

Benchmark Rating in Victorian Energy Upgrades

Specifications – Version 2.0

Author

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Document Version

Version 2.0 comes into effect from 20 June 2025. Version 1.0 is no long in effect as at 20 June 2025.

Version	Amendments	In effect from
2.0	Added forward creation metric to calculate carbon dioxide equivalent to be reduced with a corresponding persistence model Revised emissions factors and removed benchmark factor. Expanded eligible premises to participate in the method and the approved tools for calculating maximum energy for a given benchmark rating.	20 June 2025
1.0	Secretary approved	11 December 2018

We acknowledge and respect Victorian Traditional Owners as the original custodians of Victoria's land and waters, their unique ability to care for Country and deep spiritual connection to it.

We honour Elders past and present whose knowledge and wisdom has ensured the continuation of culture and traditional practices.

DEECA is committed to genuinely partnering with Victorian Traditional Owners and Victoria's Aboriginal community to progress their aspirations.



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Introduction

The Benchmark Rating method provides methods and variables for project-based activities in the Victorian Energy Upgrades program. These are contained within this document, the Benchmark Rating Specifications (the specifications).

Purpose

This document sets out the specifications for calculating the carbon dioxide equivalent (in tonnes) of greenhouse gases using the Benchmark Rating method to be reduced by carrying out a prescribed activity.

Legislation and responsibilities

The Victorian Energy Upgrades program is enabled by the Victorian Energy Efficiency Target (VEET) Act 2007, the Victorian Energy Efficiency Target Regulations 2018 (the VEET Regulations 2018), the Victorian Energy Efficiency Target (Project-Based Activities) Regulations 2017 (the VEET PBA Regulations 2017) and the Victorian Energy Efficiency Target Guidelines (the Guidelines).

The Department of Energy, Environment and Climate Action (the department) supports the Minister in overseeing the Victorian Energy Upgrades legislation.

This document sets out the rules for defining the methods and variables to be used when calculating the abatement of a prescribed activity using the Benchmark Rating method for the purpose set out in the PBA Regulations.

The Essential Services Commission (ESC) is the administrator of the Victorian Energy Upgrades program and is responsible for the Guidelines. Participants must also comply with the ESC's requirements, which are published on their website at <http://veet.vic.gov.au>.

This document should be read in conjunction with the Act, Regulations and material published by the ESC.

Using this document

This document is divided into three parts: **Information to be provided**, **Methods** and **Variables**.

Information to be provided lists information specific to benchmark rating which must be provided during the scoping approval and project impact report stages.

Methods sets out the calculations that must be undertaken in determining the abatement.

Variables sets out the terms by which projects are defined.

Information to be provided

Information to be provided in an application for scoping approval

- (1) The applications for scoping approval must include an approved benchmark administrator for a process intended to be used to calculate the reduction in greenhouse gases. The Secretary has approved one benchmark administrator under regulation 17A of the VEET PBA Regulations 2017. Only this benchmark administrator, for the premises or area within premises specified, can be nominated in an application for scoping approval.
- (a) NSW OEH¹ – NABERS² Energy Rating – Data centres – IT equipment
 - (b) NSW OEH – NABERS Energy Rating – Data centres – Infrastructure
 - (c) NSW OEH – NABERS Energy Rating – Data centres – Whole facility
 - (d) NSW OEH – NABERS Energy Rating – Hotels
 - (e) NSW OEH – NABERS Energy Rating – Offices – Tenancy
 - (f) NSW OEH – NABERS Energy Rating – Offices – Base building
 - (g) NSW OEH – NABERS Energy Rating – Offices – Whole building
 - (h) NSW OEH – NABERS Energy Rating – Shopping centres
 - (i) NSW OEH – NABERS Energy Rating – Hospitals
 - (j) NSW OEH – NABERS Energy Rating – Apartment buildings
 - (k) NSW OEH – NABERS Energy Rating – Residential Aged Care
 - (l) NSW OEH – NABERS Energy Rating – Retirement Living
 - (m) NSW OEH – NABERS Energy Rating – Warehouses and cold stores
 - (n) NSW OEH – NABERS Energy Rating – Schools
 - (o) NSW OEH – NABERS Energy Rating – Retail Stores
 - (p) NSW OEH – NABERS Energy Performance Indicator
 - (q) NSW OEH – Future NABERS Energy rating tools that are developed excluding pilot rating tools.

Information to be provided in an application for approval of a project impact report

- (2) The application for approval of a project impact report must include the following:
- (a) two NABERS Energy Rating Report documents, one accounting for the baseline period and one for the reporting period;
 - (b) a calculation of the carbon dioxide equivalent to be reduced using Equations 1 to 4;
 - (c) number of whole years between the baseline period and the reporting period;
 - (d) inputs for the prediction tool for the baseline period;
 - (e) details of the energy content factors for fuels that are not electricity or gas;
 - (f) details of the unaccounted energy consumption during the reporting period;
 - (g) details of any negative savings; and
 - (h) details of any counted savings.

¹ New South Wales Office of Environment and Heritage

² National Australian Built Environment Rating System

Methods

Calculation of carbon dioxide equivalents of greenhouse gases

- (3) The carbon dioxide equivalent (in tonnes) of greenhouse gases to be reduced by undertaking a project is calculated using Equation 1, where variables are determined in accordance with sections (6) to (16).

Equation 1 – Carbon dioxide equivalent to be reduced

$$\begin{aligned} \text{carbon dioxide equivalent} = & \sum_i [\text{electricity savings} \times \text{electricity emissions factor} \times RF \\ & + \text{gas savings} \times \text{gas emissions factor}] \times DF_i \\ & - \text{counted savings} + \text{negative savings} \end{aligned}$$

where:

- (a) *electricity savings* are calculated in MWh using Equation 2, in which references to “energy” in Equations 3 to 4 of this Division are taken to mean “electricity”.
- (b) *RF* is the regional factor, which is 0.98 if the project is undertaken in metropolitan Victoria or 1.04 if the project is undertaken in regional Victoria, as defined by the Locations Variable List in the Victorian Energy Upgrades Specifications 2018.
- (c) *gas savings* are calculated in gigajoules (GJ) using Equation 2, in which references to “energy” in Equations 3 to 4 of this Division are taken to mean “gas”.
- (d) *counted savings* is a variable determined in accordance with section (6).
- (e) *emissions factors* are provided in section 0.
- (f) *negative savings* is the negative carbon dioxide equivalent from the previous reporting period (if any), which should be carried through reporting periods until the difference has become zero.
- (g) DF_i is the decay factor for that measurement boundary in year i .
- (h) i is a year of the maximum time period, 10 years, for forward creation for the project.

Equation 2 – Energy savings

$$\text{energy savings} = (\text{baseline energy consumption} - \text{reporting energy consumption})$$

where:

- (a) *baseline energy consumption* is calculated using Equation 4.
- (b) *reporting energy consumption* is calculated using Equation 3.
- (c) *baseline energy consumption and reporting energy consumption have been calculated for a premises with a similar configuration as defined in section (8).*

Equation 3 – Reporting energy consumption

$$\text{Reporting energy consumption} = E_R + E_U$$

where:

- (a) E_R is the *energy consumption* specified in the NABERS Energy Rating Report, as defined in section **Error! Reference source not found.**, for the reporting period.
- (b) E_U is the *unaccounted energy consumption* during the reporting period, at the building where the project is undertaken, that is not included in E_R for reasons defined in section (9).

Equation 4 – Baseline energy consumption

$$\text{Baseline energy consumption} = E_B$$

where:

- (a) E_B is the *energy consumption* for the baseline period calculated using the NABERS Prediction Tool approved by the benchmark administrator specified in the scoping approval and *inputs for the NABERS Prediction Tool* as defined in section (12).

Time at which prescribed activity is undertaken and reduction in greenhouse gas emissions occurs

For the purpose of creating certificates using a reduction in greenhouse gases calculated for a reporting period:

- (4) The project is taken to have been undertaken at the end of the reporting period.
- (5) The reduction in greenhouse gas emissions that results from a project is taken to have occurred 6 months after the end of the reporting period.

Variables

Terms

(6) Counted savings

- (a) Counted savings are the reduction of carbon dioxide equivalent (in tonnes) of greenhouse gases represented by certificates created in respect of activities undertaken within the measurement boundary after the end of the baseline period, unless accounted for in an earlier reporting period.
- (b) An adjustment may be made to counted savings in respect of activities prescribed by the Victorian Energy Efficiency Target Regulations 2018 if the adjustment is required for compliance with Regulation 14(b) of the Victorian Energy Efficiency Target (Project-Based Activities) Regulations 2017.

(7) Emissions factors

- (a) For the purposes of Equation 1, the emissions factor:
 - (i) for electricity
 - *between 1 August 2021 and 31 January 2022 is 0.9546*
 - *between 1 February 2022 and 31 January 2023 is 0.8142*
 - *between 1 February 2023 and 31 January 2024 is 0.6738*
 - *between 1 February 2024 and 31 January 2025 is 0.5334*
 - *after 1 February 2025 is 0.3930;*
 - (ii) for natural gas is 0.05523;
 - (iii) for liquefied petroleum gas is 0.0642;
 - (iv) for solar, wind, hydroelectric, geothermal and ocean energy is zero;
 - (v) for any other renewable energy is the relevant emissions factor for the renewable energy listed in Section 2.1 of the National Greenhouse Accounts Factors published by the Commonwealth Department of the Environment in August 2016.

(8) Similar configuration

- (a) The baseline energy consumption and reporting energy consumption, calculated in Equation 3 and Equation 4, must have a similar configuration for the premises, as defined below:
 - (i) the sub-metering arrangements are the same. A premises' sub-metering arrangements are considered the same if, at the time a building was rated during the baseline and reporting periods, the sub-metering arrangements (if any) covered the same space as determined by the assessor for each rating, using the evidence required by the benchmark administrator that is relevant to the type of premises or the type of area within a premises.
 - (ii) where the conditions defined in (i) are not met, changes in sub-metering arrangements resulting in changes in energy consumption due to a reduced space must be discounted from energy savings. This discount will be done as unaccounted energy consumption, as described in (9) below. These changes must be metered and recorded over the rating period.

(9) Unaccounted energy consumption

- (a) Where "energy" consumption in Equation 3 is taken to mean "electricity", the unaccounted energy consumption is the electricity consumption (in MWh) during the reporting period, at the premises where the project is undertaken, that is not included in reporting electricity consumption as a result of:
 - (i) electricity generated from renewable energy systems installed between the end of the baseline and the end of the reporting period for which incentives have been received under a prescribed greenhouse gas scheme as specified in Regulation 38 of the VEET Regulations 2018;

Note: this means that renewable energy which has not generated incentives in these prescribed schemes is not unaccounted energy. Energy exported to the electricity grid is excluded from the energy consumption.

- (ii) changes in the metering arrangements at the building between the start of the baseline period and the end of the reporting period, as defined in (10) below.
- (iii) Where “energy” consumption in Equation 3 is taken to mean “gas”, the unaccounted energy consumption is the gas consumption (in GJ) during the reporting period, at the premises where the project is undertaken, that is not included in the reporting gas consumption as a result of changes in the metering arrangements at the building between the start of the baseline period and the end of the reporting period, as defined in (10) below.

(10) Changes in metering arrangements

- (a) Changes in metering arrangements are allowed over the course of the project, provided changes in the energy boundary have been metered and recorded over the rating period.

(11) NABERS Energy Rating Report

- (a) A document that was issued by the benchmark administrator nominated at scoping approval and meets the requirements under regulation 11A (3) and 11A (4) of the VEET PBA Regulations 2017.

(12) Inputs for the NABERS Prediction Tool

- (a) A prediction tool is an electronic mechanism for calculating the maximum energy that the premises can consume for a given benchmark rating, as defined in the VEET PBA Regulations 17A.
- (b) Subject to (d) the inputs for the NABERS Prediction Tool must be the other variables published in the reporting rating.
- (c) The rating input into the NABERS Prediction Tool must not take into account whether electricity is purchased under the GreenPower Program.
- (d) The baseline rating input into the NABERS Prediction Tool is the rating published on the NABERS Energy Rating Report for the baseline period, unless the building where the project is undertaken undergoes a renovation or upgrade that requires planning approval, in which case the baseline rating for each reporting period commencing after the renovation or upgrade is completed is the highest of:
 - i. The rating published on the NABERS Energy Rating Report for the most recent reporting period that ends prior to the issue of the planning approval; or
 - ii. The minimum rating (if any) the building is required to meet under the planning scheme of the Local Government Area that applies to the building; or
 - iii. If the building is not required to meet a minimum rating, 4.5 stars for a building that is a data centre or 4 stars for any other building.
- (e) The percentage breakdown of fuels used in the building where the project is undertaken, which is input into the NABERS Prediction Tool, must be determined by converting into MWh any measurement of energy consumed at the building that is not measured in MWh. This must include all fuels used in the reporting rating.
- (f) For the purpose of the conversion referred to in (e), if the measurement is not in terms of energy, the energy content factor for that fuel type, as specified in section (7), must be used in the conversion.
- (g) The rating input into the NABERS Prediction Tool must use the same emissions factors as the Reported Energy consumption in the NABERS Energy Rating Report.
- (h) Where a NABERS Prediction Tool is not suitable for a specific premises, the NABERS Reverse Calculator is permitted to be used.

(13) Other variables

- (a) Additional information to a premises' measured energy consumption, which is used by a benchmark administrator's process to calculate a benchmark rating.

(14) Number of whole years

- (a) The number of whole years are calculated by subtracting the year of the end of the reporting period minus the year of the end of the baseline period, as defined in section (15) and (16).

(15) Reporting period

- (a) The reporting period, in relation to a project, is a 12-month period commencing:
 - (i) Directly following the implementation start time for the project, as defined in regulation 4 of the VEET PBA Regulations 2017; or
 - (ii) Directly following another reporting period but not later than 2 years after the implementation start time.

(16) Baseline period

- (a) The baseline period, in relation to a project, is a 12-month period ending:
 - (i) Before works commence, as defined in regulation 6 (7) of the VEET PBA Regulations 2017; and
 - (ii) No more than 18 months before works commence.

(17) Decay Factor

- (a) The decay factor for a year is assigned on a per measurement boundary basis and is determined using Table 1 or by applying a persistence model.
- (b) A persistence model must meet the following requirements:
 - i. it provides a reasonable estimate of the expected lifetime of an energy consuming product in whole years; and
 - ii. it provides a decay factor representing the decline in performance of the product each year by taking into account:
 - iii. the type of the energy consuming product; and
 - iv. how the energy consuming product is used; and
 - v. the environmental characteristics of the premises where the energy consuming product is used; and
 - vi. the model provides the most conservative set of yearly decay factors when applied to more than one energy consuming product or the model provides the yearly decay factors for the energy consuming product that contributes to greater than 80% of the total annual energy savings.

(18) Maximum time period for forward creation

- (a) Forward creation is permitted for ten years from the implementation start time of that project.

Table 1 – Decay factor

Year (<i>i</i>)	Decay factor
1	1.00
2	0.80
3	0.64
4	0.51
5	0.41
6	0.33
7	0.26
8	0.21
9	0.17
10	0.13