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Report of the

Minister for the Environment  
on the operation of the

# OZONE LAYER PROTECTION ACT 1996

for the period ended  
31 December 2018  
Report dated May 2020

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*Presented to the House of Representatives pursuant to  
subsection (2) of section 30 of the Ozone Layer Protection Act 1996*

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## Summary

This report provides Parliament with information about the operation of the Ozone Layer Protection Act 1996 (the Act) from 1 January 2018 to 31 December 2018. Provision of this information is a requirement under section 30 of the Act.

The data shows that New Zealand has stopped consuming or producing those ozone depleting substances that are controlled under the Montreal Protocol (the Protocol). In 2018 exemptions were granted to 20 aviation businesses who collectively imported 969kg of recycled ozone depleting halons for firefighting purposes.

New Zealand's consumption (defined as imports minus exports) of ozone depleting substances in 2018 had 398 tonnes of ozone depleting potential (ODP tonnes). This is greater than in 1995, the year before the Act came into force, when New Zealand consumed 384 ODP tonnes. This is because of the increasing use of the ozone depleting substance, methyl bromide to fumigate imported and exported goods. These quarantine and pre-shipment uses of methyl bromide are exempt from controls under the Protocol. New Zealand's increased use is primarily due to an increase in the export of raw tree logs (logs with bark on) to countries that require raw logs be fumigated with methyl bromide before they are shipped.

## Background

The ozone layer is a layer of stratospheric gas around the Earth that protects life on Earth from the sun's harmful ultraviolet radiation. Some substances used by humans can deplete ozone gas, and in the 1970s, these were found to be causing ozone layer holes.

International concern led to the Vienna Convention for the Protection of the Ozone Layer (the Convention) being agreed in 1985. It established global monitoring and reporting on ozone depletion. It also created a framework for the development of protocols for taking more binding action.

The Montreal Protocol (the Protocol) under the Vienna Convention was agreed in 1987. It facilitates global cooperation in reversing the rapid decline in atmospheric concentrations of ozone. Under the Protocol countries agreed to phase out the production and consumption of chemicals that deplete ozone. Phase out of certain substances is required by specific deadlines.

The Vienna Convention and its Montreal Protocol are the first and only global environmental treaties to achieve universal ratification, with 197 parties.

New Zealand's obligations under the Convention and the Protocol are implemented through the Ozone Layer Protection Act 1996 (the Act) and the Ozone Layer Protection Regulations 1996 (the Regulations).

## Purpose and Scope

The purpose of the Act is to—

- a) help protect human health and the environment from adverse effects resulting or likely to result from human activities which modify or are likely to modify the ozone layer
- b) phase out ozone depleting substances as soon as possible except for essential uses
- c) give effect to New Zealand's obligations under the Convention and the Protocol.

Each year the Minister for the Environment is required by section 30 of the Act, to prepare a report on the operation of the Act. The Minister is then required to lay a copy of the report before the House of Representatives. The purpose of this report is to meet these reporting requirements.

The report includes data to 31 December 2018. Data from 2019 is not yet available as EPA permit data needs to be validated against actual import export data from Customs. This data collection and processing occurs after the year has ended and provides a validated combined data set that reflects permitted and actual data regarding imports and exports.

## Operation of the Act in 2018

### Administration

The Ministry for the Environment (the Ministry) is responsible for administering the Ozone Layer Protection Act (the Act) and the Ozone Layer Protection Regulations 1996 (the Regulations). The Environmental Protection Authority (EPA) has responsibility for enforcing the Act and implementing the permit system for imports and exports under the Regulations. The New Zealand Customs Service enforces import and export controls at New Zealand's borders. Customs keep records of net imported ozone depleting substances and their volumes. EPA collates and validates permit data with actual net import data provided to them by Customs.

### Ozone depleting substances

This section describes the ozone depleting substances discussed in this report. There are three groups of ozone depleting substances controlled by the Protocol and the Regulations. These are:

- 1) hydrochlorofluorocarbons (HCFCs)
- 2) Methyl Bromide used for purposes other than quarantine (Non- QPS)
- 3) Other substances – these include halons, chlorofluorocarbons (CFCs), carbon tetrachloride (CCl<sub>4</sub>), methyl chloroform and hydrobromofluorocarbons.

New Zealand also uses methyl bromide for quarantine and pre-shipment purposes (QPS). This type of use is not controlled by the Protocol or the Regulations. New Zealand uses methyl bromide for QPS purposes to protect the environment and primary industries from harmful foreign organisms and to meet the importing countries' quarantine requirements.

### Exemptions granted in 2018

Prohibited substances are controlled substances that are not allowed to be imported, exported or manufactured in New Zealand. The import of goods containing these substances is also

prohibited. Under Part 5 of the Regulations, certain prohibited substances and goods may be permitted if the EPA grants an exemption. Appendix 1 lists the reason the EPA may consider when granting an exemption. Section 30(3)(a) of the Act and regulation 36 of the Regulations require the details of each exemption granted to be specified in this report. These are listed in Appendix 2.

In 2018 the EPA granted thirty four exemptions. All of these were for the halon-based fire extinguishers required for use in aircrafts. In total, 969 kgs of halon were imported in 2018 by twenty different importers. This halon is recycled halon. It is excluded from total consumption figures as these are based on new gases.

### Enforcement

There were no prosecutions under the Act in 2018. The last prosecution made under the Act was in 2008 when two refrigeration engineers were successfully prosecuted under section 13(f) of the Act for reckless discharge of an ozone depleting substance.

### Consumption of ozone depleting substances in 2018

For the purpose of this report it is assumed that all imports are to cover the product used in that year and that there is no stockpiling of ozone depleting substances. Annual imports are therefore used to estimate the total consumption in that year. Consumption is defined as production plus imports minus exports. As no production occurs in New Zealand, it is assumed to be net imports. Consumption is provided in tonnes of ozone depleting potential (ODP tonnes)<sup>1</sup>.

New Zealand’s consumption of new (not recycled) ozone depleting substances from 1994 to 2018 is shown below in Figure 1. The ozone depleting substances that are controlled under the Protocol and also under schedule one of the Regulations are shown in three ‘blue toned’ groupings. HCFCs are shown in navy, methyl bromide for non-QPS use is shown in turquoise and ‘others’ are shown in light blue. Methyl bromide for QPS is not a controlled substance and is shown in yellow.

Figure 1 shows that the controlled ozone depleting substances have been successfully phased out since reporting began in 1994. Methyl bromide for non-QPS use ended in 2007 and HCFC use ended in 2015. Substances in the ‘others’ category which includes halon, CFCs, CCl<sub>4</sub>, methyl chloroform and hydrobromofluorocarbons were rapidly phased out in the 1990s. Small amounts of halons do continue to be imported and consumed under exemptions as discussed above. As the halon is recycled it does not count towards total consumption of new ozone depleting substances.

New Zealand’s consumption of QPS methyl bromide (shown in yellow) has risen from 23 ODP tonnes in 1994 to 398 ODP tonnes in 2018. This is approximately a sixteen-fold increase in the consumption of methyl bromide for QPS purposes since reporting and data collection began.

<sup>1</sup> CFC-11 (Trichlorofluoromethane) is the standard measurement where one metric tonne is equal to one ODP tonne. The ODP represents the amount of ozone destroyed by emission of a gas over its entire atmospheric lifetime relative to that due to the same mass of CFC-11. All data supplied in this report is ODP data to allow for a standard measurement to be used for each substance.

$$\text{ODP of a compound} = \frac{\text{global change in ozone due to compound}}{\text{global change in ozone due to CFC-11}}$$

Approximately 92 per cent of current QPS methyl bromide use is to fumigate raw logs<sup>2</sup>. The major importers, India and China, require raw logs to be fumigated with methyl bromide before they are shipped. There is a strong relationship between QPS methyl bromide consumption and New Zealand's harvest of wood. As the large forests planted between 1992 and 1998 become ready for harvest in coming years, it is likely that methyl bromide consumption will continue to rise unless there is some disruption or intervention.

Other products frequently fumigated with methyl bromide include timber products for export, imported fruits and vegetables, contaminated shipping containers, scrap metal consignments, wood products, bamboo, contaminated vehicles, used car parts, and stock food.

Due to the increased use of methyl bromide QPS, New Zealand's overall impact on ozone depletion is currently similar to what it was in the mid 1990's when monitoring, the Act and Regulations began.

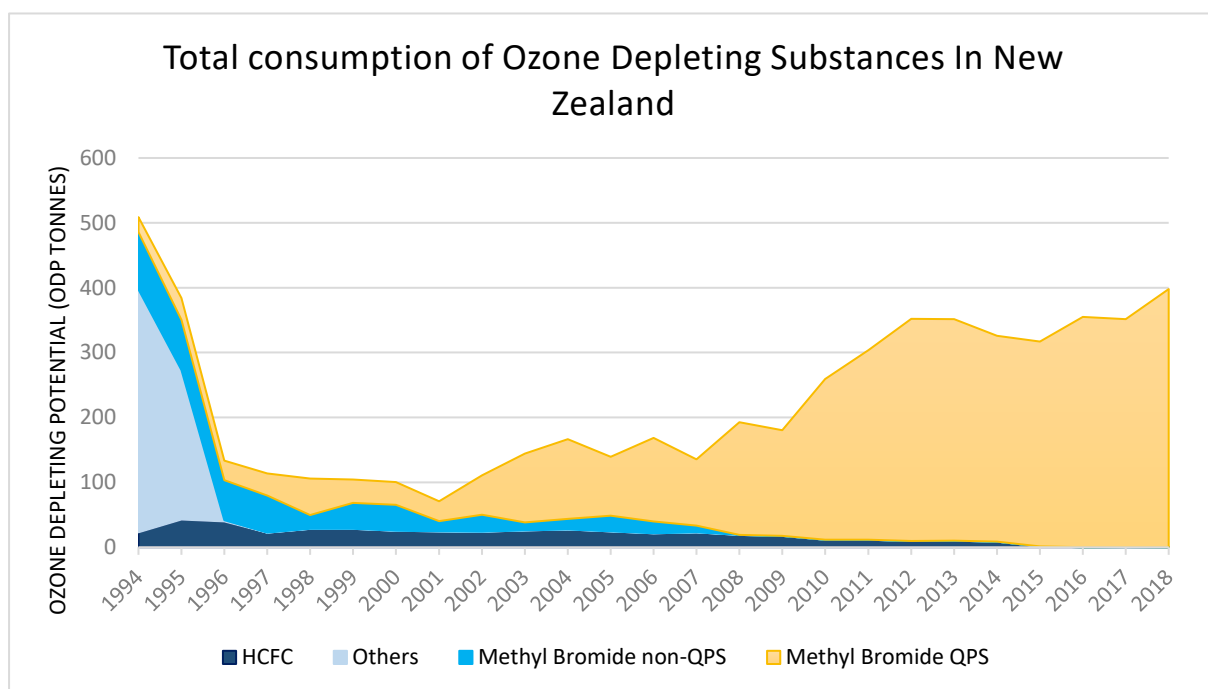


Figure 1: Consumption of New Ozone Depleting Substances in New Zealand. Source: Environmental Protection Authority and Customs net import data.

### Hydrofluorocarbons (HFCs)

Following the phase down efforts, CFCs and HCFCs were replaced in many products with hydrofluorocarbons (HFCs). While HFCs do not deplete ozone, they are potent greenhouse gases. In 2016, New Zealand and 196 other Parties agreed to an amendment of the Protocol (the Kigali Amendment) to phase down HFCs. New Zealand completed amendments to the Regulations in 2018. These require New Zealand to put in place a permitting system to set annual limits on imports of bulk HFCs from 1 January 2020.

<sup>2</sup> <https://www.mpi.govt.nz/dmsdocument/39575-methyl-bromide-factsheet-2020-pdf>

The amendment regulations came into force internationally on 18 February 2019, and all importers and exporters require permits for bulk HFCs from 1 January 2020. Data on the import and export of bulk HFCs will be collected from 1 January 2020 and will be included in the 2020 report on the operation of the Act.

#### Exports of controlled substances

New Zealand does not manufacture any controlled substances but does periodically export quantities of substances that have been previously imported, mostly to the Pacific. As New Zealand has no approved destruction facilities, in 2018, 1.2249 metric tonnes of HCFCs and were exported for destruction in an approved overseas facility.

## Conclusions and Recommendations

This report shows that New Zealand's use of ozone depleting substances has returned to pre-Ozone Layer Protection Act levels. This is primarily due to the requirement of importing countries that logs from New Zealand are fumigated with methyl bromide prior to shipment. Other ozone depleting substance exemptions are minor in comparison to that of methyl bromide.

The recapture of methyl bromide is required from 28 October 2020. EPA are undertaking a modified reassessment of methyl bromide controls the result of which is due in September 2020. Alternative fumigants, such as ethanedinitrile (EDN), to methyl bromide for QPS are available but not yet able to be used due to trade and domestic certification requirements. A shift to alternative fumigants such as EDN is the preferred approach currently.

Alternative methods of log processing pre-shipment, such as debarking, joule heating, or onshore production of other wood products, may also be a viable solution for long term reductions in the use of methyl bromide.

Officials recommend monitoring the increased use of methyl bromide and working with trading partners and industry to find a solution to reduce its use.

## Appendix 1: Prohibited substances

Prohibited substances are controlled substances that are not allowed to be imported, exported or manufactured in New Zealand. The import of certain goods containing these substances is also prohibited. Under Part 5 of the Regulations, certain prohibited substances and goods may be permitted if the EPA grants an exemption. Section 30(3)(a) of the Act and regulation 36 of the Regulations require the details of these exemptions to be specified in the report, and they are listed in Appendix 2.

Table 2 summarises the purpose of the 34 exemptions granted in 2018. These exemptions were for the use of halons in aircraft extinguishers as a fire suppressant. Due to weight and volume constraints, finding alternatives to halon continues to be challenging.

Table 1: Import Exemption Summary

Purpose of Exemption	Number <sup>3</sup>
Necessary aerosol/extinguisher	34
Replacement of export	0
Necessary HCFC aerosol	0
Transshipment	0
ODS fire extinguisher	0
Halon for refrigeration	0
Essential aerosol/extinguisher	0
Essential or Critical use	0

Source: Environmental Protection Authority

<sup>3</sup> Figures provided in Table 2 and Appendix 1 may not match due to more than one substance able to be covered by a single exemption.

**Table 2: Import Exemption Reasons**

<b>Note</b>	<b>Shorthand</b>	<b>Reason</b>
1	Necessary aerosol/extinguisher	This exemption is granted under regulation 31(1) in respect of the importation of any aerosol or fire extinguisher that is to be used only for a use that is necessary for human health or safety. <sup>4</sup>
2	Replacement of export	This exemption is granted under regulation 32 in respect of any substance or goods that are imported into New Zealand only for the purpose of replacing any substance or goods already transhipped into another ship or aircraft for carriage to a destination that was outside the territorial limits of New Zealand.
3	Necessary HCFC aerosol	This exemption is granted under regulation 29(c) for HCFC that is to be used in the manufacture of aerosols that are to be used only for a use that is necessary for human health or safety.
4	Transshipment	This exemption is granted under regulation 32 in respect of any substance or goods that are imported into New Zealand only for the purpose of being transhipped into another ship or aircraft for carriage to a destination that is outside the territorial limits of New Zealand.
5	ODS fire extinguisher	This exemption is granted under regulation 29(d) for any bulk recycled substance, or any bulk controlled substance that is not a halon, that is to be used only in the servicing of fire extinguishers in circumstances where the substance cannot be obtained from supplies in New Zealand and where the servicing is required either because the fire extinguisher was used in a fire or as a result of a loss of halon that was outside the control of the applicant.
6	Halon for refrigeration	This exemption is granted under regulation 29(a) for bulk recycled halon-Halon 1301 that is to be used only for refrigeration purposes and only in circumstances where the use of halon-Halon 1301 for refrigeration purposes is necessary for human health or safety and halon-Halon 1301 cannot be obtained from supplies in New Zealand.
7	Essential aerosol/extinguisher	This exemption is granted under regulation 29(b) for bulk CFC, halon, carbon tetrachloride, methyl chloroform, or HBFC that is to be used in the manufacture of aerosols or fire extinguishers for a use determined by the Parties to the Montreal Protocol to be an essential use and that use is necessary for human health or safety.
8	Essential or Critical use	This exemption is granted under regulation 29(e) for any bulk controlled substance that is to be used only for a use determined by the Parties to the Montreal Protocol to be an essential use or a critical use.

<sup>4</sup> These permits are primarily issued for aircraft or sea-vessel/ship fire extinguishers.

## Appendix 2: Exemptions granted in 2018 under Ozone Layer Protection Regulations 1996 r36(b)(vi)

Company	Product Name	Exempted Quantity (in kgs)	Substance	Exemption (Note #)	Issue Date
Air New Zealand	Aircraft Fire Extinguisher	200	Halon 1211	1	16/01/2018
Air New Zealand	Aircraft Fire Extinguisher	200	Halon 1301	1	16/01/2018
Airbus New Zealand Limited	Aircraft Fire Extinguisher	20	Halon 1211	1	25/01/2018
Airbus New Zealand Limited	Aircraft Fire Extinguisher	10	Halon 1301	1	25/01/2018
Airwork (NZ) Limited	Aircraft Fire Extinguisher	35	Halon 1301	1	16/01/2018
Avcraft Engineering NZ Ltd	Aircraft Fire Extinguisher	1	Halon 1301	1	8/02/2018
Sunstate Airlines	Aircraft Fire Extinguisher	22.5	Halon 1211	1	20/02/2018
New Zealand Defence Force	Aircraft Fire Extinguisher	50	Halon 1211	1	18/04/2018
New Zealand Defence Force	Aircraft Fire Extinguisher	50	Halon 1301	1	18/04/2018

Company	Product Name	Exempted Quantity (in kgs)	Substance	Exemption (Note #)	Issue Date
Avcraft Engineering NZ Ltd	Aircraft Fire Extinguisher	3.6	Halon 1301	1	20/03/2018
Hawker Pacific NZ Ltd	Aircraft Fire Extinguisher	11.5	Halon 1211	1	23/03/2018
Hawker Pacific NZ Ltd	Aircraft Fire Extinguisher	11.5	Halon 1301	1	23/03/2018
Avcraft Engineering NZ Ltd	Aircraft Fire Extinguisher	3.6	Halon 1301	1	6/04/2018
Qantas Airways Ltd	Aircraft Fire Extinguisher	37.5	Halon 1211	1	18/04/2018
Qantas Airways Ltd	Aircraft Fire Extinguisher	26.6	Halon 1301	1	:18/04/2018
Capital Aviation Ltd	Aircraft Fire Extinguisher	1.5	Halon 1211	1	: 24/10/2017
Nasa Armstrong Flight Research	Aircraft Fire Extinguisher	9.5	Halon 1211	1	31/05/2018
Air Chathams Ltd	Aircraft Fire Extinguisher	10.5	Halon 1211	1	: 8/10/2018
Tasman Cargo Airlines	Aircraft Fire Extinguisher	3	Halon 1211	1	4/07/2018

Company	Product Name	Exempted Quantity (in kgs)	Substance	Exemption (Note #)	Issue Date
Tasman Cargo Airlines	Aircraft Fire Extinguisher	31.5	Halon 1301	1	4/07/2018
Aviation Technology Limited	Aircraft Fire Extinguisher	2.5	Halon 1301	1	24/07/2018
BC Aviation	Aircraft Fire Extinguisher	8.9	Halon 1211	1	24/08/2018
BC Aviation	Aircraft Fire Extinguisher	1.6	Halon 1301	1	24/08/2018
HNZ New Zealand Limited	Aircraft Fire Extinguisher	6	Halon 1301	1	6/09/2018
HNZ New Zealand Limited	Aircraft Fire Extinguisher	2	Halon 1211	1	6/09/2018
Northland Emergency Services Trust	Aircraft Fire Extinguisher	1.6	Halon 1301	1	11/09/2018
Tasman Cargo Airlines	Aircraft Fire Extinguisher	25	Halon 1211	1	21/09/2018
Tasman Cargo Airlines	Aircraft Fire Extinguisher	25	Halon 1301	1	21/09/2018
Catley Aviation Limited	Aircraft Fire Extinguisher	14	Halon 1301	1	3/10/2018

Company	Product Name	Exempted Quantity (in kgs)	Substance	Exemption (Note #)	Issue Date
Virgin Australia (NZ) Ltd	Aircraft Fire Extinguisher	5	Halon 1301	1	05/11/2018
Fieldair Engineering Ltd	Aircraft Fire Extinguisher	30	Halon 1301	1	3/12/2018
Fieldair Engineering Ltd	Aircraft Fire Extinguisher	9	Halon 1211	1	3/12/2018
Airwork Fixed Wing Ltd	Aircraft Fire Extinguisher	4.5	Halon 1211	1	20/12/2018
Airwork Fixed Wing Ltd	Aircraft Fire Extinguisher	95.1	Halon 1301	1	20/12/2018