Newsletter for the Refrigeration and Air Conditioning Industry

January 2019

ISSUE 51

Australian Government
Department of the Environment and Energy

COOLCHANGE

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RAC equipment use up/ refrigerant leaks down

New industry report released on the state of the refrigeration and air conditioning (RAC) industry in Australia.

Cold Hard Facts 3 was commissioned by the Department of the Environment and Energy to provide the Australian Government with better information for policy making, and industry with better information for business decision making.

The report provides an economic and technological assessment of the RAC industry in Australia in 2016. It includes an analysis of the size and economic value of the industry, the equipment and refrigerant gas bank (all refrigerant in Australia), trends in gas imports and equipment, and direct and indirect emissions in this sector. It expands on, and where possible makes comparisons with, two previous studies – *Cold Hard Facts 1* published in 2007, and *Cold Hard Facts 2* published in 2013.

The report is the most extensive of its type in the world, and makes clear the size and importance of the RAC industry in Australia.

How big is the industry?

Over 20,000 businesses operate in the RAC industry, employing around 298,400 people. It is estimated that $38 billion was spent on purchasing, installing, maintaining and operating RAC equipment and services in 2016, with new equipment purchases accounting for $8.1 billion. This total expenditure on RAC was equivalent to 2.3 per cent of national gross domestic product (GDP) in 2016.

Is the industry growing?

Yes. The previous report noted growth in RAC equipment numbers exceeding growth in population and GDP. This trend continues for 2016, with 54 million pieces of RAC equipment in Australia, up from 45 million in 2012.

The bank of refrigerant is projected to grow by 35 per cent for the period 2017-2030. Growth in the sector could be even higher as new technologies and uses emerge, such as heat pump clothes dryers and large scale-controlled climate structures used for farming. Increases in indoor food production (such as hydroponics), chilled food transport to consumers and food exports are also likely to drive the growth.

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RAC equipment use up/ refrigerant leaks down (continued)

Refrigerant leak rates are reducing

The amount of refrigerant imported into Australia to service equipment remains stable at an average of 3,700 tonnes a year. This is despite the amount of equipment and the refrigerant it contains increasing by 17 per cent since 2012. This translates to significant improvements in leak prevention.

Equipment is becoming more energy efficient

The total amount of electricity used for RAC equipment in Australia has remained almost the same (59,100 gigawatt hours in 2012 and 61,000 gigawatt hours in 2016), despite a 20 per cent increase in the stock of equipment. This reflects a significant improvement in the efficiency of equipment.

Emissions will reduce

The refrigerant bank's carbon dioxide equivalent value of 99 million tonnes is projected to peak at more than 102.6 million tonnes in 2019, before steadily reducing to 81 million tonnes in 2030. This equates to an 18 per cent reduction for the period 2017-2030.

This reduction reflects the transition to lower global warming potential (GWP) HFCs, and increasing use of low GWP, non-HFC refrigerants. For example, it is estimated that 95 per cent of domestic refrigeration has already transitioned to hydrocarbon refrigerants, and domestic split system air conditioners are experiencing rapid growth in the use of lower GWP HFCs.

Visit the Department of the Environment and Energy's website to view the full report **www.environment.gov.au/protection/ozone/publications/cold-hard-facts-3**

Annual indexation to application fees for RAC industry permits

The Ozone Protection and Synthetic Greenhouse Gas Management Regulations 1995 allow for the annual indexation of permit application fees.

The annual indexation formula uses the Wage Price Index (WPI) figures published by the Australian Bureau of Statistics. Consistent with the WPI figures released in November 2018, refrigeration and air conditioning industry permit application fees will increase by 2.282 per cent from 1 January 2019.

Also, from 1 January 2019, the default duration for refrigerant handling licences and trading authorisations will be three years, except for refrigerant trainee licences which will remain at one year. You can apply for a licence or authorisation of a shorter duration, for example for one or two years, by contacting the ARC via email at **enquire@arctick.org**

A table outlining the current fees and fees for 2019 is below.

RAC permit scheme fees	Duration	2018 Application Fee	2019 Application Fee
Refrigerant Handling Licence	3 years	$219	$225
Restricted Refrigerant Handling Licence	3 years	$219	$225
Trainee Refrigerant Handling Licence	1 year	$31	$32
Refrigerant Trading Authorisation	3 years	$705	$720
Restricted Refrigerant Trading Authorisation	3 years	$219	$225

Stability for industry: ARC to continue supporting industry through permit scheme

The ARC has been re-awarded the contract for administration of the refrigeration and air conditioning (RAC) permit scheme, for up to nine years.

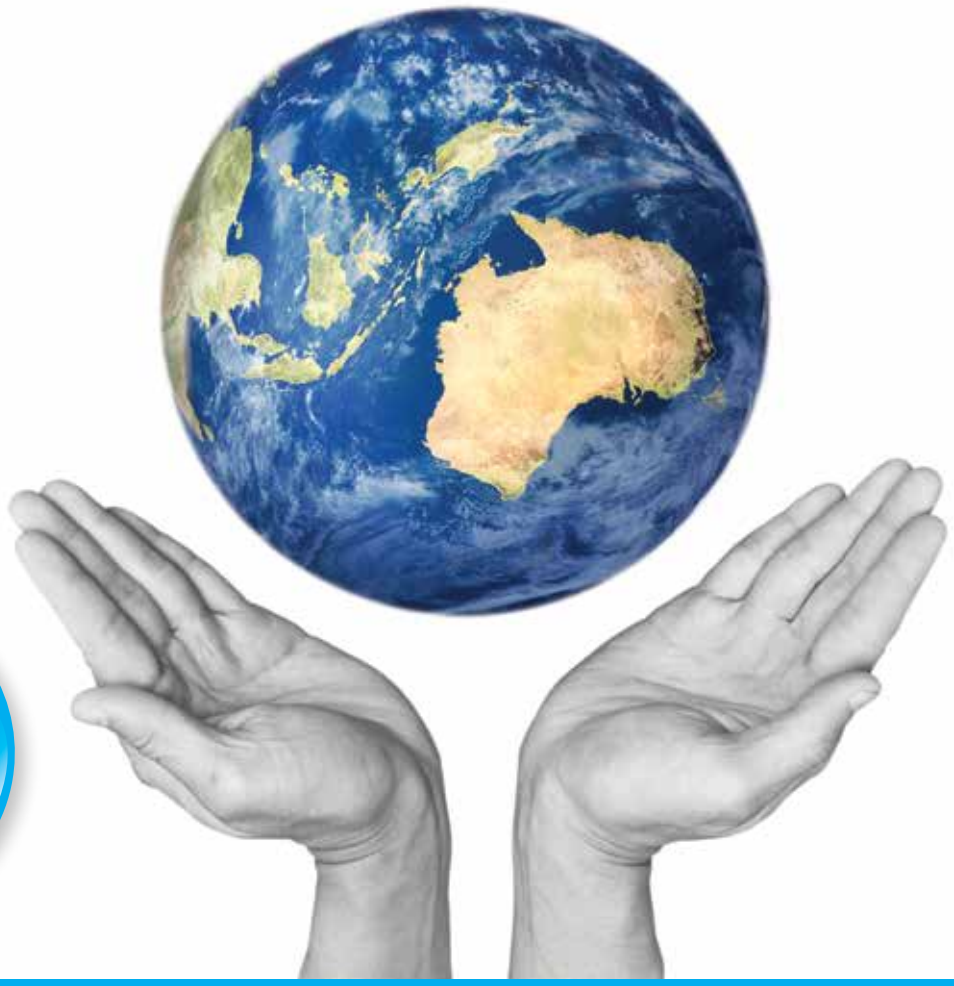
The ARC has administered the scheme successfully – in partnership with industry and government – since its inception in 2005.

The ARC is both proud and humble to continue this valuable work for industry. Since 2005 we have seen a reduction in emissions of HFC, HCFC and CFC refrigerants. Controls around the handling and trade of refrigerant have resulted in over 24.37 megatonnes of CO_2-equivalent direct emissions savings.

With 90,000 permit holders the scheme has never been as strong and, despite an uncertain refrigerant environment, it continues to grow.

In a modern world where climate control plays such a vital role, Glenn Evans, CEO of the ARC, said it's the hard work of industry which has paved the way for the permit scheme to continue.

"The RAC industry is vital to modern life. We have access to cutting-edge technologies and our environmental stewardship is world-leading. And not only that, the higher skill levels within industry has directly delivered improved environmental outcomes, consumer protection and energy efficiency," he said. The RAC permit scheme is administered by the ARC on behalf of the Australian Government, under the Ozone Protection and Synthetic Greenhouse Gas Management Regulations 1995.



QUICK FACTS:

HFC gas and HFC equipment

In 2016 a global phase-down of hydrofluorocarbon (HFC) production and imports was agreed under the Montreal Protocol on Substances that Deplete the Ozone Layer.

Australia's phase-down of imports of HFCs is underway, with importers required to hold quota for all imports of bulk HFCs from 1 January 2018. Phasing down imports of these potent greenhouse gases will lead to reduced emissions and contribute to meeting Australia's greenhouse gas emission reduction targets.

What's happening with HFC bulk gas?

- The amount of bulk HFC that can be imported each year is gradually reducing from 1 January 2018. This is managed through a quota system on imports.
- This is a phase-down not a phase-out. There will be a residual amount (up to about 1.6 million tonnes carbon dioxide equivalent annually) of HFC imports permitted from 2036 which will be available indefinitely.
- Use of HFC that is recovered in Australia is allowed. There appears to be little or no HFC being recovered and returned to manufacturers' specifications in the current market as new supply is sufficient. This may change as the phase-down progresses.

What's happening with HFC equipment?

- 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 air conditioners or refrigerators.
- HFCs contained in imported equipment are accounted for, and subject to the phase-down, in the country of manufacture.
- Existing equipment already in Australia is not affected by the phase-down. Regular servicing can benefit owners through reduced electricity costs and reduced replacement costs for leaked refrigerant.
- New high global warming potential HFC equipment production in Australia and overseas is expected to reduce as the international HFC phase-down progresses.

Will HFC equipment imports be banned in future?

- This may be considered in the future – but only following a review and further consultation with industry, and where alternative technologies are readily available. Any future bans would only apply to new equipment being imported or manufactured and not to equipment already installed in Australia.

More information can be found at **www.environment.gov.au/protection/ozone/hfc-phase-down**

Helping you attract customers this summer – ARC summer advertising blitz

This summer, ARC will be delivering an online marketing campaign targeted at people looking to buy, install, service, repair and dispose of air conditioners (domestic and auto), refrigerators and freezers.

The main goal of the campaign will be to connect potential customers to authorised businesses and licensed technicians through the consumer website www.lookforthetick.com.au. In addition, the campaign aims to educate consumers on the benefits of using appropriately licensed technicians and the damaging effects of HFC, HCFC and CFC refrigerants on the environment.

Various online platforms will be used to deliver this campaign including Google, Facebook and a number of high-profile news and entertainment websites. Last year our advertising drove over 250,000 people to the www.lookforthetick.com.au website.

This year's campaign will include a focus on the differences between a Full and a Restricted licence, and what services each licence entitles a holder to perform. It is vital that consumers are using technicians with the right qualifications and experience for the job.

Retailers partnering with ARC to promote 'Look for the tick'

ARC has partnered with air conditioning retailers around Australia to help promote the benefits of using appropriately licensed technicians.

ARC has produced a 'checklist' for retailers to display in-store, highlighting key questions consumers should be asking before they buy an air conditioner.

The questions in the 'checklist' help retail sales staff and customers to think of the important factors that influence a unit's performance. It also highlights the significance – and legal requirement – of using appropriately licensed technicians to install and repair air conditioners containing HFC, HCFC and CFC refrigerants.

The checklist can be viewed on the website **www.lookforthetick.com.au**

Access Canberra Safety Alert 065 – Gas Explosion

Article reproduced from *Access Canberra*

A tragic death occurred outside a south-side Canberra school late on 2 August 2018 following a gas explosion sourced from a work vehicle. Preliminary investigations indicate that an acetylene gas bottle leaked into a compartment at the back of a work ute and an ignition source has caused an explosion tragically killing the driver who was standing next to the vehicle.

The ACT Work Safety Commissioner has issued this safety alert as a timely reminder to everyone regarding the storage and transportation of gas cylinders.

Background

Flammable gas cylinders, including oxygen, acetylene, LPG, propane and butane are commonly transported in vehicles. If there is a leak of gas then any ignition source, often the vehicle's electrical system, can cause a significant explosion.

Checks

When transporting or storing flammable gas cylinders good ventilation is essential.

You should ensure:

- cylinder valves are tightly closed
- the regulator, hoses and torch are disconnected
- cylinders are secured in an upright position
- cylinders cannot be struck by other objects (such as loose tools or other materials) during transport
- there is no leakage around the main valve area (test with an appropriate detector or soapy water)
- carry a dry powder fire extinguisher.

Vehicles

Transport in open-type vehicles is preferred where unrestricted ventilation is provided. Some gases are heavier than air so care should be taken to ensure that there is not any low points where leaked gases can accumulate or pool.

Gas cylinders must not be carried in the passenger compartment of any vehicle. If cylinders must be carried in closed areas of vehicles, a storage cabinet with outlets in the base of the cabinet vented outside the vehicle must be used. Purpose built gas storage cabinets are available from various gas and safety gear outlets.

Staff and Training

Ensure persons using or transporting gas cylinders are appropriately trained and instructed on the proper handling, storage and transport of gas cylinders including emergency procedures.

Further Information

For further information on gas safety visit the Access Canberra website **www.accesscanberra.act.gov.au** or contact WorkSafe ACT on (02) 6207 3000 or email CMTEDDWorkSafeACT@act.gov.au.

Technician safety comes first with R32 training endorsement

Training for A2/A2L flammable refrigerants, including R32, recently received official endorsement from the Victorian Registration & Qualification Authority (VRQA).

R32 is rated as an A2L lower flammability refrigerant under AS/NZS ISO 817:2016.

In 2017, after completing industry consultation, ARC submitted an application with support letters to the VRQA for a new course for the handling of A2/A2L flammable refrigerants.

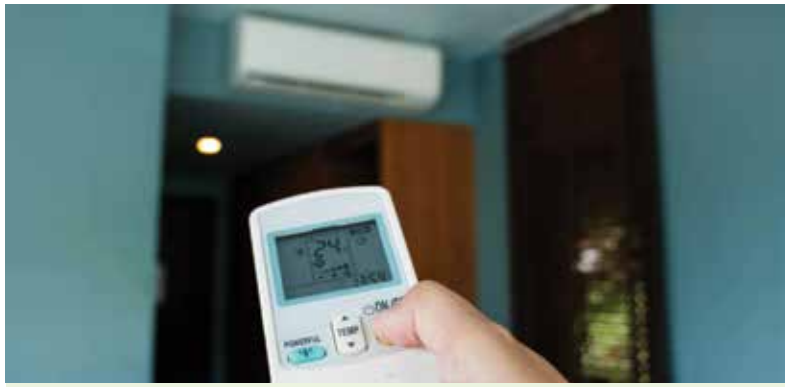
The new unit is VU22583 Handle Class A2/A2L Flammable Refrigerants. It will sit in the course – 22329 VIC Heating, Ventilation & Air Conditioning Service as an elective. This new course will provide increased safety for technicians in a growing refrigerant market, and can be used nationally.

The Air Conditioning & Mechanical Contractors' Association (AMCA) are currently developing resource material which will be used to deliver the course.

AMCA, in partnership with Box Hill Institute at the Refrigeration Climate Control Centre of Excellence (RCCC), have been delivering a number of R32 masterclasses with representatives from the Air Conditioning and Refrigeration Equipment Manufacturers Association.

R32 refrigerant is a controlled substance under the *Ozone Protection and Synthetic Greenhouse Gas Management Act 1989*. As a result, technicians and businesses working with R32 will require an appropriate refrigerant handling licence. A refrigerant trading authorisation is also required to acquire, possess or dispose R32 refrigerant.

To read more visit visit **training.gov.au/Training/Details/VU22583**



New residential air conditioning standards released

In December, a new residential air conditioning standard for residential heating and cooling systems was released – AS/NZS 5141:2018.

This standard specifies requirements for the design, selection, installation and commissioning of climate control systems to maximise operating energy efficiency within Class 1 residential buildings.

The standard brings up the requirement for holding a refrigerant handling licence when handling refrigerants that are HFC, HCFC or CFC.

ARC was part of the committee that reviewed the public comments for the new standard. We sit on a number of Standards Australia sub-committees providing advice and guidance on behalf of the refrigeration and air conditioning industry.

References have also been updated in this Standard to include Australian refrigeration designation and safety standards 5149: 1-4 and 817, adopted by industry in 2016 to replace the 1677 series.

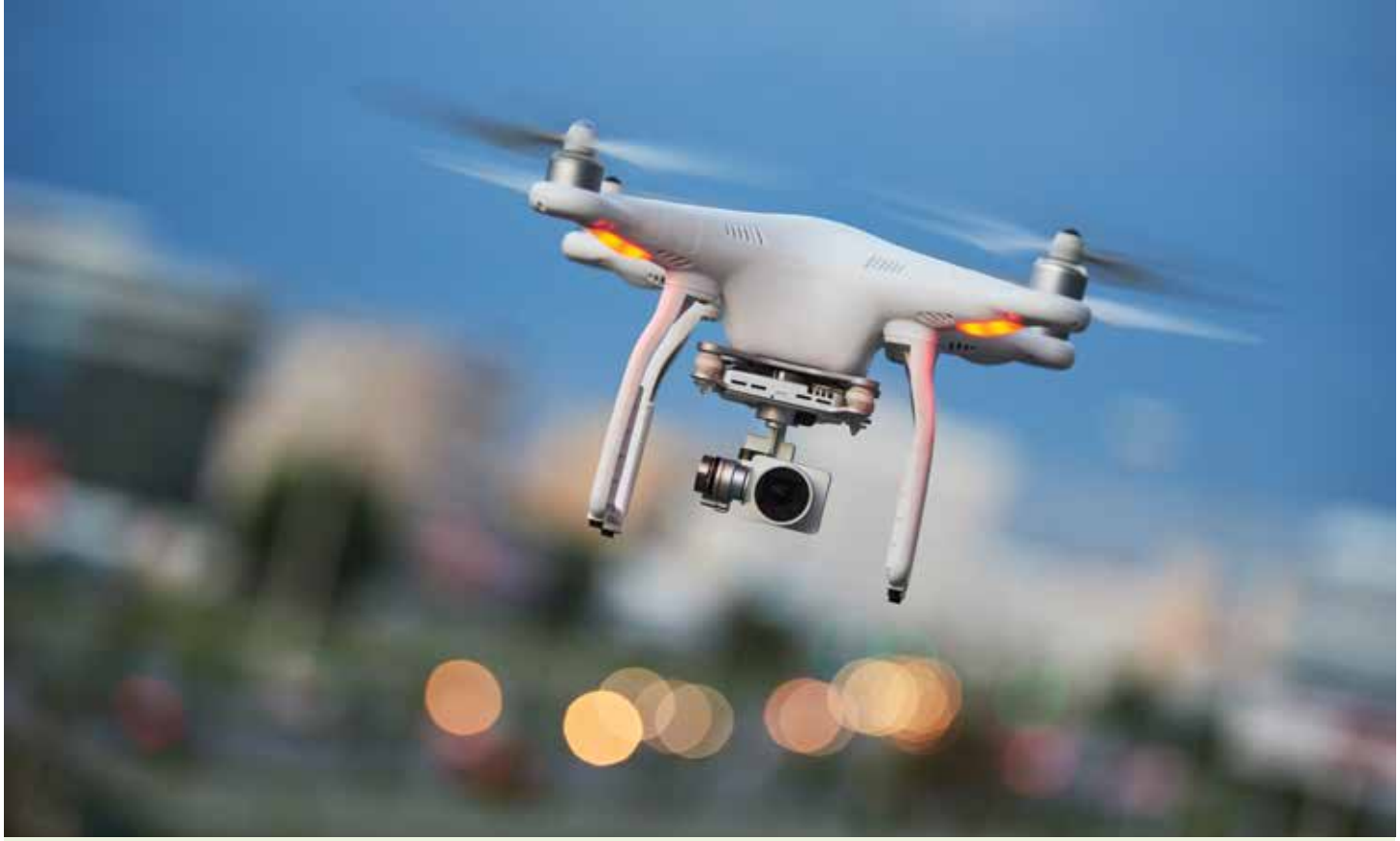
New RAC industry advisory body

A new refrigeration and air conditioning (RAC) industry advisory body will be formed to ensure the ARC's RAC industry board and the Department of the Environment and Energy receive industry-specific expert advice to inform implementation of the permit scheme.

The industry advisory body will provide advice on topics including (but not limited to):

- introduction of new gases or equipment used in the Australian industry
- trends or developments in similar industries internationally which are relevant to the Australian industry
- improvements to permit or training requirements to reduce the risk of emissions
- proposed changes to the Regulations and implications for industry.

The ARC will call for nominations for the industry advisory body early in the new year.



The future of refrigeration may be smaller than you think

Fonterra, a major dairy company in New Zealand, is currently looking at transporting milk using temperature-controlled drones, bypassing road infrastructure and increasing speed of delivery.

Unmanned aerial vehicles (UAV), commonly known as drones, were initially developed for military use and are operated by a remotely located pilot. Today, drones are increasingly being used by civilians for a variety of purposes including recreation, commerce, science and agriculture. Researchers at Johns Hopkins Medicine (USA) have also developed refrigerated drones that can safely transport medical supplies such as blood, medications, and vaccines. Researchers have perfected a system of cooling on drones which can keep blood carried in specially refrigerated coolers at the correct temperature during drone delivery. Solving the problem of refrigeration makes the use of drones to deliver blood supplies or other medical supplies more realistic.

VIC plumbing regulations now align with RAC permit scheme

New Victorian plumbing regulations came into effect on the 18th November 2018.

The new regulations remove the requirement for a licensed plumber to sign off on refrigeration and air conditioning (RAC) work, better reflecting the way the RAC industry actually operates.

The competencies for the new regulations also align better with the RAC permit scheme, with the underlying qualification being in the electrotechnology stream.

These changes are good for RAC technicians and demonstrate that the RAC permit scheme is seen as the licensing standard for RAC work.

Compliance infringement notices

Infringement notices have been introduced in the RAC industry and fire protection industry end-use permit schemes.

These 'mid-range' compliance tools can be more effective and efficient alternatives to prosecution in appropriate circumstances, particularly for minor breaches.

Infringement notices were already available under the *Ozone Protection and Synthetic Greenhouse Gas Management Act 1989* – i.e. relating to emissions and under the import/export program.