Australian Government

Department of the Environment and Energy

Australian Halon Management Strategy 2019

COPYRIGHT INFORMATION

© Copyright Commonwealth of Australia, 2019.

Australian Halon Management Strategy 2019 is licensed by the Commonwealth of Australia for use under a Creative Commons Attribution 4.0 International licence with the exception of the Coat of Arms of the Commonwealth of Australia, the logo of the agency responsible for publishing the report, content supplied by third parties, and any images depicting people.

For licence conditions see Creative Commons website - Attribution 4.0 International page

This report should be attributed as '*Australian Halon Management Strategy 2019*, Commonwealth of Australia 2019'.

The Commonwealth of Australia has made all reasonable efforts to identify content supplied by third parties using the following format '© Copyright, [*name of third party*] '.

DISCLAIMER

The views and opinions expressed in this publication are those of the authors and do not necessarily reflect those of the Australian Government or Minister for the Environment and the Minister for Energy and Emissions Reduction.

While reasonable efforts have been made to ensure that the contents of this publication are factually correct, the Commonwealth does not accept responsibility for the accuracy or completeness of the contents, and shall not be liable for any loss or damage that may be occasioned directly or indirectly through the use of, or reliance on, the contents of this publication.

ACKNOWLEDGEMENT OF COUNTRY

The Department acknowledges the traditional owners of country throughout Australia and their continuing connection to land, sea and community.

We pay our respects to them and their cultures and to their elders both past and present.

CONTENTS

THE AUSTRALIAN HALON MANAGEMENT STRATEGY

What are halons and why are they managed?

Halons are chemicals primarily used as fire extinguishing agents. When used they break down in the stratosphere and release reactive bromine that is extremely damaging to the ozone layer, which protects life on earth by absorbing ultra-violet (UV) radiation from the sun. Halons are also potent greenhouse gases.

The international community decided to act to reduce the use of these damaging chemicals, and production and import of new halons has been phased out under the Montreal Protocol on Substances that Deplete the Ozone Layer.

Why have a halon management strategy?

Decision X/7 of the Parties to the Montreal Protocol on Substances that Deplete the Ozone Layer requested countries to develop a national or regional strategy for the management of halons, including emissions reduction and ultimate elimination of their use. The decision focusses on:

a) Discouraging the use of halons in new installations and equipment;
b) Encouraging the use of halon substitutes and replacements acceptable from the standpoint of environment and health, taking into account their impact on the ozone layer, on climate change and any other global environmental issues;
c) Considering a target date for the complete decommissioning of non-critical halon installations and equipment, taking into account an assessment of the availability of halons for critical uses;
d) Promoting appropriate measures to ensure the environmentally safe and effective recovery, storage, management and destruction of halons.

In response to Decision X/7 of the Montreal Protocol, the Australian Halon Management Strategy was first published in February 2000. The strategy outlines principles and measures Australia has in place to manage its use of halon until suitable alternatives are available and halon is no longer required. The document was updated in 2019.

The key principles

Australia aims to completely phase out halons when alternatives are available. The long term need for halon is uncertain, with halon systems potentially still being used well into the future, in particular for aviation. (Energy International Australia's Review of Australia's halon essential uses requirements). As Australia largely takes technology developed for other markets, international market changes will be the primary factor in the halon phase out.

Australia discourages the use of halons in new installations and equipment, encourages the use of halon alternatives, and has instituted measures to ensure the environmentally safe and effective recovery, storage, management and destruction of halons. Non-critical halon equipment has been decommissioned in Australia from 1995.

What are Australia's current halon uses and needs?

The 2012 Energy International Australia report concluded that halon is no longer used in the majority of applications where previously it was considered important for fire protection, such as fixed extinguishing systems in buildings and hand held fire extinguishers. However, there are some uses where suitable alternatives are not available or are yet to be commercialised,

and some use in legacy systems where it is impractical to replace the existing halon system. Sectors showing continued use are:

Aviation

There has been some progress in halon alternatives used in civil aviation. Halon is still used as a fire extinguishing agent in most aircraft globally, although non-halon alternatives are used in some parts of aircraft such as the passenger compartment, and in some cases lavatories.

Viable cargo bay halon alternatives are not expected to be included in aircraft production for some time. The Civil Aviation Safety Authority (CASA) issues airworthiness directives on halon requirements for aircraft.

Increasingly, commercial aircraft operating in Australia are leased from and partially maintained overseas, and therefore the demand for Australia's halon reserves may reduce as halon systems may be recharged overseas.

Halon may be sourced, including under the *International Air Services Transit Agreement,* from the National Halon Bank to replenish halon lost on foreign aircraft in Australia in situations where these aircraft would otherwise be unable to meet airworthiness standards to depart Australia.

Maritime

Installation of halon systems has been prohibited in new ships in Australia since 1994, and the number of Australian vessels fitted with halon systems has substantially decreased since then through natural attrition. Alternative technologies have replaced halon in Australian and foreign flagged vessels significantly since the mid-1990s.

The *International Convention for the Safety of Life at Sea* allows the use of halons for servicing existing equipment on vessels, and requires that member governments provide information on their halon banking facilities. While there is no obligation for Australia to provide halon for foreign ship maintenance, halon can be sourced from the National Halon Bank to replenish halon lost on foreign ships sailing to Australia as these ships would otherwise be unable to meet safety requirements to sail. The Australian Maritime Safety Authority (AMSA) is to be informed of such occurrences and of any changes to Australia's approach to supply of halon to foreign ships.

International agreements that need to be considered

Australia is a signatory to a number of international agreements relevant to the import, export and provision of halon. Under the Montreal Protocol all countries have phased out production and imports of new halon. Provision is made in the Montreal Protocol to approve production and imports of new halon for essential uses. Use of used halon is encouraged under the Montreal Protocol as a substitute for new production.

The International Civil Aviation Organization (ICAO) mandates the phase out of halon equipment for civil aviation uses, and collaborates with the Montreal Protocol's Halon Technical Options Committee on halon alternatives for civil aviation. ICAO periodically revises its standards to require halon alternatives in certain applications, and its members decide on phase out dates. Civil aviation uses considered include lavatory, handheld, engine and auxiliary power unit and cargo compartment uses.

While countries are expected to make best efforts to meet the ICAO standards, they are not mandatory requirements. Countries may file 'differences' which explain how they will not meet the standards, or parts of the standards. There may therefore be some halon use past ICAO's phase out dates for new designs in Australia. This is managed domestically by the Civil Aviation Safety Authority. ICAO standards do not require changing all in-production aircraft, or retrofitting existing aircraft, to halon alternatives.

It is expected Australian requirements will be adjusted as major aviation suppliers transition to alternatives.

Other agreements that Australia is party to that need to be considered in Australia's management of halon are;

- Basel Convention on the control of Transboundary Movements of Hazardous Waste and their Disposal - The Basel Convention may restrict the countries to which Australia may export waste halon to or import waste halon from or impose additional requirements,

- International Convention for the Safety of Life at Sea - allows the use of halons for servicing existing equipment on vessels. The International Maritime Organisation prohibited new installations of halons in ships in 1994,

- The International Convention for the Prevention of Pollution from Ships (MARPOL) prohibits deliberate emissions of ozone depleting substances, including halon, from ships,

- International Air Services Transit Agreement ("Freedoms of the Air") facilitates reciprocal maintenance provision, including for halon,

- Cooperative Defence Logistic Support Agreement provides for reciprocal logistic support between Australia and the United States, for example the provision of halons or halon banking services where appropriate.

AUSTRALIA'S MEASURES FOR THE MANAGEMENT OF HALON

Controlling the import and export of bulk gas

Australia controls the import of new and used halon through the Ozone Protection and Synthetic Greenhouse Gas Management Act 1989 (the Act) and associated Ozone Protection and Synthetic Greenhouse Gas Management Regulations 1995 (the Regulations). Under the Act, an essential uses licence is required to import or export new halon. An essential uses licence will only be granted where it is consistent with Australia's obligations under the Montreal Protocol, generally where an essential use exemption has been approved by the Montreal Protocol or it fits within the laboratory and analytical uses exemption under the Montreal Protocol. As of 2018 no halon essential use exemption applications had been submitted to the Montreal Protocol.

A used substances licence is required to import or export used halon. The import and export of used halon is considered on a case by case basis. Considerations include international obligations, international demand, Australia's demand and Australia's phase out policy. The Department's Guidance on the Import and Export of Used Scheduled Substances provides guidance on licence decisions for used ozone depleting substances including halon.

Discouraging the use of halon in new equipment

Australia controls the manufacture and import of equipment that contains halon through licensing under the Act and Regulations. Under the Act the manufacture or import of equipment that uses halon is generally banned in Australia, except where an equipment licence that allows the import has been granted. Under the Act, a licence can only be granted where:

- the equipment is essential for medical, veterinary, defence, industrial safety, or public safety, purposes, and no practical alternative exists to the use of scheduled substances in the operation or manufacture, as the case requires, of the equipment if it is to continue to be effective for such a purpose; or

- because of the requirements of a law concerning the manufacture or use of the equipment, there is no practical alternative to the use of scheduled substances in the operation or manufacture, as the case requires, of the equipment; or

- the equipment is for use in conjunction with the calibration of scientific, measuring or safety equipment.

Import and export licence applications

The objectives of the Act include to encourage Australian industry to replace ozone depleting substances (including halon), and to promote the responsible management of those substances so as to minimise their impact on the environment. This reflects Australia's international obligations, and provides guidance for licensing decisions. Decisions on licensing must have regard to Australia's international obligations and the policies of the Australian Government.

Each licence application, whether for equipment containing halons, a used substance licence or an essential use licence, will be considered on its merits within the legal framework and guidance set out above. Further guidance on licence applications is available here.

Encouraging halon substitutes

The limited circumstances for manufacture or import of equipment that contains a halon, and limited supply of halon into and within Australia, encourage halon substitutes.

Australia also supports global efforts to find viable halon alternatives. The Halon Technical Options Committee provides regular advice on halon uses and alternatives, and its reports are available on the Ozone Secretariat's website, http://ozone.unep.org/. Australia considers this advice in developing guidance on halon and operational guidance for the National Halon Bank.

As discussed above, the International Civil Aviation Organization (ICAO) sets timelines for the phase out of halon products and equipment for civil aviation uses, and collaborates with the Halon Technical Options Committee on halon alternatives for civil aviation. This is managed in Australia by the Civil Aviation Safety Authority. The International Convention for the Prevention of Pollution from Ships (MARPOL) prohibits deliberate emissions of ozone depleting substances, and is managed in Australia by the Australian Maritime Safety Authority. The Department of the Environment and Energy liaises with the Civil Aviation Safety Authority and the Australian Maritime Safety Authority on halon use.

Halon handling requirements

A national system of licensing and permits for possessing and handling halon has been established under the Regulations. The system applies to businesses and technicians who work on equipment containing halons and other controlled fire extinguishing agents. The scheme restricts the possession of halon to specific persons and circumstances.

Persons who possess halon (other than halon contained in equipment) are required by regulation to hold a Halon Special Permit and to use those halons only for:

- a purpose that is necessary to protect human life or operate equipment that is critical to the community; and

- there is no alternative to the halon's use that is:
    - practicable; and
    - available at a reasonable cost; and
    - safe; and
    - likely to result in less damage to the environment.

The Department periodically consults with industry and technical experts on uses that are considered to satisfy the requirements in the Regulations.

In Australia halon is generally sourced from the National Halon Bank which is owned by the Department of the Environment and Energy. The National Halon Bank will only supply halon where the use is consistent with the Regulations.

Recovery, storage, management and destruction – the National Halon Bank

The National Halon Bank (NHB) was established in 1993 under the then Department of Administrative Services. The NHB was set up to maintain a stock of halon for non-defence uses until the transition to alternatives is complete, and for the stock to be managed under controlled conditions to prevent accidental release. The NHB operates primarily as a halon 1211 and 1301 decanting, purification, and storage facility, and can also provide purity testing services for halon. Halon held at the NHB generally originates from waste halon and halon recovered from decommissioned systems in Australia. Halon management services are provided on occasion to Montreal Protocol countries by the NHB, including reclamation and recycling services.

The NHB does not destroy halon but will arrange destruction of surplus or contaminated halon as necessary. Recycling of halon for re-use in Australia or overseas is preferred and is in line with the Halon Technical Options Committee recommendation that, due to the continued global demand for halons, destruction of halon should be considered only if the halons are cross-contaminated and cannot be reclaimed to an acceptable purity. This was supported in Montreal Protocol Decisions XXVI/7 and XXI/V, which encouraged Parties to refrain from destroying uncontaminated recovered, recycled, or reclaimed halons before they considered their domestic, as well as the global, long-term future needs for halons. Those decisions also encourage Parties to consider removing barriers on the import and export of recovered, recycled or reclaimed halons, to allow their free movement to countries where they are required.