2023 Greenhouse Gas Emissions Inventory Report

CONTACT ENERGY LTD

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1 Introduction

Contact Energy (Contact) is one of the largest electricity suppliers in New Zealand. We utilise many natural resources to generate electricity and recognise the important role we play in protecting our natural environment. We believe that climate change is real and that its effects are significant and wide-ranging. We also believe that New Zealand can harness its natural advantages and turn one of the world's greatest challenges into New Zealand's greatest opportunity.

As part of our commitment to help decarbonise New Zealand, we are also looking at our own operations and processes and working to continually reduce our emissions.

This is Contact's sixth annual greenhouse gas (GHG) emissions inventory report. The inventory is a complete and accurate report of the GHG emissions that result from Contact's operations within the declared boundary and scope for the reporting period. The inventory has been prepared in accordance with the Greenhouse Gas Protocol: A Corporate Accounting and Reporting Standard (2004) (the GHG Protocol).

Contact has reported its Scope 1 – direct emissions since 2012. Scope 2 and 3 indirect emissions have been reported since 2018. 2018 is used as the base year because of the inclusion of all scopes.

No facilities, operations and/or emissions sources have been excluded from the inventory except for specific scope 3 emissions noted in Table 1.

The reporting period covered is from 1 July 2022 to 30 June 2023.

2 Organisational boundaries

The organisational boundary determines the parameters for GHG reporting and ensures a consistent approach is applied when assessing which factors to include. Contact's boundaries have been set following the GHG protocol methodology.

Contact has applied the operational control consolidation approach. This allows us to focus on those emissions sources that we have control over and therefore the ability to improve upon. The boundary encompasses all operations owned or controlled by Contact including subsidiaries, Simply Energy Limited and Western Energy Services Limited.

3 Operational boundaries

Contact has included Scope 1, 2 and 3 emissions in this GHG inventory.

Scope 1 – Direct GHG emissions

Scope 1 includes GHG emissions from sources that are owned or controlled by Contact.

This includes all the electricity generation sites, fuel used in vehicles owned or leased by Contact and any fugitive emissions released (SF6). Fuel used in vehicles owned or leased by subsidiaries Simply Energy and Western Energy is also included.

Scope 2 – Electricity indirect GHG emissions

Scope 2 accounts for GHG emissions from the generation of purchased electricity consumed by the company. Purchased electricity is defined as electricity that is purchased or otherwise brought into the organisational boundary of the company. For Contact, this means that power consumed at generation sites is not included as the electricity is not yet exported to the grid, except in cases where the operating plant is down and backup electricity is being drawn from the grid. Electricity that is consumed at other relevant sites include utility sites used for the generation of electricity (e.g. Water intake pumps) and corporate offices. Electricity consumption by subsidiaries Simply Energy and Western Energy is also included.

Scope 2 emissions have been reported using location based emissions factors.

Scope 3 – Other indirect GHG emissions

Scope 3 emissions are a consequence of the activities of the company but occur from sources not owned or controlled by the company. Reporting on these emissions is optional under the GHG protocol.

Contact has determined which categories are relevant using the following criteria:

- Relevance to our operations;
- A significant contributor to overall GHG emissions;
- Connected to stakeholder interests;
- Availability of data; and
- Able to be influenced/reduced.

The following table details which categories have been included. All Scope 3 emissions factors were sourced from Ministry for the Environment. 2022. *Measuring Emissions: A Guide for Organisations: 2022 detailed guide.* Wellington: Ministry for the Environment (MfE) unless noted otherwise.

3 Operational boundaries (continued)

Table 1: Scope 3 categories

Category	Included/ excluded	Justification	Calculation methodology and activity data source	Emission factor source
Category 1 – Purchased goods and services	Included	Estimation using the spend based approach for relevant opex activity over $100k within reporting period. 82% of operating spend for 2023 has been included in the emissions calculation.	Spend-based method from internal finance records	Inflation adjusted emissions factors sourced from the Motu Working paper 14-05 *Greenhouse Gas Emissions in New Zealand: A Preliminary Consumption-Based Analysis.*
Category 2 – Capital goods	Included	Estimation using the spend based approach for all capex activity over $500k within reporting period. This is >90% of the total capital spend. 98% of capital spend for 2023 has been included in the emissions calculation.	Spend-based method from internal finance records, using emissions factors by relevant project type	Inflation adjusted emissions factors sourced from the Motu Working paper 14-05 *Greenhouse Gas Emissions in New Zealand: A Preliminary Consumption-Based Analysis.*
Category 3 – Fuel and energy	Included	Upstream emissions of purchased fuels for generation sites. (Transportation of fuel, transmission and distribution, extraction, production)	Average-data method Data taken from fuel usage records, vehicle fuel volumes and distance travelled	Diesel Well to Tank emission specific factors sourced from UK Government *GHG Conversion Factors for Company Reporting 2022.*
		Transmission and Distribution Losses from electricity purchased.	Average-data method from purchased electricity volumes	MfE
		Emissions from diesel fuel used for drilling.	Average-data method from fuel records	MfE
		Western Energy stationary engine diesel.	Average-data method from fuel records	MfE
	Excluded	Upstream emissions from extraction and production of gas and the transportation of gas have been excluded as this is captured within Scope 1 emissions.	-	-
Category 4 – Upstream transportation and distribution	Included	Freight of major operating materials.	Spend-based method from internal finance records	Inflation adjusted emissions factors sourced from the Motu Working paper 14-05 *Greenhouse Gas Emissions in New Zealand: A Preliminary Consumption-Based Analysis.*
Category 5 – Waste	Included	Waste from all operational and office sites, excluding Simply Energy and Western Energy.	Waste-type-specific method from waste collection provider where possible Average-data method where specific data not available	MfE
Category 6 – Business travel	Included	Air travel (domestic and international)	Distance-based method Emissions directly from travel provider have been verified through the *Toitū carbonreduce certification* carbon verification scheme	MfE

		Car travel (rental cars)	Distance-based method Emissions directly from travel provider have been verified through the *Toitū carbonreduce certification* carbon verification scheme	MfE
		Accommodation	Distance-based method Emissions directly from travel provider have been verified through the *Toitū carbonreduce certification* carbon verification scheme	MfE
		Car travel (taxis and private vehicles)	Spend-based method from internal finance records	MfE
Category 7 – Employee commuting	Included	Employee survey, excluding Simply Energy and Western Energy.	Distance-based method run through Abley CarbonWise™	MfE
Category 8 – Upstream leased assets	Excluded	All leased sites electricity consumption data is included in Scope 2 – operational control.	-	-
Category 9 – Downstream transportation and distribution	Excluded	There is no transportation or distribution of products after the point of sale.	-	-
Category 10 – Processing of sold products	Excluded	There is no processing of sold products by the reporting company.	-	-
Category 11 – Use of sold products	Included	Natural gas sales.	Volume sold records	Climate Change (Stationary Energy and Industrial Processes) Regulations 2009
Category 12 – End of life treatment of sold products	Excluded	There is no remaining product to be disposed of at the end of use.	-	-
Category 13 – Downstream leased assets	Included	Contact has on-leased/licensed property – estimates provided by lessee.	Leaseholder questionnaires / Estimates	MfE
Category 14 – Franchises	Excluded	There are no franchise arrangements.	-	-
Category 15 – Investments	Excluded	Investments deemed to be minimal and no data available.	-	-

4 Base Year

FY18 emissions reporting (Scope 1, 2 and 3) form the base year for all GHG emissions. FY18 was the first year that the full emissions suite was recorded and reported.

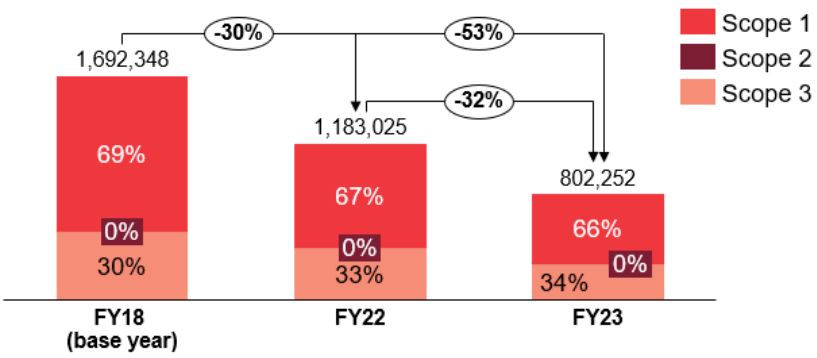
As per the Contact policy for the recalculation of base year emissions data, any structural, methodological, or other changes identified that change the emissions reported by more than 5% will trigger a recalculation of the base year and the current reporting year.

5 Greenhouse gas inventory

Table 2: Greenhouse gas emissions inventory summary 1 July 2022 – 30 June 2023 with comparison to prior year and base year

Scope	Category	FY23 tCO2e	FY22 tCO2e	FY18 tCO2e
Direct emissions (Scope 1)	Stationary Combustion	526,282	786,544	1,174,698
	Mobile combustion	179	177	1,072
	Fugitive emissions[1]	32	1	2
	Simply Energy – Mobile combustion	2	5	-
	Western Energy – Mobile combustion	126	115	-
	Subtotal	**526,621**	**786,842**	**1,175,772**
Indirect emissions (Scope 2)	Purchased electricity (location based)	1,950	1,394	1,397
	Simply Energy - Electricity consumption (location based)	4	3	-
	Western Energy - Electricity consumption (location based)	3	2	-
	Subtotal	**1,957**	**1,399**	**1,397**
Scope 1 & 2	**TOTAL**	**528,579**	**788,241**	**1,177,169**
Indirect emissions (Scope 3)	Purchased goods and services	6,197	6,371	47,507
	Capital goods	88,266	57,876	13,899
	Fuel and energy related activities	1,050	149,743	77,049
	Upstream distribution and transportation	108	444	116
	Waste	47	108	134
	Business travel	1,274	567	1,182
	Employee commuting	965	832	2
	Use of sold products	175,603	178,554	370,168
	Downstream leased assets	164	289	586
	Franchises	-	-	4,536
	Subtotal	**273,673**	**394,784**	**515,179**
Scope 1, 2 & 3	**TOTAL**	**802,252**	**1,183,025**	**1,692,348**

Figure 1: Total greenhouse gas emissions by scope vs prior year vs base year



[1] SF_6 data is only collected once annually. Any leakages from 01 January – 30 June 2023 will be reported in FY24 report.

Table 3: Total greenhouse gas emissions by greenhouse gas

GHG Gas	Volume (tonnes)	tCO_2e
CO_2	802,220	802,220
CH_4	-	-
N_20	-	-
HFCs	-	-
SF_6	0.0014	32
TOTAL		**802,252**

Table 4: Ratio performance indicators

Emissions	**FY23**	**FY22**	**FY18**
Total generation emission intensity (tCO_2e per MWh)	0.070	0.095	0.136
Thermal generation emission intensity (tCO_2e per MWh)	0.657	0.578	0.530

Table 5: Activity data

Activity amount	**FY23**	**FY22**	**FY18**
Scope 1 activity amount (MWh)	7,543,612	8,269,030	8,613,687
Scope 2 activity amount (MWh)	16,299	13,024	13,578

There were no direct CO2 emissions from biologically sequestered carbon to report in FY23. Geothermal emission reinjection trials started in the second half of FY23 at our Te Huka plant, however sequestration data is still being collected and analysed both internally and externally prior to inclusion under the Emissions Trading Scheme.

6 Methodologies, uncertainties, and emission factors

Table 1 provides some detail on the source of the data and how it was collected for each category in scope 3. All data is maintained by the ESG team however data is contributed from other parts of the business including Finance, Sustainability, Geothermal Resources, Operations, Trading, and our suppliers.

Most scope 2 data is calculated using e-bench, an online database provided and maintained by CarbonEMS. Data is automatically uploaded from individual connection points for all of Contacts electricity usage. Carbon EMS maintain a database of emissions factors, the original source for purchased electricity emissions factors is the Ministry for the Environment.

All other emissions calculations are completed within Microsoft Excel, using the emissions source data multiplied by an emissions factor.

The nature of GHG emissions inventory reporting means there will always be a level of uncertainty, especially within scope 3. To minimise this uncertainty, source data has been used where possible. Where uncertainty exists or source data is unavailable, a conservative estimation approach has been taken so understatement of emissions does not occur. Where emission factors are historical (i.e. *Motu Working paper 14-05 Greenhouse Gas Emissions in New Zealand: A Preliminary Consumption-Based Analysis*), an adjustment for inflation has been applied.

6 Methodologies, uncertainties, and emission factors (continued)

All scope 1 and scope 2 emissions factors were sourced from Ministry for the Environment. 2022. *Measuring Emissions: A Guide for Organisations: 2022 detailed guide.* Wellington: Ministry for the Environment except in the following cases:

Scope 1:

- Geothermal field specific factors approved under the *Climate Change (Unique Emissions Factor) Regulations 2009.*
- Natural gas specific factors approved under the *Climate Change (Stationary Energy and Industrial Processes) Regulations 2009*
- SF_6 is sourced from the Intergovernmental Panel on Climate Change (IPCC) fifth assessment report.

Scope 3 emissions factors are discussed in Table 1.

7 Emission Reduction Targets

Contact has set emission reduction targets as part of the Science Based Targets initiative (SBTi). In June 2021 we updated our targets to align with the goal of limiting global warming to 1.5 degrees. Our commitments are as follows:

- to reduce absolute scope 1 and 2 GHG emissions 45% by 2026 from a 2018 base year;
- to reduce absolute scope 1 and scope 3 emissions from all sold electricity 45% by 2026 from a 2018 base year; and
- reduce scope 3 emissions from use of sold products 34% by 2026 from a 2018 base year.

These targets do not include any offsetting from domestic or international schemes.

8 Assurance

EY has provided an unmodified reasonable assurance opinion for Scope 1, 2 and Scope 3 (Use of sold products) that in all material respects Contact Energy's Greenhouse Gas Emissions Inventory Report has been prepared in accordance with the Greenhouse Gas Protocol: A Corporate Accounting and Reporting Standard (2004) for the year ended 30 June 2023. EY has further provided an unmodified Limited assurance conclusion for scope 3 GHG emissions (except for use of sold products that received a reasonable level of assurance) that in all material respects Contact Energy's Greenhouse Gas Emissions Inventory Report has been prepared in accordance with the Greenhouse Gas Protocol: A Corporate Accounting and Reporting Standard (2004) for the year ended 30 June 2023.

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