



SUMMARY OF TOITŪ CARBONREDUCE CERTIFICATION

INSTITUTE OF GEOLOGICAL AND NUCLEAR SCIENCES LIMITED TRADING AS GNS SCIENCE

Year 3 of 3 year certificate period



Institute of Geological and Nuclear Sciences Limited, trading as GNS Science, meets the requirements of Toitū carbonreduce certification having measured its greenhouse gas emissions in accordance with ISO 14064-1:2006 and committed to managing and reducing its emissions in respect of the operational activities of its organisation.

GNS Science is a Crown-owned research and consultancy organisation focused on securing benefits for New Zealand from natural processes occurring in the Earth's crust. In 2019/2020, GNS Science had a turnover of \$95.4 million, with 454 staff working across our five sites in Auckland, Wairakei, Lower Hutt and Dunedin. The Covid-19 lockdown (which started on the 23 March 2020) and related restrictions had a negative impact on revenue in 2020, mostly coming from commercial projects. In 2020/2021, GNS Science's total revenue was \$107.25 million, and employed 483 staff working at our five sites, and remotely, across New Zealand. Revenue in 2021 increased as we adjusted to the changing situations brought on by Covid-19 and its restrictions. The organisation's activities are funded through government grants for research, contestable research contracts, and consultancy services for a wide range of clients in New Zealand and internationally. GNS Science's 2020/2021 research continues to be grouped into four themes, focussing on processes and resources within the Earth's crust and at the Earth's surface:

- Energy Futures
- Environment and Climate
- Land and Marine Geoscience
- Natural Hazards and Risks

GNS Science recognises that its operations may have a direct impact on the environment, and has tracked its emissions for a decade, but has not sought to be audited or accredited for its progress, nor has it implemented specific measures to reduce its carbon footprint until now. GNS Science's emission history identified three fairly equal emissions totals for site energy, travel, and staff commute, with a smaller emission total for company vehicle use. However, some activities have not been rigorously tracked to date. By signing up to the Toitū Envirocare carbonreduce programme, GNS Science hopes to manage its carbon footprint in a more quantitative way, following independent audits and accreditation.



By enabling an energy conscious culture within the company, we aim to balance our environmental and financial priorities throughout our operations and be able to demonstrate regulatory compliance to existing and future legislation.

EMISSIONS SUMMARY ¹

GNS Science’s emissions for this year (01 July 2020 to 30 June 2021) were 2,854.76 tCO₂e. The operational GHG emission sources included in this inventory are shown in Figure 1 below.

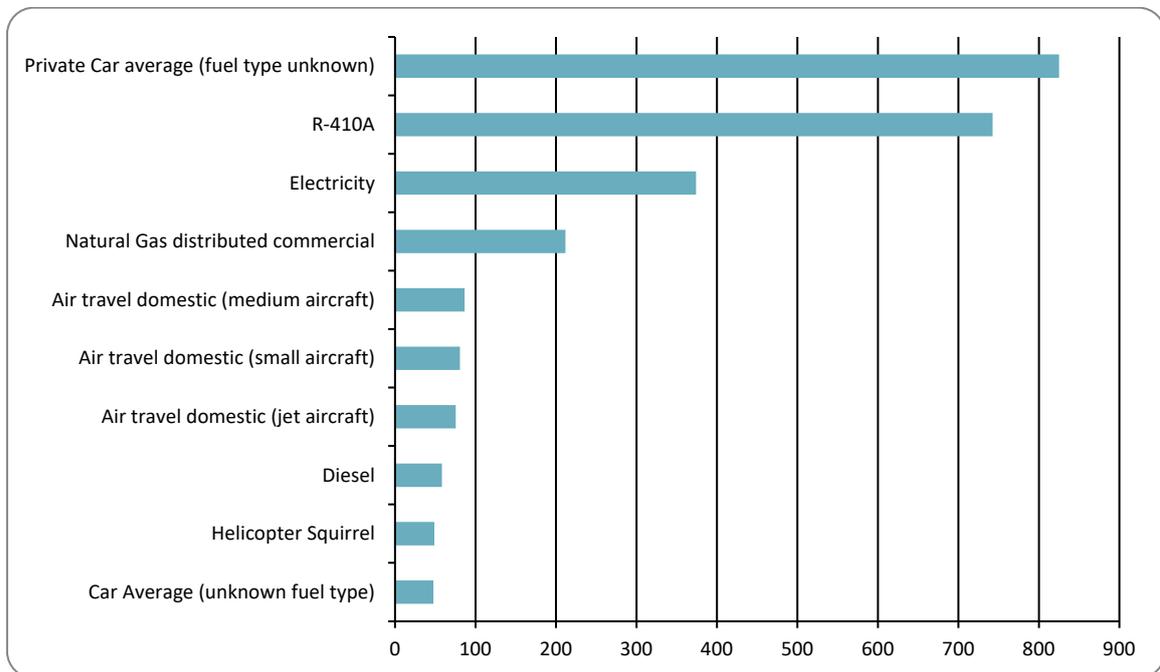


Figure 1: GHG emissions by emissions source

Emissions as tonnes of carbon dioxide equivalents (tCO₂e) for this period were:

Scope	tCO ₂ e
Scope 1	1,069.69
Scope 2	374.00
Scope 3 Mandatory	483.23
Scope 3 Additional	927.84
Scope 3 One time	0.00
Total gross emissions	2,854.76

¹ **Disclaimer:** This Disclosure Statement is a summary of the verified information considered for certification and the certification decision. It should not be taken to represent the full submission for certification. Whilst every effort has been made to ensure that the information in this Disclosure Statement is accurate and complete, Enviro-Mark Solutions Limited (trading as Toitū Envirocare) does not, to the maximum extent permitted by law, give any warranty or guarantee relating to the accuracy or reliability of the information.



EMISSIONS REDUCTIONS

GNS Science is committed to reducing its GHG emissions in compliance with rule 59b of the programme requirements. The target is to reduce intensity by 20% within five years since establishing the base year (i.e. reduce net carbon emissions by 20% by 2025). The target is based on an intensity basis using a 5 year rolling average, per \$ M turnover (inflation adjusted). We also intend to meet the aim of being carbon net zero by 2025, in keeping with the directive set by the New Zealand Government on 2 December 2020. Our long term goal is to help New Zealand be carbon neutral by 2050.

As shown in Table 1, there are specific ‘subtargets’ at a more detailed level, by emission source. By achieving each sub target, the aggregated results will mean we achieve our overall target for the total inventory. To reduce its emissions, GNS Science has developed a GHG emissions management plan and reduction targets. Some of these plans include:

Scope of target	Target	Baseline (tCO ₂ e)	Target date
Total Scope 1, Scope 2, and all Scope 3 (both mandatory and additional) emissions	20%	Base year: 33.77; Target: 27.00	30/06/2025
Emissions specific “subtargets”:			
Company-wide Air travel (all)	15%	Base year: 1228.72; Target: 1044.41	30/06/2025
Staff commute	35%	Base year: 852.23; Target: 553.95	30/06/2025
Vehicle fuel consumption (includes company and rental vehicles, and private vehicle use for work purposes)	35%	Base year: 164.52; Target: 106.94	30/06/2025
Site-wide Electricity	10%	Base year: 317.62; Target: 285.86	30/06/2025
Site-wide Natural Gas use	10%	Base year: 229.24; Target: 206.32	30/06/2025

This is the 3rd year of reporting under the Toitū carbonreduce programme. An absolute increase in Scope 1 and 2 emissions of 528.41 tCO₂e has occurred against base year. A reduction in emissions intensity (for Scope 1, 2 and mandatory Scope 3 emissions) of 3.09 tCO₂e/\$M has been achieved based upon a 3-year rolling average.

EMISSIONS BOUNDARIES

The below chart shows the main organisational boundaries (GNS Science Groups and Departments) used for the 2020/2021 reporting year, which remain unchanged from the 2019/2020 reporting year. The main operational boundaries (GNS Science sites) remain the same as that used in the 2018/2019 reporting year. GNS Science has a number of wholly owned subsidiaries: IsoScan Limited, IsoScan Food Limited, Geological Surveys (New Zealand) Limited, Geological Risk Limited, and GNS Science International Limited, and is part of KiwiNet (Kiwi Innovation Network Ltd) and the NZ Synchrotron



Group. The emissions related to these subsidiaries have already been included in the GNS carbon emissions reported in this document.

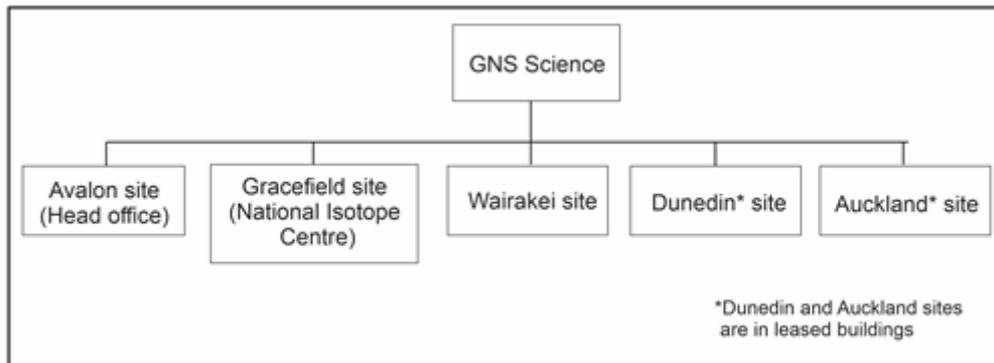


Figure 2: Organisational structure showing business units included and excluded

An operational control consolidation approach was used to account for emissions. GNS Science has established a framework for accounting via site (for energy consumption and operational emissions), and via Department/Group for travel-related emissions. Separate categories for fieldwork and staff commute have also been included.

A full list of excluded emissions is available upon request.

Excluded emissions do not exceed 5% of the total footprint within the organisation boundary stated.

CERTIFICATE DETAILS

Certification status – Toitū carbonreduce certified organisation

Certificate number – 2021055J, Year 3 of 3-year certificate period

Valid until – 26 May 2024

Measurement period – 01 July 2020 to 30 June 2021

Base year – 01 July 2018 to 30 June 2019

Verified by – Enviro-Mark Solutions Limited

Level of assurance – Reasonable mandatory scopes 1, 2 & 3, no assurance scope 3 additional

Data quality score – Good