MINISTRY OF BUSINESS, INNOVATION & EMPLOYMENT
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Licencing system for refrigeration, heating and air conditioning technicians: consulting on technical details

Background: what's already been decided

In 2019 Cabinet agreed to introduce a new licencing system for refrigeration, heat pump and air conditioning technicians. Many of the general requirements for this licencing system have already been decided by Cabinet, following public consultations in 2018 and 2020.

Below we outline some of these existing decisions. In this consultation, we are not wanting to revisit these decisions, but this information can help you understand how the system will work.

What work requires a licenced technician:

- Licenced technicians will only be required where work is being done on "commercial and industrial" systems, **not** domestic or "light commercial" systems. "Light commercial" systems are systems like vending machines, refrigerated display cabinets, retail icemakers and small drop-in packaged refrigeration units.
- Licenced technicians will only be required for work on systems that use flammable, toxic or very high-pressure refrigerants. More information on the suggested definitions for these terms is below.
- The "work" that requires a licenced technician includes installation, commissioning, repair, maintenance or decommissioning of relevant commercial or industrial refrigeration, heating and air conditioning systems, except where:
    - The work is in relation to an automotive air conditioning system
    - The work is in relation to a system on a ship or aircraft, and is being carried out by a technician licenced under maritime or civil aviation rules
    - The work being done is solely "prescribed electrical work" under the Electricity (Safety) Regulations and is being carried out by an authorised electrical worker.

Licence types:

Four licence types will be introduced. Each licence type will determine the types of work a technician is authorised to do and will have different qualification/competency requirements to get a licence. The licence types are:

Types of licence	Class of work the licence holder would be licenced to carry out
Refrigeration, heating, and air conditioning licence (including ammonia)	Work on any commercial or industrial refrigeration, heat pump or air conditioning system that uses a flammable, toxic, or very high operating pressure refrigerant (including transport refrigeration systems and systems using ammonia refrigerant).

Refrigeration, heating, and air conditioning licence (excluding ammonia)	Work on any commercial or industrial refrigeration, heat pump or air conditioning system that uses a flammable, toxic, or very high operating pressure refrigerant (including transport refrigeration systems), but excluding systems using ammonia refrigerants.
Heating, and air conditioning licence	Work on any commercial or industrial heat pump or air conditioning system that uses a flammable, toxic, or very high operating pressure refrigerant.
Transport refrigeration systems licence	Work on refrigeration systems mounted in trucks, trailers, and shipping containers.

Licence fees and term:

The fee to get a licence will be the same across all four licence classes. Applying for a licence (and renewing an existing licence when it expires) will cost $720 (incl. GST).

Licences will need to be renewed every 5 years.

When the new licencing system will take effect:

All technicians doing work on industrial and commercial refrigeration, heating or air conditioning systems that use hazardous refrigerants will need to hold a licence four years after the regulations take effect. We expect these regulations to take effect around March 2023, meaning technicians will need to be licenced by early 2027.

WorkSafe and Hanga-Aro-Rau (the Manufacturing and Engineering Workforce Development Council) are working to develop qualifications to support the licencing system. These qualifications will be how technicians can show that they have the necessary knowledge of hazardous refrigerants and refrigeration, heating and air conditioning systems to be licenced. Once qualifications have been developed, WorkSafe will set the competency requirements for each of the licence types in a Safe Work Instrument.

The licencing process:

Regulations will set the basic rules for the licencing process, like what information must be included in all licence applications, when WorkSafe can cancel or suspend licences, and how licencing decisions can be appealed.

MBIE are currently developing regulations that will establish a licencing process for workers doing various kinds of high-risk work. Refrigeration technicians, along with scaffolders, will be some of the first types of workers that will be licenced under these new high-risk work licencing regulations.

A draft of these new licencing process regulations will be released for comment in late September.

For refrigeration technicians, WorkSafe will be directly responsible for issuing and administering licences.

What we're seeking feedback on:

To make the licencing system work, we need to develop technical definitions for the types of systems that require a licenced technician to work on. We'd like your feedback on whether our proposed definitions are fit for purpose and will be able to be easily understood and applied.

Defining "commercial and industrial" systems

As mentioned above, Cabinet has decided the licenced technicians will only be required for work on "commercial and industrial" refrigeration, heating and air conditioning systems, and **not** for work on domestic and light commercial systems.

We want to develop a definition for commercial or industrial systems that:

- Captures the systems that pose significant health and safety risks to technicians and others if work is not done competently.
- Will avoid capturing domestic systems or light commercial systems that Cabinet has previously decided should be excluded (like display cabinets, water coolers, vending machines, retail icemakers, small packaged liquid chillers used in laboratories and small drop-in packaged refrigeration units).
- Allows businesses and technicians to understand and easily work out which systems require a licenced technician to work on.

Proposed definition:

We suggest a system should be considered a "commercial or industrial" refrigeration, heating or air conditioning (RHAC) system (requiring a licenced technician to work on) if either:

1) The RHAC plant has a cooling or heating capacity of 18 or more kilowatt hours, except where it is:
    a. hermetically sealed, vapour compression refrigeration or air conditioning plant that is contained in parts that are not permanently connected on site
    b. refrigeration or air conditioning plant that is designed not to be permanently connected to a power supply or to require the installation of pipework, and is contained in parts that are not permanently connected on site.

OR

2) The RHAC plant has a charge size of:
    a. 500 grams or more, where methane, isobutane, ethane, dimethyl ether, butane, propane, propylene or pentane (or a mixture of these substances) is used as the refrigerant; or
    b. 1200 grams or more, where difluroethane, trifluroethane, difluromethane, or tetrafluroprop-1-ene (or a mixture of these substances) is used as the refrigerant.

WorkSafe may also add additional substances and charge size limits to this list through creating Safe Work Instruments.

Notes on this proposed definition:

- In previous consultations, a number of businesses preferred not to use charge limits as the main method of definition, as these limits were not always a good indicator of risks and could be difficult to determine in some systems. To help manage these concerns, we are suggesting limb 1) of the definition instead relies on the kilowatt hours output of systems.
- However, we understand that for flammable refrigerants, charge sizes are the commonly understood and used measure. Given the particular risks associated with A2L, A2 and A3 refrigerants, we think it is useful to state systems using such refrigerant substances over specific charge thresholds are included (limb 2)) to ensure it is clear these systems are included.
- Where possible, we have attempted to align our thresholds with relevant international standards:
    - The charge size limits in limb 2) reflect those in the International Electrotechnical Commission's standard 60335-2-89:2019 for safety requirements for electrically operated commercial refrigerating appliances.
    - The 18 kWh threshold in limb 1) aligns with the Australian distinction between domestic and commercial systems for the purpose of ARC licence classes (though note this licencing system focuses on environmental, rather than health and safety, risks).
- We suggest WorkSafe is enabled to add to the systems that require a licenced technician to work on under limb 2) through Safe Work Instruments. This will allow the list of flammable refrigerants to be kept up to date as new refrigerants and blends are introduced.

Questions:

1) Do you think that these proposed definitions will capture hazardous industrial or commercial systems, while avoiding domestic or light commercial systems? Are there changes you would suggest?
2) Do you think these measures based on kWh output and charge sizes will be easy for businesses and technicians to understand and apply when checking which systems need a licenced technician?

Defining hazardous refrigerants

Licenced technicians will also only be required for systems using flammable, toxic or very high-pressure refrigerant substances. We therefore also need to define what we mean by these terms.

For "flammable" and "toxic", we suggest definitions are based on whether a substance is considered to hold a corresponding hazard class under the *Health and Safety at Work (Hazardous Substances) Regulations 2017*. This will keep definitions consistent across the different work health and safety regulations, and businesses working with hazardous substances should already be familiar with which substances fall within these classes.

For "very high pressure" we are proposing a definition based on a substance's critical temperature and liquid phase saturation.

We want these definitions to:

- Capture all substances that pose serious health and safety risks due to being flammable, toxic or used at very high pressure in commercial or industrial systems.
- Be general enough that they will include new refrigerants and blends that enter use over time.
- Be clear and easy for businesses and technicians to understand and work out which systems require a licenced technician to work on.

Proposed definitions:

"Flammable" means the substance is a class 2 or 3 substance within the meaning of the Health and Safety at Work (Hazardous Substances) Regulations 2017.

"Toxic" means the substance is a class 6.1 substance within the meaning of the Health and Safety at Work (Hazardous Substances) Regulations 2017.

"Very high pressure" means a substance that either:

a) has a critical temperature below 40°C; or
b) is in gas form at a temperature of 40°C, unless contained at a pressure above 355psia.

Questions:

3) Do you think these definitions are clear and will capture all relevant hazardous refrigerants? Are there any changes you would suggest?

What happens next

Once we have considered your feedback, MBIE will develop finalise the definitions we recommend are put into regulations. We expect Cabinet to make final decisions on these regulations in early 2023. We will provide further updates on these regulations as decisions are made.

If you are also interested in the licencing process regulations that will apply, a draft of the high-risk work licence regulations will be released for comment in late September. If you would like to be informed when this draft is released (or keep up to date with other health and safety regulations in development) you can subscribe for updates here.