



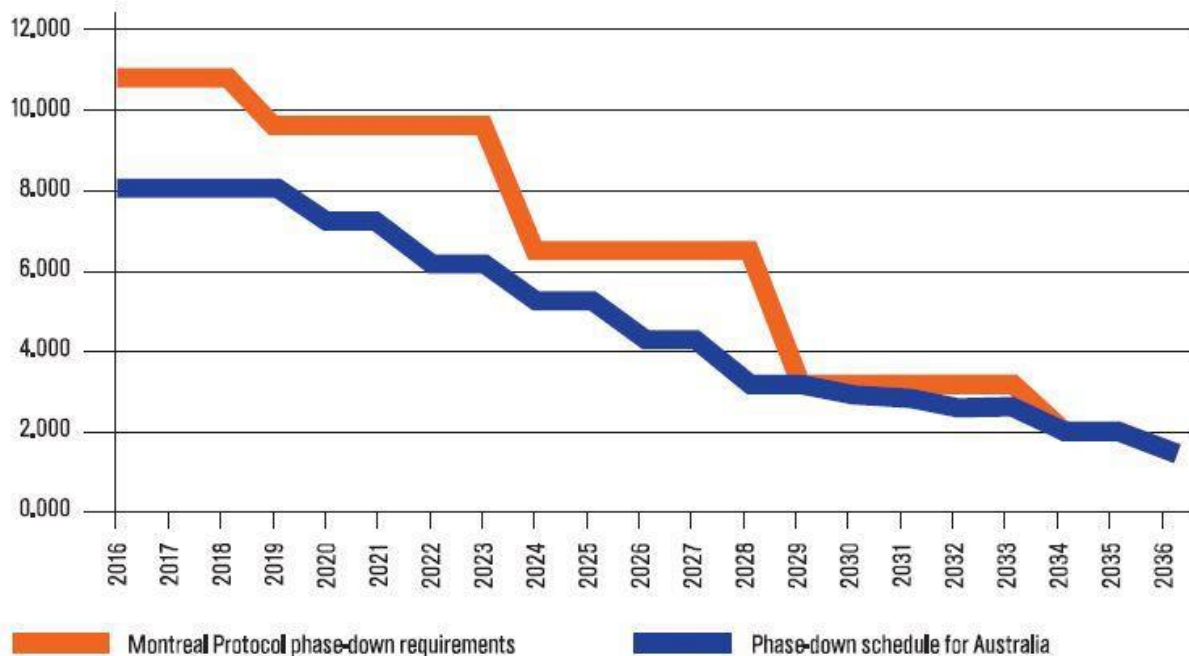
Australia's HFC phase-down

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The phase-down of hydrofluorocarbons (HFCs) under the Montreal Protocol commenced in Australia on 1 January 2018. It is a gradual reduction in the maximum amount of bulk HFCs permitted to be imported into Australia. The phase-down is being managed through an annual import quota that will gradually reduce over 18 years. 15% of the Montreal Protocol baseline level will be reached on 1 January 2036.

A key pillar of the phase-down is to encourage industries to move to alternative substances that have less impact on the environment because of lower global warming potential (GWP).

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Australia is implementing the phase-down through smaller and more frequent step downs than is required under the Montreal Protocol.



Key Facts:

What does it cover?

- The HFC phase-down covers only imports of bulk gas such as in cylinders. It does not cover gas imported in pre-charged equipment such as portable fire-extinguishers. HFCs contained in imported equipment are accounted for in the country of manufacture.

How is quota calculated?

- HFC quota is expressed in carbon dioxide equivalent (CO₂-e) megatonnes (million tonnes). Carbon dioxide equivalent (CO₂-e) is the measurement of the global warming potential (GWP) of a substance compared to a similar mass of carbon dioxide (CO₂).

Phase-down vs phase out

- It is important to remember that the phase-down mechanism involves a gradually declining cap on the total of bulk HFCs. There will be a residual amount (about 1.6 million tonnes carbon dioxide equivalent annually) of HFC imports permitted from 2036 which will be available indefinitely.

How does it work?

- Australia has introduced a quota system for imports of HFCs as bulk gas. Quota is divided between grandfathered quota (GFQ), allocated to established market participants, and non-grandfathered quota (NGFQ), open to new and established participants.
- You **cannot** import HFCs in a quota period unless you hold quota for that period.

How does the phase-down impact the fire protection industry?

- HFCs are a group of synthetic greenhouse gases (SGGs) that can be found in fire protection equipment and special hazard systems. The most commercially used HFC in fire protection is HFC227ea (FM200).

- It is estimated that FM200 has achieved approximately 80% of the worldwide market for the replacement of halon in firefighting systems (*Gaseous Fire Suppression Systems in Australia Stage 1 Report*). FM200 is the main scheduled extinguishing agent used in special hazard systems in Australia.
- The overall pace of the phase-down is designed to match demand and equipment replacement at end of life. The intention is to align demand for HFCs with supply to avoid spikes in the price of HFCs that might lead to equipment being retired prematurely.
- Reducing (CO₂-e) quota limits could lead to more limited availability of HFCs used by fire technicians when installing a suppression system or re-filling a container. However, equipment manufacturers and importers are expected to gradually change their equipment range to align with the bulk HFC phase-down. This will happen as consumers demand up-to-date technology and manufacturers will want to ensure their products can be serviced for the entire equipment life. This was the experience with Australia's successful phase out of HCFCs and HCFC equipment.

Current alternatives to HFCs:

- Novec 1230 (GWP of 1) – patented 3M product, is the most widely used replacement for HFC fire protection systems
- IG-01 – an inert gas consisting of 100% argon and is used in total flooding applications
- IG-100 – an inert gas consisting of 100% nitrogen and is used in total flooding applications
IG-55 – a blend of 50% argon & 50% nitrogen. Suited for data centres, communication rooms, telecommunication facilities etc.
- IG-541 – a composite gas (52% Nitrogen, 40% Argon, 8% CO₂) suitable for use on class A and class B fires

What industry changes could the phase-down help fast-track?

- The phase-down could reduce imports of new HFCs by encouraging business to instead recover existing HFCs. The recovery of halon is now commonplace, and the phase-down may have the same implications for HFCs.
- It may lead to some manufactures moving more quickly than they otherwise would have to support alternative extinguishing agents with a lower GWP.
- There may be advances in the development of new or less established alternative fire protection technologies.
- Long-term savings to end users and the broader economy could flow from new technology that requires lower maintenance, has lower leak rates, and is more efficient