Quad Services Greenhouse Gas Emissions Report

FY2025

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Prepared by NetNada

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Executive Summary

NetNada is pleased to present the Greenhouse Gas (GHG) Emissions Report for Quad Services for the 2025 financial year ending. This report has been prepared in accordance with the GHG Protocol and includes Scope 1, Scope 2 (location-based and market-based), and relevant Scope 3 emissions categories across all Quad Services locations.

Total GHG emissions for FY25 were 300.70 tCO_2-e, representing a 82.99% reduction from the FY24 total of 1,767.6 tCO_2-e.

KPI	FY25	FY24
Total Emissions	300.70	1,767.6
tCO_2e / FTE*[1]	**3.07**	**2.77**

This year's inventory reduction is driven primarily by:

- There has been a **substantial change in the employee commute boundary** and methodology. In FY24, cleaners were included in the total FTE whereas this year commute emissions were calculated by extrapolating survey responses to Corporate staff only[2].
- **A significant decline in third-party fuel use and business travel** compared with FY24 levels.
- **Improved operational efficiency** and reduced activity levels across several Scope 3 categories.
- **Refinements in data quality and categorisation**, leading to a more accurate representation of purchased goods, accommodation and commuting emissions.

To ensure transparency and integrity of year-on-year comparisons, reductions driven by methodological updates should be distinguished from those resulting from actual emissions mitigation activities. This distinction supports a clearer understanding of Quad Services's progress toward climate goals and ensures alignment with best-practice reporting expectations.

[1] FTE for FY24 was 638 and for FY25 it was 98 accounting only for Corporate/Office staff.
[2] Given the lack of data and the fact that cleaner commute patterns are not comparable to Corporate/Office staff, it is not feasible to estimate their emissions for extrapolation.

1. Organisational Profile

Quad Services Pty Ltd is an Australian provider of cleaning and facilities support services operating across multiple states and territories. The organisation maintains physical offices in New South Wales, Victoria, and Queensland, with additional virtual offices enabling service delivery across South Australia, Western Australia, Tasmania, the Australian Capital Territory, and the Northern Territory.

The company's greenhouse gas emissions arise from office-based activity, employee commuting, purchased goods and services, business travel, transport fuel use, and electricity consumption. These activities form the operational boundary assessed under the GHG Protocol for this FY25 emissions inventory.

2. Reporting Methodology

This greenhouse gas (GHG) inventory has been prepared in accordance with the ***GHG Protocol Corporate Accounting and Reporting Standard (Revised Edition)*** and the ***GHG Protocol Corporate Value Chain (Scope 3) Standard***, which are internationally recognised frameworks for corporate carbon accounting. All emissions are reported in metric tonnes of carbon dioxide equivalent (tCO_2-e).

Scope 2 emissions are disclosed using both the location-based and market-based methodologies, providing a comprehensive view of indirect electricity-related impacts.

Emissions were quantified using a hybrid approach that combined activity-based and spend-based methodologies:

- **Activity-based calculations** were conducted by multiplying measured activity data (e.g., kilowatt-hours of electricity consumed, kilometres travelled) by relevant emission factors. This method was applied wherever reliable consumption or operational data was available.

- **Spend-based calculations** were employed where direct activity data could not be obtained. This approach estimates emissions by multiplying the financial value of purchased goods or services by the corresponding environmentally-extended input–output (EEIO) emission factor.

The most recent and regionally appropriate emission factors were applied, sourced from reputable databases such as the UK DEFRA, the U.S. EPA, and the Australian National Greenhouse Accounts.

Organisational boundaries were defined using the operational control approach, ensuring all Quad Services operations were comprehensively included. Methodological decisions, including estimation techniques, boundary setting, and treatment of data limitations, were guided by principles of

materiality, data availability, and recognised industry best practice.

This approach ensures that the emissions inventory is robust, transparent, and aligned with international standards, making it suitable for both internal decision-making and external assurance or verification.

3. Quad Services Carbon Footprint

3.1 Emission Boundaries

Quad Services's greenhouse-gas inventory covers the financial year 2025 (1 July 2024 – 30 June 2025).

Defining emission boundaries is a critical step in developing a credible carbon inventory, as it establishes which assets, activities, and stages of the value chain are included in the organisation's emissions footprint.

In line with the GHG Protocol Corporate Accounting and Reporting Standard, Quad Services defines its boundaries through two dimensions:

- **Organisational boundary**: determined using the operational control approach, which includes all facilities over which Quad Services has the authority to introduce and implement operating policies.

- **Operational boundary**: defines the types of emissions accounted for under Scope 1 (direct emissions), Scope 2 (purchased energy), and Scope 3 (other indirect emissions) within the defined organisational boundary.

Together, these boundaries ensure that the GHG inventory accurately represents Quad Services's operational control, material impacts, and value chain influence, while maintaining transparency and comparability across reporting years.

Table 1: *Quad Services Emission Boundaries and GHG Categories by Scope FY25*

Scope	Category	Description
Scope 1	Company Vehicles	Direct emissions from fuel combustion in vehicles owned or controlled by Quad Services, including petrol and diesel used for operational travel.
Scope 2	Purchased Electricity (Location-Based & Market-Based)	Indirect emissions from purchased electricity consumed at Quad Services' office facilities. Both location-based and market-based methods are disclosed to provide a full picture of electricity-related emissions.
Scope 3	Purchased Goods and Services	Indirect upstream emissions from the procurement of goods and services, including cleaning supplies, materials, and operational services.
Scope 3	Fuel and Energy Related Activities (not in Scope 1 or 2)	Upstream emissions from fuel and electricity production, including extraction, refining, and transmission losses.
Scope 3	Transportation and Distribution (Upstream)	Emissions from the transportation of goods and materials to Quad Services facilities via third-party logistics providers.
Scope 3	Waste in Operations	Emissions associated with general waste and recycling generated at office locations.
Scope 3	Water Consumption	Emissions from the supply and treatment of water consumed at office locations.
Scope 3	Business Travel – Flights	Emissions from staff air travel for business purposes, including short and very short-haul flights.
Scope 3	Business Travel – Accommodation	Emissions generated from hotel stays associated with business travel activities.
Scope 3	Business Travel – Land Transport	Emissions from land-based business travel, including hire cars, taxis, rideshare, and other ground transport.
Scope 3	Employee Commuting (Corporate/Office Staff)	Emissions associated with corporate/office staff travel between home and workplace, including car, bus, train, tram, taxi/rideshare, cycling, and walking (where applicable).
Scope 3	Upstream Leased Assets	Emissions associated with electricity use and base-building services in leased office spaces that are not directly controlled by Quad Services.

3.2 Emissions Overview

Table 2: *Greenhouse Gas Emissions comparison FY24 vs FY25*

Metric	FY24 (tCO_2-e)	FY25 (tCO_2-e)	Change (%)
Total Emissions	1,767.60	300.70	−82.99%
Scope 1	108.4	28.74	−73.50%
Scope 2 (Location-Based)	59	59.92	0.01%
Scope 2 (Market-Based)	0	3.64	+3.64 tCO_2-e (newly reported)
Scope 3	1,659.20	268.32	-83.83%

4. Emissions by Scope and Category

4.1 Direct Emissions (Scope 1)

Scope 1 emissions are direct GHG emissions from sources owned or controlled by Quad Services. This includes emissions from fuel combustion in company-owned vehicles, industrial processes, and fugitive emissions from equipment like air conditioning systems.

Quad Services reports 28.74 tCO_2-e of Scope 1 emissions for FY25, arising solely from fuel combustion in company-owned vehicles. These emissions include petrol and diesel consumed in Quad Services' operational fleet.

A review of other potential Scope 1 sources, such as stationary combustion, controlled fuel use, and fugitive emissions from refrigerants, confirmed that company-owned vehicles are the only material Scope 1 source within Quad Services' operational control boundary for FY25. No stationary fuels (e.g., LPG, natural gas) or controlled refrigerant losses were identified across office locations.

As Quad Services operates from a combination of leased and virtual offices, building-related emissions such as base-building refrigerants and natural gas use fall outside operational control and are therefore reported under Scope 3 where relevant. Nevertheless, it is recommended that future reporting cycles continue to monitor any potential exposure to fugitive emissions from air conditioning systems in controlled office environments to ensure continued completeness and accuracy.

4.2 Purchased Electricity (Scope 2)

Scope 2 emissions represent indirect greenhouse gas (GHG) emissions from the generation of purchased electricity, steam, heating, or cooling consumed by the organisation.
In accordance with the GHG Protocol, Scope 2 emissions are typically reported using two complementary methods:

- **Location-based**: Reflects the average emissions intensity of the electricity grid where energy consumption occurs.

- **Market-based**: Reflects emissions from electricity that the organisation has purposefully chosen or purchased through specific contractual instruments (e.g., renewable energy certificates or power purchase agreements).

Quad Services' location-based and market-based Scope 2 emissions differ in FY25 due to varying electricity procurement arrangements across office locations. NSW and QLD offices have zero market-based emissions due to renewable supply, while the VIC office reports 3.64 tCO_2-e under the market-based method. Consequently, Quad Services' electricity emissions are 3.64 tCO_2-e (market-based) and 59.92 tCO_2-e (location-based). The location-based figure provides a benchmark for what emissions would have been under the grid-average electricity mix.

This approach ensures transparency and consistency while aligning with the GHG Protocol's principle of **completeness**, even when market-based differentiation is not applicable.

***Table 3**: Summary of locations included in Scope 2 within Quad Services emission boundaries FY25*

State	Suburb	Address
NSW	Artarmon	12 Carlotta Street, Artarmon NSW 2064
VIC	Moonee Ponds	Suite 5, 117 Holmes Road, Moonee Ponds VIC 3039
QLD	Springwood	15/6–8 Vanessa Boulevard, Springwood QLD 4127

***Table 4**: Scope 2 Emissions - Location-based vs Market-based Methodologies*

Source	Emissions (tCO_2-e)	Notes
Location-based	59.92	Calculated using grid-average emissions factors for NSW, QLD, and VIC based on metered electricity consumption at each Quad Services office.
Market-based	3.64	Calculated using supplier-specific emissions factors reflecting renewable electricity procurement in NSW and QLD offices, with partial non-renewable supply in the VIC office.

Total Energy (kWh)	89,663.82 kWh	Based on metered usage across all three offices: NSW (80,662.289 kWh), QLD (4,208.972 kWh), and VIC (4,792.557 kWh).

4.3 Other Indirect Emissions (Scope 3)

Scope 3 encompasses all other indirect emissions that occur in Quad Services's value chain, both upstream and downstream. These emissions are a consequence of activities that occur from sources not owned or controlled by the company. This is the most significant portion of the carbon inventory, covering a wide range of activities from purchased goods and services to business travel and employee commuting.

Table 5: *Scope 3 Emissions by Category (Upstream and Downstream Activities)*

Category	FY25 Emissions (tCO_2-e)	Share of Total Footprint (%)
1. Purchased Goods & Services	79.01	22.13%
2. Capital Goods	0	Excluded (no relevant assets purchased)
3. Fuel & Energy-Related Activities	4.08	1.14%
4. Upstream Transportation & Distribution (Land)	27.87	7.81%
5. Waste in Operations	7.8	2.19%
5. Water Consumption (Other Upstream)	0.07	0.02%
6. Business Travel – Flights	50.6	14.17%
6. Business Travel – Land	3.01	0.84%
6. Business Travel – Accommodation	16.28	4.56%
7. Employee Commute (Corporate/Office Staff)	79.60	22.30%
8. Upstream Leased Assets	Included in Scope 2 base-building electricity (no separate category)	-
9. Other downstream categories	Excluded (not applicable to service-based operations)	-

Table 6: *Leading 15 Suppliers by Emission Category, Sector, and Percentage of Organisational Footprint*

Name	Category	Sector	Emissions (tCO2e)	% of Total
Workplace Advisory Group	Purchased Goods and Services	Restaurants and Accommodation	18.86	5.23%
Konica Minolta Business Solutions Pty Ltd	Upstream Transportation and Distribution (Land)	Energy	7.90	2.19%
Pixel Ink Sydney P/L Kwik Kopy Printing Centre Art	Purchased Goods and Services	Restaurants and Accommodation	6.49	1.80%
Gruber Gozer Pty Ltd (Laneway Promos)	Upstream Transportation and Distribution (Land)	Restaurants and Accommodation	5.68	1.58%
Andrew Rider (Barrister)	Purchased Goods and Services	Restaurants and Accommodation	5.44	1.51%
Australia Post (A/C 9623704)	Upstream Transportation and Distribution (Land)	Restaurants and Accommodation	4.75	1.32%
Dynamic Office National	Purchased Goods and Services	Restaurants and Accommodation	4.54	1.26%
Origin Energy Electricity Ltd	Fuel and Energy Related Activities	Restaurants and Accommodation	4.08	1.13%
Mail Plus Pty Ltd	Upstream Transportation and Distribution (Land)	Restaurants and Accommodation	4.03	1.12%
AGL	Company Vehicles	Restaurants and Accommodation	3.96	1.10%
Global Mark Pty Ltd	Purchased Goods and Services	Restaurants and Accommodation	3.75	1.04%
Affida (Austbrokers Ris Pty Ltd)	Purchased Goods and Services	Restaurants and Accommodation	3.70	1.03%
Brigden & Partners Services Pty Ltd	Purchased Goods and Services	Energy	3.23	0.90%
HBA Legal Sydney	Purchased Goods and Services	Restaurants and Accommodation	3.22	0.89%
Intertek Testing Services (Australia) Pty Limited	Purchased Goods and Services	Restaurants and Accommodation	3.01	0.84%

5. GHG Management and Performance

5.1 GHG Reduction Targets

Quad Services has not yet set formal emissions reduction targets. Based on the FY25 emissions profile, NetNada recommends adopting medium- and long-term targets aligned to SBTi or Net Zero frameworks. The most material reduction opportunities lie in purchased goods and services, employee commuting, business travel, and electricity consumption.

Quad Services can prioritise the following targeted actions to manage and reduce emissions:

1. Transition All Offices to Renewable Electricity (High Impact)

The NSW and QLD offices have already achieved 0 tCO_2-e (market-based) through GreenPower purchases. Transitioning the VIC office to a 100% renewable electricity supply would eliminate the remaining Scope 2 emissions.

2. Implement a Sustainable Procurement Policy (High Impact)

Purchased Goods & Services contribute 79.01 tCO_2-e, the second largest Scope 3 category. Introducing supplier sustainability criteria and preferring low-emission or certified providers can reduce upstream impacts across printing, office supplies, legal/advisory services, and other key categories.

3. Reduce Emissions from Employee Commuting (High Impact)

Employee commuting accounts for 79.60 tCO_2-e, making it the largest emissions category. Initiatives such as hybrid work arrangements, public transport incentives, carpooling programs, and support for active transport can meaningfully reduce these emissions.

4. Manage Business Travel (Moderate Impact)

Business travel, especially flights (50.60 tCO_2-e), offers a strong reduction potential through digital-first collaboration, consolidating site visits, and selecting low-impact travel options.

5. Improve Freight & Delivery Efficiency (Moderate Impact)

Upstream transportation contributes 27.87 tCO_2-e. Choosing logistics partners with low-carbon delivery programs and consolidating orders can reduce emissions in this category.

6. Strengthen Waste & Resource Efficiency (Supporting Action)

Office waste (7.80 tCO_2-e) can be reduced through improved recycling systems, procurement controls, and periodic waste auditing.

6. Data Quality and Assurance

Ensuring the accuracy, completeness, and credibility of emissions data is essential for producing a reliable greenhouse gas inventory. This section outlines the data sources, estimation methods and quality control processes applied in the preparation of Quad Services's emissions profile.

A consistent and conservative approach has been adopted to manage data gaps, improve transparency, and align with the expectations of third-party assurance providers. Particular attention has been given to the integrity of Scope 3 emissions, where data availability and quality can vary significantly across categories.

Emissions were calculated using a combination of activity-based and spend-based methodologies, selected to best align with the type and quality of data available for each emissions category.

***Table 7:** Emission Categories Across Scopes 2 and 3: Data Sources, Methodologies and Reliability*

Category	Primary Data Source	Method	Reliability	Improvements FY26
Company Vehicles (Scope 1)	Fuel spend export	Spend-based	**Medium**	Move to activity data (fuel litres) where possible via fleet logs or receipts.
Electricity (Scope 2)	Utility-meter consumption bills	Activity-based	**High**	–
Purchased Goods & Services (Scope 3)	Spend export from the finance system	Spend-based	**Medium**	Improve coding quality; exclude non-emission-relevant expenses (bank fees, donations, worker insurance, sponsorship). Seek supplier-specific emission data for top vendors.
Capital Goods (Scope 3)	Spend export	Spend-based	**Medium**	If available, use a fixed asset register to differentiate CapEx vs OpEx.
Fuel & Energy-Related Activities (Scope 3)	Calculated from electricity + fuel use	Hybrid (derived)	**High**	–
Upstream Transportation & Distribution (Scope 3)	Spend export	Spend-based	**Medium**	Engage logistics providers (Australia Post, MailPlus, etc.) for emission reporting where available.
Waste in Operations (Scope 3)	Waste contractor weights & stream	Activity-based	**High**	–

	data			
Business Travel – Flights (Scope 3)	Travel details + spend export	Hybrid (Spend + Activity)	**Medium**	Encourage travel providers to supply distance-based emission reports; capture class (economy vs business).
Business Travel – Accommodation (Scope 3)	Spend export	Spend-based	**Medium**	Collect hotel nights & location for activity-based modelling.
Employee Commute (Corporate/Office Staff)	Survey responses	Activity	**Medium**	This year's employee commute survey achieved a response rate of around 63%. Increasing participation next year would help further improve data accuracy and reduce the level of extrapolation required. Incorporating the cleaners workforce would also strengthen the completeness of the assessment.

Emission factors sources
NetNada utilises Climatiq as well as the most recent and regionally appropriate emission factors sourced from reputable databases such as the UK DEFRA, EPA and the Australian National Greenhouse Accounts.

6.1 Future Objectives for Methodological Refinement

Quad Services aims to strengthen the accuracy and reliability of its future GHG inventories. The following priority improvements have been identified for upcoming reporting cycles:

- **Expand Scope 3 Coverage**

Conduct a materiality review to assess additional upstream and downstream categories for inclusion, ensuring a more comprehensive view of Quad Services' value chain emissions.

- **Shift Key Categories to Activity-Based Data**

Where feasible, transition from spend-based to activity-based data, particularly for business travel, transport, and company vehicles. Collecting metrics such as flight distances, hotel nights, kilometres travelled, and fuel litres will improve accuracy.

- **Obtain Supplier-Specific Emission Factors**

Engage major suppliers, including logistics providers, electricity retailers, and professional service partners, to obtain primary emissions data. This will reduce reliance on industry averages and improve Scope 3 precision.

• **Improve Primary Data Quality**

Increase participation in the employee commute survey and enhance internal travel data capture. In future cycles, incorporate the cleaner workforce into the employee commute assessment to more accurately reflect operational reality and ensure a complete representation of workforce-related emissions.

These objectives will enhance data quality, reduce uncertainty, and prepare Quad Services for improved third-party assurance in future reporting cycles.

7. Uncertainty

Primary uncertainties exist in Scope 3 due to use of secondary spend-based methods. Future reports aim to improve granularity by adding supplier-level data tags and travel distance records.

In line with the principles of transparency and accuracy outlined in the GHG Protocol, this section discloses the known sources of uncertainty within the FY25 emissions inventory. Greenhouse gas accounting, particularly for complex value chains, involves a degree of estimation and reliance on assumptions. While Quad Services has strived to use the most accurate data and methodologies available, it is important for stakeholders to understand the potential limitations.

7.1 Uncertainty in Scope 3 Emissions

Scope 3 is the largest source of emissions and carries the highest degree of uncertainty, primarily due to the reliance on secondary, spend-based data and the complexities of value chain mapping.

- **Allocation of Financial Data:**

The accuracy of the spend-based calculations for categories of Purchased Goods and Services (Category 1) is dependent on the quality and clarity of the underlying financial data. The process of mapping expenditure to the correct emissions category relies on the descriptions and account names provided in the financial records. Ambiguous or generic transaction descriptions can lead to misclassification, potentially allocating emissions to an incorrect category and affecting the overall accuracy of the inventory.

- **Reliance on Industry-Average Emission Factors:**

The spend-based methodology uses Environmentally-Extended Input-Output (EEIO) factors, which are industry and regional averages. These factors represent the average emissions per dollar of spend for a broad sector (e.g., "software publishing") and do not reflect the specific environmental performance of Quad Services's individual suppliers. The actual emissions from a specific supplier could be significantly higher or lower than this industry average.

- **Completeness of Provided Data:**

The entire GHG inventory is based on financial and operational data provided by Quad Services's internal teams. It is important to note that this information has not been subject to an external financial audit or a separate assurance process to confirm its completeness for the purpose of this GHG inventory. The calculations assume that the data provided represents the full and accurate scope of the business's activities during the reporting period. Any omissions or errors in the source data would directly impact the final emissions figures.

Quad Services acknowledges these uncertainties and is committed to reducing them in future reporting cycles by improving internal data collection processes and engaging more directly with key suppliers, as outlined in section 6.1 Future Objectives for Methodological Refinement

8. Verification

This report will be subject to limited assurance. A third-party verification statement will be added following review of the final submission.

9. Appendices

Appendix A: Glossary of Terms

Activity Data: A quantitative measure of the level of activity that results in GHG emissions (e.g., litres of fuel consumed, kilowatt-hours of electricity used, tonnes of waste generated). Activity data is multiplied by an emission factor to calculate emissions.

Base Year: A specific, historical year (or an average over multiple years) against which an organisation's emissions are tracked over time. It serves as a benchmark for setting targets and measuring performance.

Biogenic Emissions: Emissions from the combustion or decomposition of biomass (e.g., CO_2 from burning wood, agricultural waste). Under the GHG Protocol, CO_2 emissions from biogenic sources are reported separately from the scopes.

Carbon Dioxide Equivalent (CO_2-e): A standard unit for measuring carbon footprints. It converts the impact of different greenhouse gases into the equivalent amount of carbon dioxide (CO_2) based on their Global Warming Potential (GWP).

Consolidation Approach: The method used to define an organisation's boundaries for GHG reporting. The GHG Protocol defines three approaches:

- **Equity Share:** A company accounts for GHG emissions from operations according to its share of equity in the operation.
- **Financial Control:** A company accounts for 100% of the GHG emissions from operations over which it has financial control.
- **Operational Control:** A company accounts for 100% of the GHG emissions from operations over which it has operational control.

Direct Emissions: See Scope 1 Emissions.

Emission Factor: A coefficient that quantifies the emissions or removals of a gas per unit of activity. For example, kg CO_2-e emitted per litre of petrol consumed.

Fugitive Emissions: Intentional or unintentional releases of GHGs from the production, processing, transmission, storage, and use of fuels and other products (e.g., leaks from refrigeration equipment or methane from coal mines).

Greenhouse Gas (GHG): A gas in the atmosphere that absorbs and emits radiation, causing the greenhouse effect and warming the planet. The six main GHGs covered by the Kyoto Protocol are carbon dioxide (CO_2), methane (CH_4), nitrous oxide (N_2O), hydrofluorocarbons (HFCs), perfluorocarbons (PFCs), and sulphur hexafluoride (SF_6).

GHG Protocol: A global standardised framework to measure and manage greenhouse gas (GHG) emissions from private and public sector operations, value chains, and mitigation actions. It provides the world's most widely used GHG accounting standards.

Global Warming Potential (GWP): A measure of how much heat a greenhouse gas traps in the atmosphere over a specific time period (typically 100 years), relative to carbon dioxide.

Indirect Emissions: Emissions that are a consequence of an organisation's activities but occur at sources owned or controlled by another company. See Scope 2 and Scope 3 Emissions.

Location-based Method: A method to quantify Scope 2 emissions based on the average emissions intensity of the electricity grids where consumption occurs.

Market-based Method: A method to quantify Scope 2 emissions based on the electricity that an organisation has purposefully chosen, often through contracts with suppliers or through energy attribute certificates like Renewable Energy Certificates (RECs).

Organisational Boundary: The boundary that determines the operations owned or controlled by the reporting company for GHG reporting purposes, defined by the chosen consolidation approach.

Operational Boundary: The boundary that categorises emissions associated with the company's operations as either direct (Scope 1) or indirect (Scope 2 and 3).

Scope 1 Emissions: Direct GHG emissions from sources that are owned or controlled by the company. This includes emissions from stationary combustion (e.g., boilers), mobile combustion (e.g., company vehicles), process emissions, and fugitive emissions.

Scope 2 Emissions: Indirect GHG emissions from the generation of purchased electricity, steam, heating, or cooling consumed by the company.

Scope 3 Emissions: All other indirect emissions (not included in Scope 2) that occur in the value chain of the reporting company, both upstream and downstream. This includes 15 distinct categories, such as purchased goods and services, business travel, employee commuting, and the use of sold products.

tCO_2-e: Metric tonnes of carbon dioxide equivalent.

Value Chain: All the upstream and downstream activities associated with the operations of the reporting company.

Verification: An independent assessment of the accuracy and completeness of a reported GHG inventory.

Appendix B: Calculations

Table 8: *Summary of Scope 2 Energy Emissions by Location FY25*

Location	Location-Based Emissions (tCO2e)	Market-Based Emissions (tCO2e)	kWh
NSW Office	53.23	0	80,662.29
QLD Office	2.98	0	4,208.97
VIC Office	3.69	3.64	4,792.56
Total	**59.92**	**3.64**	**89,663.82**

Table 9: *Detailed Breakdown of Scope 3 Emission Calculation Method FY25*

GHG Category Name	Cat	Method	Activity Unit	Activity	CO2e (t)	Method
Purchased Goods and Services	S3 C1	Spend	AUD	235,148.70	79.01	Calculation based on financial expenditure. Non-emission-relevant items excluded. Exchange rate & inflation adjustments applied. Emission factors sourced from EPA, EXIOBASE, and Climatiq.
Capital Goods	S3 C2	Spend	AUD	–	–	No qualifying capital purchases in FY25. Category excluded.
Fuel and Energy Related Activities	S3 C3	Activity	kWh	179,327.64	4.08	Transmission & distribution losses calculated using total electricity purchased. Factors from DEFRA, Australian NGA, and IEA.
Upstream Transportation and Distribution (Land)	S3 C4	Spend	AUD	82,953.64	27.87	Based on courier and logistics spend. Industry-average emission factors applied. Exchange rate & inflation adjustments included.
Waste in Operations	S3 C5	Activity	kg	12,754.80	7.8	Based on contractor-reported waste quantities. Emission factors from Australian NGA (landfill and recycling).
Water Consumption	S3 C5	Activity	kL	381.276	0.07	Calculated using water supply and wastewater treatment factors from AUS NGA.
Business Travel – Flights	S3 C6	Activity	tCO_2e (distance-derived)	50.6	50.6	Calculated using flight distances, class of travel, and radiative forcing uplift. Emission factors from DEFRA/BEIS.

Business Travel – Accommodation	S3 C6	Spend	AUD	78,439.68	16.28	Spend-based calculation reflecting average hotel emissions intensity per dollar spent. Emission factors from EPA and EXIOBASE.
Business Travel – Land Transport	S3 C6	Spend	AUD	10,444.93	3.01	Taxi/rideshare/hire car spend converted using sector emission factors. Exchange rate & inflation applied.
Employee Commute	S3 C7	Activity	km	779346.58	79.60	Based on the employee commute survey capturing mode, distance, and frequency. Results extrapolated to total FTE. Emission factors from EPA, DEFRA, and NGA.
Upstream Leased Assets	S3 C8	–	–	–	–	Electricity is already reported under Scope 2. No separate upstream leased asset emissions are applicable.
Downstream Categories	S3 C9–C15	–	–	–	–	Not applicable to Quad Services' service-based operations (no sold products).