

Mechanical Services Regulation

Decision Regulatory Impact Statement

Implementation of a new mechanical services licensing framework for medical gas work, air conditioning and refrigeration and plumbing work

October 2019



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Executive Summary

On 11 September 2018, a new mechanical services licensing framework was established within the *Queensland Building and Construction Commission Act 1991* (QBCC Act).

With the QBCC Act establishes the licensing framework, its technical aspects, such as licence classes, scopes of work, managerial, experience and technical qualification requirements will be prescribed through the Queensland Building and Construction Commission Regulation 2018 (QBCC Regulation).

A draft regulation (**Appendix 1**), tabled in Parliament in October 2017, proposed the following four occupational and four contractor licence classes:

- mechanical services - medical gas
- mechanical services - air conditioning and refrigeration (unlimited design)
- mechanical services - air conditioning and refrigeration (limited design)
- mechanical services - plumbing.

Using the draft regulation as a basis, along with refinements resulting from feedback from key stakeholder groups, the Department of Housing and Public Works (DHPW) developed a consultation Regulatory Impact Statement (RIS) which was released for comment between 6 June 2019 – 5 July 2019. The consultation RIS sought feedback about the adequacy and workability of the proposed technical aspects of the mechanical services licence, implementation considerations for industry and noted mechanical services licensing arrangements in other Australian jurisdictions.

Sixty responses were received during the consultation period, comprising 48 online survey responses and 12 written submissions. Seven of the written submissions answered questions posed in the consultation RIS (which closely mirrored the online survey). This decision RIS outlines the results of consultation and how feedback has helped to further develop the licensing framework.

The mechanical services licensing framework will commence on 1 January 2020.

From this date, all new entrants (finishing an apprenticeship after 31 December 2019), contractors and nominee supervisors who carry out mechanical services work will be required to hold a mechanical services licence. The laws will recognise existing licensees who perform mechanical services work under their current QBCC licences.

To provide a seamless transition for industry, the laws will give workers until 31 December 2021 to meet the licensing requirements for an occupational and site supervisor mechanical services licence. In the interim, these workers will be able to continue to perform mechanical services work without a licence as long as they are employed by an appropriately licensed contractor or a contractor to which an exemption from holding a licence or from prosecution exists under the QBCC Act.

From 1 January 2022, all individuals or companies performing mechanical services work will be required to hold a mechanical services licence.

These licensing requirements will affect existing workers performing mechanical services work, for example, individuals working on refrigeration and air conditioning systems where the value of the work is less than \$3,300 (excluding work valued under \$3,300 on single head split systems) and medical gas systems. Individuals currently performing this work may need to undertake additional training or have their skills assessed, through a recognition of prior learning (RPL) or similar process, to be eligible to obtain the new licence.

1.0 Introduction

Mechanical services work involves the mechanical heating or cooling of commercial and residential buildings through the use of motors, machines or the flow of temperature controlled fluids, for example air conditioning, refrigeration and air handling systems or boilers. Mechanical services systems contribute to the overall health and safety of the community and can have fatal consequences if incorrectly installed or maintained. For example, legionella bacteria can grow and spread through air conditioning systems found in buildings such as aged care and health facilities and shopping centres.

The purpose of licensing frameworks is typically to address health and safety risks and improve consumer protection. Historically, Queensland's building industry licensing framework has recognised one aspect of the specialist streams of mechanical services work by establishing a refrigeration, air conditioning (RAC) and mechanical services contractor, nominee supervisor and site supervisor licence. Currently, a licence is required to be held by individuals or companies who carry out building work valued above \$3,300 (including GST). The existing licensing framework does not regulate work associated with medical gas systems.

On 11 September 2018, the *Plumbing and Drainage Act 2018* (PDA) commenced and among other things, amended the *Queensland Building and Construction Commission Act 1991* (QBCC Act) to establish a mechanical services licensing framework. This framework recognises the three trades that perform this type of work, i.e. refrigeration and air conditioning technicians, plumbers and medical gas technicians. The mechanical services licensing framework includes the following specialist streams:

- Mechanical services – medical gas
- Mechanical services –air conditioning and refrigeration
- Mechanical services – plumbing.

The mechanical services licence aims to protect the health of people who work and live in high-risk buildings, such as high-rise residential apartments and office buildings, commercial retail centres, health care facilities and recreational establishments. These buildings are more likely to have larger, more complex systems which, if incorrectly installed and maintained, pose higher risks of fire, poor ventilation, exposure to harmful gases, bacteria and inadequate acoustic controls. Consumers also risk paying higher energy costs because of inadequate design specifications for the area being covered.

The licensing framework recognises that mechanical services work involves working with dangerous elements, such as hydrocarbon refrigerants, and directly impacts the comfort, health and safety of the people who use medical gas and mechanical services systems such as air conditioning systems. Further, licensing of practitioners provides consumers comfort that operators hold an appropriate technical qualification, contractors are financially sound and that the regulator can swiftly take action against individuals performing substandard work or using non-conforming building products.

Owner-builder permits will be subject to conditions that the permittee must not personally carry out mechanical service work generally valued over \$1,100 (including GST). For all other individuals a licence will be required to perform mechanical services work or contract to perform mechanical services work regardless the value of the work being performed.

Individuals undertaking building work that is not within the scope of work for the mechanical services licence, such as the installation of single head split systems, will continue to operate under the existing licensing requirements.

While the QBCC Act establishes the licensing framework, the licence classes, scopes of work, managerial, experience and technical qualification requirements will be prescribed through the *Queensland Building and Construction Commission Regulation 2018* (QBCC Regulation). These provisions will commence on 1 January 2020.

A draft amendment regulation was tabled in Parliament in October 2017 (the draft Regulation), proposing occupational, site supervisor, nominee supervisor and contractor mechanical services licence classes for each of the specialist streams of mechanical services work.

To refine the technical details of the mechanical service licence in the draft Regulation, DHPW consulted industry and the community via a RIS process which was released on 6 June for 29 days (closed on 5 July 2019). This decision RIS outlines the results of that consultation and how feedback has informed refinement of the mechanical services licensing framework.

1.1 Issue

Work on complex mechanical services systems, such as large air conditioning units located in hospitals and shopping centres, pose serious health and safety risks to the community, including the transmission of legionella and other bacteria. It is also becoming more prevalent that these systems use products such as hydrocarbon refrigerants which could explode or cause flash fires under certain conditions, causing serious safety risks.

Mechanical services work includes the installation, commissioning and maintenance of medical gas systems used in hospitals, medical facilities and dental rooms for patient care. The quality of work on medical gas systems impacts patient care and can potentially have fatal consequences, which was tragically demonstrated in New South Wales.

In 2016, two incidents occurred where babies at the Bankstown-Lidcombe Hospital in New South Wales were administered nitrous oxide rather than oxygen due to the incorrect installation of the medical gas system. Tragically one baby died and one baby suffered permanent brain damage.

Queensland's existing licensing framework permits an unlicensed and unqualified person to perform mechanical services work, so long as they are employed by a contractor who holds a Queensland Building and Construction Commission (QBCC) licence for the building work being performed. There are no licensing requirements for individuals working on medical gas systems.

The mechanical services licensing framework enables the QBCC to regulate the industry and protects consumers.

Industry submissions to the Parliamentary Transport and Public Works Committee's scrutiny of the Plumbing and Drainage Bill 2018, which introduced the mechanical services licence, noted the significant safety issues implicit in this type of work and the importance of regulation in mitigating risks for consumers and industry workers¹. The introduction of a mechanical services licence in Queensland will help prevent the occurrence of tragedies such as those that occurred in New South Wales.

The mechanical services licensing framework will require all individuals and companies who perform mechanical services work, as defined in legislation, to hold a licence issued by the QBCC. Subject to the transitional arrangements, individuals who may not have been required to hold a licence will need to obtain either a contractor, nominee supervisor, site supervisor or occupational licence or be undertaking an apprenticeship for mechanical services work.

¹ Parliamentary Transport and Public Works Committee, 2018, *Plumbing and Drainage Bill 2018*, www.parliament.qld.gov.au/Documents/TableOffice/TabledPapers/2018/5618T467.pdf,

It is important that implementation of the new licensing framework provides a seamless transition for people currently working in the industry. The licence classes, scopes of work, managerial, experience and technical qualifications outlined in this document aim to:

- achieve a reasonable balance between the interests of licensees, industry and consumers;
- maintain proper industry standards through benchmarked training requirements for individuals who perform mechanical services work (noting that alternate pathways exist, including recognition of prior learning [RPL]); and
- ensure that transitional arrangements do not create unnecessary impediments or create a skills shortage potentially impacting service delivery across the State.

Feedback regarding the proposed technical aspects and transitional arrangements has informed the government's decision on how best to implement the mechanical services licensing framework to:

- prevent underqualified individuals from performing mechanical services work, potentially compromising the health and safety of consumers and workers;
- ensure the licensing eligibility requirements are not too onerous to prevent competent people from undertaking the work (i.e. above and beyond what is reasonably required to manage risks); and
- ensure a seamless transition for industry to the mechanical services licensing framework.

1.2 Policy objectives

The key objectives of the mechanical services licensing framework are to:

- protect public health and safety through the regulation of mechanical services work, including medical gas work;
- ensure suitably trained and qualified workers perform mechanical services work in high risk and complex buildings;
- establish contractor, nominee supervisor, site supervisor and occupational licence classes in each specialist stream of mechanical services work, including work on medical gas systems; and
- implement transitional provisions for the new licence classes, which ensure a seamless transition for industry while protecting the health and safety of the community.

2.0 Licensing framework

Consistent with other licences issued under the QBCC Act, mechanical services licence classes will be available for a contractor, nominee supervisor, site supervisor and occupational licence.

A **contractor licence** permits an individual or company to contract, subcontract, advertise to contract and perform the work within the scope of work for their licence class. A contractor licence is generally required for building work regulated and licensed by the QBCC over the value of \$3,300 (including GST). However, the mechanical services contractor licence classes will be required regardless of the value of work being performed.

A **nominee supervisor's licence** permits an individual to supervise work for a licensed company contractor who holds the same QBCC licence class as the nominee supervisor, but does not permit the individual to personally contract or subcontract to carry out work.

A **site supervisor's licence** permits an employee or officer of a licensed contractor to supervise work carried out under their employer's contractor's licence.

An **occupational licence** permits an individual to carry out work within the scope of work for their licence class, but does not permit the individual to contract, subcontract or advertise to contract. An occupational licence is required for building work regulated and licensed by the QBCC, regardless of the value of the work.

2.1 Legislative framework

The QBCC Act creates the mechanical services licensing framework and the QBCC Regulation will prescribe the technical details. The mechanical services licensing provisions and Regulation will commence on proclamation.

The following mechanical services contractor, nominee supervisor and site supervisor licence classes will be established in the QBCC Regulation:

1. Mechanical services – medical gas
2. Mechanical services –air conditioning and refrigeration (ACR) (unlimited design)
3. Mechanical services –air conditioning and refrigeration (limited design)
4. Mechanical services – plumbing.

Through the consultation RIS process industry strongly supported merging the two proposed air conditioning and refrigeration mechanical services occupational licence classes into a single occupational licence for air conditioning and refrigeration work. However, industry submitted that the two nominee supervisor, site supervisor and contractor licence classes (unlimited and limited design licence classes) should be maintained. The Regulation will be to establish a single mechanical services - air conditioning and refrigeration occupational licence class, while the contractor, nominee supervisor and site supervisor licence classes will be renamed as mechanical services licence classes with the same requirements and scopes of work.

Figure 1 illustrates how the revised mechanical services licensing framework will be established in legislation.

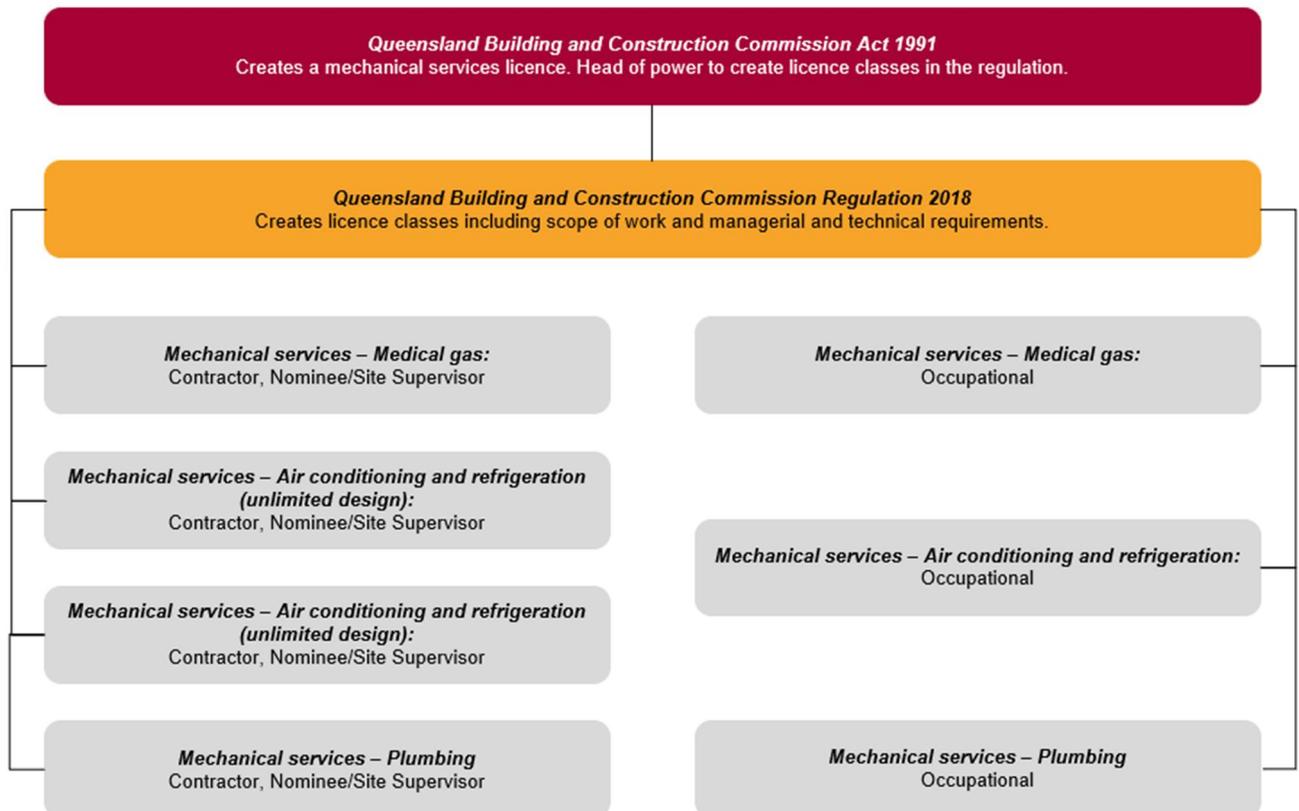


Figure 1: Legislative framework

2.2 Definitions

2.2.1 Mechanical services work

The mechanical services licensing framework, subject to certain exclusions (explained below), covers work on medical gas systems, RAC systems, and plumbing work for these mechanical services systems.

The PDA amends Schedule 2 of the QBCC Act to insert a definition for 'Mechanical services work'. Mechanical services work means the construction, installation, replacement, repair, alteration, maintenance, testing or commissioning of a mechanical heating or cooling system in a building or a medical gas system.

The definition of mechanical services work under the PDA excludes:

- gas work regulated under the *Petroleum and Gas (Production and Safety) Act 2004*; or
- any treatment of cooling water; or
- the connection or disconnection of a system (i.e. a building's mechanical heating or cooling system or a medical gas system) from a water supply other than disconnection of the system from a water supply at an isolating valve adjacent to a mechanical component of that system; or
- design work that is a professional engineering service under the *Professional Engineers Act 2002*; or
- manufacturing of pipe or ducting or components manufactured off-site; or
- installing a single head split system; or
- installing ductwork and enclosures for air conditioning, air handling and mechanical ventilation systems; or
- any other work prescribed by regulation.

The draft Regulation (**Appendix 1**) excluded mechanical services work carried out:

- on class 1a (detached house and townhouse) and class 10 (shed and garage) buildings;
- on buildings located in land regulated under certain Acts (refer to schedule 2BA of the draft Regulation in **Appendix 1**);
- as part of prescribed environmentally relevant activities and prescribed resource activities.

For the definition of mechanical services work as proposed in the consultation RIS refer to section 196 of the PDA and schedule 2BA of the draft Regulation in **Appendix 1**.

Note: Although some work being performed, such as the installation of ductwork, is excluded from the definition of mechanical services work, the work may fall within the definition of building work in the QBCC Act and require a contractor licence to be held before performing work over \$3,300 (including GST) in value.

Stakeholder responses to the consultation RIS

Are there any other aspects of mechanical services work or other building work that should be identified through the definitions of mechanical services work?

DHPW received 24 responses to this question. The suggestions were very diverse, with no aspects raised in numbers sufficient enough to indicate a significant issue for industry. The most common responses were:

- Single head split systems – five respondents
- Ductwork – four respondents

- Ventilation – three respondents
- Laboratory gas systems – three respondents.

The RAC industry, including the Australian Refrigeration Mechanics Association (ARMA) and Australian Refrigeration Association (ARA), urged that single head split systems be included in the licensing framework because of substandard work compromising consumer health and safety.

ARMA and ARA also requested that ductwork, work on ventilation systems and mechanical services work on class 1A and class 10 buildings be included in the mechanical services licensing framework.

The Master Plumbers Association of Queensland (MPAQ), Air-conditioning and Mechanical Contractors Association (AMCA), Plumbing and Pipe Trades Employees Union of Queensland (PUQ), Dawsons Technical Services, AG Coombs and Paragon Plumbing supported the definition of mechanical services work as defined in the Act. However, PUQ suggested that the exclusion of ventilation systems in the consultation RIS was confusing and potentially misleading and that the definition proposed in the QBCC Act was supported.

While industry requested ductwork and ventilation systems be included in the mechanical services licensing framework, no compelling issues were raised to justify an amendment to the existing provisions.

Master Builders Queensland (MBQ) suggested that a mechanical services licence should be required for work on temporary buildings (classes 2 – 9). The mechanical services licensing framework has been established under the QBCC Act and therefore will apply to class 2 – 9 buildings and temporary buildings such as a demountable building.

Amendments in response to feedback and further policy development

Ductwork and work on ventilation systems is currently regulated through other licence classes, for example the air handling duct installation, plumbing and drainage, RAC and some specialist fire protection licence classes. It is not proposed to alter these existing arrangements as to do so would unnecessarily displace these licensees.

It is proposed to repeal the current RAC contractor, nominee supervisor and site supervisor licence classes and replace it with the mechanical services – air conditioning and refrigeration licence class, which will prescribe the same scope of work as the current contractor licence. This means that existing RAC licensees will be able to continue to perform all the work that they can currently perform under their existing licence, including work on ventilation systems

Some QBCC licensees can perform 'incidental work' under their existing licence. Incidental work is defined in the QBCC Regulation and enables certain licensees to perform work outside the scope of their licence class where the value of the work is under \$3,300 and the work does not require the person performing the work to hold an occupational licence. Fire protection, plumbing and drainage and mechanical services are the only QBCC licensed occupational trades.

Holders of a national refrigerant handling licence (RHL) issued by the Australian Refrigeration Council (ARC) can install a single head split air conditioning system without a QBCC licence if the value of the work is under \$3,300. It is understood that heating, ventilation, air conditioning and refrigeration (HVACR) technicians, electricians, plumbers and some non-trades install single head split systems where the value of the work is under \$3,300. However, where the value of the work exceeds \$3,300 a QBCC contractor licence must be held to lawfully perform this work. As the department could not find evidence of significant failures arising from the current arrangements, it is not intended to disrupt existing licensing requirements.

2.2.2 Medical gas system and medical gas

Upon proclamation, the terms 'medical gas system' and 'medical gas' will be defined in the QBCC Act as follows:

Medical gas system means any fixed component used –

- (a) In a reticulation system for the supply or removal of medical gas from the gas source to a wall outlet; and
- (b) For patient care, therapeutic, diagnostic purposes or surgical tools.

Medical gas means any gas or mixture of gases or other substance or process used for hospital or medical use that is supplied to, removed from or conducted at, a hospital or other place where medical procedures are carried out, by way of a pipeline reticulation system and includes oxygen, helium, nitrous oxide, nitrogen, medical air, surgical tool gas, carbon dioxide and common mixtures of those gases as well as anaesthesia waste.

Stakeholder responses to the Consultation RIS

Is the definition for 'medical gas system' sufficient? If it is not sufficient, what should the definition include?			
No. of stakeholders	Yes	No	Unsure
17	64.7%	35.3%	-

The majority of stakeholders supported the definition of 'medical gas system'.

While five stakeholders did not think the definition was adequate, the comments were broad ranging with no common issues identified. However, two responses to this question suggests that medical suction should be included in the definition of medical gas system.

Is the definition for 'medical gas' sufficient? If it is not sufficient, what should the definition include?			
No. of stakeholders	Yes	No	Unsure
23	65.22%	30.43%	4.35%

The majority of stakeholders supported the definition 'medical gas'.

While some responses found the definition of 'medical gas' insufficient, the comments were broad ranging, with the only common theme (two responses) being a request to include medical suction into the definition. One stakeholder requested that the definition be broadened to apply to medical gas in buildings other than hospitals.

Amendments in response to feedback and further policy development

The current definitions include the use of suction if it forms part of a medical gas system, meaning a fixed component used in a reticulated system for the removal of gas and for patient care, therapeutic or diagnostic purposes. This is considered sufficient to meet the policy objectives and no changes are proposed.

Similarly, the definition discussed medical gas in 'a hospital or other place where medical procedures are carried out'. This is considered adequate to cover buildings other than hospitals and no changes are proposed.

It is not proposed to amend the definitions of 'medical gas system' or 'medical gas'.

2.3 Scopes of work

The consultation RIS sought feedback on the proposed scopes of work (work that may be performed by the licensee) for each licence class. The following sections describe discuss the proposed scopes of work and related feedback for each mechanical services licence class.

2.3.1 Mechanical services – medical gas

The mechanical services – medical gas licence class regulates work that has not previously been licensed in Queensland. There was renewed support for the introduction of this licence. However, industry advised that the work is currently being performed by various trades including mechanical fitters, boiler makers/welders, electricians, refrigeration mechanics. Alternatively, the work is being performed by unlicensed and/or non-trade qualified workers. Individuals currently performing this work may need to undertake additional training or have their skills assessed through RPL or a similar process to meet the technical qualifications for this licence class.

Proposed scope of work in the consultation RIS

The draft Regulation proposed the following scope of work for the mechanical services - medical gas licence class:

Construction, installation, replacement, repair, alteration, testing, maintenance or commissioning of a medical gas system.

Stakeholder responses to the Consultation RIS

Should the scope of work include decommissioning a medical gas system?			
No. of stakeholders	Yes	No	Unsure
23	95.65%	-	4.35%

An overwhelming majority of stakeholders agreed that the scope of work should include decommissioning.

What other work undertaken on medical gas systems should be included in the scope of work?
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Responses to this question were broad with no common themes. Some comments requested the inclusion of work currently within the scope of the licence, for example, the inclusion of preventative maintenance, or testing and commissioning of components of the medical gas system.

Is there any work that a contractor licensee would perform (excluding contracting, subcontracting and advertising to contract) that would be different to an occupational licensee? If so, should this work be included in the scope of work for the contractor licensee?			
No. of stakeholders	Yes	No	Unsure
23	47.83%	26.09%	26.09%

The largest proportion of stakeholders indicated that there would be no difference to the work undertaken at a contractor and occupational level other than the contracting activities.

Where stakeholders indicated that contractors would perform different work, there was one response each indicating that ancillary building work, final testing and commissioning on completion, design and certification would be performed by a contractor licensee and not an occupationally licensed individual.

General comments

General comments received from respondents regarding the mechanical services - medical gas licence has been grouped into broad themes and summarised in **Appendix 2**.

Amendments in response to feedback and further policy development

DHPW reviewed the existing definition of mechanical services work and understand that it is arguable that decommissioning work already is covered under the definition by virtue of the words 'altering, repairing and replacing'. However, DHPW will review the definition as a part of the legislative review process.

The QBCC Regulation will be amended to allow incidental building work to be performed for each licence class, which is consistent with the current practice.

2.3.2 Mechanical services – air conditioning and refrigeration (unlimited and limited design)

RAC contractor licence classes

The current RAC and mechanical services (limited or unlimited design) licence classes permit a licensee to perform both building work that is not mechanical services work, such as work performed on ventilation systems, and mechanical service work.

The proposed scope of work for the new mechanical services air conditioning and refrigeration contractor, nominee supervisor and site supervisor licence classes will be the same as the current licence classes, with the only change being the licence class name and threshold value (dropping from \$3,300 down to \$0).

Contractor licence: Mechanical services – air conditioning and refrigeration (unlimited design)

The below draft scope of work was presented in the consultation RIS and differed from the draft Regulation (**Appendix 1**) because it was considered to more accurately reflect that the licence class would include both mechanical services work and building work that is not mechanical services work. The exact wording will be finalised during drafting, however will reflect the same policy position.

Proposed scope of work in the consultation RIS

The proposed scope of work for the mechanical services – air conditioning and refrigeration (unlimited design) contractor licence is as follows:

- (1) Mechanical services work that is:
 - (a) installing, commissioning, servicing or repairing refrigeration, air conditioning, and air handling systems for a building, including the installation, commissioning and handling of refrigerant gases; and
 - (b) design and prepare plans and specifications for refrigeration, air conditioning, and air handling systems for a building that are—
 - (i) for the licensee's personal use; or
 - (ii) for use in building work to be performed by the licensee personally.
- (2) Building work (other than mechanical services work) that is:
 - (a) installing, commissioning, servicing or repairing refrigeration, air conditioning, mechanical ventilation and air handling systems for a building;
 - (b) design and prepare plans and specifications for refrigeration, air conditioning, mechanical ventilation systems and air handling systems for a building (that are—
 - (i) for the licensee's personal use; or
 - (ii) for use in building work to be performed by the licensee personally.

The scope of work and technical qualification requirements for the current RAC (unlimited and limited design) contractor, nominee supervisor and site supervisor licence classes will be reflected in the air conditioning and refrigeration mechanical services licence classes. The existing licence classes will be

omitted from the legislation, to avoid duplication. Current contractor licensees will be taken to hold the equivalent mechanical services licence class.

Refer to sections 4.1 and 6.0 for information about transitional arrangements.

Figure 2 summarises the transition from the current to the new contractor licence class as explained in this section.

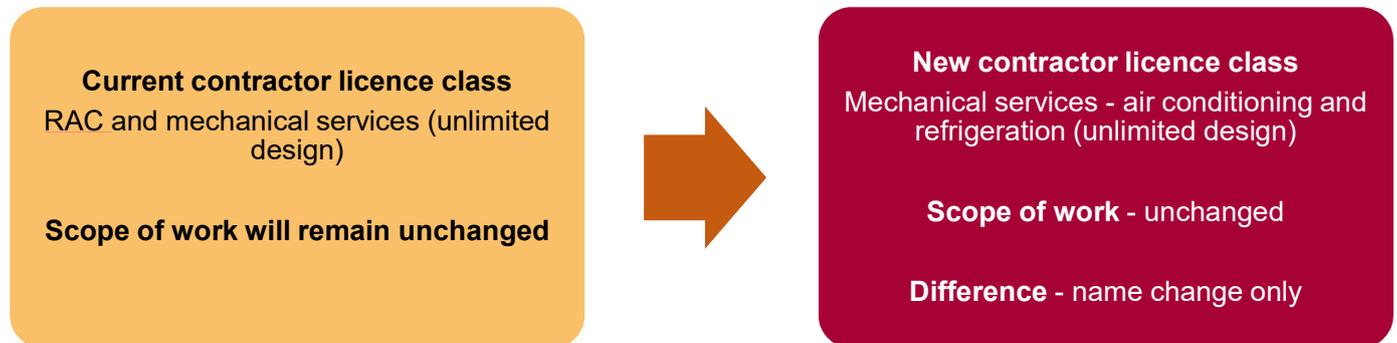


Figure 2: Current RAC and mechanical services (unlimited design) contractor licence class and new contractor licence class

Contractor licence: Mechanical services – air conditioning and refrigeration (limited design)

Like the previous section, the below drafting was in the consultation RIS and was different to the draft Regulation (**Appendix 1**) to more accurately reflect that the licence class would include both mechanical services work and building work that is not mechanical services work. The legislative wording will be finalised during drafting, however, will reflect the same policy position.

Proposed scope of work in the consultation RIS

The proposed scope of work for the mechanical services – air conditioning and refrigeration (limited design) contractor licence is as follows:

- (1) Mechanical services work that is installing, commissioning, servicing or repairing refrigeration, air conditioning, and air handling systems for a building, including the installation, commissioning and handling of refrigerant gases; and
- (2) Building work (other than mechanical services work) that is installing, commissioning, servicing or repairing refrigeration, air conditioning, mechanical ventilation and air handling systems for a building;
- (3) Designing and preparing plans and specifications for air conditioning, mechanical ventilation systems and air handling systems are for a building -
 - a) i. that is not more than 3 storeys; and
 - ii. that has a floor area of not more than 2,000m²; and
 - iii. for which that plant capacity for any one system for the building is not more than 34kW;

but only if -

- b) to the extent the plans and specifications are for systems that do not form part of a fire or smoke hazard management system for a building; and
- c) the plans and specifications are:
 - i. for the licensee's personal use; or
 - ii. for use in building work to be performed by the licensee personally.

Figure 3 summarises the transition from the current to the new contractor licence class as explained in this section.

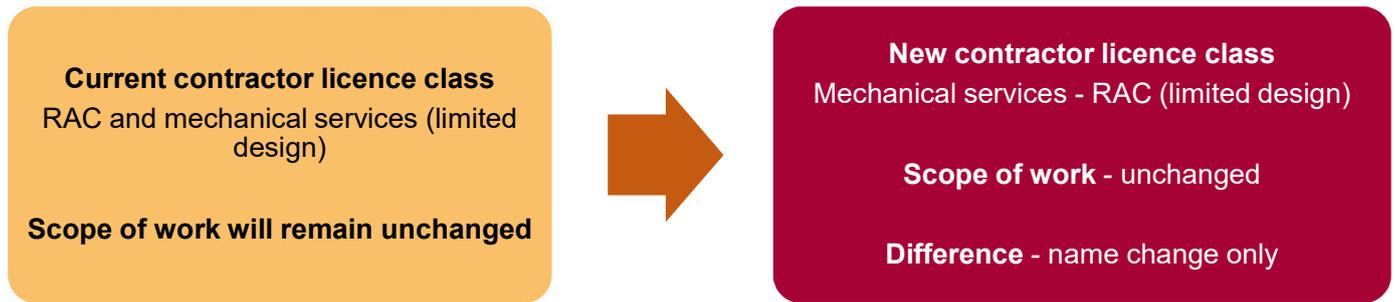


Figure 3: Current RAC and mechanical services (limited design) contractor licence class and new contractor licence class

Mechanical services – air conditioning and refrigeration occupational licence

The mechanical services – air conditioning and refrigeration occupational licence is a new licence class. It is understood that certain aspects of the proposed scope of work may be undertaken by holders of a restricted plumbing licence, a restricted electrical licence (required for the connection of electrical wiring), or by unlicensed workers. Individuals currently performing this work may need to undertake additional training or have their skills assessed through an RPL or similar process, to meet the technical qualification requirements for this licence class.

The mechanical services licensing framework will, subject to the transitional provisions and legislated exemptions, require all individuals who perform mechanical services work to hold a licence, regardless of the value of the work being performed. Therefore the scope of work for the mechanical services occupational licences will only include mechanical services work within the scope of work for the licence and will differ to the scope of work for the contractor, nominee supervisor and site supervisor licence classes.

The draft Regulation (**Appendix 1**) proposed two different occupational licence classes for mechanical services air conditioning and refrigeration work.

Peak bodies advised that work undertaken at the occupational level does not include design work or the preparation of plans and specifications. The department sought feedback about excluding this type of work from the scope of work for the RAC occupational licence class/es, noting that doing so would negate the need for two occupational licence classes (unlimited and limited design) to be established.

Proposed scope of work in the consultation RIS

The RIS provided the following draft scope of work for a single occupational licence and sought feedback.

Installing, commissioning, servicing, repairing and decommissioning refrigeration, air conditioning and air handling systems for a building, including the installation, commissioning and handling of refrigerant gases.

Stakeholder responses to the consultation RIS

Would you support a single occupational licence for mechanical services air conditioning and refrigeration work? If not, why?			
No. of stakeholders	Yes	No	Unsure
41	65.85%	29.27%	4.88%

The majority of stakeholders supported a single occupational licence for air conditioning and refrigeration work.

ARMA and ARA in a joint submission suggested the department considered introducing a single occupational licence with endorsements for limited and unlimited design work.

Would you support excluding design work from a mechanical services air conditioning and refrigeration occupational licence? If not, why?			
No. of stakeholders	Yes	No	Unsure
41	48.78%	48.78%	2.44%

Stakeholders were equally divided on this issue.

Those who supported this proposal noted that design work is not currently taught as part of the Certificate III in the RAC training packages, which are proposed for the occupational licence (design is offered as part of the Diploma). Written submissions from AMCA, Dawsons Technical Services, AG Coombs and Paragon Plumbing noted that including design work within the scope of the occupational licence would mean *“licensing people to undertake work for which they have not had any formal or recognised training”*.

These respondents opposed any assertions that design work is part of the RAC trade; design work includes system modifications, correct selections and application of equipment; and degree level qualifications do not provide relevant trade experience in the field.

Would you support excluding ‘prepare plans or specifications’ from the scope of work for a mechanical services air conditioning and refrigeration occupational licence? If not, why?			
No. of stakeholders	Yes	No	Unsure
41	56.1%	41.46%	2.44%

The majority of stakeholders supported excluding the preparation of plans and specifications from the occupational licence class.

Consultation also revealed that the existing scope of work for the air conditioning and refrigeration licence omits construction, replacement, altering or testing the RAC systems, all of which are necessary for a tradesperson to undertake their trade.

Amendments in response to feedback and further policy development

The QBCC Regulation will be amended to create a single occupational licence for air conditioning and refrigeration mechanical services work that excludes design work and the preparation of plans and specifications, as this work will sit within the scope of work for the mechanical services – air conditioning and refrigeration contractor licence classes (unlimited design and limited design).

When introducing any experience requirements for the purposes of licensing mechanical services work consideration will be given to excluding these design elements as the applicants will be unable to attain experience under an occupational licence.

The scope of work will be expanded to include construction, replacement, alteration and testing of RAC systems. This amendment will better align the scope of work with the trade requirements and qualification outcomes.

2.3.3 Mechanical services – plumbing

This will be a newly created licence class, with the scope of work including work that historically has included both unregulated and regulated work dependent upon the value of work being performed. Individuals currently performing this work may need to undertake additional training or have their skills assessed through an RPL or similar process to meet the technical qualifications for this licence class.

Proposed scope of work in the consultation RIS

As the new mechanical services – plumbing licence classes have been created solely to perform mechanical services work, the scope of work for the contractor, nominee supervisor, site supervisor and occupational licence classes will be the same. However, consistent with other QBCC licensees, to be eligible for a contractor or nominee licence, applicants will need to meet other requirements for example, managerial and financial requirements, while applicants for the occupational licence will need to satisfy the technical requirements.

The proposed scope of work for the mechanical services – plumbing licence classes in the consultation RIS was as follows:

The construction, installation, replacement, repair, alteration, maintenance, testing or commissioning of a mechanical heating or cooling system in a building which is associated with the heating and cooling of that building but does not include the installation, commissioning or handling of refrigerant gases.

Stakeholder responses to the consultation RIS

Do you support the scope of work for a mechanical services plumbing occupational licence being the same as the mechanical services plumbing contractor licence? If not, why?			
No. of stakeholders	Yes	No	Unsure
32	40.62%	43.75%	15.62%

A small majority did not support the proposed scope of work. However, many of these respondents opposed the introduction of a mechanical services – plumber licence generally or opposed allowing the plumbing sector to perform any mechanical services work. It is noted that these comments were generally made by non-plumbing industry stakeholders.

Written submissions from the plumbing industry, particularly the Master Plumbers Association Queensland (MPAQ), Plumbers Union Queensland (PUQ), AMCA, Dawsons Technical Services, AG Coombs and Paragon Plumbing supported the scope of work for the occupational and contractor classes being the same. Industry did question the inclusion of gases (refrigerants) as these are regulated by other government bodies.

Master Builders Queensland (MBQ) recommended that, at both an occupational and contractor level, the scopes of work for mechanical services plumbing and air conditioning and refrigeration licence classes should be the same, with the difference being the type of system being worked on.

Stakeholders from the RAC industry generally did not specifically address this question, other than to express strong opposition to the introduction of the mechanical services plumbing licence class. Many stated that mechanical services plumbing should be restricted to water, chilled water systems and drainage and that for plumbers to perform mechanical services work they should complete a RAC apprenticeship or training.

One online survey respondent expressed concern that the scope of work as proposed in the consultation RIS means that a plumber could work on any aspect of any air conditioning system with the exception of

refrigerants. They explained, “*Plumbers do not have any electrical training, they are not trained to work on air conditioning controls, they are not trained to work on motors, they are not trained to work on the electronic components of air conditioning, they are not trained to work on high pressure systems, they are not trained to work on refrigerants. This training cannot be undertaken by RPL and short courses. Therefore this wording must be correctly done to clearly outline the limits to the work undertaken. Failure to do this will result in unlicensed and unskilled personnel carrying out the work. This will lead to system failures and more importantly safety issues.*”

Is the proposed scope of work sufficient to enable mechanical services plumbers to perform their trade? If not, what needs to be changed?			
No. of stakeholders	Yes	No	Unsure
31	22.58%	67.74%	9.68%

The majority of stakeholders stated that the scope of work was insufficient as it failed to clarify the difference between the mechanical services plumbing licence class and other licence classes.

In its written submission, the Australian Refrigeration Council (ARC) sought clarity on whether the scope permits mechanical services plumbers to install refrigeration and/or air conditioning pipework and equipment to which refrigerant will be added later during the commissioning of the system by a mechanical services air conditioning and refrigeration licence holder. ARC advised “*The current federal Ozone Protection and Synthetic Greenhouse Gas Management Regulations 1995 does not permit this to occur*” and “*under the national Regulation, it is an offence for persons without the relevant Refrigerant Handling Licence to install refrigerant pipework*”.

Written submissions from MPAQ, PUQ, AMCA, Dawsons Technical Services, AG Coombs and Paragon Plumbing did not support the proposed scope in the regulation as it excludes work on ventilation systems.

Amendments in response to feedback and further policy development

It is proposed to amend the scope of work for the mechanical services – plumber licence to clarify that the licence does not include work associated with refrigerant gases regulated by the Ozone Protection and Synthetic Greenhouse Gas Management Regulations 1995 (C’wth).

The department has considered whether an occupational licensee and contractor licensee work on different systems and whether the scope of work should reflect the different systems. However, the feedback provided indicates that the systems being worked on could be undertaken by either the contractor or an employee of the contractor. It is proposed to prescribe the same scope of work for the occupational and contractor licence classes.

Water plumbing work on mechanical services systems is currently being performed by licensed plumbers, and requires the individuals performing the work to hold a licence issued under the PD Act. The licence issued under the PD Act is broader than the mechanical services plumbing licence class and individuals will need to be recognised for the purposes of both licences. Provisions will be introduced to minimise the impact of requiring two licence classes, for example a single fee.

3.0 Eligibility requirements

The QBCC Regulation refers to the *Technical Qualifications for Licensing* (TQL) document maintained by the Department of Housing and Public Works. This document contains the eligibility requirements i.e. technical and managerial qualifications a person must meet to be eligible for a license issued by the QBCC.

To be eligible to obtain a mechanical services licence, applicants will need to satisfy the relevant managerial and technical qualification requirements in the TQL. The following sections discuss the

proposed technical and managerial requirements outlined in the consultation RIS and proposed changes as a result of industry feedback.

Table 1 shows the managerial and technical qualifications proposed in the consultation RIS for each of the mechanical services licence classes.

All contractor licensees, in addition to these proposed qualifications, will be required to meet the minimum financial requirements for licensing².

Licence class	Proposed managerial requirements and technical qualifications
<p>Mechanical services – medical gas</p> <p>Contractor, nominee, site supervisor and occupational licensees</p>	<p><i>Managerial requirements</i></p> <p><u><i>(Contractor, nominee and site supervisor licensees only)</i></u></p> <ul style="list-style-type: none"> • Successful completion of BSBSMB401 - Establish legal and risk management requirements of small business, or course the commission considers as equivalent. <p><i>Technical qualifications</i></p> <p><u><i>(Contractor, nominee, site supervisor and occupational licensees)</i></u></p> <p>Must satisfy (1) and (2) below.</p> <p>(1) One of the following-</p> <ul style="list-style-type: none"> i. Certificate III in Plumbing Mechanical Services CPC32513; or ii. Certificate III in Plumbing CPC32413; or iii. Successful completion of a course the QBCC considers is at least equivalent to 1(i) or 1(ii). <p>(2) Both of the following</p> <ul style="list-style-type: none"> i. Install medical gas pipeline system CPCPMS3034A; and ii. Carry out WHS requirement CPCPCM2043A; <p style="text-align: center;"><u>Or</u></p> <ul style="list-style-type: none"> iii. Successful completion of a course/s the QBCC considers is at least equivalent to 2(i) and 2(ii).

² QBCC, *Minimum Financial Requirements: myQBCC user guide for licensees*, web: www.qbcc.qld.gov.au/sites/default/files/Minimum_Financial_Requirements_-_myQBCC_user_guide.pdf

Licence class	Proposed managerial requirements and technical qualifications
<p>Mechanical services – air conditioning and refrigeration (unlimited design)</p> <p>Contractor, nominee and site supervisor licensees</p>	<p>Managerial requirements</p> <ul style="list-style-type: none"> • Successful completion of BSBSMB401 - Establish legal and risk management requirements of small business, or course the commission considers as equivalent. <p>Technical qualifications</p> <ol style="list-style-type: none"> a) successful completion of UEE51211 – Diploma of Air Conditioning and Refrigeration Engineering*; b) successful completion of a course the QBCC considers is at least equivalent to either course mentioned in paragraph (a); c) a qualification or statement of attainment of required competency for the class of licence. <p>* It is proposed that if UEE51211 is to be relied on to demonstrate eligibility for the licence, that electives should be included that deal with energy efficiency.</p>
<p>Mechanical services – air conditioning and refrigeration (limited design)</p> <p>Contractor, nominee and site supervisor licensees</p>	<p>Managerial requirements</p> <ul style="list-style-type: none"> • Successful completion of BSBSMB401 - Establish legal and risk management requirements of small business, or course the commission considers as equivalent. <p>Technical qualifications</p> <ol style="list-style-type: none"> a) successful completion of any of the following courses— <ol style="list-style-type: none"> i. an apprenticeship in refrigeration and air conditioning; or ii. Certificate III in Engineering Mechanical Trade (Refrigeration and Air Conditioning) MEM30205; or iii. Certificate III in Air Conditioning and Refrigeration UEE32211; or b) successful completion of a course the QBCC considers is at least equivalent to a course mentioned in paragraph (a); or c) a recognition certificate as a qualified refrigeration and air conditioning mechanic; OR d) a qualification or statement of attainment of required competency for the class of licence.
<p>Mechanical services – air conditioning and refrigeration</p> <p>Occupational licensees</p> <p>(Based on a single occupational licence as proposed in section 2.3.2 above)</p>	<p>Technical qualifications</p> <ol style="list-style-type: none"> a) Successful completion of any of the following courses— <ol style="list-style-type: none"> i. an apprenticeship in refrigeration and air conditioning; or ii. Certificate III in Engineering Mechanical Trade (Refrigeration and Air Conditioning) MEM30205; or iii. Certificate III in Air Conditioning and Refrigeration UEE32211; or b) successful completion of a course the QBCC considers is at least equivalent to a course mentioned in paragraph (a); or c) a recognition certificate as a qualified refrigeration and air conditioning mechanic; or d) a qualification or statement of attainment of required competency for the class of licence.

Licence class	Proposed managerial requirements and technical qualifications
Mechanical services – plumbing	<p>Managerial requirements</p> <p><u>(Contractor, nominee and site supervisor licensees only)</u></p> <ul style="list-style-type: none"> • Successful completion of BSBSMB401 - Establish legal and risk management requirements of small business, or course the commission considers as equivalent. <p>Technical qualifications</p> <p><u>(Contractor, nominee, site supervisor and occupational licensees)</u></p> <p>Any of the following—</p> <ol style="list-style-type: none"> a) Certificate III in Plumbing (CPC32413)*; or b) Certificate III in Plumbing Mechanical Services (CPC32513); or c) Successful completion of a course the QBCC considers is at least equivalent to a course mentioned in paragraph (a). <p>*It was proposed that if a Certificate III in Plumbing (CPC32413) was the prescribed qualification, the 11 units of competency discussed below would be mandated.</p>

Table 1: proposed technical qualifications

Certificate III in Plumbing (CPC32413) requirements for a mechanical services plumbing licence

In recognition that plumbing work relating to mechanical services is a specialist stream of plumbing, the consultation RIS sought feedback on whether to mandate the completion of the following units of competency as a part of the Certificate III in Plumbing (CPC32413), in order to be eligible for the mechanical services – plumbing licence class:

- CPCPMS2021A – Assemble mechanical services components
- CPCPMS3031A – Fabricate/install steel pressure piping
- CPCPMS3033A – Install small bore heat systems
- CPCPMS3035A – Install/test ducting systems
- CPCPMS3032A – Select/fit insulation/sheathing
- CPCPMS3036A – Install air handling units
- CPCPMS3038A – Install air conditioning control equipment
- CPCPMS3039A – Maintain mechanical services equipment
- MEM05049B – Perform routine gas tungsten arc welding
- MEM05050B – Perform routine gas metal arc welding
- CPCCCM3001 – Operate elevated work platforms up to 11 metres

Alternatively the mechanical services stream of the certificate III in plumbing would be prescribed as a technical qualification for the mechanical services – plumbing licence.

Stakeholder responses to the consultation RIS

3.1 Mechanical services - medical gas

Are the proposed qualifications for the medical gas licence classes appropriate? If not, why?			
No. of stakeholders	Yes	No	Unsure
24	50%	29.17%	20.83%

The majority of stakeholders supported the proposed managerial and technical qualifications for the medical gas licence classes.

Some stakeholders questioned whether the proposed qualifications would include units of competency covering design, testing, installation and commissioning.

MBQ suggested CPC32713 Certificate III in Gas Fitting as a possible alternative base qualification and supported the two units of competencies listed as additional mandated units.

ARMA and ARA suggested that the required skills for this licence class is not limited to the plumbing sector. They recommended UEE32211 Certificate III in Air Conditioning and Refrigeration and, if prior to 2022, MEM30205 Certificate III in Engineering Mechanical Trade (Refrigeration and Air Conditioning), as additional base qualifications for this licence class.

Amendments in response to feedback and further policy development

- The technical qualifications for the mechanical services medical gas licence will be expanded to include CPC32713 Certificate III in Gas Fitting in addition to the two proposed units of competency referred to in **Table 1**.
- While it was suggested that a unit of competency be mandated covering commissioning, the department was unable to identify specific training for commissioning of a medical gas pipeline system. It proposes to rely on the general commissioning training delivered through the proposed apprenticeship qualifications prescribed.

3.2 Mechanical services - air conditioning and refrigeration

Are the proposed managerial and technical qualifications for the air-conditioning and refrigeration licences appropriate?			
No. of stakeholders	Yes	No	Unsure
42	59.52%	28.57%	11.9%

The majority of stakeholders supported the proposed managerial and technical qualifications for the air conditioning and refrigeration licence classes.

However, there was a diverse range of suggestions to revise the qualifications, such as including electrical training and training in hydrocarbon refrigerants, and that four-year apprenticeships and ongoing professional development should be mandatory.

In their joint submission, ARMA and ARA cited their preference for the UEE32211 training package over the lesser supported MEM30205 training package, and recommended that the latter be accepted as meeting the technical qualifications for this licence class only until 2022. In addition, they advocated these qualifications be accepted for the unlimited design licence class.

ARC provided the following feedback for the air conditioning and refrigeration licence classes:

- the relevant units of competency for UEE51211 Diploma of Air Conditioning and Refrigeration be prescribed to ensure that contractor licensees acquire the required skills and knowledge
- MEM30205 Certificate III in Engineering Mechanical Trade (Refrigeration and Air Conditioning) qualification was recently replaced by a new MEM31319 (Certificate III in Refrigeration and Air Conditioning) qualification. Further, relevant units of competency should be prescribed and that the prescribed units be consistent with the national full refrigerant handling licence.
- The proposed qualifications for the occupational licence include as an option, RAC01 Full Refrigeration or and Air Conditioning Refrigerant Handling Licence, which is issued by ARC.

ARC, MPAQ, PUQ, AMCA, Dawsons Technical Services, AG Coombs and Paragon Plumbing did not support Diploma level qualifications for nominee supervisors and site supervisors, citing it as an unreasonable burden for these licence classes. They recommended qualifications at the Certificate III level, given the proposed merge of the unlimited and limited design licences at the occupational level.

AMCA, Dawsons Technical Services, AG Coombs and Paragon Plumbing also recommended that *“regulations include a requirement for gap training based on the AMCA Qld Smoke and Fire Damper Installation Certification Course. Similarly, we recommend that for those who contract for building service and maintenance on Essential Fire Services Maintenance Measures undertake gap training based on an AMCA Qld course in Essential Service Maintenance. Both the Installation and Maintenance courses provide outcomes which cover off on Codes, Standards and practices relating to defined scopes of work”*. PUQ also supported consideration for separate fire training on fire and smoke dampers as well as essential maintenance systems.

MPAQ, AMCA, Dawsons Technical Services, AG Coombs and Paragon Plumbing supported the overarching UEE and MEM qualifications, however recommended that relevant units be prescribed. These stakeholders referred to the units of competency under MEM30298 (required for RAC01 Full Refrigeration or and Air Conditioning Refrigerant Handling Licence, issued by ARC).

For the limited design contractor licence, MBQ recommended UEE42711 Certificate IV in Air conditioning & Refrigeration Servicing as the minimum technical qualification, citing *“this allows for increasing knowledge of a worker transitioning from a occupational licence to the lower level contractors licence”*.

Should the Diploma in Air Conditioning and Refrigeration Engineering (UEE51211) be accepted as a suitable qualification for the mechanical services – air-conditioning and refrigeration (unlimited) contractor licence, only if additional units dealing with energy efficiency are included?			
No. of stakeholders	Yes	No	Unsure
39	56.41%	30.77%	12.82%

The majority of stakeholders supported this proposal.

Survey respondents also added:

- There is a limited number and availability of energy efficiency courses
- Hydrocarbon refrigerant training should be included
- There should be a minimum experience requirement (e.g. 3-5 years)
- Bachelor level engineering qualifications should be required for unlimited design work.

Written submissions from PUQ, AMCA, Dawsons Technical Services, AG Coombs and Paragon Plumbing supported the Diploma provided it incorporates certain competencies.

Amendments in response to feedback and further policy development

- In response to industry feedback it is proposed to change the technical qualifications required for the mechanical services – air conditioning and refrigeration site supervisor licence to a Certificate III level qualification (rather than Diploma). This change will relate to both the mechanical services – air conditioning and refrigeration limited and unlimited design site supervisor licence classes. However, the proposed qualifications for the other air conditioning and refrigeration licence classes will remain at the proposed level.
- Allow UEE51211 Diploma of Air Conditioning and Refrigeration only if additional units dealing with energy efficiency have been completed.

3.3 Mechanical services – plumbing

Are the proposed managerial and technical qualifications for the mechanical services – plumbing licence appropriate?			
No. of stakeholders	Yes	No	Unsure
35	45.71%	40%	8.57%

Those who supported the proposed qualifications for the mechanical services plumbing licence classes were in the slim majority.

The RAC industry expressed strong opposition to this licence class, with some stating that qualifications and/or an apprenticeship in air conditioning and refrigeration is required to undertake this work.

ARMA and ARA supported the technical qualifications for the occupational licence only.

MBQ supported the qualifications at the occupational level, but recommended for the contractor licence class CPC50412 Diploma of Plumbing and Services, with the Mechanical Services core and electives as mandatory units to be completed.

Would you support the Certificate III in Plumbing (CPC32413), including the following mandated units of competency, being one of the suitable technical qualifications for the mechanical services – plumbing licence?	
<ul style="list-style-type: none"> • CPCPMS2021A – Assemble mechanical services components • CPCPMS3031A – Fabricate/install steel pressure piping • CPCPMS3033A – Install small bore heat systems • CPCPMS3035A – Install/test ducting systems • CPCPMS3032A – Select/fit insulation/sheathing • CPCPMS3036A – Install air handling units 	<ul style="list-style-type: none"> • CPCPMS3038A – Install air conditioning control equipment • CPCPMS3039A – Maintain mechanical services equipment • MEM05049B – Perform routine gas tungsten arc welding • MEM05050B – Perform routine gas metal arc welding • CPCCCM3001 – Operate elevated work platforms up to 11 metres

No. of stakeholders	Yes	No	Unsure
32	34.37%	59.37%	6.25%

While written submissions from ARMA, ARA and the plumbing industry supported this proposal, the majority of other stakeholders were opposed.

Online survey responses from the RAC industry expressed strong opposition to this licence class and the proposed qualifications. Some reiterated that qualifications and/or an apprenticeship in air conditioning and refrigeration is required to undertake this work. Others questioned the proposed additional units of competency, citing they are insufficient.

Should the Certificate III in Plumbing (CPC32413) be accepted as a suitable qualification for the mechanical services – plumbing licence only if the individual has completed the mechanical services stream of that qualification? If not, why?

No. of stakeholders	Yes	No	Unsure
7	100%	-	-

Note: This question was posed in the consultation RIS document but was omitted in error from the online survey.

Written submissions from the plumbing industry supported this proposal.

Amendments in response to feedback and further policy development

The feedback received through the RIS process strongly supported the need to mandate the mechanical services licensing stream as a part of the plumbing licence. As such it is proposed to prescribe the certificate III in Plumbing (CPC32413) as a technical qualification for the mechanical services -plumbing licence subject to completion of the units of competency as proposed in the consultation RIS.

DHPW also considered the current qualification level for contractor licensees and differing responsibilities between a contractor and occupational licensee. However, as this is a new licence class it is proposed to prescribe a certificate III level qualification (apprenticeship) as discussed. However, this qualification will be reviewed after the framework is fully implemented with the view to upskilling industry (contractors and nominee supervisors) to a certificate IV level qualification to improve the business practices of these licensees.

Consistent with other licence classes it is proposed to maintain the Certificate III level qualification for site supervisors and occupational licensees.

3.4 Additional requirements for licensees

In addition to the proposed technical qualifications, the consultation RIS sought feedback on whether applicants for mechanical services contractor licences and nominee supervisor licences should demonstrate a minimum amount of industry experience. This requirement would be in addition to industry experience gained through an apprenticeship.

A minimum requirement of two years' experience in the scope of work was proposed for the relevant contractor and nominee supervisor licence class (i.e. medical gas, air conditioning and refrigeration or mechanical services - plumbing), or other work the QBCC is satisfied is at least equivalent. This would be comparative to the experience requirements for various existing builder contractor and nominee supervisor licences regulated by the QBCC (e.g. builder and fire protection licence classes). However, as these are new licence classes the experience requirements will not commence until 1 January 2022.

Costs associated with meeting this proposed requirement are difficult to quantify as they relate to loss of potential earnings should an occupational licensee wish to move to a contractor licence but does not have the experience requirements. However, considering the serious risks associated with mechanical services work, DHPW considers that it may be beneficial for contractor licensees and nominee supervisors to demonstrate a sufficient amount of relevant industry experience before contracting with consumers and signing off work.

Consistent with the QBCC Act licensing framework, no industry experience requirement is proposed for mechanical services occupational licences.

Other jurisdictions that licence mechanical services type work have different experience requirements. For example, Victoria's mechanical services practitioners and contractors require an apprenticeship or four years' experience. Tasmania sets different categories of work based on level of risk and generally require an apprenticeship plus different experience and ongoing CPD requirements. New South Wales' RAC licensees are required to undertake an apprenticeship but no additional industry experience requirements are specified.

Stakeholder responses to the consultation RIS

Should applicants for a contractor licence or a nominee supervisor licence be required to demonstrate a minimum two years relevant industry experience?				
Licence class	No. of stakeholders	Yes	No	Unsure
Medical gas	23	69.56%	8.69%	21.74%
Air conditioning and refrigeration	40	72.5%	25%	2.5%
Mechanical services plumbing	32	68.75%	31.25%	-

There was significant support to require a minimum two years relevant industry experience for contractor and nominee supervisor licence holders.

Some stakeholders recommended longer – four or five years – but it was unclear whether this was in addition to or inclusive of a four year apprenticeship.

Many stakeholders also expressed that in addition to meeting minimum experience requirements, applicants need to demonstrate competence.

Written submissions from AMCA, Dawsons Technical Services, AG Coombs and Paragon Plumbing recommended a provisional licence approach for overseas applicants.

Amendments in response to feedback and further policy development

The QBCC Regulation will be amended to reflect that applicants for a mechanical services contractor licence or a mechanical services nominee supervisor licence must be required to demonstrate a minimum two years relevant industry experience (excluding certain design elements for the air conditioning and refrigeration licence classes, as these cannot be performed under the proposed occupational licence). This experience requirement will not commence until 1 January 2022, when the new licensing framework is fully implemented.

4.0 Implementation for industry

4.1 Transitional arrangements

To provide a seamless transition for industry, including the impacts of potential costs or displacement of existing workers, the consultation RIS presented the department's proposal to implement the licensing requirements in two stages. The department has refined the proposals to incorporate feedback received during the consultation process, with the following transitional arrangements being proposed.

- **Stage 1: From 1 January 2020 –**
 - All new entrants (those who complete an apprenticeship after this date) would be required to hold the mechanical services licence before performing mechanical services work.
 - All businesses (contractors) and nominee supervisors would be required to hold the mechanical services licence. However, they will have a six month moratorium period where they will not be prosecuted for the offence of performing unlicensed mechanical services work. This will allow these individuals and companies six months to meet the licensing requirements. However, from 1 July 2020 these individuals and companies must hold a licence to lawfully perform mechanical services work.
 - All individuals currently performing mechanical services work will be able to continue to perform this work unlicensed until 31 December 2021, if they are employed by the holder of a relevant mechanical services contractor licence.
 - Individuals not working in the industry on commencement (1 January 2020) and who do not meet the eligibility requirements (including technical qualifications), will need to undertake the relevant training before being able to work in the industry.
- **Stage 2: From 1 January 2022 –**
 - All individuals performing mechanical services work would need to meet the new licensing requirements to be able to continue to work within the industry, noting that apprentices and trainees must be supervised but do not need to be licensed.

To assist existing contractors and nominee supervisors licensees currently performing mechanical services work to transition, their previous experience will be recognised in lieu of the requirements for new entrants into the industry. Specifically:

Mechanical services - medical gas

Contractor and nominee supervisor licence holders (e.g. gas-fitting) who make an application for a mechanical services - medical gas licence, and who can demonstrate they have been performing medical gas work for at least six months, will be eligible for the mechanical services - medical gas licence. A fee will apply to this initial application as the medical gas scope of work is new and substantially different to the scopes of work for other licence classes.

When it comes time to renew their licence/s, the licensee can decide to specialise in medical gas work and pay to renew only that licence; or retain (and pay) for both their gas-fitting and medical gas licence.

Mechanical services - air-conditioning and refrigeration

Current contractor and nominee supervisor licence holders of QBCC's 'Refrigeration, Air-Conditioning and Mechanical Services including Limited Design' licence and the 'Refrigeration, Air-Conditioning and Mechanical services including Unlimited Design' licence will be taken to hold the new mechanical services licence and not be charged a fee upon transition. However, they will be required to pay fees upon renewing the mechanical services licence.

Some current RAC contractors also undertake work which will be captured under the mechanical services – plumbing licence and employ suitably qualified staff to perform that work. RAC contractors who can demonstrate they have been performing mechanical services plumbing work for at least six months and hold the relevant qualifications (or employ a nominee supervisor who holds the relevant qualifications), will be eligible for the mechanical services – plumbing licence. This initial application will attract no fee.

When it comes to renew their licence/s, the licensee can decide to specialise in either air conditioning and refrigeration or mechanical services – plumbing work and pay to renew only that licence; or retain (and pay) for both.

Mechanical services - plumbing

Plumbing and drainage contractor and nominee supervisor licence holders who make an application for a mechanical services – plumbing licence, and who can demonstrate they have been performing mechanical services plumbing work for at least six months, will be eligible for the mechanical services – plumbing licence. This initial application will attract no fee.

When it comes to renew their licence/s, the licensee can decide to specialise in mechanical services work and pay to renew only that licence; or retain (and pay) for both their plumbing and drainage and their mechanical services licence.

Benefits

The benefits of implementing the licensing requirements as proposed are as follows:

- achieves a reasonable balance between the interests of workers and consumers;
- recognises the experience and expertise of existing workers in the sector;
- enables the regulator to take action against individuals performing substandard mechanical services work;
- provides a career path for individuals performing mechanical services work;
- gives industry two years to transition into the licensing framework;
- enables a seamless continuation of service delivery in rural areas;
- provides employers and consumers transparency about the people who are performing mechanical services work; and
- improved accountability of workers in the industry.

Risks

Previously, the heating, ventilation, air conditioning and refrigeration (HVACR) industry raised concerns that HVACR technicians would be displaced by plumbers and electricians under the model discussed as part of the Queensland Building Plan. This risk has been mitigated through the establishment of a dedicated mechanical services – air conditioning and refrigeration occupational licence, which recognises the HVACR industry as a specialist stream with a specific skillset. The department has consulted with peak bodies and has been advised that the proposed model has alleviated the HVACR industry concerns about being displaced. However, feedback through this RIS process has refined the department's understanding of the potential impacts to industry.

The potential risks associated with implementing the new licensing framework are listed below. However, it is believed that these risks would be mitigated through the two-staged implementation approach:

- An initial decline in the number of individuals performing mechanical services work due to the eligibility requirements, potentially disrupting service delivery in rural areas, reducing industry competition and increasing consumer costs.
- New entrants (those who have completed an apprenticeship) in the industry may not have elected the prescribed units of competency, meaning that although they have completed a nationally accredited apprenticeship they are ineligible to hold a licence and perform mechanical services work in Queensland.
- Individuals currently undertaking study may need to adjust their study program to ensure they are able to be licensed at the completion of the course.

- Registered Training Organisations being inundated with applications for enrolment and trade assessment tests, delaying the obtainment of the new licence classes.

There are also implementation risks for the industry regulator (QBCC), including insufficient time to:

- ensure systems and processes are updated to accommodate the new licensing framework;
- provide adequate notice to industry of the new licensing requirements; and
- design and deliver education and awareness campaigns.

It is believed that the proposed transitional arrangements will mitigate the aforementioned risks by:

- enabling individuals, other than nominee supervisors, to continue to work for a licensed contractor or contractor to which an exemption applies (6 months exemption);
- providing RTOs sufficient time to assess RPL and trade assessment applications, while individuals continue to perform their current work;
- recognising existing licensees;
- only requiring applications received after 31 December 2019 to meet the new licensing requirements, noting they will have until 1 January 2022 to meet these requirements.

4.2 Current vs future licensing requirements

The current licensing requirements under the QBCC Act and PDA will apply until the mechanical services licensing provisions commence on 1 January 2020. From 1 January 2020, all new entrants, businesses (contractors) and nominee supervisors will be required to hold a mechanical services licence or be exempt from holding a licence before being able to perform mechanical services work.

Individuals, other than nominee supervisors, currently performing mechanical services work will be able to continue to perform this work unlicensed until 31 December 2021, so long as they are employed by the holder of a relevant mechanical services contractor licence or if an exemption applies to their employer. From 1 January 2022 all individuals performing mechanical services work will need to hold a mechanical services licence.

About 2,500 (current as at 30 December 2018) QBCC licensees who hold a RAC and mechanical services (unlimited or limited design) contractor licence will automatically be taken to hold the equivalent mechanical services contractor licence. It is not proposed to change the scope of work or technical qualifications for the equivalent mechanical services licence. However, the name of the licence class and monetary threshold for when a licence is required will change.

As is the case with other QBCC occupationally licensed trades, a licence will be required to perform mechanical services work, regardless of the value of the work. This licence can be either an occupational licence or if an individual also wants to contract, subcontract or advertise to perform mechanical services work, a contractor licence.

Currently holders of a water plumber – water and sanitary restricted licence, issued under the PDA, are able to perform mechanical services work. It is proposed to recognise these licensees under the mechanical services licensing framework by deeming them to hold a mechanical services – plumbing licence. As the occupational licence issued under the PDA is broader in scope than the mechanical services – plumbing licence, individuals will be required to hold both licence classes. However, it is proposed that individuals who hold the licence issued under the PDA will not be required to pay for a mechanical services licence under the QBCC Act.

Table 2 compares the current and future QBCC licensing requirements to be able to perform the various streams of mechanical services work.

Mechanical services (MS) type of work stream	Current licensing requirements	New QBCC licensing requirements
Work on medical gas systems	Contract and perform the work: Nil	Contract and perform the work: MS – medical gas contractor licence
	Perform the work: Nil	Perform the work: MS – medical gas occupational licence
Work on air-conditioning and refrigeration systems	Contract and perform the work: RAC and MS including unlimited design contractor licence <u>or</u> RAC and MS including limited design contractor licence (Monetary threshold \$3,300)	Contract and perform the work: MS – air conditioning and refrigeration (unlimited design) contractor licence <u>or</u> MS – air conditioning and refrigeration (limited design) contractor licence (monetary threshold \$0)
	Perform the work: Nil	Perform the work: MS – air conditioning and refrigeration occupational licence
Plumbing work related to MS systems	Contract and perform the work: Plumbing and Drainage Contractor (broader scope of work)	Contract and perform the work: MS – plumbing contractor licence
	Perform the work: Water plumber – water and sanitary restricted licence	Perform the work: MS – plumbing occupational licence

Table 2: Current vs future licensing requirements

5.0 Costs

The costs of transitioning to the mechanical services licensing framework will differ for each individual and company, dependent upon their previous training (formal and informal), skillset, knowledge and experience. However, the following section provides an indication of the costs associated with the licence application process and training requirements.

5.1 Licence fees

Consistent with other QBCC licence applications, an application for a mechanical services licence will be decided by the QBCC Commissioner in accordance with the legislation and fees will apply.

The QBCC Regulation will prescribe the fees associated with obtaining the initial licence or renewing or restoring a licence. Generally, when making the initial application for a licence two fees will apply, an application fee and a licence fee, where a licence fee generally applies when applying to renew a licence. As a licence may be issued under the QBCC Act for one year or three years, the licence fees will differ dependent upon the duration of the licence.

Contractor licence fees are charged according to the licensee's licence categories as prescribed through the Minimum Financial Requirements (MFR). Generally licence fees increase with government indexation annually.

Currently, individuals who are required to hold two licences to perform the same scope of work only pay for one licence, this will also apply for the mechanical services licence classes. For example, to perform plumbing work you must hold a licence issued under the PDA, the mechanical services licence class will include aspects of water plumbing work and therefore the licensee would be required to hold a licence issued under the PDA and a licence under the QBCC Act.

It should be noted that if an individual holds a licence and wants to perform work other than what is included within the scope of work of the existing licence, they will be required to pay fees for the second licence as it expands the scope of work they are currently able to perform.

The QBCC licence fees for 2019-2020 are set out in **Table 3**.

Licence type and Maximum revenue	Individual QBCC licence types			Company QBCC licence types		
	Application fee	1-year licence fee	3-year licence fee	Application fee	1-year licence fee	3-year licence Fee
Nominee Supervisor	\$213.75	\$213.75	\$545.00	N/A	N/A	N/A
Site Supervisor	\$213.75	\$213.75	\$545.00	N/A	N/A	N/A
Fire Occupational	\$121.65	\$121.65	\$310.20	N/A	N/A	N/A
Plumbing and Drainage Occupational (issued under the PDA)	\$68.97	\$143.10	N/A	N/A	N/A	N/A
SC1 (\$200,000)	\$374.10	\$285.65	\$728.50	\$624.70	\$571.20	\$1456.50
SC2 (\$800,000)	\$427.50	\$357.35	\$911.35	\$713.15	\$713.15	\$1818.55
Cat 1 (\$800,001-\$3M)	\$578.65	\$427.50	\$1090.15	\$980.45	\$856.80	\$2184.70
Cat 2 (\$3,000,001 - \$ 12M)	\$578.65	\$427.50	\$1090.15	\$980.45	\$856.80	\$2184.70
Cat 3 (\$12,000,001 – 30M)	\$803.20	\$643.15	\$1640.10	\$1337.90	\$1284.30	\$3275.00
Cat 4 (\$30,000,001 – 60M)	\$803.20	\$643.15	\$1640.10	\$1337.90	\$1284.30	\$3275.00
Cat 5 (\$60,000,001 - \$120M)	\$803.20	\$643.15	\$1640.10	\$1337.90	\$1284.30	\$3275.00
Cat 6 (\$120,000,001-\$240M)	\$803.20	\$643.15	\$1640.10	\$1337.90	\$1284.30	\$3275.00
Cat 7 (>\$240M)	\$803.20	\$643.15	\$1640.10	\$1337.90	\$1284.30	\$3275.00

Table 3: QBCC licence fees 2019-2020

It is proposed that the mechanical services licence fees will be the same as for other licences issued under the QBCC Act:

- for occupational licences, the mechanical services licence would be the same as the fire protection occupational licence
- for contractor licences, the fees will vary according to the licensee's MFR category.

5.2 Employer costs

Employers may have staff undertaking mechanical services work that:

- will be eligible to obtain a mechanical services licence upon commencement;
- may need to complete some gap training; or
- will need complete an apprenticeship.

The following provides an overview of the potential costs associated with employers transitioning into the mechanical services licensing framework.

Employer costs may include:

- recruitment costs for specialist expertise;
- higher wages and entitlements because of the specialist skillset and licensing requirements;
- loss of productivity associated with the use of an employee to supervise and train an apprentice and the need for apprentices to attend off the job training. However, business can expect productivity to improve in the long term due to a highly skilled work force;

- travel and/or accommodation costs for an apprentice or trainee to attend training;
- training costs for staff; and
- tool allowances or costs for apprentices or trainees.

A number of incentive programs exist to encourage and assist employers to employ apprentices. The following provides some information on these programs.

The Australian Apprenticeships Incentives Program provides a number of incentive payments to assist employers who take on an Australian Apprentice, particularly where the Australian Apprenticeship is in a trade experiencing a skills shortage³.

Employers who use the Australian Government's JobActive service may be eligible for wage subsidies when employing eligible persons who are mature aged, young, long-term unemployed or indigenous.

Queensland Government programs

Eligible employers have access to two programs - Employer Support Payment of up to \$15,000 and Youth Boost Payment of up to \$20,000 - when they employ eligible unemployed jobseekers.

From 1 July 2017, WorkCover Queensland has offered employers a discount on their premium if they employ an apprentice. The discount is applied by removing the apprentice wages from the employer's premium calculation. This does not apply to the employment of trainees.

Employers may also be eligible for a payroll tax exemption for the wages paid to their apprentices and trainees.

Employers will also benefit as there would be fewer underqualified and unlicensed individuals competing and underpricing the services being delivered.

5.3 Apprentice and trainee costs

While individuals undertaking an apprenticeship or traineeship are not required to be licensed while undertaking formal training, there will be costs associated with undertaking the training and entering the industry. The following provides an overview of the costs that would be incurred while completing an apprenticeship or traineeship.

Apprentice or trainee costs may include:

- reduction in wages if the person has been working in the industry whilst unqualified;
- study costs such as fees, specialist tools, text books, standards, travel and/or accommodation; and
- parking or transport costs (to attend training).

Training costs will depend on the training organisation chosen to deliver the training and assessment for the apprenticeship or traineeship. These training organisations determine the fees to be charged to deliver

³ Information accessed from www.australianapprenticeships.gov.au/employer-incentives on 29 March 2019.

their services. Some training organisations⁴ are contracted by the Queensland Department of Employment, Small Business and Training to deliver these services at a subsidised rate.

Non-funded apprentices and trainees are charged a fee for service cost which is outlined in a training plan prior to the commencement of training.

A number of Commonwealth and State initiatives exist to financially assist individuals undertaking an apprenticeship, including high school graduates and people returning to work after a lengthy period of being unemployed.

To support year 12 graduates into work, the Queensland Government offers free TAFE in high priority areas, including:

- Certificate III in Engineering - Mechanical Trade (Refrigeration and Air Conditioning) – Apprenticeship;
- Certificate III in Plumbing – Apprenticeship; and
- Certificate III in Plumbing (Mechanical Services) – Apprenticeship.

Eligible apprentices and trainees that meet Queensland funding support requirements are charged a set fee per nominal hour. According to information sourced from TAFE with regard to the Certificate III in Plumbing, these fees are calculated at a regulated rate of \$1.60 per nominal hour. Concession rates apply for students who hold a current health care card or who identify as Aboriginal or Torres Strait Islander.

Advice from peak bodies is that it is rare for apprentices to pay for their nominal hours and this cost is generally covered by their employer. It is understood this arrangement is not mandated and any individuals undertaking training are encouraged to discuss payment of fees with their employers.

Apprentices covered by certain industry awards may have no out of pocket expenses relating to RTO fees and prescribed textbooks as these costs are generally covered by their employer. For example, section 15.6 of the Building and Construction General On-Site Award 2010 sets out that all fees charged by an RTO and the cost of prescribed textbooks for the apprenticeship, which are paid by an apprentice, should be reimbursed by the employer to the apprentice within a certain timeframe. Alternatively, the employer can pay these costs directly to the RTO⁵.

⁴ Information regarding training organisations is available from the Queensland Training Information Service (QTIS) www.qtis.training.qld.gov.au/.

⁵ Fair Work Commission, June 2019, *Building and Construction General On-Site Award*, www.fwc.gov.au

Table 4 provides an indication of course fees sourced from the Australian Government's MySkills website and TAFE Queensland.

Course	Average full course fees ⁶	Course fees: subsidised ⁷	Course fees: concession ⁸	Average course duration
Certificate III in Plumbing (CPC32413)	\$7,085	\$1,654	\$662	42 months
Certificate III in Engineering - Mechanical Trade (MEM30205)	\$10,300	Unknown	Unknown	48 months
Certificate III in Air Conditioning and Refrigeration (UEE32211)	\$6,321	\$1,712 – \$1,808	\$683 - \$723	48 months

Table 4: Indicative course fees

Like employers, incentive programs exist to encourage individuals to undertake an apprenticeship or traineeship. The following provides a non-exhaustive list of support offered to apprentices and trainees:

- travel and accommodation subsidy⁹ for apprentices and trainees (not school-based) who have to travel more than 100 km to attend training.
- Commonwealth Government allowances such Youth Allowance, Austudy and ABSTUDY. As part of this assistance, apprentices and trainees may be eligible for a health care card which may entitle them to a reduction in some of the costs of training.
- Commonwealth Government Australian Apprenticeships Incentives Scheme - apprentice incentives include access to the Trade Support Loans designed to assist in the costs associated with being an apprentice and Living Away From Home Allowance.
- other financial support, including disability support.

5.4 Costs for existing employees

Unlicensed individuals currently performing mechanical services work will be required to hold a licence and meet the eligibility requirements, including the technical qualification requirements, from 1 January 2022.

Individuals who do not hold a formal qualification may be able to demonstrate competence through other means including the RPL process. The costs for RPL are determined by the registered training organisation and vary depending on the number of units successfully recognised, the fee structure of the course, and any assessment or training required¹⁰. However, a scan of information available online indicates that the cost ranges between \$60 to \$400 per unit of competency. Advice received from an RTO is the approximate cost for an RPL assessment is \$900.

⁶ Average course cost entered on My Skills website by training providers. Not all training providers enter this information on My Skills www.myskills.gov.au/courses/search

⁷ TAFE Queensland, www.tafeqld.gov.au

⁸ Information accessed from www.australianapprenticeships.gov.au/employer-incentives

⁹ Queensland Government subsidy

¹⁰ TAFE, *Recognition of prior learning*, <https://tafeqld.edu.au/courses/ways-you-can-study/recognition-of-prior-learning.html>

If the applicant is unable to demonstrate sufficient competence to be eligible for the full qualification, they may be required to undertake gap training, which could include completing one or more units of competency. The cost of completing a unit of competency will vary between organisations and between the unit of competency being undertaken. However, through industry feedback and by reviewing the available information it expected that the cost will generally range between \$50 and \$300 per unit of competency.

Costs are provided to the applicant on an individual basis. Individuals in the air conditioning and refrigeration mechanical services stream can apply for funding to cover the costs of RPL and gap training under the Trade Skills Assessment and Gap Training Program¹¹ (discussed on following pages).

5.5 Industry cost benefit analysis

As certain work within the mechanical services licensing framework has historically been unregulated it is difficult to accurately identify the number of people who will be impacted by the reforms. However, based on the Commonwealth's information¹², as at 30 June 2018, there were 89,237 active industry permits issued to the RAC industry under the *Ozone Protection and Synthetic Greenhouse Gas Management Regulations 1995*. This includes 18,758 refrigerant trading authorisations and 70,479 refrigerant handling licences (issued by the Australian Refrigeration Council - ARC).

Current forecast industry statistics shows 6,890 businesses operating in the RAC industry nation-wide¹³. The industry comprised about 3,400 establishments in 2012. There was a relatively even cross-section of organisational sizes with on average of five people employed per organisation, with most of the established organisations in the industry providing a broad range of services, while small to medium-sized contractors specialised and operating in distinct geographical areas. It was estimated that Queensland's share of national industry establishments is 24 percent¹⁴ of the Australian RAC industry.

The Department of Jobs and Small Business' September 2018 industry survey, shows that there are currently around 3900 air-conditioning and refrigeration mechanics employed in Queensland. It also shows there were around 370 air-conditioning and refrigeration mechanic apprenticeship commencements and 150 completions in Queensland as at March 2018.¹⁵

DHPW estimated that 4,461 individuals would be working unlicensed in the RAC industry in Queensland in 2019.

Using the estimation of 4,461 individuals and assuming that all employees transition to the new mechanical services air conditioning and refrigeration occupational licence, the licensing costs to industry would equate to \$1,061,718 (based on the 2018-2019 QBCC annual licence fees for the fire protection occupational licence).

¹¹ Department of Employment, Small Business and Training, *Trade Skills Assessment and Gap Training Program*, <https://desbt.qld.gov.au/training/providers/funded/tradegap>

¹² Department of Environment and Energy Annual Report, www.environment.gov.au

¹³ IBISWorld, Air conditioning and Heating Services (E3233), www.ibisworld.com.au

¹⁴ NOLA, 2013, Decision Regulation Impact Statement, Proposal for national licensing of the refrigeration and air-conditioning occupations, <https://ris.pmc.gov.au/2014/07/10/national-licensing-refrigeration-and-air-conditioning-occupations---coag-decision-ris->

¹⁵ Department of Jobs and Small Business, Airconditioning and Refrigeration Mechanic Queensland, ANZSCO 3421-11, September 2018 <https://docs.jobs.gov.au/system/files/doc/other/334211airconrefrigmechqld.pdf>

The potential sector wide educational and training costs to obtain full formal qualifications are presented in **Figure 4** for various scenarios. Each scenario assumes:

- a total of 4,461 unlicensed air conditioning and refrigeration workers in Queensland
- a course fee of \$6,321 for the Certificate III in Air Conditioning and Refrigeration (UEE32211)¹⁶
- the eligible worker pays the full course fee to undertake the full formal qualification prior to receiving subsidised or concessional fee (funding sources including Commonwealth and state funding, private training provider covering part or full fee)¹⁷.

Estimated cost impact of unlicensed air conditioning and refrigeration workers needing to undertake full formal qualifications to be eligible for a mechanical services occupational licence, based on four scenarios		
% unlicensed workers (4,461)	No of workers	Cost impact
10%	446	\$2,819,798
25%	1115	\$7,047,915
50%	2230	\$14,098,990
75%	3346	\$21,148,485

Figure 4: Indicative sector-wide training costs for the air conditioning and refrigeration stream

Other potential costs include:

- time costs associated with obtaining the new licence, estimated to be 1.5 hours per application
- job losses for individuals failing to meet the licensing requirements by 1 January 2022 (full implementation date)
- wage decrease for individuals who need to undertake an apprenticeship to meet licensing eligibility requirements.

The wage decreases will vary from employer to employer, however as an indication of the potential wage decrease it is estimated that the average weekly wage of a RAC mechanic in Australia is \$1,500¹⁸, while the average wage of a RAC apprentice in their third year apprentice is about \$795¹⁹. The department proposes to mitigate the impact of the above issue by implementing generous transitional provisions.

Although the benefits that result from these training requirements are not easily quantifiable, the department believes that this cost will be more than offset by benefits in the form of:

¹⁶ Average course cost entered on My Skills website by training providers. Not all training providers enter this information on My Skills www.myskills.gov.au/courses/search

¹⁷ Australian Industry and Skills Committee <https://nationalindustryinsights.aisc.net.au/industries/electrotechnology/refrigeration-and-air-conditioning>

¹⁸ Australian Government, Job Outlook: Airconditioning and refrigeration mechanics, <https://joboutlook.gov.au/occupation.aspx?code=3421>

¹⁹ Fair Work Ombudsman, Pay Calculator, www.fairwork.gov.au/pay

- safety benefits and productivity improvement for employers, as they will continue to rely on workers' registration in training and obtaining the licence as evidence of competency. Long term, it is estimated that businesses will not have to compete with the unlicensed for low risk work level projects.
- additional benefits to the individual from improved career and opportunities for work, including being able to seek work across state borders and benefiting from greater labour mobility²⁰. There is also the opportunity for unlicensed individuals currently working in the sector, to work in other aspects of the air-conditioning and refrigeration industry in public buildings and commercial buildings, or in the residential sector (given, for example, class 1a buildings are not covered by the scope of work).
- increased safety and consumer protection, compared to a no licence option. It is anticipated that the licensing framework would result in a reduced amount of defective work and rectification and/or injury or death.

Trade Skills Assessment and Gap Training Program for priority trade qualifications

The Trade Skills Assessment and Gap Training Program is a Queensland Government program, giving eligible Queenslanders with substantial industry experience an opportunity to complete a priority trade qualification. Accessed via User Choice pre-qualified suppliers, it funds trade skills assessments and the gap training required to gain an eligible qualification.

This program, administered by the Department of Employment, Small Business and Training, involves:

- assessing the skills of experienced individuals who can demonstrate substantial competency in a priority trade qualification²¹; and
- providing gap training of no more than 40 per cent of the funded competencies to complete the trade qualification.

Currently the following qualifications, which are relevant to the mechanical services – air conditioning and refrigeration licence are eligible for assistance under the program:

- Certificate III in Air Conditioning and Refrigeration UEE32211; and
- Certificate III in Engineering Mechanical Trade MEM30205.

Funding is provided at the rate of \$2,000 per eligible participant for RPL and \$2,700 per participant to deliver the gap training required. Participants are required to contribute to the cost of their gap training at the rate of \$1.60 per nominal hour or, where eligible, a concessional rate.²²

Skills for Queensland: free apprenticeships for under 21s

The Queensland Government, through the Department of Employment, Small Business and Training, is providing access to fully subsidised training across 139 priority apprenticeship or traineeship qualifications for young people²³.

²⁰ Definition of 'labour mobility' from Cambridge English Dictionary: People will be able and willing to move from one job to another, or move from one area to another, in order to work

²¹ Department of Employment, Small Business and Training, *Trade Skills Assessment and Gap Training Program*, <https://desbt.qld.gov.au/training/providers/funded/tradegap>

²² Department of Employment, Small Business and Training, TSAGT Program frequently asked questions, <https://desbt.qld.gov.au/training/providers/funded/tradegap/faqs>

²³ Department of Employment, Small Business and Training, *Free apprenticeships for under 21s*, <https://desbt.qld.gov.au/training/training-careers/incentives/freeapprenticeships>

The government will cover the cost of training for apprentices and trainees who commence or are undertaking a priority apprenticeship or traineeship qualification from 1 July 2019 to 30 June 2023.

The following qualifications relevant to the mechanical services licensing framework are covered under this program:

- Certificate III in Air Conditioning and Refrigeration - Apprenticeship
- Certificate III in Engineering – Mechanical Trade (Refrigeration and Air Conditioning) - Apprenticeship
- Certificate III in Gas Fitting – Apprenticeship
- Certificate III in Plumbing – Apprenticeship
- Certificate III in Plumbing (Mechanical Services) – Apprenticeship.

Construction Skills Queensland (CSQ) programs

CSQ is an independent industry-funded body supporting the building and construction industry in Queensland. It invests levy funds and delivers programs and services to ensure the industry has a skilled workforce.

Various programs offered by CSQ provide workers with access to subsidised training to meet their skilling needs. As an example, under the new licencing framework, contractor, nominee and site supervisor licences require successful completion of BSBSMB401 – Establish Legal and Risk Management Requirements of Small Business or a course the commission considers as equivalent. CSQ currently offers funding for eligible workers to complete this unit of competency under their Short Courses (General) program. Access to funding for this unit of competency may assist some workers to undertake gap training required to meet to the new licensing requirement²⁴.

Trades Recognition Service (Australian Government)

Funding the costs for the RPL process may be available to people who do not have an Australian vocational education and training (VET) qualification relevant to the mechanical service occupation. The Australian Government's Department of Education and Training provides information about the trades recognition services and the RTOs approved by Trades Recognition Australia (TRA)²⁵.

6.0 Transitional provisions

6.1 Mechanical services – medical gas work

Currently medical gas work in Queensland is regulated administratively through Queensland Health's internal policies and procedures. The mechanical services licensing framework will require all new entrants, businesses (contractors) and nominee supervisors performing medical gas work to obtain a QBCC licence from 1 January 2020 and other individuals (site supervisor and occupational) by 1 January 2022. The exact number of individuals undertaking this type of work has been difficult to determine.

²⁴ Construction Skills Queensland, July 2019, *Submission to the Consultation Regulatory Impact Statement: Mechanical Services Regulation*

²⁵ Australian Government Department of Education and Training, *Trades Recognition Services*, www.tradesrecognitionaustralia.gov.au/programs/trades-recognition-service

However, there are currently 193 health facilities and hospitals²⁶ and 723 Queensland dentists clinics²⁷, amongst other medical facilities which require this type of work to be carried out. The department has been advised that trade qualified plumbers or gas fitters currently perform a majority of this work and therefore the transition from the existing regime to the mechanical services licensing regime is expected to be minimal.

Stakeholder responses to the consultation RIS

What tradespeople currently perform medical gas work (other than plumbers or gas fitters)?

Stakeholders advised that other than plumbers and gasfitters, the trades performing medical gas work include mechanical fitters, boiler makers, welders, electricians, RAC technicians, biomedical technicians, biomedical engineers, sheet metal workers, tool makers, diesel fitters, automotive mechanics, cabinet makers, draftsmen and spray painters. Additionally, people working in the manufacturing sector also perform medical gas work.

Do individuals who are not trade qualified currently perform medical gas work? If so, what work do they perform?

No. of stakeholders	Yes	No	Unsure
23	73.91%	4.35%	21.74%

The majority of stakeholders asserted that people without trade qualifications currently perform medical gas work and they can be involved in any aspect of the work. Some stakeholders advised that workers must undertake relevant in-house, competency based training, prior to performing medical gas work.

6.2 Mechanical services – air conditioning and refrigeration

As at December 2018, there were approximately 2500 individuals or companies that held a RAC and mechanical services (limited or unlimited design) contractor licence.

An amendment to the QBCC Act (yet to commence on proclamation) provides that if a licensee, immediately before commencement of the mechanical services contractor licensing provisions, held a RAC and mechanical services (limited or unlimited design) contractor licence they are taken to hold the equivalent mechanical services contractor licence.

Holders of the new mechanical services contractor licence will have the same competency and qualification requirements as holders of the current licence.

Some current RAC contractors also undertake work which will be captured under the mechanical services – plumbing licence and employ suitably qualified staff to perform that work. RAC contractors who can demonstrate they have been performing mechanical services plumbing work for at least six months and hold the relevant qualifications (or employ a nominee supervisor who holds the relevant qualifications), will be eligible for the mechanical services – plumbing licence.

²⁶ Queensland Health, Hospital and Health Service facility profiles, www.health.qld.gov.au/services

²⁷ Australian Dentist Directory, www.australiandentistsdirectory.com.au/brisbane-dentists-and-queensland-dentists

Individuals or companies who do not hold a RAC and mechanical services (limited or unlimited design) contractor licence immediately before commencement of the provisions will need to make an application (and pay the relevant fees) for a mechanical services licence before performing mechanical services work.

6.3 Mechanical services – plumbing

Plumbing is an occupationally licensed trade, meaning all individuals performing plumbing work as an occupation must hold a QBCC licence. Consequently it is not anticipated that any significant issues would arise while transitioning to the new licensing framework, as plumbers will be performing work within the scope of the mechanical services plumbing licence. However, if individuals do not hold the proposed technical qualification, they may need to undertake some additional training or have their skills assessed (i.e. RPL or similar process) to be eligible to hold a licence in the new licence class.

As at December 2018, there were approximately 10,000 occupational plumbers licensed in Queensland.

6.4 Other considerations

Do you support the requirement for all new entrants (completed an apprenticeship and not yet entered the industry) to hold a full mechanical services licence from 1 January 2020? Please explain your answer.			
No. of stakeholders	Yes	No	Unsure
41	68.29%	26.83%	4.88%

Note: The commencement timeframe of 1 January 2020 was discussed throughout the consultation RIS and was posed in the online survey. However, in the question box on page 26 of the RIS document, this question was posed as 'late 2019/early 2020' for new entrants and contractors. The total number of stakeholder responses received noted in the box above includes the seven written submissions that addressed the late 2019/early 2020 timeframe.

The majority of stakeholders supported this proposal.

The reasons provided for not supporting the proposal included the need to complete a full four year RAC apprenticeship, concern that the timeframe was too short to complete the required training modules. However, it should be noted that individuals undertaking an apprenticeship are exempt from holding a licence under the QBCC Act.

QMB supported a commencement of late 2019/early 2020 for occupational licences only.

Do you support all individuals and companies being required to hold a full mechanical services licence from 1 January 2022?			
No. of stakeholders	Yes	No	Unsure
34	64.7%	29.4%	5.9%

The majority of stakeholders supported this proposal.

The reasons provided for not supporting the proposal included the need to complete a full four year RAC apprenticeship, concern that the timeframe was too short, and objection towards the need for licensing. However, it should be noted that individuals undertaking an apprenticeship are exempt from holding a licence under the QBCC Act.

Note: The commencement timeframe of 1 January 2022 was discussed throughout the consultation RIS and was posed in the online survey. However, in the question box on page 27 of the RIS document, this question was incorrectly posed as '30 September 2020'. Eight written submissions addressed this question, as per below:

Do you support all individuals and companies being required to hold a full mechanical services licence from 30 September 2020?

No. of stakeholders	Yes	No	Unsure
8	87.5%	12.5%	-

In considering the commencement date, what other transitional matters should be included? For example, matters regarding the proposed use of recognised prior learning or a trade skills assessment.

Key considerations provided by stakeholders include:

- The qualifications and availability of those who would assess RPL and undertake trade skills test;
- Availability of RTOs, especially in regional areas;
- Potential use of competency based training;
- AS2896-2011 – ability to demonstrate competence for the Australian Standard before the commencement date;
- Workers' prior learning and length of industry experience; and
- Importance of industry wide education campaign on the obligation to upskill.

What other approaches exist for transitioning unlicensed individuals?

Key suggestions and considerations provided by stakeholders through the online survey include:

- For the medical gas licence, the Healthcare Facility Manager is required to assess the competency of the installer/contractor (as per AS2896-2011);
- Proof of industry experience taken into consideration;
- Some companies run internal competency based training courses;
- Probation period;
- Statutory declaration / capability statement from an employer; and
- Online training.

MBQ's written submission suggested the use of a Challenge Test, comprising practical and theory components, mapped against the relevant qualifications.

Written submissions from AMCA, Dawsons Technical Services, AG Coombs and Paragon Plumbing advised *"Both classes of Mechanical Services Contracting include scopes of work which will be described as Mechanical Services Plumbing. An unintended consequence of the regulations could see a demarcation for some contractor licensees who engage RAC employees to perform some chilled water system maintenance and installs. Given that the critical issue being addressed in these regulations is public and consumer safety, those performing the work need to demonstrate competence. RAC qualified employees engaged by RAC contractors who can demonstrate competence should be deemed as eligible to perform certain scopes of mechanical services work."*

Amendments in response to feedback and further policy development

- The mechanical services licensing framework will commence on 1 January 2020.
- From 1 January 2020, new entrants (those finishing their apprenticeship after 31 December 2019) will be required to hold a mechanical services licence.

- From 1 January 2020, contractors and nominee supervisors will be required to hold a mechanical services licence, subject to a six month exemption from prosecution. Existing licensees will have their experience and qualifications considered in lieu of the prescribed requirements for new entrants.
- Individuals, other than nominee supervisors, currently performing mechanical services work will be able to continue to perform this work unlicensed until 31 December 2021, if they are employed by the holder of a relevant mechanical services contractor licence.
- From 1 January 2022, all individuals will be required to hold a mechanical services licence.

7.0 Individuals without formal qualifications

To provide a seamless transition for industry and individuals to the mechanical services licensing framework, the consultation RIS sought feedback on ways to recognise the skills of individuals currently performing mechanical services work without any relevant formal qualification or licence.

7.1 Recognition of prior learning (RPL)

Currently under the Australian Qualification Framework, individuals can apply for RPL. RPL is an assessment process that involves assessment of an individual's relevant prior learning (including formal, informal and non-formal learning) to determine credit outcomes towards a course or qualification²⁸. It is the responsibility of organisations who issue qualifications to offer RPL assessment to students.

7.2 Trade skills assessment

Additionally, the department sought feedback about the use of trade skills assessment processes, which would involve existing practitioners having to apply (and pay a fee) for a certificate of competency. The certificate would be issued by a registered training organisation upon being satisfied that the applicant has the necessary skills, practical experience and employment history (employed in the relevant trade for a minimum period), to demonstrate that they have acquired the competencies of the trade.

7.3 Apprentices, trainees and students

Individuals undertaking an apprenticeship, traineeship or other form of formal study for the purpose of obtaining a relevant mechanical services qualification, are exempt from holding a mechanical services licence while studying.

Stakeholder responses to the consultation RIS

Would you support using the recognition of prior learning (RPL) process to transition unlicensed individuals into the mechanical services licensing framework?			
No. of stakeholders	Yes	No	Unsure
42	54.76%	38.09%	7.14%

The majority of stakeholders supported this proposal.

²⁸ Australian Qualifications Framework Council, 2012, *Recognition of Prior Learning: An Explanation*, www.aqf.edu.au/sites/aqf/files/rpl-explanation.pdf, accessed March 2019

The reasons provided for not supporting RPL as a transitional arrangement include preference for a full apprenticeship qualification, the preference for a minimum four years industry experience, cost and time to undertake the RPL process, and the potential abuse of the RPL process resulting in undesirable outcomes.

In its written submission, the QMB explains *“In construction, RPL is often completed poorly and as an industry have developed a tick and flick culture where a simple sign off is assumed. In this case, industry can not simply sign off workers”*.

Would you support introducing a trade skills assessment process to transition unlicensed individuals into the mechanical services licensing framework?			
No. of stakeholders	Yes	No	Unsure
42	64.26%	28.57%	7.14%

The majority of stakeholders supported this proposal. The MBQ recommended the assessment include a practical component.

Stakeholder reasons for not supporting a trade skills assessment process were the same as the reasons provided for not supporting the RPL process.

Amendments in response to feedback and further policy development

The RPL process and trades skills assessments will be available to industry so that licence applicants can meet and prove their eligibility requirements.

8.0 Jurisdictional discussion

8.1 Jurisdiction comparison

The building and construction industry licensing requirements vary significantly across Australia. While Victoria and Tasmania are the only jurisdictions that currently issue a mechanical services work licence, other jurisdictions regulate certain aspects of this work, for example air conditioning and refrigeration work is regulated in New South Wales. Similarly Victoria and Tasmania are the only jurisdictions that licence medical gas work.

8.2 Australian Refrigeration Council (ARC) licensing scheme

States and Territories are responsible for administering the National Construction Code, which is achieved through licensing and compliance activities. The Australian Government is responsible for, among other things, regulating the use of ozone depleting gases, such as refrigerants used in air conditioning units. The licensing regimes often work in parallel to each other and serve different purposes, as is the case for air conditioning and refrigeration work.

Under the *Ozone Protection and Synthetic Greenhouse Gas Management Act 1989* (C'wth) an individual who installs, services or repairs air conditioning equipment is required to hold a refrigerant handling

licence (RHL) issued by the ARC²⁹. An individual must complete a Certificate II level qualification to be eligible to obtain a RHL permitting them to commission and decommission single head split air conditioning systems.

Under the QBCC Act, an individual must hold a QBCC licence before contracting or performing building work involving a single head split air conditioning system (including installing a unit), where the value of the work exceeds \$3,300 (including GST). Therefore, currently an individual can install a single head split air conditioning unit without holding a QBCC licence, if the value of the work is less than \$3,300 (including GST). However, the individual would be required to hold a RHL regardless the value of the work. Any electrical work associated with installation or maintenance will need to be undertaken by a licensed electrician. The introduction of the Queensland mechanical services licensing framework does not alter the national licensing requirements for handling refrigerants nor the licensing requirements for electrical work.

Stakeholder responses to the consultation RIS

Are there any technical aspects of mechanical services licensing in other jurisdictions that should be considered?

Key suggestions and considerations provided by stakeholders through the online survey include:

- Queensland Health requires a letter of compliance to AS2896-2011 (as a consideration for the medical gas licence)
- Other jurisdictions and the Australian Standards support hydrocarbon refrigerants
- Consultation with ARC about licensing guidelines
- Medical gas occupational licence should be recognised in all states and territories
- Arrangements for applicants with relevant qualifications gained overseas.

The issue of mutual recognition was raised by MBQ in its written submission: *“Other states e.g. Victoria regulate Mechanical Services for both Air Conditioning & Plumbing. The technical and experience requirements are different. DHPW needs to determine if they will award a license in QLD via mutual recognition or if they will apply restrictions. Some states e.g. NSW do not have a Mechanical Services Plumbing license class.”*

9.0 Consultation

9.1 Queensland Building Plan

The Queensland Government consulted on the introduction of a mechanical services licence as a part of the Queensland Building Plan (QBP), with ongoing consultation occurring with key stakeholders. The QBP proposal was to adopt a mechanical services licensing model similar to the Victorian model, which would

²⁹ Australian Refrigeration Council, www.arctick.org/licensing

have resulted in mechanical services work being performed by qualified plumbers and displacing the existing licensing arrangements for the air conditioning and refrigeration sector.

In response to the 2017 QBP discussion paper, DHPW received 684 responses to the online surveys, including 188 responses to the proposed regulation of medical gas and 159 written submissions.

Feedback identified broad industry concern about Queensland simply adopting the Victorian mechanical services licensing model. In response to feedback received, the Queensland model was substantially modified to recognise the specialist streams of mechanical services work and enable the regulation to divide the licence into licence classes that reflect the specialist streams of work.

9.2 Consultation on the draft Regulation

In December 2018, DHPW consulted peak bodies regarding the draft Regulation, including the Air Conditioning and Mechanical Contractors' Association, Air Conditioning and Refrigeration Mechanics Association, Master Plumbers Association Queensland, Plumbing and Pipe Trades Employees Union Queensland and Service Trades College. These organisations generally support the proposed licence classes, scopes of work and technical qualifications. Feedback received during these consultation sessions have been considered when developing the consultation RIS.

The responses to the consultation RIS have assisted to refine the final Regulation and inform government decision making about the licence classes, scopes of work, transitional arrangements and technical qualification requirements.

Targeted confidential consultation also occurred with the following organisations and agencies and members of the Ministerial Construction Council and the Service Trades Council:

- Air Conditioning and Mechanical Contractors' Association
- Association of Wall and Ceiling Industries Queensland
- Australian Institute of Architects
- Australian Institute of Building Surveyors
- Australian Manufacturing Workers Union
- Board of Architects of Queensland
- Board of Professional Engineers of Queensland
- Communications, Electrical and Plumbing Union, Plumbing Division, Queensland Branch
- Construction, Forestry, Mining and Energy Union
- Department of Employment, Small Business and Training
- Department of Housing and Public Works
- Electrical Trades Union
- Engineers Australia
- Housing Industry Association
- Institute of Plumbing Inspectors Queensland Inc
- Landscape Queensland
- Local Government Association of Queensland Ltd
- Master Builders Queensland
- Master Concreters Australia

- Master Electricians Australia
- Master Painters Queensland
- Master Plumbers Association of Queensland
- National Association of Women in Construction
- National Fire Industry Association
- Office of Fair Trading Queensland
- Plumbing and Pipe Trades Employees Union Queensland
- Queensland Building and Construction Commission
- Queensland Council of Unions
- Queensland Training Ombudsman
- Queensland Health
- Subcontractors Alliance
- TAFE Queensland.

9.3 Consultation Regulatory Impact Statement

On 6 June 2019, DHPW released a consultation RIS for comment. The consultation period closed on 5 July 2019. The RIS was available online via the EngagementHQ platform and was accompanied by an online survey.

Stakeholders were made aware of the consultation process via the following methods:

- Announcement at Service Trades Council Industry Forum
- Media statement by the Minister for Housing and Public Works; Minister for Digital Technology; and Minister for Sport
- Announcement at DHPW plumbing law reforms information sessions (Rockhampton, Gatton, Emerald, Moranbah, Eagle Farm)
- Email from DHPW to peak bodies and other key stakeholders
- Feature on DHPW website and Get Involved website
- Feature on DHPW's Building for Queensland social media
- Listed on Queensland Productivity Commission's website

A total of 60 responses were received:

- 48 responses via the online survey made available through the EngagementHQ platform
- 7 written submissions where the stakeholder answered questions in the consultation RIS document
- 5 written submissions.

Note: There were some differences and errors between the questions in the consultation RIS document and the online survey. These are noted in relevant areas of discussion in this document.

Survey responses

Survey and RIS question responses are summarised in the relevant sections throughout the body of this decision RIS.

Written submissions

A summary of the policy matters raised by stakeholders and DHPW's response is in **Appendix 2**.

It should also be noted that where possible, stakeholder feedback has been discussed in relevant sections throughout this document and in response to questions posed in the consultation RIS. A summary of each submission follows.

AG Coombs Group Pty Ltd

AG Coombs Group Pty Ltd is a commercial service provider. Their submission addressed the questions posed in the consultation RIS (as noted in relevant sections of this document).

Air Conditioning and Mechanical Contractors' Association (AMCA)

AMCA is a national industry body representing businesses operating in the commercial Heating Ventilation Air Conditioning (HVAC) industry.

AMCA expressed its general support of the licensing framework. Their submission addressed the questions posed in the consultation RIS (as noted in relevant sections of this document).

Australian Refrigeration Council (ARC)

ARC is the peak body for the RAC industry in Australia. It administers national refrigerant handling licences and refrigerant trading authorisations on behalf of the Queensland Government.

ARC's submission focused mostly on the air conditioning and refrigeration occupational licence class but also commented on the mechanical services plumbing licence. ARC's assessment of the relevant proposals are noted in relevant sections of this document.

In addition, ARC advocated the opportunity to align Queensland's licensing system with the national ARCTick Scheme, which ARC administers. ARC submitted that *"it would assist the RAC industry greatly if the current RAC01 Full Refrigeration and Air Conditioning Refrigerant Handling Licence was accepted as proof of meeting the technical qualification requirement for the proposed mechanical services – air conditioning and refrigeration occupational licence."*

Australian Refrigeration Mechanics Association (ARMA) and Australian Refrigeration Association (ARA)

ARMA and ARA represent the Heating Ventilation Air Conditioning and Refrigeration (HVACR) industry and provided a joint submission on behalf of their members.

Their submission discusses the demarcation issues between HVACR work (often labelled as mechanical services) and the mechanical services work undertaken by the plumbing trade. They explain the difference as the HVACR industry works in high pressure refrigeration systems whereas the plumbing trade works in low pressure systems.

ARMA and ARA also noted the differences in the proposed air conditioning and refrigeration licence class qualifications, stating *"Simply put many of the units of competencies under the MEM30205 RAC stream do not stack up to the competencies of the UEE32211 RAC training package... an example is the (plumbing) low pressure welding skills applied under the MEM30205 RAC stream in comparison to the RAC's required high pressure welding requirements adequately provided under UEE32211."*

ARMA and ARA recommended:

- class 1a and class 10 buildings be included
- single head split systems, heat pumps, ventilation and ductwork be included in the scopes of works for the air conditioning and refrigeration licence classes

- UEE32211 and MEM30205 training packages be accepted as meeting the technical qualifications for the medical gas licence classes as well as the air conditioning and refrigeration unlimited design licence
- the medical gas licence be listed as additional endorsements to existing RAC licences (once all eligibility requirements are met)
- certificate III level training (preferably UEE32211) be required to work with flammable refrigerants
- acceptance of MEM30205 only prior to 2022
- industry be provided a two year transitional period
- removal of the 34k limit from all refrigeration and air conditioning licences
- the inclusion of flammable refrigerant competencies
- that a single occupational licence be offered for refrigeration and air conditioning work, with endorsements in design and/or prepare plans and specifications
- that CPC32413 Certificate III in Plumbing be accepted as meeting the technical qualifications for the mechanical services plumbing licence, only if the eleven units of competency set out on page 13 of the consultation RIS are mandated.

Construction Skills Queensland (CSQ)

CSQ is an independent body that provides assistance to Queensland's building and construction industry in order to ensure that workers have access to skills and training required to perform their work and meet the needs of industry.

Its submission noted: *"The introduction of the licensing framework will ensure that workers are suitably skilled in the technical aspects required to work with these systems to minimise health and safety risks and improve consumer protection in this area."*

CSQ provided clarity and additional information relating to employers' obligations under industry awards relating to the payment of training costs (training fees and the cost of textbooks) for their apprentice; this has now been updated in the relevant sections of this document.

Further, CSQ recommended a significant and effective communication strategy for the implementation of the licensing framework to ensure industry is aware of the new requirements and the necessary steps to continue performing mechanical services work. Further, in light of the risk that RTOs will not have the capacity to meet potential demand for training or assessment, CSQ recommended that impact of access to training be closely monitored in order to ensure that sufficient time is provided to allow workers to undertake the necessary steps to meet the licensing requirements.

CSQ advised that the Certificate III in Plumbing is currently under review by Artibus Innovation, and that any changes to this training package arising from the review may impact licensing requirements.

Dawsons Technical Services

Dawsons Technical Services is a commercial service provider. Their submission addressed the questions posed in the consultation RIS (as noted in relevant sections of this document).

Master Electricians Australia (MEA)

MEA is the national trade association representing electrical contractors.

MEA's submission noted the intention not to change the current situation in relation to the installation of single head split systems i.e. that electrical workers can continue to install these systems so long as the value of the building work does not exceed \$3,300 (including GST).

MEA raised the issue of regulatory uncertainty around the cost of the single head split system and whether it is included in the cost of “building work”. They submitted their view and interpretation of the *Electrical Safety act* that these units are electrical appliances and part of an electrical installation.

MEA recommended that “*significant wording should be inserted into the Act AND Regulations to clarify the demarcation between installing an electrical appliance and any associated incidental building work*”.

Master Plumbers Association of Queensland (MPAQ)

MPAQ is the peak industry body representing plumbing contractors in Queensland.

MPAQ expressed its support for the licensing framework, particularly noting the importance of regulating medical gas work. Their submission addressed the questions posed in the consultation RIS (as noted in relevant sections of this document).

In addition, they provided the following recommendations and considerations:

- consider widening gas licensing to include all industrial gases
- remove the reference to plumber from the mechanical services plumbing licence (resulting mechanical services licence)
- removal of the Water Plumber – Water and Sanitary (Restricted) licence when mechanical services licence is introduced

Paragon Plumbing (Qld) Pty Ltd

Paragon Plumbing is a commercial service provider. Their submission addressed the questions posed in the consultation RIS (as noted in relevant sections of this document).

Plumbing and Pipe Trades Employees Union of Queensland (PUQ)

PUQ addressed the questions posed in the consultation RIS (as noted in relevant sections of this document).

PPW Group

PPW Group is a commercial service provider. Their submission raised fire protection issues, which is outside the scope of this RIS process and the mechanical services licensing framework.

Queensland Master Builders (QMB)

QMB addressed the questions posed in the consultation RIS (as noted in relevant sections of this document). In summary, QMB is generally supportive of the licensing framework for mechanical services work as it aligns with other higher-risk occupational areas such as fire protection, plumbing and electrical work. However, QMB raised concerns regarding the time, effort and cost to industry (workers and businesses) in order to meet the eligibility requirements for licensing, as well as potential skills shortages and impact on building costs. To address these issues, QMB recommended:

- that relevant government agencies work together to streamline licensing arrangements in order to minimise legislative crossover and the number of licences required to undertake work
- government establish a (non-CSQ administered) training fund which would be made available to industry to meet the new licensing requirements.

Further, QMB was strongly opposed to the medical gas licence class in its current form and urged that it include independent testing and certification.

10.0 Implementation and evaluation

The mechanical services licensing framework will commence on 1 January 2020 and be fully implemented by 1 January 2022.

In the lead up to the commencement of the new regulation, QBCC and the department will engage with key industry stakeholders, including peak bodies, to ensure that industry is informed of the changes.

The QBCC will administer the new mechanical services licensing regime using its existing administrative processes and procedures.

The QBCC and the department will employ mechanisms for monitoring and evaluating the mechanical services licensing framework to ensure it remains effective and relevant over time. This would include:

- monitoring developments relevant to the regulation of building standards in Queensland;
- monitoring the impact on the industry; and
- monitoring any administrative costs that may be incurred by the QBCC.

10.1 QBCC implementation costs

Many individuals currently performing mechanical services work, do so under a contractor, plumbing occupational or gas work licence. The QBCC has advised that similar to other licensed trades, the costs of regulating the mechanical services industry will be funded by the revenue raised from licensing and compliance activities.

Therefore, while the exact revenue is unknown because of the unknown number of unlicensed individuals the new licence streams are estimated to provide a modest annual increase in QBCC's revenue (approximate average of \$20,000 annually), which would provide a cost-neutral net result.

Appendix 1

List of stakeholder responses received

Twelve (12) written submissions were received:

- A.G. Coombs Group Pty Ltd
- Air Conditioning and Mechanical Contractors Association of Queensland
- Australian Refrigeration Council
- Australian Refrigeration Mechanics Association and the Australian Refrigeration Association
- Construction Skills Queensland
- Dawsons Technical Services Pty Ltd
- Master Builders Queensland
- Master Electricians Australia
- Master Plumbers Association of Queensland
- Paragon Plumbing (Qld) Pty Ltd
- Plumbing and Pipe Trades Employees Union Queensland
- The PPW Group.

A total of 48 stakeholders completed the online survey:

- 20 stakeholders identified they were a QBCC licensee, including:
 - 17 contractor licensees
 - 13 company contractors
 - 4 individual contractors
 - 3 occupational licensees
- 23 stakeholders who did not identify as a QBCC licensee, including:
 - 7 who work in the building industry
 - 7 other business or industry
 - 2 from an education or research organisation
 - 1 peak body
 - 3 other
 - 3 undisclosed
- 5 undisclosed.

Appendix 2

Summary of policy considerations raised by stakeholders

Mechanical services licence – Summary of industry feedback	
Policy matter	DHPW response
<p>Requesting a change to policy positions previously decided and implemented through the <i>Plumbing and Drainage Act 2018</i>. For example, that the following should be included as mechanical services work –</p> <ul style="list-style-type: none"> • Single head split systems • Treatment of cooling towers • Ductwork • Ventilation systems • Should apply to class 1a and class 10 buildings • Laboratory gas pipelines 	<p>The mechanical services licensing framework has been designed to address the health and safety risks associated with the use of mechanical services in high risk buildings.</p> <p>Certain elements of work have been excluded from the licensing framework as it is considered that the existing licensing and regulatory requirements are adequately managing any risks.</p> <p>Alternatively, the work does not meet the policy intent of the medical gas work which is to address the risks associated with the use of medical gas for patient care.</p>
<p>Requested consideration of the following matters –</p> <ul style="list-style-type: none"> • Including fire safety aspects such as stairwell pressurisation and fire dampers 	<p>Fire protection is considered a specialist field of work, which is recognised through the Queensland Building and Construction Commission fire protection licensing framework. It is not intended to displace the existing fire protection licensing arrangements.</p>
<p>The inclusion of incidental building work in each of the licence classes</p>	<p>The Regulation will include incidental building work. However, as is the case with all licence classes the work will not involve occupationally licensed work unless the individual performing the work holds the occupational licence. For example, plumbing, fire protection and other mechanical services licence classes.</p>
<p>Design work for medical gas systems should be within scope of the licence.</p>	<p>Industry feedback advised that various trades perform different aspects of the scope of work of medical gas work and not every person performs design work. It is not intended to disturb the existing arrangements regarding the design elements of the medical gas systems.</p>
<p>Medical gas alarm system</p>	<p>The definition of medical gas work includes all elements of the system between the cylinders or gas tanks through the reticulated system up to and including the wall outlet. However, the mechanical services provisions should be read in conjunction with other legislation. Therefore, any work to which a licence is required under another Act, such as electrical work under the <i>Electrical Safety Act 2002</i>, cannot be performed under the mechanical services licence.</p>

Mechanical services licence – Summary of industry feedback	
Policy matter	DHPW response
<p>Requested matters be included that are currently within scope. For example –</p> <ul style="list-style-type: none"> • Cryogenics • Heating should be included in the RAC licence • Medical tools • Servicing and maintenance of medical gas systems • Performance testing 	<p>The matters raised in the left-hand column are considered within scope of the mechanical services licensing framework. These are identified through the definitions and scope of work. The department has reviewed the definitions considering the comments and considers no changes are needed to clarify the matters raised.</p>
<p>Requested matters be included that may be within scope depending how they are used and installed. For example –</p> <ul style="list-style-type: none"> • Suction waste • Industrial gases • Cylinder racking 	<p>The licensing framework targets health and safety risks associated with the use of mechanical services systems in high risk buildings.</p> <p>Regarding medical gas work the application of the licensing requirements is dependent upon how the system is installed. For example, the system must be a reticulated system, located within the walls of a building and be used for patient care, therapeutic or diagnostic purposes. If the elements in the left-hand column meet these requirements they are within scope if they do not meet these elements they are out of scope of the licence.</p>
<p>Clarification of matters such are the following within scope, the –</p> <ul style="list-style-type: none"> • actual wall outlet • gas manifold • does the mechanical services – plumber licence permit plumbers to install refrigerant pipelines 	<p>The wording of the mechanical services – plumbing licence is being revised to further clarify the scope of work that can be performed under this licence.</p> <p>The department considers that industry may benefit from education about some of the matters raised as opposed to requiring legislative amendments.</p>
<p>Amendments to wording such as –</p> <ul style="list-style-type: none"> • Medical facility instead of hospital • 'Patient use' instead of 'patient care' • Definitions should relate to a building only 	<p>The department has considered the suggested amendments and considers that the existing definitions adequately address the matters raised. However, consider that industry education may assist in clarifying the scope of the work for each licence class.</p>
<p>Need to exclude –</p> <ul style="list-style-type: none"> • Work for which an electrical licence is required 	<p>Electrical work regulated under the <i>Electrical Safety Act 2002</i> is currently excluded from the mechanical services licence class.</p>
<p>Matters outside of the scope of this reform policy. For example</p> <ul style="list-style-type: none"> • Mutual recognition • Whether a single head split system air conditioning unit should be considered an appliance or building material for 	<p>A few issues were raised regarding matters regulated by other government departments, such as mutual recognition and asbestos management. The comments provided insufficient information to forward information to the relevant agencies.</p> <p>Matters such as certification, continuing professional development and the application of the \$3,300 threshold value for the Queensland Building and Construction Commission</p>

Mechanical services licence – Summary of industry feedback	
Policy matter	DHPW response
<p>the purposes of the \$3,300 licensing threshold</p> <ul style="list-style-type: none"> • Introducing a third-party certification process • Asbestos management issues • Mandating professional development 	<p>licensing framework are matters that will be considered independently of the mechanical services licensing reforms.</p>
<p>Consider mandating training on hydrocarbon refrigerants for RAC</p>	<p>Under the existing vocational educational and training (VET) system, national training packages are developed to meet the workforce development needs of industry, enterprises and individuals. The department has considered the existing training package requirements for the RAC sector and do not intend on deviating from the national training package requirements.</p>
<p>Site supervisors should be required to complete a certificate III level qualification</p>	<p>The department proposes to adopt this feedback and require site supervisors to hold a certificate III level qualification.</p>
<p>Mandate training for smoke and fire damper installation and maintenance</p>	<p>Fire protection work is considered specialist work regulated under a dedicated fire protection licensing regime. It is not intended that the mechanical services licensing framework displace the existing fire protection licensing framework.</p>
<p>Comments were made regarding the interaction between the various trades, particularly the plumbing work and RAC work. Including the need to maintain a clear separation of trades, conversely that the licence should be broad and upskill industry to be able to undertake all mechanical services work under a single licence.</p>	<p>The department consulted industry through the Queensland Building Plan on a single mechanical services licence, like the model that was previously adopted in Victoria. In response to industry feedback a revised licensing model was developed to recognise the specialist streams of work within the mechanical services sector. For example, water plumbing work associated with the systems or work associated with refrigerants. Due to the specialist expertise required for each of the aspects of work it is not proposed to amalgamate the licence classes and the scope of work is being refined to delineate between the specialist trades.</p>
<p>One respondent raised concerns about duplication and additional licence fees</p>	<p>The proposed licence classes enable individuals and businesses to specialise in mechanical services work. Transitional arrangements will recognise existing licensees performing this work under a QBCC issued licence.</p> <p>Where a licence is required to hold a licence under two Acts to perform this work they will only pay for one licence. For example, an occupational licence issued under the PDA is needed to perform plumbing work associated with the mechanical services licence. If an individual wants to contract to perform mechanical services- plumbing work or to contract to perform mechanical services plumbing work under the under the QBCC Act they will be required to hold two licences. However, if the scope of work being performed is the same under both licence classes the applicant will only need to pay for one licence.</p> <p>However, if a licensee makes a business decision to perform a broader scope of work than the licence issued under the PDA</p>

Mechanical services licence – Summary of industry feedback	
Policy matter	DHPW response
	<p>excluding contracting and supervisory activities) they will be required to pay for the licences required to undertake the broader scope of work. For example, if an individual wants to perform mechanical services work and hold the contractor licence for this work, but later decide they want to contract for all plumbing and drainage work they will be required to pay for and hold two licence classes.</p> <p>Note these scenarios do not apply where transitional provisions permit otherwise.</p>

Appendix 3

Terminology and definitions

Australian Refrigeration Council Ltd (ARC)

Is the peak body for the refrigeration and air conditioning industry in Australia, servicing individuals and businesses through licensing and regulatory assistance. ARC administers refrigerant handling licences and refrigerant trading authorisations on behalf of the Australian Government, to professionals in the refrigeration/air conditioning and auto industry.

On the 1st of July 2005, the Australian Government implemented a licensing scheme to support regulations under the *Ozone Protection and Synthetic Greenhouse Gas Management Act 1989*, designed to reduce emissions of environmentally harmful refrigerant gases.

Under the *Ozone Protection and Synthetic Greenhouse Gas Management Regulations 1995*, a Refrigerant Trading Authorisation is required when a business or individual wishes to acquire, store or dispose of refrigerant.

Anyone wanting to install, service or repair an air conditioner, or any other piece of refrigeration and air conditioning equipment must be a licensed technician under the regulations. The holder of a Refrigerant Handling Licence is an individual who is qualified in their field of activity and has met the licensing requirements under the regulations.

Building work

Means work regulated by the QBCC and includes (but is not limited to) the erection, construction, renovation, alteration, extension, improvement or repair of buildings.

Contractor licence

A contractor licence permits an individual or company to contract, subcontract, advertise to contract and perform the work within the scope of work for their licence class.

Draft Regulation

Means the draft Queensland Building and Construction Commission (Mechanical Services Licence) Amendment Regulation 2017, tabled in the Queensland Parliament on 10 October 2017. This draft regulation is included in this RIS as Appendix 1 and is available on the Parliament website: www.parliament.qld.gov.au.

Licensees

QBCC licence holders, including building and trade contractors, occupational (plumbing and drainage and fire protection), pool safety inspectors and certifiers

Minimum Financial Requirements (MFR) Policy

A policy for licensing administered by the QBCC. The MFR policy was repealed on 2 April 2019 as all of requirements for licensing are included in the Queensland Building and Construction Commission (Minimum Financial Requirements) Regulation 2018 under the *Queensland Building and Construction Commission Act 1991*.

The objectives of minimum financial requirements are to promote financially viable businesses and foster professional business practices in the Queensland building industry.

National Construction Code (NCC)

The NCC is an initiative of the ABCB. It provides the minimum necessary requirements for safety and health, amenity and accessibility, and sustainability in the design, construction, performance and liveability of new buildings (and new building work in existing buildings) throughout Australia.

Occupational licence

An occupational licence permits an individual to carry out work within the scope of work for their licence class, but do not permit the individual to contract or advertise to contract for mechanical services work.

Refrigerant

According to the *Australia and New Zealand refrigerant handling code of practice* (Australian Refrigeration Council Ltd (ARC), the medium used for heat transfer in a refrigerating system, which absorbs heat on evaporating at a low temperature and a low pressure and rejects heat on condensing at a higher temperature and higher pressure. (The term 'gas' should be avoided when referring to refrigerants). Unless specified otherwise, refrigerant in this code refers to fluorocarbon refrigerant only. Any person whose business includes manufacturing, installation, servicing, modifying, or dismantling of any refrigeration and/or air conditioning equipment which:

- (a) contains
- (b) is designed to use, or
- (c) is manufactured using

fluorocarbon refrigerant, must ensure that they and/or any of their employees who handle fluorocarbon refrigerant are appropriately licensed under the *Ozone Protection and Synthetic Greenhouse Gas Management Regulations 1995* and any regulations that supersede it.

Refrigerant handling licence

A licence issued by the Australian Refrigeration Council required to carry out work in relation to refrigeration and air conditioning equipment.

Queensland Building and Construction Commission (QBCC)

Queensland's building and construction industry regulator.

Queensland Building Plan (QBP)

Released in October 2017 by the Queensland Government, the QBP outlines a long-term strategic direction for Queensland's building and construction industry.

Appendix 4

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