**on**

**Discussion Document: Ensuring effective regulation of health and safety risks associated with toxic or flammable refrigerant gases**

**Submission made by**

 **Name** \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

 **Company** \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

**# Number of employees**\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

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| **Executive Summary** |

Thank you for the opportunity to make a submission on this important issue to our company.

Our industry is committed to ensuring all Technicians and Engineers can demonstrate the competency to co-operate safely and effectively in all they do, be it a single heat pump installation, a significant commercial refrigeration, a mechanical services fitout or a large ammonia cool-store.

With the changing refrigerants under the Kigali Amendment to the Montreal Protocol, this important health & safety issue has been brought to light, but discussions with industry have also highlighted the need to ensure that all refrigerants are covered under the scope below. Raising the standards in our industry with a mandatory Credential and ensuring that all individual Technicians carry a Credential is the only way to ensure that those health & safety risks are mitigated

Our industry association CCCANZ have consulted with member companies in detail and we share their view. As an employer of said Technicians we are committed to ensuring the safety of our staff and the public alike. I enclose my submission to support Climate Control Companies Association of NZ (CCCANZ) and the wider HVAC&R Industry as they seek your approval to provide this Credential.

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*Technicians are not required to demonstrate their competency to install, repair and maintain systems that use flammable or toxic refrigerant gases*

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| 1. Have we accurately identified the issues associated with the competence of refrigeration technicians to install, repair and maintain systems that use flammable or toxic refrigerants? Are there other issues associated with this matter?
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**YES**

We understand the problem, you have identified the issues. It is worth noting the issues are complex and varied and cannot be treated in isolation

The problem has been identified correctly, but accuracy as to the reasoning behind this fact is lacking, mainly due to the resultant fragmentation of our industry, to satisfy some growth sectors. In fact, the potentially least qualified industry sectors also require basic refrigeration skills (along with an understanding of the characteristics of different refrigerants). Two examples are;

1. Split System Heat Pump Air Conditioning less than 18Kw
2. Automotive Air Conditioning

The basic skill required to safely handle refrigerants in both sectors is still “Refrigeration”. The current level of skills required isinsufficient for the above and many other sectors that handle refrigerant. We believe that the basic skills required in an environment covering all refrigerants including low GWP refrigerants, need to be consistent and standardised.

To do this, they need to align with the current qualification framework, namely, Trade Certificate and the Approved Filler course. Other relevant topics such as an understanding of Hazardous Substances (HASNO) and how to handle spills of Hazardous substances (HAZCHEM) also need to be introduced as part of a standardised curriculum for all technicians who handle refrigerant.

We strongly recommend the inclusion of Technicians who install, repair and maintain refrigeration, heat pump or air-conditioning systems using high pressure refrigerants to any occupational regulation that might be considered.

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| 1. Do you agree with these objectives? Would you suggest any others?
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**YES**

Our company agree with the objectives as stated.

The industry would be better served by including;

1. The alignment of the qualification standards for any technician handling any refrigerants
2. Revising and increasing the existing qualification standards, such as Refrigeration Trade Certificate and Approved Filler courses.
3. Specifying that only competent persons who install, repair or maintain refrigeration, heat pump or air conditioning systems that use high pressure refrigerants be added to any occupational regulation considered.

*Option 1: Introduce an authorization requirement for individual refrigeration service technicians in regulations under the HSW Act*

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| 1. Do you support the introduction of an authorization requirement for individual refrigeration technicians in regulations under the HSW Act?
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**YES**

We support an authorisation for individual refrigeration Technicians, being persons who install, repair or maintain refrigeration, heat pump, or air conditioning systems that use all refrigerants, be they high pressure or otherwise, through regulation under the HSW Act. We support the qualification framework proposed by the HVAC&R Council and governed by IRHACE/CCCANZ/RLNZ as part of a new industry ‘Credential’ they are formulating for Technicians.

The HSW Act is the appropriate vehicle to put such a License under.

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| 1. What do you think are the main benefits and costs of this proposal? (Please quantify any impacts identified and express in dollar terms to the extent practical)
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The main benefit to this proposal would be to maximise risk mitigation of not only the Technicians, but also their customers and the public.

CCCANZ are very clear that the word ‘authorisation’ in this context equates to Technicians holding a mandatory industry Credential and this will only be achieved through a form of regulation such as the HS&W Act to give it further credibility.

Clearly there will be added costs. For many, this will be viewed as a cost of doing business and to improve the lot of the industry. Others may not share that view. Regardless, the quality and professionalism in the industry will be lifted, and I welcome the outcome a mandatory credential will bring to both the industry and the public.

Whilst our industry has a view as to cost implications, it recognises the current cost of a Trade Certificate or similar but sees that the final cost of a credential best determined once the government direction is agreed on. Industry have, however done a significant amount of work on how that Credential should look and are confident they can provide a comprehensive framework to ensure those standards are reinforced.

This credential will include, but is not limited to*;*

* Enhancement of existing Trade Certificate qualifications
* Additional training for existing Technicians
* A form of grandfathering of all existing Technicians at the outset
* A method of Capstone and/or Prior Recognition of Learning for some in the industry, be they older Technicians, or those looking to immigrate
* Use of Continuous Professional Development (CPD) to incentivize upskilling on an ongoing basis
* As refrigerants are likely to change markedly in future years, there is a need to regularly revisit the Technician knowledge and training
* Any changes to the regulatory framework introduced now must be suitably robust enough to accommodate a world where increased pressure, flammability, or toxicity of refrigerants becomes more prevalent, the norm, even
* Requiring the individual to demonstrate competency when installing, repairing, or maintaining these systems will provide a much higher level of certainty than other options available.

An industry licensing or registration model has also been considered to further reinforce that process and assessment procedure. It is envisaged that, for practicality’s sake, the register would align to other similar registers within the construction industry and wider built environment, however, would be managed jointly by a body common to our industry associations.

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| 1. Do you agree that technicians who only work on automotive air conditioning systems should be excluded from the proposed requirement to hold an authorization? If no, why?
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Definitely **NO.**

This answer is no because of the magnitude of risk to life (their life and others). Whilst we don’t have day to day contact with the practices and procedures currently employed in the automotive industry, the risks are similar.

Given parts of the automotive manufacturing industry have opted for the widespread use of high pressure refrigerant CO2, we believe those Technicians who service or maintain that equipment must be required to hold this industry Credential if the risks to consumers or third parties are to be mitigated.

Our industry does and can work in a mix of disciplines and must be trained for the optimum outcome and safety for all.

*Example;*

*The Tamahere Coolstore fire in 2008 is an example of just why not to allow segmentation or for a loophole in the industry. The contractor at fault at Tamahere was a mobile air-conditioning technician familiar with automotive work. He was not trained to handle such a project, but able to do so all the same, with tragic consequences.*

IMPORTANT NOTES!

1. The argument about volume of refrigerant contained in each system (or vehicle) should not apply because refrigerant (to service these vehicles) can be supplied in bulk – the technician can be dealing with larger volumes during service procedures.
2. The question of how NZ is going to handle imported vehicles (both new and used) in this regard is very important.
3. Notes 1) & 2) above apply equally to imported packaged equipment (e.g. heat pumps).
4. The NZ government must look at existing border controls of all sources of refrigerant entering (& leaving) NZ.

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| 1. Do you agree that technicians should not be required to hold an authorization for any work on a refrigeration system, heat pump or air conditioning system that uses non-toxic or non-inflammable refrigerants? If no, why?
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Our company **does not** agree with your statement

Every technician should be required to hold an authorisation (Credential) independently. No-one should be exempt. Otherwise there is risk of loopholes being found.

One reason CCCANZ propose this, is that Kigali approves C02 (as a non-toxic and non-inflammable refrigerant), however this is a very high-pressure refrigerant and CCCANZ

 are concerned that currently there are no controls on the design and service of systems employing this refrigerant. The use of C02 is currently increasing markedly, particularly in sub-critical supermarket applications.

Currently, we have no way of telling if any single refrigerant is going to become the ‘refrigerant of choice’ for refrigeration, heat pump or automobiles, but one can safely say that C02 will be a consideration.

To introduce a ‘Credential’ for Technicians yet leave a ‘loop-hole’ to circumvent the safe use of any refrigerant, is contrary to the HSW Act.

The HVAC&R ‘Credential’ includes a tiered Certificate of Competence structure with increasing grades of eligibility within, to cater for safe handling of all refrigerants. That is, all Technicians must sit a practical and theoretical examination and be graded according to competency level. This applies equally to every Technician wishing to handle or purchase any refrigerant.

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| 1. Should the proposed authorization requirement apply (or not apply) to technicians who work on refrigeration or air conditioning systems in aircraft, vessels, transportable containers and mobile (truck or van) refrigeration units? Why?
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**YES,** it must apply.

The key is the *refrigerant* type – not the system type or size.

Accordingly, our opinion is that the proposed authorisation should indeed apply to all Technicians working with any refrigerant.

Regardless, this must apply to

* **all** refrigerants and,
* **all** categories and,
* **all** Technicians/ engineers

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| 1. Do you agree with the proposed categories for the refrigeration technician authorization? If no, why?
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**NO,** as explained in our answers to items 5 through 7 above

Regardless of the situation, this must apply to

* **all** refrigerants and,
* **all** categories and,
* **all** Technicians/ engineers

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| 1. Do you agree with the proposed high-level criteria to be met before a technician authorization will be issued?
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**YES,** I do agree.

There cannot be any exceptions. *Any* Technician working with any refrigerants should be trained and acknowledged via authorisation (i.e. Credential).

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| 1. Are there any other high-level criteria that should be met before a refrigeration technician authorization will be issued?
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**YES**

Our company believe there are shortcomings and believe our industry can introduce a better training regime. This Credential will include training under Pressure Hazards, HASCHEM and HASNO and in brief below:

1. A practical test to demonstrate understanding for the grade they which to practice
2. A test to demonstrate knowledge of related legislation, such as HASNO & HAZCHEM signage and clean-up procedures
3. Training to understand refrigerant Safety Standard 5149
4. Along with training to ensure competency in differing levels and sectors of the industry who handle these refrigerants.

*Option 2: Introduce an authorization requirement for refrigeration service businesses in regulations under the HSW Act*

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| 1. Do you support the introduction of an authorization requirement for refrigeration service businesses in regulations under the HSW Act? If no, why?
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**NO.**

The CCCANZ preference remains for **Option 1** as outlined above because it is the closest control point for mitigating the risk. To further explain this:

* We have no confidence the credential for the PCBU would guarantee that the employer would invest in staff to ensure they are qualified and compliant.
* Currently the PCBU is covered under the HSW Act and there is insufficient compliance
* How can the PCBU have sufficient control over employees i.e. the man in a van who is working remotely say 50km from base. How will he know the quality of the work and what is more sign off on it?

Example

We point out the Electrical regulations require individuals to hold the qualification and for similar reasons. The PCBU does not and does not want to take the responsibility to sign off work remotely.

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| Questions 12 thru 19 |

Not applicable

*Option 3: Build on the current approach to industry self-regulation supported by WorkSafe effort to improve awareness, understanding, and compliance with current regulatory requirements*

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| 1. Do you support building on the current approach to industry self-regulation supported by WorkSafe improving awareness, understanding and compliance with current regulatory requirements? If no, why?
 |

**NO**

Our company agree with CCCANZ who as an industry body will not support this issue.

We support a more direct approach for 2 reasons:

1. Option 1 as outlined above, is the closest control point for mitigating the risk.
2. Our industry has become fragmented in terms of skill levels. We either exclude some sectors from using Kigali gases altogether ***OR*** standardise on an upgraded level of competency and. in this way consolidate the industry and therefore control the risk points (by authorisation/licensing) more effectively. It is the latter direction that we are advocating.

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| 1. What do you think are the main benefits and costs of this proposal? (Please quantify any impacts identified and express in dollar terms to the extent practical)
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There are no benefits to this proposal. There is only the inherent risk with our industry standing still, which is the option offered here.

No large or small amount of money spent on training would have any value under this option. In fact, there is a likelihood of an escalation of issues with low GWP refrigerants, as you well know.

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*Compliance with the joint Australian/New Zealand Standard for commercial refrigeration systems is not mandatory for systems using anhydrous ammonia*

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| 1. Have we accurately identified the gaps in the current regulatory requirements for ammonia refrigeration systems? Are there any other issues associated with this matter?
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**YES**

The problem has been identified correctly. This subject is another example of an anomaly present in our standards of training and regulation for Refrigeration Technicians. The current discussion along with ratification of the Kigali Amendment provides the motivation to correct this situation in the same way that we have described for other lower level attainment areas of our industry.

The basic skill required to safely handle all refrigerants (including anhydrous ammonia, which is being utilised more and more as A1 refrigerants become less available) is still “Refrigeration”. The safe handling of anhydrous ammonia needs to align with the current qualification framework.

We reiterate, anhydrous ammonia is just another refrigerant and is just as dangerous.

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| 1. Do you agree that there is a case for requiring operators of ammonia systems to comply with the joint Australian/New Zealand Standard for commercial refrigeration systems?
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**YES**

However, this answer is reserved for anyone operating Plants employing ammonia refrigerant; it does not change the CCCANZ belief regarding Technicians and their qualifications, which need to have a wider focus encompassing all Kigali refrigerants.

Specialised training to handle ammonia has only developed in a declining market due to insufficient numbers of qualified Technicians. This market is reversing now and the need for more trained Technicians will increase as high GWP refrigerants become more costly and scarce.

CCCANZ believe that anyone handling anhydrous ammonia should have a similar level of standardised training and regulation as anyone handling any refrigerants. As mentioned in our answer to question 1 above, as the level of use of Ammonia is likely to increase, additional trained Technicians will be required, even if they eventually operate a single plant (i.e. become a plant operator).

One of the reasons for the current “fragmentation” of operators possessing ammonia skills, is twofold;

1. A historical declining need, which is *now reversing* due to Kigali and
2. A lack of qualified technician numbers (in Ammonia Refrigeration skills) as a trained source of Plant Engineers.

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| 1. Do you agree with the proposed change to regulation 10.10 of the Hazardous Substance Regulations? If no, why?
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**YES**

We agree, noting that this is a standard applicable to each site using anhydrous ammonia. It should not be confused with our clear advice in this submission that industry Credential should also include the necessary knowledge to handle ammonia and the HASNO (storage and handling regulations) and HAZCHEM (signage) that are fundamentally applicable to the associated level of risk.

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| 1. Do you agree with the proposed transitional arrangements? If no, why?
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**YES**

I believe this to be a practical step for existing ammonia plants and the Technicians.

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| 1. What do you think are the main benefits and costs of this proposal? (Please quantify any impacts identified and express in dollar terms to the extent practical)
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The main benefit of the proposal is to establish a common basis of understanding between Plant Owners, Plant Operators and external service providers (i.e. Technicians).

Costs will be like those mentioned in item 4; however, some specialised training would come at a cost, though unlikely to be greater than the costs incurred for current training available.

It will also assist to “defragment” training, providing additional career paths for Technicians towards becoming a Plant Operator.

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| **In conclusion** |

We believe CCCANZ and the HVAC&R industry take their responsibilities very seriously. They see the current regulatory framework to be deficient and are correct in advocating for a new mandatory credential.

To introduce a framework where all Technicians can demonstrate suitable qualifications in use of all refrigerants will ensure the industry meet their health & safety obligations and reduce risk to workers and the public as the more flammable, volatile and toxic refrigerants become more prevalent. Ultimately, our industry see the Credential and Licensing / Registration recommended in this submission could be worn as a ‘badge of pride’ and ensure high standards within a safe, competent, and progressive industry.

We \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ support that view