Victorian Energy Upgrades: Refrigerated Display Cabinets (RDCs)

Response to consultation

September 2021

Victorian Energy Upgrades

VICTORIA State Government | Environment, Land, Water and Planning

Acknowledgment

We acknowledge and respect Victorian Traditional Owners as the original custodians of Victoria's land and waters, their unique ability to care for Country and deep spiritual connection to it. We honour Elders past and present whose knowledge and wisdom has ensured the continuation of culture and traditional practices.

We are committed to genuinely partner, and meaningfully engage, with Victoria's Traditional Owners and Aboriginal communities to support the protection of Country, the maintenance of spiritual and cultural practices and their broader aspirations in the 21st century and beyond.

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Contents

Executive summary

On 22 July 2021, the Victorian Department of Environment, Land, Water and Planning (the department) released a public consultation enabling stakeholders to provide feedback on updates to the Victorian Energy Upgrades (VEU) program Part 32 activity, Refrigerated Display Cabinets (RDC).

Proposed updates will allow for Refrigerated Cabinets (RC) registered to the *Greenhouse and Energy Minimum Standards Refrigerated Cabinets Determination 2020* (GEMS 2020 Determination) to be eligible for VEU program incentives provided they meet requirements set by the department.

Proposed updates to the RDC activity as part of this consultation include:

- Updating the Part 32 activity name from '**Refrigerated display cabinet**' to '**Refrigerated cabinet'** to reflect the broader range of product classes now covered under the GEMS 2020 Determination.
- **Expanding the range of refrigeration products** that can be installed under the VEU activity to include:
    - *Refrigerated display cabinets* - designed to store and display for sale chilled and/or frozen food items contained in the cabinet in a retail environment. This includes refrigerated drink cabinets that are designed to store non-perishable drinks only.
    - *Refrigerated storage cabinets* - designed to store, but not to display for sale, chilled and/or frozen food items.
    - *Ice cream freezer cabinets* - designed to store and display pre-packaged frozen ice cream.
    - *Scooping cabinets* - designed for the storage, display and scooping of containerised frozen gelato or ice cream.
- Providing a **transition time** for products registered to the GEMS 2012 Determination to be eligible to create Victorian Energy Efficiency Certificates (VEECs) under the current Part 32 activity.
- **Introducing new formulae** for calculating energy savings and the introduction of an **Energy Efficiency Index (EEI)** scale to assess energy performance, including:
    - *baseline EEI levels* to calculate emissions savings
    - *upgrade EEI levels* to set energy efficiency thresholds for upgrade equipment
    - *product lifetimes* used to calculate emissions savings.

Seven (7) submissions were received from VEU accredited providers, peak bodies, product manufacturers and distributors, and members of the public. The department would like to thank the organisations and individuals who took the time to provide feedback.

Stakeholders supported the expansion of the RDC activity to accommodate the GEMS 2020 Determination. However, stakeholders recommended that the department aligns VEU program requirements, in particular baseline and upgrade EEI levels, with proposals[1] from energy efficiency obligation programs in other jurisdictions and the European Commission regulations (EU MEPS 2023). Key decisions made by the department on the revision of the RDC activity are outlined in Table 1. Further detail is provided in the relevant sections of this response to consultation.

Draft Specifications for the revised Part 32, Refrigerated Cabinet activity are provided in Appendix A **(Draft Specifications).**

PLEASE NOTE, the Draft Specifications are in draft form only. The Draft Specifications have not received final approval and may be subject to further change. Stakeholders are advised not to make any decisions related to Refrigerated Cabinet upgrades under the VEU program until final Specifications have been published. The department does not make any express or implied representation or warranty that Draft Specifications: (i) will take effect; (ii) will take effect on or by a particular date; or (iii) will take effect in the current form. Neither the department, nor any other person, is or may be liable to any other person in connection with the department's decision to include the Draft Specifications in this response to consultation document.

[1] The NSW, Energy Savings Scheme (ESS) recently consulted on updates to its Refrigerated Cabinets activity.

Next steps

The department will revise the draft Specifications for the refrigerated display cabinet activity to address stakeholder feedback from this consultation, as detailed in this response to consultation.

The department expects to be able to publish updated Specifications for the revised 'Part 32 – Refrigerated Cabinet' activity in October 2021. From the date these changes to the Specifications come into effect, RCs registered to the GEMS Determination 2020, that meet the requirements detailed in Part 32 of the Specifications will be able to be create Victorian Energy Efficiency Certificates (VEECs) in the VEU program.

There will be no changes to the abatement methodology for Refrigerated Display Cabinets registered to the GEMS Determination 2012[2], however from 1 July 2022, these products will be unable to create VEECs in the VEU program.

Table 1 - Key decisions in response to stakeholder feedback

Feedback:	Decision made:

On expanding the Part 32 Refrigerated Display Cabinet activity:	• The department will proceed to update the current Part 32 - Refrigerated Display Cabinet activity so that all product classes in the GEMS 2020 Determination can receive incentives under the VEU program.
	• This will include changing the name of the activity from 'Refrigerated Display Cabinet' to 'Refrigerated Cabinet'.
	• This will expand the range of refrigeration products eligible for VEU incentives to include:
	  ○ Refrigerated Display Cabinets
	  ○ Ice Cream Freezer Cabinets
	  ○ Gelato or Ice Cream Scooping Cabinets
	  ○ Refrigerated Storage Cabinets.

On a transition period for products registered to the GEMS 2012 Determination:	• High efficiency Refrigerated Display Cabinets registered to the GEMS 2012 determination, will be eligible for VEU program incentives until **30 June 2022**. There will be no change to abatement calculations. However, stakeholders should note that previously announced changes[3] to the electricity emissions factor (EEF) on 31 January 2022 will impact incentive levels. • From 1 July 2022, only Refrigerated Cabinets registered to the GEMS 2020 Determination, that meet the energy efficiency performance thresholds set by the department, will be able to receive VEU incentives.

[2] This does not include changes to the Electricity Emissions Factor (EEF) set to occur on 31 January 2022.

[3] Target setting for Victorian Energy Upgrades (8 December 2020): https://engage.vic.gov.au/victorian-energy-upgrades/targets

Feedback:	Decision made:
On introducing new formulae to calculate energy savings:	• The department will proceed with the proposed formula and methods for calculating abatement across the various refrigerated cabinet classes. • Where possible, the department may consider simplifying formula. This will have no impact on the abatement calculations. • The duty class of products (heavy duty, normal duty and light duty) will be factored into deemed abatement calculations.

On the proposed baseline and upgrade Energy Efficiency Index (EEI):	• The department has analysed the proposals presented by stakeholders, and will:
	  ○ harmonise upgrade EEI levels with the European Union Commission EU MEPS 2023 values
	  ○ harmonise baseline levels with those proposed for the NSW, Energy Saving Scheme (ESS)[4].
	• These changes in response to stakeholder feedback will establish effective high-efficiency thresholds, align with international performance standards and reduce compliance burdens across different jurisdictions by allowing the same models to be eligible for rebates in multiple states.

On product lifetimes:	• The department will proceed with the proposed product lifetimes. Product lifetimes are consistent with the GEMS 2020 Determination Regulatory Impact Statement, and NSW ESS method update which was updated in 2020 and recently consulted on.[5]

On refrigerants:	• Several stakeholders recommended the department consider the use of refrigerants in RC upgrades. Suggested approaches to avoid the use of refrigerants with a high global warming potential (GWP) included:
	  ○ excluding high GWP refrigerants
	  ○ providing incentives for the use of low GWP refrigerants.
	• The department will further investigate refrigerant requirements for RCs and how they could be implemented. This may be part of a Part 32 activity review or a broader review of the use of refrigerants in the VEU program.
	• Stakeholders will be consulted on any potential changes to the RC activity in relation to refrigerant usage.

On historical activities:	• Refrigerated Cabinet upgrades where products are registered to the GEMS 2020 Determination, will only be able to be create VEECs in the VEU program from the date that the updated activity Specifications take effect.

[4] https://www.energy.nsw.gov.au/government-and-regulation/consultations/2020-21-energy-savings-scheme-rule-change

[5] Ibid., 4.

1. Introduction

1.1 About the Victorian Energy Upgrades program

Victorian Energy Upgrades (VEU) is a market-based program that helps Victorians to cut their power bills and reduce greenhouse gas (GHG) emissions by encouraging upgrades to energy efficiency technology.

The VEU program is governed by the *Victorian Energy Efficiency Target Act 2007* and has three objectives:

1) reduce greenhouse gas emissions
2) encourage the efficient use of electricity and gas
3) encourage investment, employment and technology development in industries that supply goods and services which reduce the use of electricity and gas by consumers.

The program is making a significant contribution to Victoria's climate change and energy affordability goals. More than 1.9 million households and 117,000 business premises have participated in the VEU program since it commenced in 2009.The program has reduced Victoria's GHG emissions by over 68 million tonnes to date[6] with average annual bill savings of $110 for participating households and $3,700 for participating businesses and $4.1 billion in cumulative energy system benefits.

Reduced GHG emissions by over **68** million tonnes.

Approximately **1.9 million** households and **117,000** businesses have participated.

Participating households and businesses have saved **$110** and **$3,700** respectively on their annual energy bills.

Benefits all Victorians through savings made **across the system** when energy demand is reduced.

The VEU program currently includes 36 activities that can be undertaken in eligible Victorian residential, business and non-residential premises. Accredited providers who undertake these energy efficiency activities create Victorian Energy Efficiency Certificates (VEECs). Each VEEC represents one tonne of GHG emissions saved over the lifetime of the activity or product installed. VEECs can then be sold to energy retailers, who must meet an emissions reduction target each year.

For more information on the VEU program, please see the website below or contact the VEU team on energy.upgrades@delwp.vic.gov.au.

VEU website: https://www.energy.vic.gov.au/energy-efficiency/victorian-energy-upgrades.

[6] https://www.esc.vic.gov.au/victorian-energy-upgrades/updates-reports-reviews-and-data/victorian-energy-upgrades-data-dashboard - Based on the number of Victorian Energy Efficiency Certificated (VEECs) registered on 1 September 2021.

1.2 Consultation background

On 22 July 2021, the department released a public consultation enabling stakeholders to provide feedback on updates to the Victorian Energy Upgrades (VEU) refrigerated display cabinet (Part 32) activity.

An issues paper with proposed updates and draft Specifications was released for consultation on the Engage Victoria website:

https://engage.vic.gov.au/victorian-energy-upgrades-updates-refrigerated-display-cabinets

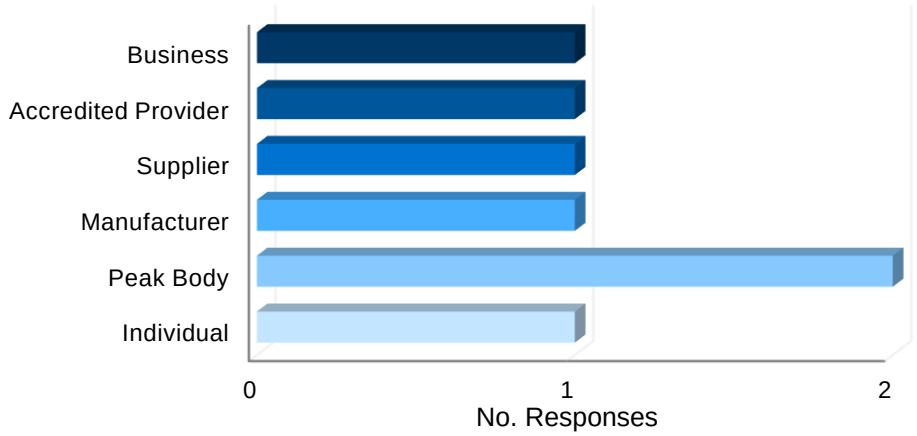
Stakeholder feedback provided in the consultation will be used to guide updates to the refrigerated display cabinet activity. This response to consultation outlines the feedback received by stakeholders on this activity and the decisions by the department on how this feedback will be implemented.

1.3 Stakeholder submissions

Seven (7) submissions were received from a range of stakeholders including VEU accredited providers, product manufacturers and members of the public.

Submissions by stakeholder type are shown in Figure 1.

Figure 1 - Consultation responses by activity and stakeholder type



The department would like to thank all the organisations and individuals who took the time to review the material available on the Engage Victoria website and provide submissions. The department has carefully considered all stakeholder feedback. The proposed updates to the refrigerated display cabinet activity, after stakeholder feedback, is detailed in the following sections.

2. Response to stakeholder feedback

2.1 Updating the current Part 32 – Refrigerated Display Cabinet activity to align with the GEMS 2020 Determination

All stakeholder submissions supported the proposal to update the VEU Regulations and Specifications for the Refrigerated Display Cabinet (RDC) Part 32 Activity, to provide incentives for Refrigerated Cabinets (RC) registered to the GEMS 2020 Determination.

The proposed updates will expand the number of RC classes to include:

- Refrigerated Display Cabinets
- Ice Cream Freezer Cabinets
- Gelato or Ice Cream Scooping Cabinets
- Refrigerated Storage Cabinets.

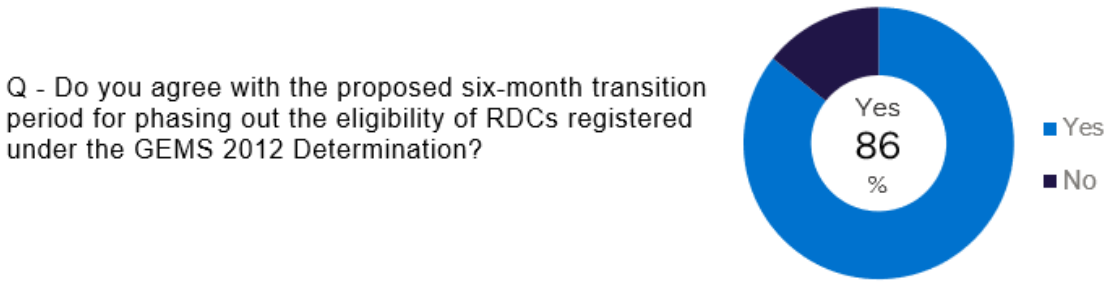
As noted by stakeholders, the expansion of the current activity will provide industry with access to incentives which will promote the installation of energy efficient RCs in Victoria.

The department will proceed to update the current Part 32 - Refrigerated Display Cabinet activity so that models registered to the GEMS 2020 Determination that meet the departments requirements can receive incentives under the VEU program.

2.2 Proposed VEU transition period for products registered to the GEMS 2012 Determination

Six (6) out of seven (7) stakeholders agreed with a six-month transition period for phasing out the eligibility of high-efficiency RDCs registered to the GEMS 2012 Determination to receive VEU incentives (Figure 2). After this six-month transition period, only RCs registered to the GEMS 2020 Determination will be eligible to receive VEU incentives.

Figure 2 – Stakeholder responses to transitional arrangements for products registered to GEMS 2012 and GEMS 2020



Stakeholders agreed that a six-month transition period would allow for existing stock to be sold and is consistent with lead and installation times. Stakeholders noted that refurbishments of retail food outlets can take at least six months from specification of high-efficiency products.

One stakeholder noted however that there have been recent shipping delays due to coronavirus (COVID-19) impacts on foreign ports, delaying installation timeframes. Another stakeholder proposed that the transition period should run until the end of the financial year 2022 (FY 2022) as business purchases are often based across a financial year and on VEU incentives available at that time.

In response to this feedback, the department will extend the transition period so that high-efficiency RDCs registered to the GEMS 2012 Determination will be eligible for VEU incentives until 30 June 2022. There will be no change to abatement calculations. However, stakeholders should note that previously announced changes to the electricity emissions factor (EEF) on 31 January 2022 will impact incentives.

2.3 Proposed formula

Stakeholders agreed with the proposed formula and methods for calculating incentives across the various refrigerated cabinet classes.

One stakeholder noted that it may be beneficial to further incentivise the purchase of heavy duty storage cabinets, as they are typically more expensive to manufacture than normal and light duty products.

In response to this feedback, the department will proceed with the proposed formula and methods for calculating incentives across the various refrigerated cabinet classes. The department may consider simplifying formula where possible but this will not change the abatement levels.

The duty class of products (heavy duty, normal duty and light duty) will be factored into deemed abatement calculations.

2.4 Baseline energy efficiency and efficiency thresholds (EEI)

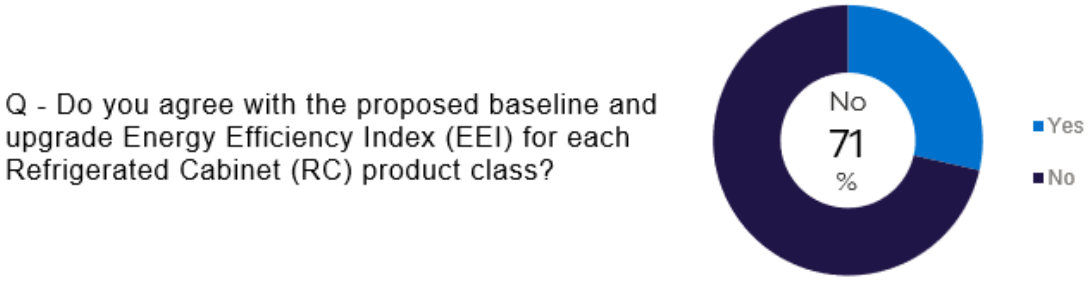
The department received substantial feedback on the proposed baseline and upgrade EEI values.

The **baseline EEI** level determines the amount of energy savings and the number of VEECs an RC product can create.

The **upgrade EEI** is a performance threshold which determines the efficiency level RC products must meet to be installed under the VEU program

Five (5) out of seven (7) stakeholders did not agree with the proposed baseline and upgrade EEI values (Figure 3).

Figure 3 – Stakeholder responses to proposed baseline and upgrade EEI



Stakeholders noted that:

- the GEMS registration database is still growing, and as products transition from GEMS 2012 to GEMS 2020 the average EEI calculated for each class will change over time
- the GEMS 2020 registration database may be skewed towards more efficient products due to those products transitioning from GEMS 2012 to GEMS 2020 registrations earlier than less efficient products
- there are outliers and anomalous registrations in the GEMS registration database which should be excluded from calculated baseline and upgrade EEI values
- the average EEI across any one product class does not represent the actual sales-weighted average EEI, therefore this method overstates the upgrade EEI value
- the VEU upgrade EEI thresholds would constrain the availability of efficient models and limit the market depth in some equipment classes
- the VEU baseline and upgrade EEI levels are more stringent than the NSW, Energy Savings Scheme (ESS) method EEI baseline, which was also recently consulted on with industry
- some stakeholders encouraged the VEU program to harmonise upgrade EEI values with the European Union Commission Minimum Energy Performance Standards 2023 (EU MEPS 2023).

Stakeholders noted that the EU MEPS 2023 for refrigerated display cabinets sets energy performance standards and trends internationally for products, is where a large proportion of RCs are sourced from for Australia and would be an appropriate start for setting a high efficiency performance level for models registered to the GEMS 2020 Determination. This would ensure promotion into the market of proven higher efficiency models in sufficient numbers across all equipment classes and provides sufficient purchase options for equipment buyers who would prefer to invest in high-efficiency models.

Some stakeholders also commented that harmonisation with the EU MEPS 2023 and the NSW, Energy Savings Scheme (ESS) values would be widely applauded by industry, not only in establishing effective high-efficiency thresholds, but also by greatly reducing compliance burdens across different jurisdictions by allowing the same models to be eligible for rebates in multiple states.

The department has analysed the proposals presented by stakeholders, and will:

- **harmonise upgrade EEI levels with the EU MEPS 2023 values**
- **harmonise baseline levels with those proposed for the NSW, Energy Savings Scheme (ESS).**

Revised upgrade and baseline EEI are presented in Table 2. Please note, based on stakeholder feedback the department has also differentiated the baseline EEI values for heavy duty products (against light and normal duty products) for refrigerated storage cabinets.

Table 2 – Proposed RC baseline and upgrade EEI levels[7]

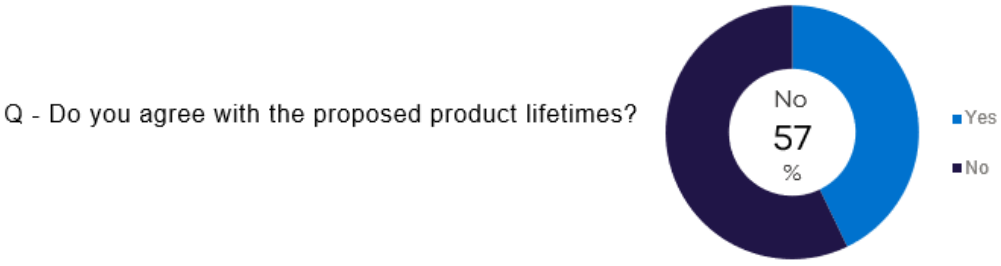
GEMS Product Class	GEMS 2020 Characteristic Code	Application	Baseline EEI		Upgrade EEI
			All or HD for RSCs	Light /normal duty (RSCs)	
Class 1	IRH Integral Refrigerated Horizontal Cabinets	**Integral Refrigerated Display Cabinets**	**130**		**81**
Class 7	IRV Integral Refrigerated Vertical Cabinets		**90**		**81**
Class 11	IRV-4 Integral Refrigerated Vertical Cabinets with Glass Door		**130**		**81**
Class 2	IFH Integral Freezer Horizontal		**92**		**81**
Class 5	IFH-5 Ice-Cream Freezer		**130**		**51**
Class 8	IFV Integral Freezer Vertical		**97**		**81**
Class 12	RRH Remote Refrigerated Horizontal Cabinets	**Remote Refrigerated Display Cabinets**	**130**		**81**
Class 14	RRV or RRV-2 Remote Refrigerated Vertical Cabinets or Remote Refrigerated Vertical Cabinet, open, medium temperature		**91**		**81**
Class 13	RFH Remote Freezer Horizontal		**80**		**81**
Class 15	RFV Remote Freezer Vertical		**106**		**81**
Class 6	GSC/ISC Gelato Scooping Cabinets and Ice-Cream Scooping Cabinets	**Refrigerated Display Cabinets**	**76**		**81**
Class 3	SRH Storage Refrigerator Horizontal	**Refrigerated Storage Cabinets**	**73**	**71**	**81**
Class 9	SRV Storage Refrigerator Vertical		**91**	**79**	**81**
Class 4	SFH Storage Freezer Horizontal		**89**	**80**	**81**
Class 10	SFV Storage Freezer Vertical		**96**	**80**	**81**

[7] GEMS product classes in this table are grouped by application

2.5 Product lifetimes

Stakeholders had mixed feedback on the proposed product lifetimes, with three (3) out of seven (7) stakeholders supporting the proposed lifetimes and other stakeholders proposing variations (Figure 4).

Figure 4 – Stakeholder responses to proposed product lifetimes



Stakeholders commented that varying lifetimes may incentivise energy consumers to purchase larger RCs than their requirements, proposing either a twelve (12) year or ten (10) year lifetime across all RC classes. Other stakeholders agreed with the proposed lifetimes, noting that these are conservative relative to lifetimes observed in the field.

The department will proceed with the proposed product lifetimes in Table 3. The proposed product lifetimes are consistent with the GEMS 2020 Determination Regulatory Impact Statement, and NSW ESS method which was updated in 2020 and recently consulted on.

Table 3 – Proposed RC lifetimes

GEMS Product Class	Total Display Area (TDA) (m^2)	Lifetime (years)
Classes 1-6, 9, 10	-	8
Classes 7, 8 and 11	<3.3	8
Classes 7, 8 and 11	≥3.3	12
Classes 12 - 15	All	12

2.6 Refrigerants

Several submissions highlighted the use of refrigerants in VEU refrigerated cabinet upgrade activities.

Refrigerants are used in a range of appliances which use a vapour compression cycle. Although there is existing legislation that requires the safe and proper collection and disposal of refrigerants[8], refrigerants can act as powerful greenhouse gases (GHG) when emitted into the atmosphere through refrigerant leaks or incorrect decommissioning. The Global Warming Potential (GWP) of a refrigerant refers to the total contribution to global warming resulting from the emission of one unit of a gas relative to carbon dioxide.

Some refrigerated cabinet models use refrigerants with high global warming potentials (GWP). This can lead to GHG emissions where refrigerant is emitted into the atmosphere. As the VEU program is based on GHG reductions, stakeholders recommended the VEU consider the types of refrigerants used in refrigerated cabinet upgrades and discourage the use of products using refrigerants with a high GWP.

[8] https://www.legislation.gov.au/Details/F2020C00077

Stakeholder proposals included:

- encouraging the use of natural refrigerants in replacement equipment
- providing incentives for RCs which use refrigerant with a lower GWP
- excluding all products which use high GWP refrigerant from being eligible for VEU incentives, specifically, R134A (GWP = 1,430) and R404A (GWP = 3922).

Stakeholders also recommended that any approach to refrigerants is carefully considered, to ensure higher efficiency units are not disincentivised.

The department is aware of the usage of refrigerants in VEU activities. In June 2021, the VEU program commenced a consultation on commercial and industrial heat pump water heaters (C&I HPWH). The C&I HPWH paper is the first VEU consultation paper to propose different incentives based upon the use of refrigerants. The consultation paper proposes proportionally rewarding or penalising VEU incentives based on the global warming potential of the refrigerant used. This would be the first VEU activity that has included an incentive (or disincentive) to utilise low global warming potential (GWP) refrigerants in products.

While this is a relatively simple approach for the HPWH activity, consideration of the overall VEU program policy objectives on refrigerants as well as consistency between other activities will need to be considered. The department will need to consider suitable approaches to impact high GWP refrigerant use in RCs, and how to best achieve a reduction in usage, without impacting on efficiency gains.

Adding refrigerant requirements to the VEU RC activity will also require implementation by the Essential Service Commission (ESC). The department notes that refrigerant type and volume is not recorded in the GEMS registry for RC products registered to the 2020 Determination. There could also be challenges with determining and incentivising refrigerant volumes in some situations such as the installation of remote cabinets. The GEMS registry is used to determine eligibility for the Part 32 Activity[9]. Stakeholders noted that the refrigerant type can be easily identified on the cabinet rating label due to mandatory labelling under AS/NZS 60335-2 and could be recorded at the time of product registration. However, there will need to be further consideration on how this information is collected and implemented for RC activities.

The department would welcome any feedback or further information stakeholders would like to provide on refrigerant usage, implementation approaches and how future VEU requirements could impact the market.

The department will further investigate refrigerant requirements for refrigerated cabinets. Stakeholders will be consulted with on any potential changes in the future.

2.7 Historical refrigerated cabinet activities

Several stakeholders requested that the department recognise and provide VEECs for historical RC activities, once the updated Specifications are released.

Upgrades for Refrigerated Cabinets registered to the GEMS 2020 Determination will only be eligible to receive VEECs after the commencement date of updated Specifications.

Refrigerated Cabinet upgrades will be able to be create VEECs in the Victorian Energy Upgrades program after the commencement date of relevant and updated Specifications. Historical upgrades will not be eligible for VEECs.

[9] GEMS registry - https://reg.energyrating.gov.au/comparator/product_types/

3. Next Steps

3.1 Revision of the Part 32 Activity – Refrigerated Display Cabinets

- The department will revise the Specifications for refrigerated display cabinets based on stakeholder feedback. Refrigerated Cabinets registered to the GEMS 2020 determination will be able to be create VEECs in the Victorian Energy Upgrades program from the commencement date of the activity Specifications.
- Refrigerated Display Cabinets registered to the GEMS 2012 Determination will be eligible for VEU incentives until the 30 June 2022.
- From 1 July 2022, only Refrigerated Cabinets registered to the GEMS 2020 Determination will be eligible for VEU incentives.

3.2 VEU new and revised activity work

The department is working on several new and revised activities for the VEU program, to ensure Victorians have access to the latest energy efficiency technologies, and to increase the pool of opportunity to deliver the programs emissions reductions targets.

- **Cold Rooms** – On 18 August 2021, the department introduced a new cold room activity into the VEU program to help industry upgrade their cold rooms. To be eligible, the upgrade must be undertaken in a business/non-residential premises and for a room or structure where goods are stored at temperatures below 7°C. Organisations can now apply to become accredited for this activity. The department is also seeking feedback from stakeholders to assist in the uptake of this activity.

- **Commercial and Industrial Heat Pump Water Heating –** In June 2021, the department held a consultation on a new commercial and industrial heat pump water activity. The department will publish a response to stakeholder feedback by October 2021 and will be looking to introduce the activity into the VEU program by the end of 2021**.**

- **Smart Thermostats and Hot Pipe Lagging –** The department will be holding further consultations to inform the development of these new activities later this year.

- **Water heating and Space heating –** The department has started a review of all VEU water and space heating activities. Stakeholders will be consulted on proposed changes for these activities following normal processes.

VEU updates:

- To receive updates about VEU, visit our website at:

  https://www.energy.vic.gov.au/energy-efficiency/victorian-energy-upgrades

- You can subscribe to the VEU mailing list by filling out the ‘Subscribe to updates’ form at the bottom of the page.

Appendix A - Draft Victorian Energy Upgrades Specifications - Part 32 Activity– Refrigerated cabinets

PLEASE NOTE, the Draft Specifications are in draft form only. The Draft Specifications have not received final approval and may be subject to further change. Stakeholders are advised not to make any decisions related to Refrigerated Cabinet upgrades under the VEU program until final Specifications have been published. The department does not make any express or implied representation or warranty that Draft Specifications: (i) will take effect; (ii) will take effect on or by a particular date; or (iii) will take effect in the current form. Neither the department, nor any other person, is or may be liable to any other person in connection with the department's decision to include the Draft Specifications in this response to consultation document.

Activity Description

Part 32 of Schedule 2 of the Regulations prescribes the upgrade of refrigerated cabinets as an eligible activity for the purposes of the Victorian Energy Upgrades program.

Table 32.1 lists the types of refrigerated display cabinets that may be installed. Each type of upgrade is known as a scenario. Each scenario has its own method for determining GHG equivalent reduction.

Products installed must be listed on the GEMS Register at the time of installation.

The information in this part of the Specifications should only be used until 30 June 2022.

Part 32A will be removed from 30 June 2022.

Table 32.1 – Eligible refrigerated cabinet scenarios

Product category number	Scenario number	Decommissioning requirements	Product to be installed	Historical schedule number
32A	32A	None	A refrigerated display cabinet	-
32A(i)	32A(i)	None	A refrigerated display cabinet (RDC) or a gelato or ice-cream scooping cabinet	32A*
32A(ii)	32A(ii)	None	An ice cream freezer cabinet	-
32A(iii)	32A(iii)	None	A refrigerated storage cabinet (RSC)	-

***** This Scenario also now includes an expanded range of products.

Specified Minimum Energy Efficiency

The product installed must meet the requirements listed in Table 32.2.

Table 32.2 – Additional requirements for refrigerated cabinets to be installed

Product category number	Requirement type	Efficiency requirement
32A	Minimum performance requirement	Achieves the high efficiency level within the meaning of *Greenhouse and Energy Minimum Standards (Refrigerated Display Cabinets) Determination 2012*.
32A(i-iii)	Minimum performance requirement	Achieves an Energy Efficiency Index within the meaning of *Greenhouse and Energy Minimum Standards (Refrigerated Cabinets) Determination 2020*

Product category number	Requirement type	Efficiency requirement
		below the Upgrade Energy Efficiency Index (EEI) specified for the relevant product class in Table 32.4, Table 32.5 or Table 32.6.

Other specified matters

None.

Method for Determining GHG Equivalent Reduction

PART 32A EXPIRES END OF DAY 30 JUNE 2022

Scenario 32A: Installing a refrigerated display cabinet

The GHG equivalent emissions reduction for each scenario is given by Equation 32.1, using the variables listed in Table 32.3.

Equation 32.1 – GHG equivalent emissions reduction calculation for Scenario 32A

$$GHG\ Eq.Reduction = (Baseline - Upgrade) \times Lifetime \times EEF \times Regional\ Factor \times \mathrm{TDA}$$

Table 32.3 – GHG equivalent emissions reduction variables for Scenario 32A

Measurement, testings and ratings must be in accordance with the Greenhouse and Energy Minimum Standards (Refrigerated Display Cabinets) Determination 2012		
Input type	**Condition**	**Input value**
Baseline	RS 1 – unlit shelves	3.67
	RS 1 – lit shelves	5.19
	RS 2 – unlit shelves	3.72
	RS 2 – lit shelves	4.96
	RS 3 – unlit shelves	4.34
	RS 3 – lit shelves	5.37
	RS 4 – glass door	2.84
	RS 6 – gravity coil	4.15
	RS 6 – fan coil	4.14
	RS 7 – fan coil	4.32
	RS 8 – gravity coil	3.58
	RS 8 – fan coil	3.85
	RS 9 – fan coil	3.53
	RS 10 – low	5.46
	RS 11	11.14
	RS 12	19.38

	RS 13 – solid sided	5.69
	RS 13 – glass sided	5.72
	RS 14 – solid sided	4.53
	RS 14 – glass sided	10.83
	RS 15 – glass door	10.83
	RS 16 – glass door	11.85
	RS 18	14.20
	RS 19	10.56
	HC1	3.36
	HC4	4.53
	VC1	9.57
	VC2	7.67
	VC4 – solid door	5.04
	VC4 – glass door	5.04
	HF4	7.74
	HF6	2.34
	VF4 – solid door	12.13
	VF4 – glass door	12.13
Upgrade	RS 1 – unlit shelves	2.45
	RS 1 – lit shelves	3.11
	RS 2 – unlit shelves	2.48
	RS 2 – lit shelves	3.31
	RS 3 – unlit shelves	3.02
	RS 3 – lit shelves	3.58
	RS 4 – glass door	1.98
	RS 6 – gravity coil	2.89
	RS 6 – fan coil	2.88
	RS 7 – fan coil	2.88
	RS 8 – gravity coil	2.49
	RS 8 – fan coil	2.68
	RS 9 – fan coil	2.36
	RS 10 – low	3.80
	RS 11	7.75
	RS 12	13.48
	RS 13 – solid sided	3.80
	RS 13 – glass sided	3.98
	RS 14 – solid sided	3.35
	RS 14 – glass sided	3.76
	RS 15 – glass door	8.01
	RS 16 – glass door	8.76

	RS 18	11.61
	RS 19	8.64
	HC1	2.48
	HC4	3.33
	VC1	7.04
	VC2	5.65
	VC4 – solid door	2.13
	VC4 – glass door	3.13
	HF4	5.70
	HF6	1.72
	VF4 – solid door	8.93
	VF4 – glass door	8.93
TDA		Total display area in m^2 of the installed item
Lifetime	In every instance	8.00
Regional Factor	For upgrades in Metropolitan Victoria	0.98
	For upgrades in Regional Victoria	1.04

Scenario 32A(i): Installing a refrigerated display cabinet or a gelato or ice-cream scooping cabinet

The GHG equivalent emissions reduction for each scenario is given by Equation 32.2, using the variables listed in Table 32.4.

Equation 32.2 – GHG equivalent emissions reduction calculation for Scenario 32A(i)

$$GHG\ Eq.\ Reduction = (Baseline\ EEI\ x\ \left(\frac{(M\ +\ (N\ x\ TDA))}{100}\right) - TEC)\ x\ 365.24\ x\ Lifetime/1000\ x\ Regional\ Factor\ x\ EEF$$

Table 32.4 – GHG equivalent emissions reduction variables for Scenario 32A(i)

Measurement, testings and ratings must be in accordance with the Greenhouse and Energy Minimum Standards (Refrigerated Display Cabinets) Determination 2020

Where –

- M and N are the coefficients for the cabinet's product class, as given by Schedule 1 in the GEMS (Refrigerated Cabinet) Determination 2020.

Input type	Condition			Input value				
Baseline EEI, M and N, Lifetime	GEMS 2020: Product class	GEMS 2020: Characteristics (code)	Upgrade EEI:	Baseline EEI	M	N	Lifetime (years) (TDA< 3.3m^2)	Lifetime (years) (TDA≥ 3.3m^2)
	Class 1	IRH	81	130	3.7	3.5	8	8
	Class 2	IFH	81	92	4.2	9.8	8	8
	Class 6	GSC or ISC	81	76	10.4	30.4	8	8
	Class 7	IRV	81	90	9.1	9.1	8	12
	Class 8	IFV	81	97	1.6	19.1	8	12
	Class 11	IRV-4	81	130	0.69	5.97	8	12
	Class 12	RRH	81	130	3.7	3.5	12	12
	Class 13	RFH	81	80	4.2	9.8	12	12
	Class 14	RRV or RRV-2	81	91	9.1	9.1	12	12
	Class 15	RFV	81	106	1.6	19.1	12	12
TDA				Total Display Area in m^2 of the installed product as recorded in the GEMS Registry				
TEC				Total Energy Consumption of the installed product as recorded in the GEMS Registry				
Regional Factor	For upgrades in Metropolitan Victoria			0.98				
	For upgrades in Regional Victoria			1.04				

Scenario 32A(ii): Installing an ice cream freezer cabinet

The GHG equivalent emissions reduction for each scenario is given by Equation 32.3, using the variables listed in Table 32.5.

Equation 32.3 - GHG equivalent emissions reduction calculation for Scenario 32A(ii)

$$\boldsymbol{GHG\ Eq.Reduction} = \left(Baseline\ EEI\ x\ \left(\frac{M\ +\ (N\ x\ Vn)}{100}\right) - TEC\right)\ x\ 365.24\ x\ Lifetime/1000\ x\ Regional\ Factor\ x\ EEF$$

Table 32.5 – GHG equivalent emissions reduction variables for Scenario 32A(ii)

Measurement, testings and ratings must be in accordance with the Greenhouse and Energy Minimum Standards (Refrigerated Display Cabinets) Determination 2020.

Where –

M and N are the coefficients for the cabinet's product class, as given by Schedule 1 in the GEMS (Refrigerated Cabinet) Determination 2020.

Input type	Condition			Input value		
Baseline EEI, M and N	GEMS 2020: Product class	GEMS 2020: Characteristics (code)	Upgrade EEI:	Baseline EEI	M	N
	Class 5	IFH-5	51	130	1	0.009
Vn				Net Volume, in litres, of the installed product as recorded in the GEMS Registry		
TEC				Total Energy Consumption, in kWh/day, of the installed product as recorded in the GEMS Registry		
Lifetime	In all cases			8 years		
Regional Factor	For upgrades in Metropolitan Victoria			0.98		
	For upgrades in Regional Victoria			1.04		

Scenario 32A(iii): Installing a refrigerated storage cabinet

The GHG equivalent emissions reduction for each scenario is given by Equation 32.4, using the variables listed in Table 32.6.

Equation 32.4 – GHG equivalent emissions reduction calculation for Scenario 32A(iii)

$$GHG\ Eq.Reduction = \left(\text{Baseline EEI x}\frac{((\text{M x Vn}) + \text{N})}{100}\right) - (\text{TEC x af x } 365.24)) \text{ x Lifetime}/1000 \text{ x Regional Factor x EEF}$$

Table 32.6 – GHG equivalent emissions reduction variables for Scenario 32A(iii)

Measurement, testings and ratings must be in accordance with the Greenhouse and Energy Minimum Standards (Refrigerated Display Cabinets) Determination 2020

Where –

M and N are the coefficients for the cabinet's product class, as given by Schedule 1 in the GEMS (Refrigerated Cabinet) Determination 2020.

Input type	Condition			Input value			
Baseline EEI, M and N	GEMS 2020: Product class	GEMS 2020: Characteristics (code)	Upgrade EEI:	Baseline EEI		M	N
				Heavy Duty	Normal and Light Duty		
	Class 3	SRH	81	73	71	2.55	1,790
	Class 4	SFH	81	89	80	5.84	2,380
	Class 9	SRV	81	91	79	1.643	609
	Class 10	SFV	81	96	80	4.928	1,472
Vn				Net Volume, in litres, of the installed product as recorded in the GEMS Registry			
TEC				Total Energy Consumption, in kWh/day, of the installed product as recorded in the GEMS Registry			
af				Adjustment factor for refrigerated storage cabinets as determined by Table 32.7			
Lifetime	In all cases			8 years			
Regional Factor	For upgrades in Metropolitan Victoria			0.98			
	For upgrades in Regional Victoria			1.04			

Table 32.7 – af input values for Scenario 32A(iii)

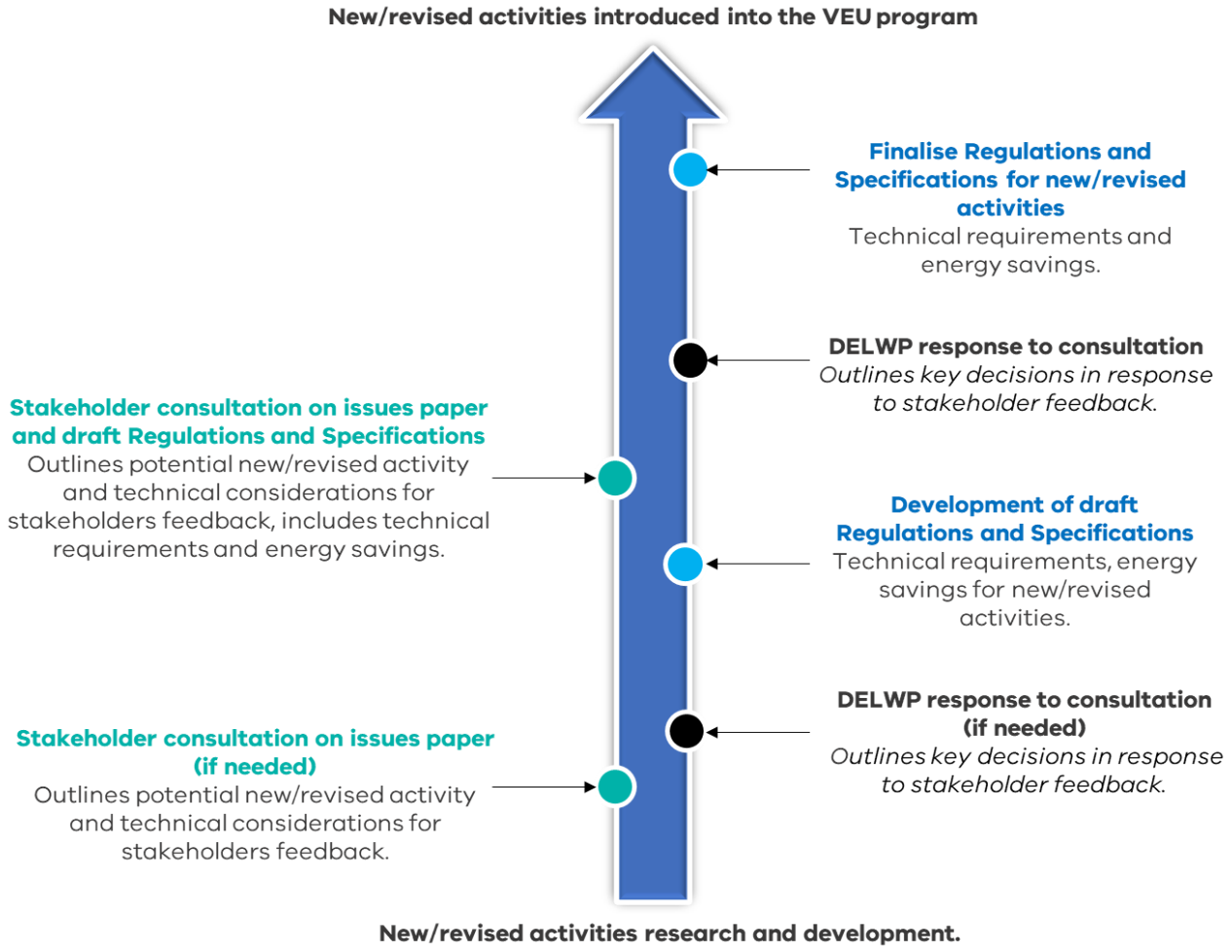
Input type	Condition	Input value
af	Light Duty (LD) chiller	1.2
	Light Duty (LD) freezer	1.1
	Normal Duty (ND) chiller or freezer	1.0
	Heavy Duty (HD) chiller or freezer	1.0

Appendix B – New and revised activities consultation process

Stakeholder feedback is an essential component of the process to develop new activities and revise existing activities within the VEU program. It allows the department to have questions answered on activity design, market barriers, product suitability and installation requirements. Public consultation on issues papers allows stakeholders to provide feedback on possible new VEU activities and to comment on draft Regulations and Specifications which govern how an activity can be carried out. Figure 5 outlines the steps involved in the activity development process.

The process will vary depending on the activity, with the consultation of an issues paper and draft Regulations and Specifications potentially undertaken in a single step. This can provide for a combination of stakeholder feedback and rapid activity development.

Figure 5 - Victorian Energy Upgrades (VEU) new and revised activities process



Activities within the VEU program are reviewed and refined on a constant basis. Revisions to existing activities are performed as per the Guidelines for updating the VEU Specifications. This document outlines the process that will be followed when updating or changing the Specifications for VEU activities.[10]

[10] https://www.energy.vic.gov.au/__data/assets/pdf_file/0036/396882/Guidelines-for-Updating-the-Victorian-Energy-Upgrades-Specifications-Version-1.0.pdf