MINISTRY OF BUSINESS, INNOVATION & EMPLOYMENT
HĪKINA WHAKATUTUKI

COVERSHEET

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Information redacted **YES / <u>NO</u>**

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In Confidence

Office of the Minister for Workplace Relations and Safety

Chair, Cabinet Economic Development Committee (DEV):

Ensuring Effective Regulation of Health and Safety Risks Associated with Work on Commercial and Industrial Refrigeration, Heat Pump, and Air Conditioning Systems

Proposal

1. I am proposing new regulations under the *Health and Safety at Work Act 2015* to introduce a licensing regime for individual technicians that work on commercial and industrial refrigeration, heat pump, or air conditioning systems that use flammable, toxic, or very high operating pressure refrigerant gases.

2. I also propose to amend regulations in the *Health and Safety at Work (Hazardous Substances) Regulations 2017* to ensure that owners of ammonia-based refrigeration systems comply with the joint Australian/New Zealand Standard for commercial refrigeration systems.

Executive Summary

3. A global phase down of hydrofluorocarbons (HFCs) commenced on 1 January 2019 under the Kigali Amendment to the Montreal Protocol on Substances that Deplete the Ozone Layer (the Kigali Amendment) for those countries that have ratified it.

4. New Zealand will ratify the Kigali Amendment on 3 October 2019, so it will enter into force for New Zealand on 1 January 2020.

5. The phase down will result in significant reductions in the global supply of HFCs which will have a significant impact on the costs of HFCs. Overtime this will incentivise many owners of commercial and industrial refrigeration, heat pump, and air conditioning systems in New Zealand to retrofit or replace their systems to use alternative refrigerants.

6. While alternative refrigerants are less harmful to the environment, they typically present increased risks to health and safety because of their hazardous properties. Consequently, the risks associated with work involving refrigerants and refrigerating systems are likely to increase as HFCs are replaced with more hazardous alternatives.

7. New regulations and amendments to current regulations under the *Health and Safety at Work Act 2015* (the HSW Act) are required to support a safe transition away from HFCs.

8. Consultation on options to ensure only competent persons work on refrigeration, heat pump, or air conditioning systems and to ensure owners of ammonia-based refrigeration systems comply with the joint Australian/New Zealand (AS/NZ) Standard for commercial refrigeration systems was carried out between September

and December 2018. The Ministry of Business, Innovation and Employment received 288 submissions through the consultation process. There was almost unanimous support for a licence on individual refrigeration and air conditioning technicians, with comments largely directed at the details. There was also wide support for the proposal to ensure owners of ammonia-based refrigeration systems comply with the joint AS/NZ Standard for commercial refrigeration systems.

9. This paper seeks decisions relating to:

   a. making new regulations under the HSW Act to establish a licensing regime for technicians that work on commercial or industrial refrigeration, heat pump, or air conditioning systems that use flammable, toxic, or very high operating pressure refrigerant gases;

   b. amending the *Health and Safety at Work (Hazardous Substances) Regulations 2017* (the Hazardous Substances Regulations) to ensure:

      i. persons conducting a business or undertaking (PCBUs) with management or control of commercial or industrial refrigeration systems that use anhydrous ammonia as a refrigerant comply with the joint AS/NZ Standard for commercial refrigeration systems; and

      ii. PCBUs with management or control of commercial or industrial refrigeration systems, in which more than 100kg of anhydrous ammonia is used as a refrigerant, place signage displaying the correct hazard pictogram and statement for ammonia at the entrance to the building and the entrance to the land on which the building is located;

   c. carrying out further targeted consultation on the following matters before final decisions are made:

      i. a possible transport refrigeration licence class;

      ii. a possible exemption for work involving on-farm milk vat refrigeration systems;

      iii. administrative fees;

      iv. offences and penalties;

      v. infringement offences and fees;

      vi. a transitional period for ammonia refrigeration plant compliance with signage requirements; and

      vii. the details of the proposed licensing regime processes.

10. The decisions in this paper are needed now to ensure the regulation development process remains on track to meet the timeline for the Kigali Amendment implementation in New Zealand. Remaining policy decisions will be sought from Cabinet later this year following consultation on those residual matters.

Background

Importance of refrigeration to the New Zealand economy

11. Refrigeration has provided New Zealand the opportunity to develop an extensive export economy, which has made possible a high standard of living for the population. Refrigeration is vital to reducing post-harvest and post-slaughter losses and in the preservation of food products.

12. New Zealand has one of the largest refrigerated storage volumes per capita of any country and a significant percentage of our export earnings are from refrigerated food products.

HFCs are widely used in refrigeration, heat pump and air conditioning systems

13. The majority of commercial refrigeration systems and a smaller number of industrial systems use HFCs currently. HFCs have been widely used in New Zealand and other countries because of their favourable thermodynamic properties and low toxicity, flammability, and reactivity.

14. HFCs are contributing to climate change worldwide and without action to curb their use will become a significant influencer on climate. As nations are moving to undertake ambitious efforts to combat climate change, the world is moving away from substances that have a high global warming potential, including HFCs. As a small, trade-dependent nation that widely uses refrigeration, New Zealand is inevitably influenced by these international changes.

The global phase down of HFCs has commenced

15. In October 2016, New Zealand joined 196 countries in adopting an amendment to the Montreal Protocol on Substances that Deplete the Ozone Layer in Kigali, Rwanda. The Kigali Amendment implements a global phase down of HFCs and is expected to avoid up to 0.5 degrees Celsius of global warming by 2100.

16. The Kigali Amendment entered into force on 1 January 2019 for those countries that have ratified it. Developed countries are required to phase down consumption of HFCs by 85 per cent by 2036. Developing countries have a slower phase down schedule, beginning in 2024 or 2028 and ending in 2047. This will result in significant reductions in the global supply of HFCs which will have a significant impact on the costs of HFCs and will incentivise many owners of commercial and industrial refrigeration, heat pump, and air conditioning systems in New Zealand to retrofit or replace their systems to use alternative refrigerants. New Zealand will ratify the Kigali Amendment on 3 October 2019, so it will enter into force for New Zealand on 1 January 2020.

17. The *Ozone Layer Protection Amendment Regulations 2018* give effect to New Zealand's obligations under the Kigali Amendment and puts in place a permitting system to set annual limits on imports of bulk HFCs from 1 January 2020 which will

reduce gradually over a 17-year period. It will allow New Zealand to phase down our use of HFCs by more than 80 percent by 2037.

18. While alternative refrigerants are less harmful to the environment, they typically present increased risks to health and safety because of their hazardous properties. The current prevalence of HFCs means many technicians lack the knowledge and experience to safely install, maintain, or repair systems that use flammable refrigerants (e.g. hydrocarbons), toxic refrigerants (e.g. anhydrous ammonia), or very high operating pressure refrigerants (e.g. carbon dioxide). The exception to this is the relatively small number of technicians that work on industrial systems that typically use anhydrous ammonia.

New regulations and amendments to current regulations under the HSW Act will support a safe transition away from HFCs

19. The risks associated with work involving refrigerants are likely to increase as HFCs are replaced with more hazardous alternatives. These risks are currently managed under the HSW Act, the *Electricity Act 1992*, and the *Building Code Act 2004*. However, there are two key gaps in the current regulatory requirements that need to be addressed:

    a. Technicians are not required to demonstrate their competency to install, repair, and maintain commercial or industrial refrigeration, heat pump, or air conditioning systems – particularly in relation to systems that use flammable, toxic, or very high operating pressure refrigerants; and

    b. Compliance with the joint AS/NZ Standard for commercial refrigeration systems is not mandatory for systems using ammonia, when all other flammable refrigerants are subject to this requirement.

20. Consultation also identified a third gap in that PCBUs with management or control of ammonia-based refrigeration systems are currently exempt from a basic requirement to display signage at the entrance to the building and the entrance to the land on which the building is located, which displays the hazard pictogram and statement for the hazardous substances contained in the building. This information is essential for firefighters when responding to an incident.

Solution

21. The proposed solution is to:

    a. make new regulations under HSW Act to establish a licensing regime for technicians that work on commercial or industrial refrigeration, heat pump, or air conditioning systems that use flammable, toxic, or very high operating pressure refrigerant gases; and

    b. amend the Hazardous Substances Regulations to ensure:

        i. PCBUs with management or control of commercial or industrial refrigeration systems that use anhydrous ammonia comply with the joint AS/NZ standard for commercial refrigeration systems; and

ii. PCBUs with management or control of commercial or industrial refrigeration systems, in which more than 100kg of anhydrous ammonia is used as a refrigerant, place signage displaying the correct hazard pictogram and statement for ammonia at the entrance to the building and the entrance to the land on which the building is located.

New regulations to introduce a licensing regime for technicians and engineers that work on commercial or industrial refrigeration, heat pump and air conditioning systems

Potential for harm

22. Incompetent installation, repair, or maintenance of commercial or industrial refrigeration, heat pump, or air conditioning systems — which use flammable, toxic, or very high operating pressure refrigerant gases — can result in significant irreversible harm to persons and property. The costs associated with such an accident can be significant in terms of costs associated with: fatalities and serious injuries; damage to the system and associated building; damage to products under refrigeration; attendance by emergency services; investigation and legal costs; lost production while system not operating; repair or rebuild of damaged system and associated building. For example, the Tamahere Cool Store Fire killed one and seriously injured seven firefighters, destroyed $25 million worth of stored products, and $2.2 million worth of fire service equipment.

23. Reliance on the training system alone is unlikely to provide adequate assurance that the risks will be effectively managed. The HVAC&R industry is underpinned by a well-established apprenticeship system, with a National Certificate. However, the National Certificate is not a compulsory requirement for working on refrigeration, heat pump, or air conditioning systems.

24. Previous attempts by the HVAC&R industry to regulate itself have not had sufficient uptake across the industry because of their voluntary nature and potentially because of the use of the safe (but environmentally damaging) HFCs.

Current requirements

25. The risks associated with hazardous refrigerants, and associated plant and equipment, are currently managed by a range of regulatory requirements under the HSW Act. The current requirements places controls on: the use, handling, and storage of hazardous refrigerants; the management of pressure equipment associated with commercial or industrial refrigeration plant; the management of commercial or industrial refrigeration plant that uses flammable refrigerants; the management of electrical hazards; and emergency procedures. Generic, high-level training and supervision requirements that apply to all workers also exist, but there are no specific controls to prevent a technician from working on a refrigeration, heat pump, or air conditioning system beyond their level of skills, qualifications, and expertise.

Proposed change

A new licensing regime for specified HVAC&R technicians

26. I propose to make new regulations under HSW Act to establish a licensing regime for technicians that work on commercial or industrial refrigeration, heat pump, or air conditioning systems that use flammable, toxic or very high operating pressure refrigerant gases.

27. Under the proposed regulations, a duty would be placed on a person to not carry out a class of work on a commercial or industrial refrigeration, heat pump, or air conditioning system — which uses a flammable, toxic, or very high operating pressure refrigerant — unless the person holds a licence for that class of work. This duty would then invoke section 206 of the HSW Act, which requires that:

    a. a person must not carry out work if regulations require the work, or class of work to be carried out by, or on behalf of a person who is authorised; and the person, or the person on whose behalf the work is carried out, is not authorised in accordance with regulations;

    b. a PCBU must not direct or allow a worker to carry out work if regulations require the work, or class of work, to be carried out by, or on behalf of, a person who is authorised; and the person, or the person on whose behalf the work is to be carried out, is not authorised in accordance with regulations.

28. Individual technicians would be required to obtain a licence from WorkSafe before being permitted to work on such systems. The licence would be valid for five years from the date of issue, consistent with other authorisation regimes administered by WorkSafe and consistent with the high-risk work licensing regime in Australia. WorkSafe would also be required to establish and maintain a register of the individuals who have been issued a licence.

29. In order to qualify for a licence, individual applicants would have to demonstrate to WorkSafe that they: have knowledge of the installation, commissioning, servicing, and maintenance of refrigeration, and/or heat pump, and/or air conditioning plant and equipment relevant to the class of work for which the applicant seeks a licence; have knowledge of the hazardous properties for the classes of refrigerants they are likely to use; and have had suitable training and experience. There was wide support from submitters for these general competency requirements.

30. I expect that applicants would be able to demonstrate that they meet these requirements by providing evidence that they have completed a relevant New Zealand trade qualification in the refrigeration, heating, or air conditioning field.

31. Where an individual has relevant work experience, but does not hold a relevant trade qualification, they would first need to approach Competenz (the industry training organisation for the HVAC&R industry) to develop an individual recognition of prior learning programme and get their trade skills formally recognised before applying to WorkSafe for a licence.

32. Where an individual has a relevant trade qualification from overseas they would first need to contact the New Zealand Qualifications Authority (NZQA) to assess their qualification and determine whether it can be recognised in New Zealand before applying to WorkSafe for a licence. Both recognition of prior learning and overseas qualifications recognition are existing services provided by Competenz and NZQA respectively.

33. I propose that the general competency requirements to be met by applicants would be set in the regulations and the more specific competency requirements would be set in a Safe Work Instrument. The more specific requirements would include the details of any relevant trade qualifications and any additional unit standards that may be required for each licence class. The Safe Work Instrument would be developed by WorkSafe in consultation with the HVAC&R industry and Competenz. Safe Work Instruments are disallowable instruments that are made by the Minister for Workplace Relations and Safety and notified in the Gazette. This approach would enable WorkSafe to make adjustments to the detailed competency requirements more readily as trade qualifications change over time.

34. I propose that processes for the issue, renewal, suspension, and cancellation of licences and processes for the review of decisions and appeals would be based where possible on the processes set out in the high-risk work licensing provisions of the Australian Model Work Health and Safety Regulations.

35. The discussion document indicated that WorkSafe should have the flexibility to either administer the licensing regime in-house or authorise another suitable organisation to carry out this task. My officials have subsequently advised that the regulation making powers in the HSW Act do not provide for this, despite older regulations made under the former *Health and Safety in Employment Act 1992* providing this type of flexibility.

Licensing classes

36. Different licence classes are proposed to ensure that technicians do not work on systems that use flammable, toxic, or high pressure refrigerant gases outside of their competence. The classes have been shaped by the feedback that we received from industry and recognise the different skillsets that are required for work on different applications. The proposed classes are as follows:

a. the *heating and air conditioning licence* would enable the holder to work on any commercial or industrial heat pump or air conditioning system;

b. the *refrigeration, heating, and air conditioning licence (excluding ammonia)* would enable the holder to work on any commercial or industrial refrigeration, heat pump, or air conditioning system, including transport refrigeration systems but excluding systems using ammonia refrigerant; and

c. the *refrigeration, heating, and air conditioning licence (including ammonia)* would enable the holder to work on any commercial or industrial refrigeration, heat pump, or air conditioning system, including transport refrigeration systems and including systems using ammonia refrigerant.

37. Consultation identified that we may need to introduce a licence class for technicians that would only be carrying out work on transport refrigeration systems mounted in trucks and trailers or shipping containers. Individuals that carry out this type of work are not subject to any restrictions that prevent them from working on systems outside of their competence and are not subject to an associated licensing regime in the same way as individuals who work on marine or aviation refrigeration systems. Further targeted consultation about the suitability of this potential licence class will be carried out with relevant stakeholders before a final policy decision is made.

Out of scope

38. I propose that the licensing regime would not apply to the following types of work or workers:

a. trainees or apprentices who are working towards trade certification in order to be licensed, and are under the supervision of a technician who holds a current licence;

b. plant operators responsible for the day-to-day operation of a commercial or industrial refrigeration system;

c. work on domestic or light commercial refrigeration, heat pump, or air conditioning appliances because of the low levels of risk presented by the low levels of refrigerant in these systems;

d. work on automotive air conditioning systems because of the low levels of risk presented by the low levels of refrigerant in these systems;

e. work on commercial or industrial refrigeration, heat pump, or air conditioning systems that use non-hazardous refrigerant gases;[1]

f. work on refrigeration, heat pump, and air conditioning systems on ships or aircraft because the individuals carrying out this work are already subject to licensing regimes under the Maritime Rules and Civil Aviation Rules.

39. Consultation also identified that we may need to introduce an exemption for work involving on-farm milk vat refrigeration systems because there may be reduced access to refrigeration technicians in remote areas, and also because they are built to standardised designs and located in well ventilated semi-detached or detached buildings. Further targeted consultation about the suitability of this possible exemption will need to be carried out with relevant stakeholders before a final policy decision can be made.

Transitional arrangements

40. I propose a three year transitional period, to provide technicians with sufficient time to complete any additional training that may be required. For example, some technicians may need to complete additional training on flammable refrigerants if it wasn't covered as part of their trade training. This timeframe would also provide WorkSafe with sufficient time to design, build, and implement the systems and processes that will be required to administer the proposed licensing regime. On completion of the three year transitional period, technicians would then be able to apply to WorkSafe for their licence but the requirement to have a licence would not commence until the fourth year.

Administrative Fees

1 In this context *'non-hazardous refrigerant gases'* means gases that are non-flammable, and non-toxic, and do not have a very high operating pressure.

41. Administrative fees for processing licensing applications will need to be set in regulations in order to implement the proposed licensing arrangements.

42. WorkSafe has calculated proposed fees for the licensing of HVAC&R technicians based on cost-recovery and applying public sector fee guidelines. These need to be consulted on with stakeholders so they can be included in the regulations when they are finalised later this year.

43. Prior to carrying out the consultation process, WorkSafe advised that the administrative fees for the proposed licensing regime would likely need to be in the order of $250 in order for WorkSafe to recover their costs. However, subsequent work on administrative fees post consultation has increased the estimate of fees for this regime to be in the order of $680 (if the full costs of processing applications and ongoing competency assurance of technicians is recovered) or $430 (if the costs associated with the processing of applications only are recovered). Individuals would be able to spread these costs over the proposed five year duration of the licence, which would reduce the impact to $136 or $86 each year. I am advised that the estimated fees are similar to the fees for asbestos removal licences ($490). I also note that the estimated fees are similar to or lower than the licensing fees paid by electrical workers and lower than the fees paid by plumbers. An electrical worker pays $350 for registration (one-off cost) and then $250 every two years for a practising licence; which equates to $625 over five years. A plumber pays $375 for registration (one off cost) and then $375 each year for a practising licence; which equates to $1,875 over five years.

44. Further targeted consultation on the proposed fees will need to be carried out with impacted stakeholders before final policy decisions on fees are made.

Offences and penalties

45. I propose that offences and penalties for the proposed licensing regime be identified and set in accordance with the framework for offences and penalties for regulations made under the HSW Act, which was set by Cabinet (under the previous Government) in September 2015.

46. I propose that infringement offences and fees for the proposed licensing regime be identified and set in accordance with: the approach for identifying infringement offences which was agreed by Cabinet (under the previous Government) in September 2015; and the infringement fee framework previously agreed to by the

Minister for Workplace Relations and Safety and the Minister of Justice (under the previous Government) in February 2016.

47. Infringements are effectively 'on-the-spot' fines issued via notice by a WorkSafe inspector to deal with minor breaches of the law. Set fees apply in respect of each regulation identified as an infringement offence; meaning that inspectors do not have any discretion about the dollar amount charged.

48. Further targeted consultation about the proposed offences and penalties, including any infringement offences, will need to be carried out with relevant stakeholders before final policy decisions are made on these.

Subsequent change to Hazardous Substances Regulations required

49. I also propose that a change be made to the Hazardous Substances Regulations to remove duplication by ensuring that an HVAC&R technician who holds a licence under this proposed licensing regime would no longer need to hold an approved fillers certificate under those regulations. This change would not apply until four years after the amended regulations are made, consistent with the proposed four year transitional timeframe that will apply to the commencement of the requirement to have a licence.

Consultation findings

50. There was almost unanimous support from the industry for a licence on individual HVAC&R technicians – both from large asset owners and HVAC&R businesses and technicians. Only two submitters of 288 did not support this licensing proposal: a large installer of domestic heat pumps and an industry association representing automotive technicians. Both of these submitters fall outside of the scope of the proposed licensing regime.

51. A small number of submitters were of the view that a licence on individual technicians could be further strengthened by also placing a licence requirement on the HVAC&R business that employs the technician. This would ensure that accountability is more fairly apportioned between the employer and employee and could help to avoid situations where the technician may be pressured by their employer to carry out non-compliant work. However, I consider that placing a licence on both the individual technician and business is unlikely to provide any additional benefits relative to the additional costs that would be imposed on those businesses.

52. Many submitters were of the view that the issues are not limited to flammable, toxic, or very high operating pressure refrigerant use and that all refrigerants pose risks

that require careful management. These submitters noted that all refrigerants can cause severe burns and injuries on contact if accidentally released and asphyxiation if accidentally released into a confined space. While I acknowledge that non-hazardous refrigerants can still carry some risks, I consider that the level of risk presented by these refrigerants is well below that presented by toxic, flammable, or very high operating pressure refrigerants.

53. A number of submitters were of the view that the issues that have been identified are not as relevant to the repair or servicing of refrigeration appliances or heat pump and air conditioning systems that are designed primarily for household or light commercial use given the small amounts of flammable refrigerants that are allowed to be used in such systems. While other submitters disagreed with this position, I consider that the level of risk presented by work on household or light commercial appliances does not warrant being subject to the proposed licensing regime.

54. A number of submitters were also of the view that the issues are not as relevant to the servicing of automotive air conditioning systems, again because of the small amounts of refrigerants used in such systems. Again, while other submitters disagreed with this position, I consider that the level of risk presented by work on automotive air conditioning systems does not warrant being subject to the proposed licensing regime.

Amend existing regulations to ensure that owners of ammonia-based refrigeration systems comply with the joint AS/NZ standard for commercial refrigeration systems

Potential for harm

55. Anhydrous ammonia is commonly used as a refrigerant in large commercial and industrial refrigeration systems. It is acutely toxic, corrosive, and flammable when mixed with air. Unprotected exposure to ammonia at a high enough concentration can be fatal. Lower-level exposures can cause temporary blindness and eye damage, as well as irritation to the skin, mouth, throat, lungs, and mucous membranes. An ammonia leak can also contaminate the food items that the refrigeration system was designed to protect.

56. Between 1996 and 2016, 403 workplace incidents involving ammonia were recorded. Of those incidents, eight involved serious injury to workers that required hospital admission or medical treatment.

57. In terms of more recent incidents, in 2017 a total of 17 workplace incidents involving ammonia were recorded. In 2018 we had 11 incidents, one of which left three people needing hospital treatment after being exposed to the toxic gas and required the plant to be evacuated.

Current requirements

58. Under the HSW Act, a person conducting a business or undertaking's (PCBU's) primary duty is to ensure so far as reasonably practicable the health and safety of its

workers while at work for the PCBU and any workers whose activities in carrying out work are influenced or directed by the PCBU while carrying out the work. The term "worker" includes employees, contractors, subcontractors, outworkers, apprentices and volunteers.

59. In carrying out the primary duty, the PCBU must ensure so far as practicable the provision and maintenance of a work environment that is without risks to health and safety and the provision and maintenance of safe plant (i.e. commercial or industrial ammonia refrigeration plant).

60. In addition to the primary duty of care, a further duty is placed on a PCBU who manages or controls plant at a workplace to ensure, so far as is reasonably practicable, that the plant is without risks to the health and safety of any person.

61. Under the *Health and Safety in Employment (Pressure Equipment, Cranes, and Passenger Ropeway) Regulations 1999* (the PECPR Regulations), owners of ammonia-based refrigeration systems are required to ensure that the pressure equipment associated with these systems is safe, is operated safely, is operated within the limits that it was designed to operate within, and is maintained in a safe condition. The pressure equipment must also have a current certificate of inspection before it can be operated.

62. Under the Hazardous Substances Regulations, a PCBU with management or control of a refrigeration system that uses a flammable refrigerant must ensure that the system complies with the joint AS/NZ Standard for commercial refrigeration systems.

63. This standard specifies requirements for the design, construction, and installation of refrigeration systems including heat pumps. It also specifies requirements for testing, commissioning, marking, and documentation. It applies to new refrigeration systems, extensions or modifications of existing systems, and for used systems being transferred to and operated on another site. It would also apply in the case of the conversion of a system to another refrigerant.

64. This requirement was introduced through the reassessment of the HSNO approval for LPG, butane, propane, and isobutane, in order to manage the risks associated with flammable hydrocarbon refrigerants following the 2008 Tamahere Cool Store Fire. The Fire Service Report into the Tamahere incident indicated that the loss of life may have been prevented if the cool store had been designed to meet the requirements of best industry practice; that is to comply with the joint AS/NZ Standard for commercial refrigeration systems.

65. This requirement was subsequently extended to all flammable refrigerants when it was transferred into the Hazardous Substances Regulations.

66. However, owners of ammonia-based refrigeration systems are exempt from the requirement to comply with this Standard.

67. Under the Hazardous Substances Regulations, a PCBU with management or control of a refrigeration system that uses a flammable refrigerant is also required to display

signage at the entrance to the building and the entrance to the land on which the building is located, which displays the hazard pictogram and statement for the hazardous substances contained in the building. This information is essential for firefighters when responding to an incident. Owners of ammonia-based refrigeration systems are also exempt from this requirement.

68. These exemptions are a historical carry over from the former Dangerous Goods legislation, which acknowledged that the risks associated with ammonia refrigeration systems were at that time managed under the (now repealed) Factories and Commercial Premises legislation.

Proposed change

69. I propose to make amendments to the Hazardous Substances Regulations to ensure that a PCBU with management or control of:

    a. a commercial or industrial refrigeration system that uses anhydrous ammonia complies with the joint AS/NZ Standard for commercial refrigeration systems; and

    b. a commercial or industrial refrigeration system, in which more than 100kg of anhydrous ammonia is used as a refrigerant, places signage displaying the correct hazard pictogram and statement for ammonia at the entrance to the building and the entrance to the land on which the building is located.

70. The first part of this change would ensure that the Standard is consistently applied to all commercial and industrial refrigeration systems that use refrigerants with flammable properties, including anhydrous ammonia. In accordance with the scope of the Standard, this requirement would only apply to new refrigeration systems, extensions or modifications of existing systems, and for used systems, being transferred to and operated on another site. It would also apply in the case of the conversion of a system to another refrigerant.

71. PCBUs with management or control of older ammonia refrigeration systems would still need to ensure that they manage their systems in accordance with the more general duties of the HSW Act, and the more specific requirements to manage pressure equipment risks under the PECPR Regulations.

72. The second part of this change would ensure consistent application of current signage requirements across all commercial and industrial refrigeration systems that use refrigerants with flammable properties, including anhydrous ammonia.

73. A threshold of greater than 100kg is proposed for this requirement to be consistent with other provisions in the Hazardous Substances Regulations. For example, the emergency management provisions in the Hazardous Substances Regulations only apply to anhydrous ammonia that is contained in plant when over 100kg of the substance is used as a refrigerant.

74. Further targeted consultation is required to confirm whether a three month transitional period would provide PCBUs with management or control of ammonia

refrigeration systems with an appropriate amount of time to comply with the signage requirements.

Consultation findings

75. There was wide support for this proposal from submitters. Two key stakeholders opposed; one representing cold storage operators, and one representing academics in the refrigeration field.

76. The first stakeholder was concerned with the feasibility of upgrading older ammonia systems to meet the requirements in the joint AS/NZ Standard for commercial refrigeration systems. I consider that this can be addressed by clarifying the application of the Standard in the regulations. In accordance with the scope of this Standard, this requirement would be limited to new refrigeration systems, extensions or modifications of existing systems, and the conversion of a system for another refrigerant.

77. The second stakeholder was of the view that the main risks associated with ammonia systems are already managed under the PECPR Regulations. However, this submitter did concede that in practice pressure piping and associated safety equipment is often ignored by equipment inspectors carrying out periodic checks under those regulations. I consider that the PECPR Regulations alone are not sufficient to manage all risks associated with ammonia-based refrigeration systems.

Consultation

78. Public consultation — targeting HVAC&R technicians and businesses and owners of commercial and industrial refrigeration, heat pump, or air conditioning systems — was carried out between September and December 2018. Key feedback from the consultation process is discussed under each proposal.

79. Submissions were received from industry associations representing commercial and refrigeration plant owners; industry associations representing individual HVAC&R technicians; industry associations representing HVAC&R businesses; unions; training organisations for the HVAC&R sector; large manufacturers, importers, and suppliers of refrigeration plant and equipment; large businesses that own several commercial and industrial refrigeration assets nationwide; Fire and Emergency New Zealand; and refrigeration focussed academic and research body. Submissions were also received from a large number of individual HVAC&R technicians and businesses.

80. The following government agencies have been consulted on this paper and their views have been taken into account: Ministry for the Environment; Environmental Protection Authority; Ministry of Primary Industries; Ministry of Transport; New Zealand Transport Agency; Maritime New Zealand; Civil Aviation Authority; WorkSafe New Zealand; Department of Internal Affairs; Fire and Emergency New Zealand; and The Treasury. The Department of Prime Minister and Cabinet has been informed.

81. I propose that further targeted consultation on administrative fees, offences and penalties, infringement offences, a possible exemption for on-farm milk vat refrigeration systems, a possible licence class for work on transport refrigeration

systems, and a transitional period for ammonia refrigeration plant compliance with signage requirements should be carried out before seeking policy decisions on those residual matters. I would also use this consultation process to test the details of the proposed licensing regime processes (issue, renewal, suspension, cancellation, review and appeal of decisions) with the relevant stakeholders.

Financial Implications

82. The proposed licensing regime will have cost implications for WorkSafe. WorkSafe have advised that the direct costs, indirect costs, and capital costs to establish and operate the proposed licensing regime would need to be recovered through administrative fees for the processing of licence applications and associated processes.

83. The options that will be tested further with impacted stakeholders would cover either: the full costs of processing applications and ongoing competency assurance of technicians; or the costs associated with the processing of applications only. These fees are expected to be in the order of $680 or $430 respectively.

84. As I previously mentioned, I propose to undertake a targeted consultation on the proposed fees with impacted stakeholders before final policy decisions on fees are made.

Legislative Implications

85. The proposed licensing regime would be put in place by making new regulations under the HSW Act, based on the high-risk work licensing provisions in Chapter 4, Part 4.5, Division 1 of the Australian Model Work Health and Safety Regulations.

86. A change would also need to be made to the Hazardous Substances Regulations to remove duplication by ensuring that an HVAC&R technician who holds a licence under this proposed licensing regime would no longer need to hold an approved filler certificate under those regulations.

87. The Hazardous Substances Regulations would also need to be amended to ensure that a PCBU with management or control of:

a. a commercial or industrial refrigeration system that uses anhydrous ammonia complies with the joint AS/NZ Standard for commercial refrigeration systems; and

b. a commercial or industrial refrigeration system, in which more than 100kg of anhydrous ammonia is used as a refrigerant, places signage displaying the correct hazard pictogram and statement for ammonia at the entrance to the building and the entrance to the land on which the building is located.

88. The *Health and Safety at Work (Infringement Offences and Fees) Regulations 2016* may need to be amended to include any infringement offences and fees identified for the proposed licensing regime.

Impact Analysis

89. MBIE's Regulatory Impact Review Panel has considered the attached Regulatory Impact Summary prepared by the Ministry of Business, Innovation and Employment. The Panel considers that the information and analysis summarised in the Regulatory Impact Summary meets the criteria for Ministers to make informed decisions on the proposals in this paper.

Publicity

90. The Ministry of Business, Innovation and Employment will release this Cabinet paper and associated Cabinet minutes on its website and let key stakeholders know this has occurred. Other than this, I do not consider any further publicity is necessary at this stage. Relevant stakeholders will be informed when consultation on the residual matters, such as administrative fees and offence provisions, begins.

Proactive Release

91. The Ministry of Business, Innovation and Employment plans to proactively release this paper on its website subject to any necessary redactions, in a timely manner following consideration by the Cabinet Economic Development Committee.

Recommendations

The Minister for Workplace Relations and Safety recommends that the Committee:

New regulations to introduce a licensing regime for technicians that work on commercial and industrial refrigeration, heat pump, or air conditioning systems

1. **agree** that regulations for work involving commercial and industrial refrigeration, heat pump or air conditioning systems should:

    1.1 specify that a person must not carry out a class of work on a commercial or industrial refrigeration, heat pump, or air conditioning system — which uses a flammable, toxic, or very high operating pressure refrigerant — unless the person holds a licence for that class of work;

    1.2 exempt the following types of work or workers from the requirement to be licenced:

        1.2.1 trainees or apprentices who are working towards trade certification in order to be licensed, and are under the supervision of a technician who holds a current licence;

1.2.2 plant operators responsible for the day-to-day operation of a commercial or industrial refrigeration system;

1.2.3 work on domestic or light commercial refrigeration, heat pump, or air conditioning appliances;

1.2.4 work on automotive air conditioning systems;

1.2.5 work on commercial or industrial refrigeration, heat pump, or air conditioning systems that use non-hazardous refrigerant gases;

1.2.6 work on refrigeration, heat pump, and air conditioning systems on ships or aircraft.

1.3 specify that a *heating and air conditioning licence* would enable the licence holder to work on any commercial or industrial heat pump or air conditioning system that uses a flammable, toxic, or very high operating pressure refrigerant;

1.4 specify that a *refrigeration, heating, and air conditioning licence (excluding ammonia)* would enable the licence holder to work on any commercial or industrial refrigeration, heat pump, or air conditioning system that uses a flammable, toxic, or very high operating pressure refrigerant, including transport refrigeration systems, but excluding systems using ammonia refrigerant;

1.5 specify that a *refrigeration, heating, and air conditioning licence (including ammonia)* would enable the licence holder to work on any commercial or industrial refrigeration, heat pump, or air conditioning system that uses a flammable, toxic, or very high operating pressure refrigerant, including transport refrigeration systems and systems using ammonia refrigerant;

1.6 specify licensing processes based on those in Chapter 4, Part 4.5, Division 1, Subdivision 2 of the Australian Model Work Health and Safety Regulations;

1.7 specify that an applicant would have to meet the following general competency requirements:

1.7.1 have knowledge of the installation, commissioning, servicing, and maintenance of refrigeration, and/or heat pump, and/or air conditioning plant and equipment relevant to the class of work for which the applicant seeks a licence;

1.7.2 have knowledge of the hazardous properties for the classes of refrigerants they are likely to use; and

1.7.3 have had suitable training and experience.

1.8 specify that the more specific competency requirements to be met by an applicant can be set in a Safe Work Instrument;

1.9 specify that a licence takes effect on the day it is issued by WorkSafe and, unless cancelled earlier, expires five years after that day;

1.10 specify amendment of licence document processes based on those in Chapter 4, Part 4.5, Division 1, Subdivision 3 of the Australian Model Work Health and Safety Regulations;

1.11 specify licence renewal processes based on those in Chapter 4, Part 4.5, Division 1, Subdivision 4 of the Australian Model Work Health and Safety Regulations;

1.12 specify licence suspension and cancellation processes based on those in Chapter 4, Part 4.5, Division 1, Subdivision 5 of the Australian Model Work Health and Safety Regulations;

1.13 specify review and appeal processes based on those in Subpart 6 of the *Health and Safety at Work (Asbestos) Regulations 2016*;

1.14 specify that WorkSafe shall keep a register of the individuals who have been issued a licence based on the requirement in regulation 43 of the *Health and Safety in Employment Regulations 1995*;

1.15 specify that the duty on a person to not carry out a class of work on a commercial or industrial refrigeration, heat pump, or air conditioning system — which uses a flammable, toxic, or very high operating pressure refrigerant — unless the person holds a licence for that class of work would not commence until four years after the proposed regulations have been made;

1.16 specify that the licensing processes, amendment of licence document processes, and register provisions would not commence until three years after the proposed regulations have been made;

2. **agree** to amend the *Health and Safety at Work (Hazardous Substances) Regulations 2017* so that the requirement to hold an approved filler certificate does not apply to a person that already holds a refrigeration and air conditioning licence or an ammonia plant service technician licence;

3. **note** that consultation identified that we may need to introduce a licence class for technicians that would only be carrying out work on transport refrigeration systems;

4. **note** that consultation identified that we may need to exempt work involving on-farm milk vat refrigeration systems from the requirement to be licenced;

5. **note** that administrative fees will need to be set in regulations in order to implement the proposed licensing regime;

6. **note** that a framework for offences and penalties for regulations made under the HSW Act was set by Cabinet, under the previous Government, on 28 September 2015 (CAB-15-MIN-0118);

7. **note** that offences and penalties for the proposed licensing regime will be identified and set in accordance with the framework for offences and penalties for regulations made under the HSW Act;

8. **note** that Cabinet, under the previous Government, agreed the approach to identifying infringement offences for regulations made under the HSW Act in September 2015 [CAB-15-MIN-0118];

9. **note** that the former Minster for Workplace Relations and Safety and former Minister of Justice, under the previous Government, agreed to the infringement fee framework to apply regulations made under the HSW Act in February 2016, and that this framework will be applied to setting the infringement fees that will apply to infringement offences for the proposed licensing regime;

10. **agree** that further targeted consultation about a possible transport refrigeration licence class, a possible exemption for work involving on-farm milk vat refrigeration systems, administrative fees, offences and penalties, infringement offences and fees, a transitional period for ammonia refrigeration plant compliance with signage

requirements, and the details of the proposed licensing regime processes be carried out with impacted stakeholders before final policy decisions on these matters are made;

11. **authorise** the Minister for Workplace Relations and Safety to undertake a targeted consultation on a possible transport refrigeration licence class, an exemption for work involving on-farm milk vat refrigeration systems, administrative fees, offences and penalties, infringement offences and fees, a transitional period for ammonia refrigeration plant compliance with signage requirements, and the details of the proposed licensing regime processes with impacted stakeholders;

12. **invite** the Minister for Workplace Relations and Safety to issue drafting instructions to the Parliamentary Counsel Office to draft regulations to give effect to the above paragraphs;

13. **authorise** the Minister for Workplace Relations and Safety to further clarify and develop policy matters relating to the proposals in this Cabinet paper in a manner not inconsistent with the policy recommendations contained in this paper;

14. **note** that any remaining policy decisions will be sought from Cabinet by August 2019 following the consultation process.

Amend existing regulations to ensure that owners of ammonia-based refrigeration systems comply with the joint AS/NZ standard for commercial refrigeration systems

15. **agree** to amend the *Health and Safety at Work (Hazardous Substances) Regulations 2017* so that a PCBU with management or control of a commercial or industrial refrigeration system that uses anhydrous ammonia as a refrigerant complies with the joint AS/NZ Standard for commercial refrigeration systems;

16. **agree** that the scope of this requirement should be clarified to ensure that it only applies to new refrigeration systems, extensions or modifications of existing systems, the conversion of a system for another refrigerant, and for used systems being transferred to and operated on another site;

17. **agree** to amend the *Health and Safety at Work (Hazardous Substances) Regulations 2017* so that a PCBU with management or control of a commercial or industrial refrigeration system, in which more than 100kg of anhydrous ammonia is used as a refrigerant, places signage displaying the correct hazard pictogram and statement for ammonia at the entrance to the building and the entrance to the land on which the building is located.

18. **invite** the Minister for Workplace Relations and Safety to issue drafting instructions to the Parliamentary Counsel Office to draft regulations to give effect to the above paragraphs;

19. **authorise** the Minister for Workplace Relations and Safety to make decisions on detail, and to make changes consistent with the policy intent, on any issues that arise during the drafting processes in order to finalise the amendments to the *Health and Safety at Work (Hazardous Substances) Regulations 2017*.

Authorised for lodgement

Hon Iain Lees-Galloway

Minister for Workplace Relations and Safety