

Z Energy Limited

**FY23**

# Greenhouse Gas Inventory Report



IS FOR  
NEW ZEALAND

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## Introduction

This document is the annual greenhouse gas (GHG) emissions inventory for Z for the **9-month period** between 1 April 2022 to 31 December 2022. This 9 month report reflects the change to Z's financial year to align with Ampol following the acquisition of Z by Ampol in 2022. This report can be read in line with both environmental and financial information published in Z's FY23 Annual Report. It should be noted that FY23 data will not be directly comparable with previous years reported due to the different time periods covered.

Z's inventory has been calculated with guidance from the Greenhouse Gas Protocol: A Corporate Accounting and Reporting Standard, Revised Edition (GHG Protocol). The GHG Protocol is the widely accepted methodology for organisational carbon accounting and is supported by ISO 14064 (2018).

The inventory accounts for all direct Scope 1 and Scope 2 emissions and selected Scope 3 emissions of the six Kyoto Greenhouse Gases (CO<sub>2</sub>, SF<sub>6</sub>, CH<sub>4</sub>, N<sub>2</sub>O, HFCs, PFCs) and are expressed as CO<sub>2</sub>-e (CO2 equivalent).

# GHG Inventory

**Table 1: Greenhouse gas emissions inventory summary for Z Energy**

Scope	Category	CO <sub>2</sub> -e Emissions (tonnes)				
		FY19	FY20	FY21	FY22	FY23 (9 months ended 31 Dec 2022)
1 - Z offices, terminal & retail sites	Diesel	1,559	1,526	1,445	2,051 <sup>1</sup>	1,439
	HVAC (loss)	1,502	1,502	1,502	1,471	135 <sup>2</sup>
	Natural gas	437	798	143	24	13
	Petrol (premium & super)	95	92	82	77	49
	Petrol (regular)	54	41	39	24	13
	Refrigeration (loss)	190	167	187	151	74
<b>Total Scope 1</b>		<b>3,837</b>	<b>4,127</b>	<b>3,398</b>	<b>3,798</b>	<b>1,723</b>
2 - Z offices, terminal & retail sites	Electricity – Corporate Offices & EVs	56	76	64	64	57
	Electricity - Commercial	83	69	55	61	48
	Electricity - Retail	3,650	2,869	2,841	2,858	2,245
	Electricity - Terminals	405	358	231	174	139
<b>Total Scope 2</b>		<b>4,195</b>	<b>3,371</b>	<b>3,191</b>	<b>3,156</b>	<b>2,489</b>
3 - Z offices, terminal & retail sites	Air travel	1,198	714	332	251	731
	Rental car	51	44	24	20	26
	Taxis	26	29	9	9	12
	Waste to landfill	2,827	2,234	1,788	1,631	761
3 - NZ Supply	AGO Bunker fuel <sup>3</sup>	1,498	1,507	3,034	2,068	0
	HFO Bunker fuel <sup>3</sup>	11,863	13,330	12,254	13,634	0
	Diesel for Awanuia <sup>4</sup>	1,665	2,059	1,301	0	0
	Diesel for trucking deliveries	13,474	12,148	11,776	12,353	9,829
<b>Z Operational Emissions (Scope 1, 2 &amp; 3 above)<sup>5</sup></b>		<b>40,704</b>	<b>39,742</b>	<b>37,149</b>	<b>37,042</b>	<b>15,570</b>
3 - Flick Electric	Flick Electric Scope 1,2 and 3 emissions	-	-	-	13	20
3 - JVs	Electricity from WOSL	168	129	90	78	98
3 - Line losses	Electricity (line losses)	342	255	274	270	233
	Natural gas (line losses)	52	94	9	1	1
3 - Z DEC	Z DEC for deliveries	57	44	43	43	42
3 - Share of Refinery	Crude processed at NZRC	555,892	520,708	475,255	367,525	28,754
3 - International supply <sup>6</sup>	Crude extraction & transportation to NZ	459,384	558,788	267,283	313,697	0
	Offshore production of refined products	442,831	472,521	584,952	562,061	1,055,683
	Refined product transportation to NZ	-	-	-	-	282,012
	Upstream Electricity	579	569	519	249	0
3 - End Use	Sold fuel	10,459,104	9,990,103	8,039,840	8,760,150	7,605,026
	Sold electricity <sup>7</sup>	-	-	-	-	3
<b>Total Scope 3</b>		<b>11,951,008</b>	<b>11,575,275</b>	<b>9,398,781</b>	<b>10,034,054</b>	<b>8,983,231</b>
<b>Total Emissions (scope 1, 2 &amp; 3)</b>		<b>11,958,268</b>	<b>11,582,773</b>	<b>9,405,371</b>	<b>10,041,008</b>	<b>8,987,442</b>

<sup>1</sup> Due to a correction in the methodology used to calculate fuel consumption of Z's mini tanker fleet, an adjustment of 544 t CO<sub>2</sub> was made to increase FY22 emissions. As historic data is not available FY19 - FY21 remains uncorrected, however we estimate corrected emissions levels for those periods would be materially consistent with FY22.

<sup>2</sup> For the nine months ended 31 December 2022 the method for estimating HVAC refrigerant loss was changed to use actual top-up data, providing a more accurate emissions estimate. In previous periods HVAC refrigerant loss was estimated using loss rate assumptions from the Ministry for the Environment guidance. As historic data is not available FY19 - FY22 emissions have not been restated and use the previous methodology.

<sup>3</sup> Z ceased operations in coastal shipping in 2022 resulting in no further emissions of AGO and HFO bunker fuel from ships. As a result emissions of trucking have slightly increased.

<sup>4</sup> Awanuia ceased operations in FY21.

<sup>5</sup> Z's FY20 -FY30 carbon reduction target is benchmarked against operational emissions – those domestic emissions of which Z has the most control and or influence over and can therefore take meaningful action to reduce.

<sup>6</sup> In 2022 Z moved to an import only fuel model and as such recalculated the associated emissions with refining and transportation of fuel from overseas to New Zealand.

<sup>7</sup> Electricity sold from Z's owned and operated EV charging sites.

All numbers are subject to rounding.

## Organisational boundary

The organisational boundary for ZEL Group's carbon inventory were set with reference to the methodology described in the GHG Protocol and ISO 14064-1:2018 standards. The GHG Protocol allows two distinct approaches to consolidate GHG emissions: the equity share and control (financial or operational) approaches. We used an operational control consolidation approach to account for emissions.

Z's organisational boundary encompasses the companies listed in the table below.

**Table 2: Z's Organisational boundary FY22 as at 31 March 22**

List of all legal entities of facilities over which Z has equity share, financial control or operational control	% equity share in legal entity	Does reporting company have operational control? (yes/no)	Does entity or facility produce GHG emissions? (yes/no) If yes, are they included in the GHG inventory figures? (yes/no)
Z Energy ESPP Trustee Limited	100%	Yes	No, No
Z Energy LTI Trustee Limited	100%	Yes	No, No
Z Energy 2015 Limited	100%	Yes	Yes, Yes
Joint User Hydrant Installation (JUHI) - Auckland Airport	33.3%	No	Yes, No (based on materiality)
Joint Interplane Fuelling Services (JIFS) – Auckland Airport	50%	No	Yes, No (based on materiality)
Jointly Owned Storage Facility – Christchurch Airport	50%	Yes	Yes, Yes
Wiri to Auckland Airport Pipeline	40%	No	Yes, No (based on materiality)
Loyalty New Zealand Limited (Loyalty)	25%	No	No, No
Wiri Oil Services Limited (WOSL)	44.45%	No	Yes, Yes
Flick Energy Limited	95.03%	Yes	Yes, Yes
Channel Infrastructure NZ Limited	12.88%	No	No, No
Mevo Limited	31.82%	No	Yes, No (based on materiality)
Red Phase Technologies Limited	6.00%	No	No, No
Z General Partner Limited	51.00%	Yes	No, No
Z Partner Limited	100.00%	Yes	No, No
Z Property Manager Limited	100.00%	Yes	No, No

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## Scope of emission sources

ZEL will include Scope 1, 2 and some Scope 3 emissions from all relevant Kyoto Protocol gases in its carbon inventory. As some of the Scope 1 and 3 emissions to be included in our inventory are only a small percentage of our emissions, a materiality test has been applied. We have prepared our footprint using best efforts to determine accurate emissions totals under each Scope relative to the materiality of each emissions source to the total footprint. For some small emissions sources, we have used estimation techniques to manage the trade-off between accuracy of the footprint and the cost of preparation. Certain small emissions sources have been excluded as indicated below.

### Scope 1, 2 and 3 emissions are defined as follows:

**Scope 1 emissions:** are direct emissions from within an organisation's boundary. These emissions are from sources that Z Energy Limited controls: natural gas combustion at the biodiesel plant, fuel combustion in corporate vehicles and mini tankers and fugitive emissions resulting from the loss of refrigerants in HVAC & refrigeration systems at retail sites. Emissions of refrigerants from corporate vehicles AC and office fridges and cooling systems, as well as combustion of fuels in back-up generators were excluded due to low level of emissions (less than 0.005% of total emissions) and relative difficulty in collecting data.

**Scope 2 emissions:** are indirect emissions from electricity that is used by the organisation but is generated outside the organisation's boundary by another company such as an electricity provider. This includes electricity use at the Z Energy offices, retail sites, truck stops and Z managed terminals including the biodiesel plant. In FY23 this included purchased electricity for the charging of Z's corporate electric vehicle (EV) fleet for the first time.

**Scope 3 emissions:** are all other indirect emissions that occur outside the boundary of the organisation but that result from the activities of the organisation. This includes such sources as Cradle to Gate emissions for crude and refined product purchased, emissions from refining processes for ZEL product (which ceased in May 2022), indirect losses resulting from the transmission of electricity and other fuels, emissions from transportation of finished products to retail sites, truckstops and marine vessels, emissions from electricity at JV terminals, emissions from waste sent to landfill, business travel (air, rental cars and taxis), emissions from Flick Energy operations, and emissions from the use of our sold products.

## Summary of data sources, methodologies and key assumptions

Unless otherwise stated below, Ministry for the Environment (MfE) emission factors, 2022 release, are used to calculate the tonnes of carbon dioxide equivalent generated.

Inventory Category	Summary of Data Source and Methodology
<b>Scope 1</b>	
Stationary combustion	<ul style="list-style-type: none"> <li>Supplier invoices for monthly consumption (natural gas).</li> </ul>
Mobile combustion	<ul style="list-style-type: none"> <li>Fuel purchased through Z Business Card accounts for corporate use.</li> <li>Kilometres travelled by mini tankers. MfE emissions factors based on vehicle size.</li> <li>Exclusions: Fuel purchased without Z Business Card.</li> </ul>
Fugitive emissions	<ul style="list-style-type: none"> <li>Actual losses for HVAC emissions. MfE methodology used to calculate Refrigeration emissions based on equipment type and default leakage rates.</li> <li>Exclusions: Emissions from HVAC in leased properties, vehicles, and office fridges.</li> </ul>
<b>Scope 2</b>	
Electricity	<ul style="list-style-type: none"> <li>Supplier invoices/third party reporting for monthly consumption.</li> <li>An estimate for a very small number of sites has been extrapolated from third party reporting.</li> </ul>
<b>Scope 3</b>	
Downstream indirect scope – Z offices, terminals & retail site	<p><b>Line losses</b></p> <ul style="list-style-type: none"> <li>Electricity data used as a basis to apply the MfE methodology.</li> <li>Natural gas data used as a basis to apply the MfE methodology.</li> </ul> <p><b>Waste</b></p> <ul style="list-style-type: none"> <li>Third party waste data extrapolated to represent all retail sites and terminals.</li> <li>Third party waste audit data extrapolated to represent all corporate office sites.</li> </ul> <p><b>Business travel</b></p> <ul style="list-style-type: none"> <li>Supplier reporting for air and rental car travel. Taxi travel is based on ZEL purchase card spend.</li> </ul>
Downstream indirect scope – New Zealand supply chain	<p><b>Transportation and distribution</b></p> <ul style="list-style-type: none"> <li>Third party report from supplier on fuel usage for fuel distribution via truck using Z Business Card data.</li> <li>Third party report on electricity use for non-Z operated terminals (WOSL).</li> <li>The Awanui ceased operations at the end of FY21.</li> <li>Coastal shipping ceased operations at the end of FY22.</li> </ul>
Upstream indirect scope – outside New Zealand	<p><b>Raw material and finished product acquisition</b></p> <ul style="list-style-type: none"> <li>Sales reports.</li> <li>Emissions factors for overseas refined product and transportation to New Zealand calculated for Z by an external consultant in 2022.</li> </ul>
Upstream indirect scope – inside New Zealand	<ul style="list-style-type: none"> <li>Sales volumes obtained from New Zealand oil industry exchange reporting for share of refinery (closed April 2022).</li> <li>Emissions calculated using factor supplied by Refining New Zealand.</li> </ul>



# Independent Reasonable Assurance Report to the Directors of Z Energy Limited

## Opinion

Our reasonable assurance opinion has been formed on the basis of the matters outlined in this report.

In our opinion, in all material respects, the Greenhouse Gas Statement, comprising the Emissions Inventory and the explanatory notes on pages 2 to 6 (the 'GHG Statement') has been prepared in accordance with the Greenhouse Gas Protocol: A Corporate Accounting and Reporting Standard (2004) requirements (the 'Protocol') for the period 1 April 2022 to 31 December 2022.

## Information subject to assurance

We have performed an engagement to provide reasonable assurance in relation to Z Energy Limited's GHG Statement for the period 1 April 2022 to 31 December 2022.

## Criteria

The criteria used as the basis of reporting include the Greenhouse Gas Protocol: A Corporate Accounting and Reporting Standard (2004). As a result, this report may not be suitable for another purpose.

## Standards we followed

We conducted our reasonable assurance engagement in accordance with International Standard on Assurance Engagements (New Zealand) 3000 (Revised) *Assurance Engagements other than audits or reviews of historical financial information* and International Standard on Assurance Engagements (New Zealand) 3410 *Assurance Engagements on Greenhouse Gas Statements* ('ISAE (NZ) 3410') issued by the New Zealand Auditing and Assurance Standards Board. We believe that the evidence we have obtained is sufficient and appropriate to provide a basis for our opinion. In accordance with those standards we have:

- assessed the suitability of the circumstances of Z Energy Limited's use of the criteria as the basis for preparation of the GHG Statement;
- used our professional judgement to assess the risks of material misstatement and plan and perform the engagement to obtain reasonable assurance that the GHG Statement is free from material misstatement, whether due to fraud or error;
- considered relevant internal controls when designing our assurance procedures, however we do not express an opinion on the effectiveness of these controls;
- evaluated the appropriateness of quantification methods and reporting policies used, and the reasonableness of estimates made by Z Energy Limited;
- evaluated the overall presentation of the GHG Statement; and
- ensured that the engagement team possesses the appropriate knowledge, skills and professional competencies.

## How to interpret reasonable assurance and material misstatement

Reasonable assurance is a high level of assurance, but is not a guarantee that it will always detect a material misstatement when it exists.



Misstatements, including omissions, within the GHG Statement are considered material if, individually or in the aggregate, they could reasonably be expected to influence the relevant decisions of the intended users taken on the basis of the GHG Statement.

## Use of this assurance report

Our report is made solely for Z Energy Limited. Our assurance work has been undertaken so that we might state to Z Energy Limited those matters we are required to state to them in the assurance report and for no other purpose. No other third party is intended to receive our report.

Our report should not be regarded as suitable to be used or relied on by any third parties other than Z Energy Limited and the Directors ("Recipients") for any purpose or in any context. Any other party other who obtains access to our report or a copy thereof and chooses to rely on our report (or any part thereof) will do so at its own risk.

Our report is released to the Recipients on the basis that it shall not be copied, referred to or disclosed, in whole or in part, without our prior written consent.

To the fullest extent permitted by law, none of KPMG, any entities directly or indirectly controlled by KPMG, or any of their respective members of employees accept or assume no responsibility and deny all liability to any party other than Z Energy Limited for our work, for this independent reasonable assurance report, and/or for the opinions we have reached.

## Management's responsibility for the GHG Statement

Management of Z Energy Limited are responsible for the preparation of the GHG Statement in accordance with the criteria. This responsibility includes such internal control as Management determine is necessary to enable the preparation of the GHG Statement that is free from material misstatement whether due to fraud or error.

GHG quantification is subject to inherent uncertainty because of incomplete scientific knowledge used to determine emission factors and the values needed to combine emissions of different gases.

## Our responsibility

Our responsibility is to express an opinion to the Directors of Z Energy Limited on whether the GHG Statement is, in all material respects, prepared in accordance with the criteria.

## Our independence and quality control

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 (Amended) and accordingly maintains a comprehensive system of quality control including documented policies and procedures regarding compliance with ethical requirements, professional standards and applicable legal and regulatory requirements.

Our firm has also provided financial audit services to the Company. Subject to certain restrictions, partners and employees of our firm may also deal with the Company on normal terms within the ordinary course of trading activities of the business of the Company. These matters have not impaired our independence as assurance providers of the Company for this engagement. The firm has no other relationship with, or interest in, the Company.

KPMG  
Auckland

27 February 2023