



# COOLCHANGE

## In this issue

- Summer Campaign takes it up a notch
- Are you sure of what you're handling?
- ARCTick trainee licences essential
- Heat pumps pose end-of-life challenge
- Pair coil survey responses appreciated
- Two half-centuries and counting
- Record keeping leads to theft conviction
- \$100 million fund for energy saving
- Ozone-depleting refrigerants less than ever
- Clever technology keeps records up to date
- From the Field: Don't forget to display your RTA number
- Tech Talk: Refrigerant replacement requirements
- What's On
- By the Numbers

## Summer Campaign takes it up a notch

ARC's annual Summer Campaign has taken things up a notch for this season, with fresh new graphics to attract even more consumers to the "look for the tick" message.

The campaign promotes ARCTick licensed businesses and individuals to consumers, and runs from October to February to connect consumers with ARCTick licence holders. When people are looking for refrigeration and air conditioning services online, it helps direct them to the [www.lookforthetick.com.au](http://www.lookforthetick.com.au) website to contact licensed technicians in their local area.

This year's campaign continues last year's upgraded multi-media mix with YouTube and Connected TV video commercials combined with Google Search, Google Display, Facebook Lead Ads and Facebook Website click ads. For the first time, there will be both male and female technicians in the ads.

Connected TV (CTV) is when our TV viewing is being streamed over the internet, rather than via a signal coming in directly from the TV aerial. Typically, it uses an internet-connected device such as a smart TV, game console, Fetch or Foxtel box, computer or tablet, or phone apps such as 7plus or 9Now.

The important thing about CTV is that the channel we are watching knows quite a lot about us from our various online activities, just like Google or Facebook does.

As a result, it can target us with ads based on what it knows about us – and if that includes researching air conditioning, it can target us with 'look for the tick' ads.



# Heat pumps pose end-of-life challenge

A new report predicts heat pumps will increasingly dominate Australia's domestic hot water, pool heating and clothes drier markets over the next decade – and will lead to a major end-of-life challenge in handling the refrigerants they contain.

*Heat pumps – Emerging trends in the Australian market* has been prepared by the Expert Group for the Department of Climate Change, Energy, the Environment and Water (DCCEEW). It notes that government policies and incentives in Australia (and in Europe, USA, Japan and China) are driving dramatic growth in the technological advancement, manufacture and sales of heat pumps, mostly charged with HFC refrigerants. The report notes that most heat pumps are sealed units having low servicing requirements and low leak rates in service (similar to a household refrigerator), but the department is looking at ways to address the end-of-life challenge. ARC and the department have several resources to help understand the requirements around heat pumps and especially end-of-life disposal.



First is the report itself: **heat-pumps-emerging-trends-australian-market**



Fact Sheets 9, 10, 18 and 20 explain recovery requirements for both stationary and automotive sectors: **arctick/fact-sheets**



The arctick.org website also lists the various Refrigerant Recovery Licences and their qualification requirements: **arctick/licence-types**

## Are you sure of what you're handling?



Handling, reclaiming and recycling refrigerant is an essential part of our specialised work, but it is important to know what you are handling to avoid contamination and risk of injury to yourself and others.

No longer are there only a few familiar refrigerants. New blends are being released all the time, and there is no sure way to know what refrigerant you are working with if you don't have a tool designed to analyse the refrigerant. Simply assuming a refrigerant is pure, or relying on pressure temperature (PT) charts, can cause confusion and lead to avoidable mixing or inappropriate application and use of refrigerants.

Now more than ever you must verify that every refrigerant in a system or cylinder is correct, in order to ensure that equipment runs effectively and efficiently as designed. With the presence of only a small amount of air, moisture or another contaminant, a PT analysis can fail and lead to costly service. Moreover, mixing refrigerants can lead to system failures and potentially put the user or unsuspecting service technician at risk of injury or harm.

A refrigerant analyser in today's market is an essential, valuable tool to safeguard users and equipment, while promoting reclaiming and recycling to protect the environment. It is important to eliminate any uncertainty by analysing every refrigerant before handling, to safeguard yourself, staff, equipment and the environment.

## ARctick trainee licences essential



The first step towards becoming a licensed refrigeration technician is to obtain a Trainee Licence in order to handle refrigerant legally while training.

It is a requirement of an employer's Refrigerant Trading Authorisation (RTA) that their employees are licensed, and this includes apprentices. Most RTOs make a point of ensuring their refrigeration/air conditioning students are licensed, but employers carry the main responsibility for ensuring their apprentices have the required licence. There are two types of ARctick licences for apprentices, one which covers them for both the classroom and the workplace, and one for the classroom only, and both are valid for up to one year of training:

**TL000 – Trainee Refrigeration and Air Conditioning Licence** is required to work on air conditioning and refrigeration equipment and handle refrigerant while undertaking training and/or assessment in a classroom setting and at your workplace under supervision. The nominated supervisor must be the holder of a refrigerant handling licence that entitles them to engage in work for which the licensee is being trained. To obtain this licence an apprentice must provide proof of enrolment in the applicable course listed; and a Work Supervisor Declaration must be completed by the proposed supervisor.

**CL000 - Refrigeration and air conditioning trainee licence (Classroom)** is required to work on air conditioning and refrigeration equipment and handle a refrigerant only while undertaking training and/or assessment in a classroom setting. The licensee cannot handle refrigerant outside the classroom setting. To obtain this licence an apprentice must provide proof of enrolment in the applicable course.

Details of licence types and their requirements are on the ARctick website <https://www.arctick.org/refrigerant-handling-licence/licence-types>. Additional information is in Fact Sheet 8 which can be downloaded [https://www.arctick.org/media/29079/arc5353\\_factsheet08\\_jun2023.pdf](https://www.arctick.org/media/29079/arc5353_factsheet08_jun2023.pdf) for Fact Sheet 8.

# Pair coil survey responses appreciated



The Department of Climate Change, Energy, the Environment and Water (DCCEEW) has expressed its appreciation for the strong responses to its recent survey into pair coil micro-pitting.

Survey responses showed that most reported micro-pitting issues occurred in the past 18 months. Issues were spread across every state and territory, with Queensland having the most reports, followed by New South Wales and Victoria.

Micro-pitting reports involved most major brands of air conditioner and pair coil, with the number of cases generally reflecting the market share of the various brands.

This broad spread of brands and locations is similar to what was found in cases previously reported to ARC and added to DCCEEW's knowledge of the issue.

The department is now analysing the survey responses and the existing data from earlier reports to find common factors which might help to address the pair coil issue.

# Record keeping leads to theft conviction

Good record keeping by RTAs can have more benefits than just being compliant – in one recent case it led to the conviction of an employee who had been stealing gas.

When the owner of a NSW central coast refrigeration company noticed a discrepancy in their purchase and return records, it triggered an investigation that ultimately led to the conviction of an employee for the theft of 30 bottles of refrigerant.

The employer reported that their employees purchased refrigerant under the company's RTA and stored it in their work vans. He became suspicious when one of his employees had not been returning his unused refrigerant. The employee said he had stored the refrigerant at his home, but the owner noticed refrigerant for sale on Facebook Marketplace, and it turned out to be the stolen refrigerant.

NSW Police investigated and the employee was convicted of theft after pleading guilty.



ARC provides downloadable templates for refrigerant record keeping on the ARCTick website <https://www.arctick.org/refrigerant-trading-authorisation/business-reporting-templates-and-guides/>



# Two half-centuries and counting



When Trevor Judd's father, Norm, started Croydon Refrigeration Service in 1949, Trevor was not even a twinkle in his father's eye, but 74 years later, both father and son have clocked up their own personal half-centuries in the refrigeration business.

Croydon was then on the outer edge of Melbourne, and phone numbers had just three digits. By the time Trevor joined his dad in 1973 (and the business became Croydon Air Conditioning), the business did anything and everything involving refrigeration.

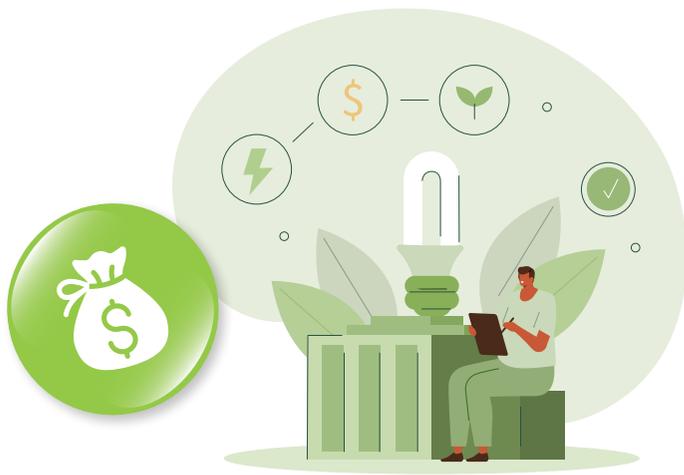
'We did interesting stuff,' Trevor recalls. 'We did sperm banks, blood banks, funeral homes, morgues – they took the bodies out for us to work on them. We used to do refrigeration for pubs and clubs in the old days, and we also did sales along the way.'

It was the very early days of popular refrigeration when Norm started out. 'Prior to the War, nobody had a fridge in their house,' Trevor said. 'Dad attended night school to learn about refrigeration, and prior to that he was a fitter and turner for Werner Refrigeration.'



Trevor started his own business in 1990, trademarked as 'The Guru of Cool', and his brother Philip has also been in the industry for 35 years. He has seen the industry change a lot since then, with today's major emphasis on the environment, and he was involved in the early days of the ARCTick licensing scheme.

These days Trevor hails from Ipswich in south-east Queensland – and the one thing he reckons hasn't changed is that's the need for good, qualified fridges. 'It doesn't matter where you go in the world, as a fridge you've always got a job,' he said. 'It gave Dad a job for 50 years, and now it's given me one for 50 years too.'



## \$100 million fund for energy saving

The Australian Government is partnering with local governments to deliver energy upgrades for community facilities like local pools, sporting clubs and community centres, to help councils cut their emissions and reduce their energy bills.

The new \$100 million Community Energy Upgrades Fund will co-fund upgrades with councils and has the potential to unlock over \$200 million in high-impact energy upgrades to save community facilities on their bills.

Eight million Australians use community sport infrastructure annually, and local councils own and operate many of the public sporting, community and cultural facilities involved.

This new funding could include upgrades like replacing energy-intensive heating in pools with heat pumps and installing energy-efficient lighting and battery storage at sporting fields, libraries and community centres.

The \$100 million funding boost adds to the \$1.6 billion Energy Savings Package delivering upgrades for homes and businesses in the 2023-24 Budget. Guidelines for the Fund will be designed in close consultation with key stakeholders, including the Australian Local Government Association.

## Clever technology keeps records up to date

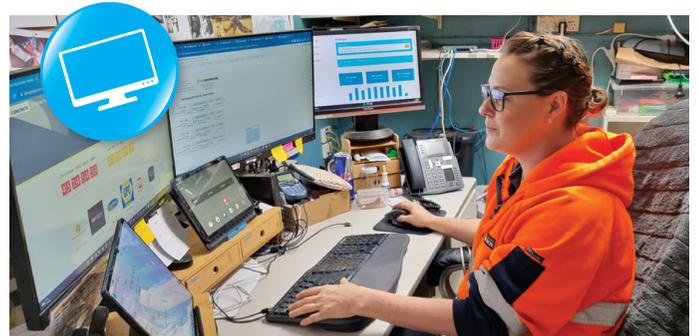
When Kate Heinz needed a better way to manage the paperwork for Geraldton City Mechanical, she decided the best way was with a phone app – so she made one.

Strictly speaking, it's not an app so much as an internal web page that provides an online portal to her admin records. It works with Google Forms to record refrigerant purchase and return, cylinder checks and maintenance, plus many other aspects of the business.

Geraldton City Mechanical operates throughout Geraldton, Perth and the north-west of Western Australia, and its mechanics can be away for two or more weeks at a time, so Kate was handed a lot of bits of paper when they got back to base.

"I don't have time for all that paper," Kate recalls, and the mechanics don't either. "The guys like it because they don't have to worry about paperwork. The moment they enter the information on their phones, it's in my system."

Kate adapted the ARC record-keeping template into Google Forms, so the information automatically populates an Excel file, and the records are always up to date. The system saves money too – ink and paper costs are down from more than \$3,000 a year to less than \$1,000.



Access ARC's ready-made templates and guides at <https://www.arctick.org/refrigerant-trading-authorisation/business-reporting-templates-and-guides//>



## Ozone-depleting refrigerants less than ever

Australia had a major ozone protection achievement to celebrate for World Ozone Day this year: ozone-depleting gases are now less than 5% of Australia's refrigerant bank, the refrigerants contained within refrigeration and air conditioning equipment.

World Ozone Day on 16 September celebrates the anniversary of the Montreal Protocol, and its theme for 2023 was 'fixing the ozone layer and reducing climate change'.

The removal of ozone-depleting substances from the refrigerant bank is a credit to ARCTick licensed climate control technicians and businesses.

The decrease in ozone-depleting gases in the refrigerant bank reflects the increasing destruction of gases such as R22, one of the most common ozone-depleting refrigerants. More than 120 tonnes of R22 were recovered in 2020-21 and sent for destruction at the Refrigerant Reclaim Australia (RRA) plasma arc facility in Melbourne.

Since Australia first banned chlorofluorocarbons (CFCs) in 1996, the climate control industry has moved on to eliminating hydrochlorofluorocarbons (HCFCs) such as R22, and the achievements speak for themselves.



# Don't forget to display your RTA number

FROM THE FIELD

A common area where Refrigerant Trading Authorisation holders fall short at their permit condition check is in not including their RTA number in their advertising.

It's a simple requirement: your RTA number – which is prefixed by the letters 'AU' – should be referenced on any advertising that promotes RAC services, as well as stationery items such as invoices and business cards.

Anywhere you put your business name or logo, that's advertising, and you need to include your RTA number. That includes vehicles, signage and any form of advertising – print, online, websites, outdoor, radio and TV, even promotional items. In addition to being a requirement, there are practical benefits. It assures your customers that you are one of the hands-on environmental heroes who is committed to reducing preventable emissions of ozone depleting substances and synthetic greenhouse gases.

Many RTAs also use the ARCTick symbol with their RTA number. This is not required by the regulations, but certainly worthwhile. Especially when ARC is running its Summer Campaign telling hundreds of thousands of people to 'Look for the Tick', it makes good business sense if people already associate you with the ARCTick symbol.

Holders of a Refrigerant Handling Licence (RHL) who are not employed or hired by an RTA must include their licence number – prefixed by the letter 'L' – on any invoices, receipts and quotes for work carried out under their licence.

For free artwork files for the ARCTick logo, email [comms@arctick.org](mailto:comms@arctick.org).

For full details of the requirements, see Fact Sheet 12.



## Refrigerant replacement requirements

Australia's HFC phase-down and the constant development of new refrigerants have created a need for technicians to understand the latest legal and safety requirements for refrigerant replacement.

TECH TALK

Heading the list is a new condition added to the ARC's Refrigerant Handling Licence requirements on 1 January 2020. It states that RAC equipment must not be charged with a refrigerant that has a higher global warming potential (GWP) than the refrigerant the equipment was designed to use, as recorded on the equipment compliance plate.

The bigger picture includes the Hydrofluorocarbon (HFC) phase-down, implemented on 1 January 2018 to achieve a gradual reduction in the amount of HFCs imported into Australia. The HFC phase-down covers only imports of bulk gas such as in cylinders. Existing operating equipment is not affected except that the quantity of HFCs imported will be gradually reduced, making it difficult to purchase and more expensive if required to service the equipment.

As a result, some existing refrigeration and air conditioning equipment may need to be retrofitted with a lower GWP refrigerant in the future. So what are the legal and safety requirements for replacing the refrigerant?

Firstly, all previously used refrigerant must comply with AHRI700 quality requirements for fluorocarbon refrigerants. In addition, the following Standards and Codes of Practice are called up in the Ozone Protection and Synthetic Greenhouse Gas Management Regulations 1995, Table 135.

- **AS/NZS 5149.4:2016 Refrigerating systems and heat pumps – Safety and environmental Requirements, Part 4: Operation, maintenance, repair and recovery (ISO 5149-4:2014, MOD).** *Clause 5.4 Change of refrigerant type* provides the procedure to change the refrigerant type which MUST be followed.
- **Australia and New Zealand Refrigerant Handling Code of Practice 2007, Part 1 – Self-contained low charge systems.** *Clause 11 Retrofitting* provides the procedure to change the refrigerant type which MUST be followed.
- **Australia and New Zealand Refrigerant Handling Code of Practice 2007, Part 2 – Systems other than self-contained low charge systems.** *Clause 12 Retrofitting* provides the procedure to change the refrigerant type which MUST be followed.

Other useful resources include:

- Heads of Workplace Safety Authorities (HWSA) Flammable refrigerant gases position paper [http://www.dmp.wa.gov.au/Documents/Dangerous-Goods/DMIRS\\_IS\\_FlamRefrigGases.pdf](http://www.dmp.wa.gov.au/Documents/Dangerous-Goods/DMIRS_IS_FlamRefrigGases.pdf)
- **AIRAH Flammable Refrigerant Safety Guide** – this online resource will help refrigeration technicians, apprentices and other stakeholders understand the range of skills and knowledge required to work safely with flammable refrigerants. Module 6 Video on system conversion rules provides information about the critical aspects of the issues surrounding changing the refrigerant in an existing system.
- **ARC 32 Refrigerant information for technicians**
- **Actrol – Drop-In-Refrigerant, Theory Vs Reality**
- **Freon™ – M099 Refrigerant (R-438A) Retrofit Guidelines**
- **Honeywell – Retrofit Guidelines, Solstice® N40, R-404A/R-507A to: R-448A**
- **Linde – Refrigerants. General HCFC to HFC retrofit checklist**

The full ARC Technical Resources on these requirements can be downloaded at [www.arcltd.org.au/media/1166/safety-and-legal-requirements-for-refrigerant-replacementfinal.pdf](http://www.arcltd.org.au/media/1166/safety-and-legal-requirements-for-refrigerant-replacementfinal.pdf)





# What's On

## 29/02

### 29 February 2024 AIRAH Melbourne West Industry Night

Victoria Pavilion, Ascot Vale. Broaden your networks in trades, innovation and engineering. Discover the latest technologies. Free to attend, but be sure to register. Details plus full 2024 calendar of AIRAH industry nights at [https://www.airah.org.au/industry\\_nights](https://www.airah.org.au/industry_nights).

## 11/04

### 11-13 April 2024 Auto Aftermarket Expo 2024

Melbourne Convention & Exhibition Centre. For the automotive service and repair industry. Hundreds of brands, the latest equipment, tools, technology and trends, plus a comprehensive new automotive training program. Details at <https://autoaftermarketexpo.com.au/>.

## 28/05

### 28-30 May 2024 ARBS 2024 at ICC Sydney

Air conditioning Refrigeration & Building Services Exhibition. International Convention & Exhibition Centre, Darling Harbour, Sydney. Join with more than 300 exhibitors and 8,000 visitors at Australia's big RAC expo. Details at <https://www.arbs.com.au/>.

# By the numbers

## Total Permit Holders (at 30 September)

RTA	Stationary	13,107
	Mobile	13,146
<b>RTA TOTAL</b>		<b>26,253</b>
RHL	Stationary	65,548
	Mobile	44,546
<b>RHL TOTAL</b>		<b>110,094</b>
<b>TOTAL all types</b>		<b>136,347</b>

## New Permits Issued (1 July-30 September)

New RTA applications	575
New RHL applications	1,093
New Trainee applications	2,926
<b>TOTAL applications</b>	<b>4,594</b>

## Permit Condition Checks (1 July-30 September)

On-site checks	1,114
Desk audits	125
<b>TOTAL</b>	<b>1,239</b>

## DID YOU KNOW RRA WILL PAY YOU FOR YOUR USED AND UNWANTED REFRIGERANT?



### To recover refrigerant:

- 1 Collect a recovery cylinder from your refrigerant gas supplier,
- 2 Fill it with used, contaminated and unwanted refrigerant from systems you service, repair, or decommission.
- 3 Return it to your refrigerant supplier and collect your rebate



**REFRIGERANT  
RECLAIM**  
AUSTRALIA

02 6230 5244

[www.refrigerantreclaim.com.au](http://www.refrigerantreclaim.com.au)