



Ministry for the  
**Environment**  
*Manatū Mō Te Taiao*



# **New Zealand's phase down of hydrofluorocarbons to ratify the Kigali Amendment to the Montreal Protocol and associated supporting measures**

CONSULTATION DOCUMENT

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Ministry for the  
**Environment**  
Manatū Mō Te Taiao



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# Message from the Minister

Last year New Zealand, along with 196 other Parties, adopted an amendment to the Montreal Protocol on Substances that Deplete the Ozone Layer. The Kigali Amendment sets in place a global phase down of hydrofluorocarbons (HFCs). HFCs, which are used mainly in air conditioning and refrigeration, are potent greenhouse gases.

New Zealand does not manufacture HFCs but we do import them. As this is an international phase down, we will be able to tap into alternatives and new technology developed overseas.



I want to understand how New Zealand would best meet the obligations under the Kigali Amendment before progressing ratification in front of Parliament. This consultation document seeks your feedback on these controls. I also want your views on how we can support businesses to reduce demand for high global warming HFCs, and make the transition to more environmentally acceptable alternatives.

Several of our key trading partners are taking, or have announced plans to take, increased domestic action on HFCs. We need to be prepared for the changes in the international market for refrigerants as a result of this.

I am proposing New Zealand sets up a permitting system for HFCs. I would like us to start with a more ambitious step than we are required to under the Kigali Amendment.

I applaud the effort New Zealand industry has made so far in adapting and taking on new technologies to support the phase out of hydrochlorofluorocarbons (HCFCs) and chlorofluorocarbons (CFCs) under the Montreal Protocol. The phase out of these ozone depleting substances has had significant environmental and health benefits for New Zealand. I anticipate the industry will be able to adapt and take on this next big environmental challenge posed by HFCs just as successfully.

I welcome feedback on the Government's proposal through this consultation document.

A handwritten signature in blue ink, which appears to read 'Nick Smith'. The signature is stylized and fluid.

Hon Dr Nick Smith  
Minister for the Environment

# Section 1: About this consultation

The Government is considering how to implement a phase down of hydrofluorocarbons (HFCs), a greenhouse gas, in New Zealand.

HFCs are contributing to climate change worldwide, and without action to curb their use will become a significant influencer on climate. As nations are moving to undertake ambitious efforts to combat climate change, the world is moving away from substances that have a high global warming potential, including HFCs. As a small, trade-dependent country, New Zealand is inevitably influenced by these international changes.

In October 2016, New Zealand was among the 197 Parties to the *Montreal Protocol on Substances that Deplete the Ozone Layer* (the Montreal Protocol) that adopted an amendment in Kigali, Rwanda to phase down HFCs worldwide. The Kigali Amendment puts in place a worldwide phase down of the production and consumption of HFCs. HFCs are used in New Zealand, mainly in refrigeration and air conditioning, but also in smaller activities.

New Zealand does not currently have the requisite rules in place to ratify the Kigali Amendment to the Montreal Protocol. The Amendment still needs to go through the Parliamentary Treaty Examination process to determine whether it is in New Zealand's interests to ratify. We need to understand how New Zealand should meet these obligations so we are prepared if New Zealand does ratify.

The key purpose of this document is to seek feedback on the proposed controls, including an import permitting system, which would need to be put in place if New Zealand decides to ratify. The section on proposed rules is outlined in technical detail to allow for detailed feedback on proposals from affected businesses, especially importers of HFCs.

We are seeking your feedback on the impact of the phase down on New Zealand business to inform this assessment.

We understand this phase down will have an impact on New Zealand business, and the alternatives may present different challenges, including potential health and safety concerns. Because of this, we are also seeking feedback on additional supporting measures that may help the transition to the available alternatives to hydrofluorocarbons.

**Submissions close at 5.00pm on Friday 23 June 2017.**

# Section 2: Why we need to act on hydrofluorocarbons (HFCs)

## HFCs have a climate impact

Hydrofluorocarbons (HFCs) are man-made greenhouse gases with high global warming potentials (GWP), up to 14,800 times that of carbon dioxide (CO<sub>2</sub>).<sup>1</sup> The GWP of CO<sub>2</sub> is one. The most commonly used HFCs in New Zealand have a GWP of between 675 and 4470. New Zealand's current HFC emissions comprise approximately 2 per cent of our gross<sup>2</sup> CO<sub>2</sub>-equivalent (CO<sub>2</sub>-eq) emissions, and are projected to double by 2030.

HFCs are used in New Zealand, mainly in refrigeration and air conditioning, but also in smaller activities. The use of HFCs has increased since the early 1990s when they were used as substitutes for ozone-depleting chlorofluorocarbons (CFCs) and hydrochlorofluorocarbons (HCFCs), which are already being phased out under the *Montreal Protocol on Substances that Deplete the Ozone Layer* (the Montreal Protocol). If no measures are taken, it is estimated that HFCs could amount to 9–19 per cent of total CO<sub>2</sub> emissions by 2050 globally.<sup>3</sup>

## Decreasing HFC use

### International market

As a small country in the HFC market, New Zealand is heavily influenced by international market movements. As such, we need to ensure we are appropriately prepared for changes. With climate change being a key worldwide issue, measures have already been put in place by key governments and businesses worldwide to move away from high-GWP HFCs. To accommodate the changes in the worldwide market, substitutes are being developed to replace high-GWP HFCs.

New Zealand is influenced by movements in international markets, as they impact not only on technology received by New Zealand, but also what technology New Zealand can export to the international market. This means that it is likely New Zealand will start moving away from HFCs anyway.

### The Kigali Amendment to the Montreal Protocol

In October 2016, New Zealand was among 197 Parties that adopted the Kigali Amendment to the Montreal Protocol, a protocol to the Vienna Convention for the Protection of the Ozone Layer, aimed at phasing down HFCs.

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<sup>1</sup> The GWP of CO<sub>2</sub> is one; HFC-23 (the second most abundant HFC in the atmosphere) has a GWP of 14,800.

<sup>2</sup> Gross emissions include all direct greenhouse gases emitted from energy, industrial processes and product use, agriculture, and waste. They exclude emissions and removals associated with land use, land-use change, and forestry.

<sup>3</sup> [www.ccacoalition.org/en/initiatives/hfc](http://www.ccacoalition.org/en/initiatives/hfc).

The Montreal Protocol is an international treaty designed to protect the ozone layer by phasing out the use of ozone-depleting substances. It is widely considered to be the most successful international environmental protection agreement.

The Montreal Protocol sets global timeframes for phasing out identified substances. The phase down of bulk HFC substances reduces a country's HFC import and production. As most ozone-depleting substances being phased out are also greenhouse gases, the Montreal Protocol has also provided an important climate benefit. As there was international concern that this climate benefit will be diminished due to the increase in HFCs, it was decided to include them in the scope of the Protocol, even though they do not have significant ozone depleting potential.

The Kigali Amendment requires developed countries such as New Zealand to begin phasing down HFCs in 2019. Most developing countries will follow with a freeze of HFC consumption levels in 2024, and some in 2028.<sup>4</sup> The phase-down schedule will see developed countries phase down HFC consumption by 85 per cent of their calculated baseline by 2036, with developing countries achieving this reduction by 2047.

This Amendment is one of the largest contributions the global community has made towards keeping the global temperature rise "well below" 2 degrees Celsius, a target agreed at the Paris climate conference in 2015 and referred to in the Paris Agreement on climate change.

The Kigali Amendment will come into effect on 1 January 2019, provided it is ratified by at least 20 Parties to the Montreal Protocol.

This Amendment will move the world away from high-GWP HFCs, as has already happened with HCFCs and CFCs.

The governments of other countries are already putting regimes in place. Other countries are taking measures such as:

- Australia's HFC phase down will be a gradual reduction in the maximum amount of bulk HFCs permitted to be imported into Australia, beginning in January 2018. This will be managed through a quota system for imports.
- The European Union (EU) recently updated their Fluorinated-gas (F-gas) regulations to reduce the availability of HFCs by 79 per cent between 2015 and 2030.

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<sup>4</sup> A list of countries that are a developed country (ie, non-article 5 party), or a developing country (ie, an article 5 party) for the purpose of the Montreal Protocol is outlined at <http://ozone.unep.org/en/article-5-parties-status>.

## SUCCESS OF THE MONTREAL PROTOCOL IN OZONE PROTECTION AND CLIMATE CHANGE MITIGATION

### *The ozone layer is on its way to recovery*

In response to the global decrease in ozone-depleting substances, the Arctic and global ozone layer should return to the benchmark 1980 levels around mid-century, and somewhat later for the Antarctic ozone hole.<sup>5</sup>

### *Ozone recovery has had health benefits*

As a result of ozone protection, up to 2 million cases of skin cancer may be prevented globally each year by 2030.<sup>6</sup>

### *The phase out of ozone substances has made large contributions toward reducing global greenhouse gas emissions*

In 2010, the decrease of annual ozone depleting substance emissions under the Montreal Protocol is estimated to be about 10 gigatonnes of avoided CO<sub>2</sub>-equivalent emissions per year.<sup>7</sup>

## United Nations (UN) Framework Convention on Climate Change (UNFCCC) obligations

HFCs are potent greenhouse gases. Under the UN Framework Convention on Climate Change (UNFCCC), its Kyoto Protocol, and the Paris Agreement, New Zealand is obliged to limit and report greenhouse gas emissions, including HFC emissions (from both bulk HFCs and products), and account for progress toward targets.

These climate agreements and the Montreal Protocol work together. Although the climate change agreements impose broad obligations on Parties to reduce emissions, they do not place specific limits on HFC production or use. In comparison, this amendment to the Montreal Protocol requires a freeze or phase down of consumption and production of HFCs.

## New Zealand's Emissions Trading Scheme complementary to HFC phase down

HFCs are included in the New Zealand Emissions Trading Scheme (NZ ETS). The NZ ETS is the Government's principal policy response to climate change. Its objective is to support and encourage global efforts to reduce greenhouse gas emissions by:

- helping New Zealand meet its international climate change obligations under the UNFCCC
- reducing New Zealand's net greenhouse gas emissions below business as usual levels.

The NZ ETS is complementary to the aims of the Montreal Protocol to phase down HFCs. There are no changes proposed for the NZ ETS as a result of the Kigali Amendment.

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<sup>5</sup> [http://ozone.unep.org/Assessment\\_Panels/SynthesisReport2014.pdf](http://ozone.unep.org/Assessment_Panels/SynthesisReport2014.pdf).

<sup>6</sup> [http://ozone.unep.org/Assessment\\_Panels/SynthesisReport2014.pdf](http://ozone.unep.org/Assessment_Panels/SynthesisReport2014.pdf).

<sup>7</sup> [http://ozone.unep.org/en/Assessment\\_Panels/SAP/ADM\\_2014OzoneAssessment\\_Final.pdf](http://ozone.unep.org/en/Assessment_Panels/SAP/ADM_2014OzoneAssessment_Final.pdf).

The NZ ETS requires all sectors of New Zealand's economy to report on their emissions and, with the exception of agriculture, purchase and surrender emission units to the Government for those emissions. This price on emissions is intended to create an incentive for investment in technologies or practices that reduce emissions.

Importers of bulk HFCs are required to participate in the NZ ETS, and must surrender emission units to the Government for all bulk HFCs imported.

Importers of products or vehicles containing HFCs are subject to a price on emissions through the Synthetic Greenhouse Gas Levy (SGG levy). The SGG levy applies to certain imported goods and vehicles that contain SGGs, where it is impractical for the importer to be a participant in the NZ ETS. The Kigali Amendment only controls bulk HFCs.

Exporters of HFCs, either in bulk or equipment, that meet the prescribed threshold can voluntarily participate in the NZ ETS. They earn emission units for exporting HFCs, to recognise that these gases have not contributed to New Zealand's emissions profile.

The NZ ETS will not enable New Zealand to meet the Kigali obligations by itself, even though it helps incentivise a move to alternatives to HFCs. The NZ ETS does not put an upper limit ('cap') on HFC consumption, which means an unlimited amount could be imported as long as NZ ETS obligations to surrender emission units are met. It also does not set up a regime of permits as it only requires registration, followed by reporting on emissions from HFCs at the end of each year.

## How HFCs are used in New Zealand

### Feedback on HFCs use and alternatives

The Kigali Amendment only applies to the production, importation and exportation of bulk HFCs. It does not cover the importation and exportation of HFCs in products (ie, 'pre-charged' equipment).

### Use of HFCs in New Zealand

Bulk HFCs are not manufactured in New Zealand, but are imported, and used by domestic manufacturers in refrigeration and air-conditioning equipment in homes, commercial and industrial facilities, as well as for air conditioning in vehicles. Smaller amounts are used in foam products, aerosols, such as metered dose inhalers, fire protection services and solvents.

As outlined, the international phase-down of HFCs will move New Zealand away from the use of HFCs, without putting in place additional controls. The New Zealand ETS will also have an influence.

### Alternatives to HFCs

Alternatives available in most sectors include either synthetic lower global warming HFCs or hydrofluoroolefins (HFOs), or natural alternatives. The alternatives can have increased health and safety risks due to higher pressure, flammability or toxicity.

Below is a summary of the sectors we understand are currently using HFCs, some of these are generally imported pre-charged, ie, 'in the product'. 'Pre-charged equipment' is outside the

scope of the phase down; however, in the event of a leakage, equipment would need to be serviced by bulk HFC imports. There are five main market sectors using HFCs<sup>8</sup>:

- refrigeration and air-conditioning (main user):
  - commercial refrigeration
  - industrial refrigeration
  - transport refrigeration
  - domestic refrigeration
  - chillers
  - mobile air conditioning
  - heating only heat pumps
- foam insulation
- aerosols
- fire protection systems
- solvents.

#### Questions for feedback

1. How would you characterise the use of HFCs in New Zealand in the different sectors?
2. Are there alternatives to HFCs available in your business sector? Please provide evidence where possible.

## Costs and benefits of phasing down HFCs

The actual cost implications of a phase down of HFCs will vary from user to user. We are keen for your feedback on the cost of the phase down.

### Households

We do not anticipate there will be any additional costs to households as a result of ratifying the Kigali Amendment.

Use of HFCs can continue in New Zealand, so appliances such as heat pumps and fridges can continue to be used, and when they need to be replaced the market will likely have moved to alternative lower-GWP substances.

For vehicle owners, the new low-GWP HFCs will be increasingly used in new cars. High-GWP HFCs may need to continue to be used for the life of some existing cars.

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<sup>8</sup> [http://ozone.unep.org/sites/ozone/files/Meeting\\_Documents/HFCs/FS\\_2\\_Overview\\_of\\_HFC\\_Markets\\_Oct\\_2015.pdf](http://ozone.unep.org/sites/ozone/files/Meeting_Documents/HFCs/FS_2_Overview_of_HFC_Markets_Oct_2015.pdf).

## Industry

The costs will depend on the age, condition, and the current technology of the existing equipment, and on the cost of the refrigerant itself.

For example, an owner with existing HFC equipment, where good maintenance routines are in place, should not have significant additional costs associated with the phase down. The timeframe of the phase down should allow for an acceptable plant life, which may be able to be extended by utilising lower GWP blends in the future.

Owners facing imminent replacement decisions will need to decide whether to:

- use high-GWP HFC technology, with the knowledge that it will be phased down
- move to lower-GWP alternatives
- move to natural refrigerants such as ammonia, CO<sub>2</sub> or hydrocarbons.

We also understand there may be costs associated with moving to alternatives, which may have added health and safety risks (from increased pressures, flammability and/or toxicity). Note that there are systems with higher hazard gases and, provided those maintaining the system are properly trained and follow safe procedures, risks can be managed.

### Questions for feedback

3. What are the costs and benefits of the phase down on your business? Please provide evidence where possible.

## Problem definition

HFCs are contributing to climate change worldwide, and the world is moving away from high GWP HFCs. Countries and businesses have already put in place measures to manage HFCs, and all Parties have adopted the Kigali Amendment under the Montreal Protocol to phase down HFCs.

We do not currently have adequate rules in place in New Zealand to ratify the Kigali Amendment to the Montreal Protocol. While the Amendment still needs to go through the Parliamentary Treaty Examination process to decide whether New Zealand should ratify it, we need to understand how we should meet these obligations so we are able to ratify in the best way possible.

We understand such a transition could be difficult for businesses, and we are keen to look at how we can help in the transition to HFC alternatives.

## What we are trying to achieve

### Objectives

The overall objective is to design a system to provide certainty that New Zealand will meet Montreal Protocol international obligations.

In doing this, we will also work to ensure the design of the rules to phase down HFCs will:

- be equitable/fair (including being fair to both new and current HFCs users in New Zealand, and to both New Zealand and overseas manufacturers using HFCs)
- incentivise/influence a shift to the alternatives and spark innovation
- provide efficiency – the result is that limited HFCs are put towards the use where they have the highest value
- generate low/proportionate administrative costs for Government and business
- provide certainty to business.

## Section 3: Seeking views on our proposed rules

This section outlines the proposed measures New Zealand would need to implement to meet the international obligations generated by the Kigali Amendment. The next section looks more widely at measures to support businesses with the phase down.

This section is organised as follows:

- Characteristics of the proposed import licencing system. This is broken down into five key components:
  1. What should be included in the permitting system
  2. Who can apply for an import permit
  3. How the baseline and phase down steps should be designed
  4. How permits should allocate hydrofluorocarbons (HFCs)
  5. How imports of HFCs should be reported.

Each component is broken down into:

- Background
- International obligations (where required)
- Our preferred option
  - How the option meets domestic objectives
  - Costs/risks with the option.
- Alternative options (further assessed in [Appendix 2](#))
- Questions for your feedback.
- Other proposed rules. This includes how we propose to meet other obligations to ratify, including controls on recycled HFCs, exports of HFCs and manufacturing of HFCs.
- How the overall system meets the domestic objectives.
- Information on implementation.

All international obligations and how we will meet them are outlined in [Appendix 1](#).

### Proposed import permitting system

Our proposed approach for an import permitting system is outlined in this section for your feedback.

An import permitting system is one of the key requirements to ratify the Kigali Amendment. Under the Amendment, we need to put in place a ‘licensing’/permitting system and impose upper limits (‘caps’) on imports. Other options that may phase down HFCs, such as a full market approach, or a ban on certain equipment, are not being assessed further as they do not meet our overall objective to have a system in place to be able to ratify the Kigali Amendment.

The exportation of HFCs is outlined in the ‘[Other proposed rules](#)’ part of this section.

In summary, we propose putting in place a permitting system to control the importation of HFCs. Permits would be allocated to importers to allow them to import HFCs up to a certain upper limit each year. The starting overall upper limit/baseline we propose for New Zealand in 2019 is more ambitious than what is required by the Kigali Amendment. From 2019, we propose regular phase down steps until 2036. This will meet our international obligations under the Kigali Amendment.

## 1 What should be included in the permitting system

### Background

In New Zealand, there are a range of HFCs with different global warming potentials (GWPs) being imported. This section outlines the substances that we propose are covered by New Zealand’s permitting system.

### International obligations (for inclusion in the permitting system)

The Kigali Amendment controls the importation and exportation of certain bulk HFCs, such as those bought in cylinders. Substances in the scope of the Kigali Amendment are:

- Imports of the 18 HFCs included in the Kigali Amendment, see table 1.
- HFC components of a blended substance being imported (HFCs are often used in blends with a range of HFCs, or with other substances). Non-HFC components of the blend will not be covered.
- Manufacture of bulk HFCs. Controls on this are outlined in the ‘[Other proposed rules](#)’ section.
- Recycled HFCs must be permitted, but do not need to be phased down. Controls on this are also outlined under ‘[Other proposed rules](#)’ section.
- Exports of the 18 HFCs must be permitted. Controls on this are outlined in the ‘[Other proposed rules](#)’ section.

Out of scope of the Kigali Amendment:

- HFCs in products (‘pre-charged’ equipment, eg, HFCs imported in a refrigerator) are not covered by the Kigali Amendment. The consumption of bulk HFCs used to fill new equipment will be counted as that of the country in which the equipment was filled.
- Other HFCs not included in table 1 and hydrofluoroolefins (HFOs).

**Table 1: Eighteen HFCs included in the Kigali amendment**

Hydrofluorocarbon		
Chemical compound	Substance name	100-year global warming potential
CHF <sub>2</sub> CHF <sub>2</sub>	HFC-134	1,100
CH <sub>2</sub> FCF <sub>3</sub>	HFC-134a	1,430
CH <sub>2</sub> FCHF <sub>2</sub>	HFC-143	353
CHF <sub>2</sub> CH <sub>2</sub> CF <sub>3</sub>	HFC-245fa	1,030
CF <sub>3</sub> CH <sub>2</sub> CF <sub>2</sub> CH <sub>3</sub>	HFC-365mfc	794
CF <sub>3</sub> CHF <sub>2</sub> CF <sub>3</sub>	HFC-227ea	3,220
CH <sub>2</sub> FCF <sub>2</sub> CF <sub>3</sub>	HFC-236cb	1,340
CHF <sub>2</sub> CHF <sub>2</sub> CF <sub>3</sub>	HFC-236ea	1,370
CF <sub>3</sub> CH <sub>2</sub> CF <sub>3</sub>	HFC-236fa	9,810
CH <sub>2</sub> FCF <sub>2</sub> CHF <sub>2</sub>	HFC-245ca	693
CF <sub>3</sub> CHFCH <sub>2</sub> CF <sub>2</sub> CF <sub>3</sub>	HFC-43-10mee	1,640
CH <sub>2</sub> F <sub>2</sub>	HFC-32	675
CHF <sub>2</sub> CF <sub>3</sub>	HFC-125	3,500
CH <sub>3</sub> CF <sub>3</sub>	HFC-143a	4,470
CH <sub>3</sub> F	HFC-41	92
CH <sub>2</sub> FCH <sub>2</sub> F	HFC-152	53
CH <sub>3</sub> CHF <sub>2</sub>	HFC-152a	124
CHF <sub>3</sub>	HFC-23	14,800

### Preferred option (for inclusion in the import permitting system)

We propose requiring import permits for the 18 bulk HFCs, outlined above, to comply with international obligations. We do not propose including any additional substances in New Zealand’s domestic controls.

The controls on the export of bulk and recycled HFCs in the proposed permitting system will be dealt with under a different permit (outlined in the ‘[Other proposed rules](#)’ section.)

This would meet the objectives by:

- ensuring we meet the international obligations imposed by the Kigali Amendment
- ensuring fairness between domestic and international companies, as all countries will be phasing out these substances
- incentivising a shift to lower GWP HFCs through the phase down on total GWP
- incentivising a shift to alternatives, because they would not require import permits.

There would be additional costs to the *status quo* to implement the permitting system with these substances.

### Other options (for inclusion in the import permitting system)

Other options for chemicals that might be included under the permitting system are outlined in the table below, along with the reasons why these are not the preferred options. Further assessment of the options is outlined in [Appendix 2](#).

Could include the 18 HFCs, plus ...	this option is not preferred because...
Hydrofluoroolefins (HFOs)	HFOs are substances that can be used as an alternative HFCs, with very low global warming potential. This option would not incentivise a shift to alternative chemicals, and would increase costs without any environmental benefit.
HFCs covered by the New Zealand Emissions Trading Scheme (NZ ETS)	This could cause complications for accounting purposes for the Montreal Protocol. As the additional HFC under the ETS is not included in the Montreal Protocol phase down, we could potentially be more restricted than intended.
Products containing HFCs	This would substantially increase the cost of the permitting system to government and business, and would be difficult to monitor. It would result in 'double counting', as the production or importation of the bulk substance used in the product will already be counted in its country of manufacture/origin. The measure is not required by the Kigali Amendment. The Montreal Protocol works by reducing the supply of the HFC and other substances subject to the Protocol. This reduction in supply results in diminished use.
Imported recycled HFCs	There is some uncertainty around what New Zealand's future use of HFCs will be, and recycled HFCs may be used as a way to help ease the transition. It would also put New Zealand out of step with other countries.

#### Questions for feedback

4. Do you agree with the Government's preferred option for inclusion in the proposed import permitting system?
5. What would the impact of this approach be? Please provide evidence where possible.
6. What other options should be considered and why? Please provide evidence where possible.

## 2 Who can apply for an import permit

### Background

Currently in New Zealand there are 16 registered importers (including wholesalers) of HFCs and perfluorocarbons (PFCs),<sup>9</sup> while several thousand contractors and a significant number of New Zealanders use HFCs.

### Preferred option (for who can apply for an import permit)

We propose that importers of HFCs should hold a permit to import. This will:

- limit the administrative burden on the Environmental Protection Authority (EPA) and businesses (the small number of importers will mean that the costs are limited; if contractors or end users held the permit, there would be significant costs as they are not importers and would, therefore, need to find an importer and give them an allocation to import – a practice that would be time consuming and would not provide business certainty)

<sup>9</sup> <https://emissionsregister.govt.nz/Common/ViewPublicReport.aspx?rt=a3c6953e-5a22-43a4-95e9-8c867d20f9e8>.

- ensure we meet the international obligations imposed by the Kigali Amendment
- incentivise a shift to alternative chemicals, by increasing importers' awareness of the limitations for what they can import.

There are risks and costs associated with this approach.

- The end users of HFCs, that is, people who use the substance once it is imported into New Zealand, will not have access to an HFC permit. If the end user does not have access to alternatives to HFCs, this could result in a significant issue for business operation. To mitigate this, users will need to have access to importers to ensure they can access HFCs. This risk is also mitigated by the 'special' permits (outlined below), through which wholesalers will be able to obtain or increase their allocation to import HFCs, and supply HFCs to end users. If end users were concerned, they could also apply for a special permit and become an importer of HFCs.
- The EPA could place conditions on the importer's permit on how the substance can be used. As the importer may be selling the substance to another user, this condition would be transferred. This may result in increased burden for the importer needing to put conditions on the sale.
- There is an increased administrative burden on importers of HFCs.

### Other options (for who can apply for an import permit)

Other options for who could hold the import permit are outlined below, along with the reasons why each option is not the preferred one. Further assessment of the options is outlined in [Appendix 2](#).

Permit could be held by ...	this option is not preferred because...
Contractors using HFCs	it would have significant administrative costs, and fail to incentivise a shift to alternative chemicals. The increase in administrative costs would also come without an environmental benefit.
Wholesalers	it would take away a company's right to import bulk substances, which they currently can do if registered under the NZ ETS.

#### Questions for feedback

7. Do you agree with the proposed approach on who should have an import permit?
8. What would the impact of this approach be? Please provide evidence where possible.
9. What other options should be considered, and why? Please provide evidence where possible.

## 3 How the baseline and phase-down steps should be designed

### Background

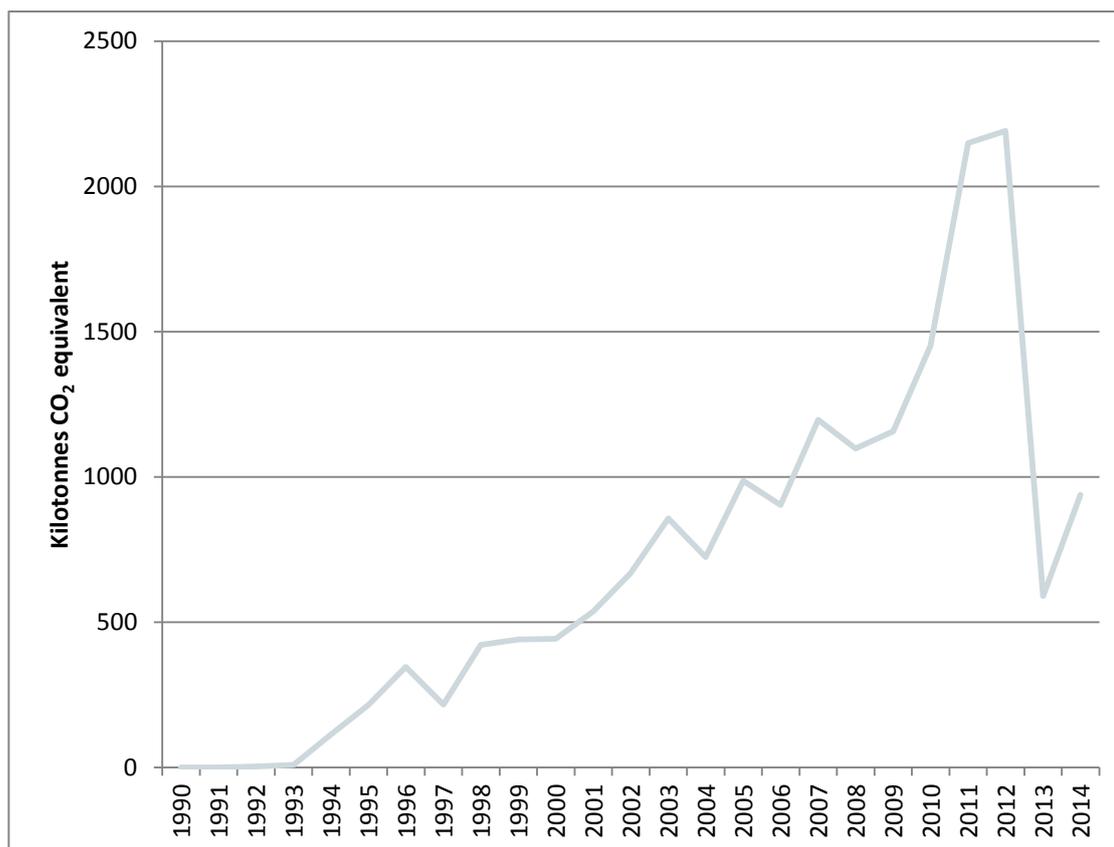
The baseline can be thought of as the quantity of HFCs at a given time, from which point a country will be required to start phasing down HFCs. Under the Montreal Protocol, the baseline and phase down is based on HFC consumption; that is, the quantity of HFC imports

minus their exports. The phase down provides an upper limit ('cap'), which cannot be breached. The phase-down steps are a percentage-based reduction of the baseline in certain years.

New Zealand's previous consumption data are outlined below.

The consumption graph shows a rise of HFC consumption from 1992 to 2010. We understand that the upward trend from 2011 to 2014 is due to stockpiling of imported bulk HFCs before the January 2013 introduction of HFCs into the NZ ETS.

**Figure 1: New Zealand's historic consumption (imports minus exports) of HFCs**



**Note:** consumption under the Montreal Protocol means the import minus the export of HFCs.

### International obligations (for the baseline and phase down steps)

The controls on HFCs under the Kigali Amendment are on the importation and exportation of bulk HFCs ('consumption'). Under the Amendment, each country needs to limit its annual consumption of HFCs to within the cap/upper limit.

HFC consumption is expressed in CO<sub>2</sub>-eq tonnes; that is, tonnes multiplied by the global warming potential of each HFC. This is designed to incentivise a move to low-GWP alternatives. For example, if the quantity upper limit was 100CO<sub>2</sub>-eq tonnes, you would be able to import 1 tonne of a substance with a GWP of 100, or 5 tonnes of a substance with a GWP of 20.

Outlined below are our obligations under the Kigali Amendment. Note, however, that New Zealand can be more ambitious than what is required.

### *Starting point*

The baseline, or starting point, for the amount of HFCs a country can consume (consumption being import minus export), is calculated for each country using the following formula:

*Average HFC consumption for the period 2011–13 plus 15 per cent of the hydrochlorofluorocarbon (HCFC) baseline.<sup>10</sup>*

The HCFC component bolsters a country's HFC baseline to allow for growth. It does not change any obligations countries have in regards to HCFCs.

Under the Kigali Amendment, developed countries start the phase down in 2019 with a reduction of 10 per cent from their calculated baseline.

### *Phase-down steps and amounts*

The Kigali phase-down steps are outlined below. These are the points at which countries need to reduce their annual consumption to the capped amount/upper limit, that is, at these points a country's consumption cannot exceed the specific upper limit amount. The upper limit is expressed in a reduction from the baseline.

### *End point*

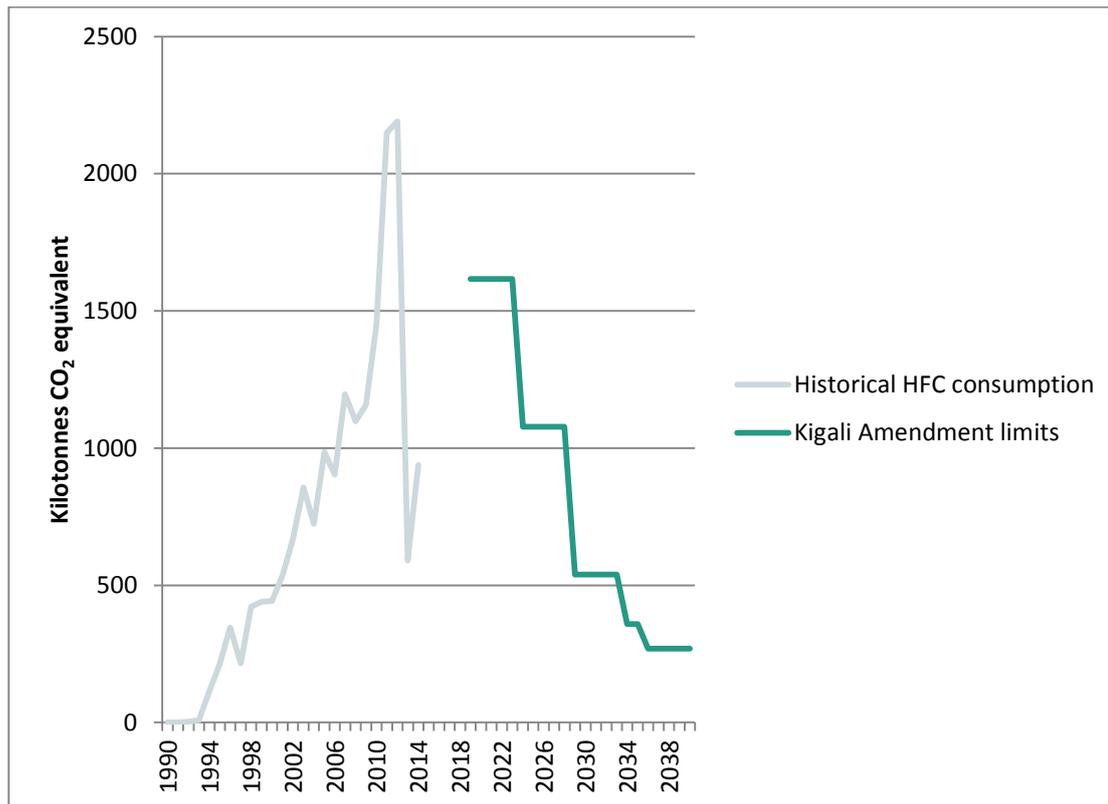
The final phase-down date at which a country does not need to continue to reduce its consumption.

**Table 2: Kigali Amendment baseline and phase down**

Component of baseline and phase down	Developed countries
Baseline formula	Average HFC consumption for 2011–13 + 15% of HCFC baseline
1st step	2019 – 90% of the baseline
2nd step	2024 – 60% of the baseline
3rd step	2029 – 30% of the baseline
4th step	2034 – 20% of the baseline
End point/final phase-down step	2036 – 15% of the baseline

<sup>10</sup> [http://conf.montreal-protocol.org/meeting/mop/mop-28/presession/Briefing%20Notes/Briefing%20note\\_baselines.pdf](http://conf.montreal-protocol.org/meeting/mop/mop-28/presession/Briefing%20Notes/Briefing%20note_baselines.pdf).

**Figure 2: New Zealand Kigali Amendment obligations**



**Preferred option (for the baseline and phase-down steps for imports)**

Figure 2 shows the minimum steps New Zealand would need to take to meet obligations under the Kigali Amendment. We are seeking feedback on the preferred option for implementation in New Zealand, which takes a more ambitious approach than required under the Kigali Amendment.

*New Zealand baseline*

Consistent with requirements under the Amendment, we propose to start the phase down of HFCs in 2019. We propose, however, that New Zealand starts with a lower quantity of HFCs than is required to meet Kigali obligations. That is, New Zealand will be more ambitious than what is required under the Kigali Amendment.

We propose the New Zealand baseline be determined by average consumption from 2010–15 (a six-year average).

The data used is based on the 2016 Inventory Report. As the data for 2015 are still provisional and not included in this report, data has been rounded to the nearest 10 kt CO<sub>2</sub> equivalent. Rounding allows for small changes in the data as it is finalised, while maintaining an adequate representation of the trend in HFC consumption over the period. For consistency, we have rounded all the data from 2010–15 to the nearest 10 kt CO<sub>2</sub> equivalent. This baseline will not change, even if the consumption figures differ once finalised.

The calculation results in New Zealand’s baseline, or upper limit for consumption in 2019, of 1338 CO<sub>2</sub>-eq. This is in comparison to the higher upper limit of 1616 CO<sub>2</sub>-eq needed to meet the Kigali obligations in 2019.

This is preferred, as it would average out New Zealand's peak in consumption, that is, imports, (from 2010–12) and comparatively lower recent consumption (2013–15). The peak in consumption is likely as a result of stockpiling before the NZ ETS was put in place. The lower consumption may be a result of domestically using up the stockpile developed in 2011/12, that is, there was no need to import HFCs as there was enough already imported during the stockpiling years to meet demand in New Zealand. Therefore, the baseline needs to be higher than the 2013–15 period of relatively low consumption (imports) to reflect actual use within New Zealand.

To incentivise a shift to HFC alternatives, however, the baseline should be lower than the generous limit provided under the Kigali Amendment, to facilitate a prompt transition to alternatives.

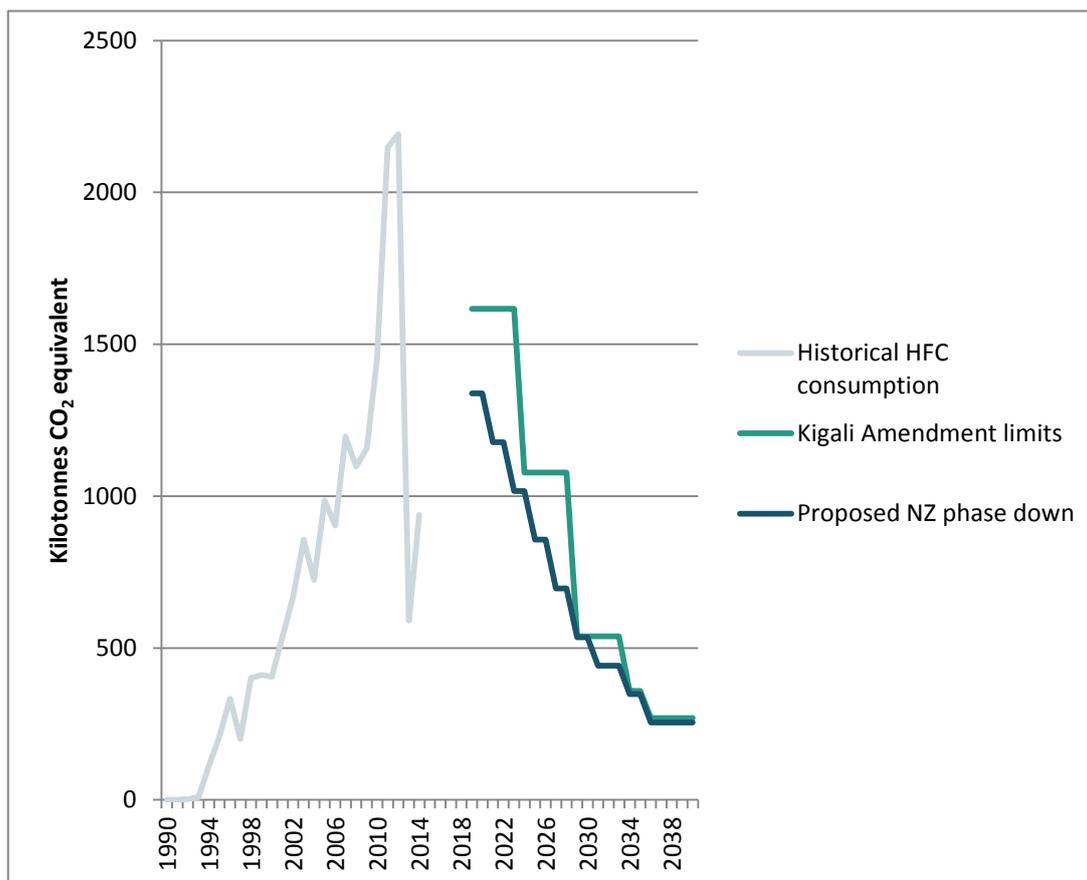
#### *New Zealand phase-down steps and amounts*

We propose more frequent and regular decreases than what is required under the Protocol. Where possible, while ensuring the steps meet our international obligations, we propose phasing down HFCs over two-year cycles (with one three-year cycle) with drops in the upper limit phase-down steps as regularly as possible to incentivise a shift to alternatives and provide predictability.

#### *New Zealand end point*

As there will be uncertainty about the demand for HFCs in 2036, we propose to keep the end point close to the minimum required under the Kigali Amendment. We propose this is at 19 per cent of the New Zealand baseline, which is slightly lower than what is required under the Kigali Amendment.

**Figure 3: Proposed baseline and phase-down steps for New Zealand**



**Table 3: Proposed New Zealand phase-down steps**

Year	Phase-down steps as a percentage of the proposed New Zealand baseline
2019	100%
2021	88%
2023	76%
2025	64%
2027	52%
2029	40%
2031	33%
2034	26%
2036	19%

The actual numbers of the baseline and proposed phase-down steps in comparison to the Kigali Amendment can be found in [Appendix 3](#).

The option outlined above will meet the objectives by ensuring:

- we meet the international obligations imposed by the Kigali Amendment
- we are equitable/fair in our treatment of New Zealand and overseas manufacturers (the proposal does not restrict HFCs to such an extent that we would be out of step with other countries' phase downs)

- the controls incentivise a move to the alternatives, which can be achieved in two ways:
  - starting with a lower quantity than strictly required under the Kigali Amendment in 2019, which will mean businesses will be incentivised to promptly move to alternatives
  - taking more regular steps to incentivise a shift to the alternative, as it will keep the phase down top of mind
- business certainty – the phase-down steps will be made known in advance of when they are required.

There will be costs associated with having a more stringent approach than is required under the Kigali Amendment.

### Other options (for the baseline and phase-down steps)

Other options for the implementation of the phase-down steps are outlined below, along with the reasons why each option is not the preferred one. Further assessment of the options is outlined in [Appendix 2](#).

The design should include...	this option is not preferred because...
allowing the maximum amount of consumption permitted by the Kigali Amendment to be imported into New Zealand	it does not reflect the low level of consumption New Zealand has recently had, and would not incentivise a timely shift to the alternatives. It would also mean a significant amount of time will have passed before the next phase-down step. This may mean there is too much time between steps to motivate or prompt users to switch to alternatives.
a baseline that mirrors the consumption in 2015	although this may reflect recent HFC imports and exports, it may not reflect the actual demand for HFCs in New Zealand, due to the peaks in 2010–12.
an end point lower than 15%	there is uncertainty around what New Zealand’s demand for HFCs will be in 2036, so a cautious approach is advised.

#### Questions for feedback

10. Do you agree with the proposed approach on how the baseline and phase-down steps should be designed?
11. What would the impact of this approach be? Please provide evidence where possible.
12. What other options should be considered and why? Please provide evidence where possible.

## 4 How the permits should allocate HFC quantity

### Background

There are no specific international requirements on how the permits should be allocated. Our preferred methodology is outlined below, while further options are outlined in [Appendix 2](#).

## Preferred option (for how permits should allocate the HFC quantity)

We propose implementing the permitting system in regulations under the Ozone Layer Protection Act 1996 (the Act). We do not propose amending the Act, so the following rules currently outlined under the Act will remain.

Under the Act, the EPA must, in considering an application for a permit, have regard to the following matters to the extent that they are relevant:

- (a) the amount of the substance that is available for allocation
- (b) the total amount of the substance for which applications have been received
- (c) the importance of the use to which the substance will be put
- (d) whether there is a viable alternative to the use of the substance that would be less harmful to the environment.

The EPA could also place conditions on permits controlling such things as the use of the substance, reporting, insurance and transferability. Conditions for these things can be applied to permits under section 9D of the Act. It is intended that permits would be annual.

In the regulations, we propose having two permit types in New Zealand:

- grandfathered permits
- special permits.

Permits for grandfathered allocation will be issued for up to 80 per cent of the total upper limit, and special permits can be issued for up to 20 per cent of the total upper limit. If the grandfathered allocation is not taken up, then it could be reallocated through the issuing of additional permits for the special allocation. The 80 per cent split recognises that the majority of importers of HFCs in the future will have imported in the past.

### *Grandfathered permits*

A grandfathered permit refers to the allocation of permits on the basis of past importation. Eighty per cent of the total annual upper limit for New Zealand will be given to permits for the 'grandfathered' allocation, that is, the 'grandfathered' amount. To be part of the grandfathered permit, you need to have imported HFCs at some stage between 2013 and 2015.

Importers will need to submit to the EPA the average amount imported during 2013–15, before 1 September 2018. This will then be calculated into a percentage share. We propose these years to ensure the percentage share each importer would receive is reflective of the current situation.

For example:

- There are three importers:
  - importer (a) has an average import of 50 CO<sub>2</sub>-eq tonne over 2013–15
  - importers (b) and (c) have average import of 25 CO<sub>2</sub>-eq tonne each over 2013–15.
- Therefore, importer (a) has a 50 per cent share, and importers (b) and (c) have a 25 per cent import share each.

The grandfathered amount for the year would then be split according to the market share.

For example:

- The total amount for the annual New Zealand upper limit for a certain year is 100 CO<sub>2</sub>-eq tonne.
- The grandfathered amount is 80 per cent of this, 80 CO<sub>2</sub>-eq tonne.
- The three importers outlined above would be able to receive an import permit for the following amount:
  - importer (a): 50 per cent percentage share, multiplied by the grandfathered amount (80) means they can import 40 CO<sub>2</sub>-eq tonne
  - importer (b) and importer (c) both have a 25 per cent percentage share, which, multiplied by the grandfathered amount (80), means they could each import 20 CO<sub>2</sub>-eq tonne.

As the total upper limit decreases, so does the grandfathered amount. For example, if the total upper limit were reduced to 90 CO<sub>2</sub>-eq tonnes, then the grandfathered amount is 80 per cent of that, that is, 72 CO<sub>2</sub>-eq tonnes. Therefore, importer (a) would only be able to import 36 CO<sub>2</sub>-eq tonnes.

The import permit issued to those entitled to a grandfathered amount is transferable both temporarily and permanently, through a notification to the EPA. If permanently, this would transfer the 'percentage share' from one importer to another. For example:

- importer (b) may decide to permanently transfer 5 per cent of their market share to importer (c) by notifying the EPA
- this would mean the percentage share is divided as follows:
  - importer (a) has 50 per cent
  - importer (b) has 20 per cent
  - importer (c) has 30 per cent
- importer (a) may then decide to temporarily transfer 10 per cent of their market share to importer (b) for the year by notifying the EPA. This would mean for that year:
  - importer (a) has 40 per cent
  - importer (b) has 30 per cent
  - importer (c) has 25 per cent
- the next year, importer (a) would recover its 50 per cent market share.

If the full allocation to an importer is not used for two years in a row, and hasn't been transferred to anyone, the EPA may decrease the amount the importer can import for the following period.

### *Special permits*

Businesses would be able to apply to the EPA for special permits to access the remaining 20 per cent of New Zealand's total upper limit. The EPA would have the discretion to allocate the permits to 20 per cent of the total upper limit, plus any grandfathered permits not already claimed.

Suggested criteria to apply to the allocation of the special permits are either:

- the importer is a wholesaler and provides evidence of the extent to which the applicant's entitlement to import has been fully used or accounted for, or
- the application for any importer should outline:
  - the extent to which the applicant's entitlement (if any) to import HFCs has been fully used or accounted for
  - evidence of the applicant's commitment to use, in a timely manner, cost-effective alternatives to HFCs
  - evidence of the applicant's commitment to obtain a transfer of entitlement to a permit for HFCs
  - evidence of energy efficiency or other environmental advantages (if any) from granting a special permit for HFCs to the applicant
  - evidence of adverse economic or social impacts (if any) that may occur if the EPA does not grant an 'other' permit for HFCs to the applicant.

The application will need to be received annually by the EPA by 1 September of the calendar year before the one in which importers/wholesalers wish to import. The EPA will have discretion to allocate permits for multiple years, as long as the New Zealand phase-down steps are met.

The proposed allocation of HFCs permits will meet the objectives by ensuring:

- we meet the international obligations imposed by the Kigali Amendment
- we are equitable/fair in our treatment of new and current users of HFCs in New Zealand (this is achieved by having the special permit for which new users may apply to the EPA; having a permit for wholesalers will mean there should be access to new businesses as end users of HFCs in New Zealand, rather than importers)
- the shift to alternatives is incentivised, as all permits will be in CO<sub>2</sub>-eq, as outlined in figure 3 (meaning that an importer could import more of a lower-GWP HFC)
- business certainty (if the importer uses its entire quota under the grandfathering regime, they will know what their import permit allocation will be and how it will be reduced until 2036; the EPA's ability issue special permits for multiple years will further provide business certainty).

There are risks/costs associated with this approach.

- The majority of the quantity of HFCs allowed will be going to grandfathered permits, so there will be limited access to new entrants.
- The years used to determine percentage share may not reflect the situation of importers in New Zealand in the future. This risk is mitigated by using recent years 2013–15 to determine the percentage share. Also, allowing permits to be transferred, and having an allowance for the EPA to reduce permits if they are not used, will ensure that those in the market will have access to the appropriate amount over time.
- There is a risk an importer may only import lower-GWP HFCs (as more tonnage can be imported under the permit), while there is demand for a higher GWP HFC. However, if there is sufficient demand, we would expect an importer to import the required substance.

## Other options (for how permits should allocate the HFC quantity)

Other options on how permits could allocate HFC quantity are outlined below, along with the reasons why each option is not the preferred one. Further assessment of the options is outlined in [Appendix 2](#).

Permits could allocate HFC quantity by...	this option is not preferred because...
auctioning all permits in each phase-down period	the number of importers in the market is not high enough to ensure the pricing would be competitive. It would also not provide business certainty.
only having special permits, and no grandfathered permits	it would give uncertainty to previous importers of HFCs, as they would not know how much can be imported in the future.
allocating the permits based on tonnage amounts in a certain year, for example, if the baseline were based on: <ul style="list-style-type: none"> <li>2015 data, then actual consumption could be used to allocate the permits out</li> <li>2011–13 consumption, then an importer could determine their consumption over this time and get a permit for this amount</li> </ul>	<ul style="list-style-type: none"> <li>as outlined above, this would mean the baseline would be too low</li> <li>it does not reflect the current market.</li> </ul>
reallocating the grandfathered permits for each phase-down period by reflecting percentage share of the imports in the previous period	it would not provide business certainty about the amount they can import in the next period, and would add administrative costs to the EPA.

### Questions for feedback

- Do you agree with the proposed approach on how permits should be allocated?
- What would the impact of this approach be? Please provide any evidence where possible.
- What other options should be considered and why? Please provide any evidence where possible.

## 5 How HFC imports should be reported

### Background

Reporting imports of HFCs is important to ensure we are able to monitor how the phase down is going.

### International obligations (for reporting on HFC imports)

New Zealand needs to submit data on our controlled HFC consumption annually to the UN Ozone Secretariat.

### Preferred option (for reporting on HFC imports)

Permits will include conditions regarding reporting on volumes and uses. This approach was used for reporting of HCFCs when these were being phased out. Accurate information will also help New Zealand monitor the situation to evaluate the phase down.

This proposal on HFC reporting will meet the objectives by ensuring we meet the international obligations imposed by the Kigali Amendment.

There will be costs/risks associated with this approach.

- The EPA will need to follow up with companies each year to get the required information, incurring some costs.
- Industry already provides a number of reports on HFC consumption to the New Zealand Government, and this will increase reporting burden. This could be mitigated by the EPA coordinating among agencies to ensure cross-checking occurs (where possible).

### Other options (for reporting on HFC imports)

Another option on how HFC imports could be reported on is outlined below, along with the reason why each option is not the preferred one. Further assessment of options is outlined in [Appendix 2](#).

HFC imports could be reported on by...	this option is not preferred because...
relying on existing reporting mechanisms under the NZ ETS	the information provided in the NZ ETS would not be fit for purpose.

#### Questions for feedback

16. Do you agree with the proposed approach on how imports of HFCs should be reported?
17. What would the impact of this approach be? Please provide any evidence where possible.
18. What other options should be considered and why? Please provide any evidence where possible.

## Other proposed rules

This section outlines other controls we need to put in place to meet obligations under the Kigali Amendment. This section includes recycled HFCs, export of HFCs, manufacturing of HFCs, and non-party trade provisions.

Other minor changes needed to meet Montreal Protocol obligations are outlined in [Appendix 1](#).

## How should recycled HFCs be controlled?

### International obligations

New Zealand needs to implement a permitting system for used, reclaimed, recovered and recycled substances, and report on this system. These substances are not included in the phase down, however.

## Preferred option (for recycled substances)

The following definition is used for 'recycled' substances in the Ozone Layer Protection Regulations:

bulk recycled substance: means any controlled substance that is acquired in a non-processed form, whether alone or in a mixture, and that has been recovered, cleaned, or reclaimed; but excludes any controlled substance that is in a manufactured product other than a container used for the transportation or storage of the substance.

'Reclaimed', in relation to any bulk recycled substance, is a recovered substance that has been reprocessed and upgraded by filtering, drying, distillation, or chemical treatment.

'Recovered', in relation to any bulk recycled substance, is a substance that has been collected from machinery, equipment or containment vessels during servicing or before disposal.

We propose putting in place a permitting system for the importation of recycled HFCs, similar to the one required by the special permits, but without an upper limit on how much can be imported.

The importer will need to apply before 1 September of a calendar year to bring in recycled HFCs for the following year. Additionally, there will be the following notification controls, similar to those under HCFCs:

- a) On importation, the person provides all of the following documents as may be required by an officer:
  - (i) a document from the person or company that recovered, cleaned, or reclaimed the substance, stating that the substance is a bulk recycled substance
  - (ii) a statutory declaration signed by the person importing the substance declaring that the substance is a bulk recycled substance
  - (iii) such other documentation as an officer may reasonably require to ascertain that the substance is a bulk recycled substance.
- b) Every person who imports any bulk recycled substance shall, within 10 working days after the date of importation, notify the EPA, in writing, of the substance imported and the date and amount of the import.

This proposal will meet the objectives by ensuring:

- we meet the international obligations imposed by the Kigali Amendment
- equitable/fair treatment of New Zealand and overseas manufacturers (there are no phase-down controls on bulk used or recycled HFCs under the Kigali Amendment, and putting strict controls on recycled HFCs would disadvantage local industry if they wish to use recycled HFCs)
- our HFC use is efficient – if recycled HFCs are able to be used, this would encourage their recycling.

There are costs/risks associated with this approach. New Zealand will remain reliant on HFCs by using recycled HFCs as a way to mitigate the impact of the phase down.

## Other options (for recycled substances)

Another option on how recycled HFCs could be controlled is outlined below, along with the reason why each option is not the preferred one. Further assessment of options is outlined in [Appendix 2](#).

Recycled HFCs could be controlled by...	this option is not preferred because...
mirroring the HCFC requirements; that is, have recycled HFCs subject to the same permit and phase down as for new bulk HFCs	there is some uncertainty around what New Zealand's future use of HFCs will be, and recycled HFCs may be used as a way to help ease the transition. It would also put New Zealand out of step with other countries.

### Questions for feedback

19. Do you agree with the proposed approach on how recycled imports of HFCs should be managed?
20. What would the impact of this approach be? Please provide any evidence where possible.
21. What other options should be considered and why? Please provide any evidence where possible.

## How should the exportation of HFCs be controlled?

### International obligations

New Zealand only exports a small amount of HFCs, but still needs to implement a permitting system for the export of controlled substances. This includes recycled, used, and new HFCs. The upper limit of consumption is measured as total imports minus exports. This means New Zealand could import more HFCs if more bulk new HFCs were exported.

### Preferred option (for exports of HFCs)

We propose mirroring the export requirements in place for HCFCs. New Zealand only exports a small amount of HFCs each year, generally 2–12 tonnes.

Under this proposal, if an importer exported HFCs, their quota for importation would not increase. Given the small amount that is exported, this would reduce the administration costs associated with this.

The application to the EPA for the export permit of HFCs would include:

- (a) the name and address of the exporter
- (b) the substance to be exported
- (c) the quantity to be exported
- (d) the purpose of exportation
- (e) the date and destination of the export.

This proposal will meet the objectives by ensuring:

- we meet the international obligations imposed by the Kigali Amendment
- costs to the EPA and business are proportionate to the activity.

### Other options (for exports of HFCs)

Another option on how to control the export of HFCs is outlined below, along with the reason why each option is not the preferred one.

The export of HFCs could be controlled by...	this option is not preferred because...
including the export of HFCs with the import permitting system, ie, if an export is made, the importer would be able to import more under their permit	the added administrative costs to the EPA and business would be disproportionate to the size of the activity

#### Questions for feedback

22. Do you agree with the proposed approach on how exports of HFCs should be managed?
23. What would the impact of this approach be? Please provide any evidence where possible.
24. What other options should be considered and why? Please provide any evidence where possible.

### How should the manufacture of HFCs be controlled?

New Zealand does not manufacture new HFCs. The set-up costs to manufacture the chemical would be significant, and it is unlikely to be feasible in New Zealand. We understand there are no plans to set up such a facility.

### International obligations

New Zealand would need to control the manufacture of HFCs, including controls on emissions from manufacturing.

### Preferred option (for manufacture of HFCs)

We propose mirroring the controls that were put in place for HCFCs, which would mean the manufacture of HFCs in New Zealand was prohibited. This will ensure we meet the international obligations imposed by the Kigali Amendment, and would not have any impact on current domestic activity.

This proposal will meet the objectives by ensuring we meet the international obligations imposed by the Kigali Amendment.

No alternatives are suggested, as they would not meet international obligations.

### Questions for feedback

25. Do you agree with the proposed approach on how the manufacture of HFCs should be managed?
26. What would the impact of this approach be? Please provide any evidence where possible.
27. What other options should be considered and why? Please provide any evidence where possible.

## Non-party trade provisions

### International obligations

Similarly to HCFCs, Parties are required to ban the import and export of HFCs with countries that are not party to the Amendment. This obligation will come into effect on 1 January 2033, provided at least 70 Parties have ratified the Amendment at that time.

### Preferred option (for non-party trade controls)

We propose mirroring the required Kigali Amendment obligations on non-party trade provisions, and bringing these into effect by 1 January 2033.

This proposal will meet the objectives by ensuring we meet the international obligations imposed by the Kigali Amendment.

No alternatives are suggested, as they would not meet international obligations.

### Questions for feedback

28. Do you agree with the proposed approach on how non-party trade provisions should be managed?
29. What would the impact of this approach be? Please provide any evidence where possible.
30. What other options should be considered and why? Please provide any evidence where possible.

## Package of controls assessed against objectives

Objectives	How the proposed package meets the objectives
Provide certainty that New Zealand will meet Montreal Protocol international obligations	All the proposals will meet all obligations under the Kigali Amendment to the Montreal Protocol.
Be equitable/fair to new and current users in New Zealand	The package will accept new users and importers into the system, while recognising that there are some businesses that have been importing for some time.
Be equitable/fair to New Zealand and overseas manufacturers using HFCs	The package generally aligns, with some more stringent controls, with the controls under the Kigali Amendment. As a result, it will not put New Zealand manufacturing at a disadvantage.
Incentivise/influence a shift to the alternatives and spark innovation	The package's main driver for this objective is that the controls are in CO <sub>2</sub> -eq; therefore, more can be gained by importing lower-GWP HFCs.
Provide efficiency – the result is that limited HFCs are put towards their best use	As there will be a limited and well-signalled decrease in the supply of HFCs, it can be assumed that this will be allocated where there is demand.
Generate low/proportionate administrative costs for government and business	The administrative cost to government and business has been minimised where possible.
Provide certainty to business	The proposed controls allow for businesses to be aware of their obligations ahead of time.

## Implementation

### Ozone Layer Protection Regulations

New Zealand implements its obligations from the *Montreal Protocol on Substances that Deplete the Ozone Layer* under the Ozone Layer Protection Act and Regulations 1996. These regulations implemented the recent HCFC permitting system.

To ratify the Kigali Amendment to the Montreal Protocol, the Ozone Layer Protection Regulations would need to be amended to include the proposed import permitting system for HFCs, and other controls outlined above.

### Timeframes – next steps

There are a number of steps required to ratify the Kigali amendment.

The basic outline of the next steps and timeframes to ratify are outlined below.

1. Consultation closes on the HFC phase down and transition to the alternatives (23 June 2017)
2. Parliamentary Treaty Examination on the Kigali Amendment to the Montreal Protocol
3. Regulations are approved and New Zealand ratifies the Kigali Amendment (2018)
4. EPA sets up the permitting systems
5. First import control is in place (1 January 2019).

# Section 4: Exploring how to make the transition

## Reducing demand for HFCs, and moving to alternatives

While the permitting system will ensure New Zealand will meet its international obligations under the Kigali Amendment, we are interested in hearing from you about what additional supporting measures the Government should put in place to help the transition.

We want to understand the core problems associated with moving to HFC alternatives, so we can ensure any supporting controls address these.

### Questions for feedback

31. What barriers/issues do you face to move to alternatives to HFCs?
32. What would reduce your demand for high-GWP HFCs?

We're also interested in any ideas for measures that the Government should put in place to help the transition. By measures, we are referring to both regulatory (law changes) and non-regulatory measures.

In particular, we're interested in measures to:

- reduce demand for HFCs
- help move to alternatives to HFCs
- ensure a safe and effective move to alternatives.

Examples of supporting measures might be:

- education campaign to raise awareness of the phase down
- ensuring controls are adequate on retrofitting systems for alternatives on HFCs
- programme of work to increase health and safety skills in the workforce
- removing the ability to buy small DIY cans that incentivise topping up leaky equipment.

### Questions for feedback

33. What are your suggestions for supporting measures? Please be as specific as possible.
34. Which problems would these measures address?
35. What would be the impact on New Zealand of these measures being put in place?

The supporting measures will be progressed in parallel to the ratification timeframe, as set out in the [Implementation section](#). Depending on what is decided to progress, this may involve further consultation (either public or targeted) before it progresses.

# Section 5: Consultation process

## How to make a submission

The Government welcomes your feedback on this consultation document. The questions, posed throughout this document, are summarised below. They are a guide only and all comments are welcome. You do not have to answer all the questions.

To ensure your point of view is clearly understood, you should explain your rationale and provide supporting evidence where appropriate.

There are three ways you can make a submission:

- use our online submission tool, available at [www.mfe.govt.nz/more/consultation/hydrofluorocarbons-phase-down](http://www.mfe.govt.nz/more/consultation/hydrofluorocarbons-phase-down)
- download a copy of the submission form to complete and return to us. This is available at [www.mfe.govt.nz/more/consultation/hydrofluorocarbons-phase-down](http://www.mfe.govt.nz/more/consultation/hydrofluorocarbons-phase-down). If you do not have access to a computer we can post a copy of the submission form to you
- write your own submission.

If you are posting your submission, send it to HFC Consultation, Ministry for the Environment, PO Box 10362, Wellington 6143 and include:

- the title of the consultation (HFC Consultation)
- your name or organisation name
- postal address
- telephone number
- email address.

If you are emailing your submission, send it to [HFCConsultation@mfe.govt.nz](mailto:HFCConsultation@mfe.govt.nz) as a:

- PDF
- Microsoft Word document.

**Submissions close at 5.00pm on Friday 23 June 2017.**

## Contact for queries

Please direct any queries to:

Phone: +64 4 439 7400

Email: [HFCConsultation@mfe.govt.nz](mailto:HFCConsultation@mfe.govt.nz)

Postal: HFC Consultation, Ministry for the Environment, PO Box 10362, Wellington 6143

## Publishing and releasing submissions

All or part of any written submission (including names of submitters), may be published on the Ministry for the Environment's website, [www.mfe.govt.nz](http://www.mfe.govt.nz). Unless you clearly specify otherwise in your submission, the Ministry will consider that you have consented to website posting of both your submission and your name.

Contents of submissions may be released to the public under the Official Information Act 1982 following requests to the Ministry for the Environment (including via email). Please advise if you have any objection to the release of any information contained in a submission and, in particular, which part(s) you consider should be withheld, together with the reason(s) for withholding the information. We will take into account all such objections when responding to requests for copies of, and information on, submissions to this document under the Official Information Act.

The Privacy Act 1993 applies certain principles about the collection, use and disclosure of information about individuals by various agencies, including the Ministry for the Environment. It governs access by individuals to information about themselves held by agencies. Any personal information you supply to the Ministry in the course of making a submission will be used by the Ministry only in relation to the matters covered by this document. Please clearly indicate in your submission if you do not wish your name to be included in any summary of submissions that the Ministry may publish.

## Questions to guide your feedback

### How HFCs are used in New Zealand

1. How would you characterise the use of HFCs in New Zealand in the different sectors?
2. Are there alternatives to HFCs available in your business sector? Please provide evidence where possible.
3. What are the costs and benefits of the phase down on your business? Please provide evidence where possible.

### Proposed import permitting system

4. Do you agree with the Government's preferred option for inclusion in the proposed import permitting system?
5. What would the impact of this approach be? Please provide evidence where possible.
6. What other options should be considered and why? Please provide evidence where possible.
7. Do you agree with the proposed approach on who should have an import permit?
8. What would the impact of this approach be? Please provide evidence where possible.
9. What other options should be considered, and why? Please provide evidence where possible.
10. Do you agree with the proposed approach on how the baseline and phase-down steps should be designed?
11. What would the impact of this approach be? Please provide evidence where possible.

12. What other options should be considered and why? Please provide evidence where possible.
13. Do you agree with the proposed approach on how permits should be allocated?
14. What would the impact of this approach be? Please provide any evidence where possible.
15. What other options should be considered and why? Please provide any evidence where possible.
16. Do you agree with the proposed approach on how imports of HFCs should be reported?
17. What would be the impact of this approach be? Please provide any evidence where possible.
18. What other options should be considered and why? Please provide any evidence where possible.

### **Other proposed rules**

19. Do you agree with the proposed approach on how recycled imports of HFCs should be managed?
20. What would the impact of this approach be? Please provide any evidence where possible.
21. What other options should be considered and why? Please provide any evidence where possible.
22. Do you agree with the proposed approach on how exports of HFCs should be managed?
23. What would the impact of this approach be? Please provide any evidence where possible.
24. What other options should be considered and why? Please provide any evidence where possible.
25. Do you agree with the proposed approach on how the manufacture of HFCs should be managed?
26. What would the impact of the approach be? Please provide any evidence where possible.
27. What other options should be considered and why? Please provide any evidence where possible.
28. Do you agree with the proposed approach on how non-party trade provisions should be managed?
29. What would the impact of the approach be? Please provide any evidence where possible.
30. What other options should be considered and why? Please provide any evidence where possible.

### **Reducing demand for HFCs, and moving to alternatives**

31. What barriers/issues do you face to move to alternatives to HFCs?
32. What would reduce your demand for high-GWP HFCs?
33. What are your suggestions for supporting measures? Please be as specific as possible.
34. Which problems would these measures address?
35. What would be the impact on New Zealand of these measures being put in place?

## **Other comments**

36. Do you have any further comments you would like to make about the Government's proposals?

# Appendix 1: How we would meet obligations

The relevant amendment text can be found at <http://ozone.unep.org/sites/ozone/files/pdfs/Consolidated-Montreal-Protocol-November-2016.pdf> and the official text at <https://treaties.un.org/doc/Publication/CN/2016/CN.872.2016-Eng.pdf>.

Relevant amendment sections	How New Zealand could meet these obligations
<p>Article 2: 9(a)(iii): Control measures</p> <ul style="list-style-type: none"> <li>Parties may decide to adjust the global warming potential of adjustments of the controlled HFCs.</li> </ul>	<ul style="list-style-type: none"> <li>No action needed to meet this obligation.</li> <li>If decision to amend the global warming potential is made by Parties to the Montreal Protocol, we would amend the Regulations at that stage.</li> </ul>
<p>Article 2: 11: Control measures</p> <ul style="list-style-type: none"> <li>Parties may take more stringent measures than those required by the Protocol.</li> </ul>	<p>Whether New Zealand should take a more stringent approach is explored in the 'proposed import permitting system' section of this consultation document.</p>
<p>Article 2J: 1 Hydrofluorocarbons</p> <ul style="list-style-type: none"> <li>Parties are required to ensure that its consumption (import – export) of controlled substances does not exceed a certain percentage of its baseline each year.</li> </ul>	<p>How New Zealand will ensure it meets the consumption caps is explored in the 'proposed import permitting system' section of this consultation document.</p>
<p>Article 2J: 3 Hydrofluorocarbons</p> <ul style="list-style-type: none"> <li>Parties are required to ensure that its production of controlled substances does not exceed a certain percentage of its baseline each year.</li> </ul>	<p>The Ozone Layer Protection Regulations 1996 outline that the manufacture of any controlled substance is prohibited. Controls are explored in the 'other proposed rules' section of this consultation document.</p>
<p>Article 2J: 6 Hydrofluorocarbons</p> <ul style="list-style-type: none"> <li>Ensure emissions from manufacturing the controlled substances are destroyed to the extent practicable using technology approved by the Parties.</li> </ul>	<p>As outlined above, the manufacturing of HFCs is proposed to become prohibited, so this additional control on manufacturing is not relevant.</p>
<p>Article 2J: 7 Hydrofluorocarbons</p> <ul style="list-style-type: none"> <li>Ensure the destruction of HFC-23 that are generated by producing HCFCs or HFCs are destroyed only by technologies approved by the Parties.</li> </ul>	<ul style="list-style-type: none"> <li>As outlined above, the manufacturing of HFCs is proposed to become prohibited, so this additional control on manufacturing is not relevant.</li> <li>The manufacturing of HCFC is already prohibited.</li> </ul>

Relevant amendment sections	How New Zealand could meet these obligations
<p>Article 3: Calculation of control levels</p> <ul style="list-style-type: none"> <li>When calculating the consumption, Parties should use the global warming potential outlined in the Amendment.</li> </ul>	<p>How New Zealand would calculate the baseline using global warming potentials is outlined in the ‘proposed import permitting system’ section of this consultation document.</p>
<p>Article 4: Control of trade with non-parties</p> <ul style="list-style-type: none"> <li>Once this section enters into force, Parties need to ban the import and export of controlled substances from/to any State not Party to this Protocol. That section will enter into force on 1 January 2033 provided at least 70 instruments of ratification has been put in place.</li> </ul>	<p>As outlined above, propose to include non-party trade provisions as outlined in the ‘proposed import permitting system’ section of this consultation document.</p>
<p>Article 4B: Licensing</p> <ul style="list-style-type: none"> <li>Each Party shall establish a system for licensing the import and export of new, recycled and reclaimed controlled substances.</li> </ul>	<p>How the permitting system would operate is explored in the ‘proposed import permitting’ and ‘other proposed rules’ section of this consultation document.</p>
<p>Article 6: Assessment and review of control measures</p> <ul style="list-style-type: none"> <li>Parties shall assess the controls measures on the basis of available scientific, environment, technical and economic information.</li> </ul>	<ul style="list-style-type: none"> <li>New Zealand will support the assessment and review.</li> <li>No regulation changes needed.</li> </ul>
<p>Article 7: Reporting of data</p> <ul style="list-style-type: none"> <li>Parties need to provide data on its production, imports and exports of HFCs for 2011–31, or best possible estimate no later than three months after controls enter into force (1 April 2019).</li> </ul>	<ul style="list-style-type: none"> <li>The information outlined in the ‘proposed import permitting system’ section of this consultation document will be presented to the Secretariat – this is based on survey data we collect for the UNFCCC reporting.</li> <li>No regulatory changes are needed.</li> </ul>
<p>Article 7: Reporting of data</p> <ul style="list-style-type: none"> <li>Parties need to provide annual information on its annual imports and exports of controlled substances, and emissions from manufacturing facilities.</li> </ul>	<ul style="list-style-type: none"> <li>Reporting of HFCs is explored above in the ‘proposed import permitting system’ section in this consultation document.</li> <li>Emissions do not need to be reported as New Zealand does not manufacture HFCs.</li> </ul>

Relevant amendment sections	How New Zealand could meet these obligations
<p>Annex A and C: Controlled substances</p> <ul style="list-style-type: none"> <li>The global warming potential for CFCs and HCFCs are included, as well as the ozone depleting potential.</li> </ul>	<p>Update Part 1 and Part 3 of schedule 1 in the Ozone Layer Protection Regulations.</p>
<p>Annex F: Controlled substances</p> <ul style="list-style-type: none"> <li>A list of the controlled HFCs with their global warming potential.</li> </ul>	<p>Include the controlled HFCs in schedule 1 in the Ozone Layer Protection Regulations.</p>
<p>Article III of Decision XXVIII/1: Relationship to the UNFCCC and its Kyoto Protocol</p> <ul style="list-style-type: none"> <li>The Amendment is not intended to have the effect of excepting HFCs from the scope of the commitments in the UNFCCC or its Kyoto Protocol.</li> </ul>	<ul style="list-style-type: none"> <li>HFCs will remain in New Zealand’s scope of commitments under the UNFCCC.</li> <li>A minor technical change to the Climate Change Response Act will be needed at some stage to legally require New Zealand to continue to report on HFCs in the inventory. New Zealand will continue to report on HFCs until amendment is made to the Climate Change Response Act 2002.</li> </ul>
<p>Updating treaty text:</p> <ul style="list-style-type: none"> <li>Schedule 5 of the Ozone Layer Protection Regulations copies to Montreal Protocol. It needs to be updated with the amended protocol.</li> </ul>	<ul style="list-style-type: none"> <li>Update the text by order in council once approved by Treaty Examination.</li> </ul>

## Appendix 2: Alternative options and impacts

Section	Alternative Option	Benefits, costs and assessment against objectives
<p>What we propose to include in the permitting system</p>	<p>Eighteen hydrofluorocarbons (HFCs) and hydrofluoroolefins (HFOs). HFOs have a very low global warming potential and are often referred to as the alternative to HFCs.</p> <p>1234YF (an HFO) is likely to be used commonly in vehicle air conditioning.</p>	<p>Benefits: This would ensure New Zealand could monitor the import of the alternatives. Without also monitoring the import of natural refrigeration, however, the picture would be incomplete. Monitoring all refrigerants would be infeasible as naturals are used in a range of situations.</p> <p>Costs: There would be increased costs from needing an import permit for the alternatives, with no environmental benefit. It would not incentivise a shift to alternatives if there were costs. There would also be increased administrative costs with no environmental benefit.</p>
	<p>Matching the inclusion of HFCs with what is covered by the New Zealand Emissions Trading Scheme (NZ ETS), ie, add one additional HFC with a global warming potential of 12.</p>	<p>Benefits: This would help importers understand the coverage, streamlining the controls.</p> <p>Costs: This could cause complications for accounting purposes for the Montreal Protocol. As the additional HFC under the ETS is not included in the Montreal Protocol phase down, we could potentially be more restricted than intended.</p>
	<p>Include products containing the 18 HFCs.</p>	<p>Benefits: This would ensure New Zealand would have a full picture of what was being imported into the country. This would also incentivise a shift to the alternatives, as products coming in would be restricted. It would also reduce demand for HFCs as there would likely be fewer products that rely on them.</p> <p>Costs: The costs of setting up a system that would accurately monitor products would be substantial. Products containing hydrochlorofluorocarbons (HCFCs) were not controlled under the phase down; however, as the worldwide market moved away from HCFCs, so did New Zealand.</p> <p>This option would also result in ‘double counting’, as the production or importation of the bulk substance in the product will already be counted in the product’s country of manufacture/origin.</p>
	<p>Include imported recycled HFCs and phase them down.</p>	<p>Benefits: It would incentivise a shift to the alternatives by making businesses move away from HFCs faster.</p> <p>Costs: As there is some uncertainty around what New Zealand’s future use of HFCs would be, recycled HFCs may be used as a way to help ease the transition. Encouraging recycling of HFCs could also reduce the environmental effect of HFCs by ensuring HFCs are captured.</p>

Section	Alternative Option	Benefits, costs and assessment against objectives
Who can apply for an import permit	Contractors using HFCs hold import permit.	<p>Benefits: The contractors would be fully aware of the phase down, by keeping it front of mind. This would incentivise a shift by being able to advise end users effectively.</p> <p>Costs: This is not preferred, as it would have significant administrative costs both for businesses, and the Environmental Protection Authority (EPA) by having a large number of players in the system.</p>
	Only wholesalers holding the import permit.	<p>Benefits: All of the permits would be able to be accessed by everyone, ie, the wholesalers could provide the whole market with HFCs. It would also reduce costs by only having a handful of people in the market.</p> <p>Costs: This is not preferred as it would take away the right of import from currently registered importers.</p>
How should the baseline and phase-down steps be designed?	The maximum consumption allowed by the Kigali Amendment is allowed to be imported into New Zealand.	<p>Benefits: Given there is some uncertainty regarding the future demand of HFCs, allowing the maximum consumption would ensure businesses can access as many HFC imports as possible under the Kigali Amendment.</p> <p>Costs: This is not preferred as it does not reflect the low-level consumption New Zealand has recently had. This would not incentivise a shift to the alternatives for a significant period of time.</p>
	The baseline mirrors the consumption in 2015.	<p>Benefits: This would reflect New Zealand's recent import and export volumes, and ensure a swift move to alternatives.</p> <p>Costs: This is not preferred as, although this may reflect HFC imports and exports, it may not reflect the actual use of HFCs in New Zealand, given the peaks in 2010-12.</p>
	The end point should be lower than 15% of the Kigali baseline.	<p>Benefits: This would ensure New Zealand is only using HFCs needed for the best use from 2036 onwards.</p> <p>Costs: This is not preferred, as there is uncertainty about what demand for HFCs will be in 2036. There are also lower-GWP transitional blends, which may need to be used for some time, and which would not be able to be imported if the end point were fixed at zero.</p>
How should the permits allocate the HFC quantity?	Auctioning all permits each phase-down period.	<p>Benefits: This would ensure all market players, including new importers, all have an equal opportunity to receive import permit.</p> <p>Costs: This is not preferred as the small number of importers in the market is not sufficient to ensure the pricing and the HFC market post auction would be competitive.</p>

Section	Alternative Option	Benefits, costs and assessment against objectives
	<p>Allocate the permits based on tonnage amounts in a certain year, ie, if the baseline were based on:</p> <p>2015 data (not preferred) then actual consumption could be used to allocate the permits out.</p> <p>2011–13 consumption, then an importer could determine their consumption over this time and get a permit for this amount.</p>	<p>Benefits: It would be easier to determine the tonnage amounts for HFCs.</p> <p>Costs: This is not preferred as there is not an appropriate year to choose. Recent years' consumption is too low, whereas previous years were too high or too far back to be representative of the current situation.</p>
	<p>Reallocate the grandfathered permits each phase-down period by reflecting percentage share of the imports in the previous period.</p>	<p>Benefits: This would ensure the quota system is staying relevant to the current situation.</p> <p>Costs: This is not preferred, as it would not provide business certainty about the amount they can import in the next period and would add administrative costs to the EPA.</p>
<p>How should importation of HFCs be reported?</p>	<p>Rely on existing mechanisms under the NZ ETS.</p>	<p>Benefits: Businesses would only need to report once to the EPA.</p> <p>Costs: The information under the NZ ETS may not be fit for purpose.</p>
<p>How should recycled HFCs be managed?</p>	<p>Mirror the HCFC requirements; that is, have recycled HFCs subject to the same permit and phase down as new bulk HFCs.</p>	<p>See above on what we should include in the permitting system.</p>
<p>How should the export of HFCs be controlled?</p>	<p>Have HFC exports included in the import permitting system, ie, if an export is made, then the importer would be able to import more under their cap.</p>	<p>Benefits: This would mean an exporter would not be discouraged by having to export new HFCs out of their import quota.</p> <p>Costs: This would add administrative costs to the EPA and businesses that would be disproportionate to the size of the activity.</p>

## Appendix 3: Proposed phase-down steps

The proposed phase-down schedule for HFCs KtCO<sub>2</sub>-eq is outlined below. The columns include:

- obligations for consumption under the Kigali Amendment, ie, the upper limit
- proposed upper limit on New Zealand's importation
- proposed percentage reduction from the proposed New Zealand baseline.

Year	Obligations under Kigali Amendment	Proposed upper limit on importation	% of New Zealand baseline
2019	1616.4	1338.3	100%
2020	1616.4	1338.3	100%
2021	1616.4	1177.7	88%
2022	1616.4	1177.7	88%
2023	1616.4	1017.1	76%
2024	1077.6	1017.1	76%
2025	1077.6	856.5	64%
2026	1077.6	856.5	64%
2027	1077.6	695.9	52%
2028	1077.6	695.9	52%
2029	538.8	535.3	40%
2030	538.8	535.3	40%
2031	538.8	441.7	33%
2032	538.8	441.7	33%
2033	538.8	441.7	33%
2034	359.2	348.0	26%
2035	359.2	348.0	26%
2036	269.4	254.3	19%
2037	269.4	254.3	19%