

Greenhouse Gas Disclosure Report 2024

FY24: 1 July 2023 – 30 June 2024

Version: Final

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1. GREENHOUSE GAS EMISSIONS INVENTORY SUMMARY

Total Greenhouse gas emissions for PGG Wrightson Limited by ISO category and business activity:

Category	Business Activity	FY21 tCO ₂ -e	FY22 tCO ₂ -e	FY23 tCO ₂ -e	FY24 tCO ₂ -e
Scope 1 (Direct Emissions)					
Stationary Combustion					
	Diesel used for heating	36	29	21	35
	Natural gas used for heating	9	9	7	9
Mobile Combustion					
	Diesel used in fleet vehicles	6,984	6,487	6,604	6,477
	Petrol used in fleet vehicles	70	66	72	81
	LPG used in forklifts*	131	137	125	102
Fugitive Emissions					
	HFCs used in AC and refrigeration	212	212	212	79
Scope 2 (Indirect Emissions)					
Imported Energy					
	Electricity consumption (location based)	623	564	372	377
	Electricity consumption (market based)	623	564	204	0*
Total Direct and Indirect Emissions (location-based)		8,065	7,503	7,413	7,161
Total Direct and Indirect Emissions (market-based)		8,065	7,503	7,245	6,784*
Absolute Change from FY21 Baseline (market-based)		-	-7.0%	-10.2%	-15.9%
Emissions Intensity (tCO₂-e/\$1M NZD Revenue) (market-based)		9.51	7.88	7.42	7.41

Greenhouse gas emissions by individual greenhouse gas (location based):

Greenhouse Gas	FY21		FY22		FY23		FY24	
	tonnes	tCO ₂ -e	tonnes	tCO ₂ -e	tonnes	tCO ₂ -e	tonnes	tCO ₂ -e
Scope 1								
CO ₂	7,119	7,119	6,624	6,624	6,724	6,724	6,602	6,602
CH ₄	0.5	15	0.5	14	0.5	14	0.5	14
N ₂ O	0.4	100	0.4	93	0.4	94	0.4	93
HFCs	0.120	212	0.120	212	0.120	212	0.048	79
Subtotal		7,446		6,943		7,044		6,788
Scope 2 (location-based)								
CO ₂	607	607	549	549	362	362	36	363
CH ₄	0.6	16	0.5	15	0.4	10	0.5	13
N ₂ O	0.0	1	0.0	1	0.0	1	0.0	0
Subtotal		624		565		372		376
Total (location-based)		8,070		7,508		7,417		7,164

Global Warming Potential (GWP) based on the Intergovernmental Panel on Climate Change (IPCC) Fifth Assessment Report (AR5). CO₂ = 1, CH₄ = 28, N₂O = 265.

Scope 1 and 2 energy usage by type:

Category	Business Activity	FY21	FY22	FY23	FY24
Scope 1 (Direct Emissions)					
Stationary Combustion					
	Diesel used for heating (litres)	13,259	10,750	7,797	13,216
	Natural gas used for heating (MJ)	166,144	159,152	132,005	175,424
Mobile Combustion					
	Diesel used in fleet vehicles (litres)	2,577,280	2,393,685	2,436,833	2,416,921
	Petrol used in fleet vehicles (litres)	28,497	26,958	29,116	33,677
	LPG used in forklifts (litres)*	80,795	84,295	77,310	63,237
Fugitive Emissions					
	HFCs used in AC and refrigeration (kg)	120	120	120	48
Scope 2 (Indirect Emissions)					
Imported Energy					
	Electricity consumption (kWh)	5,191,781	4,901,209	5,017,308	5,165,067
	Renewable energy certificates (MWh)	0	0	1,296	5,165 [^]

Notes:

Table totals may not match due to variation in component emissions factors used for each table and rounding of figures.

* LPG used in forklifts has been restated for FY21. FY22 & FY23, following a change in reporting methodology that was corrected during the FY24 reporting period. The restatement resulted in a minor increase (~1%) to overall greenhouse gas emissions going back to the baseline year. More details can be found under 16 Restatements.

[^] Market-based emissions for FY24 have not been subject to external assurance.

2. INTRODUCTION

PGW recognises that climate change is a major threat to life on this planet and believe that the agricultural and horticultural sectors have an important role to improve production efficiencies and reduce greenhouse gas (GHG) emissions.

PGW knows that agriculture is one of the most vulnerable sectors to the impacts of climate change. As one of the largest and oldest agricultural and horticultural supplies businesses in New Zealand, PGW has an important role to play to influence its suppliers and to assist its customers to address sustainability.

PGW has committed to measure, report and reduce its GHG emissions. To achieve this PGW seeks to report on progress publicly and transparently. This GHG Disclosure Report details PGW's existing emissions inventory and will expand over time to capture all available sources.

3. STATEMENT OF INTENT

PGW intends to demonstrate best practice account for GHG emissions accounting. This report has been prepared following:

- The GHG Protocol Corporate Accounting and Reporting Standard (Revised Edition);
- The GHG Protocol Scope 2 Guidance; and
- ISO 14064-1:2018 Greenhouse gases – Part 1: Specification with guidance at the organisation level for quantification and reporting of greenhouse gas emissions and removals.

4. DESCRIPTION OF PGG WRIGHTSON LIMITED

PGW is a large agricultural and horticultural supplies business, operating across multiple markets in New Zealand. The company profile is broadly split into two areas – Retail & Water and Agency. The two areas are then split into seven business units as shown below. For the purposes of GHG reporting all PGW business units are reported as a consolidated inventory.

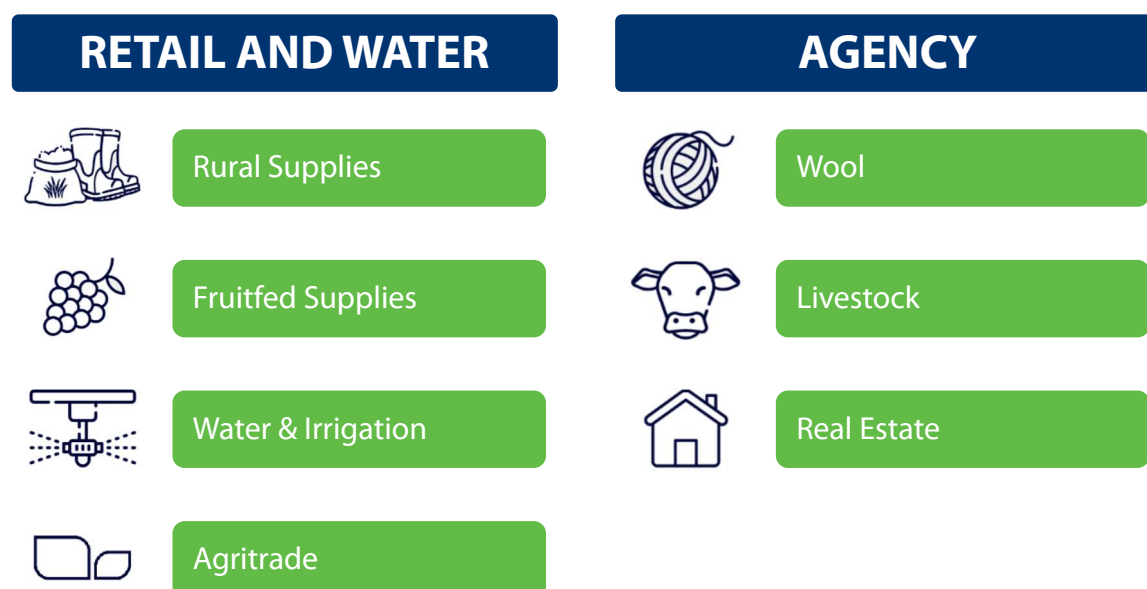


Figure 1 PGW Company Profile (July 2024)

5. SUSTAINABILITY STRATEGY AND TARGETS

PGW's Sustainability Strategy to 2030 (*Te Rautaki mō te Toitūtanga*) outlines commitments across a range of environmental, social and governance topics. In relation to its GHG inventory PGW has committed to:

- Reduce operational (scope 1 & 2) market-based GHG emissions profile by 30% by FY30 from a FY21 base.
- Improve scope 3 emissions calculation methodologies, disclosures and set targets.
- Improving energy efficiency through PGW's network of stores, offices and other premises by 20% by FY30 from a FY21 baseline; and to
- Transition the vehicle fleet to more efficient options to target an annual improvement in emissions per kilometre driven.

The publishing of this GHG Disclosure Report supports these targets by providing transparency in reporting. PGW applies a market-based methodology for determining scope 2 emissions associated with the operational (scope 1 & 2) GHG emissions reduction target.

PGW also reports on GHG emissions intensity, which PGW defines as the total tCO₂-e (market-based) per \$1M of revenue. This performance metric is specific to PGW, as the nature of activities are unique to our business profile – making external comparisons difficult.

6. PERSONS RESPONSIBLE

The preparation and disclosure of this GHG inventory is ultimately the responsibility of the Board of Directors. The person responsible for compiling this GHG inventory is Michael Anderson, Sustainability Manager.

In addition, GHG reporting requires data collection and supporting information. The following team members have contributed to substantive elements of this inventory:

- Brian Harrison, Group Financial Controller
- Amanda Dick, Group Investment and Media Relations Analyst
- Robert Janssen, Corporate Operations Manager
- Mike Lavender, Procurement Manager
- Megan McCulloch, Procurement Specialist
- Doug Cartridge, National Property Manager
- Tracey Beavan, National Property Lease and Facility Manager

7. REPORTING PERIOD

This GHG inventory covers the following reporting period:

- 1 July 2023 – 30 June 2024 (FY24)

8. INVENTORY BOUNDARY

This current GHG Disclosure report is currently limited to only scope 1 & 2 emissions. Future reports will expand to cover scope 3 emissions.

9. ORGANISATIONAL BOUNDARY

Subsidiaries and Joint Ventures

PGG Wrightson Limited is a New Zealand Limited Company registered with the New Zealand Companies Office (company number 142962). PGW has its registered office at 1 Robin Mann Place, Christchurch Airport, Christchurch 8053.

All registered subsidiaries (NZ Companies Register) are shown below and group ownership is 100% unless otherwise indicated. For the purposes of GHG emissions reporting all subsidiaries are included in reporting and PGW does not operate any joint ventures.

PGG Wrightson Limited	Bidr Limited
	Bloch & Behrens Wool (NZ) Limited
	NZ Agritrade Limited
	PGG Wrightson Employee Benefits Plan Trustee Limited
	PGG Wrightson Trustee Limited
	PGG Wrightson Investments Limited
	PGG Wrightson Real Estate Limited

Figure 2 PGW List of Registered Subsidiaries (August 2024)

Saleyard Operations

Saleyards are often owned by multiple parties for cost sharing, risk mitigation, industry co-operation, expertise, networking, regional considerations, governance and decision-making reasons. PGW keeps a list of all saleyard sites where PGW operates, accompanied with an operational control assessment.

10. OPERATIONAL BOUNDARY

PGW accounts for 100 percent of the GHG emissions under its control. For the purposes of assessing this control, PGW applies the operational control assessment criteria.

Operational Control – A company has operational control over an operation if it has the full authority to introduce and implement its operating policies at the operation. It is expected that except in very rare circumstances, if the company or one of its subsidiaries is the operator of a facility, it will have the full authority to introduce and implement its operating policies and thus has operational control. Under the operational control approach, a company accounts for 100% of emissions from operations over which it or one of its subsidiaries has operational control.

- The GHG Protocol, World Business Council for Sustainable Development & World Resources Institute, 1998.

Operational control is assessed across all locations where PGW operates to determine whether a facilities' emissions should be included or excluded from GHG reporting. As above, these assessments are based on PGW's ability to introduce and implement operational, health and safety and environmental policies at each location. Operational control assessments for all PGW locations are held internally.

11. EMISSIONS SOURCE INCLUSIONS

The following table details the emissions sources included in PGW's GHG Inventory:

Category	Subcategory	GHG Emissions Source
Company Vehicles	Fleet diesel	Diesel used within the PGW fleet of vehicles
	Fleet petrol	Petrol used within the PGW fleet of vehicles
	Forklift LPG	LPG used in PGW forklifts within properties under PGW operational control
Company Facilities	Stationary natural gas	Natural gas used for heating in properties under PGW operational control
	Stationary diesel	Diesel used for heating in properties under PGW operational control
	Fugitive emissions from air conditioning systems	HFC replacement quantities from leakage in air conditioning systems in properties under PGW operational control
	Fugitive emissions from refrigeration systems	HFC replacement quantities from leakage in refrigeration systems in properties under PGW operational control
Purchased Energy	Electricity consumption	Electricity used in properties under PGW operational control

12. EMISSIONS SOURCE EXCLUSIONS

The following table details the emissions sources excluded in PGW's GHG Inventory:

Category	Subcategory	GHG Emissions Source
Company Facilities	Stationary firewood	Firewood used for heating in properties under PGW operational control

Stationary firewood use is excluded from the GHG Inventory as the data is not available due to the use of unconventional suppliers. An estimation of the size of this source has been undertaken based on the number of working appliances across the business – the source is considered immaterial and has been excluded based on de minimis principles.

PGW currently excludes all scope 3 sources from GHG reporting, these are intended to be included in future reporting.

13. DATA COLLECTION AND SOURCES

Data is sourced directly from suppliers to PGW where activity-based data is available. Alternatively, qualified estimates may be used where activity data is not available – these are outlined below. Data quality is self-assessed based on the sources available.

Data Quality

PGW uses a matrix to qualitatively self-assess the level of data quality associated with each source:

High	Medium-High	Medium	Low-Medium	Low
Data expected to be over 99% complete with very little inaccuracy expected	Data expected to be over 95% complete (or higher) with little inaccuracy expected	Data expected to be 90% complete (or higher) with only minor inaccuracy expected	Data expected to be 80% complete (or higher) with some inaccuracy expected	Data expected to be below 80% complete and inaccuracy expected

Additional notes to include if the data includes estimates, non-standard data manipulation or if interpolation or extrapolation methods are used.

Data Sources and Availability

Category	Subcategory	GHG Emissions Source	Data Source	Data Quality	Data Availability
					FY24
Scope 1 – Direct Emissions					
Company Vehicles	Fleet diesel	Diesel fuel used within the PGW fleet of vehicles	Records from suppliers of volumes purchased via fuel cards	High – A very low level of data leakage expected from those not using fuel cards	✓
	Fleet petrol	Petrol used within the PGW fleet of vehicles	Records from suppliers of volumes purchased via fuel cards	High – A very low level of data leakage expected from those not using fuel cards	✓
	Forklift LPG	Fuel used in PGW forklifts within properties under PGW operational control	Records from suppliers of volumes purchased via fuel cards	Medium-High – A low level of data leakage expected through staff using corporate cards for store expenses (discouraged for fuel purchases)	✓
Company Facilities	Stationary natural gas	Fuel used for heating in properties under PGW operational control	Records from suppliers of volumes consumed	High – No data leakage expected as there are only a small number of sites with natural gas supply	✓
	Stationary diesel	Diesel fuel used for heating in properties under PGW operational control	Records from suppliers of volumes purchased	High – Records supplied by a single retailer for a single PGW site	✓
	Firewood	Firewood used for heating in fireplaces under PGW operational control	Records from suppliers of volumes purchased	Low – No records available due to unconventional supplier sources	*
	Fugitive emissions from air conditioning systems	Leakage and replacement quantities	Record from suppliers of ‘top-up’ amounts	Medium-High – Data collected from multiple subcontractors	✓
	Fugitive emissions from refrigeration systems	Leakage and replacement quantities	Record from suppliers of ‘top-up’ amounts	Medium-High – Data collected from multiple subcontractors	✓
Scope 2 – Indirect Emissions					
Purchased Energy	Electricity consumption	Electricity used in properties under PGW operational control	Records from electricity suppliers	High – Supplier provide a summary of the consumption used by each ICP	✓

* Firewood excluded, refer to Emissions Source Exclusions. ** Fugitive emissions estimated for FY21 & FY22, refer to Estimated Data.

PGW aims to improve the quality of GHG emissions inventory data where available or practical. PGW actively appoints preferred suppliers for most service providers and enforces compliance across the business – these activities promote cost efficiencies through negotiated pricing and reduces data leakage for reporting purposes.

Estimated Data

Activity data that is obtained directly from suppliers is the preferred source of information for GHG emissions calculations. Supplier sourced information provides the highest level of integrity and reduces re-calculation and a transcription errors. When data is not available from suppliers an estimation may be used. No estimated data was used in FY24.

Estimated data was used in FY21, FY22 & FY23 to calculate missing data for LPG use where no data is available (refer: 16. Restatements). This estimate was limited to a single supplier of LPG for PGW. In estimating the missing data, FY24 data was used to substitute previous years as well as a typical heating profile for one site that used LPG for heating – this assumption was applied as there was no material change to operations at these sites from FY21 to FY24. The total size of this estimation was less than 1% of the total GHG emissions recorded in tCO₂-e for PGW across all three reporting periods.

Emissions Factors

Available emissions factors are sourced from the most recently available New Zealand publication of national greenhouse emissions factors – Ministry for the Environment. 2024. *Measuring emissions: A guide for organisations: 2024 detailed guide*. Wellington: Ministry for the Environment.

In FY24, one external emissions factor was sourced for a commercial zeotropic refrigerant blend that was used to top-up refrigerant in a PGW freezer. The specific refrigerant was R452A, which developed by Honeywell and Chemours as a lower GWP refrigerant replacement. The GWP for R452A was sourced directly from the Honeywell Refrigerants database, where the GWP (AR5) is listed as 1,945.

Reference: Honeywell. (2024, September 3). Solstice® 452A (R-452A) | European Refrigerants.
<https://www.honeywell-refrigerants.com/europe/product/solstice-452a/>

PGW utilises both location-based and market-based emissions reporting for scope 2 emissions. Location-based emissions are calculated using the underlying electricity consumption data multiplied by the grid emissions factor for the location, regardless of contract. Whereas market-based emissions are calculated using the underlying electricity consumption data multiplied by contract emissions factors, typically associated with renewable energy supply agreements.

Renewable Energy Certificates

PGW utilised a market-based emissions factor for scope 2 emissions reporting – reporting zero (0) tonnes of CO₂-e associated with all electricity consumption in FY24. PGW purchases Meridian's Certified Renewable Energy product and are backed by appropriate evidence and New Zealand Energy Certificate System (NZECS) statements of position.

The NZECS enables a certificate to be issued against one megawatt-hour (MWh) of electricity generated, capturing the characteristic attributes of generation and enabling these attributes to be traded and redeemed against the electrical consumption of an Energy User.

Certificates equivalent to 100% of the volume of PGW's annual electricity consumption for all installation control points (ICPs) were redeemed. In FY24 the applicable production device that generated the certificates was Benmore Hydro Electric Power Station (BEN2202) which was commissioned in 1965.

Information Management

An internal PGW GHG Reporting Basis of Preparation document was created in 2024 and is reviewed annually. The PGW GHG Reporting Basis of Preparation document defines the data reporting processes used to collate the information for the emissions inventory. Data is collected from suppliers and collated by PGW to be used for all external reporting purposes.

14. UNCERTAINTY

There is always a level of uncertainty in calculating and preparing a GHG inventory. Uncertainty can be introduced through the business operations, the source data, the supplier information or emissions factors used. PGW take a precautionary approach to the calculation of GHG emissions, ensuring emissions calculations are conservative and tend to lead to an overestimation of emissions, rather than an underestimation.

Data quality self-assessments are included in under Data Collection and Sources. Uncertainty associated with each individual emissions factor is published by the Ministry for the Environment (New Zealand Government) in Measuring emissions: A guide for organisations: 2024 detailed guide.

15. BASE YEAR

The base year is FY21 (1 July 2020 – 30 June 2021). This is the most recent year for which PGW has complete data. The base year is the year for which PGW will record progress against targets.

PGW will recalculate the base year if any of the following qualitative significance thresholds apply:

- If emission factors change materially and were applicable to the base year (for example if the science behind a factor changed)
- If PGW bought or sold a business that has a material impact on its profile,
- If PGW materially changed the scope of what is measured in the value chain, or
- If any errors or a number of cumulative errors are uncovered that would alter the emissions profile materially.

The base year has been recalculated once based on an error that was uncovered in FY24, the details of this recalculation are listed under 16. Restatements.

Original Base Year Emissions	7,980 tCO ₂ -e
Recalculated Base Year Emissions	8,065 tCO ₂ -e
Change in Base Year Emissions	+1.1% (+85 tCO ₂ -e)

16. RESTATEMENTS

PGW have restated the GHG emissions associated with LPG used in forklifts for the FY21, FY22 and FY23 reporting years. The restatement has occurred following the identification of two issues with the inventory compilation during FY24 reporting processes:

- An additional supplier of LPG to the business was discovered and it was determined that the quantity of LPG supplied by this supplier was material to the inventory category.
- An inconsistency was noted in the calculation methodology where a density conversion did not take place, as LPG is primarily reported in kilograms, but when used as a transport fuel this primary unit needs to be converted to litres.

The impact of these restatements has resulted in approximately a 1% increase to the overall GHG emissions inventory for PGW applied across FY21, FY22 and FY23 reporting years. It is intended that this restated information will be reported consistently from the FY24 reporting year onwards.

17. GREENHOUSE GAS REDUCTIONS

PGW implemented GHG reduction initiatives to address the inventory listed in this report. These initiatives have been focused to address the material contributing sources of GHG emissions.

As fleet emissions comprise the single largest source of emissions within its operational (scope 1&2) profile, PGW has implemented a range of changes to the vehicle fleet in FY23:

- Permanent inclusion of a hybrid options (2 out of 3) within the vehicle offerings.
- Mandatory improvement in emissions per kilometre (intensity) for any change to the vehicle options during the refresh of the fleet options.
- Tighter vehicle selection criteria to ensure the provided vehicles better match the roles of staff.

To address energy consumption across the building portfolio, PGW has undertaken the following actions:

- **LED Lighting Upgrades:** Through a strategic, multi-year approach to upgrading lighting across the building portfolio PGW has seen significant reductions in electricity consumption. PGW has invested in over 70 LED lighting projects since 2017 realising over 800,000kWh of electricity savings per year. In FY24 a further 16 LED lighting upgrade projects delivered under PGW's energy efficiency investment funding and capital upgrade program.
- **Renewable Energy Purchasing:** PGW began purchasing Meridian Energy's Certified Renewable Energy product from April 2023 onwards, supporting the development of renewable energy in New Zealand and demonstrating its commitment to taking climate action. This purchase allows PGW to report zero emissions from electricity using a market-based approach to GHG emissions.

18. GHG PROTOCOL AND ISO 14064-1:2018

This GHG inventory report for FY21, FY22 and FY23 has been prepared following the GHG Protocol Corporate Accounting and Reporting Standard (Revised Edition), GHG Protocol Scope 2 Guidance and ISO 14064-1. A reporting index is provided in Appendix 1 - Reporting Index.

19. ASSURANCE OF THE GREENHOUSE GAS INVENTORY

Ernst & Young Limited issued an unqualified limited assurance opinion over the Scope 1 and Scope 2 (location-based) GHG emissions inventory for the year ended 30 June 2024. PGW's Scope 2 (market-based) GHG emissions for the year ended 30 June 2024 have not been assured.

See Appendix 4 – External Assurance Statement.

20. APPENDIX 1 - REPORTING INDEX

The GHG Protocol: A Corporate Accounting and Reporting Standard – Revised Edition.

The following table details the relevant components for reporting purposes to ensure reporting is in accordance with the GHG Protocol Corporate Accounting and Reporting Standard (Revised Edition):

GHG Protocol Standards	Reference
Chapter 1 GHG Account and Reporting Principles	Appendix 2 – Reporting Principles
Chapter 3 Setting Organisational Boundaries	9. Organisational Boundary 10. Operational Boundary
Chapter 4 Setting Operational Boundaries	8. Inventory Boundary
Chapter 5 Tracking Emissions Over Time	7. Reporting Period 15. Base Year
Chapter 9 Reporting GHG Emissions	1. Greenhouse Gas Emissions Inventory Summary 7. Reporting Period 8. Inventory Boundary 9. Organisational Boundary 10. Operational Boundary 15. Base Year

Scope 2 emissions reporting, including both location-based and market-based methods have been prepared in accordance with the requirements and best practices outlined in the GHG Protocol Scope 2 Guidance.

ISO 14064-1:2018 Greenhouse gases – Part 1: Specification with guidance at the organisation level for quantification and reporting of greenhouse gas emissions and removals.

The following table details the ‘required information’ for a GHG report as listed under ISO 14064-1:2018.

ISO 14064-1:2018 Greenhouse gases	Reference
9.3.1(a) description of the reporting organization	4. Description of PGG Wrightson Limited
9.3.1(b) person or entity responsible for the report	6. Persons Responsible
9.3.1(c) reporting period covered	7. Reporting Period
9.3.1(d) documentation of organizational boundaries	9. Organisational Boundary
9.3.1(e) documentation of reporting boundaries, including criteria determined by the organization to define significant emissions	8. Inventory Boundary
9.3.1(f) direct GHG emissions, quantified separately for CO ₂ , CH ₄ , N ₂ O, NF ₃ , SF ₆ and other appropriate GHG groups (HFCs, PFCs, etc.) in tonnes of CO ₂ e	1. Greenhouse Gas Emissions Inventory Summary
9.3.1(g) a description of how biogenic CO ₂ emissions and removals are treated in the GHG inventory and the relevant biogenic CO ₂ emissions and removals quantified separately in tonnes of CO ₂ e	Not applicable
9.3.1(h) if quantified, direct GHG removals, in tonnes of CO ₂ e	17. Greenhouse Gas Reductions
9.3.1(i) explanation of the exclusion of any significant GHG sources or sinks from the quantification	12. Emissions Source Exclusions
9.3.1(j) quantified indirect GHG emissions separated by category in tonnes of CO ₂ e	1. Greenhouse Gas Emissions Inventory Summary
9.3.1(k) the historical base year selected and the base-year GHG inventory	1. Greenhouse Gas Emissions Inventory Summary 15. Base Year
9.3.1(l) explanation of any change to the base year or other historical GHG data or categorization and any recalculation of the base year or other historical GHG inventory, and documentation of any limitations to comparability resulting from such recalculation	15. Base Year

9.3.1(m) reference to, or description of, quantification approaches, including reasons for their selection	13. Data Collection and Sources
9.3.1(n) explanation of any change to quantification approaches previously used	13. Data Collection and Sources
9.3.1(o) reference to, or documentation of, GHG emission or removal factors used	13. Data Collection and Sources
9.3.1(p) description of the impact of uncertainties on the accuracy of the GHG emissions and removals data per category	14. Uncertainty
9.3.1(q) uncertainty assessment description and results	14. Uncertainty
9.3.1(r) a statement that the GHG report has been prepared in accordance with this document	18. GHG Protocol and ISO 14064-1:2018
9.3.1(s) a disclosure describing whether the GHG inventory, report or statement has been verified, including the type of verification and level of assurance achieved	19. Assurance of the Greenhouse Gas Inventory
9.3.1(t) the GWP values used in the calculation, as well as their source. If the GWP values are not taken from the latest IPCC report, include the emissions factors or the database reference used in the calculation, as well as their source	13. Data Collection and Sources

21. APPENDIX 2 - REPORTING PRINCIPLES

The following reporting principles underpin all aspects of PGW GHG accounting and reporting, ensuring that the GHG inventory is a true and fair representation of the company's GHG emissions. The following reporting principles are defined by both the:

- GHG Protocol Corporate Accounting and Reporting Standard Revised Edition; and
- ISO 14064-1:2018 Greenhouse gases – Part 1: Specification with guidance at the organisation level for quantification and reporting of greenhouse gas emissions and removals.

Principle	Description
Relevance	PGW GHG reporting contains information that all stakeholders need for decision making, the inventory boundary reflects the substance and economic reality of PGW's business relationships. PGW has considered the organisational structures (control, ownerships, legal agreements and joint ventures), operational boundaries (on-site and off-site activities, processes, services and impacts) and business context (the nature of activities, geographic location, industry sectors, purposes and users of information)
Completeness	PGW has included all relevant emissions sources within the inventory boundary so that a comprehensive and meaningful inventory is compiled. Materiality specifications have been applied with appropriate thresholds, including transparent estimates and justifications.
Consistency	PGW intends to track GHG emissions over time and aims to apply a consistent application of accounting approaches, inventory boundaries and calculation methodologies. GHG emissions data is compiled in a manner that ensures that aggregate information is internally consistent and comparable over time. Any changes to this will be transparently documented and justified.
Transparency	PGW is transparent with the processes, procedures, assumptions and limitations of the GHG inventory in a way that is clear, factual, neutral and understandable. A full audit trail of information will be kept for internal review and external verification to attest to its credibility. Specific exclusions or inclusions need to be clearly identified and justified, assumptions disclosed, and appropriate references provided for the methodologies applied and the data sources used.
Accuracy	PGW data is sufficiently precise to enable intended users to make decisions with reasonable assurance that the information is credible. GHG measurements estimates and calculations are accurate as far as can be judged and uncertainties are reduced as far as practicable.

Legislative Context

On 14 December 2022 the External Reporting Board (XRB) issued the Aotearoa New Zealand Climate Standard 1 – Climate-related Disclosures (NZ CS 1) under section 12(aa) of the *Financial Reporting Act 2013*. NZ CS 1 outlines a range of climate-related disclosures for organisations and applies for reporting periods begin after 1 January 2023. For PGW this will apply for the FY24 reporting period (1 July 2023 – 30 June 2024) onwards.

22. APPENDIX 3 - EMISSIONS SCOPES

PGW follows the methodologies and guidelines of the GHG Protocol for the definitions of scopes for accounting and reporting purposes:

Scope 1: Direct Emissions

Scope 1 emissions occur from sources that are owned or controlled by the company, for example, emissions from combustion in owned or controlled boilers, furnaces, vehicles and emissions from chemical production in owned or controlled process equipment.

Scope 2: Indirect Emissions (Purchased Energy)

Scope 2 accounts for GHG emissions from the generation of purchased electricity, steam, heat or cooling consumed by the company. Purchased energy is defined as energy that is purchased or otherwise brought into the organisational boundary of the company. Scope 2 emissions physically occur at the facility where energy is generated.

Scope 3: Indirect Emissions (Value Chain)

Scope 3 accounts for all other indirect emissions from an organisation's value chain. Scope 3 emissions are a consequence of the activities of the company and occur from sources not owned or controlled by the company. Some examples of scope 3 activities are extraction and production of purchased materials; transportation of purchased fuels; and use of sold products and services.

23. APPENDIX 4 – EXTERNAL ASSURANCE STATEMENT



Independent Limited Assurance Report to the Directors of PGG Wrightson Limited ("PGW")

Assurance Conclusion

Based on our limited assurance procedures performed and the evidence we have obtained, nothing has come to our attention that causes us to believe that PGW's Greenhouse Gas ("GHG") Disclosure Report 2024, other than those elements related to Scope 2 (market based) metrics and related explanatory information, for the year ended 30 June 2024 has not been prepared, in all material respects, in accordance with the Criteria defined below.

Scope

Ernst & Young Limited ("EY") has undertaken a limited assurance engagement, as defined by International Standards on Assurance Engagements, to report on PGW's Greenhouse Gas Disclosure Report 2024 (the "Report") for the year ended 30 June 2024. Our assurance included all of the Report other than those elements related to Scope 2 (market based) metrics and explanatory information related to these metrics. The parts of the Report subject to our assurance are referred to hereafter as the "Subject Matter".

We have not performed any procedures in relation to Scope 2 (market based) metrics and related explanatory information and, therefore, no conclusion in relation to these is expressed.

Criteria applied by PGW

In preparing the Report, PGW applied the Greenhouse Gas Protocol: A Corporate Accounting and Reporting Standard (revised version) (2004) and the GHG Protocol Scope 2 Guidance, (together the "Criteria").

The methods, estimates and emissions factors adopted by PGW in applying the Criteria are described on pages 9 to 13 of the Report.

PGW's Responsibility

The Directors are responsible, on behalf of PGW, for selecting the Criteria and preparation of the Report in accordance with the Criteria. This responsibility includes establishing and maintaining internal controls, maintaining adequate records and making estimates that are relevant to the preparation of the Report, such that it is free from material misstatement, whether due to fraud or error.

EY's Responsibility

Our responsibility is to express a limited assurance conclusion on the Subject Matter based on the procedures we have performed and the evidence we have obtained.

Our engagement was conducted in accordance with the *International Standard for Assurance Engagements (New Zealand): Assurance Engagements Other than Audits or Reviews of Historical Financial Information* ('ISAE (NZ) 3000') and *International Standard for Assurance Engagements (New Zealand): Assurance Engagements on Greenhouse Gas Statements* ('ISAE (NZ) 3410'). Those standards require that we plan and perform this engagement to obtain limited assurance about whether the Subject Matter has been prepared, in all material respects, in accordance with the Criteria. The nature, timing, and extent of the procedures selected depend on our judgment, including an assessment of the risk of material misstatement, whether due to fraud or error.

We believe that the evidence obtained is sufficient and appropriate to provide a basis for our limited assurance conclusion.

Ernst & Young provides financial statement audit, gap analysis on climate reporting disclosures and research and development taxation incentive services to PGW. Partners and employees of our firm may deal with PGW on normal terms within the ordinary course of trading activities of the business of PGW. We have no other relationship with, or interest in, PGW or any of its subsidiaries.

Our Independence and Quality Management

We have complied with the independence and other ethical requirements of Professional and Ethical Standard 1 *International Code of Ethics for Assurance Practitioners (including International Independence Standards)* (New Zealand) issued by the New Zealand Auditing and Assurance Standards Board, which is founded on fundamental principles of integrity, objectivity, professional competence and due care, confidentiality and professional behaviour.

The firm applies Professional and Ethical Standard 3 *Quality Management for Firms that Perform Audits or Reviews of Financial Statements, or Other Assurance or Related Services Engagements*, which requires the firm to design, implement and operate

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a system of quality management including policies or procedures regarding compliance with ethical requirements, professional standards and applicable legal and regulatory requirements.

Description of procedures performed

Procedures performed in a limited assurance engagement vary in nature and timing from, and are less in extent than, a reasonable assurance engagement. Consequently, the level of assurance obtained in a limited assurance engagement is substantially lower than the assurance that would have been obtained had a reasonable assurance engagement been performed. Our procedures were designed to obtain a limited level of assurance on which to base our conclusion and do not provide all the evidence that would be required to provide a reasonable level of assurance.

Although we considered the effectiveness of management's internal controls when determining the nature and extent of our procedures, our assurance engagement was not designed to provide assurance on internal controls. Our procedures did not include testing controls or performing procedures relating to checking aggregation or calculation of data within IT systems.

A limited assurance engagement consists of making enquiries, primarily of persons responsible for preparing the report and related information and applying analytical and other relevant procedures.

Our procedures included:

- Conducting interviews with personnel to understand the business and relevant reporting process.
- Considering the application of emissions factors and methodologies against the Criteria.
- Considering organisational and operational boundaries to assess completeness of greenhouse gas emissions sources.
- Comparing year on year activity-based greenhouse gas and energy data.
- Considering sources of GHG emissions and the measurement methodology.
- Limited sample testing of calculation and aggregation.
- Reviewing the appropriateness of the presentation of disclosures.
- Obtaining management representation.

We also performed such other procedures as we considered necessary in the circumstances.

Inherent Uncertainties

The GHG quantification process is subject to scientific uncertainty, which arises because of incomplete scientific knowledge about the

measurement of GHGs. Additionally, GHG procedures are subject to estimation uncertainty resulting from the measurement and calculation processes used to quantify emissions within the bounds of existing scientific knowledge.

Use of our Assurance Report

We disclaim any assumption of responsibility for any reliance on this assurance report to any persons other than the Directors of PGW, or for any purpose other than that for which it was prepared.

Ernst & Young Limited
Auckland
13 September 2024

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