

Greenhouse Gas Disclosure Report

FY21: 1 July 2020 – 30 June 2021

FY22: 1 July 2021 – 30 June 2022

FY23: 1 July 2022 – 30 June 2023

Version: V1.0 Final

Document Owner: Michael Anderson, Sustainability Manager

Date of Last Review: 7 September 2023

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1. GREENHOUSE GAS EMISSIONS INVENTORY SUMMARY

Total greenhouse gas emissions for PGG Wrightson Limited by scope:

Greenhouse Gas Emissions	FY21 tCO ₂ -e	FY22 tCO ₂ -e	FY23 tCO ₂ -e
Scope 1	7,357	6,852	6,959
Scope 2 (market based)	623	564	204
Total Group Emissions (market based)	7,980	7,416	7,162

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

ISO Category	Business Activity	FY21 tCO ₂ -e	FY22 tCO ₂ -e	FY23 tCO ₂ -e
Direct Emissions				
Stationary Combustion				
	Diesel used for heating	36	29	21
	Natural gas used for heating	9	9	7
Mobile Combustion				
	Diesel used in fleet vehicles	6,984	6,487	6,604
	Petrol used in fleet vehicles	70	66	72
	LPG used in forklifts	46	49	43
Fugitive Emissions				
	HFCs used in AC and refrigeration	212	212	212
Indirect Emissions				
Imported Energy				
	Electricity Consumption (location based)	623	564	372
	Electricity Consumption (market based)	623	564	204
Total Direct and Indirect Emissions (market based)		7,980	7,416	7,162

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

Greenhouse Gas	FY21 tCO ₂ -e	FY22 tCO ₂ -e	FY23 tCO ₂ -e
Scope 1			
CO ₂	7,037	6,539	6,645
CH ₄	13	12	12
N ₂ O	100	93	94
HFCs	212	212	212
Subtotal	7,362	6,856	6,963
Scope 2 (location based)			
CO ₂	607	549	362
CH ₄	16	15	10
N ₂ O	1	1	1
Subtotal	624	565	372
Total (location based)	7,986	7,421	7,335

* Table totals may not match due to variation in emissions factors used for each table and rounding

2. INTRODUCTION

PGG Wrightson Limited (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; 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.

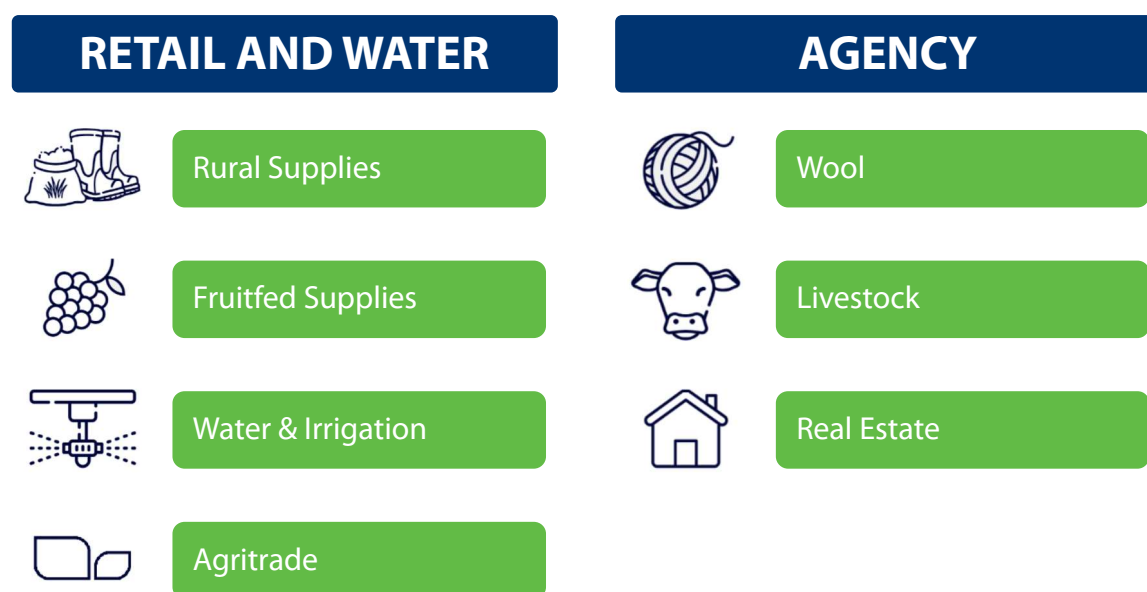


Figure 1 PGW Company Profile (August 2023)

5. SUSTAINABILITY STRATEGY

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 carbon emissions (scope 1 & 2) by 30% by FY30 from a FY21 base.
- Improve scope 3 emissions calculation methodologies, disclosures and set targets.

To support these commitments, PGW has set additional targets around:

- 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.

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 periods:

- 1 July 2020 – 30 June 2021 (FY21)
- 1 July 2021 – 30 June 2022 (FY22)
- 1 July 2022 – 30 June 2023 (FY23)

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 2023)

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 the following matrix to self-assess and score 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		
					FY21	FY22	FY23
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.

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. The following data contained a period for which it was not available:

- Fugitive emissions from air conditioning systems for FY21 and FY22.
- Fugitive emissions from refrigeration systems for FY21 and FY22.

To provide a complete picture of PGW's emissions profile, it was determined that the best method to estimate of this unavailable data was to use the actual data captured in FY23 (refrigerant top-up quantities). FY23 data was used in place of both the FY21 and FY22 years. PGW is confident that the data captured in FY23 would be representative of FY21 and FY22 as there has been no material change to the number of air conditioning systems, HVAC equipment, fridges or freezers during this period. All other data sources were available for FY21, FY22 and FY23.

Emissions Factors

Emissions factors are sourced from the most recently available New Zealand publication of national greenhouse emissions factors – Ministry for the Environment. 2023. *Measuring emissions: A guide for organisations: 2023 detailed guide*. Wellington: Ministry for the Environment.

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 contracts. Whereas market-based emissions are calculated using the underlying electricity consumption data multiplied by contract emissions factors, typically associated with renewable energy supply agreements.

For PGW, market-based emissions factors (zero emissions renewable electricity) are associated with the purchase of Meridian's Certified Renewable Energy product and are backed by appropriate evidence and New Zealand Energy Certificate System statements of position. In FY23, zero emissions renewable energy was purchased from April 2023 to June 2023. For the months where this produce was not purchased, a market-based emissions calculation was used that utilised monthly residual emissions factors. Monthly residual emissions factors are published by the New Zealand Energy Certificate System within Attributes of Residual Supply datasets.

Totals within tables may not always match due to rounding or difference between market-based and location-based calculations, which are clearly labelled.

Information Management

An internal PGW GHG Reporting Basis of Preparation document was drafted in 2023 and is to be 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: 2023 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 applied:

- If emission factors changed substantially and were relevant to prior years (for example if the science behind a factor changed)
- If PGW bought or sold a business that has a material impact on its profile, or
- If PGW significantly changed the scope of what is measured in the value chain.

16. 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 option 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 40 LED lighting projects since 2017 realising approximately 600,000kWh of electricity savings per year. In FY23 a further five LED lighting upgrade projects were approved under PGW's energy efficiency investment criteria.
- **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.

17. GHG PROTOCOL AND ISO 14064-1:2018

This GHG inventory report for FY21, FY22 and FY23 has been prepared following the GHG Protocol and ISO 14064-1. A reporting index is provided in Appendix 1 - Reporting Index.

18. ASSURANCE OF THE GREENHOUSE GAS INVENTORY

Ernst & Young Limited issued an unqualified limited assurance opinion over the GHG emissions inventories for the years ended 30 June 2021, 30 June 2022 and 30 June 2023 (the "Subject Matter"), as disclosed in the this GHG Disclosure Report.

See Appendix 4 – External Assurance Statement.

19. 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 Standard:

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

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	16. Greenhouse Gas Removals and 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	15. Uncertainty
9.3.1(r) a statement that the GHG report has been prepared in accordance with this document	17. Compliance with the 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	18. 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

20. 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).

21. 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.

22. APPENDIX 4 – EXTERNAL ASSURANCE STATEMENT



Independent Limited Assurance Report to the Management and Directors of PGG Wrightson Limited

Assurance Conclusion

Based on the procedures we have performed and the evidence we have obtained, nothing has come to our attention that causes us to believe the greenhouse gas emissions inventories including scope 1 and scope 2 emissions for the year ended 30 June 2021, 30 June 2022, and 30 June 2023, disclosed in the PGG *Greenhouse Gas Disclosure Report FY21, FY22, FY23* has not been prepared, in all material respects, in accordance with the Criteria defined below.

Scope

We have been engaged by PGG Wrightson Limited ("PGW") to perform a 'limited assurance engagement,' as defined by International Standards on Assurance Engagements, here after referred to as the "engagement", to report on the greenhouse gas ("GHG") statements of PGW as of 7 September 2023, for the years ending 30 June 2021, 30 June 2022, and 30 June 2023, comprising the scope 1 and scope 2 GHG emissions inventory (the "Subject Matter") included in the PGG *Greenhouse Gas Disclosure Report FY21, FY22, FY23* (the "Report").

Criteria applied by PGW

In preparing scope 1 and scope 2 GHG emissions inventories for the years ending 30 June 2021, 30 June 2022, and 30 June 2023, PGW applied the Greenhouse Gas Protocol: A Corporate Accounting and Reporting Standard ("the Criteria"). The Criteria is publicly available and can be accessed through the Greenhouse Gas Protocol website. Where appropriate, emissions factors from the New Zealand Ministry for the Environment, Measuring Emissions: A Guide for Organisations (2023) ("MfE") were applied. The NZECS Residual Supply Mix has been applied to FY23 Scope 2 market-based reporting.

PGW's responsibilities

PGW management ("management") is responsible for selecting the Criteria, and for presenting scope 1 and scope 2 GHG emissions inventory for the year ending 30 June 2021, 30 June 2022, and 30 June 2023 in accordance with that Criteria, in all material respects. This responsibility includes establishing and maintaining internal controls, maintaining adequate records and making estimates that are relevant to the preparation of the GHG Report, such that it is free from material misstatement, whether due to fraud or error.

EY's responsibilities

Our responsibility is to express a conclusion on the presentation of the Subject Matter based on the evidence we have obtained.

Our engagement was conducted in accordance with the *International Standard on Assurance Engagements ISAE (NZ) 3000: Assurance Engagements Other than Audits or Reviews of Historical Financial Information* and *ISAE (NZ) 3410 Assurance Engagements on Greenhouse Gas Statements* and the terms of reference for this engagement as agreed with PGW on 22 June 2023.

Those standards require that we plan and perform our engagement to express a conclusion on whether we are aware of any material modifications that need to be made to the Subject Matter in order for it to be in accordance with the Criteria, and to issue a report. 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.

Our independence and quality management

We have maintained our independence and confirm that we have met the requirements of the *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, and we have fulfilled our ethical responsibilities in accordance with these requirements. We confirm we have the required competencies and experience to conduct this assurance engagement.

EY applies *Professional and Ethical Standard 3* which requires the firm to design, implement and operate 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 for 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.



Building a better working world

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 (or measurement) uncertainty resulting from the measurement and calculation processes used to quantify emissions within the bounds of existing scientific knowledge.

The engagement consists of making enquiries, primarily of persons responsible for preparing the scope 1 and scope 2 GHG emissions inventory for the year ending 30 June 2021, 30 June 2022, and 30 June 2023 and related information, and applying analytical and other relevant procedures.

Our procedures included, but were not limited to:

- ▶ Conducting interviews with personnel to understand the business and reporting process
- ▶ Checking that the flow of information from site metering or monitoring through to calculation spreadsheets is accurate
- ▶ Identifying and testing assumptions supporting the calculations
- ▶ Comparing year on year activity-based greenhouse gas and energy data
- ▶ Checking organisational and operational boundaries to test completeness of greenhouse gas emissions sources
- ▶ Testing of calculations and controls
- ▶ Checking that emissions factors and methodologies have been correctly applied as per the criteria
- ▶ Reviewing the appropriateness of the presentation of disclosures.

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

Restricted use

This report is intended solely for the information and use of PGW and is not intended to be and should not be used by anyone other than those specified parties.

Ernst & Young Limited
New Zealand
7 September 2023

A member firm of Ernst & Young Global Limited