# Victorian Government Emissions Valuation Application Guidance

**October 2025**

## Introduction

### What is emissions valuation?

*Emissions valuation* is the practice of applying a dollar value to greenhouse gas (GHG) emissions for decision-making purposes only - for instance, when comparing two business case options.

In economic terms, GHG emissions are a *negative externality* - an aspect of a project which is not accurately represented in the project's costs, but should be accounted for to understand the full costs and benefits of a project. The emissions associated with a project are a cost imposed on others within the Victorian economy through future damages of climate change and the cost of emissions reduction. If emissions are not properly accounted for, decisions may lead to inefficient economic outcomes and poor use of resources from a full socio-economic perspective. Emissions valuation addresses this by allowing the cost to society of emissions to be considered in decision making.

An emissions value is not a carbon price. A carbon price is a financial charge that must be paid by one party to another based on their emissions. An emissions valuation on the other hand improves decision-making but does not require any payments to be made. Emissions valuation has become a common practice in decision-making processes in many jurisdictions in Australia and around the world.

For advice on measuring GHG emissions, refer the Emissions Measurement Guidance

### When to apply emissions valuation?

Emissions valuation can be applied to cost-benefit analyses or impact analysis for initiatives and projects which could benefit from incorporating emissions into decision-making, including regulatory impact statements, legislative impact statements, and policy proposals.

VICTORIA State Government | Energy, Environment and Climate Action

# Victorian emissions value series

The Victorian emissions values have been developed consistent with Victoria's emissions reduction targets, using the Sectoral Emission Abatement Model (SEAM), Victoria's whole-of-government microeconomic emissions model. The Victorian emissions values increase over time, reflecting the increasing marginal costs of technologies needed to meet more ambitious interim targets and net zero emissions by 2045. Note that the Victorian emissions values will be reviewed regularly to appropriately factor emissions into investment decision-making.

Central values should be used for decision-making purposes. Lower and upper values are provided for sensitivity testing only. The 2049/50 value can be applied for activities beyond the year 2049/50. There is no need to apply indexation beyond 2049/50 as the emissions values are in real (2024) dollars.

**Table 2.** Victoria's emissions values in real 2024 AUD as of August 2025 ($ per $tCO_2$-e).

| FY | VEV Lower | VEV Central | VEV Upper |
|---|---|---|---|
| **2023/24** | 102 | **128** | 154 |
| **2024/25** | 110 | **137** | 164 |
| **2025/26** | 116 | **147** | 179 |
| **2026/27** | 122 | **157** | 194 |
| **2027/28** | 129 | **168** | 211 |
| **2028/29** | 136 | **180** | 230 |
| **2029/30** | 144 | **192** | 250 |
| **2030/31** | 151 | **204** | 269 |
| **2031/32** | 159 | **218** | 292 |
| **2032/33** | 168 | **233** | 317 |
| **2033/34** | 177 | **250** | 344 |
| **2034/35** | 187 | **267** | 374 |
| **2035/36** | 199 | **288** | 410 |
| **2036/37** | 212 | **312** | 449 |
| **2037/38** | 225 | **336** | 491 |
| **2038/39** | 240 | **363** | 538 |
| **2039/40** | 255 | **392** | 589 |
| **2040/41** | 271 | **424** | 644 |
| **2041/42** | 288 | **458** | 705 |
| **2042/43** | 306 | **494** | 771 |
| **2043/44** | 326 | **534** | 844 |
| **2044/45** | 346 | **577** | 923 |
| **2045/46** | 346 | **577** | 923 |
| **2046/47** | 346 | **577** | 923 |
| **2047/48** | 346 | **577** | 923 |
| **2048/49** | 346 | **577** | 923 |
| **2049/50** | 346 | **577** | 923 |

# Steps for applying the emissions values

## Step 1: Identify key parameters needed for emissions valuation

To conduct emissions valuation for a business case, the timeframe for assessment and emissions associated with the business case must be identified

**Timeframe for assessment period**

For a project, this timeframe will likely be the start and end years of the project including construction and decommissioning of assets. For a policy, the timeframe may include the lifespan of assets/policy requirements needed, as well as additional time beyond this to realise the key benefits of the policy.

For scoping of the broader cost-benefit analysis (CBA) and emissions estimation, confirm the:

- *Base date (generally when time is 0)* – the date which future costs and benefits are discounted back to. Often the base date is set the same date as the project start date.
- *Start date* – the date the project starts
- *Final date* – the date the project finishes

**Emissions measurement**

Refer to the Emissions Measurement Guidance to calculate emissions.

For clarity, please include in your emissions valuation analysis a note on which emissions you have included as in/out of scope.

## Step 2: Apply emissions values

The value of the change in GHG emissions for each year can be calculated by multiplying the estimated tonnes of carbon dioxide equivalent emissions in that year ($tCO_2$-e) by the emissions value for that year ($, see Table 2). Emissions values should be applied to estimated emissions for each option being tested.

For each year:

Value of the change in GHG emissions ($) =

estimated tonnes of carbon dioxide equivalent ($tCO_2$-e) X emissions value ($/$tCO_2$-e)

## Step 3: Calculate the discounted value of the annual changes in GHG emissions

To bring values into today's dollars, the discounted cost of GHG emissions in each year need to be calculated by multiplying the undiscounted costs per year (calculated in Step 2) by a discount factor, using the chosen discount rate. As part of this you will need to decide on a discount rate to apply to your business case. Please consult Section 6 'Discounting costs and benefits' of the Economic Evaluation for Business Cases – Technical guidelines (DOC) to determine the appropriate discount rate to apply to your business case. Note that the discount rate needs to be used in percentage (e.g. 4%) or decimal point (e.g. 0.04) form. For activities beyond the year 2049/50, the 2049/50 value can be applied. There is no need to apply indexation beyond 2049/50, as the emissions values in this document are in real (2024) dollars.

Please note that only the *dollar value* of GHG emissions can be discounted – not the physical units of emissions themselves (the kilotonne or megatonne of $CO_2$-e).

$$Discount\ factor = \frac{1}{(1+r)^t}$$

$$r = discount\ rate$$

$$t = year\ relative\ to\ base\ year\ (year\ 0)$$

For each year:

Discounted value ($) = Value of the change in GHG emissions ($) (from Step 2) X discount factor

## Step 4: Calculate the Present Value (PV)

The Present Value (PV) can be calculated by summing all the discounted values of annual changes in GHG emissions in order to get the total cost or benefit of GHG gas emissions. This will represent the cumulative value of GHG emissions in today's dollars.

Present Value ($) = Sum of all discounted values of annual changes in GHG emissions (from Step 4)

## Step 5: Incorporate costs or benefits into broader Cost Benefit Analysis (CBA) or other relevant economic analysis of the whole project

This process of emissions valuation produces just one of a range of values for input into a full cost benefit analysis (CBA).

Once the emissions valuation process has been undertaken, all results (including sensitivity testing) should be incorporated into the broader CBA of the whole policy or project. Particular attention should be paid to whether the ranking of options in the full CBA changes when sensitivity testing is conducted.

# Glossary

| Term | Definition |
|---|---|
| Base case (or counterfactual) | The default course of action, business-as-usual approach that would most likely have occurred in the absence of a project or policy intervention. To calculate an estimate for an individual project or policy you need a 'base case' to compare to. For further information on establishing a base case, please refer to the "*A clearly defined base case"* section of the Emissions Measurement Guidance. |
| Business case | Business case in this context refers to any business case document being prepared for review by the Victorian Government Department of Treasury and Finance. See more here: https://www.dtf.vic.gov.au/business-case |
| Cost-benefit analysis | Cost-benefit analysis is an economic evaluation that compares the projected costs and benefits of a decision, project, or investment to determine its feasibility. |
| Discount rate | The rate used to determine the present value of future cash flows. See 'Concept of discounting' in Economic Evaluation for Business Cases – Technical guidelines (DOC) for further information. |
| Embodied emissions | Emissions that result from the construction, maintenance, and end-of-life disposal of an asset. Embodied emissions can be separated into 'upfront', 'in use' and 'end of life' emissions. |
| Emissions measurement | Calculating the (expected) greenhouse gas emissions from a project or policy. This is distinct from emissions valuation (below) as the units are given in tCO2-e (tonnes of carbon dioxide equivalent), as opposed to a dollar value.<br>Refer to Emissions Measurement Guidance for advice on calculating emissions. |
| Emissions value, or emissions valuation | The practice of applying a dollar value to greenhouse gas emissions for decision-making purposes only (for instance, comparing two business case options). See the introduction of this document for more information. |
| GHG | Greenhouse gas emissions, including carbon dioxide, methane, nitrous oxide, sulphur hexafluoride (as well as a list of hydrofluorocarbons, hydrochlorofluorocarbons and perfluorocarbons). For full list refer to the Australian Government's National Greenhouse Accounts Factors (Appendix 2 Global Warming Potentials). |
| SEAM | Sectoral Emission Abatement Model (SEAM). SEAM is Victoria's whole-of-government microeconomic model, purpose-built for Victorian policy making. SEAM represents the structure of Victoria's economy and the type, scale, and timing of relevant abatement opportunities. |
| $tCO_2$-e | Tonnes of carbon dioxide equivalent. Since different greenhouse gases have varying warming effects, $tCO_2$-e is used to standardise the impact of greenhouse gases relative to carbon dioxide ($CO_2$). |
| Upfront Carbon | Upfront carbon emissions are the **carbon emissions caused before a building is used**, including manufacture, transport, and construction. Upfront emissions account for 7% of Australia's national emissions in 2022–23[1], with most of these emissions originating from the manufacture of construction materials. Upfront carbon represents a significant proportion of embodied carbon, but embodied carbon can also refer to 'in use' and 'end of life' emissions. |

[1] Infrastructure Australia, Embodied Carbon Projections for Australian Infrastructure and Buildings. https://www.infrastructureaustralia.gov.au/reports/embodied-carbon-projections-australian-infrastructure-and-buildings