



# COOLCHANGE

## In this issue

COVID-19 update: Guidance and financial support for businesses

Ozone for life: 35 years of ozone layer protection

Streamlining e-applications – handy tips

The benefits of cooling efficiency – International Energy Agency report

Facts and Figures – R32 refrigerant

The vital ingredients of an essential industry

Consumer advertising campaign to kick-start industry into summer

Ozone for life:  
35 years of  
ozone layer  
protection  
> page 2



## COVID-19 update: Guidance and financial support for businesses

To ensure licensed technicians and authorised businesses are aware of the information and financial entitlements available to them during the COVID-19 pandemic, below is a selected list of government-related support.

### Business support

Below is a list of the key financial support available to businesses. To read more about each category, and others, visit <https://covid19inlanguage.homeaffairs.gov.au/businesses>

- JobKeeper payment (extended to 28 March 2021)
- Ensuring cash flow to pay bills and wages
- Supporting apprentices and trainees
- Credit and loans
- Increasing the instant asset write-off

### Employer/employee support

Information on reducing the risk of COVID-19 in the workplace can be found on the Safe Work Australia website at [www.safeworkaustralia.gov.au/covid-19-information-workplaces](http://www.safeworkaustralia.gov.au/covid-19-information-workplaces)

The Fair Work Commission has published useful information on workplace entitlements during the COVID-19 pandemic. Visit [www.coronavirus.fairwork.gov.au](http://www.coronavirus.fairwork.gov.au)

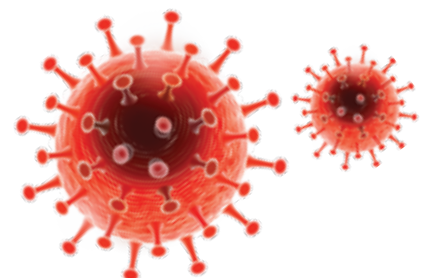
### Health support

The Department of Health has put together a useful FAQ section on COVID-19 and how to best manage your health during this time. Visit [www.healthdirect.gov.au/coronavirus](http://www.healthdirect.gov.au/coronavirus)

### Licensing update – Open for Business

The ARC continues to manage the refrigeration and air conditioning industry Permit Scheme with some temporary changes to our normal process:

- Face-to-face permit condition checks have been replaced by electronic checks (desktop reviews) via email.
- The ARC reception area is currently closed to the public. If you need to drop off an application form or other documents, just call the ARC on 1300 884 483 or post to ARC, Locked Bag 3033, Box Hill VIC 3128. Alternatively, you can scan and email the documents to [enquire@arctick.org](mailto:enquire@arctick.org).
- Some employees and functions have been forced to move off-site due to COVID-19 restrictions. This may cause some delays in the services we provide however we are still committed to processing permit applications and renewals as quickly as possible.



>> continued on back page

# Ozone for life: 35 years of ozone layer protection

September 16 is World Ozone Day and the theme for this year is 'Ozone for life: 35 years of ozone layer protection'. World Ozone Day commemorates the date of signing, in 1987, of the Montreal Protocol on Substances that Deplete the Ozone Layer.

## What's the big deal about the ozone layer?

Life on Earth would not be possible without sunlight. But the ultra violet radiation (UV radiation) emanating from the sun would be too much for life on Earth to thrive were it not for the ozone layer. This stratospheric ozone layer shields Earth from most of the sun's harmful UV radiation. Sunlight makes life possible, but the ozone layer makes life as we know it possible.

The ozone layer is like sunscreen for the Earth. Ozone depleting substances (ODS), including some refrigerants, damage the ozone layer, allowing more UV radiation from the sun to pass through, causing harm to our health and lifestyle.

## The ozone layer and licence holders

Australia has phased out the import and production of most ozone depleting chemicals to meet our obligations under the Montreal Protocol on Substances that Deplete the Ozone Layer – the international treaty to restore the ozone layer.

Australia has also implemented additional measures to further reduce emissions of these harmful chemicals, including the refrigeration and air conditioning industry Permit Scheme which controls the trade, use and recovery of ozone depleting and synthetic greenhouse gas refrigerants.

A 2018 assessment by the World Meteorological Organisation (WMO) found that the Antarctic ozone hole has been shrinking by about 1 per cent to 3 per cent per decade since 2000. Credit is due to the Montreal Protocol and countries like Australia further restricting emissions of harmful chemicals, including the RAC industry Permit Scheme.

## Read more

**WMO** [www.unep.org/sites/default/files/2019-05/SAP-2018-Assessment-report.pdf](https://www.unep.org/sites/default/files/2019-05/SAP-2018-Assessment-report.pdf)

**NASA** [www.nasa.gov/feature/goddard/2019/2019-ozone-hole-is-the-smallest-on-record-since-its-discovery](https://www.nasa.gov/feature/goddard/2019/2019-ozone-hole-is-the-smallest-on-record-since-its-discovery)



# Streamlining e-applications – handy tips

Online applications for refrigerant trading authorisations (RTAs) and refrigerant handling licences (RHLs) make up 95 per cent of all applications received by the Australian Refrigeration Council (ARC). Using the online application facility is a quick and easy way to apply for or renew your permit.

## Checks to undertake before you renew:

- Check to see that your permit hasn't expired. If it has, and you wish to continue to hold a permit, you have up to 6 months after expiry to renew.
- Check that your details are up-to-date on the ARC's self-service portal: name, address, email, phone etc. Visit [www.arctick.org](http://www.arctick.org) and go to the change your details section for RTA or the change of details section for RHL.
- For RTAs, check that the RHL holders listed against the RTA are current. Use the RHL check facility at [www.lookforthetick.com.au/licence-check](http://www.lookforthetick.com.au/licence-check).
- If you hold a RTA and RHL, check that you are renewing the correct permit.
- For RTAs, check that there are no compliance issues pending from a permit condition check. This can hold up your renewal. If you are unsure, contact the ARC on **1300 884 483**.

## Useful tips

- The online application/renewal facility should be used through Google Chrome or Firefox web browsers for optimal performance. It is also best to use a PC or laptop, not a mobile phone.
- Make sure there are no symbols in the business name, for example: &, \* or @. Symbols can come up as errors on your application/renewal and cause delays.
- Set reminders for your permit expiry date(s). The ARC sends all permit holders renewal reminders 90 and 30 days prior to expiry. However, setting your own reminders is a great way to ensure you don't forget to renew your permit.

If you have any questions about applying for or renewing a permit, please contact the ARC Licensing and Customer Service Team on **1300 884 483** or [enquire@arctick.org](mailto:enquire@arctick.org).

# The benefits of cooling efficiency – International Energy Agency report

In July 2020 the International Energy Agency (IEA) and the United Nations Environment Programme (UNEP) jointly released a report on *Cooling Emissions and Policy Synthesis: the benefits of cooling efficiency and the Kigali Amendment*.

The report is a global call to action for the heating, ventilation, air conditioning and refrigeration (HVAC&R) industry and governments worldwide. It encourages industry and governments to accelerate the move to more climate and energy efficient cooling to meet the targets set under 2016 Kigali Amendment (to the Montreal Protocol on substances that deplete the ozone layer) to phase-down the use of hydrofluorocarbon (HFC) refrigerants.

The report focusses on the following questions:

- What is the climate mitigation impact of HFC phase-down?
- What are the current uses of HFCs and what are their substitutes?
- What technologies are available to hasten the transition to climate friendly and energy efficient cooling?
- What is the status of cooling energy efficiency and its potential for improvement?
- What policies and measures can countries apply to unlock the multiple benefits of climate friendly and energy efficient cooling?

According to the report, fast and coordinated action through efficiency improvements and refrigerant transition can avoid between 210-460 gigatonnes of carbon dioxide equivalent emissions globally over the next four decades. This is equivalent to about 4 to 8 years of global greenhouse gas emissions, based on 2018 levels.

The graphic below (IEA report 2020) shows that although many countries are implementing measures that contribute to efficient cooling, more can be done to achieve the best available outcomes:



Efficiency estimated in ISO Cooling Seasonal Performance Factor (CSPF) based on IEA data converted to common metric using relationships in Park et al. (2020).








A UNEP 2018 study quoted in the report highlighted the commonly used high global warming potential (GWP) refrigerants in the market, and available alternatives with lower GWP, indicating that there are opportunities for improvement

**IMPORTANT: Alternative refrigerants, like the ones listed in the table below, should only be used where specifically advised by the manufacturer and in-line with relevant Standards.**

Market sector 	High GWP HFC in common use (GWP )	Examples of lower GWP alternatives (GWP)
Domestic refrigerators	HFC-134a (1360)	→ HC-600a (<<1)
Small split room air-conditioning	R-410A (2100)	→ HFC-32 (704) → HC-290 (<1)
Water chillers for air-conditioning	HFC-134a (1360)	→ HFO-1234ze (<1) → HFO-1233zd (1) → R-514A (NA)
Food retail systems	R-404A (4200)	→ R-744 (1) → R-448A (1400) → R-449A (1400)
Mobile air-conditioning	HFC-134a (1360)	→ HFO-1234yf (<1) → HFC-152a (148) → R-744 (1)

Source: UNEP (2018) OzonAction Kigali Fact Sheet 19 –Phase-down Strategy: Impact of Gas Choices. Global warming potentials for 100-year time horizons (GWP-100) are WMO et al. 2018 values updated with the most recent analysis. Note, some of the GWP figures indicated by UNEP are incorrect. The correct figures using IPCC Assessment Report 4 calculations are: R32 = 675, R134a = 1,340, R404a = 3,922, R410a = 2,088, R448a = 1,386, R449a = 1,396 and R152a = 124.

The report estimated that “there are 3.6 billion cooling appliances in use globally and that number is growing by 10 devices per second. However, if cooling is provided for all who need it, not just those that can afford it, there would be a need for up to 14 billion cooling appliances by 2050”.

This growth in demand to provide for cooling as an essential service for all will further increase global warming so rapid and collective action to move to climate friendly and energy efficient cooling is much more critical as we move forward (IEA report 2020).

The full 48-page peer-reviewed report can be found by visiting  
<https://wedocs.unep.org/bitstream/handle/20.500.11822/33094/CoolRep.pdf?sequence=1&isAllowed=y>

# Facts and Figures – R32 refrigerant

R32 refrigerant is a low global warming potential (GWP) alternative to R410A commonly used in new air conditioning systems.

Globally, small air conditioning systems are rapidly transitioning from R410A to R32. In 2018, R32 systems made up 53 per cent of all pre-charged small air conditioning units imported to Australia, an increase from 39 per cent in 2016 and up from effectively zero in 2012.

Some manufacturers in Europe are also supplying variable refrigerant flow systems using R32, which may increase the likelihood of larger, ducted systems coming into Australia in the future.

A refrigerant handling licence is required when using R32 refrigerant, and a refrigerant trading authorisation is required to acquire, possess and dispose/sell it.

R32 refrigerant, and the systems designed for it, present significant changes to the service tools, working practices, component standards and workplace safety considerations relating to install, repair, service and refrigerant recovery. Note: R32 refrigerant (A2L) is not a replacement for existing R410A (A1) equipment. Please refer to the tables below for properties and characteristics of R32.

R32 – KEY POINTS
Lower flammability with a safety classification of A2L
High operating pressure
Dangerous Goods Class 2.1 flammable gas
Only use equipment rated for use with A2 and A2L refrigerants
Suitable trade training in flammable refrigerants is recommended

Table 1: Comparisons between R32 and R410A

PROPERTIES	R32	R410A
Boiling point	-51.7°C	-51.0°C
Critical temperature	78.4°C	72.0°C
Saturation pressure at 4°C	818kPa	806kPa
Saturation pressure at 40°C	2380kPa	2337kPa
Global warming potential	675	2088
Flammability rating	A2L lower flammability	A1 non-flame propagation

Table 2: Safety groups as determined by flammability and toxicity (AS/NZS ISO 817)

FLAMMABILITY CLASS	SAFETY GROUP	
Higher flammability	A3	B3
Flammable	A2	B2
<b>R32</b> Lower flammability	A2L	B2L
No flame propagation	A1	B1
	<b>Lower Toxicity</b>	<b>Higher Toxicity</b>

Table 3: Characteristics

CHARACTERISTICS
Non-toxic
Hydrofluorocarbon (HFC) gas
Oil: POE (Poly Olester Oil)
Non-ozone depleting



# The vital ingredients of an essential industry

COVID-19 has shone a spotlight on the essential services the refrigeration and air conditioning (RAC) industry delivers to society.

From refrigeration of food and medicine, to heating and cooling during lock-downs, it is clear that managing this crisis would be very difficult without it. And it is the indispensable nature of RAC that has ensured most of the industry continues to be allowed to work during the various stages of restrictions.

Our industry is strengthened by this. It is also influenced by a number of other key factors that contribute to its strength:

## Strength in numbers

Support for the RAC industry Permit Scheme has never been stronger with total permit holders (individuals and businesses) recently ticking over to 105,000 Australia-wide – the highest ever. The 2019-20 financial year alone saw an additional 8,000 permit holders join the scheme.

## Effective regulation

The RAC industry permit scheme provides a framework which has driven the level of skill in the industry up, ensuring the right players are in the game. Prior to the scheme, practically anyone could do RAC work.

The scheme is a national (allowing ease of movement between states and territories) qualifications-based (ensuring professional and skilled technicians) program. It has the environment as its base, but also covers off on consumer engagement and industry related issues.

## Environmental results

The RAC industry has reduced emissions of synthetic greenhouse gases by 80-90 per cent since 1990\*, according to figures reported by Refrigerant Reclaim Australia (RRA) and is projected to reduce remaining emissions by a further 80 per cent by 2036.

Licensed technicians and authorised businesses play a vital role in contributing to Australia meeting its international obligations to reduce emissions of harmful gases and to improve the health of the ozone layer. See the 'Ozone for life' article on page 6 to read more about how permit holders have made a real and positive change to our environment.

*\*Data taken from the baseline studies into CFC and HCFC use by the Australian Government in the 1990's. Emissions from ozone depleting substances totalled 90 million tonnes in the early 90's and is less than 8 million today.*

# Consumer advertising campaign to kick-start industry into summer

One of the benefits of holding a refrigerant handling licence (RHL) is that ARC actively promotes the value of using licensed technicians to consumers. And this advertising is not just paying lip service.

Last year over 200,000 people went to the [www.lookforthetick.com.au](http://www.lookforthetick.com.au) website where they located authorised businesses, checked that individuals had the right RHL for the job and learned about the value of the industry and the refrigeration and air conditioning (RAC) industry Permit Scheme.

With COVID-19 changing the business landscape, ARC will invest even more time and effort into this year's campaign to ensure permit holders are recognised for their professionalism and skill. Based on industry feedback, we will be focussing our messaging on the following key areas:

- Discouraging 'topping up' in the automotive sector.
- Encouraging the use of full RHL holders for service and maintenance.
- Encouraging regular servicing and maintenance of cooling systems – increasing work for appropriately licensed technicians.
- Encouraging consumers to ask for a technician's licence card – looking for the tick!

We will continue to use cost-effective marketing strategies including search engine marketing, online advertising, Google AdWords and Facebook advertising to get the message out in support of permit holders.

ARC is here to help and support the RAC industry, so if there are other areas you want to see promoted, or key messages that you want consumers to know about, drop us a line at [enquire@arctick.org](mailto:enquire@arctick.org).



## COVID-19 update: Guidance and financial support for businesses

### Important

If you are experiencing any hardship during this time, please feel free to get in touch and we will do our best to point you in the right direction and find you the support you need. The ARC Call Centre is still available to support permit holders during this pandemic. Speak to one of our Customer Service and Licensing employees by calling **1300 884 483** Monday to Friday, 8.30am to 5.30pm (AEST). We're here to help.