

Basis of preparation

1. Purpose and Scope

This section describes the methodology, data sources, calculations and limitations applied to the indicators to be disclosed in the Treasury Corporation of Victoria (TCV) Sustainability Bond Annual Report 2025 ('report').

The scope of impact metric development and reporting covers eight projects / program financed through TCV Sustainability Bond proceeds and presented in the main body of the report:

Table 1. Scope of project for impact assessment

Section in TCV's Sustainability Bond Annual Report 2025 (Project summary update section)	Projects in scope
Section 1 - Sustainable Water and Wastewater Management	• Hobson's Bay Main Sewer Renewal • The 5 West Nutrient Removal Plant Project at Western Treatment Plant • Yan Yean to Bald Hill Pipeline project
Section 2 - Renewable Energy	• Victoria Renewable Energy Zones
Section 4 - Clean Transportation	• High-Capacity Metro Trains (HCMT) • X'Trapolis 2.0, • Next Generation Trams (G-Class), and • Zero Emission Vehicles (ZEV) Adoption Programme for EV infrastructure

Unless it is explicitly stated, impact and indicators are presented on a 100% project basis and are not pro-rated to TCV's share of financing or bond proceeds.

2. Role of South Pole

South Pole's role in this assessment involves the following duties.

- Identify relevant impact reporting metrics aligned with international reporting standards, in particular the International Capital Market Association (ICMA) Green and Social Bond Principles and Sustainability Bond Guidelines and the Harmonised Framework for Impact Reporting
- Define data collection requirements and design data collection templates
- Review data inputs from the Victorian Government Departments and participating authorities to assess their suitability for disclosure in the impact report
- Prepare impact metric disclosure for the above projects in scope for assessment
- Research on public information sources from government websites to identify other data points for disclosures

The data and information used to prepare these sections were sourced from and provided directly by TCV and the relevant Government and departments and participating authorities. South Pole utilised publicly available data to fulfil further information requirement, a step that TCV subsequently reviewed and confirmed.

Note the role of South Pole did not include any certification or attestation of data inputs and accuracy provided by Government departments and participating authorities. The scope of services provided did not constitute an independent audit, assurance engagement, or second-party opinion.

3. Data Metric Selection and Data Collection Design

3.1 Temporal boundary

The primary reporting period is the financial year 2024–25 (FY2024–25) for annual indicators. For each indicator, the underlying dataset specifies the period type (annual, cumulative, or over specific periods). Where relevant, two types of values are used:

- Ex-post: based on operational data for projects already in service or
- Ex-ante: a forecast or design capacity for projects that are still in construction, commissioning, or early deployment.

In this report:

- Annual indicators are generally shown for FY 2024–25 (1st July 2024–30th June 2025)
- Cumulative indicators (for example, cumulative number of chargers installed or trainee positions created) are presented from project inception to 30 June 2025, where such totals are available
- Some water-related indicators use a specific 12-month period that aligns with project commissioning dates (for example, Nov 2024–Oct 2025 for Yan Yean to Bald Hill)
- Ex-ante indicators for projects in pre-deployment or commissioning (e.g. X'Trapolis 2.0, G Class trams and some ZEVET components) are explicitly labelled through the time horizon (for example, FY 2025–26 (expected) or “to be installed”)

Forecast values are not combined with ex-post totals. The report distinguishes between realised operational performance and expected future performance.

3.2 System and project boundaries

The system boundaries for the indicators are defined as follows:

Water and wastewater projects

- Physical infrastructure characteristics (for example length of sewer, design or operational flow capacity)
- Service coverage (population served, volume of clean water supplied)
- Selected environmental indicators (for example nitrogen discharge to Port Phillip Bay) and socio-economic indicators (local jobs, apprenticeships)

The indicators cover the projects and their immediate service function, not the full lifecycle environmental impacts of construction materials or the downstream use phase.

Victoria Renewable Energy Zones (REZ)

- The share of Victorian generation from renewable sources at the state level
- The renewable generation capacity is expected to be enabled by the upgraded transmission network
- The installed storage capacity and selected socio-economic indicators, e.g. jobs, apprenticeships, etc

Clean Transportation

For the clean transportation projects, boundaries vary by project:

- For HCMT, the key indicators (passenger boardings, traction energy consumption, GHG emissions, total vehicle kilometre (v-km) travelled and intensity metrics) are reported at the metropolitan rail network level, as per data received. These values reflect the performance of the whole network, rather than isolating the marginal effect of HCMT alone.

- For X'Trapolis 2.0 and G Class trams, indicators focus on fleet deployment and local economic impacts. (number of trains or trams to be delivered, local jobs supported, local content requirement). Operational performance and GHG-related indicators will only be available once the fleets are in service.
- For the ZEV Adoption programme, indicators relate to the programme-wide EV charging infrastructure, including chargers installed, installed capacity, energy delivered, utilisation accessibility and local procurement.

For all projects, the indicators are limited to direct project/programme outputs and selected outcomes that can be reliably quantified with data availability.

3.3 Alignment with the ICMA reporting framework

Our indicator development and reporting approach aligns with the [ICMA Harmonised Framework for Impact Reporting](#). There are two types of indicators included in the impact report, including

- 1) Impact indicators that are adopted directly from the ICMA report guidance document (core and other sustainability indicators)
- 2) Other indicators are developed based on the specific project scope and South Pole's understanding of industry practices

Table 2. Impact metrics adopted from the ICMA report guidance document

Project	ICMA Project Classifications	Indicator name in the report
Hobson's Bay Main Sewer Renewal	Sustainable Water Management - Water Use Sustainability and Efficiency Projects	Number of people served by the pipeline (estimated)
The 5 West Nutrient Removal Plant Project at Western Treatment Plant	Wastewater Treatment Projects (including Sewage Sludge Management)	Additional capacity for wastewater treatment (estimated)
Yan Yean to Bald Hill Pipeline project	Sustainable Water Management - Water Use Sustainability and Efficiency Projects	Number of people served by the Bald Hill transfer system
Zero Emission Vehicles (ZEV) Adoption Programme for EV infrastructure	Renewable Energy	Energy delivered (estimated)
		Number of accessible EV bays delivered (estimated)
High-Capacity Metro Trains (HCMT)	Deployment of clean transportation	Passenger boardings
		Annual absolute GHG emissions (location-based)
		Number of clean vehicles deployed
X'Trapolis 2.0 and GClass - Next Generation Trams	Deployment of clean transportation	Number of clean vehicles to be deployed

Table 3. Other impact indicators developed based on project scope and industry practices

Project	ICMA Project Classifications	Indicator name in the report
Hobson's Bay Main Sewer Renewal	Sustainable Water Management - Water Use Sustainability and Efficiency Projects	Capacity of sewer pipeline
The 5 West Nutrient Removal Plant Project at Western Treatment Plant	Wastewater Treatment Projects (including Sewage Sludge Management)	Energy use
		Tonnes of nitrogen discharged to Port Philip Bay
Yan Yean to Bald Hill Pipeline project	Sustainable Water Management - Water Use Sustainability and Efficiency Projects	Volume of clean drinking water supply (estimated)
Victoria Renewable Energy Zones	Renewable Energy	Share of Victorian generation from renewable sources
		Renewable energy capacity to be enabled by transmission systems (estimated)
		Total energy storage capacity installed
Zero Emission Vehicles (ZEV) Adoption Programme for EV infrastructure	Renewable Energy	Total chargers installed
		Total installed charging capacity
		Public accessibility
		Number of accessible EV bays delivered (estimated)
		Uptime (estimated)
		Utilisation (estimated)
		Energy delivered (estimated)

4. Data sources and data quality

4.1 Data Sources

Quantitative data have been sourced from a combination of:

1. Data collection templates, which were completed by relevant stakeholders from Victorian Government departments and participating authorities
2. Publicly available information on project proponent and Victorian Government websites, used primarily to cross-check qualitative descriptions and, where necessary, to contextualise numerical indicators

Table 4. Data sources

Project	Impact metrics/data points	Data provided by	Information sources
Hobson's Bay Main Sewer Renewal	Length of the existing sewer and the new sewer line	Melbourne Water	Hobson's Bay Main Upgrade Project on Melbourne Water's website
	Number of people served by the pipeline		Data collection template prepared by South Pole
	Capacity of sewer pipeline		
	Local jobs created, apprenticeships and traineeships		
5 West Nutrient Removal Plant Project at Western Treatment Plant	Additional capacity for wastewater treatment	Melbourne Water	5 West Nutrient Removal Plant Project on Melbourne Water's website
	Local jobs created, apprenticeships and traineeships	Melbourne Water	Data collection template prepared by South Pole
Yan Yean to Bald Hill Water Main	Volume of clean water supplied	Melbourne Water	Data collection template prepared by South Pole
	Number of people served	Yarra Valley Water	News publication on Yarra Valley Water's website
Victoria Renewable Energy Zones	Share of Victorian generation from renewable sources	Parliament of Victoria	Victorian Renewable Energy Target 2024-25 Progress Report
	Project overview details about funding and the number of projects	Department of Energy, Environment and Climate Action, Victoria	Data collection template prepared by South Pole
	Increase in transmission capacity		
	Increase in energy storage capacity		
	Local jobs created, apprenticeships, trainees		
	Local content commitment		

Table 4. Data sources (continued)

Project	Impact metrics/data points	Data provided by	Information sources
Zero Emission Vehicles (ZEV) Adoption Program	Number of charges installed	Department of Energy, Environment and Climate Action, Victoria	Data collection template prepared by South Pole
	Charging capacity		
	Energy delivered		
	Uptime		
	Public accessibility		
	Utilisation of charging infrastructure		
	Local jobs created		
	Procurement from local SMEs		
High-Capacity Metro Trains (HCMT)	Number of clean vehicles deployed	Department of Transport and Planning, Victoria	Data collection template prepared by South Pole
	Passenger boarding		
	Traction electricity consumption		
	Annual absolute GHG emissions (location-based)		
	Total kilometres travelled (metro network)		
	CO ₂ e per passenger (intensity metric) (location-based)		
	CO ₂ e per kilometre travelled (intensity metric)		
	Local jobs created		HCMT project information on DTP website
	Local content requirement		
X'Trapolis 2.0	Number of clean vehicles to be deployed	Department of Transport and Planning (DTP), Victoria	Data collection template prepared by South Pole
	Local jobs created		X'Trapolis 2.0 project information on DTP website
	Local content requirement		

Table 4. Data sources (continued)

Project	Impact metrics/data points	Data provided by	Information sources
GClass - Next Generation Trams	Number of clean vehicles to be deployed	Department of Transport and Planning, Victoria	Data collection template prepared by South Pole
	Local jobs created		G Class project information on DTP website
	Local content requirement		

4.2 Data Quality

Data used in this report reflects the best available information from the relevant Victorian Government departments and participating authorities for this reporting cycle. South Pole has applied basic consistency checks and simple transformations (e.g. data aggregation and straightforward unit conversions), but has not conducted a full audit or assurance of the underlying datasets.

- Indicators are reported as provided by the competent department or participating authorities, without adjustment by South Pole, except for straightforward unit conversions or derived metrics described below.
- No imputation of missing values or model-based extrapolation has been conducted by South Pole for this impact report.
- Where data format inconsistencies were observed in the information received (for example, between stated units, etc.), South Pole sought clarifications where possible and corrected obvious issues, such as typographical errors. These instances are not considered material for the overall conclusions of the report.
- Where an indicator was not available or not yet mentioned (for example, energy use for the 5 West Nutrient Removal Plant during commissioning, or ex-post operational indicators for X'Trapolis 2.0 and G Class trams), the tables either show "Not yet available" or provide only qualitative notes.

5. Calculation methods used

5.1 Scope of the project where SP applied calculations

South Pole's role in the calculations is limited to:

- Converting some indicators into common units or time bases (for example, daily flows to annual volumes, or litres to cubic meters), where this is explicitly indicated in the tables.
- Calculating electricity-related GHG emissions and associated intensity-based indicators for the Clean Transportation projects using grid emissions factors, including
- Deriving simple intensity metrics (for example, emissions per passenger or per vehicle kilometre) from total annual values.

5.2 Emission factors

Location-based grid emission factors for Victoria are taken from the Australian National Greenhouse Accounts factors (NGA) for the relevant year, as referenced in the dataset. For example, the NGA 2024 publication reports a scope 2 emission factor of 0.77 kg CO₂e per kWh for Victoria, equivalent to 0.77 tCO₂e per MWh.

Market-based adjustments are not applied in this report. Scope 3 electricity emissions (well-to-tank and transmission and distribution loss) are not included in the reported impact indicators.

5.3 Electricity-related GHG emissions

Electricity-related GHG emissions are calculated for High-Capacity Metro Trains (HCMT), from annual electricity consumption and the location-based grid emission factor for Victoria as follows:

- Annual GHG emissions (tCO₂e) = Electricity use (MWh) × Grid emission factor (tCO₂e/MWh)

The same factor is applied consistently across comparable indicators within the reporting year where the dataset indicates this.

5.3 Intensity indicators

Where intensity indicators are reported (for example “CO₂e per passenger” or “CO₂e per vehicle kilometre” for the metro network), these are calculated by dividing total annual emissions by the corresponding annual activity measure:

- CO₂e per passenger = total traction emissions for the metro network divided by total annual passenger boardings on the metro network;
- CO₂e per vehicle kilometre = total traction emissions for the metro network divided by total vehicle kilometres travelled on the metro network.

No additional lifecycle expansion or upstream/downstream adjustments are made beyond what is captured by the grid emissions factors.

For projects that are still under construction, commissioning or early deployment (notably X'Trapolis 2.0, G Class trams and certain ZEVET components), only ex-ante or design-based indicators are reported, such as:

- Number of vehicles to be deployed
- Number and capacity of chargers to be installed
- Expected local jobs supported and local content commitments

These indicators are clearly labelled as expected or to be installed and are intended to illustrate the scale and nature of the financed projects rather than to represent realised environmental impacts.

5.4 Avoided emissions calculation

During the assessment, South Pole team examined whether three projects may cause avoided emissions, namely High Capacity Metro Trains (HCMT), X'Trapolis 2.0, G Class – Next Generation Trams.

Various methodologies on data collection were explored and discussed with the TCV team, including potential avoided emissions from rolling-stock efficiency and modal shift (from new capacity/connectivity). A 2016 study of the Melbourne Metro Rail Project (MMR-AJM-PWAA-RP-NN-000833) from Melbourne Metro Rail Authority was also reviewed to understand the projected avoided emissions from the design study.

Due to data availability challenges (for fleet-level and corridor-level measurement) and the DTP's view of no proof of avoided emissions in actual operation, avoided emissions are not calculated and reported quantitatively.

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The impact assessment results presented herein are based on data and documentation provided by the client and/or third-party sources. South Pole has not independently verified the accuracy, completeness, or traceability of the data. Where data gaps exist, reasonable proxies, industry benchmarks, or assumptions have been applied, as disclosed in the relevant sections.

All estimates and findings are sensitive to input parameters, such as emission factors, baseline scenarios, and actual or assumed project performance. Results should be interpreted in light of the data quality and methodological limitations described in this report.

This assessment has been conducted independently by South Pole consultants who were not involved in the structuring, approval, or execution of the financing activities. To the best of our knowledge, the consultants do not hold any conflicts of interest with respect to Treasury Corporation of Victoria, the financed projects, or any affiliated third parties. South Pole has not conducted independent verification of the accuracy, completeness, or traceability of the data.

- Where data gaps exist, reasonable proxies or assumptions have been applied, as disclosed in relevant sections.
- Impact estimates are sensitive to input assumptions, emission factors, and project performance. Results should be interpreted considering the data quality and methodological choices described above.