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FEATURE
HFC phase-down

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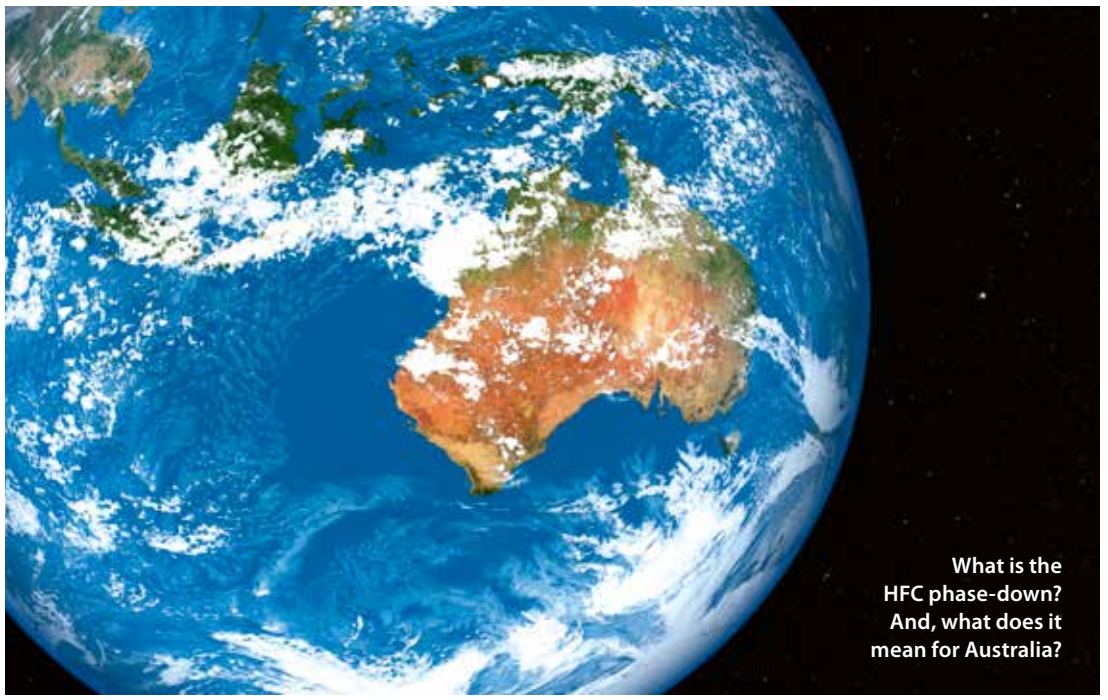
COMING SOON: HFC PHASE-DOWN



What is the HFC phase-down? And, what does it mean for Australia?

HFC refrigerants have become a mainstay of the HVAC&R industry. However, concerns about the increasing rate of HFC emissions and their impact on climate change has brought about a phase-down that will begin from January next year. HVAC&R Nation finds out how it will impact you and the wider industry.

In May last year, the Australian government decided on a range of measures to improve the efficiency and effectiveness of the Ozone Protection and Synthetic Greenhouse Gas Management (OPSGGM) program.

One of the key measures is an 85 per cent phase-down of HFC (hydrofluorocarbon) imports, commencing on January 1, 2018, which will see this target reached by 2036.

According to Bruce Edwards, the Assistant Secretary Assessments and Air Branch at the Department of the Environment and Energy, the phase-down is an effective way of reducing HFC emissions before they become a major emissions source.

"A phase-down is achievable, and can be done at a low cost to business and consumers," he says.

The phase-down will cap and gradually reduce HFC imports to 15 per cent by 2036.

This is different to a phase-out, where the gradual reduction would end in a total ban on imports.

"The phase-down recognises that there are some HFC uses where it will be difficult to develop alternatives," says Edwards. "These include uses of HFCs such as in metered dose inhalers for asthma management."

So, what does the looming HFC phase-down mean for the HVAC&R industry and its members?

Here's what you need to know.

HFCS AND HFC REFRIGERANT BLENDS ARE AFFECTED

The phase-down applies to the following commonly used HFCs and includes refrigerant blends containing these HFCs:

HFC23, HFC32, HFC41, HFC125, HFC134, HFC134a, HFC143, HFC143a, HFC152, HFC152a, HFC161, HFC227ea, HFC236cb, HFC236ea, HFC236fa, HFC245ca, HFC245fa, HFC365mfc and HFC43-10mee.

Bulk imports of HFC gas only

The HFC phase-down applies to bulk imports of gas such as in cylinders, but does not apply to gas imported in pre-charged equipment such as air conditioners or refrigerators. Under the Montreal Protocol, gas contained in equipment is counted against the limit of the country where the equipment is manufactured.

Equipment bans may be considered in the future to support the phase-down.

In the past, Australia has banned the manufacture and import of equipment containing CFC and HCFC refrigerant after most manufacturers had moved to alternatives.

Similar HFC equipment bans will be considered where alternative equipment is available but not being provided to the Australian market.

No one will be forced to replace their equipment

The overall pace of the phase-down is designed to match demand and end-of-life equipment replacement.

If adopted, any future equipment bans would only apply to new equipment being imported or manufactured, and not to equipment already installed in Australia.

The phase-down will take place over 18 years

Australia's HFC phase-down will begin in January 2018 and reach 85 per cent by December 2036.

"It is happening over a long period to allow business and consumers time to adopt alternatives, avoid premature retirement of equipment, and so that there is a continued supply of HFCs to service equipment," says Edwards.

"This approach provides industry and consumers with investment certainty, and a long period to plan the required changes. The same approach has been used to phase out HCFCs."

Australia's phase-down of HFCs is consistent with action being taken internationally

Australia's phase-down, which was developed in consultation with Australian industry, is largely consistent with the Montreal Protocol agreement.

"Australia's phase-down starts one year earlier than the Montreal Protocol and has a lower starting point, which reflects current HFC use," says Edwards. "It also has smaller and more frequent reductions, reflecting industry's preference."

Refrigerant prices should not be affected

Edwards is confident refrigerant prices will not be affected when the phase-down begins next January.

"The phase-down has been designed to match the reduction in demand as businesses and consumers convert to different technologies," he says. "The availability of alternative refrigerants for existing HFC equipment will also help put a cap on prices."

There are a number of potential replacements for HFCs

Several refrigerants with no or very low GWP (global warming potential) are now available in Australia, which may be appropriate for use in the same applications as HFCs.

These gases are not regulated under the OSGG Program and comprise of naturally occurring substances known as "natural" refrigerants, including ammonia, carbon dioxide and hydrocarbons, as well as manufactured substances (e.g., hydrofluoro-olefins or HFOs).

Natural refrigerants and HFOs may offer improved performance and energy efficiency in fit-for-purpose systems. In considering an alternative refrigerant, it is important that it be used in equipment that is fit for purpose and not used in equipment designed for a specific HFC; this could prove hazardous.

Some alternative gases can be flammable and some, such as ammonia, can be toxic. For some sectors with "hard to transition" technologies, it may be that use of HFCs continues – because it is an HFC phase-down, not an HFC phase-out.

There will be no regulatory changes for licensed technicians

There will be no regulatory changes for technicians because HFC systems will continue to be installed, serviced and decommissioned for many years to come.

In October 2016, 197 Parties to the Montreal Protocol agreed to gradually limit their production and use of HFCs at a meeting in Kigali, Rwanda.

However, technicians will need to learn and be trained to work on alternative technologies so they can install and service this equipment into the future, and advise their customers of the options available.

Become familiar with what the phase-down means for you and your customers

"The phase-down does not mean instant change," says Edwards.

"Contractors and licensed technicians should become familiar with the phase-down and what it will mean for their customers, including learning about the alternative technologies coming online for various sectors."

The HFC phase-down will contribute significantly to Australia's emissions reduction target

The HFC phase-down and other measures from the review of the OPSGGM program, including promotion of equipment maintenance, will reduce emissions by up to 80Mt CO2-e in the period to 2030.

"As well as significant environmental benefits, the phase-down will also bring long-term investment certainty for businesses throughout the supply chain and pave the way for the introduction of state-of-the-art refrigeration and air conditioning equipment," says Edwards.

KEY FEATURES OF THE PHASE-DOWN

The Department of the Environment and Energy will administer the HFC phase-down through the existing licensing scheme under the Ozone Protection and Synthetic Greenhouse Gas Management Act 1989 (OPSGGM Act).

Key features of the phase-down are:

The starting point

The phase-down will start on January 1, 2018 with an annual import limit of 8 megatonnes (Mt) CO2-e per year. Australian industry has agreed that this starting point is consistent with current use.

Phase-down steps

The phase-down will have reductions at the start of each two-yearly quota period, aligned with licensing periods under the OPSGGM Act. These steps can be seen in the blue line in Figure 2 below.

(Note: The schedule will be adjusted slightly as Australia's limit is slightly above the Montreal Protocol limit in 2029–2031 and 2034–2035.

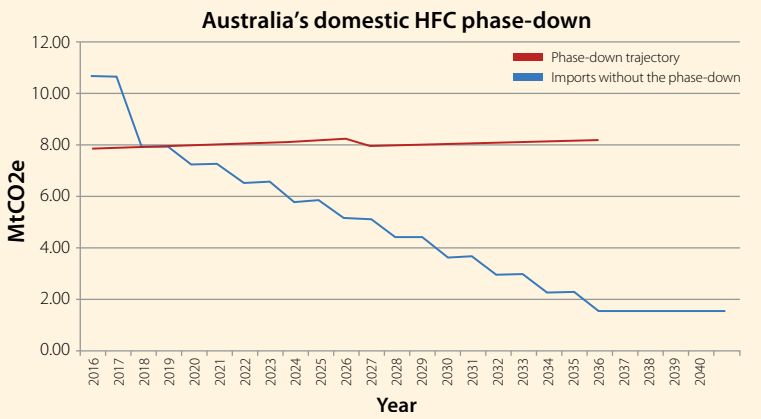


Figure 2: Australia's domestic HFC phase-down compared to business-as-usual (BAU) projections.

The end point

The end point of 1.607 Mt CO2-e will be reached on December 31, 2035, and will remain at 1.607 Mt CO2-e for each quota period from then on.

This figure is based on the 15% of average HFC imports and 75% of HCFC imports for the period 2011–2013. This is the basis for calculations of a HFC phase-down under the Montreal Protocol.

Source: With the assistance of the Department of the Environment and Energy

Need further information? More information on the HFC phase-down is available at www.environment.gov.au/protection/ozone