

# Explanatory note – non-building based lighting upgrade – part 1: activity guidance

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The Essential Services Commission administers the program as the 'Victorian Energy Efficiency Target scheme' under the *Victorian Energy Efficiency Target Act 2007*.

For more information, visit [veet.vic.gov.au](http://veet.vic.gov.au).

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Summary

Essential Services Commission **Explanatory note – non-building based lighting  
upgrade – part 1: activity guidance**

# Introduction

Undertaking a non-building based lighting upgrade became an eligible prescribed activity under Schedule 34 of the *Victorian Energy Efficiency Regulations 2008* (the Principal Regulations) in 2016. Non-building based lighting upgrade activities include upgrades to street, road, sports field, outdoor lighting and other situations where lighting equipment is not affixed to or found within a building.

The purpose of this document is to help accredited persons (APs) understand the lighting upgrade activity, as well as to provide important information about their obligations when undertaking this activity. This explanatory note makes extensive reference to the Principal Regulations, which are available for download from the VEET website ([www.veet.vic.gov.au](http://www.veet.vic.gov.au)).

## How this document is structured

This document explains how to participate in the non-building based non-residential lighting activity of the Victorian Energy Efficiency Target (VEET) scheme. This activity is complex, both administratively and technically. Participants typically need to dedicate considerable time to understanding how it works, even if they have many years of experience in the lighting industry.

Participants seeking guidance on building based lighting upgrades should refer to *Explanatory note – building based lighting upgrade - part 1: activity guidance*.

This explanatory note begins by explaining some of the key concepts and issues – see Section 1 of this document. You will need a firm grasp of this section in order to review and comprehend the other sections of this document.

Sections 1 and 2 of this document (in particular Section 2) explain the process for participating in this activity. Section 2 details the end-to-end process of the activity, starting with becoming accredited and finishing with the registration of Victorian energy efficiency certificates (VEECs). This end-to-end process provides only one example of how you might structure your engagement with the scheme. Every business is different, and you may find that the specifics of your arrangements differ, but Section 2 should provide an easy way to find the information you need, when you need it. Note – the content of Appendix A is relevant to Section 1.9.

## Before you begin

This is not the only document you will need in order to understand how to participate in this activity. Especially if you are new to the VEET scheme, you should access the following documents and keep them handy. They will be referred to in this document and some (such as the Principal Regulations) will be important throughout your involvement in the scheme.



Each of the following documents can be accessed via the VEET website:

- [Victorian Energy Efficiency Target Act 2007](#) (the Act)
- [Victorian Energy Efficiency Target Regulations 2008](#) (the Principal Regulations)
- [Victorian Energy Efficiency Target Guidelines](#) (the Guidelines)
- Either the [Explanatory note – lodging an application for accreditation](#) (if you are not yet accredited) or [Explanatory note – lodging an application for additional activities](#) (if you are already an AP)
- [Explanatory note – lodging a product application](#)
- [Explanatory note – creating VEECs from prescribed activities](#)
- [Explanatory note - large energy users' scheduled activity premises](#)
- [Explanatory note – non-building based lighting upgrade - part 2: compliance requirements](#)
- Frequently Asked Questions (FAQ) – see the top right corner of the VEET website.

There is also some specific documentation that is not listed above but which will be introduced as you step through the document. You should download a copy of each of these documents below and keep them handy while reading this explanatory note. You can access them from the Forms – Assignment – Business page of the VEET website.

- [Schedule 34 \(NBB\) lighting upgrade application form](#)
- [Non-building based lighting upgrade \(34\) – documentation pack coversheet template](#)
- [Non-building based lighting upgrade \(34\) – assignment form template](#)
- [Non-building based lighting upgrade \(34\) – training identification matrix and installer qualifications declaration](#)
- [Non-building based lighting upgrade \(34\) - data summary and compliance declaration templates](#) (located in the same Excel file on the website).

The Essential Services Commission (the commission) has prepared this document to help APs understand how to participate in the NBB lighting upgrade activity under Schedule 34 of the Principal Regulations. However, you should not rely on this document to discharge your legal responsibility and this document should be read in conjunction with the Act, the Principal Regulations and the Guidelines. You should review and have a thorough understanding of the Principal Regulations, in particular Schedule 34.

# 1. Key concepts and issues

There are a range of concepts and terminology that are specific to undertaking NBB lighting upgrades in the VEET scheme. Even if you are an experienced lighting installer, to successfully participate in the scheme you will need to take the time to familiarise yourself with the following key concepts and issues.

The standards AS 2560 and AS/NZS 1158 are referred to throughout this document:

- AS 2560 is the Australian standard for sports lighting
- AS/NZS 1158 is the Australia/New Zealand standard for lighting of roads and public spaces.

## 1.1. Definitions

The following (commission) definitions apply to this explanatory note:

Term	Definition
AS 2560 compliance declaration	A document declaring that the upgrade meets the applicable installation and performance requirements of AS 2560
AS 2560 specific lighting application	The specific sporting use (e.g. outdoor tennis) which identifies the needs/requirements of the sports field lighting installation and the associated lighting design process as outlined in the applicable part of AS 2560 (e.g. AS 2560.2.1)
AS/NZS 1158 compliance declaration	A document declaring that the upgrade meets the applicable installation and performance requirements of AS/NZS 1158
AS/NZS 1158 lighting subcategory	The subcategory which corresponds to the needs/requirements of the lighting installation identified through the AS/NZS 1158 lighting design process (e.g. P5)
Asset lifetime reference	Allowable combinations of Equation 3 (Non-J6) and Equation 4 (Upgrade – U) asset lifetimes of the Principal Regulations
Building based lighting upgrade	A lighting upgrade that is undertaken in a building or structure captured under the Building Code of Australia (BCA) (as amended from time to time). This includes external lighting affixed to such buildings or structures
BB lighting upgrade	See also building based lighting upgrade
Carpark – general (open air)	An area that is for the parking of cars or other vehicles, which has illumination provided by at least one luminaire attached to a free-standing pole, bollard, canopy or similar
Distribution Network Service Provider	Also known as a Distribution Business (DB), the responsible/owning authority for certain types of lighting assets
DNSP	See also Distribution Network Service Provider
Energy consumer	The person responsible for the payment of electricity for lighting asset to be upgraded (see also lead energy consumer)

Term	Definition
Installer qualifications list declaration	A document completed for a non-building based lighting upgrade activity that declares that the applicable installer training and qualification requirements have been identified and complied with
Lead energy consumer	The nominated energy consumer for the purposes of assigning rights for the VEECs created by a non-building based lighting upgrade, where multiple bodies or persons are responsible for the payment of electricity for the lighting asset to be upgraded
Lighting criteria	Please refer to the applicable parts of the AS 2560 series
Lighting designer (assets not DNSP/RMA owned)	The person responsible for producing the design and verifying that the lighting upgrade complies with AS/NZS 1158 or AS 2560 must hold the following minimum qualification: Member – Illuminating Engineering Society of Australia and New Zealand (MIES) or higher
Lighting designer (DNSP/RMA owned assets)	The person (also may be referred to as “design consultant”) responsible for producing the design and verifying that the lighting upgrade complies with AS/NZS 1158 must be approved by the relevant DNSP or Road Management Authority (e.g. VicRoads)
Lighting diagram	Refers to diagrams or plans drafted using accepted industry conventions, symbols, perspectives, units of measurements and notations systems and usually generated by a professional draftsman or with the aid of a Computer Aided Design (CAD) system. These diagrams may also be referred to as ‘scaled plans’
Light technical parameters	Please refer to AS/NZS 1158.0
LTP	See also Light Technical Parameters
Non-building based lighting upgrade	An upgrade that is undertaken in an environment that is not a building or structure (see also building based lighting upgrade)
NBB lighting upgrade	See also non-building based lighting upgrade
Road management authority	A local authority that has responsibility for the management of a road space and its associated lighting
RMA	See also Road Management Authority
Sports field lighting	Comprised of a luminaire or luminaires whose primary purpose is to provide illumination to the playing surface of a sports field
Supervising electrician/lineworker	The nominated electrician or lineworker (as applicable) who signs off on the applicable lighting upgrade documentation
Training identification matrix declaration	A document completed for a non-building based lighting upgrade activity that declares that the applicable installer training and qualification requirements have been identified and complied with (to be completed pre-activity)
Upgrade manager	The nominated person legally representing a business for the purposes of verifying the upgrade and supporting documentation

Please note that the definitions included in the AS 2560 and AS/NZS 1158 series also apply unless stipulated in the above table.

## **1.2. Product safety, OH&S and compliance to standards**

For an installation to be eligible under the VEET scheme, it must comply with all relevant laws and regulations, including those relating to occupational health and safety (OH&S). This applies to all installations – including in circumstances where you subcontract the actual installation work to a third party.

There are a range of risks applicable to lighting upgrades in non-building based installation environments that may differ to those found in building based environments. Broadly, these risks fall into two main categories:

1. Activity installation risks – relating to installers and the general public where installations are associated with traffic (pedestrian, vehicular or other), at heights, requiring the use of specialist equipment (e.g. elevated work platforms), or some combination of these.
2. Product risks – relating to the fact that external environments are impacted by climatic conditions and other factors that may negatively affect the lifetime and/or operation of installed lighting equipment.

Risks may also depend on the type of upgrade activity and where that activity is being undertaken.

NBB lighting upgrade activity requirements including compliance to certain standards have been set to assure all stakeholders that an upgrade has been undertaken with thought given, and actions taken, to mitigate the applicable risks that may be encountered.

If a NBB installation or installation environment is subject to client (i.e. energy consumer) based standards or requirements (e.g. those of a road management authority (RMA)), then compliance to those standards or requirements is a matter for the AP to be aware of and to adhere to in addition to compliance to the requirements of part 1 and part 2 of this explanatory note.

### **Replacing a luminaire – important information**

While this issue relating to replacing a linear fluorescent lamp with a LED tube is of particular relevance to building based lighting activities, it may also be relevant to NBB activities undertaken in other environments.

If you are planning on installing these products, you should ensure that you thoroughly understand the OH&S, compliance and warranty implications. As a starting point, you should confirm that your product meets the requirements set out in the AS/NZS 60598.2.1:2014 standard for these luminaires. You should also make sure that the products you plan to install do not pose any unreasonable electrical risks to your installers or to your client, either during the installation process or post-installation.

Importantly, you should understand that ‘modifying’ an existing luminaire may effectively create a ‘new’ luminaire from a legal viewpoint. This means that you will likely become responsible for that luminaire’s compliance with relevant safety and electro-magnetic compatibility laws and standards. In addition, the upgrade may void the warranty provided by the original luminaire manufacturer, meaning you may be considered liable should the product malfunction post-installation. From 16 May 2016, the assignment form must include this information as a tick box for the customer to sign, and you should ensure that they are aware of the implications of the modification work prior to the installation taking place.

The Certificate of Electrical Safety which Energy Safe Victoria requires for this work must be retained on file by you should the commission require an audit. From 16 May 2016, this document must detail the modification work you performed on each type of linear fluorescent luminaire you modified, as well as specify that the modification work includes electrical isolation of the legacy ballast (and capacitor if one was present).

If you elect to retrofit linear LED lamps into linear fluorescent luminaires without removal of the legacy ballast and/or capacitor, from 16 May 2016 you must measure and assess the power factor of the upgraded lighting circuit, with the aim that the upgrade should not have a detrimental impact on the customer’s compliance with Section 4.3 of the *Electricity Distribution Code* (EDC).

You must also have obtained commission approval for your proposed measurement and assessment methodology prior to proceeding. The EDC can be found at <http://www.esc.vic.gov.au/document/energy/34937-energy-distribution-code-version-9-current/>.

Adequate evidence of the approved measurement and assessment approach used, and the result of the power factor measurement must be retained and be made available to the commission upon request. If you feel unsure about the obligations and risks associated with installing LED tubes, you should seek independent legal advice.

APs should also be aware of the decommissioning requirements associated with installations of LED tubes, as outlined in Section 2.11 of this document and the applicable section of *Explanatory note – non-building based lighting upgrade - part 2: compliance requirements*. These requirements stipulate that any replaced control gear must be decommissioned (rendered permanently unusable).

### **1.3. Eligible upgrades**

There are two facets of eligibility you must satisfy for a given upgrade:

- whether the lighting installation and/or type of lighting environment is eligible
- whether you have the appropriate accreditations and approvals from the commission at the time of the upgrade.

## Eligible NBB lighting installations

To be eligible, NBB lighting installations must fulfil three essential criteria:

- It must **not** be a new installation (VEET only applies to retrofits of existing non-building based lighting installations).
- An installation must be defined as one of the following:
  - road lighting
  - public lighting
  - outdoor space lighting (for a space that is not a sports field)
  - carpark – general (open air)
  - sports field lighting
  - any other case.
- The premises must not be a 'scheduled activity premises' as defined in Regulation 4 of the Principal Regulations, unless it has been 'opted in' to the VEET scheme pursuant to Regulation 10AA of the Principal Regulations.

Please note:

- A carpark – general (open air) environment is defined as ‘an area that is for the parking of cars or other vehicles, which has illumination provided by at least one luminaire attached to a free-standing pole, bollard, canopy or similar’. These installations are covered by the applicable requirements of AS/NZS 1158.
- Sports field lighting is comprised of a luminaire or luminaires whose primary purpose is to provide illumination to the playing surface of a sports field. These installations are covered by the applicable requirements of AS 2560.
- NBB lighting upgrades undertaken in installation environments where the existing assets are owned by a DNSP or RMA have different compliance requirements to assets that are not DNSP/RMA owned. Please see *Explanatory note – non-building based lighting upgrade - part 2: compliance requirements* for these requirements.
- The upgrade of NBB lighting installations must also meet the applicable requirements of AS 2560 (see Section 1.10) or AS/NZS 1158 (see Section 1.11). Please see *Explanatory note – non building based lighting upgrade - part 2: compliance requirements* for these requirements.

**If AS 2560 or AS/NZS 1158 is not applicable to the installation environment, please contact the VEET support team on (03) 9032 1310 or [veet@esc.vic.gov.au](mailto:veet@esc.vic.gov.au).**

### Eligible upgrades

For an individual upgrade to be eligible, it must meet the following conditions:

- The treatment of the works as part of the same upgrade must be reasonable and defensible.
- The upgrade must have begun after the commencement of the amended regulations (1 January 2016).
- The upgrade must have been completed after the date on which you lodged your application for accreditation or application for additional activity approval.
- All products installed as part of the upgrade must have been listed on the VEET product register and be approved for NBB activities before being installed as part of the upgrade (i.e. the ‘effective from’ date listed in the product register must be before the date of installation).
- You must be able to source all the documentation required to verify the pre-upgrade lighting situation.
- You must ensure that your installers are appropriately trained and qualified.

## 1.4. Accredited person approval for NBB lighting upgrades

Both building and non-building based lighting upgrade activities are captured under *Schedule 34 – Lighting upgrade* of the Principal Regulations. Due to this, many of the basic elements of each activity are either the same or very similar, but as noted in Section 1.2 there are risks that may only be applicable to NBB installation environments.

To ensure that APs wishing to operate in NBB installation environments fully understand these risks and have appropriate processes and procedures in place, it is a requirement that APs gain a separate approval from the commission to undertake NBB lighting upgrades. This means:

- APs already approved for Schedule 34 (BB) activities will need to complete the Schedule 34 non-building based (NBB) lighting application form.
- APs that are not approved for Schedule 34 (BB) activities are required to complete an application for Schedule 34 (BB) activities and the Schedule 34 non-building based (NBB) lighting specific application form.

The primary purpose of the application process is to enable the commission to:

- be satisfied that APs have robust quality, safety and risk management processes in place to a level comparative with their undertakings and can verify their implementation in practice
- be assured that appropriate contractor management systems are in place, should the AP subcontract all or part of the upgrade works.

The AP will be required to confirm the following:

- whether the AP has certified quality and safety management systems (e.g. certified to AS/NZS ISO 9001 and AS/NZS 4801) and if not, whether the AP has systems aligned with the framework of those standards
- whether the AP can provide adequate evidence of quality and safety management systems certification (if applicable)
- whether the AP has documented quality and safety policies
- whether the AP has safe work methods commensurate with the risks that may be encountered in undertaking NBB lighting activities (e.g. working at heights, operation of working at heights equipment, traffic and pedestrian management, work in close proximity to powerlines)
- whether the AP has systems which incorporate the requirements of applicable NBB installation and performance standards (e.g. AS/NZS 1158)
- whether the AP employs qualified or experienced lighting practitioners
- whether the AP has a training procedure and maintains relevant training records of employees and/or subcontractors
- any other quality and safety management information that is deemed supportive in the approval process.



## **1.5. Role of the upgrade manager**

For each upgrade, you must nominate a single person to legally represent your business for the purposes of verifying the upgrade and supporting documentation, including the assignment of rights, training identification matrix declaration, installer qualifications declaration, AS 2560 compliance declaration or AS/NZS 1158 compliance declaration. This person is referred to as the upgrade manager.

It is not necessary for the upgrade manager to be directly employed by the AP but they must have the authority to sign on the AP's behalf. Additionally, the roles of the upgrade manager, as defined by the assignment form and other scheme documentation, must be completed by a single person.

## **1.6. Role of the supervising electrician/lineworker**

Similar to the role of the upgrade manager, for each NBB lighting upgrade there must be a single electrician who is nominated as the supervising electrician/lineworker (as applicable). This person will be required to provide their details, including their licence or registration number (or equivalent) and sign the activity assignment form.

## **1.7. Role of the lighting designer**

Depending on the installation environment, a qualified lighting designer needs to verify that the design and installation of the lighting upgrade meets the requirements of either:

- AS 2560 and the relevant specific application (e.g. outdoor tennis) and associated level of play (e.g. recreational, amateur, semi-professional and professional play)
- AS/NZS 1158 and the relevant subcategory (e.g. lighting subcategory – P5).

This verification is provided by the signing of the applicable compliance declaration by the lighting designer responsible for producing the design and verification of the lighting upgrade.

## **1.8. Using subcontractors**

It is permissible as an AP to use subcontractors to undertake installations on your behalf. However, for the purposes of VEET, all legal liability rests with you as the AP. This means that if a subcontractor is found to have disregarded a relevant law or failed to properly record information about the upgrade, you may be subject to compliance action.

Because the use of subcontractors represents a compliance risk, you will be required to provide information about the contractual arrangements for each upgrade you undertake. This information is recorded on the assignment form and must be provided at the time you create the VEECs associated with each upgrade.

## **1.9. Installer training and qualification requirements**

Non-building based lighting upgrade activities are required to be undertaken by a supervising electrician/lineworker and installers appropriately qualified for this activity.

As noted in Section 1.2, lighting upgrades undertaken in NBB environments may be subject to risks that may not be applicable for building based environments, with many of these risks found at an installation level. It is the responsibility of the upgrade manager and AP to ensure all risks have been identified and that all training requirements are met. To assist in ensuring APs understand and manage these risks, it is a requirement that the training identification matrix declaration and installer qualifications declaration found in Appendix 1 of this explanatory note is completed before an activity is undertaken. This declaration requires sign off by the upgrade manager and AP representative.

This matrix includes the required installer training and qualifications applicable for particular installation environments. It is understood that not every activity will be subject to every risk or that a piece of specialised equipment is required in every situation. To confirm that the training requirements identified in the training identification matrix declaration have been met and that installers have the appropriate training at the time of installation, the upgrade manager and appropriate representative of the AP (e.g. compliance manager) are required to provide and sign off on all installer qualifications as part of the activity documentation submission.

## **1.10. Compliance with AS 2560**

Sports field lighting comprises of a luminaire or luminaires whose primary purpose is to provide illumination to the playing surface of a sports field. These lighting upgrade activities must meet the applicable installation and performance requirements of the relevant part of AS 2560.

The standard series includes general principles and recommendations for sports field lighting, descriptions of lighting equipment, as well as measurement and assessment method requirements for installations. It also provides for the needs of different levels of play (e.g. recreational, training, club, national, international), and for the visual requirements of participants, officials and spectators. Please note that this standard provides no detail on the special requirements of lighting for colour television broadcasting.

It is understood that sports fields may be multiuse facilities, so it will be necessary to understand the primary sporting use that is driving the lighting upgrade. This should be completed via consultations primarily with the activity client (i.e. the energy consumer), stakeholders involved in the upgrade decision making process (e.g. ground committees), and the qualified lighting designer involved in the design and verification of the upgrade. Once the lighting application has been identified, the relevant parts of AS 2560 should be reviewed.

These parts may include:

- AS 2560.1 – Part 1: general principles
- AS 2560.2.1 – Part 2.1: specific applications – lighting for outdoor tennis
- AS 2560.2.3 – Part 2.3: specific applications – lighting for football (all codes)
- AS 2560.2.4 – Part 2.4: specific applications – lighting for outdoor netball and basketball
- AS 2560.2.5 – Part 2.5: specific applications – swimming pools
- AS 2560.2.6 – Part 2.6: specific applications – baseball and softball
- AS 2560.2.7 – Part 2.7: specific applications – outdoor hockey
- AS 2560.2.8 – Part 2.8: specific applications – bowling greens

APs engaged in sports field lighting activities should obtain and keep a copy of these standards.

Depending on the specific lighting application, APs may be required to collect and retain the documentation described in the appendices to each part of AS 2560, which outline the documentation required for demonstrating compliance. Additionally, please see part two (*compliance requirements*) of this explanatory note for an outline of the evidentiary documents that are required to demonstrate that compliance to certain aspects of AS 2560 has been achieved.

As noted in Section 1.2, if a NBB installation or installation environment is subject to client based standards or requirements (e.g. those of a sporting association or similar), then compliance to those standards or requirements is a matter for the AP to be aware of and to adhere to in addition to compliance to the requirements of this explanatory note (including adherence to AS 2560).

**Please note that it is recognised that AS 2560 will be applicable to most but not all sports field lighting applications. If AS 2560 is not applicable to the sports field lighting application to be upgraded, then please contact the VEET support team on (03) 9032 1310 or [veet@esc.vic.gov.au](mailto:veet@esc.vic.gov.au).**

### **1.11. Compliance with AS/NZS 1158**

Lighting upgrades undertaken for roads or in public spaces (including tunnels and underpasses) must meet the applicable installation and performance requirements of the relevant subcategory of the relevant part of AS/NZS 1158.

The AS/NZS 1158 series covers lighting schemes for roads and outdoor spaces. The standard is premised on designing NBB lighting schemes with three aims in mind:

- the facilitation of safe movement
- the discouragement of illegal acts
- the contribution to the amenity of an area through increased aesthetic appeal.

The safe movement of people is noted as the primary aim of any NBB lighting scheme, and because of this, AS/NZS 1158 is divided into two main categories:

- category V – lighting designed for roads where the needs of motorists are the most important factor
- category P and PX – lighting designed for roads and outdoor spaces where the needs of pedestrians are the most important factor<sup>1</sup>.

The standard sets out the installation and performance and design requirements of a NBB lighting scheme dependant on the identified needs of the installation. The identification of these needs and therefore the AS/NZS 1158 lighting category should be completed via consultations with the activity client (i.e. the energy consumer).

The relevant parts of AS/NZS 1158 may include:

- *AS/NZS 1158.0 – Part 0: introduction*
- *AS/NZS 1158.1.1 – Part 1.1: vehicular traffic (category V) lighting. Performance and design requirements*
- *AS/NZS 1158.1.2 – Part 1.2: vehicular traffic (Category V) lighting. Guide to design, installation, operation and maintenance*
- *AS/NZS 1158.2 – Part 2: computer procedures for the calculation of light technical parameters for category V and category P lighting*
- *AS/NZS 1158.3.1 – Part 3.1: pedestrian area (category P) lighting. Performance and design requirements*
- *AS/NZS 1158.4 – Part 4: lighting of pedestrian crossings*
- *AS/NZS 1158.5 – Part 5: tunnels and underpasses*
- *SA/SNZ TS 1158.6 – Part 6: luminaires. Performance*

APs engaged in NBB lighting activities should obtain and keep a copy of these standards.

Depending on the installation environment, APs may be required to collect and retain the documentation described in the appendices to each part of AS/NZS 1158, which outline the documentation required for demonstrating compliance. Additionally, please see part two (*compliance requirements*) of this explanatory note for an outline of the evidentiary documents that are required to demonstrate that compliance to certain aspects of AS/NZS 1158 has been achieved.

As noted in Section 1.2, if a NBB installation or installation environment is subject to client based standards or requirements (e.g. those of an RMA), then compliance to those standards or

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<sup>1</sup> This includes requirements for installations for the environment: carpark – general (open air)

requirements is a matter for the AP to be aware of and to adhere to in addition to compliance to the requirements of this explanatory note (including adherence to AS/NZS 1158).

**Please note that it is recognised that AS/NZS 1158 will be applicable to most but not all NBB lighting environments. If AS/NZS 1158 is found to be not applicable to the NBB lighting environment to be upgraded, then please contact the VEET support team on (03) 9032 1310 or [veet@esc.vic.gov.au](mailto:veet@esc.vic.gov.au).**

## **1.12. Lighting designer qualification requirements**

A qualified lighting designer must be involved at all stages of the design and verification of the lighting upgrade. This person is responsible for producing the design and verifying that the lighting upgrade complies with AS 2560 or AS/NZS 1158 (as applicable), must meet one of the following minimum requirements:

- DNSP or RMA owned assets: must be approved by the relevant DNSP or RMA (e.g. VicRoads).
- All other situations: Be a member of the Illuminating Engineering Society of Australia and New Zealand (MIES), or higher.

To satisfy the above requirement, you should ensure the personnel involved in the NBB lighting upgrade are sufficiently skilled and experienced to ensure that your upgrades meet the requirements of AS 2560 or AS/NZS 1158 (as applicable).

If unsure, you should consult the lighting design peak body, the Illuminating Engineering Society of Australia and New Zealand.

## **1.13. AS 2560 and AS/NZS 1158 compliance declarations**

The commission has prepared templates to help streamline your compliance with the requirements of AS 2560 or AS/NZS 1158 (as applicable). These templates are called the AS 2560 compliance declaration and the AS/NZS 1158 compliance declaration, and depending on the environment, one needs to be completed for each upgrade you undertake. The templates can be downloaded from the business sector assignment form page of the VEET website.

In a declaration, you are required to provide the following information:

- the qualifications of the lighting designer (if you undertook lighting design)
- further details about the qualifications of the lighting designer, if the lighting designer was not affiliated with the Illuminating Engineering Society of Australia and New Zealand (only applicable to DNSP or RMA owned assets)
- various supporting evidence.

For more information on compliance to AS 2560 and AS/NZS 1158, please see part 2 (*compliance requirements*) of this explanatory note.

## **1.14. J6, non-J6 and NBB upgrades**

The calculations used to determine the energy savings of a given upgrade project vary depending on whether the upgrade is part of a site refurbishment that requires a Building Permit, and as a result is required to comply with part J6 of the *Building Code of Australia* (BCA). The shorthand terminology used to describe this distinction in this document is 'J6' and 'Non-J6' (or NJ6).

J6, Non-J6 and NBB upgrades have different data and documentation requirements. Because of this, separate versions of the upload form (which you use to create VEECs) and the VEEC calculator have been developed. You will see these three options in the relevant drop-down menus on the VEET website.

For the purposes of the Principal Regulations, a NBB lighting upgrade is a Non-J6 upgrade, with only a very slight difference between it and a BB Non-J6 upgrade. This difference is that the air conditioning (AC) multiplier has been deemed as never applicable to NBB upgrades and therefore is always set to 1.

You should exercise a high degree of care to ensure that you have a clear understanding of the status of any upgrade project you are engaged in. Selecting the incorrect version of the user interface or the upload form will result in the improper creation of certificates, which may lead to compliance action being taken against you.

## **1.15. VEEC calculation method**

The number of VEECs you receive for a given upgrade is based on the deemed abatement associated with that upgrade. It is important to recognise that this deemed abatement may differ considerably from the actual abatement caused by any particular upgrade. In some cases it will be higher, in others lower.

This is because the process of deeming abatement must make general assumptions about many factors that affect the energy savings of an upgrade, such as the operating hours of a business, mode of operation, or other specifics.

The VEEC calculation method is defined in Schedule 34 of the Principal Regulations. You should make ensure you fully understand the workings of this equation. An explanation of this method is provided below.

## VEEC calculation

VEECs are calculated using the following equation ('Regulations Equation 1'):

$$VEECs = (energy\ savings \times 1.095) \times regional\ factor$$

Where,

$$energy\ savings = baseline\ energy\ consumption - upgrade\ energy\ consumption$$

The regional factors that apply are 0.98 for upgrades undertaken in metropolitan Victoria and 1.04 for upgrades undertaken in regional Victoria. Energy savings are multiplied by the marginal greenhouse gas intensity factor of 1.095.

## Baseline calculation ('before')

There are two equations available to calculate baseline energy consumption, and whether the upgrade is required to comply with Part J6 of the current edition of the BCA (as amended from time to time) determines which equation is to be used. By definition, non-building based lighting upgrades are not required to comply with Part J6 of the BCA, thus only the following equation is used to calculate the baseline ('Regulations Equation 3' or 'Non-J6')<sup>2</sup>:

$$Baseline\ energy\ consumption\ (MWh) = \sum_{each\ lamp} (lamp\ circuit\ power\ (LCP)\ for\ the\ replaced\ lamp \times the\ relevant\ asset\ lifetime \times annual\ operating\ hours \times a\ multiplier\ if\ a\ control\ device\ is\ installed\ (CM) \times a\ multiplier\ if\ the\ space\ is\ air-conditioned\ (AM)) \div 10^6$$

In this equation, the annual operating hours is defined based on the installation environment for which the activity is undertaken in, as set out in Equation 3 of the Principal Regulations. Also for this equation, the LCP value is usually taken from Table 1 of Schedule 34. If the type of lamp being replaced is not listed in Table 1, then the applicant must apply to the commission to have a value approved (see Section 1.22 below for details). The values assigned to the applicable control device multiplier (CM) are in Table 2 of Schedule 34 of the Principal Regulations and, as noted above, the air conditioner multiplier is not applicable for NBB lighting upgrades (therefore is always set to 1).

The final variable is asset lifetime. The value for asset lifetime is obtained by first identifying what type of lighting upgrade is being undertaken, then consulting the Principal Regulations to identify which asset lifetime value applies. The details of this process are set out in full in Section 1.189.

It should be noted that for lamps that contain an integrated ballast, the asset lifetime scenario chosen needs to reflect as if both the lamp and the ballast are separately being replaced.

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<sup>2</sup> This baseline equation may be referred to as 'Regulations Equation 3' or 'Non-J6'.

## Upgrade calculation ('after')

The following equation is used to determine the upgrade energy consumption ('Regulations Equation 4' or 'U')<sup>3</sup>:

$$\text{Upgrade energy consumption (MWh)} = \sum_{\text{each upgrade lamp}} (\text{lamp circuit power (LCP) for the installed lamp} \times \text{the relevant asset lifetime} \times \text{annual operating hours} \times \text{a multiplier if a control device is installed (CM)} \times \text{a multiplier if the space is air-conditioned (AM)}) \div 10^6$$

As in the baseline calculation, the annual operating hours is defined based on the installation environment for which the activity is undertaken in, as set out in Equation 4 of the Principal Regulations. The LCP value is taken from Table 1 of Schedule 34. The values assigned to the applicable control device multiplier (CM) are in Table 2 of Schedule 34 of the Principal Regulations, and as noted, the air conditioner multiplier is not applicable for NBB lighting upgrades (therefore always set to 1).

The value for asset lifetime is again obtained by first identifying what type of lighting upgrade is being undertaken. Certain upgrade scenarios and an associated asset lifetime can only match certain baseline scenarios with the same asset lifetime. The details of this process are set out in full in Section 1.189.

Please note that in certain situations (associated with fittings being removed) there may not be an upgrade (i.e. 'Regulations Equation 4' or 'U') equation. In these situations, only the baseline asset lifetime is required – see Section 1.189 for more details.

### 1.16. VEEC calculation method with discount factor applied

The [notice of declaration of discount factors](#)<sup>4</sup> published in the Victorian Government Gazette on 1 December 2017 outlines discount factors to be applied to certain types of Schedule 34 lighting upgrade activities.<sup>5</sup>

The discount factors will apply to activities where:

1. the upgrade undertaken does not need to comply with Part J6 of the current edition of the BCA (as amended from time to time) under building based lighting upgrades, and
2. where the lamps to be replaced (incumbent lamps) are either:
  - T8 or T12 fluorescent lamps (in both building based and non-building based environments),
  - or

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<sup>3</sup> This upgrade equation may be referred to as 'Regulations Equation 4' or 'U'.

<sup>4</sup> <http://www.gazette.vic.gov.au/gazette/Gazettes2017/GG2017S411.pdf>

<sup>5</sup> Further to Section 19 of the *Victorian Energy Efficiency Target Act 2007* and Section 10A of the *Victorian Energy Efficiency Target Regulations 2008* (the Principal Regulations)



- high intensity discharge lamps (metal halide, mercury vapour and high pressure sodium lamps) (only in building based environments).

The discount factor will be applied via a staged approach. See Table 1 below for details of the discount factors to be applied over two different periods.

Table 1: Schedule 34 discount factor changes

Item number (in Table 1 of Schedule 34 Part B)	Type of incumbent lamp	Discount factor applicable from 1 February 2018– 30 April 2018	Discount factor applicable from 1 May 2018 onwards
Items 1–9	T8 or T12 linear fluorescent	0.9	0.8

You should note that the higher discount factor will apply to activities completed with an **activity date**<sup>6</sup> of 1 February to 30 April 2018; whilst the lower discount factor will apply to activities completed with an **activity date**<sup>7</sup> of 1 May onwards.

### How the discount factors are applied to Schedule 34 lighting upgrades depending on the type of activity

#### Scenario 1 - Simple upgrade with one discount factor applied

VEECs are calculated using the following equation:

$$VEECs = \text{abatement factor} \times \text{regional factor} \times \text{discount factor}$$

Where,

$$\text{abatement factor} = \text{energy savings} \times 1.095$$

$$\text{energy savings} = \text{baseline energy consumption} - \text{upgrade energy consumption}$$

Under this scenario, your Schedule 34 activity attracts a discount factor, and it involves the replacement of only one type of lamp, where the lamp is one of incumbent lamp types listed in Table 1. Here, the discount factor applies to the final amount of CO<sub>2</sub>-e calculated for the activity,<sup>8</sup> as only one discount factor applies.

<sup>6</sup> An activity is defined to be undertaken on the day the lighting upgrade is completed as per Part C of the Principal Regulations. That is, at the beginning of the day on which the lighting upgrades is completed (the activity date).

<sup>7</sup> See preceding note.

<sup>8</sup> As per Regulation 10A of the Principal Regulations.

## Scenario 2 - Complex upgrade with multiple discount factors applied

VEECs are calculated using the following equation:

$$VEECs = \text{abatement factor} \times \text{regional factor} \times \text{adjusted discount factor}$$

Where,

$$\text{abatement factor} = \text{energy savings} \times 1.095$$

$$\text{energy savings} = \text{baseline energy consumption} - \text{upgrade energy consumption}$$

$$\text{adjusted discount factor} =$$

$$((\text{energy consumption baseline zone 1} \times \text{discount factor baseline zone 1})$$

$$+ (\text{energy consumption baseline zone 2} \times \text{discount factor baseline zone 2})$$

$$+ \dots$$

$$+ (\text{energy consumption baseline zone } n \times \text{discount factor baseline zone } n))$$

$$\div \text{total baseline energy consumption.}$$

Note: zone n refers to additional zones (where applicable).

Under this scenario, your Schedule 34 activity attracts a discount factor, and it involves the replacement of more than one type of incumbent lamp (where at least one of the incumbent lamps is a lamp type listed in Table 1). Such an upgrade will consist of multiple zones and multiple incumbent lamp types, thereby requiring the application of more than one discount factor.<sup>9</sup>

Here, the discount factors are applied to the proportion of total baseline energy consumption which is attributable to the incumbent lamps affected by the discount factors.

### 1.17. Upgrades, areas and calculation zones

For the purposes of calculating the correct baseline and upgrade energy use for a given upgrade project, it will usually be necessary to subdivide the upgrade into smaller components. The way this subdivision occurs depends on the project.

As a NBB upgrade is identified as a Non-J6 upgrade, the calculation zone is defined as a set of lamps that are installed in a common type of installation environment with the same asset lifetime, control device type(s) and lamps subject to the same lamp circuit power (LCP). This is for both baseline and upgrade calculations.

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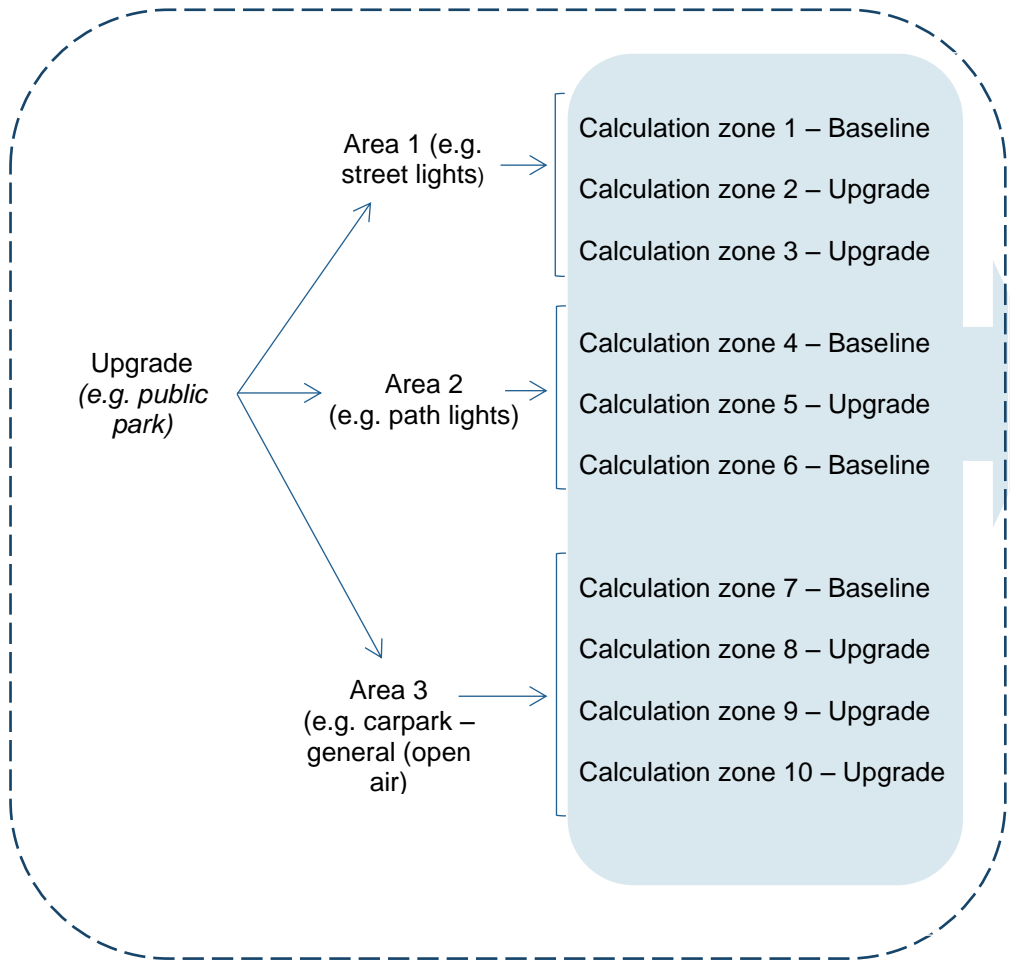
<sup>9</sup> A default value of 1 is applied where the incumbent lamps are not lamp types listed in Figure 2 above.

This information, and the definition of a calculation zone, is represented in Figure 1 below. Even for simple upgrades, there will normally be at least two calculation zones; one for baseline and one for upgrade. Complex upgrades may require many more.

The VEET online creation upload system can accommodate up to 50 calculation zones. If users encounter an upgrade requiring more than 50 calculation zones, they should contact the commission.

Due to constraints in the Principal Regulations, a NBB lighting upgrade installation cannot extend geographically across different postcodes. Even if the other requirements for a calculation zone are met, an installation that could extend across multiple postcodes needs to be terminated at the geographic boundary of a postcode and a new installation initiated for the new postcode. If you have questions concerning this matter, please contact the VEET support team for further information and guidance.

### Subdividing an upgrade



### Defining a calculation zone

Equation	Equation variables				
Non-J6 Baseline	Lamp Circuit Power (LCP)	Annual Operating Hours	Asset Lifetime	Control Multiplier	(A/C Multiplier =1)
Upgrade	Lamp Circuit Power (LCP)	Annual Operating Hours	Asset Lifetime	Control Multiplier	A/C Multiplier = 1)

A Calculation Zone is a physical space (J6) or series of lamps (Non-J6) for which all of the variables of the relevant equation are common.

For instance, if two different types of lamps are installed in an area, there will be two Lamp Circuit Power (LCP) variables, and the area must be subdivided to account for this.

Note that this means some areas may have a different number of baseline and upgrade calculation zones.

Figure 1: Subdividing an upgrade project into calculation zones

## 1.18. Asset lifetime references

As outlined above, one factor in the abatement calculation is the 'asset lifetime'. Determining the correct asset lifetime is one of the more complicated aspects of undertaking this activity. You should ensure that both you and any relevant staff fully understand how this aspect of the calculation works.

The asset lifetime varies depending on the nature of the upgrade. Typically, more permanent upgrades (those which cannot be reversed without the services of an electrician) receive higher asset lifetimes than those that are easily reversible by the project client. Importantly, within one upgrade project you may need to select different asset lifetimes.

Further, when recording your data, select the asset lifetimes for each area as outlined in Table 32, Table 5, Table 7 and Table 9. Normally this means one asset lifetime for the baseline ('before') energy calculation and another for the upgrade ('after') energy calculation (note this combination of a 'before' and 'after' asset lifetime forms an **asset lifetime reference** as discussed below).

Lastly, the asset lifetimes you use will determine what other data you must collect about the upgrade. Some asset lifetimes require you to record the rated lifetime hours of the pre-existing lamps or the newly installed lamps, while others require no rated lifetime information at all.

The asset lifetimes are defined in Schedule 34 the Principal Regulations. For ease of use, the commission has developed a shorthand reference to refer to the different asset lifetime matches. This is defined as the asset lifetime reference<sup>10</sup>. The figures in the following sections set out the various asset lifetime references, the situations in which they apply, and any data recording requirements. Keep these figures handy when you are recording data about an upgrade or when using the online VEEC calculator.

The figures also provide asset lifetime scenario explanations and details, as well as decision matrices to aid in identifying how lighting project changes relate to baseline ('Regulations Equation 3' or 'Non-J6') and upgrade ('Regulations Equation 4' or 'U') equations. Scenarios have been grouped into four types of upgrades:

- installing new lighting components
- replacing lighting components
- removing or decommissioning lighting components
- any other case.

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<sup>10</sup> Using the same naming as in the Principal Regulations, in the shorthand of an asset lifetime reference they are capitalised and include: A, AB, B, C, D, E. They are then connected to a Non-J6 or U scenario to provide a complete reference – i.e. 'Non-J6-C' means 'Regulations Equation 3' or 'NJ6', asset lifetime C.

Please note that where the fitting has been modified (i.e. fitting replaced or legacy lighting components removed or decommissioned), the lamp life is not a limiting factor for the number of VEECs claimed. This means that where the baseline and upgrade equation matches (i.e. asset lifetime reference) allow for it, a lighting upgrade may create VEECs for the total type of installation environment annual operating hours multiplied by the applicable asset lifetime. If you are unsure about any of the following, please contact the VEET support team.

### Installing new lighting components

When undertaking an upgrade that involves installing new lighting components, use the following figures as a guide to identify the correct asset lifetime references to use. Please take note of the following:

- Use the decision matrix in Table 2 to decide what an asset lifetime means in practical terms.
- Take note of the asset lifetime that best suits your upgrade for Non-J6 and U.
- Use Table 3 to find the chosen asset lifetime references and make sure their match explains your project scenario.
- Matches in both figures have been colour coded to aid in ease of use.
- Full scenario details are provided in Table 3, including the regulation wording.
- The case # is intended to assist in identifying and communicating particular asset lifetime references. It does not need to be recorded or included as a data input.

Table 2: Asset lifetime scenarios - installing new lighting components - decision matrix

Asset lifetime	New fitting installed	New lamp installed in new fitting	New ballast installed	New transformer installed	New control device installed
Non-J6-A	x	x	x	x	x
Non-J6-AB	x	x	x	x	✓
Non-J6-B	x	x	x	x	x
Non-J6-C	x	x	x	x	x
Non-J6-D	x	x	x	x	x
Non-J6-E	x	x	x	x	x
U-A	x	x	x	x	x
U-AB	x	x	x	x	✓
U-B	x	x	x	x	x
U-C	x	x	x	x	x

Table 3: Asset lifetime reference scenarios - installing new lighting components - regulation wording

Case #	Scenario	Asset lifetime reference <sup>11</sup>	Equation 3 (non-J6) – baseline regulation wording	Equation 4 (U) – upgrade regulation wording	Asset lifetime – regulation wording	RLH <sup>12</sup> data inputs required
3	Lighting control device installed	<b>J6-AB and U-AB</b>	<p><b>(AB)</b> If, as part of the lighting upgrade:</p> <p>i) a lighting control device is installed in the space, and</p> <p>ii) no lighting equipment of any other type is installed in the space</p> <p>5 years</p>	<p><b>(AB)</b> If, as part of the lighting upgrade:</p> <p>i) a lighting control device is installed in the space, and</p> <p>ii) no lighting equipment of any other type is installed in the space</p> <p>5 years</p>	5 years	None

<sup>11</sup> Remember, certain upgrades and an associated asset lifetime can only match certain baselines with the same asset lifetime – this column shows the applicable matches

<sup>12</sup> Rated lifetime hours

## Replacing lighting components

When undertaking an upgrade that involves replacing lighting components, use the following figures as a guide to identify the correct asset lifetime references to use. Please take note of the following:

- Use the decision matrix in Table 4 to decide what an asset lifetime means in practical terms.
- Take note of the asset lifetime that best suits your upgrade for Non-J6 and U.
- Use Table 5 to find the chosen asset lifetime references and make sure their match explains your project scenario.
- Matches in both figures have been colour coded to aid in ease of use.
- Full scenario details are provided in Table 5, including the regulation wording.
- The case # is intended to assist in identifying and communicating particular asset lifetime references. It does not need to be recorded or included as a data input.

Table 4: Asset lifetime scenarios - replacing lighting components - decision matrix

Asset lifetime	Lamp replaced	Ballast replaced (with lamp removed and not replaced)	Transformer replaced (with lamp removed and not replaced)
Non-J6-A	x	x	x
Non-J6-AB	x	x	x
Non-J6-B	x	✓	✓
Non-J6-C	✓	✓	✓
Non-J6-D	✓	x	x
Non-J6-E	x	x	x
U-A	✓	✓	✓
U-AB	x	x	x
U-B	x	x	x
U-C	✓	x	x



Table 5: Asset lifetime reference scenarios - replacing lighting components - regulation wording

Case #	Scenario	Asset lifetime reference	Equation 3 (non-J6) – baseline regulation wording	Equation 4 (U) – upgrade regulation wording	Asset lifetime – regulation wording	RLH <sup>13</sup> data inputs required
4	Lamp (only) removed and not replaced while associated ballast or transformer are replaced	<b>Non-J6-B only</b>	<p><b>(B)</b> If, as part of the lighting upgrade, the lamp is removed and not replaced and:</p> <p>i) the ballast or transformer associated with the lamp is replaced; or</p> <p>(ii) the light fitting in which the lamp was installed is removed</p> <p>10 years</p>	<i>Lamp removed as part of upgrade – no equation for operating period</i>	10 years	None
6	Lamp replaced – with ballast or transformer replaced	<b>Non-J6-C and U-A</b>	<p><b>I</b> If, as part of the lighting upgrade, the lamp is replaced and any ballast or transformer associated with the lamp is also replaced</p> <p>10 years</p>	<p><b>(A)</b> If the ballast or transformer associated with the lamp is replaced as part of the lighting upgrade</p> <p>10 years</p>	10 years	None

<sup>13</sup> Rated lifetime hours

Case #	Scenario	Asset lifetime reference	Equation 3 (non-J6) – baseline regulation wording	Equation 4 (U) – upgrade regulation wording	Asset lifetime – regulation wording	RLH <sup>14</sup> data inputs required
7	Lamp replaced – but not ballast or transformer	<b>Non-J6-D and U-C</b>	<p><b>(D)</b> If, as part of the lighting upgrade, the lamp is replaced and:</p> <ul style="list-style-type: none"> <li>i) the ballast or transformer associated with the lamp is not replaced; or</li> <li>ii) there is no ballast or transformer associated with the lamp</li> </ul> <p>the manufacturer’s rated lifetime (in hours and not exceeding 30,000 hours) for the replacement lamp divided by the Annual Operating Hours, to a maximum of 10 years</p>	<p><b>I</b> In any other case, the manufacturer’s rated lifetime (in hours and not exceeding 30,000 hours) for the lamp divided by Annual Operating Hours, to a maximum of 10 years</p>	<p>The manufacturer’s rated lifetime (in hours and not exceeding 30,000 hours) for the lamp divided by Annual Operating Hours</p> <p><i>Which means:</i></p> <p>Lowest manufacturer’s rated lifetime hours of post-upgrade lamp (not exceeding 30,000)/AOH</p>	RLH of <u>upgrade lighting</u>

<sup>14</sup> Rated lifetime hours

## 1.19. Removing or decommissioning lighting components

When undertaking an upgrade that involves removing or decommissioning lighting components, use the following figures as a guide to identify the correct asset lifetime references to use. Again, note the following:

- Use the decision matrix in Table 6 to decide what an asset lifetime means in practical terms.
- Take note of the asset lifetime that best suits your upgrade for Non-J6 and U.
- Use Table 7 to find the chosen asset lifetime references and make sure their match explains your project scenario.
- Matches in both figures have been colour coded to aid in ease of use.
- Full scenario details are provided in Table 7, including the regulation wording.
- The case # is intended to assist in identifying and communicating particular asset lifetime references. It does not need to be recorded or included as a data input.

Table 6: Asset lifetime scenarios - removing or decommissioning lighting components - decision matrix

Asset lifetime	Multiple lamp fitting de-lamped (assoc. ballasts and transformers decommissioned)	Fitting removed
Non-J6-A	✓	✗
Non-J6-AB	✗	✗
Non-J6-B	✗	✓
Non-J6-C	✗	✗
Non-J6-D	✗	✗
Non-J6-E	✗	✗
U-A	✗	✗
U-AB	✗	✗
U-B	✗	✗
U-C	✓	✗

Table 7: Asset lifetime reference scenarios - removing or decommissioning lighting components - regulation wording

Case #	Scenario	Asset lifetime reference	Equation 3 (non-J6) – baseline regulation wording	Equation 4 (U) – upgrade regulation wording	Asset lifetime – regulation wording	RLH <sup>15</sup> data inputs required
1	Multiple lamp fitting de-lamped	<b>Non-J6-A and U-C</b>	<p><b>(A)</b> If, as part of the lighting upgrade:</p> <p>i) the lamp is removed from a multiple lamp fitting from which no more than half of the installed lamps are removed; and</p> <p>ii) any ballast or transformer associated with the removed lamp is decommissioned:</p> <p>The manufacturer’s rated lifetime (in hours and not exceeding 30,000 hours) for the lamp divided by Annual Operating Hours, to a maximum of 10 years</p>	<p><b>I</b> In any other case, the manufacturer’s rated lifetime (in hours and not exceeding 30,000 hours) for the lamp divided by Annual Operating Hours, to a maximum of 10 years</p>	<p>The manufacturer’s rated lifetime (in hours and not exceeding 30,000 hours) for the lamp divided by Annual Operating Hours</p> <p><i>Which means:</i></p> <p>Lowest manufacturer’s rated lifetime hours of pre-upgrade lamp (not exceeding 30,000) AOH</p>	RLH of <u>original</u> lighting
5 Non-J6	Lamp fitting removed or decommissioned – Non-J6	<b>Non-J6-B only</b>	<p><b>(B)</b> If, as part of the lighting upgrade, the lamp is removed and not replaced and:</p> <p>i) the ballast or transformer associated with the lamp is replaced; or</p> <p>ii) the light fitting in which the lamp was installed is removed:</p> <p>10 years</p>	<i>Fitting removed as part of upgrade – no equation for operating period</i>	10 years	None

<sup>15</sup> Rated lifetime hours

## ‘Any other case’

When undertaking an upgrade that cannot be defined using the previous tables, use the following figures as a guide to identify the correct asset lifetime references to use in ‘any other case’.

Remember:

- Use the decision matrix in Table 8 to decide what an asset lifetime means in practical terms.
- Take note of the asset lifetime that best suits your upgrade for Non-J6 and U.
- Use Table 9 to find the chosen asset lifetime references and make sure their match explains your project scenario.
- Matches in both figures have been colour coded to aid in ease of use.
- Full scenario details are provided in Table 9, including the regulation wording.
- The case # is intended to assist in identifying and communicating particular asset lifetime references. It does not need to be recorded or included as a data input.

Table 8: Asset lifetime scenarios - any other case - decision matrix

Asset lifetime	In any other case
Non-J6-A	x
Non-J6-AB	x
Non-J6-B	x
Non-J6-C	x
Non-J6-D	x
Non-J6-E	✓
U-A	x
U-AB	x
U-B	x
U-C	✓

Table 9: Asset lifetime reference scenarios - any other case - regulation wording

Case #	Scenario	Asset lifetime reference	Equation 3 (non-J6) – baseline regulation wording	Equation 4 (U) – upgrade regulation wording	Asset lifetime – regulation wording	RLH <sup>16</sup> data inputs required
8 Non-J6	Any other case	<b>Non-J6 and U-C</b>	<p><b>I</b> In any other case, the manufacturer’s rated lifetime (in hours and not exceeding 30,000 hours) for the lamp divided by Annual Operating Hours, to a maximum of 10 years</p>	<p><b>I</b> In any other case, the manufacturer’s rated lifetime (in hours and not exceeding 30,000 hours) for the lamp divided by Annual Operating Hours, to a maximum of 10 years</p>	<p>The manufacturer’s rated lifetime (in hours and not exceeding 30,000 hours) for the lamp divided by Annual Operating Hours</p> <p>Which means: Lowest manufacturer’s rated lifetime hours of pre-upgrade lamp (not exceeding 30,000) AOH</p>	RLH of <u>original</u> lighting

<sup>16</sup> Rated lifetime hours

Table 10: Asset lifetime reference scenarios - Non-J6 summary

Case #	Project form	Scenario	Asset lifetime reference	Equation 3 (Non-J6) - Baseline Regulation Asset Lifetime	Equation 4 (U) – upgrade regulation wording	Asset lifetime	RLH <sup>17</sup> data inputs required
3	Installing new lighting components	Lighting control device installed	<b>Non-J6-AB and U-AB</b>	<b>(AB)</b>	<b>(AB)</b>	5 years	None
4	Replacing lighting components	Lamp (only) removed and not replaced while associated ballast or transformer are replaced	<b>Non-J6-B only</b>	<b>(B)</b>	<i>Lamp removed as part of upgrade – no equation for operating period</i>	10 years	None
6		Lamp replaced – with ballast or transformer replaced	<b>Non-J6-C and U-A</b>	<b>I</b>	<b>(A)</b>	10 years	None
7		Lamp replaced – but not ballast or transformer	<b>Non-J6-D and U-C</b>	<b>(D)</b>	<b>I</b>	Lowest manufacturer's rated lifetime hours of post-upgrade lamp (not exceeding 30,000) AOH	RLH of <u>upgrade</u> lighting
1	Removing or decommissioning lighting components	Multiple lamp fitting de-lamped	<b>Non-J6-A and U-C</b>	<b>(A)</b>	<b>I</b>	Lowest manufacturer's rated lifetime hours of post-upgrade lamp (not exceeding 30,000) AOH	RLH of <u>original</u> lighting
5		Lamp fitting removed or decommissioned	<b>Non-J6-B only</b>	<b>(B)</b>	<i>Fitting removed as part of upgrade – no equation for operating period</i>	10 years	None

<sup>17</sup> Rated lifetime hours

8	Any other case	Any other case	<b>Non-J6-E and U-C</b>	I	I	Lowest manufacturer's rated lifetime hours of post-upgrade lamp (not exceeding 30,000) AOH	RLH of <u>original</u> lighting
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## 1.20. Annual operating hours

Another factor in the abatement calculation is the ‘annual operating hours’. Determining this correctly is another important aspect of undertaking this activity. You should ensure that both you and any relevant staff fully understand how this aspect of how the calculation works.

The annual operating hours are determined in Schedule 34 of the Principal Regulations. Table 11 below sets out the operating hours for different installation environment types as defined in the Principal Regulations.

Please note that when creating activities and using the online calculator for NBB lighting upgrades, the ‘annual operating hours’ column in Table 11 will automatically be selected when the ‘type of installation environment’ option is selected.

Table 11: Type of installation environment and annual operating hours

Type of installation environment	Annual operating hours
Any other case	1,000
Carpark – general (open air)	4,500
Outdoor space (for a space that is not a sports field)	4,500
Public spaces	4,500
Roads	4,500
Sports fields	1,000

Please note:

- External lighting that is affixed to a building or structure captured under the BCA is a form of building based lighting upgrade. In these cases, *the Explanatory note - building based lighting upgrade - part 1: activity guidance* and *part 2: compliance requirements* should be referred to.
- The above point also applies to lighting affixed to Building Code Class 10b structures. The BCA defines these structures as “a structure being a fence, mast, antenna, retaining or free-standing wall, swimming pool, or the like”. Free-standing lights, street lights, traffic signals or similar, **are not** regarded as a light affixed to a Class 10b structure and are instead a form of NBB lighting covered in Table 11 above.

If despite your best endeavours you are unable to confidently specify the installation environment type, please consider the circumstances, consult with your activity client (i.e. the energy consumer), identify the most applicable classification and contact the VEET support team to discuss the matter.

## 1.21. NBB lighting technologies

Any product installed as part of a lighting upgrade must first be approved by the commission. This is to ensure that the product is awarded the correct wattage for the purposes of the VEEC calculation, among other reasons.

One factor in the VEEC calculation is the lamp circuit power (LCP), which refers to the combined power draw of the lamp and control gear for each light fitting. For less established types of technology (i.e. LED products – referred to as ‘emerging technology’), the LCP is determined using laboratory tests conducted on the lamp and the control gear it will be installed with. These laboratory tests form part of the commission product approval process – please see Section 2.3 for more information.

It is expected that emerging technologies will make up the majority of the NBB lighting upgrade projects undertaken for the VEET scheme. For this reason, only LED products are available for selection for NBB lighting upgrades. If you wish to upgrade using a non-LED product, please contact the VEET support team.

For more information on the product approval process and requirements, please see *Explanatory note – lodging a product application*.

Please note that lighting control devices, including voltage reduction units (VRUs), are separate to the ‘conventional versus emerging technology’ distinction. These devices have their own documentary requirements, detailed in Section 2.3.

## 1.22. Lamp circuit power if baseline lamp not in Table 1 of Schedule 34

Regulations 6C(2) and 10(3) allow the commission to determine LCP for existing lamps which don’t appear in Table 1 of Schedule 34, following an application from an AP. The commission will accept applications via email for the following two categories of baseline lamp:

1. Lamp technologies included in Table 12. The LCP will be determined based on the evidence provided by the applicant, as noted in Table 12.
2. Lamps which do not appear in Table 12, but have previously been approved by the commission for installation in the VEET scheme. The LCP will be determined from the product approval application laboratory test report, based on the evidence provided by the applicant, as noted in Table 12.

Applications should be made via email to [veet@esc.vic.gov.au](mailto:veet@esc.vic.gov.au) and include the following information:

1. Product brand
2. Product model
3. Product lamp type (from column 1 of the table below).

You must attach the required evidence (based on the lamp type) listed in the appendix below to your application.

Applications will be assessed by the commission and approval will be forwarded to successful applicants via email. The approval email will detail the process to be used by the AP when uploading the VEEC creation form for affected activities.

For all other lamp technologies, APs should contact us to determine an appropriate application process.

Table 12: List of lamp technologies

Type of lamp	Required evidence
LED lamp with integrated driver with no associated legacy ballast connected	A geotagged photo evidencing brand, model, NLP, and type of lamp
Non-integrated LED lamp with remote driver or extra low voltage lighting converter (ELC)	A geotagged photo evidencing brand, model, NLP, lamp type and driver or ELC of lamp
LED lamp with integrated driver, connected with a non-integral legacy ballast used for a T8 or T12 linear or circular fluorescent lamp, marked with EEI of A or electronic ballast with no EEI marked	A geotagged photo evidencing brand, model, NLP, lamp type and ballast of lamp
LED lamp with integrated driver, connected with a non-integral legacy ballast used for a T8 or T12 linear or circular fluorescent lamp, marked with EEI of $\geq$ B or magnetic ballast with no EEI marked	A geotagged photo evidencing brand, model, NLP, lamp type and ballast of lamp
LED lamp with integrated driver, connected with a legacy ballast used for a T5 linear or circular fluorescent lamp	A geotagged photo evidencing brand, model, NLP, lamp type and ballast of lamp
LED lamp with integrated driver, connected with a legacy ballast used for a CFL, marked with EEI of A or electronic ballast with no EEI marked	A geotagged photo evidencing brand, model, NLP, lamp type and ballast of lamp
LED lamp with integrated driver, connected with a legacy ballast used for a CFL, marked with an EEI of $>$ B or a magnetic ballast with no EEI marked.	A geotagged photo evidencing brand, model, NLP, lamp type and ballast of lamp
LED integrated luminaire	A geotagged photo evidencing brand, model, NLP and type of lamp
Non-integrated LED luminaire with remote driver	A geotagged photo evidencing brand, model, NLP, lamp type and driver of lamp
LED lamp with integrated driver, connected with a legacy magnetic ballast used for HID lamps	A geotagged photo evidencing brand, model, NLP, lamp type and ballast of lamp
LED lamp with integrated driver, connected with a legacy electronic ballast used for HID lamps	A geotagged photo evidencing brand, model, NLP, lamp type and ballast of lamp
Induction lamp with integrated ballast	A geotagged photo evidencing brand, model, NLP and type of lamp
Induction lamp with non-integrated ballast	A geotagged photo evidencing brand, model, NLP, lamp type and ballast of lamp
Self-ballasted Mercury Vapour lamp	A geotagged photo evidencing brand, model, NLP and type of lamp

## 1.23. NBB lighting design and installation considerations

As noted in Section 1.2, products installed in NBB lighting environments face impacts very different to those installed in building based environments. These impacts may include (but are not limited to):

- significant temperature fluctuations (e.g. from <5°C in the winter months through to >35°C in summer)
- rain, fog, dew (and therefore potential water ingress into the product housing or componentry)
- dust or insects (or similar)
- marine environment factors (e.g. salt water)
- wind (possibly increasing the detrimental effect of other impacts – e.g. salt water)
- external objects (e.g. objects thrown at the product)
- vibrations (e.g. from passing traffic).

Each of these environmental impacts may have a negative effect on the lifetime and/or operation of installed NBB lighting products.

**APs should give adequate thought and care to the design, manufacture and installation of NBB lighting products, to ensure the installed product can withstand the external environmental factors and impacts it may face over its lifetime in its installation environment. Consultations with activity clients will be necessary to assist in this decision making process.**

## 1.24. Assignment of rights to VEECs

A consumer needs to complete and sign a VEEC assignment form when assigning their right to create VEECs to a third-party AP. A VEEC assignment form needs to collect the information necessary for APs to create certificates and demonstrate compliance with the legislation. VEEC assignment form templates are available on the VEET website.

You may customise your own VEEC assignment form to incorporate additional explanatory text, company logos and other features. When applying for activity approval, you will need to provide a copy of the VEEC assignment form for review by the commission as part of your application process. The commission requests that changes to VEEC assignment forms also be submitted to the commission for review.

You must give a copy of the VEEC assignment form, or another document containing the same information, to consumers at the time of signing. Additionally, you must ensure that all personal information collected in the VEEC assignment form is held in accordance with the Information Privacy Principles (IPPs) under the *Privacy and Data Protection Act 2014 (Vic)*, and where applicable the *Privacy Act 1988 (Cth)*. Details of how to comply can be found at [www.privacy.vic.gov.au](http://www.privacy.vic.gov.au).

In situations where there are multiple bodies or persons responsible for the payment of electricity for the lighting asset to be upgraded, a single energy consumer (i.e. lead energy consumer) should be nominated for the purposes of assigning rights for the VEECs created.

## 2. End-to-end process

This section steps through a notional VEET NBB lighting upgrade process, in order to place the explanatory material in context. A high-level overview of this process is provided in Figure 2. Actual business processes will vary considerably and you may find this notional process bears little resemblance to your own systems. The structure is not prescriptive, but is designed for ease of reference.

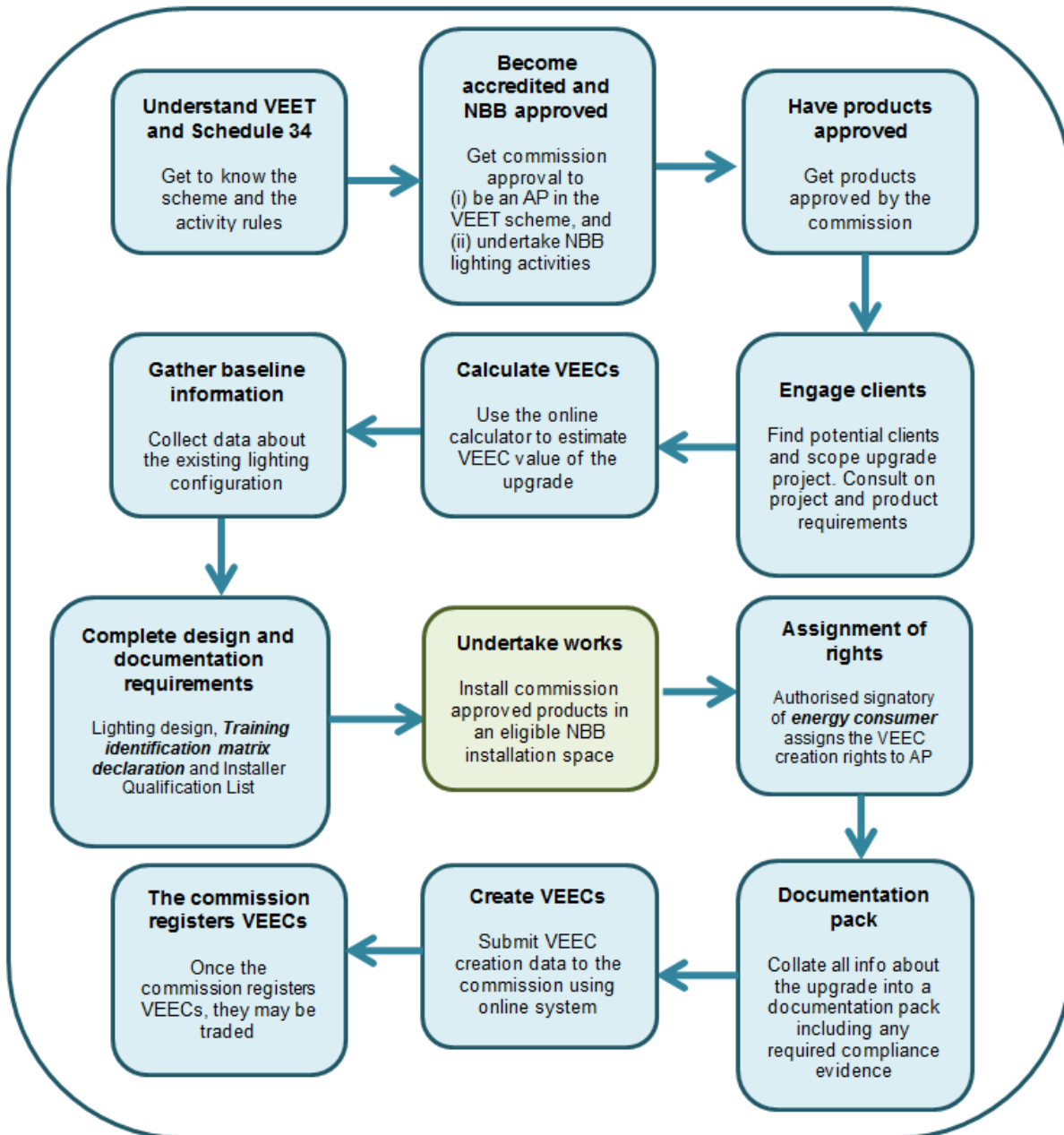


Figure 2: End to end process map

## 2.1. Understand VEET and Schedule 34

Participating in the VEET scheme can be particularly challenging at the start. Before engaging in any upgrade work, make sure you understand how the scheme works, including all facets of this end-to-end process description.

## 2.2. Become accredited

In order to create Victorian energy efficiency certificates (VEECs) for your NBB lighting upgrade activities under VEET, you must be:

- approved by the commission to be an accredited person (AP) under the VEET scheme
- approved by the commission to undertake Schedule 34 BB lighting upgrade activities under the VEET scheme
- approved by the commission to undertake Schedule 34 NBB lighting upgrade activities under the VEET scheme.

If you are not an AP, you may apply for approval for all of the above at the same time by completing and submitting an:

- application for VEET accreditation for Schedule 34 BB lighting upgrade activities and supporting documentation
- application for Schedule 34 NBB lighting upgrade activities and supporting documentation.

The commission has prepared an accreditation pack to provide guidance on the accreditation and activity approval process. You can download this pack and the Schedule 34 NBB lighting application form from the VEET website.

If you are an AP and not approved for Schedule 34 BB lighting upgrade activities and wish to undertake Schedule 34 NBB lighting upgrade activities, you must apply for approval to undertake the NBB lighting upgrade activity by completing and submitting an:

- application for additional activities form to undertake Schedule 34 BB lighting
- application for Schedule 34 NBB lighting.

The commission has prepared an additional activity pack to provide guidance on this process. This document and the Schedule 34 NBB lighting application form are available from the VEET website.

If you are an AP approved for Schedule 34 BB lighting upgrade activities and wish to undertake Schedule 34 NBB lighting upgrade activities, you must apply for approval to undertake the NBB lighting upgrade activity by completing and submitting an application for Schedule 34 NBB lighting. This document is available from the VEET website.

As part of applying for approval to undertake this activity, you are required to submit copies of the following documents based on the templates provided on the VEET website:



- VEEC assignment form
- training identification matrix declaration (also found in Appendix 1 of this explanatory note)
- installer qualification list declaration (also found in Appendix 1 of this explanatory note)
- VEET upgrade data summary
- AS 2560 or AS/NZS 1158 compliance declaration.

More information about these documents and their purpose is included below.

### 2.3. VEET products

To create VEECs from any lighting upgrade, the product installed must be listed on the VEET product register with a status of 'approved'. The product register is accessible via the VEET website and provides a list of approved products that may be installed under Schedule 34 NBB lighting upgrade activities. Please note that products must be specifically approved for a type of NBB lighting upgrade. Products only approved for use in BB lighting upgrades cannot be used in NBB lighting upgrades.

For APs and VEET account holders (including manufacturers) seeking to add a new product to the product register, an application must be submitted to the commission using the online product application tool via your VEET account. This is so the commission can verify that the product is capable of meeting the minimum criteria required by the Principal Regulations, as well as any additional eligibility criteria required by the commission.

For more information about the product application and assessment process, please refer to the *Explanatory note – lodging a product application*. This document contains a detailed step-by-step guide to getting a product listed for each prescribed activity category on the VEET register of products.

### 2.4. Engage clients

There are a number of important factors to consider when engaging clients for an upgrade that will be used to create VEECs. In addition to the usual process of developing a business case, you should ensure you give consideration to the points below.

**Please note that the client for an activity should in most cases also be the energy consumer and have the ability to assign rights for the VEECs created by the activity.**

- Is the job eligible? Is the upgrade eligible under the terms laid out in Section 1.3 of this document?
- What are the AS 2560 or AS/NZS 1158 requirements? Is the lighting upgrade within the scope of AS 2560 or AS/NZS 1158? Does the client understand the requirements of AS 2560 or AS/NZS 1158 as they apply to VEET? What are the AS 2560 or AS/NZS 1158 requirements going to be for this project?

Has a qualified lighting designer been engaged to ensure that the design and installation complies with the relevant parts of AS 2560 or AS/NZS 1158? Has adequate documentation been collected to demonstrate compliance with the design of the standard and to meet the compliance requirements under VEET? Do you have access to the relevant photometric data?

- What additional products will need to be approved? Will the upgrade require the installation of products for which you are not currently approved? If so, you should collate the necessary documentary evidence and lodge the required product approvals as soon as possible to avoid delays.

**Make sure you consult with the NBB activity client concerning the required product design, manufacture and installation requirements of the external installation environment.**

## **2.5. Complete required training and qualification documentation**

Lighting upgrades undertaken in NBB environments may be subject to risks that may not apply to BB environments, with many of these risks found at an installation level. To assist in ensuring APs understand and manage these risks, it is a requirement that the training identification matrix declaration and installer qualifications declaration (also found in Appendix 1 of this explanatory note) are completed before an activity is undertaken. This declaration requires sign off by the upgrade manager and an appropriate representative of the AP (e.g. compliance manager).

The matrix includes the required installer training and qualifications applicable to particular types of installation environments. It is understood that not every activity will be subject to every risk or that a piece of specialised equipment will be required in every situation.

To confirm that the training requirements identified in the training identification matrix declaration have been met and that installers have the appropriate training at the time of installation, the upgrade manager and appropriate representative of the AP (e.g. compliance manager) are required to provide and sign off on all installer qualifications as part of the activity documentation submission.

## **2.6. Pre-calculate VEECs**

In order to quote for a job, develop a business case, or in other scenarios, you may need to do a forward estimate of the number of VEECs an upgrade will generate. The commission provides a VEEC calculator on the VEET website for this purpose.

The calculator is designed to accommodate all possible variations of upgrade permitted under the Principal Regulations and can therefore be quite complex to understand and use. The following section provides a guide on how to determine the types of data required based on the various scenarios for which you may be calculating VEECs.

## Guide to using the VEEC calculator

To use the calculator, you need information relating to both baseline and upgrade scenarios. This can include the type of installation environment in which the upgrade is occurring, the relevant asset lifetime reference and whether you are installing conventional (non-emerging) technology or emerging technology. You may also need the NLP or LCP of both the baseline and upgrade lamps, information about any lightning control devices, and information about the lifetime of the lamps.

The type of upgrade you are undertaking (based on asset lifetime reference and technology type) will determine the data you will need to enter. In any scenario, there will be some fields you must leave blank. Figure 3 introduces the basic functionality of the calculator and Figure 4 uses a stylised representation of the calculator to show what data you will need to enter for an NBB lighting upgrade.

APs are strongly recommended to develop their own calculators and corroborate their results against the VEEC calculator on the VEET website.

## VEET Website

Select the relevant Sch 34 calculator (either J6 or Non-J6 or NBB) from the VEET website.

Activity Date:   
 Section:   
 Activity:

- ▼ Baseline: Space Type\*
- ▼ Baseline: BCA Classification
- NBB-X Baseline: Lamp Bulb Combination\*
- NBB-Y Baseline: Quantity\*
- NBB-Z Baseline: Nominal Lamp Power\*
- 1 Baseline: Asset Lifetimes Reference\*
- 2 Baseline: Rated Lifetimes Hours
- 3 Baseline: Type of First Controller
- 4 Baseline: Type of Second Controller
- 5 Baseline: VRLV Voltage
- 6 Baseline: MVAC ACD\*
- 7 Upgrade: Lamp Technology
- 8 Upgrade: FOR EMERGING TECHNOLOGY: Lamp Circuit Power
- 9 Upgrade: FOR NON-EMERGING TECHNOLOGY: Lamp Bulb Combination
- 10 Upgrade: FOR NON-EMERGING TECHNOLOGY: Nominal Lamp Power
- 11 Upgrade: Quantity
- 12 Upgrade: Asset Lifetimes Reference
- 13 Upgrade: Rated Lifetimes Hours
- 14 Upgrade: Type of First Controller
- 15 Upgrade: Type of Second Controller
- 16 Upgrade: VRLV Voltage
- 17 Upgrade: MVAC ACD\*
- Postcode\*

\* Mandatory field

Eligible VEECs: 0

## Baseline and upgrade fields

The fields shaded blue in this diagram collect information about the baseline, while the orange shaded fields collect info about the upgrade

Activity Date:   
 Section:   
 Activity:

- ▼ Baseline: Space Type\*
- ▼ Baseline: BCA Classification
- NBB-X Baseline: Lamp Bulb Combination\*
- NBB-Y Baseline: Quantity\*
- NBB-Z Baseline: Nominal Lamp Power\*
- 1 Baseline: Asset Lifetimes Reference\*
- 2 Baseline: Rated Lifetimes Hours
- 3 Baseline: Type of First Controller
- 4 Baseline: Type of Second Controller
- 5 Baseline: VRLV Voltage
- 6 Baseline: MVAC ACD\*
- 7 Upgrade: Lamp Technology
- 8 Upgrade: FOR EMERGING TECHNOLOGY: Lamp Circuit Power
- 9 Upgrade: FOR NON-EMERGING TECHNOLOGY: Lamp Bulb Combination
- 10 Upgrade: FOR NON-EMERGING TECHNOLOGY: Nominal Lamp Power
- 11 Upgrade: Quantity
- 12 Upgrade: Asset Lifetimes Reference
- 13 Upgrade: Rated Lifetimes Hours
- 14 Upgrade: Type of First Controller
- 15 Upgrade: Type of Second Controller
- 16 Upgrade: VRLV Voltage
- 17 Upgrade: MVAC ACD\*
- Postcode\*

\* Mandatory field

Eligible VEECs: 0

Activity Date:   
 Section:   
 Activity:

- ▼ Baseline: Space Type\*
- ▼ Baseline: BCA Classification
- NBB-X Baseline: Lamp Bulb Combination\*
- NBB-Y Baseline: Quantity\*
- NBB-Z Baseline: Nominal Lamp Power\*
- 1 Baseline: Asset Lifetimes Reference\*
- 2 Baseline: Rated Lifetimes Hours
- 3 Baseline: Type of First Controller
- 4 Baseline: Type of Second Controller
- 5 Baseline: VRLV Voltage
- 6 Baseline: MVAC ACD\*
- 7 Upgrade: Lamp Technology
- 8 Upgrade: FOR EMERGING TECHNOLOGY: Lamp Circuit Power
- 9 Upgrade: FOR NON-EMERGING TECHNOLOGY: Lamp Bulb Combination
- 10 Upgrade: FOR NON-EMERGING TECHNOLOGY: Nominal Lamp Power
- 11 Upgrade: Quantity
- 12 Upgrade: Asset Lifetimes Reference
- 13 Upgrade: Rated Lifetimes Hours
- 14 Upgrade: Type of First Controller
- 15 Upgrade: Type of Second Controller
- 16 Upgrade: VRLV Voltage
- 17 Upgrade: MVAC ACD\*
- Postcode\*

\* Mandatory field

✓ Data is Valid  
 Baseline fields entered are correct.  
 Upgrade fields entered are correct.  
 Baseline and upgrade are appropriate for the building category.  
 Has non-zero VEECs.

Eligible VEECs: 0

Activity Date:   
 Section:   
 Activity:

- ▼ Baseline: Space Type\*
- ▼ Baseline: BCA Classification
- NBB-X Baseline: Lamp Bulb Combination\*
- NBB-Y Baseline: Quantity\*
- NBB-Z Baseline: Nominal Lamp Power\*
- 1 Baseline: Asset Lifetimes Reference\*
- 2 Baseline: Rated Lifetimes Hours
- 3 Baseline: Type of First Controller
- 4 Baseline: Type of Second Controller
- 5 Baseline: VRLV Voltage
- 6 Baseline: MVAC ACD\*
- 7 Upgrade: Lamp Technology
- 8 Upgrade: FOR EMERGING TECHNOLOGY: Lamp Circuit Power
- 9 Upgrade: FOR NON-EMERGING TECHNOLOGY: Lamp Bulb Combination
- 10 Upgrade: FOR NON-EMERGING TECHNOLOGY: Nominal Lamp Power
- 11 Upgrade: Quantity
- 12 Upgrade: Asset Lifetimes Reference
- 13 Upgrade: Rated Lifetimes Hours
- 14 Upgrade: Type of First Controller
- 15 Upgrade: Type of Second Controller
- 16 Upgrade: VRLV Voltage
- 17 Upgrade: MVAC ACD\*
- Postcode\*

\* Mandatory field

✗ Data is Valid  
 Baseline fields entered are correct.  
 Upgrade fields entered are correct.  
 Baseline and upgrade are not appropriate for the building category.  
 Has non-zero VEECs.

Eligible VEECs: 0

## Workings

Deemed baseline and upgrade MWh figures, and deemed percentage energy savings, are displayed here to allow you to trouble shoot and sense test your results.

## Basic troubleshooting

If you get a green tick and green shading after hitting the 'calculate' button, it means the data is 'VALID' and a valid VEEC value is displayed.

If you get a red cross and red shading after hitting the 'calculate' button, it means the data is 'INVALID'. Even if a VEEC value is displayed, this value is not valid. In this instance you must correct the data errors and recalculate until you get a green tick and shading before relying on the VEEC amount provided.

Figure 3: VEEC calculator - basic functionality

Activity Date:

Sector:

Activity:

### Baseline scenarios

Determined by which asset lifetime you select

Asset Lifetime:	NJ6-A	NJ6-AB	NJ6-B	NJ6-C	NJ6-D	NJ6-E
Baseline: Area Type	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
<b>X</b> Baseline: Lamp Ballast Combination	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
<b>Y</b> Baseline: Quantity	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
<b>Z</b> Baseline: Nominal Lamp Power	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
<b>1</b> Baseline: Asset lifetime Reference	NJ6 - A	NJ6-AB	NJ6-B	NJ6-C	NJ6-D	NJ6-E
<b>2</b> Baseline: Rated Lifetime Hours	Original	<input type="text"/>	<input type="text"/>	<input type="text"/>	Upgrade	Upgrade
<b>3</b> Baseline: Type of First Controller	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
<b>4</b> Baseline: Type of Second Controller	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
<b>5</b> Baseline: VRU Voltage	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

### Upgrade scenarios

Determined by which asset lifetime you select

Asset Lifetime:	U-A	U-AB	U-C
Technology type:	Emerging	Emerging	Emerging
<b>8</b> Upgrade: FOR EMERGING TECHNOLOGY - Lamp Circuit Power	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
<b>11</b> Upgrade: Quantity	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
<b>12</b> Upgrade: Asset Lifetime Reference	U-A	U-AB	U-C
<b>13</b> Upgrade: Rated Lifetime Hours	<input type="text"/>	<input type="text"/>	<input type="checkbox"/>
<b>14</b> Upgrade: Type of First Controller	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
<b>15</b> Upgrade: Type of Second Controller	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
<b>16</b> Upgrade: VRU Voltage	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Postcode	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

Where this says 'upgrade', you must enter the rated lifetime hours of the lamps that you install, even though the field is part of the 'baseline' calculation (i.e. if you pick NJ6-E and you are replacing T8s with a rated lifetime of 5,000hrs with LED tubes with rated lifetime of 20,000hrs, you need to put 20,000 in this field).

**Key**

<input type="text"/>	Do <u>not</u> enter data into this cell for this scenario
<input type="checkbox"/>	You <u>must</u> enter data in this cell for this scenario
Original	Input inferred from scenario
<input type="checkbox"/>	Inputs dependent on lighting control device situation

**Please note:** the reference # (e.g. X) is intended to assist in identifying and communicating particular scenarios, it does not need to be recorded or included as a data input (RM C/16/14993)

Figure 4: VEEC calculator - variable data requirements - NBB non-J6 scenarios

## **2.7. Gather baseline information**

In order to create VEECs for an upgrade, you must have collected all the relevant baseline information. This includes the space type, number, type and NLP and/or LCP of the pre-existing lamps and potentially their rated lifetime. Other relevant information includes the number and type of the control gear and the configuration of any existing lighting control devices. For AS/NZS 1158, you will also need to include the lighting subcategory which corresponds to the needs/requirements of the lighting installation identified through the lighting design process (e.g. P5). For AS 2560, this is the specific lighting application, its requirements and the associated lighting design process.

In the event you require more specific guidance about the data requirements for a given upgrade, refer to the VEET upgrade data summary template on the VEET website, the upload form, or the Principal Regulations themselves.

There are a number of other types of information you will need to gather for your records, beyond the data you need to create VEECs using the online system. Ensure you consult part 2 (*compliance requirements*) of this explanatory note for full details (available from the VEET website).

Contact the VEET support team if you are unsure of your obligations.

## **2.8. Undertake works**

The highest priority while undertaking the upgrade is that all relevant OH&S laws, standards and precautions are observed.

You will also need to ensure that your staff or subcontractors collect any relevant compliance information about the upgrade progresses, including the EEI markings or types of any ballasts/control gear and sample photos of the decommissioned equipment.

Under the Principal Regulations, the upgrade is deemed to have occurred on the day the installation is completed.

## **2.9. Gather upgrade information**

In addition to the baseline information, you must take care to collect all relevant upgrade information. This includes information about AS 2560 or AS/NZS 1158 compliance (as applicable), such as an AS/NZS 1158 compliance declaration signed by your upgrade manager and the client (the energy consumer).

In the case of very large upgrades (keeping in mind that installations must not cover multiple postcodes), there may be some limited scope to ‘rationalise’ aspects of the data you collect about the upgrade (as opposed to subdividing all data by calculation zone).

The commission will consider well thought out proposals in this regard, provided (i) they do not undermine the auditability of the upgrade, (ii) the upgrade is sufficiently large, and (iii) the AP has a good compliance record.

## **2.10. Obtain assignment of rights**

Before VEECs can be created, there must be an assignment of rights between the energy consumer and the AP. You must ensure that the person signing on behalf of the client, the ‘authorised signatory’, does indeed have legal authority to sign on the behalf of that entity (the energy consumer).

In situations where there are multiple bodies or persons responsible for the payment of electricity for the lighting asset to be upgraded, a single energy consumer (i.e. lead energy consumer) should be nominated for the purposes of assigning rights for the VEECs created.

## **2.11. Decommission any removed lighting equipment**

Any lighting equipment you replace or remove must be decommissioned for the upgrade to be eligible under VEET. This includes control gear such as ballasts or transformers. Details of an AP’s decommissioning practices must be supplied to the commission for review before being approved to undertake the lighting upgrade activity.

Evidence of decommissioning must be retained by the AP and supplied to the commission for inspection on request. Please see the part 2 (*compliance requirements*) of this explanatory note for more details on record keeping requirements.

Any existing lighting products that are being decommissioned as part of the lighting upgrade should be disposed of in an environmentally responsible and verifiable manner. The commission expects APs to recycle the components of the decommissioned product wherever possible.

## **2.12. Collate documentation pack**

Having collected all the relevant baseline and upgrade information to support your claim for VEECs, you must collate the required data into a ‘documentation pack’, with a completed ‘documentation pack coversheet’ for the upgrade. You must use the template provided by the commission for the documentation pack coversheet, available from the VEET website. For reference, Table 13 reproduces the documentation checklist form the documentation pack coversheet. Part 2 (*compliance requirements*) of this explanatory note provides more details about the commission’s expectations of these items of documentation.

Table 13: Documentation checklist

Evidentiary requirements	Documentation list	Please tick
Evidence of assignment of rights to create VEECs	Assignment form	
Evidence of commercial transaction and energy consumer	Invoice for works (copy) <b>OR</b> contract	
Evidence of area type	Aerial map <b>OR</b> contract	
Evidence of electrical compliance	Certificate of Electrical Safety (CoES) <b>OR</b> a document showing involvement in Electrical Safety Management Scheme	
Evidence of decommissioning	Third party recycling receipts <b>AND</b> (for assets not owned by a DNSP/RMA and sports field lighting) Geo-tagged photographs	
Pre-existing (baseline) lighting configuration (assets not owned by a DNSP/RMA)	VEET upgrade data summary	
Pre-existing (baseline) lighting configuration	Lighting diagram <b>OR</b> public lighting inventory register	
Pre-existing (baseline) lighting configuration (assets not owned by a DNSP/RMA)	Geo-tagged photos <b>OR</b> asset register	
New (upgrade) lighting configuration (assets not owned by a DNSP/RMA)	VEET upgrade data summary (same document as for pre-existing lighting configuration)	
New (upgrade) lighting configuration (DNSP/RMA owned assets only)	Public lighting inventory register	
New (upgrade) lighting configuration	Lighting diagram	
New (upgrade) lighting configuration (assets not owned by a DNSP/RMA)	Geo-tagged photos <b>OR</b> asset register	
Evidence of compliance with AS 2560 – sports lighting	AS 2560 compliance declaration and post installation audit report/form including the relevant documentation specified in AS 2560 (refer to compliance declaration template)	
<b>OR</b>	<b>OR</b>	
Evidence of compliance with AS/NZS 1158 – lighting for roads and public spaces	AS/NZS 1158 compliance declaration including the relevant documentation specified in AS/NZS 1158 (refer to compliance declaration template)	
Mandatory safety training (MST) requirements	Training identification matrix declaration and installer qualifications declaration	



## 2.13. Create VEECs using the VEET website

To create VEECs, an AP must submit certain information to the commission. VEEC creation requests can be made either by using a bulk upload form, or by making a single entry through the online user interface (UI). APs that are approved to undertake NBB lighting upgrade activities are able to access upload forms via their online account on the VEET website.

The Principal Regulations establishing the NBB lighting upgrade activity contemplate a wide range of scenarios, relative to other VEET activities. By ‘scenarios’ we mean types of upgrade that are distinguished according to the nature of the work undertaken. Delamping for instance, represents a different scenario to replacing T8 lamps with T5 adapters, even if both occur as part of a Non-J6 upgrade.

Each scenario has specific data input requirements. Because the user interface has been designed to accommodate multiple scenarios, users must take care to ensure they have collected and input the relevant data in each case (this means you will always need to leave some fields blank.)

Figure 5 introduces the user interface with a series of screenshots, while Figure 6 outlines the data inputs required for the various Non-J6 scenarios.

## Tabs system

The UI has been divided into two tabs: detail and calculations. The former collects high level information about the upgrade, while the latter collects the data required to perform the abatement calculations. Navigate between them using the tab names as marked below.

The screenshot shows the 'New Activity' page in the user interface. On the left is a sidebar with navigation options. The main content area has two tabs: 'Detail' and 'Calculations'. A red arrow points from the 'Calculations' tab to the table on the right. The table has the following columns: A: Area Name, B: Area Type, C: Area Type (Other), D: Lighting Subcategory, E: Baseline/Upgrade, F: Lamp Ballast Combination, G: Lamp Category, H: Quantity, I: BASELINE Asset Lifetime Reference, J: UPGRADE Asset Lifetime Reference, K: Product Brand, L: Product Model, M: Rated Lifetime Hours, N: Nominal Lamp Power, O: Type of First Controller, P: Type of Second Controller, Q: VRU Product Brand, R: VRU Product Model. Below the columns are five rows labeled 'Calc Zone 01' through 'Calc Zone 05', each with a grid of input fields for the various parameters.

**Maximum of 50 calculation zones**  
 The UI and upload form can accommodate up to 50 calculation zones. If a user requires additional calculation zones they should contact the commission.

Figure 5: Schedule 34 NBB lighting user interface

Figure 6 below defines each of the 11 scenarios applying to NBB Non-J6 upgrades, along with the data requirements for each. Where the data inputs can be inferred from the nature of the scenario, the input is shown in white text. Note that the Controller Type fields should only be completed if a lighting control device was present in that scenario, and the VRU Brand and Model fields should only be completed if one of the lighting control devices is a Voltage Reduction Unit (VRU) (all VRUs must be approved by the commission before they can be installed). Note that Item D relates to the lighting application or subcategory which corresponds to the needs/requirements of the lighting installation identified through the AS 2560 or AS/NZS 1158 lighting design process.

NBB Scenarios			A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P	Q	R	
#	Asset Lifetime Ref	Lamp type	Area Name	Area Type	Area Type (Other)	Lighting Subcategory	Baseline/ Upgrade	Lamp Ballast Comb.	Lamp Category	Quantity	BASELINE Asset Lifetime Reference	UPGRADE Asset Lifetime Reference	Product Brand	Product Model	Rated Lifetime Hours	Nominal Lamp Power	Type of First Controller	Type of Second Controller	VRU Product Brand	VRU Product model	
1	NJ6-A	N/A					Baseline		Pre-upgrade		NJ6 - A				Original						
2	NJ6-AB	N/A					Baseline		Pre-upgrade		NJ6- AB										
3	NJ6-B	N/A					Baseline		Pre-upgrade		NJ6- B										
4	NJ6-C	N/A					Baseline		Pre-upgrade		NJ6 - C										
5	NJ6-D	N/A					Baseline		Pre-upgrade		NJ6- D				New lamp						
6	NJ6-E	N/A					Baseline		Pre-upgrade		NJ6 - E				Original						
11	U-A	Emerging technology					Upgrade		Newly installed			U-A									
13	U-C	Emerging technology					Upgrade		Newly installed			U-C									
14	U-A	Retained from before upgrade					Upgrade		Newly installed			U-A									
15	U-AB	Retained from before upgrade					Upgrade		Newly installed			U-AB									
17	U-C	Retained from before upgrade					Upgrade		Newly installed			U-C			Retained						

**Key**

- Do not enter data into this cell for this scenario
- You must enter data in this cell for this scenario
- Original
- Input inferred from scenario
- Inputs dependent on lighting control device situation

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## **2.14. Commission assesses VEEC creation application**

To successfully create VEECs, the data uploaded for a particular activity is assessed and verified. After you press the 'create' button for validated activities, the VEECs associated with that upgrade are created and are assigned a unique ID number. The commission then assesses the VEEC creation by verifying the information provided and determines whether to register them.

The commission conducts automated checks, manual checks, desktop audits and phone audits of the VEEC creation information. When you submit your first VEEC creation, you will receive feedback in the form of a report upon completion of the assessment. This feedback aims to assist APs in meeting the requirements to create VEECs for this activity.

You should note that it is a requirement to maintain accurate records of all documentation relating to each activity you undertake and that the commission may request documentation at any given time and for any activity.

## **2.15. The commission registers VEECs**

In due course, in order to complete the registration process, the commission will raise and forward an invoice for registration fees for VEECs accepted. Once payment is received, the commission registers the certificates and notifies the AP that the certificates are now valid and therefore available to be traded and/or surrendered to the commission.

## **2.16. Seeking assistance**

If you encounter difficulties when participating in this activity, you should in the first instance consult the explanatory material listed in Introduction of this document. This includes the VEET website FAQ section (see the top right hand corner of the page) which has a special section dedicated to Schedule 34 queries.

If you are unable to resolve your issue using the publicly available material, please contact VEET support team on (03) 9032 1310 or [veet@esc.vic.gov.au](mailto:veet@esc.vic.gov.au).

### 3. Legal context for this document

The Essential Services Commission has prepared this explanatory note document as a general summary of relevant parts of the:

- *Victorian Energy Efficiency Target Act 2007*
- *Victorian Energy Efficiency Target Regulations 2008*
- *Victorian Energy Efficiency Target Scheme Guidelines.*

This document should not be relied upon as substitute for legal advice and should be read in conjunction with the above source documents. In the event of inconsistency between this explanatory note document and the above source documents, the content in the source documents takes precedence.

## Document version control

The RM reference for this document is: C/16/14948

Version	Amendments made	Date published
V 1.0	Creation of new Non-Building Based Lighting Explanatory Note for Schedule 34	1 August 2016
V 1.1	Update for Schedule 34 space type: Carpark – general (open air) definition	1 September 2016
V 2.0	Update throughout to include the requirements for sports field lighting (in particular section 1.10) and AS/NZS 1158.5 (i.e. tunnels and underpasses) (in particular section 1.11)	1 December 2016
V 2.1	Clarification of activity requirements	6 March 2017
V 2.2	Update to the units of competency specified in the Training Identification Matrix Declaration	1 June 2017
V 2.3	Update for introduction of large energy user regulatory amendments and amended OH&S Regulations.	1 August 2017
V 3.0	Update to replace reference to the ERAC Bulletin with reference to AS/NZS 60598.2.1 2014. Update to new Victorian Energy Upgrades template.	22 December 2017
V 3.1	Inclusion of discount factor changes which apply from 1 February 2018 and 1 May 2018.	29 January 2018
V 3.2	Update to include process for applying for LCP for emerging products under the scheme (section 1.22)	28 June 2018

## Appendix A: training identification matrix and installer qualifications declaration

Please note: the information in the shaded box below is for the accredited person only and should be deleted when accredited persons create their own training identification matrix and installer qualifications declaration.

First, remove the Essential Services Commission and Victorian Energy Upgrades banner and replace it with your company's logo, and then reformat the document as per your preference. Then use the template as a coversheet for the documentation associated with each non-building based (NBB) lighting upgrade you undertake. The documentation may be stored physically or electronically. For more information about the required documentation, refer to the *Explanatory note – non-building based lighting upgrade - part 2: compliance requirements*, available from the VEET website. Delete this section before using the coversheet.

The upgrade manager is required to conduct a risk assessment of the installation environment prior to commencing works to determine the necessary mandatory safety training (MST) requirements for installers (*Explanatory note – non-building based lighting upgrade - part 2: compliance requirements*). Please fill out **Part A: Training identification matrix** below indicating the MST required for installers for this particular installation environment and accompany with **Part B: Installer qualifications** to verify installers working on this installation have the required training.

It is the responsibility of the upgrade manager and accredited person (AP) to determine the risks for each installation and ensure all MST requirements and legislation relevant to the installation are met and that the installer qualifications are maintained and provided to the commission as part of the NBB lighting upgrade documentation pack (*Explanatory note – non-building based lighting upgrade. Part 2: compliance requirements*).

## START OF TEMPLATE

### Site details

#### Site details

*Energy consumer (client) business name:*

*Installation address/location:*

*Own job reference:*

### Part A: Training identification matrix

Installation environment requirements	Hazard/risk description (possible initiating events)	Legislative guide (including acts, regulations, standards, COPs)	Mandatory safety training (MST) requirements	Required? (Y/N)
Traffic management	<ul style="list-style-type: none"> <li>Interaction with local traffic (motorists)</li> <li>Inadequate traffic management</li> </ul>	<ul style="list-style-type: none"> <li><i>Occupational Health &amp; Safety Regulations 2004 Health and Safety Act 2004 (Part 3 – General Duties Relating to Health &amp; Safety)</i></li> <li><i>Occupational Health and Safety Regulations 2017 (Part 2.1 – General Duties)</i></li> <li><i>Road Management Act 2004</i></li> <li><i>Road Safety (Traffic Management) Regulations 2009</i></li> <li><i>Road Management Act 2004 – Worksite safety – traffic management code of practice</i></li> <li><i>AS 1742.1:2014 Manual of uniform traffic control devices – General introduction and index of signs</i></li> <li><i>AS1742.3-2009 Manual of uniform traffic control devices, Part 3: traffic control for works on roads</i></li> <li><i>AS 1742.10-2009 Manual of uniform traffic control devices – Pedestrian</i></li> </ul>	RIIWH302D – Implement traffic management plan	



Installation environment requirements	Hazard/risk description (possible initiating events)	Legislative guide (including acts, regulations, standards, COPs)	Mandatory safety training (MST) requirements	Required? (Y/N)
		<ul style="list-style-type: none"> <li>control and protection</li> <li>AS 1742.13-2009 Manual of uniform traffic control devices – Local area traffic management</li> </ul>		
Working at heights	<ul style="list-style-type: none"> <li>Working on ladders at heights greater than two metres</li> <li>Working on work platforms at heights greater than two metres</li> </ul>	<ul style="list-style-type: none"> <li><i>Occupational Health and Safety Act 2004</i> (Part 3 – General Duties Relating to Health &amp; Safety)</li> <li><i>Occupational Health and Safety Regulations 2017</i> (Part 3.3 – Prevention of Falls)</li> <li>AS/NZS 1892.5:2000 Portable ladders – Selection, safe use and care</li> <li><i>Prevention of falls in housing construction compliance code</i> (Edition No. 1– Sept 2008)</li> </ul>	<p>CPCCOHS2001A – Apply OHS requirements, policies &amp; procedures in the construction industry</p> <p>or</p> <p>CPCPCM2043A – Carry out WHS requirements industry</p> <p>and</p> <p>CPCCCM2010 – Work safely on scaffolding higher than two metres</p> <p>or</p> <p>RIIWHWS204D – Work safely at heights</p>	
Operation of EWP (scissor-type)	<ul style="list-style-type: none"> <li>Incompetent operator</li> <li>Mechanical failure</li> <li>Overloading</li> <li>Soft/uneven ground conditions</li> </ul>	<ul style="list-style-type: none"> <li><i>Occupational Health and Safety Act 2004</i> (Part 3 - General Duties Relating to Health &amp; Safety)</li> <li><i>Occupational Health and Safety Regulations 2017</i> (Part 3.3 – Prevention of Falls)</li> <li><i>Occupational Health and Safety Regulations 2017</i> (Part 3.5 – Plant)</li> <li>AS 2550.10-2006 Cranes, hoists and winches – Safe use – Mobile</li> </ul>	<p>CPCCOHS2001A – Apply OHS requirements, policies &amp; procedures in the construction industry</p> <p>and</p> <p>CPCCCM2010 – Work safely on scaffolding higher than two</p>	

Installation environment requirements	Hazard/risk description (possible initiating events)	Legislative guide (including acts, regulations, standards, COPs)	Mandatory safety training (MST) requirements	Required? (Y/N)
		<ul style="list-style-type: none"> <li>elevating work platforms</li> <li><i>Prevention of falls in housing construction compliance code</i> (Edition No. 1 – Sept 2008)</li> </ul>	metres or RIIWHS204D – Work safely at heights or EWPA yellow card or RIIHAN301D – Operate elevating work platform	
Operation of EWP (boom-type) – under 11 metres	<ul style="list-style-type: none"> <li>Incompetent operator</li> <li>Mechanical failure</li> <li>Overloading</li> <li>Soft/uneven ground conditions</li> </ul>	<ul style="list-style-type: none"> <li><i>Occupational Health and Safety Act 2004</i> (Part 3 - General Duties Relating to Health &amp; Safety)</li> <li><i>Occupational Health and Safety Regulations 2017</i> (Part 3.3 - Prevention of Falls)</li> <li><i>Occupational Health and Safety Regulations 2017</i> (Part 3.5 - Plant)</li> <li>AS 2550.10-2006 Cranes, hoists and winches – Safe Use – Mobile elevating work platforms</li> <li><i>Prevention of Falls in Housing Construction Compliance Code</i> (Edition No. 1 - Sept 2008)</li> </ul>	CPCCOHS2001A – Apply OHS requirements, policies & procedures in the construction industry or CPCPCM2043A – Carry out WHS requirements industry and CPCCCM2010 – Work safely on scaffolding higher than two metres or RIIWHS204D – Work safely at heights	

Installation environment requirements	Hazard/risk description (possible initiating events)	Legislative guide (including acts, regulations, standards, COPs)	Mandatory safety training (MST) requirements	Required? (Y/N)
			or EWPA yellow card or RIIHAN301D – Operate elevating work platform	
Operation of EWP (boom-type/truck mounted) - over 11 metres	<ul style="list-style-type: none"> <li>• Unlicensed and/or incompetent operator</li> <li>• Mechanical failure</li> <li>• Overloading</li> <li>• Soft/uneven ground conditions</li> </ul>	<ul style="list-style-type: none"> <li>• <i>Occupational Health and Safety Act 2004</i> (Part 3 – General Duties Relating to Health &amp; Safety)</li> <li>• <i>Occupational Health and Safety Regulations 2017</i> (Part 3.3 – Prevention of Falls)</li> <li>• <i>Occupational Health and Safety Regulations 2017</i> (Part 3.5 – Plant)</li> <li>• <i>Occupational Health and Safety Regulations 2017</i> (Part 3.6 – High Risk Work)</li> <li>• AS 2550.10-2006 Cranes, hoists and winches – Safe use – Mobile elevating work platforms</li> <li>• <i>Prevention of falls in housing construction compliance code</i> (Edition No. 1 – Sept 2008)</li> </ul>	HRWL (WP) – TLILIC2005 – Licence to operate a boom-type elevating work platform (boom length 11 metres or more)	

Installation environment requirements	Hazard/risk description (possible initiating events)	Legislative guide (including acts, regulations, standards, COPs)	Mandatory safety training (MST) requirements	Required? (Y/N)
Overhead utilities (powerlines)	<ul style="list-style-type: none"> <li>Inadvertent contact with hazardous overhead services (powerlines) if using EWP for installations</li> </ul>	<ul style="list-style-type: none"> <li><i>Occupational Health and Safety Act 2004</i> (Part 3 - General Duties Relating to Health &amp; Safety)</li> <li><i>Occupational Health and Safety Regulations 2017</i> (Part 2.1 - General Duties)</li> <li>Framework for undertaking work near overhead and underground assets (No Go Zone) – WorkSafe Victoria guidance material (June 2006)</li> <li>Using powered mobile plant near overhead electrical assets (Version 3 2015) – Energy Safe Victoria/WorkSafe Victoria guidance material</li> </ul>	22195VIC – Course in workplace spotting for service assets	

## Part B: Installer qualifications

Installation environment requirements – mandatory safety training (MST) requirements										
Installer		Traffic management	Working at heights Operation of EWP (scissor-type) Operation of EWP (boom-type) - under 11 metres						Operation of EWP (boom-type/truck mounted) - over 11 metres	Overhead utilities (powerlines)
First name	Last name	RIIWHS302D	CPCPCM2043A	CPCCOHS2001A	CPCCCM2010	RIIWHS204D	RIIHAN301D	EWPA Yellow card	HRWL (WP) – TLILIC2005	22195VIC
<i>insert name</i>	<i>insert name</i>	<i>insert date of qualification</i>	<i>insert date of qualification</i>	<i>insert date of qualification</i>	<i>insert date of qualification</i>	<i>insert date of qualification</i>	<i>insert date of qualification</i>	<i>insert date of qualification</i>	<i>insert date of qualification</i>	<i>insert date of qualification</i>

### Declaration by upgrade manager

I hereby declare that:

- I have assessed and identified all risks associated with the installation environment, including but not limited to the risks listed above, prior to installation on the date of signature and ensured all relevant mandatory safety training requirements and obligations under relevant legislation to the installation environment have been met.

Upgrade manager signature:

Date:

### Declaration by accredited person (e.g. compliance manager)

I hereby declare that:

- I have verified the risks associated with the installation environment, including but not limited to the risks listed above, prior to installation on the date of signature and ensured all relevant mandatory safety training requirements and obligations under relevant legislation to the installation environment have been met and recorded.

Accredited person signature:

Date:

**END OF TEMPLATE**