quo. However, the combination of Options 1c, 2c and 3b achieves all objectives at least as well, and in most cases better than each of the options as a standalone. Further, stakeholders indicated support for the components of the preferred option.

How do the options compare to the status quo/counterfactual?

Table 2: Multi-criteria analysis comparison of options

Objective 1: Enable consumers, those that lease or rent building space, and the Government to have better information on the energy performance of existing buildings in such a way that improves energy efficiency across the building stock.

Criteria	Option 1a – Status quo	Option 1b – Provide greater non-regulatory support to voluntary energy performance rating systems	Option 1c – Amend the Act to require buildings to hold an energy performance rating	Option 1d - Amend Act to require buildings to hold an energy performance rating and meet a minimum acceptable energy performance level
Effective	0 Information on building energy efficiency is inconsistent and not comparable. This makes it difficult for consumers, those that lease or rent building space, and the Government to access comparable information on a building's energy performance.	+	+++	++
		Would generate some additional consumer information about building energy efficiency, but it is unlikely to be consistent or comparable and may not drive consumer decision-making. Voluntary requirements would not consistently drive action or investment by building owners to reduce emissions.	Would generate more complete and comparable consumer information about building energy efficiency, and as requirements are consistent and mandatory are more likely to drive action or investment by building owners to reduce emissions.	Would generate more complete and comparable consumer information about building energy efficiency, and as requirements are consistent and mandatory are more likely to drive action or investment by building owners to reduce emissions. A minimum acceptable energy performance level may increase energy efficiency, but is likely to affect buy-in to the programme if building owners are unable to affordably meet acceptable performance levels or find these levels onerous or not credible.
Efficient	0 Voluntary energy ratings schemes will continue, with existing limited levels of uptake. Greater awareness of climate change and carbon Neutral Government Programme requirements may drive a small increase in ratings. Buildings with poor energy efficiency will be less likely to hold a rating, and when they are rated this information is less likely to be disclosed to potential tenants.	+	++	+
		Greater uptake of ratings than status quo, but likely to result in lower and less consistent uptake of ratings than a mandatory scheme. Buildings with poor energy efficiency are less likely to be rated, and where they are rated are less likely to disclose this information to potential tenants. Consumers would largely continue to have inconsistent and non-comparable information about buildings' energy efficiency.	Sets consistent and understandable requirements, which would support building owners and tenants' understanding of their responsibilities. Relatively simple to administer and enforce using existing energy performance rating systems.	Sets consistent and understandable requirements, which would support building owners and tenants' understanding of their responsibilities. Would be complex and costly to develop, administer and enforce credible minimum levels of energy performance, and may not work with existing energy performance rating systems. May result in owners of buildings that are not energy efficient (e.g. heritage buildings) being unable to sell or rent them, leading to increased vacant building stock.
Durable and resilient	0 Provides limited ability for building occupiers to consider information to reduce energy usage and improve the resilience of New Zealand's energy system. Will not result in long-term or systemic improvements to energy efficiency, which is required to progress the building sector's climate change response.	+	+++	++
		While it may improve information that is available to some building users and lead to small improvements in energy efficiency, this option is unlikely to result in long-term, systemic improvements in energy efficiency that are needed to progress the building sector's climate change response.	Energy performance ratings for buildings will provide information to improve energy efficiency, and in doing so contribute to the resilience of the wider energy system. This option also contributes to sustainable long-term system improvements to building energy efficiency, which is needed to progress the building sector's climate change response.	Energy performance ratings for buildings will provide information to improve energy efficiency, and in doing so contribute to the resilience of the wider energy system. This option also creates some long-term systemic improvements to the building and construction sector, but is likely to be costly, unsustainable and result in significant disruption for the sector.
Fair and accountable	0 Information asymmetry continues between building owners and potential tenants. Consumers	+	+++	+
		Only a proportion of buildings are energy rated and there will be incomplete information available	Addresses information asymmetry between	Addresses information asymmetry between

	<p>who lease or rent building space will find it difficult to obtain comparable information on the energy performance of buildings.</p> <p>Potential tenants cannot know the operational costs of running a building before they take on a lease, which may result in unaccounted for costs.</p>	<p>to building users to compare a building's energy performance.</p> <p>There may be inconsistency with who is able to access support, creating potential distributional impacts.</p>	<p>building owners and potential tenants and creates consistent requirements for all building owners.</p> <p>Provides flexible, non-compulsory opportunities for building owners to increase their buildings' energy efficiency if it is cost-effective or reasonable for them to do so for their specific situation.</p> <p>More information means owners of buildings that are not energy efficient may find it more difficult to sell or rent buildings without investing in recommissioning or energy efficiency upgrades.</p>	<p>building owners and potential tenants and creates consistent requirements for all building owners.</p> <p>There are likely to be distributional impacts, where some building owners will have to invest more to meet the standards than others, and could pass these costs on to tenants.</p> <p>Owners of buildings with poor energy efficiency may be unable to afford to upgrade them to a minimum level required to rent or sell them, resulting in stranded assets.</p>
Overall assessment	0	+	+++	++

Objective 2: Enable more consistent requirements for people to consider, recognise or reduce the social and environmental cost of construction and demolition waste.

Criteria	Option 2a – Status quo	Option 2b – Provide greater non-regulatory support to voluntary or Council-mandated waste minimisation requirements	Option 2c – Amend the Act to require a Waste Minimisation Plan to be submitted when seeking a building consent	Option 2d – Amend the Act to require a Waste Minimisation Plan, with mandatory waste minimisation requirements, to be submitted when seeking a building consent
Effective	<p>0</p> <p>Construction and demolition waste is considered inconsistently and effort to reduce it is rarely made.</p> <p>Some Councils require waste minimisation plans and some building projects make use of waste minimisation infrastructure or services.</p>	<p>+</p> <p>Could support some increased uptake and understanding of existing Council-mandated waste minimisation plan requirements, and development of new requirements by some Councils.</p> <p>Construction and demolition waste may be considered more regularly and effort to reduce more regularly made.</p> <p>Enforcement remains difficult and implementation remains inconsistent across New Zealand.</p>	<p>+++</p> <p>A consistent nationwide requirement for waste minimisation plans with consistent enforcement will result in greater reductions in emissions from embodied carbon of construction materials.</p>	<p>+++</p> <p>A consistent nationwide requirement for waste minimisation plans with consistent enforcement will result in greater reductions in emissions from embodied carbon of construction materials.</p> <p>Setting minimum waste diversion requirements may reduce waste, but be difficult to implement equitably and without unintended consequences given the diversity of building types, local, and on-site conditions. It would require a significant amount of information that could be onerous to collect and be complex to administer.</p>
Efficient	<p>0</p> <p>By some estimates building and construction waste could contribute around half of the waste going to landfill.</p> <p>The amount of expensive building materials going to landfill indicates that cost and consistency efficiencies can be gained from reducing waste.</p>	<p>+</p> <p>Requirements may be clear within individual regions but differ between regions. This can be confusing and inefficient for designers and builders that operate between multiple regions.</p> <p>Inconsistencies between Council waste minimisation plans can make it difficult for building participants to understand requirements and for decision-makers to obtain comparable information.</p>	<p>+++</p> <p>Consistent, comparable, national Waste Minimisation Plan requirements will enable building participants to implement this requirement more easily and will provide better performance information for decision makers. Provides flexibility for different and appropriate waste minimisation opportunities to be considered in different regions or projects.</p>	<p>++</p> <p>Will provide the benefits of consistent, comparable, national plans. However, minimum requirements could be difficult to consistently enforce because of the different factors involved in generating building and construction waste. May also create unintended consequences or significant costs for building owners, which could drive non-compliance or reduce building activity. This would also put the focus on reducing waste from the site to landfill, rather than on better designs to reduce emissions further up the supply chain.</p>
Durable and resilient	0	+	+++	+

	There are no clear or future-proofed considerations around waste in the regulatory system. The lack of specific requirements for waste are likely to result in greater emissions from embodied carbon of construction materials than other options.	There are no clear or future-proofed considerations around waste in the regulatory system. Inconsistent requirements will likely result in less concerted action to reduce waste and result in greater emissions from embodied carbon of construction materials than other options.	Sets a clear and future-proofed framework for considerations around waste in the regulatory system, which is complementary with MfE's waste minimisation work programme. Consistent national requirements will be more straightforward to implement and likely to lead to less wastage and lower embodied carbon emissions from building materials.	Sets a clear framework for considerations around waste in the regulatory system, which is complementary with MfE's waste minimisation work programme. However, mandatory waste minimisation requirements are likely to be difficult to measure or implement. They may affect the credibility of and buy-in from building stakeholders to this programme over the longer term and may have unintended impacts on the viability of some construction processes.
Fair and accountable	0 Building owners bear the cost of higher levels of waste being transferred to landfills.	+ Building owners bear the cost of higher levels of waste being transferred to landfills in much of the country. Inconsistent Council waste requirements could impose greater obligations on some building participants than others and have different degrees of penalties and levels of enforcement.	+++ Building owners are less likely to bear the cost of higher levels of waste being transferred to landfills in much of the country. Nationally consistent requirements for waste minimisation plans would treat all building participants equally and enable people to understand more easily what is required of them.	+ Building owners are less likely to bear the cost of higher levels of waste being transferred to landfills in much of the country. However, they may bear increased costs from waste diversion that may not be appropriate to their region or project. Mandatory levels of waste minimisation would create distributional impacts as some types of building work and localities may be unable to achieve the requirements without significant costs (e.g. rural areas being less able to access waste infrastructure).
Overall assessment	0	+	+++	++

Objective 3: Align the focus for both the building sector and regulators to support building emissions reduction and climate resilience.

Criteria	Option 3a – Status quo	Option 3b – Amend <i>the Act's purposes and principles and enable the collection of information to align the sector and regulators' focus on building emissions reduction and climate resilience</i>
Effective	0 The purpose of the current Act is unclear in relation to climate change. This lack of clarity does not enable building practitioners to understand their roles and responsibilities in relation to climate change and may limit the ability for MBIE to progress building performance requirements to support emissions reduction. Lack of information makes it difficult to progress, support or monitor success of initiatives to reduce emissions.	+++ Embeds a focus on promoting emissions reduction and climate resilience in the building system. Sends a signal that it is a core responsibility of building sector participants and regulators to consider the climate change and emissions implications of their decisions. Creates clear framework for MBIE to progress future building performance requirements that may be needed to support emissions reduction. Information collection powers support the development, measurement and stewardship of future initiatives to progress emissions reductions and climate resilience.
Efficient	0 A lack of clearly understood legislative purpose may result in unclear or inconsistent policies, investments and changes in practice to reduce emissions and ensure buildings are climate resilient.	++ This option will enable regulators of building work, building practitioners, and those implementing building performance standards to more predictably and consistently introduce policies, investments and changes in practice that will be required to reduce emissions and ensure buildings are climate resilient.

	Lack of information means inefficient and bespoke measures or proxies need to be used to support or monitor success of initiatives to reduce emissions.	Supports development of more coherent and efficient information collection systems, rather than requiring bespoke or ad hoc development and collection.
Durable and resilient	The unclear legislation and lack of information may not enable future regulatory or other system changes that may be needed to progress the building and construction sector's contribution to New Zealand's goal of achieving net zero carbon emissions by 2050.	+++ An enabling and future-proofed legislative and information collection framework whose principles require decision makers to consider how to reduce the operational and embodied carbon emissions of buildings will send a stronger signal that progressive reductions emissions will be required to achieve our climate change goals.
Fair and accountable	The lack of clarity in legislation and information collection means that the impacts of reducing emissions could fall unequally as some building sector parties undertake voluntary action, while others do not. Results in other sectors of the economy needing to take action to achieve net zero carbon emissions by 2050.	++ A clear signal will be provided to all parties in the building sector that there is to be a focus on emissions reduction and climate resilience in the building system. Will support fair and consistent processes and decision-making in future information collection and policy and initiative development.
Overall assessment	0	+++

Scoping framework:	
+++	significantly better than the status quo
++	better than the status quo
+	slightly better than the status quo
0	about the same as the status quo

A combination of options 1c, 2c and 3b is expected to best meet all the policy objectives

A combination of options 1c, 2c and 3b (the preferred combination of options) is best placed to meet the objectives of the RIS. When rated against the status quo across the three objectives, the preferred combination of options score highly.

The preferred combination of options will enable action to support emissions reduction and climate resilience. Waste Minimisation Plan requirements will act to minimise construction waste and reduce the associated environmental consequences. Buildings being required to hold an energy performance rating will aim to address the negative externalities associated with overconsumption of energy. Enabling information to be collected by MBIE will positively impact policies targeted at emissions reduction and climate resilience while amending the principles and purposes will place further focus on undertaking emissions reduction action.

The preferred combination of options also best supports actions under the ERP:

- The proposed Waste Minimisation Plan requirements support the Building and Construction Chapter's action to progress regulatory change to reduce embodied emissions of new buildings (Action 12.1.1), as well as the Waste Chapter's focus on reducing and diverting construction and demolition waste to beneficial uses (Focus Area 3).
- The proposed energy rating requirements support the Building and Construction Chapter's focus on improving building energy efficiency (Focus Area 3).
- The proposed clarifications to the Act's purpose and principles support the Building and Construction Chapter's action to establish an enabling legislative framework to set the foundations for future emissions reduction (Action 12.5.5).

The preferred combination of options will clarify how the sector will support emissions reduction and climate resilience while specifying how this action may evolve. The Waste Minimisation Plan, mandatory energy ratings, and information collection signal pathways through which the sector supports emissions reduction and climate resilience. In addition, amending the purposes and principles will signal and ease future legislative adjustments that may occur as part of the BfCC programme or over time.

What are the marginal costs and benefits of the option?

Option 1c, 2c, and 3b are assessed in a detailed CBA. Potential costs and benefits are assessed from an economic perspective, focusing on the total resource loss or gain to New Zealand and the potential impact of emissions reduction or abatement.

The detailed CBA results and methodology is attached in a supporting document. In line with CBA best practice, the values reported below are for the marginal costs and benefits. That is, the figures reported are stated as incremental to the status quo.

Table 3 summaries the results of each option assessed in the CBA.

Table 3: Summary of each option's results

(Million)	Option 1c	Option 2c	Option 3b
Total monetised costs	\$830	\$4820	Considered qualitatively due to potential cost and benefits largely being indirect.
Total monetised benefits	\$801	\$4886	
Non-monetised benefits	High (see Table 5)	Medium to high (see Table 6)	
Net result	\$29	\$66	
BCR	\$0.96	\$1.01	

Costs and benefits are further categorised as direct or indirect. Direct impacts are those immediately associated with the option, whereas indirect impacts occur as a by-product of the option. Direct costs equate to \$47 million. These costs are largely driven by the costs to the Government from implementing and monitoring the schemes, and to building owners from obtaining and renewing ratings. Indirect costs are \$5,604 million and indirect benefits are \$5,687 million. Interestingly, all benefits are indirect, though the majority of costs are also indirect with only a small portion of direct costs.

We note the figures do not account for the significant non-monetised benefits, such as impact on asset values or economic and employment opportunities that may be created for energy rating assessors or waste minimisation services. Opportunities to further quantify these benefits can be considered as the proposals are developed further. The information collection provisions considered in this analysis will play a key role in further supporting the quantification of benefits.

The options have not monetised the impacts from the information gathering requirements and the amendments to the purposes and principles. This is largely due to the inability to gather sufficient data and difficulty in measurement of the outcomes. Instead, these are qualitatively explored.

Considerations

Table 4 summarises the considerations made in the CBA.

Table 4: Considerations of the CBA

Considerations	Description
Assumed certain design features	The proposed changes set the legislative framework needed for future changes, with finer details of design of the initiatives intended to be determined through future regulations. The analysis has therefore assumed certain design features in keeping with the outlined intent. Though as described in the Cabinet paper it is intended that certain aspects be considered further. This is also described in the implementation section.

	The impact of any adjustments would need to be considered at the time of analysing the impacts of proposed regulations, but this will allow for tailoring and further consultation where appropriate.
Best estimates and assumptions have been used where uncertainty exists	All costs are estimated and based on limited cost information, in particular regarding construction and demolition waste quantities for which there is currently poor data. Best estimates have been used and assumptions documented, supplemented by sensitivity analysis around key uncertainties that would make a material difference to the resulting analysis. Analysis was focused on the major impacts, noting that sensitivity analysis should allow for any further impacts that have not been explored in greater depth.
Non- monetised benefits have been identified and caveated	Given the constraints and uncertainty in the data on which the analysis is based, it has been easier to quantify and monetise costs and more difficult to do so with benefits. Non-monetised benefits have been identified, described and appropriately caveated but have not been incorporated into the quantitative CBA.
Consultation was limited to that of the NAP, the ERP, and targeted stakeholder groups	Consultation was undertaken on the draft NAP and ERP as well as engagement with a targeted group representing cross-industry stakeholders and engagement with several existing stakeholder forums, such as the Building Advisory Panel and the Construction Sector Accord. Consultation is outlined in more depth in Section 1 of this RIS.
Risks are highlighted where possible	Risks are highlighted in the analysis, which can then be managed and mitigated through legislative drafting, subsequent regulations and guidance, and implementation.

Following these considerations, the CBA estimated the marginal costs and benefits for Options 1c, 2c and 3b. The results for each option are followed by sensitivity testing of the key areas of uncertainty. The impacts of the information requirements and the amendments to the purposes and principles are qualitatively explored below the CBA results.

Key parameters

The key parameters used to derive the CBA results are listed below:

- A discount rate of five per cent was used in line with the Treasury’s guidance.
- The present value impacts are analysed out to 2050 to align with Zero Carbon Act’s goal of near-zero emissions by 2050.
- Implementation costs are spread over 2024 and 2025.
- Impacts linearly increase over five years from 2025.

CBA results for Option 1c (energy performance ratings)

Option 1c results in total monetised costs of \$830 million and total monetised benefits of \$801 million. These result in a net benefit of -\$29 million and BCR of 0.96.

Option 1c’s results are displayed in Table 5 below. The figures stated are for the scenario in the CBA with industrial buildings included.

Table 5: CBA results for Option 1c (present value to 2050)

Affected groups	Comment	Impact (millions)	Evidence Certainty
Additional costs compared to taking no action			
Building owners	New ratings for buildings (ongoing)	\$37 (direct)	Medium
	Metering upgrades (one-off)	\$0.8 (indirect)	Medium
	Energy efficiency upgrades (ongoing)	\$789 (indirect)	Low
Government	Implementation and monitoring of Energy Performance Ratings (one-off and ongoing)	\$3.5 (direct)	Medium
Total monetised costs		\$830	Medium
Additional benefits compared to taking no action			
Building users	Power bill savings (ongoing)	\$688 (indirect)	Low
All New Zealanders, including to the environment	GHG emissions reduction (ongoing)	\$113 (indirect)	Low
Total monetised benefits		\$801	Medium
Non-monetised benefits	<ul style="list-style-type: none"> • Health, wellbeing, and productivity benefits • Asset values • Energy infrastructure demand decreases 	High	

Sensitivity of Option 1c’s results

Option 1c’s sensitivity testing focuses on assumed energy savings, and assumed energy costs, given these are the largest drivers of costs.

The cost-effectiveness of energy performance ratings will depend on the payback period and efficacy of energy efficiency upgrades and the extent to which energy reduction can be achieved in the industrial sector.

Under our current modelling of the energy performance ratings, we estimate a BCR of 0.96 from the impacts of introducing energy performance ratings. This incorporates assumptions that energy performance ratings drive some people to invest in energy efficiency improvements for their buildings. This outcome is dependent on a number of uncertain parameters relating to the cost and efficacy of energy efficiency upgrades. We have tested these outcomes through sensitivity analysis below. However, note that in reality it is most likely that building owners will undertake their own analysis to understand if the costs of particular energy efficiency upgrades or actions on their buildings will outweigh costs. The

policy proposals being analysed do not include requirements to invest in energy efficiency upgrades.

To test these outcomes, we undertook three sets of sensitivity tests to determine the impacts of changing these parameters on our results:

1. Payback period of 1, 3 (base) and 5 years for energy efficiency upgrades
2. Proportion of existing buildings able to undertake no-cost upgrades from 0 per cent, 10 per cent (base) and 15 per cent
3. Changes to the energy use intensity (EUI) reduction rate of -50 per cent, 0 per cent (base) and +50 per cent.

Our first set of tests found that an increase in the payback period to 5 years decreased the BCR to 0.57 while a payback period of 1 year increased the BCR to 2.55. This suggests that even with a longer payback period, there could still be an argument for the policy if the non-quantified benefits are determined to be significant enough.

Our second set of tests found that where 15 per cent of existing building stock were able to undertake no-cost upgrades, the BCR increased to 1.02. However, where none of the existing buildings are able to undertake no-cost upgrades, the BCR decreased to 0.87.

However, our third set of tests found that a 50 per cent reduction in the effectiveness of EUI reductions resulted in the BCR decreased to 0.47, while a 50 per cent increase in effectiveness increased the BCR to 1.46. This suggests that the effectiveness of upgrades to achieve the desired reductions in energy usage (approximately an additional 1.5 per cent in EUI reduction from baseline levels) is a critical parameter for the model to achieve a positive BCR.

Furthermore, while we have incorporated the industrial sector into our modelling, we recognise that the profile of buildings in this sector may not all be suitable for energy efficiency upgrades. We find that as long as the product of the percentage of each of these factors exceeds approximately 75 per cent, there is a resulting positive net present value. That is, if we assume 100 per cent of the resulting EUI reduction and 75 per cent of the average floor area is due to buildings captured by the policy, then there is still a positive net present value from the policy. If these factors were to be significantly reduced (e.g. less than 75 per cent of the average floor industrial area is impacted by the policy), this would likely reduce the BCR to below 1.0.

CBA results for Option 2c (Waste Minimisation Plan)

Option 2c results in total monetised costs of \$4,820 million and total monetised benefits of \$4,886 million. These result in a net benefit of \$66 million and BCR of 1.01.

Under this option, we have assumed that Waste Minimisation Plans would be required when a building consent is sought for new building work, and when demolishing a building. Waste diversion quantities (which is the main driver of costs) are based on maximum feasible waste diversion rates for different material types (timber, glass, concrete, etc.), which we have assumed can be achieved from 2030. We note that other interventions, such as the MfE's work on waste, is also underway and care will need to be taken to attribute the potential benefits from this intervention to its costs.

Option 2c's results are displayed in Table 6 below.

Table 6: CBA results for Option 2c (present value to 2050)

Affected groups	Comment	Impact (million)	Evidence Certainty
Additional costs compared to taking no action			
Building owners	Material recovery cost – recycling and re-use (ongoing)	\$4,816 (indirect)	Medium
Government	Implementation and monitoring of Waste Minimisation Plan (one-off and ongoing)	\$6 (direct)	Medium
Total monetised costs		\$4,820	Medium
Non-monetised costs			
Additional benefits compared to taking no action			
Building owners	Avoided landfill disposal costs (ongoing)	\$2,377 (indirect)	Medium
	Avoided material costs (ongoing)	\$1,479 (indirect)	Medium
All New Zealanders, including to the environment	Avoided costs of embedded emissions	\$724 (indirect)	Medium
	Avoided disamenity cost of landfill	\$195 (indirect)	Medium
	Avoided natural gas use from incinerated timber	\$112 (indirect)	Medium
Total monetised benefits		\$4,886	Medium
Non-monetised benefits	<ul style="list-style-type: none"> • Alignment with Māori values and concepts • Impacts on biodiversity • Reduced susceptibility to environmental impacts such as floods • Jobs created through the development of the recycling, material recovery and reuse industry • Waste prevention through low-waste design and improved on-site management • Reduced pollution to land, air and water from heavy metals and toxic chemicals. • Cost savings for building owners and developers from not paying for materials that are not needed 	Medium to High	

	<ul style="list-style-type: none"> • Avoided emissions from more efficient building designs leading to needing and using less materials 		
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Sensitivity of Option 2c's results

The key sensitivity for Option 2c lies in material recovery costs and waste volumes. We also tested the time period of analysis. Other sensitivities are not reported, though it is noted that the largest cost category already reflects recent changes in landfill costs as a result of changes to the waste levy. Further analysis when developing the regulations will further consider sensitivities in relation to material costs, the inclusion of additional materials if data becomes available, any changes if appropriate to assumptions around future carbon prices (or updates to emissions factors) or changes to gas prices.

Material recovery costs

The net present value (NPV) is highly sensitive to the material recovery costs, which, depending on assumption sources, could result in a range from -\$1.5 billion to \$1.8 billion given the volumes to which this applies. We also note that material recovery costs would also only need to decrease 24% under the higher overall cost assumption set to result in a positive NPV. We consider this is feasible given that requiring a Waste Minimisation Plan is likely to drive demand for material recovery services, which may encourage more businesses to enter, innovate and compete in the industry (as well as expand their geographic presence). In addition to increasing economies of scale, competition between suppliers may well decrease the material recovery costs over time.

Under a scenario where material recovery costs are low, the BCR is 1.60. Were material recovery costs to be high, the BCR is 0.77. Further sensitivity analysis of time horizons has taken place which indicates that the longer the time horizon modelled, the greater the resulting BCR.

Waste volumes

Waste Minimisation Plans have the potential to reduce total waste volumes in New Zealand through better on-site management and/or designing out waste in the early development or planning stage. This could realise some benefits through reduced material requirements and reduced embodied carbon, without the significant cost of material recovery.

Sensitivity analysis indicates that a 25 per cent reduction in waste resulting from waste being designed out waste and reduced through improved onsite management bring the BCR to 1.16.

CBA results for Option 3b (Amend the Act's purposes and principles and enable the collection of information to align the sector and regulators' focus on building emissions reduction and climate resilience)

The costs and benefits of this option are largely qualitative and would support the implementation of Options 1c and 2c. The attached CBA outlines these considerations, noting that:

- costs include the direct costs to draft and implement legislation, and
- benefits include greater ease of adjusting regulatory settings in future, greater certainty for the sector about initiatives that could be progressed to support net zero carbon emissions by 2050, and support for the implementation of energy performance ratings and Waste Minimisation Plans.

The CBA finds that Option 3b is expected to provide incremental (non-quantified) impacts. However, given the attribution of these impacts may be uncertain and are difficult to quantify, for the purposes of this RIS this option is considered to have neutral quantifiable costs and benefits. We have highlighted the impacts of the proposed changes to the purpose and principles of the Act under the preferred option in terms of:

- Improved compliance and understanding of climate change requirements
- Early and/or increased adoption (impacting costs and benefits)
- Potentially increased enforcement (impacting costs and benefits)

In addition to these impacts, the changes to the purpose and principles are likely to result in greater:

- Direct cost to implement the legislation (drafting, consultation, etc). For instance, a prior study in 2012 suggested that the average cost per page of legislation at the time was around \$45,000.
- Ease of adjusting settings as required to support climate objectives (reduced relative cost), where the same source above estimated the average cost of a new Act at the time was \$3.3 million compared to the average cost of new regulation of \$0.5 million.
- Certainty for the public in relation to meeting emissions budgets.

The proposed information collection powers would have additional costs and benefits that are not able to be specifically quantified. Under these powers, MBIE may require certain information to be provided to it as set out in regulations, noting that the impacts of seeking such information will be considered when determining what is sought. Therefore, the impacts of this requirement have been incorporated into the CBAs of Waste Minimisation Plans and energy performance ratings in terms of costs to:

- developers or building owners when providing information to MBIE (expected to be negligible where the information is already being provided elsewhere).
- MBIE to receive and maintain the information requested.

However, we also note that if:

- additional information is sought beyond Waste Minimisation Plans and energy performance ratings, MBIE will need to consider the costs to those providing and receiving the information when this is considered in designing the associated regulations.
- MBIE were to publish this information, as it does in the register for earthquake prone buildings, this would bring additional information and technology costs (similar to the register) and also reduce search costs in relation to energy

performance ratings and Waste Minimisation Plans which could improve compliance, energy efficiency, and waste reduction.

CBA results for preferred combination of options (1c, 2c and 3b)

The preferred combination of options results in total monetised costs of \$5,650 million and total monetised benefits of \$5,687 million. These result in a net benefit of \$37 million and BCR of 1.00. These primarily result from the Waste Minimisation Plan and energy performance rating requirements, with costs and benefits regarding information requirements and strengthening the Act's purposes and principles being qualitatively described.

We note that a significant number of benefits cannot be quantified at this stage. This potentially means the analysis is skewed in favour of costs rather than benefits. Some of the benefits cannot be quantified as there is weak or little New Zealand-based evidence, or too much uncertainty about final policy design to make reasonable assumptions about the degree of these benefits. Further work to design regulations and progress information collection powers will enable greater certainty about quantified benefits in future analyses. **Table 5** below states the results of the CBA for the preferred option. For the costs and benefits relating to the energy performance ratings, the figures stated are for the scenario in the CBA with industrial buildings included.

Table 5: CBA results for the preferred option (present value from 2050)

Affected groups	Comment	Impact (million)	Evidence certainty
Additional costs compared to taking no action			
Building owners	Material recovery cost – recycling and re-use (ongoing)	\$4,814 (indirect)	Medium
	New ratings for buildings (ongoing)	\$37 (direct)	Medium
	Renewed ratings for existing buildings (ongoing)	\$12 (direct)	Medium
	Metering upgrades (one-off)	\$0.8 (indirect)	Medium
	Energy efficiency upgrades (ongoing)	\$789 (indirect)	Low
Government	Implementation and monitoring of Waste Minimisation Plan (one-off and ongoing)	\$6 (direct)	Medium
	Implementation and monitoring of energy performance ratings (one-off and ongoing)	\$3 (direct)	Medium
Total monetised costs		\$5,650	Medium
Non-monetised costs	<ul style="list-style-type: none"> • Potential increases in rents • Administrative burden for Councils 	Low	

Additional benefits compared to taking no action			
Building owners	Avoided landfill costs (ongoing)	\$2,377 (indirect)	Medium
	Avoided material costs (ongoing)	\$1,479 (indirect)	Medium
Building users	Power bill savings (ongoing)	\$688(indirect)	Low
All New Zealanders, including to the environment	Avoided costs of embedded emissions	\$724 (indirect)	Medium
	Avoided disamenity cost of landfill	\$195 (indirect)	Medium
	Avoided natural gas use from incinerated timber	\$112 (indirect)	Medium
	GHG emissions reduction (ongoing)	\$113 (indirect)	Low
Total monetised benefits		\$5,687	Medium
Non-monetised benefits	<ul style="list-style-type: none"> • Health, wellbeing, and productivity benefits • Asset values • Energy poverty • Alignment with Māori values and concepts • Impacts on biodiversity • Reduced susceptibility to environmental impacts such as floods • Jobs created through the development of the recycling industry • Waste prevention through low-waste design and improved on-site management • Reduced pollution to land, air and water from heavy metals and toxic chemicals. • Cost savings for building owners and developers from not paying for materials that are not needed • Avoided emissions from more efficient building designs leading to needing and using less materials 	High	

Non-monetised costs

These costs have not been monetised in the CBA to avoid double-counting, because New Zealand-based data and evidence is currently weak, or because they are dependent on assumptions about final policy design or uptake that cannot be made at this stage. They will be further developed through future work.

Potential increases in rents

There is the potential for rents to increase as a building's energy efficiency increases, as energy-efficient buildings will be more desired by tenants and have lower operational costs. Landlords will have increased market power and will be able to charge higher rents.

However, rent increases are a function of reduced energy bills, i.e. a transfer from tenant to landlord. Where rent increases are equal to the energy bill decreases, this has already been captured in the CBA. To the extent the rent increases are greater or less than the reduction in energy bills, there would be an additional benefit or cost to those captured in the CBA.

Administrative burden for councils

Amending the purposes and principles could result in an additional administrative burden for councils. This burden may arise from the time spent reviewing the current published guidance documents and updating for any necessary changes. This cost will vary widely between councils and is inherently hard to estimate. It was therefore not quantified in the CBA.

Non-monetised benefits

These benefits have not been monetised in the CBA because New Zealand-based data and evidence is currently weak, or because they are dependent on significant assumptions about final policy design or uptake that cannot be made at this stage. They will be further developed through future work.

Health, wellbeing, and productivity benefits

The built environment can impact our health and wellbeing and productivity through a variety of factors including light, noise (indoor and outdoor), temperature, humidity, ventilation and air movement, indoor air quality and chemical contaminants from indoor and outdoor sources.

Research shows that these built environment factors above can lead to or exacerbate a range of health conditions, such as respiratory illness (e.g. asthma), and other preventable outcomes.^{10,11} These factors in workplace environments can lead to reduced productivity, increased absenteeism, and increased staff turnover.

¹⁰ HEAL (2020), HEAL Briefing: Healthy buildings, healthier people. HEAL.

¹¹ Ministry of Health (2022). Healthy Homes Initiative, <https://www.health.govt.nz/our-work/preventative-health-wellness/healthy-homes-initiative>

There is a wide body of research and evidence of the links between buildings and health,¹² and the health impacts of living in energy-inefficient buildings, which have been studied extensively in New Zealand and the United Kingdom.¹³ Ultimately, there is a cost to society from the health outcomes of unhealthy buildings, particularly the health sector.

However, the relationships between buildings and health are complex, and these interventions focus on realising energy efficiency outcomes rather than health outcomes. While the relationships are well established in the literature, accurate estimation is difficult and unreliable, so we did not attempt to estimate the health and wellbeing benefits of the proposed changes at this stage.

Asset values

Studies have found that energy efficient buildings (equivalent to high NABERSNZ) can increase the asset value for the building owner. One study found an 8 per cent increase in asset value over traditional buildings.¹⁴ This finding reflects the demand for energy efficiency. Building owners desire energy efficient building and are therefore willing to pay a premium for it.

Similar to the argument for increases in rent, asset value increases are a function of rent increases, i.e. the asset value is equal to the sum of all future cash flows, all else being equal. Where rent increases are equal to the resulting reduction in energy bills, this has already been captured in the quantified CBA. However, if investments enable the building owners to attract new and more profitable tenants as a result of their investments, or asset value increases are greater than the net present value increases that occur as a result of rent increases, this would be an additional benefit to that captured in our quantified benefits as would cashflows beyond the period modelled.

Energy infrastructure demand decreases

Reduced demand for energy – captured in the model as part of reduced power bills – will reduce or delay the need for the construction of new electricity generation, transmission and distribution infrastructure in New Zealand. This impact on infrastructure will avoid significant monetary and embodied carbon costs. In addition, this reduction in demand for electricity will relieve the pressure on electricity that will arise from the electrification of fossil-fuel reliant sectors such as transport and industrial process heat.

Preventing waste through low waste design

By some estimates, around a third of construction waste originates from building design decisions.¹⁵ We anticipate that Waste Minimisation Plan requirements would drive more people to consider waste earlier in the building design process, leading to low- or no-cost reductions in waste generated. In addition, onsite practices and management once construction has begun can also reduce waste. Waste Minimisation Plan requirements could

¹² Chisholm et al. (2019). What can we learn from Healthy Housing Initiatives? New Evidence from the Wellington Well Homes scheme, <https://blogs.otago.ac.nz/pubhealthexpert/what-can-we-learn-from-healthy-housing-initiatives-new-evidence-from-the-wellington-well-homes-scheme/>

¹³ HEAL (2020)

¹⁴ NABERS (2022), <https://www.nabersnz.govt.nz/why-nabersnz/owners/>

¹⁵ C.Llatasa, M.Osmanib (2016) Development and validation of a building design waste reduction model.

reduce this by supporting businesses to consider better onsite management such as reducing over-ordering, promoting re-use of materials onsite, or encouraging better waste minimisation practises by sub-contractors.

However, these are difficult to quantify in the New Zealand context and to reasonably scale up to a national context. Some estimates of these impacts are included in the CBA's sensitivity analysis of Option 2c, but they have not been incorporated into the headline BCR due to data uncertainty.

Alignment with Māori values and concepts

Reducing construction waste sent to landfill and supporting a more circular, less extractive economy is inherently linked to Māori values and concepts. Reducing waste sent to landfill and promoting Te Ao Turoa (intergenerational resource sustainability) stresses the kaitiakitanga (guardianship) role that Māori have to care for the environment and provide for the next generation.¹⁶ The role requires the exchange of treasured resources between generations to provide for the cultural practices the previous generation enjoyed. However, while acknowledged, there is limited scope to measure and quantify these benefits in monetary terms.

Impacts on biodiversity

Biodiversity will be positively impacted from the proposed changes' environmental impacts. The nature and extent of this biodiversity impact is difficult to measure and there has therefore been no attempt at monetising the impact.

Reduced susceptibility to environmental impacts such as floods

Changing the Act's purpose and principles may support activity to increase resilience, which could reduce buildings' susceptibility to environmental impacts such as floods. However, the level of reduced risk that can be attributed to the preferred option in particular is inherently difficult to measure accurately and therefore the impact has not been quantified.

Jobs created through the development of the recycling industry

Economic opportunities result from expansion of the building recycling industry and development of the market for the recovery and reuse of building materials for other purposes. While we have not included any potential job creation impacts in our CBA, we note that Rohani et al. (2019) cites studies by the United States Environmental Protection Agency (in 2002) and Institute for Local Self Reliance (in 1997) that estimate additional job creation from the recycling or waste recovery and reuse, with estimates from 1 (for incineration) to 296 jobs per 10,000 tonnes of waste recovered or reused. The MfE's 2020 Regulatory Impact Statement *Increase and expansion of the waste disposal levy* includes some analysis of potential benefits that incentives to minimise or divert waste may have for the resource recovery sector. These economic benefits could be interrogated in more depth as part of future work to develop the specific policy design of these options.

Reduced pollution to land, air and water from heavy metals and toxic chemicals

Reduced waste will reduce the pollution to land, air, and water from heavy metals and toxic chemicals. This impact would have positive environmental impacts beyond those captured in

¹⁶ Rohani et al., (2019)

the CBA. No accurate measure of this reduced pollution exists, meaning the impact is difficult to monetise.

Section 3: Delivering an option

How will the new arrangements be implemented?

MBIE is developing an implementation plan that will outline what will be done to achieve the benefits of the proposed changes. This may include information and education campaigns to support the industry in understanding the impacts of and reasoning behind the proposed legislative changes. The implementation plan will ensure that the sector is ready when the regulations come into force on or after mid-2024.

Stakeholder engagement has been key throughout the development of these proposals. This will continue to be an important factor in ensuring that the new requirements are implemented as effectively and efficiently as possible. Under s403 of the Act, consultation will be undertaken to inform the development of the regulations enabled by these proposals. Stakeholder feedback will help shape the final regulations proposed. Before any new requirements come into effect, MBIE will undertake work to ensure that people are aware of these changes.

The proposed changes are modelled after existing programmes that have been in use in New Zealand and overseas for some time, specifically:

- The energy performance ratings proposal is modelled after the existing Commercial Building Disclosure regime in Australia. Various overseas jurisdictions have also used mandated energy performance programmes to provide consumers, building owners, and government with information about the energy performance of buildings. For example, the United Kingdom has implemented mandatory energy performance certificates for most buildings sold or rented since 2008, and the European Union has set energy performance measurement and minimum energy performance requirements for buildings since 2010. Voluntary systems such as NABERSNZ are already in use in many commercial buildings in New Zealand to help companies make their buildings healthier, greener and more efficient.¹⁷ It is intended that the proposal leverages these existing compulsory and voluntary systems.
- Waste minimisation plans are widely used internationally (e.g. in the United Kingdom, United States of America, Hong Kong and Mexico) as a tool to minimise construction and demolition waste. In New Zealand, an increasing number of councils have introduced bylaws under the Waste Minimisation Act 2008 that require certain building consent applicants to provide waste minimisation plans with their building consent applications.¹⁸ While many of these regimes have promising waste reduction potential, they vary by council and have been challenging for territorial authorities to enforce.

¹⁷ The full list of buildings using NABERSNZ is available online at <https://www.nabersnz.govt.nz/about-nabersnz/currently-rated-buildings/>

¹⁸ For example, Hamilton City Council, Wellington City Council, New Plymouth District Council, Selwyn District Council have waste minimisation bylaws.

The proposed new offences are intended to be enforced by territorial authorities as part of their functions under the Act. Under section 11(m)(ii), the Chief Executive may also enforce these offences where one or more territorial authorities are unwilling or unable to take enforcement action. While this may require additional work from territorial authorities and upfront time investment from building consent applicants and building owners, these are mitigated by the significant waste reductions and cost savings that could be realised through these proposals.

To further mitigate the additional work and time that may be required by these proposals, a passive enforcement approach is proposed to avoid a significant workload increase for territorial authority staff. The focus will be to inform and educate the sector on the new requirements as a first step in ensuring compliance. Officials have engaged with territorial authorities to understand current practices and sought to align these proposals with existing practices where possible.

How will the new arrangements be monitored, evaluated, and reviewed?

The amendments to the Act are part of MBIE's larger Building for Climate Change (BfCC) programme. This programme includes a Monitoring and Evaluation Workstream tasked with developing an overall approach to assessing the implementation of BfCC initiatives and their success at meeting the intended objectives. This workstream has involved developing a logic model which identifies the outcomes in the short, medium, and longer term that will contribute to achieving the goal of near-zero building related emissions by 2050.

The proposed amendments to the Act will contribute to the following outcomes captured in the logic model:

- 'low carbon is embedded as the norm in building design and process'
- 'all building materials are re-used, recycled, or diverted from landfills'
- 'all new buildings meet requirements for operational efficiency'
- 'carbon calculation is integrated into the consenting process'.

A framework to monitor and evaluate progress towards these outcomes is currently in development.

The preferred options will set the enabling legislative framework for initiatives such as requiring buildings to hold an energy performance rating, and will require subsequent regulations to develop the specific policy. Monitoring and evaluation activity will be developed for these key changes to determine if the regulations are working as intended. Details of these specificities will be developed for future RIS which are likely to involve:

- collection of regular information to assess the impact of the BfCC programme on building and construction emissions,
- evaluating the implementation of the new regulations to ensure they are fit-for-purpose for building system users, e.g. designers, architects, builders, building consent authorities, and
- evaluating the impacts of the regulations including any unintended consequences.

The Act is regularly reviewed to ensure it provides effective stewardship for the building regulatory system. Review of the legislation changes will be part of this regular process.

Appendix One: Proposed offences and penalties

The Ministry of Justice has been consulted on the following. Their feedback has been incorporated in the proposed offences and penalties below.

Proposal	Proposed offences and penalties	Proposed infringement offence
Energy performance rating scheme	<p>An offence to intentionally not hold a current energy performance rating for a building when it is required.</p> <ul style="list-style-type: none"> On conviction, an individual building owner is liable for a fine not exceeding \$20,000. On conviction, a body corporate building owner is liable for a fine not exceeding \$60,000. <p>An offence to intentionally not prominently display the energy performance rating of a building in a place in the building to which users of the building have ready access when it is required.</p> <ul style="list-style-type: none"> On conviction, an individual building owner is liable for a fine not exceeding \$20,000. On conviction, a body corporate building owner is liable for a fine not exceeding \$60,000. <p>An offence to knowingly make a false or misleading statement about the energy performance rating for a building (for example, where the rating is inaccurate because of significant change to the property).</p> <ul style="list-style-type: none"> On conviction, an individual building owner is liable for a fine not exceeding \$20,000. On conviction, a body corporate building owner is liable for a fine not exceeding \$60,000. 	<ul style="list-style-type: none"> A fee of \$1,000 for failing to hold a current energy performance rating for a building when it is required. A fee of \$250 for failing to prominently display the energy performance rating of a building in a place in the building to which users of the building have ready access when it is required. A fee of \$1,000 for making a false or misleading statement about the energy performance rating for a building.
Waste minimisations plans	<p>An offence to intentionally carry out building work without providing a Waste Minimisation Plan as required by regulations.</p> <ul style="list-style-type: none"> On conviction, an individual building owner is liable for a fine not exceeding \$20,000. On conviction, a body corporate building owner is liable for a fine not exceeding \$60,000. <p>An offence to intentionally carry out demolition work without providing a Waste Minimisation Plan as required by regulations.</p> <ul style="list-style-type: none"> On conviction, an individual building owner is liable for a fine not exceeding \$20,000. On conviction, a body corporate building owner is liable for a fine not exceeding \$60,000. 	<ul style="list-style-type: none"> A fee of \$1000 for failing to provide the relevant territorial authority with a Waste Minimisation Plan when a building consent is sought for a new building. A fee of \$1,000 for failing to provide the relevant territorial authority with a Waste Minimisation Plan when demolishing a building for which a

	<p>An offence to intentionally not make their Waste Minimisation Plan available onsite or provide to parties to the build as specified in regulations.</p> <ul style="list-style-type: none"> • On conviction, an individual building owner is liable for a fine not exceeding \$20,000. • On conviction, a body corporate building owner is liable for a fine not exceeding \$60,000. <p>An offence to intentionally not comply with the submitted Waste Minimisation Plan.</p> <ul style="list-style-type: none"> • On conviction, an individual building owner is liable for a fine not exceeding \$20,000. • On conviction, a body corporate building owner is liable for a fine not exceeding \$60,000. 	<p>Waste Minimisation Plan is required by regulations.</p> <ul style="list-style-type: none"> • A fee of \$250 for failing to make their Waste Minimisation Plan available onsite or failing to provide to parties to the build as specified in regulations. • A fee of \$1,000 for failing to comply with the submitted Waste Minimisation Plan.
<p>Information provision</p>	<p>An offence to intentionally not provide MBIE with the information or documents requested under the new information provision requirements by the deadline specified in regulations.</p> <ul style="list-style-type: none"> • On conviction, an individual building owner is liable for a fine not exceeding \$20,000. • On conviction, a body corporate building owner is liable for a fine not exceeding \$60,000. <p>An offence to knowingly provide false or misleading statements about the information or documents requested by MBIE under the new information provision requirements.</p> <ul style="list-style-type: none"> • On conviction, an individual building owner is liable for a fine not exceeding \$20,000. • On conviction, a body corporate building owner is liable for a fine not exceeding \$60,000. 	<ul style="list-style-type: none"> • A fine of \$500 for failing to supply information or documents requested by MBIE under the new information provision requirements by the deadline specified in regulations. • A fine of \$1,000 for providing false or misleading statements about the information or documents requested by MBIE under the new information provision requirements.