Inland Revenue
Te Tari Taake

POLICY AND REGULATORY STEWARDSHIP

TE TAI ŌHANGA
THE TREASURY

# Tax policy report: Emissions reduction plan: addressing emissions leakage

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|---|---|---|---|
| **Date:** | 10 February 2022 | **Priority:** | High |
| **Security level:** | In Confidence | **Report number:** | IR2022/036<br>T2022/197 |

## Action sought

| | Action sought | Deadline |
|---|---|---|
| Minister of Finance | **Agree** to recommendations<br>**Note** the contents of this report | 24 February 2022 |
| Minister of Revenue | **Agree** to recommendations<br>**Note** the contents of this report | 24 February 2022 |

## Contact for telephone discussion (if required)

| Name | Position | Telephone |
|---|---|---|
| Stephen Bond | Manager, Tax Strategy,<br>The Treasury | s9(2)(a) |
| Graeme Morrison | Policy lead, Policy & Regulatory Stewardship, Inland Revenue | |
| Lucy England | Policy Advisor, Policy & Regulatory Stewardship, Inland Revenue | |

10 February 2022

Minister of Finance
Minister of Revenue

# Emissions reduction plan: addressing emissions leakage

## Executive summary

1. In December 2021 Cabinet noted that the Minister of Revenue, in consultation with the Minister of Finance and the Minister of Trade and Export Growth, is considering the merits of a carbon border adjustment mechanism (CBAM) for New Zealand and how it might be implemented, starting with the cement sector. Ministers expect a paper to be submitted to Cabinet in February/March 2022, so that any decisions can be included in the emissions reduction plan [CAB-21-MIN-0547.02 refers].

2. A CBAM is one of the tools available to address the risk of emissions leakage, which arises because of the uneven implementation of climate pricing between jurisdictions. This unevenness may incentivise firms facing an emissions price in one jurisdiction to shift their production to jurisdictions with no/weaker emissions prices, resulting in no overall reduction in global greenhouse gas emissions (emissions), a problem termed emissions leakage. At present, the risk of emissions leakage in New Zealand is addressed through a policy of industrial allocation (IA). However, current IA settings are inconsistent with the Government's climate change objectives and thus an assessment of alternative policies is necessary.

3. This report and the attached draft Cabinet paper outline the problem of emissions leakage and the role that a CBAM might play in addressing it. A well-designed CBAM would ensure that certain imported products face the same greenhouse gas emissions (emissions) cost as those produced domestically. This would reduce the risk of emissions leakage by ensuring that offshore production that is subject to no or a low emissions cost does not gain a competitive advantage over domestic production that is subject to the New Zealand Emissions Trading Scheme (ETS).

4. s9(2)(f)(iv) [redacted]

5. Officials seek joint Ministers' views on the scope and nature of their work in response to CAB-21-MIN-0547.02.

6. Officials recommend that further analysis be undertaken to determine which emissions-intensive and trade-exposed (EITE) sectors are at greatest risk of emissions leakage, and the best options available to respond to any identified risk.

7. s 9(2)(f)(iv) [redacted]

[1] These sectors are suggested in the first instance because of their substantial emissions profiles and because they have been signalled as being at risk in other jurisdictions, in particular through the EU draft CBAM proposal. The sectors listed are subject to further consideration.

provide better targeted advice but would risk discounting a more comprehensive policy.

8. Whichever option is chosen, there are potentially significant trade, diplomatic and legal risks to navigate, and these warrant a considered approach that is sensitive to New Zealand's overarching trade and climate change strategies.

9. Officials also recommend that the emissions reduction plan note this work.

## Recommended action

We recommend that you:

| | Recommendations | Minister of Finance | Minister of Revenue |
|---|---|---|---|
| 1. | **note** Cabinet minute CAB-21-MIN-0547.02 and the expectation that a paper be submitted to Cabinet in February/March 2022, so that any decisions can be included in the emissions reduction plan. | Noted | Noted |
| 2. | **agree** that the problem to be explored is emissions leakage, as outlined in this report. | Agreed<br>Not agreed | Agreed<br>Not agreed |
| 3. | **note** the importance of investigating the range of options available to address the risk of emissions leakage to ensure an effective and robust long-term solution. | Noted | Noted |
| 4. | s 9(2)(f)(iv) | | |
| 5. | **if recommendation 4.1 is agreed, approve and lodge** the attached Cabinet paper with the Cabinet Office by 10am on Thursday 10 March 2022, for consideration by the Cabinet Economic Development Committee on Wednesday 16 March 2022. | Approved and lodged | Approved and lodged |
| 6. | **if recommendation 4.2 or 4.3 is agreed, note** that officials will adjust the attached draft Cabinet paper to reflect this preference. | Noted | Noted |
| 7. | **agree** to include in the Government's work programme a cross-agency item on addressing emissions leakage, led by Inland Revenue and the Treasury, with significant input from the Ministry for the Environment and the Ministry of Foreign Affairs and Trade, alongside others. | Agreed<br>Not agreed | Agreed<br>Not agreed |
| 8. | **note** that including this work on the tax policy work programme will reduce the resources available to devote to other work and priorities at the next update of the work programme. | Noted | Noted |
| 9. | **agree** to officials noting in the emissions reduction plan that the Government is exploring the risk of emissions leakage and options to address any identified risk. | Agreed<br>Not agreed | Agreed<br>Not agreed |
| 10. | **refer** a copy of this report and the attached Cabinet paper to the Minister of Trade and Export Growth and the Minister of Climate Change for their information. | Referred | |

s9(2)(a)

s9(2)(a)

**Stephen Bond**
Manager, Tax Strategy
The Treasury

**Graeme Morrison**
Policy Lead,
Inland Revenue

**Hon Grant Robertson**
Minister of Finance
/ /2022

**Hon David Parker**
Minister of Revenue
/ /2022

## Purpose

11. This report responds to the 20 December 2021 Cabinet Minute that notes the Minister of Revenue, in consultation with the Minister of Finance and the Minister of Trade and Export Growth, is considering a carbon border adjustment mechanism (CBAM) for New Zealand [CAB-21-MIN-0547.02 refers]. It summarises the problem of emissions leakage and outlines options to address the problem, including the option of implementing a CBAM.

12. Given the timeframe, officials have not attempted to provide a comprehensive analysis in this report of the risk of emissions leakage by sector, or the options available to address emissions leakage. The possible solutions are complex, and time is required to ensure any policy is environmentally effective, legally robust, and sensitive to New Zealand's long-term climate change and trade strategies. Instead, this report seeks to ascertain the scope of officials' future work on addressing emissions leakage.

13. In particular, officials seek joint Ministers' agreement to continue their analysis of the problem of emissions leakage and the wider set of options to address it in greater detail, with a view to potentially publishing an issues paper on the options for consultation in the latter part of 2022.

14. s 9(2)(f)(iv)

## Background

15. In 2019 the Government legislated a target of net zero greenhouse gas emissions (emissions)[3] by 2050 to guide New Zealand's transition to a low-emissions, climate resilient economy. New Zealand's transition was further signalled in 2020 when the Government declared a climate change emergency, and in 2021 the country increased its contribution to global emissions reductions over the period 2021-2030.[4] Limiting global temperature rise to 1.5C is at the heart of New Zealand's climate change response.

16. A key tool relied upon by the Government to meet its emissions reduction target is the New Zealand Emissions Trading Scheme (ETS). The ETS requires participants[5] to purchase and surrender emissions units for every tonne of emissions they release. This ensures that consumers face the costs associated with their contribution to climate change, and in doing so, incentivises industry and consumers to reduce their emissions profiles.

17. The ETS is a domestic emissions pricing instrument; it does not price emissions that are released outside of New Zealand. This may place some New Zealand EITE firms at an economic disadvantage compared to their offshore competitors that are not

[2] s9(2)(f)(iv)

[3] Biogenic methane emissions must be reduced between 24 and 47 percent below 2017 levels by 2050, rather than achieving net zero.

[4] New Zealand updated its Nationally Determined Contribution in October 2021 to reduce net emissions by 50 percent below gross 2005 levels by 2030.

[5] The ETS covers all emissions that occur within New Zealand (except for agriculture). Typically, surrender obligations are placed as high up the supply chain as possible (for example with the fuel importer or coal miner).

subject to a domestic emissions trading scheme or equivalent pricing mechanism.[6] As a result, these firms may be incentivised to shift their production offshore instead of finding ways to reduce emissions, undermining global emissions reduction. This problem is termed 'emissions leakage'.

18. Currently, the risk of emissions leakage is addressed through a policy of industrial allocation (IA). This approach is effective in removing the risk of emissions leakage, however it compromises New Zealand's domestic emissions reductions targets. IA began a legislated phase down in 2021 which will continue at increasing rates over the next three decades. The policy is also currently undergoing a review to ensure it is fit for purpose as New Zealand shifts to a low emissions economy.

## Emissions reduction plan

19. The Climate Change Commission (Commission) identified the problem of emissions leakage in their advice to the Government in May 2021. They recommended that the Government explore alternative policy instruments to IA that, over the longer term, could be used to address the risk of emissions leakage.

20. The Government is due to release their response to the Commission's advice in May 2022 with the publication of its emissions reduction plan (ERP). The ERP will contain a coherent strategic package of mutually supporting policies to meet New Zealand's first three emissions budgets towards its emissions reduction targets.

21. If Ministers agree to officials continuing their analysis of any or all of the options available to address emissions leakage, this can be noted in the ERP. Officials will work alongside other ERP projects to ensure that any policy proposals support and reinforce the broader policy package.

## Inclusion on the Government's work programme

22. The Minister of Revenue previously requested that work on a CBAM be added to the Government's tax policy work programme. A CBAM is just one possible solution to the problem of emissions leakage. Officials recommend that this item be expanded to encompass a wider body of cross-agency work identifying possible solutions to the problem of emissions leakage. This work is complex and the expertise required is not all in one place, necessitating the input of a wide range of agencies. Hence officials recommend that this work should be a cross-agency item led jointly by Inland Revenue and the Treasury, with significant input from the Ministry for the Environment and the Ministry of Foreign Affairs and Trade alongside others. In the event that non-tax or non-charging options are developed in more detail, other agencies would take the lead.

23. Officials note that including this work on the tax policy work programme will reduce the resources available to devote to other work and priorities at the next update of the work programme.

## International developments

24. Internationally, there has been interest in addressing emissions leakage, as governments seek to achieve extensive emissions reductions in order to meet their domestic and international climate targets. In July 2021, the European Union (EU) released a draft regulation that would establish a CBAM. Under the proposed regulation, the financial adjustment would be phased in over a 10-year period

[6] Both in terms of their competitiveness on the domestic market (where they compete with imports) and on export markets.

beginning in 2026, with corresponding adjustments to IAs in the EU emissions trading scheme (further detail provided below)[7].

25. Democrat Senators in the United States have proposed a similar mechanism, and Canada has expressed plans to consult with key trading partners on the use of CBAMs.

## The problem of emissions leakage

26. A price on emissions ensures that producers and consumers face the costs associated with their contribution to climate change. It also encourages more efficient production processes, including investment in alternative low carbon technologies, and consumption behaviour which helps to mitigate the impact of climate change.

27. Emissions leakage arises because of the uneven implementation of emissions pricing policies between jurisdictions. If jurisdiction A places a price on emissions and jurisdiction B doesn't, A's producers may shift production to B, and A's consumers may import more products from B.

28. Emissions leakage can therefore compromise the climate objectives of governments that implement emissions pricing. This is because the emissions reductions achieved by a domestic emissions price may result in an increase in emissions released in other jurisdictions (for example, if consumers in the jurisdiction with emissions pricing opt instead for imports of emissions unpriced goods).

29. Emissions leakage can also result in economic harm to domestic industries in jurisdictions that have imposed an emissions price, both in relation to supplying the domestic market and exports.

## Evidence of the risk of emissions leakage in New Zealand and scope of officials' analysis

30. Whether emissions leakage is in fact a problem for New Zealand EITE firms is not clear cut; competitiveness (and the associated leakage risk) is impacted by many factors including energy price, labour costs, transport costs, and plant efficiency. It is also not a given that displacement will result in emissions leakage; this would depend on a range of factors, including the energy efficiency of the offshore producer and whether their emissions are being released under a cap-and-trade scheme.

31. Further analysis is required to determine which sectors currently classified as EITE may be at risk of emissions leakage.

32. Officials seek joint Ministers' agreement to continue their analysis of whether any of the sectors currently classified as EITE under the ETS are at risk of emissions leakage, and whether it would be appropriate to address this risk in an alternative manner to the current policy of IA.

33. s 9(2)(f)(iv)

s 9(2)(h)

s 9(2)(f)(iv)

[7] From paragraph 69.

## Industrial allocation

34. The risk of emissions leakage in New Zealand is currently addressed through a policy of IA. Firms undertaking certain industrial activities that are considered EITE receive allocations of emissions units. They can use these units to meet their obligations under the ETS or sell them to generate revenue and offset the increased cost of energy supplies such as coal or electricity.

35. IA offsets a substantial portion of the emissions price EITE industry face, so they are not disadvantaged when compared to any offshore unpriced competitors. EITE firms are still incentivised to cut their emissions as the number of units they receive is linked to production output, not actual emissions. If they reduce emissions and maintain output by becoming more efficient, they receive the same number of emission units and can benefit from the increased difference between emission costs and the value of the units. However, IA compromises climate objectives, as the emissions price signal is not passed onto consumers, who are not incentivised to purchase low emissions products. It is also costly to the Government, which is effectively subsidising these firms to remain competitive.

36. Current IA policy settings are over-allocating emissions units to EITE firms. MfE has consulted on proposed reforms to address this over-allocation. The reforms would remove the windfall gain of units to EITE firms and make IA more cost-effective in preventing emissions leakage.

37. Legislation passed in 2020 has initiated a very gradual phase out of IAs at one percentage point each year until 2030, a rate that will increase in the following decades. Over time therefore, EITE firms that do not reduce their emissions may be at increased risk of leakage and the need for alternative solutions will become more pressing.[8]

38. Officials consider that the insufficiencies of IA as an approach to addressing emissions leakage warrant an exploration of possible alternatives, as part of the ERP. Officials will ensure that their work on options to address emissions leakage aligns with IA reform and the broader suite of emissions pricing measures contained in the ERP.

s 9(2)(f)(iv)

[8] There is however a process by which EITE firms can apply to have their phase out rate reduced if certain requirements, including increased risk of emissions leakage, are met.

s 9(2)(f)(iv)

s 9(2)(h)

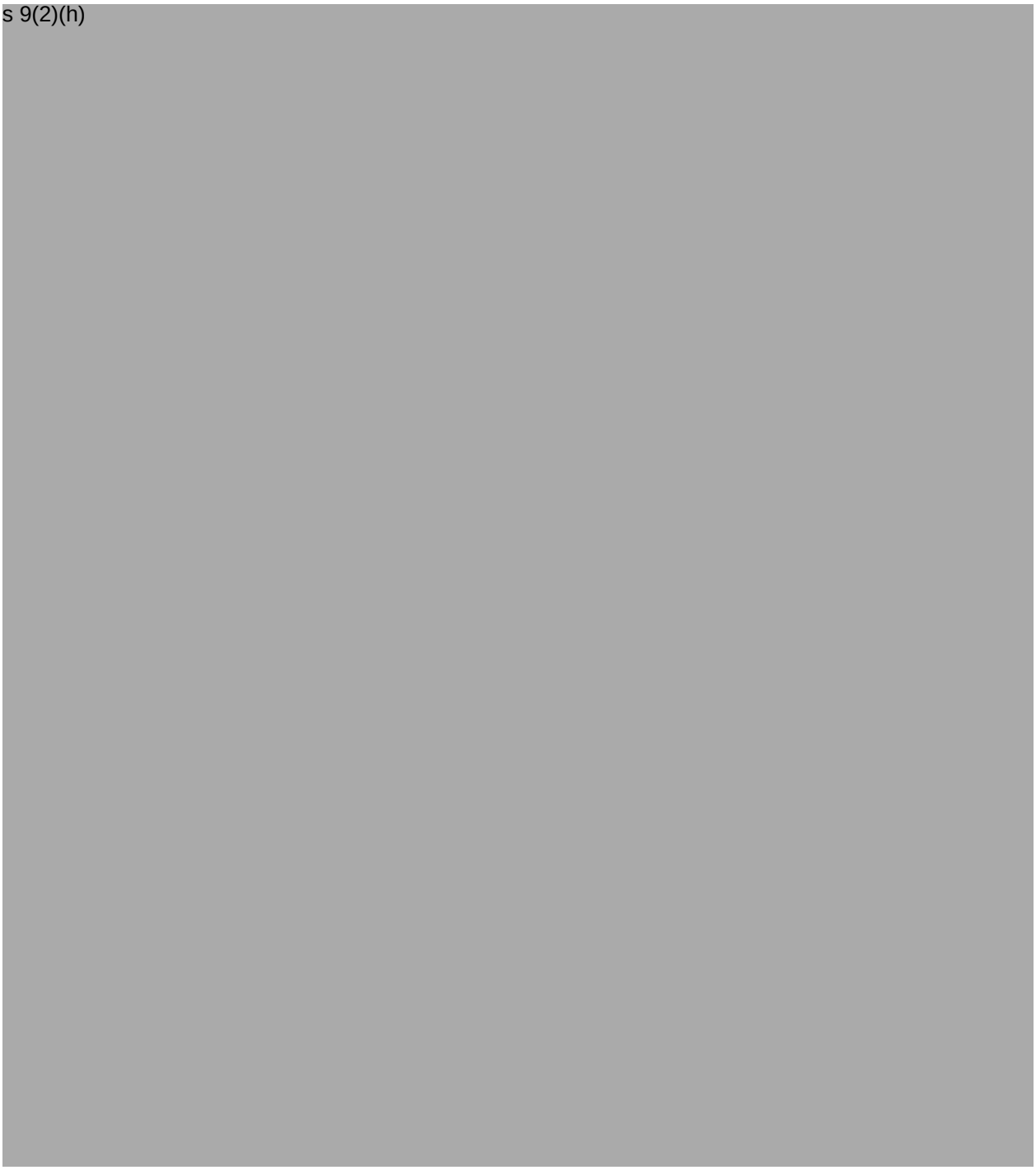
s 9(2)(f)(iv)

s9(2)(h) s 9(2)(f)(iv)

s 9(2)(h)

s 9(2)(h)

s 9(2)(h)



***Design considerations***

55. Different design choices will entail trade-offs between the criteria listed earlier.

*Scope*

56. To comprehensively address emissions leakage, all EITE products at risk of emissions leakage would need to be included in a CBAM. Further analysis is required to determine which industries this might include – it is not clear that all industries that are currently classified as EITE are at risk of emissions leakage, and proposed reforms will likely exclude some industries from their current EITE classification.

s 9(2)(h)

57. There is an option to phase in a CBAM slowly across EITE sectors, as has been proposed by the EU, or more specifically just on cement. This would provide Government time to get the settings right for a smaller subset and they could apply their learnings to sectors added at a later date.

58. Officials can do further analysis to determine which sectors it would be most appropriate to apply a CBAM to. In response to the Cabinet minute, officials have provided further information on the cement sector and its suitability for a CBAM in Appendix 1.

*Emissions coverage*

59. A CBAM could cover direct emissions released in the production process and indirect emissions resulting from energy related inputs. Focussing on direct emissions is desirable from an administration and compliance perspective as these emissions are more easily traced. However, including indirect emissions would increase the accuracy of any emissions pricing and may be desirable for EITE sectors in which a large share of their emissions are indirect.

*Determination of embedded emissions*

60. To fully incentivise firms to reduce their emissions, the emissions price could be directly tied to the number of emissions contained in the import. To do this, importers could be required to submit verified emissions data. However, this would impose great compliance costs on importers and may be impractical in some cases.

61. Another option is to create default emissions intensity assumptions for different sectors. These defaults could be based on the embedded emissions seen in equivalent domestic products. To retain an incentive to reduce emissions, importers could claim a reduction from the default if they can prove a lower carbon intensity, as per the EU proposal (which is discussed in a later section). Defaults could also be used as a transitional measure as importers develop methods to report their carbon intensity.

*Level of adjustment*

62. Decisions would also have to be made about the cost imposed on imports at the border. It is essential that imports not be afforded less favourable treatment than domestic production. The level of adjustment would thus have to account for the following:

    - Emissions embedded in the product
    - Emissions pricing already applied to the product in its country of origin
    - IA, rebates or exemptions offered to domestic industry.

63. These factors reflect that, in effect, a CBAM should only be applied to an import if it is necessary to address the risk of emissions leakage. This risk will only arise if there is no equivalent emissions pricing between an EITE domestic product and an offshore alternative. For this reason, the introduction of a CBAM will need to be tied to a decrease in IAs available to EITE industries in New Zealand and this transition will need to be managed.

64. For equity reasons, the level of adjustment could depend on a country's level of development. This would have to be achieved in a manner that is consistent with New Zealand's international trade obligations (which do permit differential treatment for developing and least developed countries in some circumstances).

Officials would need to consider whether this would warrant a more phased-in approach in some cases.

*Other considerations*

65. Given a CBAM would be applied at the border, Customs is likely best placed to implement such a charge. Their capacity to do so (and timing) will need to be investigated by officials.

66. A CBAM or other measure could also generate revenue for the Government. Generally, officials consider that revenue should be returned as core Crown revenue for efficiency reasons. Arguments in favour of hypothecation of the revenue to specific purposes would need to be carefully considered.

67. Officials would also need to do further work to determine the distributional impacts of a CBAM or any of the other tools available to address emissions leakage. The economic impacts will also need to be explored further. For example, academic literature suggests that the introduction of a CBAM could result in an offsetting adjustment in the exchange rate.

68. Any future policy would also have to be assessed against other Government priorities. For example, adding to the cost of cement may work against housing affordability objectives. Further analysis will be carried out on the range of options if Ministers agree.

### *EU carbon border adjustment mechanism*

69. The EU has released draft regulation that would establish a CBAM for imports of steel, iron, cement, aluminium, fertilisers and electricity where those products are not already facing an equivalent carbon price in their country of origin. Key elements of the proposed CBAM include:

- Importers will surrender CBAM certificates corresponding to a default assumption of their embedded emissions. Importers can, however, claim a reduction in the default if they can prove a lower emissions intensity for their product, or that an emissions price has already been paid in the product's country of origin.
- The cost of CBAM certificates is linked to the price of units in the EU ETS market in the period directly preceding import.
- The emissions are limited to direct emissions arising from the production process.
- Importers will initially have reporting obligations only, with the adjustment becoming operational in 2026.
- The adjustment will increase proportionally with the gradual phase out of free allocations for affected domestic sectors in the ETS, so that relevant foreign producers and domestic producers pay an equivalent emissions price.

70. There is scope to include indirect emissions and a wider range of products at a later date. However, the exact form any future EU CBAM takes is dependent on the outcomes of negotiation between the European Council and the European Parliament. Officials note that a recent report from the Parliament's Environment Committee recommended extending the scope of products covered by the CBAM amongst other changes.

s 9(2)(f)(iv)

s 9(2)(f)(iv)

s 9(2)(h)

s 9(2)(f)(iv)

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s9(2)(h)

s 9(2)(f)(iv)

s 9(2)(h)

s 9(2)(f)(iv)

## Consultation

84. We have consulted with the following agencies in preparing this report and the attached Cabinet paper: the Ministry of Foreign Affairs and Trade; the Ministry for the Environment; the Ministry for Business, Innovation and Employment; the Ministry for Primary Industries; New Zealand Customs Service.

s9(2)(h)

## Next steps

85. If joint Ministers agree to officials continuing their exploration of the risk of emissions leakage across EITE sectors and the options available to address this risk, officials will provide an interim report by mid-2022. s 9(2)(f)(iv) [redacted]

## Appendix 1 – New Zealand cement industry

### New Zealand's annual cement use is estimated at around 1,700,000 tonnes (valued at around $200m, excluding transport costs)[15]

Golden Bay Cement is the only cement manufacturer in New Zealand that has a full production facility. This involves the quarrying of limestone and cement rocks in New Zealand, grinding those rocks into smaller sized particles, clinkering (in which the material is heated to a high temperature) and finally milling the clinker into cement powder. The chemical reaction that occurs during the clinkering process releases carbon dioxide, and is the primary source of emissions arising from the cement production process

Golden Bay Cement accounts for around 90% of New Zealand's cement production. The remaining 10% is produced by HR cement, who manufactures cement from imported clinker.

Golden Bay Cement and HR cement account for around 60% of New Zealand's total cement needs. The remaining 40% is imported, through Holcim New Zealand.

We note that Golden Bay Cement has indicated strong support for a CBAM as an alternative to free allocation, to address emissions leakage.

#### *Cement imports to New Zealand*

s9(2)(b)(ii) followed by Thailand s9(2)(b)(ii) and Viet Nam s9(2)(b)(ii) For more information, see Annex 1.

#### *Cement exports (including re-exports)*

New Zealand also exports a small amount of cement ($10-$15 million annually).

#### *Cement definition*

This appendix uses the same cement category (2523) as the European Union is proposing to use for its CBAM. It covers basic unrefined Portland cement and therefore does not include more refined cement-based products. It is possible that a New Zealand domestic cement producer may use this unrefined product to make more refined products, in which case a CBAM based on this categorisation would be a cost to them but there would not be an equivalent tax on direct importers of the more refined products. How "cement" is defined is, therefore, a crucial aspect that will need to be considered carefully. There may be benefits in using a comparable definition to other countries.

#### *Range of countries affected by a CBAM on cement*

Figure 1 demonstrates the range of countries that could potentially be affected by a CBAM applied to cement. Each country's carbon pricing would need to be evaluated as ideally any CBAM introduced would not apply to those countries who do adequately price carbon, whether through an ETS type scheme or a carbon tax. s9(2)(b)(ii)

[15] Around $300 million with transport costs.

s 9(2)(b)(ii)

As part of this work, the emissions generated by each country's cement making process would likely need to be independently verified.

**Figure 1. New Zealand Import Statistics**
**Commodity: 2523, Portland Cement, Aluminous Cement, Slag Cement, Supersulfate Cement And Similar Hydraulic Cements**
**Calendar Year: 2018 – 2020**

| Partner Country | Unit | Quantity | | | % Share | | |
|---|---|---|---|---|---|---|---|
| | | 2018 | 2019 | 2020 | 2018 | 2019 | 2020 |
| **World**** | T | **628,180** | **636,492** | **641,794** | 100% | 100% | 100% |
| s9(2)(b)(ii) | | | | | | | |
| Thailand | T | 100,950 | 92,572 | 85,621 | 16.1% | 14.5% | s9(2)(b)(ii) |
| Vietnam | T | 17,998 | 32,750 | 33,000 | 2.9% | 5.1% | |
| Malaysia | T | 3,050 | 3,981 | 3,922 | 0.5% | 0.6% | |
| Australia | T | 9,408 | 1,581 | 1,013 | 1.5% | 0.2% | |
| United Arab Emirates | T | 451 | 260 | 427 | 0.1% | 0.0% | |
| Turkey | T | 266 | 109 | 383 | 0.0% | 0.0% | |
| Switzerland | T | 0 | 0 | 133 | 0.0% | 0.0% | |
| Netherlands | T | 96 | 161 | 100 | 0.0% | 0.0% | |
| Croatia | T | 0 | 105 | 63 | 0.0% | 0.0% | |
| United Kingdom | T | 105 | 84 | 63 | 0.0% | 0.0% | |
| Hungary | T | 21 | 0 | 21 | 0.0% | 0.0% | |
| China | T | 475 | 71 | 13 | 0.1% | 0.0% | |
| United States | T | 1 | 42 | 5 | 0.0% | 0.0% | |
| Indonesia | T | 223 | 0 | 0 | 0.0% | 0.0% | |
| Korea, South | T | 0 | 0 | 0 | 0.0% | 0.0% | |
| Germany | T | 0 | 0 | 0 | 0.0% | 0.0% | |
| Romania | T | 21 | 0 | 0 | 0.0% | 0.0% | |
| Spain | T | 2 | 0 | 0 | 0.0% | 0.0% | |

** Source of Data: Statistics New Zealand s9(2)(b)(ii)

***Conclusion***

As a general comment, just covering the cement sector is a potentially useful way of testing the concept before further expansion, s9(2)(h)