Regulatory Impact Statement: Options to manage imports of finished products containing HFC refrigerants

Coversheet

Purpose of Document	
Decision sought:	*Cabinet decision on whether to proceed with* • *policy to restrict imports of finished products containing high-global warming potential refrigerants, where alternatives are accessible and available* • *exploratory work into potential policy to restrict use of higher GWP gases in servicing.* *Note that further stakeholder consultation will be required following a Cabinet decision to proceed, to ensure that final regulations are technically workable and practical, and that we are not proposing prohibitions on servicing at this time.*
Advising agencies:	*Ministry for the Environment*
Proposing Ministers:	*Minister for the Environment*
Date finalised:	*8 March 2022*

Problem Definition

Hydrofluorocarbons (HFCs) are mainly used as refrigerants for heating and cooling, from large industrial refrigeration systems to domestic heat pumps and car air conditioners. Most HFCs are contained within equipment, so emissions are the result of wear, faulty maintenance, or leakage at the end of a product's lifetime[1]

They are potent greenhouse gases, with 'global warming potential' (GWP) of hundreds or thousands of times greater than CO2.

Consequently, they contribute to climate change in an amount that is significantly greater than the metric quantities used. While the import of HFCs imported in bulk is subject to phase down controls, finished products containing them can currently be imported in any quantity or type.

Additionally, while the phasedown reduces the volume of HFCs being imported into the country, it is possible that there are stores of high global warming potential HFCs which will continue to be used for servicing and installation.

[1] https://www.ccacoalition.org/fr/slcps/hydrofluorocarbons-hfcs

Executive Summary

- *Why government intervention is required;*
- *The number of options considered, noting what the options entail, which (if any) is the agency's preferred option, and whether it will be reflected in the Cabinet paper;*
- *The potential impact of the preferred option, including the costs, benefits, risks, and risk mitigations of the proposal, and the nature of impacts on different population groups; and*

What stakeholders and the general public think – are there any significant divergences in their views that should be brought to Ministers' attention?

Government has already taken a number of steps to reduce emissions from HFCs:

- The phasedown of HFCs imported in bulk (for insertion into equipment in New Zealand);
- The synthetic greenhouse gas levy, which applies a levy price based on the ETS price to imports of finished products containing HFCs;
- Co-design of a regulated product stewardship scheme for refrigerants.

In advising Government on meeting New Zealand's emissions budgets, the Climate Change Commission made a further recommendation that import restrictions be applied to finished products containing high-GWP HFCs, where alternatives are available.

Finished products (including motor vehicles) currently make up 33 per cent of all *allowable*[2] imports of HFCs into New Zealand. This includes domestic and commercial heat pumps, air-conditioners, fridges, freezers, dehumidifiers, and vehicles.

There are substantial opportunities to reduce gross emissions in this sector as technology advances. Technology has developed rapidly in recent years, and there is now availability of equipment that uses lower GWP refrigerants while retaining high-energy efficiency in most market sectors.

Without policy intervention at the import stage, industry could transition to alternative refrigerants rapidly, given changes in the global refrigerant market. Or, industry may transition at a slower rate, relying on existing equipment options and practices containing high-global warming potential HFCs.

Data collected on imports of goods subject to the synthetic greenhouse gas levy suggests there is opportunity to speed up New Zealand's transition in certain types of equipment. In a number of levy categories, imports of goods containing high-global warming potential refrigerants continue where alternatives are already widely available (e.g. vehicle air-conditioning, heat-pumps, refrigerator/freezers) (Environmental Protection Authority).

Additional policies in use in other countries are beneficial places to commence looking for possible policies to enhance our phasedown of bulk HFCs. We have looked particularly closely at the model of the European Union, and its reported costs and benefits. We considered two options that directly respond to the Climate Change Commission's recommendation:

- Option One: no intervention;

[2] We refer to *allowable* imports because this graph uses the total quantity of bulk HFCs allowed under New Zealand's phase down quota for 2020, in order to represent the breakdown that could be expected in other years under the quota system.

- Option Two: the creation of a quota for the total quantity of finished products containing HFCs that can be imported, and
- Option Three: the application of prohibitions on import of finished products containing high-GWP HFCs, where alternatives are available.

The Ministry for the Environment's preferred option is Option Three, to apply prohibitions to on import of finished products containing high-GWP HFCs, where alternatives are available. We consider that this option will establish a system whereby over time, as new technologies with low-GWP refrigerants become the 'mainstream', outliers with higher-GWP HFCs are removed from the market, reducing the possible emissions impact of refrigerants, contributing to our emissions reductions targets, without restricting New Zealand's transition to electrification of heating and cooling. Costs are anticipated to be low, given this proposal would be about removing outliers from the market.

This proposal is included in CAB-112 as part of the wider work programme for F-gases under the emissions reduction plan. In addition, we propose developing future regulatory proposals to prohibit the sale and use of high GWP F-gases used for servicing, where alternatives are available and provisions for ensuring worker safety have been made. This is included in this RIA due to some cross-over between the two proposals – however, a full regulatory impact analysis will be completed for future regulatory proposals, when they come to Cabinet.

Limitations and Constraints on Analysis

Were there any constraints or limitations imposed by Ministers' commissioning, eg, narrowing the scope of options to be considered or the timeframes this proposal had to be developed under?

The relatively short timeframe between public consultation on the proposals (which concluded 24 November) and the required lodgement date to meet the legislative deadline for the first Emissions Reduction Plan (March and May 2022, respectively) has limited the ability of the Ministry for the Environment to complete full policy analysis and development.

Many industry submitters, including industry groups and associations, told us that some significant changes were needed to our proposals for them to be achieved equitably and in a workable manner for the industry. Although, through the F-gas work programme, we are seeking a decision to proceed with prohibitions on import of finished products containing high-GWP HFCs, where alternatives are available, further stakeholder consultation will be required to finalise policy and associated regulatory changes to ensure these are workable for the industry and able to be enforced. We have determined, through consultation and previous engagement of external expertise, that a prohibition on pre-charged equipment is feasible. A full RIS will be provided to Cabinet when these regulatory changes are brought for a final decision.

What are the assumptions underpinning the impact analysis?

Hydrofluorocarbons (HFCs) are used in heating and cooling equipment commonplace to homes, businesses, and industries. They make up most of the F-gases used in New Zealand (approximately 92 per cent). The scope of this policy analysis excludes other F-gases at this stage, to concentrate on maximising emissions reductions.

This options analysis focuses on the case for regulatory restrictions on import or sale of products containing HFC refrigerants, based on the Climate Change Commission's advice

to Government. We assume that, to meet emissions budgets, consideration of this approach and its emissions reduction potential will be necessary.

Other assumptions underlying this impact analysis include:

- That New Zealand imports of refrigerant are expected to increase in line with population increases
- That intervention is required to catalyse a shift to more environmentally friendly refrigerants, based on current industry usage and consultation feedback which implied a preference to follow global trends and regulations
- That other actions in the Emissions Reduction Plan, such as those proposed in the building and construction and energy chapters, will work in complement to F-gas proposals to reduce the overall need for refrigerants through more efficient building and equipment design.

What is the quality of the data and evidence used in developing this proposal?

Data used in developing this proposal is primarily qualitative and based on the Ministry's understanding of the technology available, and policies already implemented in overseas jurisdictions.

Were there any limitations on consultation, testing, and stakeholder engagement?

Public consultation on proposals in the emissions reduction plan discussion document *Te hau mārohi ki anamata* closed on the 24 November. A public webinar and industry workshop were held during the initial consultation period. This engagement provided some direction on what proposals were likely to be supported, and easiest to implement.

Initially, two weeks were available following this to review submissions. However, as the Cabinet paper initially intended to come to Cabinet in December 2021 was delayed, more time was made available for reviewing feedback prior to lodging papers on 10 March 2022.

A result of more fulsome review of feedback is that the proposals we are putting forward for managing F-gases have changed significantly, although the specific proposal covered in this RIA is unaffected in principle. We have identified that further consultation of a technical nature will be required with stakeholders before proceeding with final regulations, as a result of feedback noting that there are technical and practical barriers to implementation.

What additional analysis of distributional impacts on certain population groups would you have liked to include given sufficient time/resources?

Given sufficient time and resources, additional analysis of distributional impacts on the refrigerant industry, and the flow on effects of heating and cooling costs to low-income households would have been undertaken. However, the recommended approach is expected to address technology that does not keep pace with the market, and so major differences in costs are not expected. No specific regulatory changes would be implemented at this time but would be subject to a further round of detailed public consultation to determine affected products, and thereby, distributional impacts.

What is the overall impact of these limitations and constraints on how confident Ministers can be when using this analysis to inform their decisions?

Ministers may be confident that despite these limitations, the recommended policy approach is sound, based on:

- The recommended approach to prohibiting pre-charged imports is already in place in several overseas jurisdictions (Canada, the United States of America, Japan, the European Union, the United Kingdom); and
- Formal consultation largely noted that the proposed prohibitions (on pre-charged equipment) would be practical to implement following larger jurisdictions implementing their own regulations
- Formal consultation also suggested that prohibition on specific types of F-gas would be practical if supported with training and accreditation for health and safety purposes, which is underway via WorkSafe.

Responsible Manager
Glenn Wigley *Director – Waste and Resource Efficiency* *Ministry for the Environment*      9 March 2022

Quality Assurance (completed by QA panel)	
Reviewing Agency:	The Ministry for the Environment Regulatory Impact Assessment Panel
Panel Assessment & Comment:	*The Regulatory Impact Assessment Panel from the Ministry for the Environment has reviewed the Regulatory Impact Statement "Options to manage imports of finished products containing HFC refrigerants". The Panel confirms that the level of information provided meets the quality assessment criteria for this stage in the process.*

Section 1: Diagnosing the policy problem

What is the context behind the policy problem and how is the status quo expected to develop?

1. This Regulatory Impact Assessment complements the overarching interim Regulatory Impact Assessment prepared for the emissions reduction plan - "Transition Pathway for the Emissions Reduction Plan". The F-gas policy proposals sit amongst a wider suite of emissions reduction policy proposals for waste and F-gases, for which the Waste and Resource Efficiency division are responsible. This suite of proposals is required for the emissions reduction plan. Overall regulatory impacts of the emissions reduction plan are considered in the overarching assessment, and are not replicated here.
2. Fluorinated gases are mainly used as refrigerants for heating and cooling, and are mostly hydrofluorocarbons (HFCs). They are potent greenhouse gases, with global warming potential (GWP) hundreds or thousands of times greater than carbon dioxide. HFC refrigerants contribute a hugely disproportionate amount to global warming – hundreds or thousands of times more than the metric quantities used.
3. Fluorinated gases are one of the sectors included within New Zealand's emissions reduction plan. The first Emissions Reduction Plan must be in place by the 31 May 2022.
4. The Climate Change Commission, in its advice to Government on meeting New Zealand's climate targets, made proposals to reduce emissions from HFCs and other fluorinated gases even further. Those recommendations were to:
    - ***expand import restrictions where feasible***
    - improve industry practice to reduce leakage
    - enable businesses and consumers to switch to low climate impact alternatives. (New Zealand Climate Change Commission, 2021, p. 301)
5. This impact statement considers a policy response to the first of these recommendations. The remaining recommendations are being addressed through other Government policy initiatives, specifically Regulated Product Stewardship and measures to improve training and industry practice, being led by MBIE.
6. Hydrofluorocarbons (HFCs) make up about 92 per cent of total emissions from fluorinated gases (Ministry for the Environment, 2021). Because of this, they are the primary target for intervention in this first emissions reduction budget period (2022 – 2025).
7. This regulatory impact statement includes information and analysis related specifically to import of *finished products* containing HFCs, while recognising that this is only one part of the 'life-cycle' of a product containing refrigerants.
8. This statement also includes information and analysis related to potential future regulation of imports of specific HFCs. However, implementation of such regulations is not currently proposed, and this information is included to explain how these components form part of the full F-gas work programme. Full regulatory impact analysis will be completed for such proposals separately.
9. In the emissions reduction plan discussion document, we consulted on an additional import control option – to speed up the phase down of bulk HFCs. This policy is already in place, in order to meet our commitments under the Kigali Amendment to the Montreal Protocol. Public submissions on the proposal to speed up reduction of bulk

HFC imports will be used to inform a review of the phase down timetables, as is required every two years under the *Ozone Layer Protection Act 1996.*

What is the current state within which action is proposed? eg, the nature of the market, industry structure, social context, environmental state, etc.

Background

10. HFCs became the dominant refrigerant choice as ozone-depleting substances were phased out under the Montreal Protocol. In 2019, HFCs contributed to just over two per cent of New Zealand's total domestic emissions (Ministry for the Environment, 2021).

11. HFC refrigerants imported in bulk (for insertion into equipment in New Zealand) are now being phased down under the Montreal Protocol, following international recognition of their harmful contribution to global warming.

12. Refrigerant types are classified by global warming potential (GWP).[3] This is a measure of a gas's ability to trap heat in the atmosphere, relative to carbon dioxide. For example, a global warming potential of 750 would mean that refrigerant, if leaked to the atmosphere, would have a warming impact 750 times that of carbon dioxide.

Alternatives to HFCs

13. One of the key benefits of HFCs is that they are typically rated for low flammability, reducing their risk to those who install and maintain them, as well as users. There are three alternatives to existing HFC refrigerants. The three primary alternatives are:

    - Lower-GWP HFCS: in many instances, HFCs are replaced with HFCs that have a lower GWP. Often, these are mixtures of several different HFCs, with the aim of creating a lower-GWP while maintaining other features of HFCs, like low flammability and toxicity.
    - Hydrofluoroolefins (HFOs): considered to be a 'new-generation' refrigerant to follow HFCs. HFOs have a lower global warming potential and higher flammability but share some properties with HFCs. Generates environmentally persistent and accumulative trifluoracetic acid as a breakdown product. The effects of this are as yet uncertain.
    - Natural refrigerants: substances that can be found naturally occurring in the environment. Natural refrigerants include ammonia, carbon dioxide, hydrocarbons, water, and air. Can have greater flammability risks, or lower energy efficiency capabilities.

14. These alternatives have been demonstrated to be available in a range of sectors. However, the type of alternative refrigerant used varies across sectors, based on the

[3] This is most often calculated over 100 years, and is known as the 100 year GWP. See more information about GWP calculations here: NIWA - What are global warming potentials and CO2-equivalent emissions.

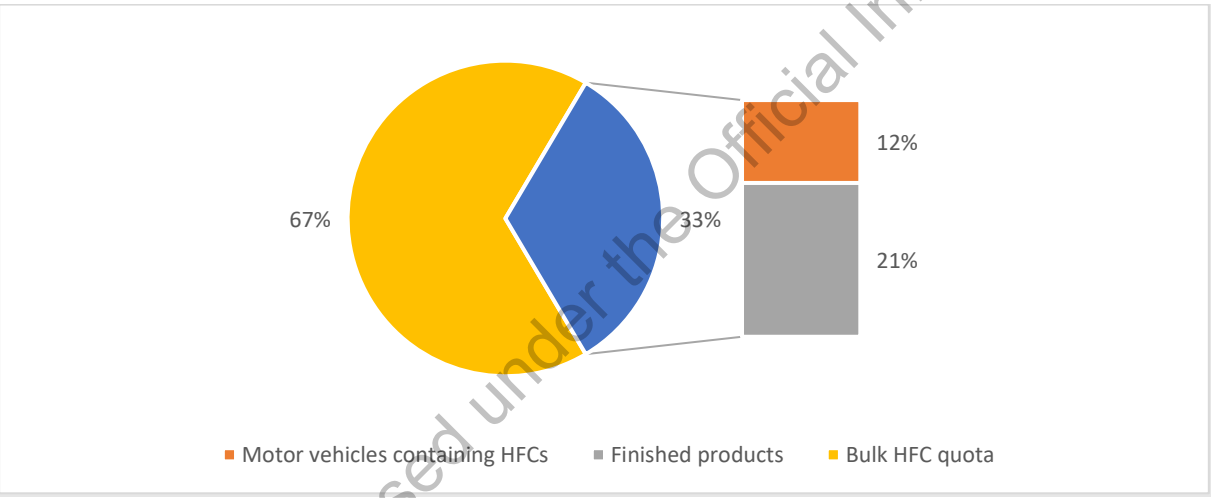
quantity of refrigerant required, flammability risk, energy efficiency, and other factors. For example:

- R32 (GWP 675) is a common replacement for the higher GWP R410A (GWP 1450) across a range of small air-conditioning and heat pump systems (Verum Group, 2020, p. 42).
- The HFO R1234yf is used in all new cars manufactured in the European Union, and will be required in new Japanese cars from 2023 (Verum Group, 2020, p. 43), (Ministry of the Environment, Japan).
- Natural refrigerants are expected to be used in almost 100 per cent of domestic refrigeration units imported by 2025 (Verum Group, 2020, p. 51)

Size and make-up of the market

15. Finished products (including motor vehicles) currently make up 33 per cent of all *allowable*[4] imports of HFCs into New Zealand, as shown in Figure 1. This includes domestic and commercial heat pumps, air-conditioners, fridges, freezers, dehumidifiers, and vehicles.

Figure 1: Quantity (carbon dioxide equivalent tones) of HFCs allowable for import in 2020



The total quantity of HFCs *allowable* for import into New Zealand in 2020 is estimated at around 176,610.2 carbon dioxide equivalent tonnes, of which 33 per cent is imported in finished products, 21 per cent being in motor vehicles. In 2020, the actual amount of HFCs imported in bulk was significantly lower than the allowable quota (720,482 carbon dioxide equivalent tonnes was imported, as compared to the allowable total imports of 1,338,000 carbon dioxide equivalent tonnes). The Ministry for the Environment has received reports that this low quantity of imported bulk HFCs may be due to the impacts of COVID-19 on international trade and shipping. We have not used this actual figure to show the ratio of bulk to finished product imports, as it may be the case that in future, the entire quota amount is used. If we did consider actual imports of bulk HFCs, then HFCs in finished products made up 48 per cent of imports.

16. Information on the quantity of HFCs imported into New Zealand is primarily drawn from the synthetic greenhouse gas levy. Importers of finished products pay a synthetic greenhouse gas levy, which varies based on the global warming potential of the refrigerant the product contains. Reporting on the quantity of goods imported under the levy is released quarterly by the Environmental Protection Authority.

17. Despite the fact the majority of the market has moved to lower-GWP refrigerant options across the synthetic greenhouse gas levy categories, finished products pre-charged

[4] We refer to *allowable* imports because this graph uses the total quantity of bulk HFCs allowed under New Zealand's phase down quota for 2020, in order to represent the breakdown that could be expected in other years under the quota system.

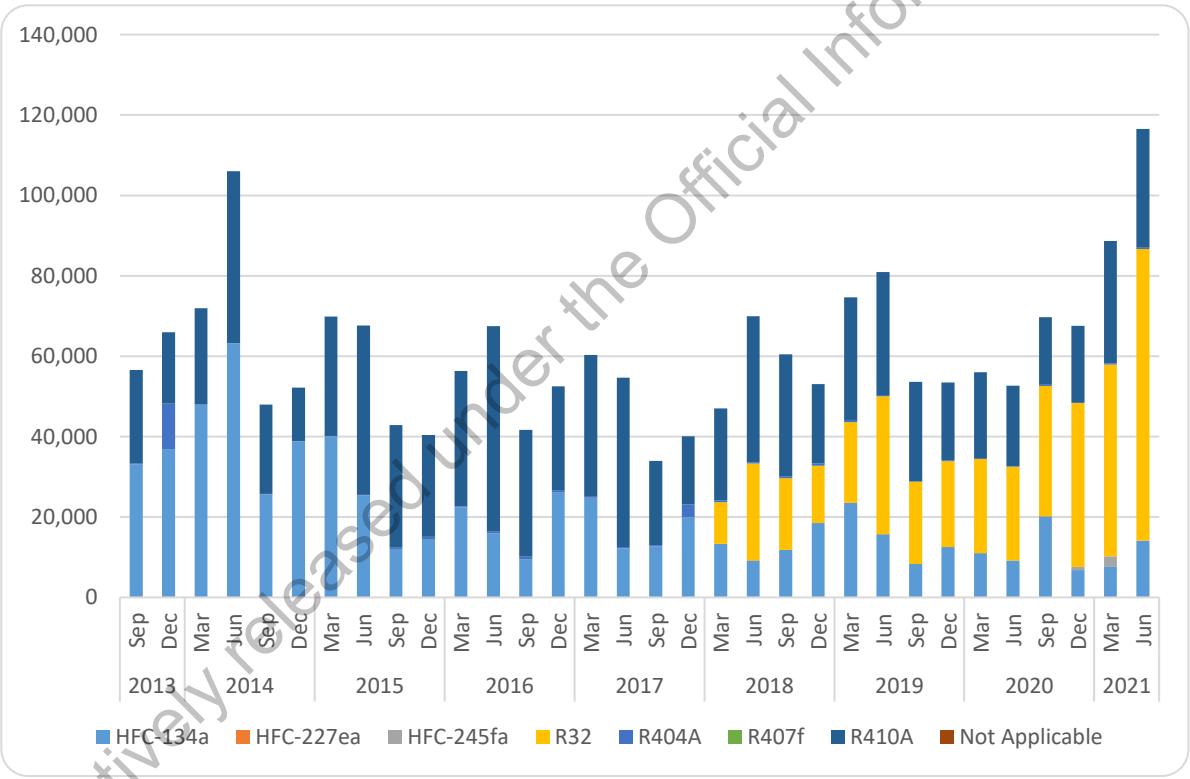
with higher-GWP HFCs (thousands of times that of carbon dioxide) continue to be imported in small quantities.

18. Data collected under the Synthetic Greenhouse Gas Levy shows that R410A (GWP 2090) was the most frequently imported refrigerant in pre-charged products until early-mid 2020, but that R32 (GWP 675) had rapidly become dominant by mid-2021.

19. For example, R32 (GWP 675) is now the major refrigerant contained in new heat pumps imported into New Zealand, replacing the former industry standard (R410A (GWP 2090)) (Verum Group, 2020, p. 42). This transition is occurring globally, and in a range of sectors. The growth in R32 within finished product imports is observable in Figure 2, as represented in yellow.

20. In the 20/21 financial year, 9 per cent of heat pump imports contained R410A (GWP 2090), but this small quantity represented 30 per cent of the potential emissions from heat pump sources.

Figure 2: Quantity of goods subject to the Synthetic Greenhouse Gas Levy imported by month



This graph is extracted from the Synthetic Greenhouse Gas Levy report, prepared quarterly by the Environmental Protection Authority. It shows the types of refrigerants imported in goods subject to the levy, and the total quantity of goods imported, by month. The major refrigerants imported in finished products are HFC-134a, R32, R404A, and R410A. Some refrigerant types are imported in very low quantities and are not visible in the bars (HFC-227ea, HFC-245fa, R407f).

Emissions sources

21. We use import information as a proxy for the quantity of emissions anticipated from refrigerants in the New Zealand market, because it provides us with the most up-to-date record of the types of refrigerants entering the market.

22. Entering the market is not the same as being emitted in the market. However, the rate of recovery of refrigerants in New Zealand is currently low – estimated at approximately 11 per cent (although this can differ significantly across sectors). Reducing high-GWP HFCs from entering the market in finished products will support the existing phase down of bulk HFCs under the Kigali Amendment to the Montreal Protocol, by mitigating the additional contribution to global warming that a high-GWP HFC would create if

released to air (whether by leakage, or intentionally), versus a lower-GWP HFC or alternative refrigerant.

What are the key features of the regulatory system(s) already in place in this area (if any)? What are its objectives?

23. New Zealand has already taken steps to reduce HFCs imported into New Zealand:

- In 2018, New Zealand ratified the Kigali Amendment to the Montreal Protocol, and committed to phase down HFCs imported in bulk (ie, for insertion into equipment in New Zealand). The phasedown commenced in 2020 and is projected to reduce use of HFCs imported in bulk by 81 per cent in 2036 (from the average consumption over 2011-2015).

- HFCs 'pre-charged' into products overseas (like heat pumps) are not included in our Kigali Amendment phasedown. Instead, they are disincentivised by their inclusion in the synthetic greenhouse gas levy (along with perfluorocarbons and sulphur hexafluoride). The levy is linked to the price of carbon and is updated annually by the Ministry for the Environment to match ETS costs.

How is the status quo expected to develop if no action is taken?

If the status quo is expected to remain unchanged, explain why.

If it is expected to change, describe how it will evolve and its impact in the absence of action (ie, the counterfactual).

24. There are substantial opportunities to reduce gross emissions in this sector as technology advances. The Montreal Protocol Technological and Economic Assessment Panel, a grouping of experts in their field, prepared a report on energy-efficient and low-global warming potential technologies in May 2021. The report concluded that during the last five years, technology has developed rapidly, and there is now availability of equipment that uses lower GWP refrigerants while retaining high-energy efficiency in most market sectors (Montreal Protocol Technology and Economic Assessment Panel, May 2021, p. 4).

25. Despite being on the right pathway, modelling carried out for the Ministry for the Environment projects that the emissions reductions that will be achieved under existing policy measures for refrigerants (estimated at 17 per cent below 2019 levels by 2035) could be enhanced in order to support net-zero emissions across our economy (other than biogenic methane) by 2050 as obligated under the Climate Change Response Act (New Zealand Climate Change Commission, 2021).

26. Without policy intervention at the import stage, industry may transition to alternative refrigerants rapidly, given changes in the global refrigerant market. Or, industry may transition at a slower rate, relying on existing equipment options and practices containing high-global warming potential HFCs.

27. Data collected on imports of goods subject to the synthetic greenhouse gas levy suggests the slower scenario is occurring in parts of the industry and there is opportunity to speed up New Zealand's transition. In a number of levy categories, imports of goods containing high-global warming potential refrigerants continue where alternatives are already widely available (e.g. vehicle air-conditioning, heat-pumps, refrigerator/freezers) (Environmental Protection Authority).

28. If New Zealand is to take concerted actions to reduce our emissions from HFCs to net-zero, the additional policies in use in other countries are beneficial places to commence

looking for possible policies to enhance our Kigali phasedown, or to implement wider improvements or reforms to our refrigerant management practices.

29. In the realm of import policies, there are two key options in place in overseas jurisdictions that are not used in New Zealand. For example, the European Union and United Kingdom use a quota system. This is supported by a placing on the market prohibition of finished products containing high-GWP HFCs, where lower-GWP alternatives exist. This prohibition approach is also in place in Japan, Canada, and California.

30. Our development of a mandatory licensing scheme for refrigerant servicing and proposal to develop a regulated product stewardship scheme are examples where New Zealand has already followed the lead of other countries.

Are there any previous government decisions, legislation, or Regulatory Impact Statements in this area that are relevant to this problem?

31. When Cabinet agreed to release the emissions reduction plan discussion document *Te hau mārohi ki anamata*, the Ministry for the Environment prepared an impact summary for one of the proposals included in the fluorinated gases section: *Phased prohibition of refrigerant-containing products and servicing options*. The reason for preparing an impact summary just for this one policy approach was to set out more detailed design features and expected impacts of different design choices so as to provide a richer information base to support feedback.

32. While this interim regulatory impact statement includes the above policy option, detailed options are not being proposed. If Cabinet agrees to the emissions reduction plan work programme for F-gases, detailed analysis and consultation will take place in 2022.

Are there any other ongoing government work programmes with interdependencies and linkages to this area that might be relevant context from a systems view?

33. In June 2021, the Ministry for Business, Innovation, and Employment released a discussion document for public engagement on regulatory reform for energy efficient products and services (Ministry for Business, Innovation, and Employment, 2021). This included a proposal to allow Minimum Energy Performance Standards and labels to include greenhouse gas emissions requirements. Because many appliances that utilise refrigerants are also subject to Minimum Energy Performance Standards, restrictions on their import will need to be holistically considered to ensure that the cumulative effect is not to increase emissions by prioritising one feature over another.

34. Refrigerant gases that can replace HFCs are usually more flammable, and so require training to handle safely. The Ministry for Business, Innovation, and Employment and WorkSafe are developing new unit standards, and this is included as a recommendation in the final report from the Synthetic Greenhouse Gas regulated product stewardship working group. Any replacement options in the New Zealand market must be able to be safely used, and in accordance with international standard.

What is the policy problem or opportunity?

What is the nature, scope, and scale of the problem?

35. Continued import of finished products pre-charged with high-GWP HFCs, in instances where alternatives with less climate impact are available for that same purpose means that there is unnecessary risk of increased greenhouse gas emissions.

36. Given factors such as variable import quantities between years, differences in the refrigerant types used across sectors, and the future shape of the market, it is difficult

to accurately quantify emissions reductions benefits in this interim regulatory impact statement.

37. However, we know that over time, manufacturers of products containing refrigerants have been able to use lower-GWP refrigerants to improve the emissions profile of their products. And we know that this trend is expected to continue to develop, as manufacturers invest in technology development to support international emissions reductions commitments under the Kigali Amendment to the Montreal Protocol.

38. This technological change brings with it the opportunity to speed up our phase down of HFCs, by looking to other options for import reductions, outside of our existing commitment to reduce bulk HFCs under the Kigali Amendment.

Who are the stakeholders in this issue, what is the nature of their interest, and how are they affected? Outline which stakeholders share your view of the problem, which do not, and why. Have their views changed your understanding of the problem?

39. Primarily, behaviour change is sought from:

- ***Importers.*** Shift as soon as possible to importing finished products containing lower-global warming potential refrigerants, to ensure additions to the bank of HFC refrigerants in New Zealand are minimised.
- ***Retailers.*** Shift as soon as possible to marketing and sale of finished products containing lower-global warming potential refrigerants, to ensure choices of finished products match emissions reductions targets.
- ***Technicians.*** Develop capability to service equipment designed to take refrigerants with a lower global warming potential. Technicians will need to be able to install and service equipment using more flammable refrigerants (the typical trade-off for lowered global warming potential).

40. Behaviour change from these actors is anticipated to have flow-on effects to the choices and behaviour of consumers. Consumers themselves could increase uptake of lower-GWP refrigerants by demanding more environmentally friendly options. [Any relevant consultation feedback]

41. The heating and cooling industry is aware of and, on the whole, supportive of the need to transition to lower global warming potential refrigerant choices. For example, many heat pumps sold in 2021 have been produced by manufacturers who have transitioned to using a refrigerant with half the global warming potential of the previous (R32, replacing R410A). Large businesses, like supermarket chains, increasingly design and use natural refrigerants (like carbon dioxide and ammonia) to run refrigeration systems.

42. On the other hand, there is some concern that under current regulatory settings, New Zealand could be subject to continued imports of finished products containing high-GWP HFCs that is restricted in other countries.

43. In the European Union, implementation of similar regulation is expected to reduce emissions to a third of 2014 levels by 2030 (as part of a package of measures). However, the European market is dealing with a rise in illegal refrigerant import and sales, because of legal market prohibitions. Mitigating a ‘black market’ for refrigerants will need to be examined carefully if Government considers imposing further restrictions here.

44. We also received feedback from consultation. This feedback is summarised in Section 2, where we examine more closely the import restriction options included in the discussion document.

Does this problem disproportionately affect any population groups? eg, Māori (as individuals, iwi, hapū, and whānau), children, seniors, people with disabilities, women,

people who are gender diverse, Pacific peoples, veterans, rural communities, ethnic communities, etc.

45. This problem does not disproportionately affect any population groups in a direct way. However, it is part of a suite of policies for inclusion in the first Emissions Reduction Plan, in recognition of the hugely disproportionate effects of unabated climate change.

46. Detailed analysis and consultation, including targeted analysis of the potential effects on population groups, would be carried out on the preferred option in this Regulatory Impact Statement will be carried out if it is progressed by Cabinet.

What objectives are sought in relation to the policy problem?

47. Reduce emissions from refrigerants to net-zero by 2050, while:

- Keeping electrification of heating as a priority, without reducing access to heating and cooling appliances for low-income New Zealanders
- Maintaining health and safety standards across cold chain, medical usage, and domestic and commercial refrigeration.

48. Respond to the recommendations of the Climate Change Commission to expand import restrictions where feasible for HFCs (Recommendation 23(2a)).

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

What criteria will be used to compare options to the counterfactual?

49. The following criteria will be used to compare options to the counterfactual.

Criteria	Context
Emissions reductions *What emissions reductions are projected under the option?*	These policy options are being compared for their ability to support New Zealand's emissions reductions targets. Potential for emissions abatement is the key criterion, but may come at the expense of the others. Mitigation of any unintended consequences will need to be included in explanation of the preferred option.
Energy efficiency of equipment *Will the option increase or decrease the energy efficiency of heating and cooling systems?*	Refrigerants can enable increased efficiency in the equipment they power. Effects on energy efficiency will need to be considered in any changes to refrigerant types. There is potential for *increased* total emissions from refrigerant-containing equipment if energy efficiency is impacted poorly.
Achievability *Are there commercially feasible, sustainable alternatives in place if this option is pursued? Is the option achievable for industry and consumers?*	If this option were implemented, would businesses and consumers still be able to access heating and cooling equipment that uses refrigerants. And would there be any major safety or cost implications associated?
Risk of unintended consequences *Could negative or positive externalities arise if this option was pursued? This includes economic, social, environmental impacts*	This criterion could apply to a range of possible consequences, which may differ based on the nature and certainty of the options (and will be explained for each).
Strategic alignment *Does the option align with Government priorities, international obligations, and environmental strategy?*	How does the option support Government strategy, and in what ways?

What scope will options be considered within?

50. This options analysis only focuses on the case for regulatory restrictions on import or sale of HFCs, based on the Climate Change Commission's advice to Government on emissions reductions. We also assume that, to meet emissions budgets, consideration of this approach and its emissions reduction potential will be necessary. Consultation on detailed options in the next stage of policy analysis will improve our understanding of the potential costs of this approach, to consider alongside emissions reductions.

Scope

51. In scope:

- HFCs used as refrigerants in heating and cooling applications.

- Policies that impact the availability of refrigerants on the market (import and sale).

52. Out of scope:
    - Management of refrigerants through their lifecycle. A separate project to create refrigerant product stewardship covers this area.
    - HFCs used for applications other than to power heating and cooling equipment (eg, foam blowing, aerosols).
    - Options other than import or sale/use restrictions of HFCs based on global warming potential are out of scope of this impact statement.

53. We are considering in this document those options for import and sale restrictions that were included for public consultation in the emissions reduction plan discussion document.

What options are being considered?

The following analysis relates to the proposal for import restrictions on pre-charged equipment. A decision is sought from Cabinet on whether to proceed with the implementation of such a prohibition, with detailed policy analysis to be completed upon this decision.
Options analysis is not presented in detail for potential future regulatory proposals regarding the sale and use of high GWP HFCs. The decision sought from Cabinet on this proposal is whether to proceed with exploratory work. Should we proceed, this exploratory work will include a full, detailed policy analysis and Regulatory Impact Assessment.

Option One – *Counterfactual*

54. Under this option, there would be no restrictions on the types of refrigerant-containing goods able to be imported into or sold in New Zealand. Producers and suppliers could continue to sell and market products containing high-global warming potential refrigerants in New Zealand, although the majority would move to low-GWP options as they became common-place in the global market.

55. There is a risk that as other countries prohibit sale of these goods, New Zealand could continue to be an import market for products that cannot be sold elsewhere.

Option Two – *Extending the phase down quota limit for new bulk HFCs to include imports of finished products containing HFCs*

56. Extending the import phase down to include HFCs in finished products like heat pumps, air conditioning units, and refrigerators, as well as recycled HFCs, could bring all uses of HFCs under the same regulatory approach.

57. This option would see a ‘sinking lid’ quota applied to the import of finished products pre-charged with HFCs. This approach is already applied to HFCs imported in bulk, in line with New Zealand’s obligations under the Kigali Amendment to the Montreal Protocol. The quota on bulk HFCs begins at a baseline of the average annual consumption in the years 2010-2015. By 2036, imports of bulk HFCs will have decreased to 85 per cent below the baseline level.

58. Those wishing to import bulk HFCs are required to apply for a permit annually. Up to 80 per cent of permits are grand parented, meaning they are granted to those who

previously imported HFCs before the implementation of the phase down quota. The remainder are 'special import permits' available for anyone to apply for.

59. The phase down of bulk HFCs is regulated under the Ozone Layer Protection Act and implemented by the Environmental Protection Authority. The Minister for the Environment is required to review the phase down timetables every two years, in line with technological developments.[5]

60. If this quota system were to be applied to pre-charged HFCs, an additional quota system to the existing one for bulk HFCs would most likely be required, owing to the wide range of technologies represented in pre-charged imports. This differs from the approach taken in the European Union, where pre-charged imports and bulk HFCs are included within one import quota. However, the European Union is a significant producer of heating and cooling equipment, as well as motor vehicles. As such, there is perhaps less need for certainty about the availability of pre-charged imports.

61. If selected as the preferred option, further analysis would be carried out on various quota options, such as what products would be included, the size of the quota and speed of phase down, any exemptions, and implementation and review activities.

62. When we sought feedback on the Kigali Amendment in 2018, some submitters said we should phase down the import of finished products containing HFCs, alongside the timetable for reductions in bulk HFCs required by the Kigali Amendment. This view was primarily held by New Zealand manufacturers, who are subject to the constraints of a quota in importing bulk HFCs to make their products. There is no quantity restraint on importers of finished products.

63. More recent stakeholder engagement indicates there is some concern that creating a quota for pre-charged imports could limit availability of some equipment like heat pumps, which are a commonplace energy efficient heating source. Restricted access to these sorts of products could have an outsized effect on those who are unable to pay. These groups are likely to already facing barriers to adequate heating and cooling.

64. If a quota system severely restricted the availability of finished products, there could be significant indirect impacts on the types and quantity of finished products imported into New Zealand. Most alternatives to HFCs are also more flammable, and require training in proper handling and management to ensure safety.

Option Three – *Phase out import/sale of certain goods containing high-GWP HFCs*

65. Prohibitions would be made on the import or sale of certain goods based on the global warming potential of the refrigerants they contain. Prohibition dates would be made based on technological development and may vary between product types. We know other like-minded countries have taken measures additional to their Kigali Amendment obligations to accelerate the transition to lower-GWP refrigerants, and to provide greater certainty of the types of refrigerants in use in the future.

66. Several overseas jurisdictions have implemented this approach. As a 'technology-taker' when it comes to refrigerant-containing equipment, prohibiting import or sale of finished products could provide New Zealand with the flexibility to follow the direction of the global market.

67. While Australia does not have these sorts of prohibitions in place currently, there is scope in their legislation (the *Ozone Protection and Synthetic Greenhouse Gas Management Act 1989*) to do so in future.

68. The Ministry has undertaken preliminary policy analysis to assess the application of these overseas policies in New Zealand. Analysis suggests that a range of products

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could be subject to prohibitions (some as early as 2022), with little impact on importers, retailers, or consumers, because the majority of the industry is already transitioning to lower-global warming potential options. This would act as a 'back stop' to ensure that parts of New Zealand's industry do not lag the transition to lower-GWP refrigerants. It would also limit the risk of dumping — products sold in New Zealand would have to meet requirements similar to other jurisdictions.

69. The equipment categories considered were:

- commercial refrigeration
- industrial refrigeration
- stationary air-conditioning
- mobile air-conditioning (vehicles)
- transport refrigeration (eg, refrigerated containers)

70. In each category, alternative refrigerant options that are available globally were assessed against two criteria:

- **Availability:** the ability of the industry to import and install products with new technologies of lower global warming potential refrigerants and higher efficiency.

Alternative availability scale	#
R&D: Still in testing phase with promising results. It may be commercialised within five years after passing through emerging technology stage.	1
Emerging technology: Prototype available at a pilot or demonstration phase. An emerging technology may become available at a later stage or might not make it to the available stage.	2
Available: Can be obtained from at least one manufacturer.	3
Widely available: Can be obtained from more than one manufacturer, supplier, or retailer. Distribution networks are available.	

- **Accessibility:** a range of factors that could influence the access to alternative refrigerant choices, including affordability, supply chains, regulations, and servicing capability.

Alternative accessibility scale	#
Not in production	1
Not available in NZ, not expected to be	2
Not currently available in NZ, expected within 5 years	3
Available in NZ, but cost prohibits mass use	4
Available in NZ, but safety prohibits mass use	5
Available widely in NZ	6

71. This process created a detailed set of equipment categories where lower-GWP refrigerants are likely to be available. Factors like global warming potential, technical properties, flammability, cost, and efficiency were compared as part of the assessment of availability and accessibility. A workbook containing these options can be reviewed here.

72. Data is not available to provide a complete picture of these factors for every refrigerant option. Most importantly, cost has been difficult to identify, given the quantity of different good manufacturers, and the difficulty of isolating the cost of the refrigerant itself. There is a low risk that various factors like cost, efficiency, and safety could become untenable. This would not be expected to occur in every equipment category,

but more likely to occur in unique circumstances relating to one category. Specific cost-benefit analysis would take place in future policy development to minimise this risk.

73. Policy development would also need to occur concurrently with the implementation of improved standards for managing flammable refrigerants.

Evidence of combined effect of Options Two and Three in other jurisdictions

74. These options were selected based on import policies in place in overseas jurisdictions. We looked most closely at the implementation of policies in the European Union, Japan, Canada, and California.

75. In the European Union (and United Kingdom), both options are used in tandem. We discuss this option in recommending our preferred approach.

76. In May 2021, the European Commission published a briefing which summarised assessment of the F-gas regulations that have been in place in European Union countries since 2006. These regulations include versions of both options two and three as included in our analysis. The briefing included findings that:

- *"While the amounts of HFCs contained in imported products have remained rather constant since 2016, the GWP of these HFCs dropped by about 33 per cent until 2019."* (European Commission, 6 May 2014, p. 5)
- The HFC phase down as well as the placing on the market and use prohibitions have worked together to discourage the use of F-gases with high GWP (European Commission, 6 May 2014, p. 5).
- Prohibitions on placing on the market and use had been observed to be effective and are easily understood by industry and end-users (European Commission, 6 May 2014, p. 5).
- The cost of the regulations varied across different sectors. Compliance with the HFC phase-down and quota system was considered by business associations/organisations to increase costs most significantly (European Commission, 6 May 2014, p. 9).
- A majority of business associations and companies who responded to a survey *"agreed that the costs of the individual measures were justified to achieve the objectives"* (European Commission, 6 May 2014, p. 9).

Feedback from consultation on the emissions reduction plan discussion document *Te hau mārohi ki anamata*

77. The options presented in this regulatory impact statement respond to the Climate Change Commission's advice that import restrictions on finished products containing high-GWP HFCs are imposed where feasible. In their advice, the Commission noted that some public submissions had supported the imposition of restrictions.

78. Specific options to restrict import of finished products containing HFCs were presented for consultation in the emissions reduction plan discussion document *Te hau mārohi ki anamata.* While the formal submissions period closed on the 24 November, the Ministry for the Environment also engaged with representatives of the sector from across these areas through two key consultation events:

- Public webinar
- Workshop with Refrigerant Product Stewardship Working Group

79. Some early responses to the proposals laid out in the emissions reduction plan discussion document revealed the following key themes:

- Some opposition to the creation of a quota system for imports of finished products containing HFCs (Option Two), with concern that New Zealand imports a greater quantity of finished products than the European Union, and as such, could face industry disruption.
- There is strong support from some groups to implement prohibitions on importation of finished products containing high-GWP HFCs where suitable alternatives are available, and no strong opposition. There was recognition amongst stakeholders that they would have an opportunity to provide feedback on individual prohibitions if this policy is selected for implementation.

80. Detailed analysis of submissions to the Emissions Reduction Plan discussion document will continue to occur in preparing final policy options for implementation.

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

Criteria	**Option One – *Counterfactual***	**Option Two – Extending the phase down quota limit for new bulk HFCs to include import of finished products containing HFCs**	**Option three – Phase out import/sale of certain finished products containing high-GWP HFCs**
Emissions reductions *What emissions reductions are projected under the option?*	0 A transition to lower-GWP refrigerants is being made by industry, but speed is uncertain, and some sectors are lagging international trends.	++ Creating a phase down quota system for finished products pre-charged with HFC refrigerants would provide certainty of the quantities of refrigerant entering into the NZ market in goods.	++ Phasing out sale of high-GWP HFCs would limit new emissions from refrigerants and provide certainty of expected emissions reductions.
Energy efficiency of equipment *Will the option increase or decrease the energy efficiency of heating and cooling systems?*	0 Heating and cooling equipment sold in New Zealand must meet Minimum Energy Performance Standards, regardless of refrigerant choice.	+ Reporting on the effectiveness of a quota on finished products in the European Union observes that generally, new products employing HFC alternatives are at least as energy efficient.	+ Heating and cooling equipment sold in New Zealand must meet Minimum Energy Performance Standards, regardless of refrigerant choice. Additionally, research has shown that equipment containing lower-GWP refrigerants meets or can exceed the efficiency of high-GWP options.
Achievability *Are there commercially feasible, sustainable alternatives? Is the option achievable for industry and consumers?*	0 No change for importers and retailers required.	0 Unknown demand for refrigerant-based heating and cooling equipment over the period to 2035. Risk that prescribing too narrow a quota could increase cost of goods for consumers.	- Some sectors may find the pace of transition to lower-GWP refrigerant technologies requires earlier replacement of existing equipment, and additional training and certification in use of more flammable refrigerants.

Criteria	**Option One – *Counterfactual***	**Option Two – Extending the phase down quota limit for new bulk HFCs to include import of finished products containing HFCs**	**Option three – Phase out import/sale of certain finished products containing high-GWP HFCs**
Risk of unintended consequences *Could negative or positive externalities arise if this option was pursued? This includes economic, social, environmental impacts*	0 Risk that the transition to lower-GWP refrigerant options lags the global market.	- Restricting the total quantity of goods that may be imported could compete with the environmental and social benefits of heat pumps	0 Phase out could lead to stockpiling, increased costs. Risk expected to be low/comparable to transition under status quo. However, this approach would also mitigate the risk of New Zealand becoming a market for high GWP products restricted from other countries.
Strategic alignment *Does the phase out align with Government priorities, international obligations, and environmental strategy?*	0 Reliance on industry and ETS pricing[2] to transition to goods containing lower-GWP refrigerants to meet Government emissions budgets.	+ Aligns with the transition to a low emissions New Zealand, and with the approach taken to bulk HFCs (N.B. there is no international requirement to apply this approach to finished products)	+ The Government is planning a transition to a low emissions New Zealand. Phasing out goods containing high-GWP refrigerants provides industry with clarity about what this means for imports over the coming decade.
Overall assessment **(Ranking: 1 = preferred)**	**3** New Zealand's market would move towards lower-GWP refrigerants, the speed of transition and expected emissions reductions would remain uncertain.	**2** This option would support the immediate goal of reducing import of high-GWP HFCs, but could have outsized unintended consequences.	**1** Phasing out goods containing high-GWP HFCs is expected to hasten market trends already underway and provide certainty of emissions reductions from this sector.

What option is likely to best address the problem, meet the policy objectives, and deliver the highest net benefits?

81. Option Three is expected to speed up market trends already underway and provide certainty of emissions reductions from this sector. The market is already making a transition to lower-GWP technologies, particularly in imports of new goods. We currently believe that this means this option would not impact most importers, retailers, and manufacturers of finished products containing HFCs. Consequently, we expect the cost of transition to be low, as technology is anticipated to already be widely available. Those that would be affected would be importing or selling goods that fall below environmental requirements in other jurisdictions. Option Three also minimises the risk to New Zealand of 'dumping' in our market.

82. By removing refrigerants from the market where possible, we would ensure that all emissions reductions opportunities are taken in this sector. International action under the Montreal Protocol means refrigerant technology is developing rapidly, and there are opportunities to make small but cumulative emissions reductions.

83. The Ministry for the Environment has not recommended the progression of Option Two. While we have received early feedback from some stakeholders that supports this option, we have also received some which does not. More time is needed to assess the overall benefits of creating a phase down quota for finished products, given the possible unintended consequences of restricting supply. This option will still be considered at a later stage, following review of submissions.

84. We could have recommended both options to be implemented in parallel. However, further analysis of consultation feedback is necessary to understand the impact of a dual approach.

What are the marginal costs and benefits of the option?

Affected groups *(identify)*	**Comment** *nature of cost or benefit (eg, ongoing, one-off), evidence and assumption (eg, compliance rates), risks.*	**Impact** *$m present value where appropriate, for monetised impacts; high, medium or low for non-monetised impacts.*	**Evidence Certainty** *High, medium, or low, and explain reasoning in comment column.*
Additional costs of the preferred option compared to taking no action			
Regulated groups (importers and retailers of heating and cooling equipment containing HFC refrigerants)	Ongoing: will be required to transition to importing, installing, and managing products using lower-GWP HFCs or alternative refrigerants sooner than anticipated. Ongoing: training and health and safety standards requirements associated with usage of more flammable refrigerants.	Low	High – based on responses to EU survey of impact upon administrative costs of similar policy (European Commission, 6 May 2014)
Regulators	One-off: resourcing to implement changes to regulatory system.	Low	High – informed by responses of EU member

	Ongoing: possible support to training and business needs associated with transition to lower-GWP refrigerants		states regarding increased costs of similar policy (European Commission, 6 May 2014, p. 23).
Consumers	Ongoing: Users could face increased cost as a result of requirement to purchase newer technology. This could be offset by improved energy efficiency.	Low	Medium – specific prohibition options would be assessed using cost-benefit analysis.
Total monetised costs	*Not yet monetised.*	*Not yet monetised.*	Monetised costs will support detailed decisions on specific prohibitions.
Non-monetised costs	Low	Low	Medium – prohibitions would be based on what refrigerant options are available globally and in the NZ market.
Additional benefits of the preferred option compared to taking no action			
Regulated groups	Ongoing: All importers/retailers face the same restrictions.	Low	High
Regulators	Ongoing: certainty of products imported, and emissions potential.	Medium	High
Others (eg, wider govt, consumers, etc.)	Ongoing: reduced emissions potential from HFC refrigerants. Consumers: not able to purchase products with older HFCs that are being phased out limits risk of stranded equipment that cannot be serviced.	High Low	High – emissions reductions the core policy benefit High – the phase down of bulk HFCs will see a reduction in high-GWP HFCs available

			to service equipment. High – Based on review of literature prepared by the Montreal Protocol Technology and Economic Assessment Panel
	Consumers: newer refrigerant technology is often coupled with improved appliance energy efficiency.	Low	
Total monetised benefits	*Not yet monetised.*	*Not yet monetised.*	Monetised benefits will support detailed decisions on specific prohibitions.
Non-monetised benefits	Medium.	Medium.	High – based on a progress report of similar regulations in place in the European Union.

Section 3: Delivering an option

How will the new arrangements be implemented?

85. We have considered a range of possible legislative vehicles for the proposed approach for prohibitions on import of pre-charged equipment, should Cabinet agree to this recommendation. There are two key ways that could restrict refrigerants:

- prohibition of higher-GWP refrigerant options; or
- setting standards requiring refrigerants meet low-GWP criteria.
- It is likely that these regulatory pathways are also the pathways that would be utilised for any future regulatory proposals applied to high GWP HFCs, should Cabinet agree to proceed with exploratory work. However, a full regulatory impact assessment will be required, at which point delivery pathways for this option will be reviewed.

86. Both could be enacted under a number of different acts and regulations. We previously considered five regulatory options. A summary of these is included in the table below:

Legislative or regulatory amendment**?**	**Legislation or regulation**	**Section**	**Rationale**	**Drawbacks**
Regulatory	***Ozone Layer Protection Act 1996 and regulations.***	Requires change to legislation	HFCs are already being phased down in bulk under the OLPA (Ozone Layer Protection Act). Including prohibitions on sale of finished products here would make this the 'umbrella' act for HFC phase out. It also matches other prohibitions already in the	The purpose and name of the OLPA are outdated, and other parts may also need revision. The EPA/MfE may not have the institutional expertise to assess the broader safety and

			Act for ozone depleting substances. The EPA (Environmental Protection Authority) already monitors imports and exports of bulk HFCs and would be the compliance, monitoring, and enforcement agency for further prohibitions.	efficiency components of new technologies that emerge as replacements for HFC-based systems.
Regulatory	***Waste Minimisation Act 2008 and regulations.***	s23(1)(b)	Could include prohibitions as part of the RPS (Regulated Product Stewardship) scheme for refrigerants, keeping management of refrigerant-containing goods in one place. This approach would also enable effective use of resources and compliance, monitoring, and enforcement.	RPS is focussed on through-life management and disposal, may not necessarily be geared towards the import/sale monitoring required to enforce prohibitions.
Legislative	***Energy Efficiency (Energy-Using Products) Regulations 2002.***	Requires change to legislation	Allowing MEPS (Minimum Energy Performance Standards) and labels to include prohibitions and information regarding refrigerants such as HFCs could speed up the transition to technologies that utilise energy efficient refrigerants with lower impact on the atmosphere should they leak. This approach would also enable effective use of resources and compliance, monitoring, and enforcement. Refrigerant standards could be part of a shift to 'mainstream' GWP/environmental impact in efficiency considerations.	Phase out of certain high-GWP HFCs could lag other countries because of concerns around NZ's role as a 'taker' in the market for refrigerant-containing goods, and a focus on energy efficiency.
Legislative	***Climate Change Response Act 2002 and regulations.***	Requires a change to legislation	The CCRA (Climate Change Response Act) already deals with refrigerants in goods via the synthetic greenhouse gas levy, to support NZ's commitments to the Paris Agreement. The legislation in Part 7 could be amended to expand the scope of the levy to include prohibitions, slowly phasing out the need for the levy/ETS in this sector.	The CCRA also sets out New Zealand's overarching emissions reductions goals and planning, but at a high level. It would not be suitable to include specific policies. It would also be difficult to justify the inclusion of specific prohibitions as part of the SGG levy, as this is not the intent of the tool.
Order in Council	**Imports and Exports (Restrictions) Act 1988**	An order can be made under this act to prohibit the import of certain goods.	An imports and exports order is the most common vehicle for prohibition of imports. This approach has been taken for a number of other substances regulated via international conventions.	An import order would stand separate from other legislation regulating import of goods or refrigerants. This may be confusing for industry and the public and could require extra investment in education and awareness of requirements.

87. Since the impact summary in which we outlined these regulatory options, we have narrowed our scope to two: the *Ozone Layer Protection Act 1996* or *Energy Efficiency*

(Energy-Using Products) Regulations 2002. Summary analysis is below. We have used the same criteria as for assessing the policy options, for consistency.

88. Note that the *Energy Efficiency (Energy-Using Products) Regulations* are being reviewed, and a public consultation on proposals to update the regulations to include, amongst other things, greenhouse gas requirements, recently concluded.

89. The proposal is still being assessed by officials, based on public consultation feedback. Progression of a legislative route for the prohibition of HFCs, based on the *Energy Efficiency (Energy-Using Products) Regulations* is subject to the updating of the regulations.

	Option One: Ozone Layer Protection Act 1996 and regulations	Option Two: Waste Minimisation Act 2008 and regulations	Option Three: Energy Efficiency (Energy-Using Products) Regulations 2002	Climate Change Response Act 2002 and regulations	Imports and Exports (Restrictions) Act 1988
Emissions reductions ***What emissions reductions are projected under the option?***	0 No specific emissions reductions benefit or risk.	0 No specific emissions reductions benefit or risk.	+ Refrigerant type would be required to be considered alongside energy efficiency, to maximise the emissions profile of the whole product.	0 No specific emissions reductions benefit or risk.	0 No specific emissions reductions benefit or risk.
Energy efficiency of equipment ***Will the option increase or decrease the energy efficiency of heating and cooling systems?***	0 No impact on efficiency.	0 No impact on efficiency.	++ Refrigerant type would be required to be considered alongside a product's energy efficiency profile.	0 No impact on efficiency.	0 No impact on efficiency.
Achievability ***Are there commercially feasible, sustainable alternatives? Is the option achievable for industry and consumers?***	+ Links to existing prohibitions on ozone-depleting refrigerants.	+ Links to regulated product stewardship.	- Option would require legislative change to implement.	- Option would require legislative change to implement.	
Risk of unintended consequences	0	0	0	0	0

Could negative or positive externalities arise if this option was pursued? This includes economic, social, environmental impacts					
Strategic alignment ***Does the phase out align with Government priorities, international obligations, and environmental strategy?***	++ Clearly linked to existing import restrictions on bulk HFCs and ozone-depleting substances.	+ Aligned to the implementation of regulated product stewardship for refrigerants.	+ Alignment with energy efficiency policy and emissions reductions goals.	- Not closely aligned with the existing tools of the Act – the ETS and SGG Levy.	0 Not linked to any existing refrigerant management policies.
Overall assessment (Ranking: 1 = preferred)	1	2	1	4	3

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

Existing data collection arrangements

90. Products containing HFCs are already monitored and recorded on import into New Zealand as they are subject to the Synthetic Greenhouse Gas Levy.

91. The Energy Efficiency and Conservation Authority (EECA) also holds information on refrigerant-containing appliances. These appliances are subject to minimum energy performance standards.

92. Other data on refrigerant management and leakage through life is not currently collected on a regular basis by public sector agencies. Compliance, monitoring, and enforcement mechanisms will be established as part of regulated product stewardship for refrigerants.

93. We cannot identify any extra data requirements should this policy proceed. A prohibition-based approach would rely on strong compliance, monitoring, and enforcement. Should policy development proceed, determination of an appropriate legislative vehicle will be critical to further policy analysis and to inform data gathering requirements.

94. A mechanism for review of regulatory arrangements has not been developed given the status of policy development.

Next steps

95. If Cabinet agrees to pursue prohibitions on import of certain pre-charged goods containing high-GWP HFCs, the next steps will be as follows:

- The Ministry for the Environment will undertake detailed policy analysis to identify finished products where lower-GWP refrigerant options are available and accessible.

This analysis will be completed with a proposed regulatory framework and implementation approach.

- Following consultation on detailed proposals (subject to Cabinet agreement) final policy decisions will be accompanied by a full regulatory impact statement.
- If Cabinet agrees to proceed with exploratory work developing future regulatory proposals to prohibit the sale and use of high GWP F-gases used for servicing, where alternatives are available and provisions for ensuring worker safety have been made, the next steps will be as follows:
    - The Ministry for the Environment will undertake desktop research into international regulations on sale and use of HFCs alongside the Kigali Amendment, including meeting with counterparts in Australia and elsewhere.
    - The Minister for the Environment is obliged every two years to review the phase down of substances controlled under the Ozone Layer Protection Act, considering advancements in technology over that period. This review can be used to support analysis regarding the need for potential future regulations on the sale and use of high GWP F-gases.
    - If identified as required, the Ministry for the Environment will undertake detailed policy analysis to identify high GWP F-gases in use where lower GWP alternatives are available. This analysis will be completed with a proposed regulatory framework and implementation approach, in time for the second emissions budget period (2026-2030). Consultation will be completed on detailed proposals.

96. Stakeholder engagement, in both cases, will focus on industry and industry associations. This is because these groups raised technical details and complexities in our initial consultation which must be worked through directly with those who will be subject to regulations. We will, however, also seek input from diverse communities, including (but not limited to) older peoples, those with disability or health needs, and lower socioeconomic households, to ensure that proposals do not limit the ability of these groups to live in appropriately warmed or cooled housing and access appropriate technology to meet other needs.

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