



**ARC** AUSTRALIAN  
REFRIGERATION  
COUNCIL



**Skills**

*A Multi-Pronged Approach*

# Evolution / Revolution

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- Move to new technologies / refrigerants
- Speed influenced by:
  - *Technology takers*
  - *Established market – used to HFCs and HCFCs*
  - *Environmental driver not as strong – end-use licensing (and destruction) limits emissions, has been in place +10 years*
  - *Training availability for new technologies / refrigerants*
  - *Government commitment (HFC Phase down – increase investment in new equipment, systems and refrigerant type)*
  - *Government responsibility for new refrigerants State based – expertise?*
- Adoption dependent upon ability of Industry to implement, commission and maintain
- How are technicians upskilled to support?

# Been here before?

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- Move away from HCFC R22
- Different this time
- National licence in place last time – much more orderly and provided:
  - Framework for training
  - Codes of practice
- More complexity this time due to:
  - Number and types of alternatives
  - More uncertainty about Industry direction

# Training

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- Training is often cited as the challenge in adoption of new technologies and refrigerants
- Reality is more complicated than that
- Uncertain environment – number of alternatives
- Course development – funding – demand and supply
- Trainer availability – upskilling of trainers

# The Trilogy

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- Need to think about in terms of:
  - Training
  - Licensing
  - Codes of Practice
- The three work hand-in-glove. Licensing is based on qualifications and those qualifications reference codes of practice and the codes of practice are called up as part of licensing compliance activities. All are interrelated.

# Interrelationships

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- Licensing:
  - Provides framework for training
  - Creates market for training
  - Works to Codes of Practice
- Codes of Practice
  - Minimum standard for work performed under licence
  - Training built around
- Training
  - Qualifications the basis for licensing
  - Designed around Codes of Practice

# Leap of Faith

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- Course developers (IRCs)
- Trainers
- Regulators
- Industry Associations
- Government
- Designers
- Technicians
- Mindful of political and regulatory landscape (reality)

# Accreditation Scheme

- ARC embarking on an accreditation scheme which incorporates the key refrigerants not covered by, and separate to, the current ODS and SGG (ARCTick) scheme.
- These are the natural and HFO refrigerants which have their own challenges and risks as they are flammable, toxic or operate at extremely high pressures.
- The scheme will be voluntary - however, it could be utilised by State/Territory Governments for licensing and/or as a Skills/Training Record for a Competent Person as defined under WHS Regulations.
- The accreditation will generally require the required qualifications of a current ARCTick licence as a pre-requisite. For credibility it will be AQF based.
- The refrigerants to be part of the scheme will include:
  - *Hydrocarbons*
  - *CO2*
  - *Ammonia*
  - *Class A2/A2L refrigerants*



# Automotive

## Automotive Air Conditioning Applications

Refrigerant Type	Required RHL	Accreditation Code	Accreditation Title	Required Unit of Competency
Hydrocarbons	Not applicable – No auto manufacturer approves the use of Hydrocarbons			
Carbon Dioxide	• AAC02 – Auto A/C	CD-AA-RS	Carbon Dioxide Refrigerant Safety	UEENEEJ184A Apply safety awareness and legal requirements for carbon dioxide refrigerant
	• AAC02 – Auto A/C	CD-AA-SR	Carbon Dioxide System Service and Repair	New AUR Automotive Unit required
Ammonia	Not applicable – No auto manufacturer approves the use of Ammonia			
Class A2 Refrigerants (R1234yf)	• AAC02 – Auto A/C	A2-AA-RH	Class A2 Refrigerants Handling	New AUR Automotive Unit required

# Stationary

## Stationary Applications

Refrigerant Type	Required RHL	Accreditation Code	Accreditation Title	Required Unit of Competency
Hydrocarbons	• Any Stationary	HC-SE-RS	Hydrocarbon Refrigerant Safety	UEENEEJ174A Apply safety awareness and legal requirements for hydrocarbon refrigerants
	• RAC01 - Full RAC • RDR04 - Restricted Domestic	HC-SE-SR	Hydrocarbon System Service and Repair	UEENEEJ175A Service and repair self-contained hydrocarbon air conditioning and refrigeration systems
	• RAC01 - Full RAC	HC-SE-IC	Hydrocarbon System Install and Commission	UEENEEJ176A Install and commission hydrocarbon refrigeration systems, components and associated equipment
Carbon Dioxide	• Any Stationary	CD-SE-RS	Carbon Dioxide Refrigerant Safety	UEENEEJ184A Apply safety awareness and legal requirements for carbon dioxide refrigerant
	• RAC01 - Full RAC • RDR04 - Restricted Domestic	CD-SE-SC	Carbon Dioxide Self-Contained System Service and Repair	UEENEEJ188A Repair and service self-contained carbon dioxide refrigeration and heat pump systems
	• RAC01 - Full RAC	CD-SE-SR	Carbon Dioxide System Service and Repair	UEENEEJ185A Repair and service carbon dioxide refrigeration systems
	• RAC01 - Full RAC	CD-SE-IC	Carbon Dioxide System Install and Commission	UEENEEJ186A Install and commission carbon dioxide refrigeration systems, components and associated equipment
Ammonia	Any Stationary	AM-SE-RS	Ammonia Refrigerant Safety	UEENEEJ178A Apply safety awareness and legal requirements for ammonia refrigerant
	Existing Ammonia Plant Operators Employer letter?	AM-SE-SO	Ammonia System Operator	UEENEEJ196A Operate Ammonia Refrigeration Plant (AIRAH)
	• RAC01 - Full RAC	AM-SE-SR	Ammonia System Service and Repair	UEENEEJ179A Repair and service ammonia refrigeration systems Repair and service ammonia refrigeration systems
	• RAC01 - Full RAC	AM-SE-IC	Ammonia System Install and Commission	UEENEEJ180A Install and commission ammonia refrigeration systems, components and associated equipment
Class A2 Refrigerants (R32, R1234yf)	Any Stationary	A2-SE-RH	Class A2 Refrigerants Handling	UEERA3024A Handle A2 Flammable Refrigerants (drafted, but not approved)

# Value to Industry

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- The new accreditation scheme will add value to the Industry:
  - Upskilling pathway for technicians
  - Assist in new technology and refrigerant uptake
  - Provides clarity around course gaps and required course development
  - Provides for an outcome to training
  - Gives trainers more confidence to provide training in an uncertain market

# The Way Forward

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- An evolving industry poses a number of challenges
- Leap of faith
- Training, licensing (accreditation) and Code of Practice interrelationships are critical
- Challenges:
  - *Training quality*
  - *Trainer quality and availability*
  - *Course availability*
  - *Relevant Codes of Practice*
- Genuine and positive industry partnership
- About Industry taking responsibility for moving forward
- Overall public, environmental, Industry and technician benefit



Pride in the Profession

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