Submission to the National Competition Policy Analysis 2025

As a Refrigeration Engineer and the part-owner of a business specializing in the installation, service, and maintenance of industrial and commercial refrigeration systems, I appreciate the opportunity to respond to the Productivity Commission's call for submissions on occupational licensing and standards harmonization. I have been in the Refrigeration Industry for 14 years as a design engineer. I have been a member of many industry working groups, designed and built several TAFE training systems for technician training, and have been the Chair or Associate Director of the AIRAH Refrigeration Special Technical Group for many years. Working alongside refrigeration technicians for many years and now as an employer, I feel this is an area that has always needed national attention and improvement.

Refrigeration and air conditioning (RAC) work is a high-risk, high-impact trade that is essential to daily life, energy consumption, and national decarbonisation goals. The industry spans complex technical domains—refrigerant handling, electrical and control systems, and plumbing—and its tradesmen require knowledge in all these areas, as well as keeping abreast of current technology and National/Worldwide legislation.

Currently, RAC licensing is based on:

- The ARCtick licence addresses refrigerant handling for synthetic gases under Commonwealth environmental legislation.
- State and territory occupational licences, where they exist, vary significantly in scope and coverage.

This mixed system leads to:

- Gaps in safety and industry knowledge, especially concerning flammable refrigerants, "Low-GWP" HFO refrigerants, and natural refrigerants like ammonia and hydrocarbons, which are outside the ARC licence's scope.
- Inconsistent scopes of work across jurisdictions.
- An industry that lacks incentive and structure for ongoing Continued Professional Development (CPD), despite the rapid evolution of refrigerant technologies and refrigerant phase-downs via the Montreal Protocol and Kigali Amendment.

A national licensing scheme, as opposed to expanded mutual recognition, is the only mechanism that can:

- Define minimum competencies and scopes of practice nationwide.

- Ensure safe handling of all refrigerants, including ammonia, hydrocarbons, CO_2, and HFOs.
- Facilitate CPD and enforce compliance with updated safety and energy standards.
- Facilitate a Tiered license framework to cover the wide range of niche works within HVAC&R.
- Address both occupational safety and environmental integrity, which are currently undermined by the disjointed regulatory framework.

I support the development of a tiered licensing system based on risk and complexity, linked to qualifications (e.g., Cert II for split system installations only, Cert III for general practice, advanced credentials for ammonia systems, CO_2 systems), and complemented by mandatory CPD and third-party capstone assessments. Enforcement is also key to success, but will also ensure safety standards are being met across all work sectors within HVAC&R.

Previous attempts at national licensing (e.g. 2013 NOLS) fell short due to lack of stakeholder alignment and political momentum. However, the landscape has shifted dramatically:

- Flammable and natural refrigerants are now widespread, increasing risks and necessitating updated skills.
- Climate policy has accelerated the HFC phase-down, requiring safe transition management at the installer and technician level. Australia is currently on track to miss its HFC Phasedown targets due to inaction and pre-phasedown stockpiling of refrigerant by wholesalers.
- Uniform licensing remains a barrier to effective system design and reliable installation, particularly in areas such as cold storage, healthcare, and industrial settings refrigeration. Additionally, there are no Bachelor of Engineering programs or higher in this sector to train design engineers for this field. Many of the industrial refrigeration engineers in this country are foreign-born.

A renewed attempt must:

- Be skills-based and nationally harmonised.
- Integrate environmental and occupational regulations into a unified framework.
- Engage stakeholders like ARC, AIRAH, training bodies, and state regulators through a national working group.

The adoption of international standards offers significant benefits, and a prime candidate is the ANSI/IIAR-2 standard for ammonia refrigeration system design, accepted in the USA and far more robust and practical than Australia's AS/NZS 5149 suite when designing/installing Ammonia Refrigeration Systems. IIAR is also producing CO2 and Hydrocarbon specific standards, although these are not recognized by ANSI.

The ISO/AS/NZ standard lacks:

- Specific guidance on ammonia system best practice.
- Clarity around modern ammonia safety protocols.

I urge the Commission to recommend:

- Harmonisation of ammonia system design standards with IIAR-2, either by adopting it directly or embedding its principles into revised local codes.

As both an engineer and business owner, I have seen firsthand the safety, cost, and productivity impacts of the current licensing regime. A national, competency-based scheme for refrigeration and air conditioning is urgently needed to protect public and worker safety, reduce emissions, and ensure consistent quality. Furthermore, aligning standards for ammonia refrigeration with IIAR-2 will increase the standards and safety across ammonia installations nationwide.

I am available to assist the Productivity Commission in further consultation or working group activities to help shape this essential reform.