

**NGĀ TAUĀKĪ ĀHUARANGI**

---

CLIMATE  
STATEMENTS

---

2023/24

---



## Welcome

### Purpose of this document

The Kāinga Ora – Homes and Communities Climate Statements 2023/24 cover two key disclosures.

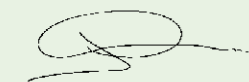
- Our Climate-related disclosure focuses on how we identify, assess, manage and report on climate-related risks and opportunities across our governance, strategy and risk management activities.
- Our Greenhouse Gas Emissions Inventory provides an assessment of our emissions across our areas of activity. It also includes information about our emissions reduction targets and our progress towards meeting them.

For and on behalf of the Board.



**Simon Moutter**  
Chair

24 September 2024



**John Duncan**  
Deputy Chair

24 September 2024



## Contents

<b>Climate-related disclosure 2023/24</b>	<b>4</b>	<b>Greenhouse Gas Emissions Inventory 2023/24</b>	<b>25</b>
<b>Overview of the climate-related disclosure</b>	<b>5</b>	<b>Overview of the Kāinga Ora Greenhouse Gas Emissions Inventory</b>	<b>26</b>
<b>Governance</b>	<b>6</b>	<b>Emissions summary</b>	<b>28</b>
Board oversight	6	<b>Direct emissions separated by GHG group</b>	<b>30</b>
The role of Kāinga Ora management	6	<b>Restatement of comparatives</b>	<b>31</b>
<b>Strategy</b>	<b>8</b>	New energy use assumptions for operational emissions from existing portfolio	32
Business model and strategy	8	Improved assumptions used in determining enabled emissions from customer transport	32
Current climate-related impacts	8	Changes to assumed occupancy rate for emissions intensity calculations	33
Scenario analysis undertaken	13	Comparatives for newly measured emissions sources	33
<b>Climate-related risks</b>	<b>14</b>	<b>Summary of targets and reduction strategies</b>	<b>34</b>
Physical risks	14	Performance against targets	36
Transition risk	19	<b>Description of the organisation</b>	<b>38</b>
<b>Control environment</b>	<b>20</b>	<b>Organisational and reporting boundaries</b>	<b>39</b>
<b>Climate-related opportunities</b>	<b>21</b>	<b>Information on emissions sources included</b>	<b>40</b>
Physical opportunity	21	<b>Exclusions</b>	<b>60</b>
Transition opportunities	21	<b>EY assurance opinion</b>	<b>64</b>
<b>How climate-related risks and opportunities serve as an input to internal capital deployment and funding decision-making processes</b>	<b>23</b>	<b>Appendix</b>	<b>67</b>
<b>Risk management</b>	<b>24</b>	Kāinga Ora likelihood definitions	67
Processes for identifying and assessing climate-related risks	24		
Processes for managing climate-related risks	24		
<b>Metrics and targets</b>	<b>24</b>		

# Climate-related disclosure 2023/24

## Overview of the climate-related disclosure

This is the fourth voluntary climate-related disclosure for the Kāinga Ora Group (Kāinga Ora) and its subsidiaries. It outlines how Kāinga Ora identifies, assesses and manages the risks and opportunities posed by climate change in the short, medium and long term.

The information in this disclosure is based on the Aotearoa New Zealand Climate Standards (NZ CS) issued by the External Reporting Board (XRB). While Kāinga Ora and its subsidiaries are not designated climate reporting entities, we have chosen to adhere to the NZ CS guidelines where possible.

Kāinga Ora is also applying the following adoption provisions.

- **Adoption provision 1:** Current financial impacts – limited current financial impacts are presented.
- **Adoption provision 2:** Anticipated financial impacts – no anticipated financial impacts are presented.
- **Adoption provision 3:** Transition planning – transition planning has not yet been undertaken.
- **Adoption provision 5:** Comparatives for Scope 3 GHG emissions – comparatives are presented where they are available.
- **Adoption provision 6:** Comparatives for metrics – no comparatives are presented for metrics.
- **Adoption provision 7:** Analysis of trends – no analysis of trends has been undertaken for metrics.

Kāinga Ora will not be applying Adoption provision 4: Scope 3 GHG emissions. All material scope 3 GHG emissions information is included in our Greenhouse Gas Emissions Inventory.

Kāinga Ora is still maturing its climate-related risk and opportunity descriptions and assessments of impact. Analysis presented in this disclosure represents our current understanding, but this will be subject to further refinement over time as processes mature and data improves.

# Governance

## Board oversight

Every 2 months, Kāinga Ora management presents an update to the Board to inform them about climate-related risks and opportunities. Regular updates are supplemented by multiple ad-hoc engagements throughout the year concerning specific issues relating to climate-related risks and opportunities.<sup>1</sup>

Climate-related risks are reviewed by the Board’s Finance, Risk and Assurance Committee every six months.<sup>2</sup>

The Board ensures it has the relevant skills and competencies available to provide oversight of climate-related risks and opportunities through specific external training as well as repeated engagement and upskilling on sustainability issues provided by our Sustainability Directorate.

The Board is responsible for considering climate-related risks and opportunities against other factors when making decisions.

Our Statement of Intent (SOI) and Statement of Performance Expectations (SPE) include metrics and targets related to greenhouse gas (GHG) emissions. The Board reviews these metrics, targets and performance against targets annually. Non-GHG-related metrics and targets have not yet been developed. As a result, mechanisms for the Board to monitor progress against and oversee achievement of these metrics and targets do not currently exist. In addition, related performance metrics are not part of our remuneration policies.

1. For example, workshops on appetite for climate-related risks or consultation on and endorsement of the Kāinga Ora Emissions Reduction Plan.  
 2. Refer to the risk management section on page 24 for more details.

## The role of Kāinga Ora management

### Sustainability and Climate Change Advisory Network

In May 2024, Kāinga Ora stood up a new management committee – the Sustainability and Climate Change Advisory Network (SCAN). Membership consists of senior management personnel across a wide range of business groups and supports effective management of climate and sustainability issues. SCAN is chaired by the Director Sustainability, meets monthly and has a list of responsibilities, including but not limited to:

- ensuring key Kāinga Ora climate change risks and opportunities are reflected in strategy, governance, risk and reporting management processes
- providing oversight and understanding of the aggregated effects of sustainability and climate-related decisions occurring across the organisation
- providing oversight of key climate change risks to the organisation, ensuring risks are escalated when required
- ensuring a clear line of communication between the Kāinga Ora Board, wider management and SCAN on climate-related issues.

## Chief Executive Leadership Group

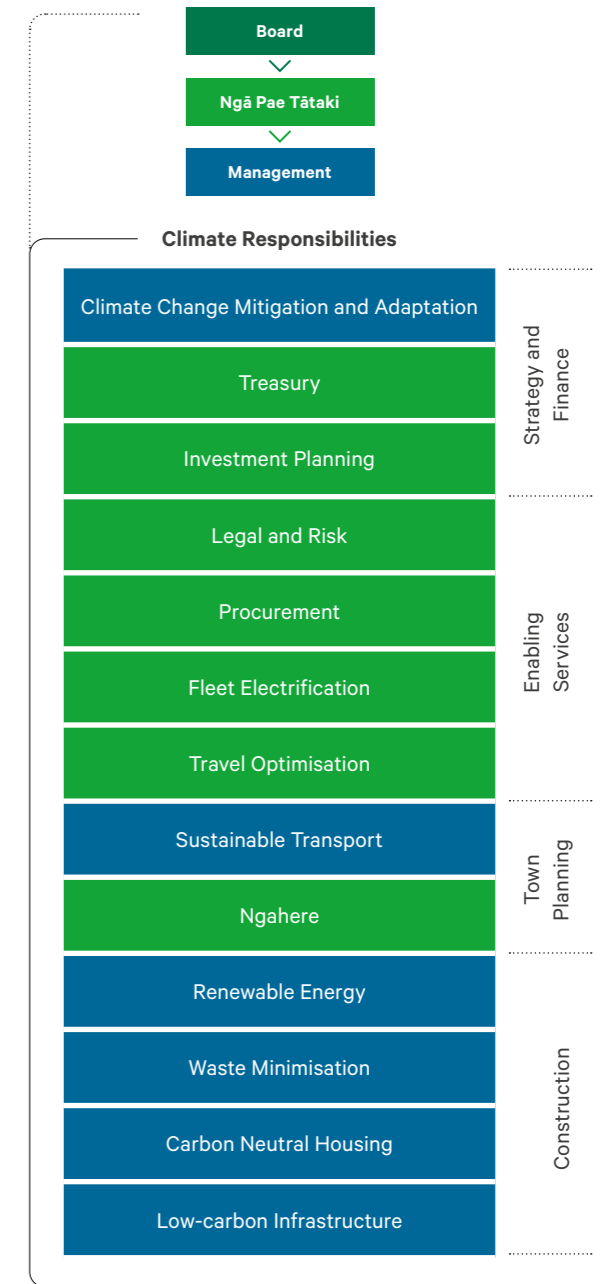
Where SCAN deems an executive-level discussion is required, issues or decisions are escalated to the Chief Executive Leadership Group (CELG) – a formal forum focused on strategic organisation-wide initiatives with delegations to support decision making. CELG membership consists of the Chief Executive (as Chair) and all their direct reports. CELG meets weekly, and decisions and update papers concerning climate-related risks and opportunities are tabled frequently. Members of CELG are present at Board meetings and attend Board subcommittee meetings where relevant.

### Sustainability and climate-related responsibilities

Kāinga Ora has a combination of dedicated and non-dedicated sustainability and climate-related resources in place across the organisation.

- Our Sustainability and Climate Strategy team is responsible for our strategies for climate change mitigation and adaptation and supporting the implementation of those strategies.
- We use a matrix management structure to ensure activities across the group are coordinated and conducted in a centrally prioritised way. We also allocate specific resourcing to respond to key risks and opportunities.
- We have collaborative management arrangements in place to ensure all other relevant parts of the organisation have oversight and ownership of the climate-related issues material to them.

Figure 1: Sustainability and climate responsibilities at Kāinga Ora



● Line of responsibility to Director Sustainability  
 ● Collaborative management arrangements exist

## Strategy

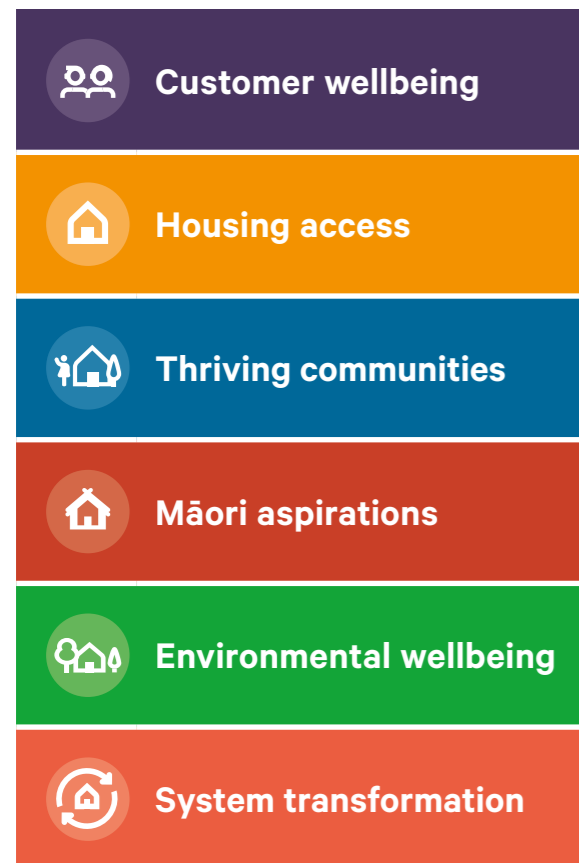
### Business model and strategy

Kāinga Ora has two core roles.

- Delivering social housing and being a responsible landlord as an agent for the Crown.
- Partnering to lead and facilitate urban development projects of all sizes.

Kāinga Ora has six enduring outcomes it is working to achieve. Our outcomes outlined in our Statement of Intent 2022–2026<sup>3</sup> are interlinked and collectively enable us to contribute to the people of New Zealand.

Figure 2: Kāinga Ora outcomes



### Current climate-related impacts

#### Extreme weather events

Kāinga Ora continues to be impacted by extreme weather events in regions where we operate. These events continue to challenge some of our basic assumptions about how our business operates, including:

- customer support managers being able to travel to our homes
- tradespeople being able to get to our sites
- infrastructure and transport networks being intact, allowing our supply chain to operate.

We experienced several events in 2023/24 that required immediate response and resulted in repair/maintenance requirements for affected properties.

In particular, the 2023 North Island weather events, including January’s Auckland/Northland floods and February’s Cyclone Gabrielle, had a significant impact on Kāinga Ora in 2022/23. In 2023/24, we have continued to deal with the ongoing financial and operational impacts of these events.

Our assets, people, customers and communities were immediately and directly impacted by these events.

#### 2023 NORTH ISLAND WEATHER EVENTS

**1,940** homes affected in the Auckland region, **683** homes severely impacted, about **1,400** customers affected and **314** customer households relocated.

**495** homes affected in Tairāwhiti and Hawke’s Bay, mostly with minor damage, and **431** cyclone-related work orders logged.

**262** homes affected in the Northland region with weather events having minor impacts.

**310** homes affected throughout the rest of the North Island with no severe impacts recorded.



Approximately **1,200** welfare calls were made, and **900** welfare visits undertaken by the frontline team over Auckland Anniversary weekend.



Damage to communication and roading infrastructure left customers unable to contact staff or access amenities.

3. <https://kaingaora.govt.nz/assets/Publications/Statement-of-Intent/Kainga-Ora-2022-2026-SOI.pdf>

Kāinga Ora has aggregated costs resulting from the Auckland floods and made an insurance claim in 2023/24 of around \$40 million. Our excess is \$20 million. Our insurance premiums have increased substantially due to these events and other global climate-related events. Kāinga Ora has also impaired the value of affected land for valuation purposes. The longer-term response to these events has impacted work elsewhere in the organisation as remediation is prioritised.

The Auckland floods triggered Auckland Council to adopt a property-level flood risk framework to support recovery funding decision making and future land use. Kāinga Ora has adopted this framework to ensure consistency. The process has benefited our organisation's broader work on flood risk management maturity.

Extreme weather events continue to have an ongoing impact on our strategy and response planning. Management have spent substantial time responding to these impacts. Beyond immediate remediation work, they have been focusing on issues such as our risk appetite and the future use of our severely impacted properties.

These events have highlighted the importance of our efforts to increase climate risk management maturity. These efforts include providing guidance on how climate risk is considered across a project's life cycle from opportunity identification to delivery/acquisition and ongoing management. It also includes developing guidance on flood risk appetite, which includes risk and tolerance assessment, risk treatment and feasibility.

### Expectation to report on and reduce emissions

The Ministry for the Environment (MfE) Carbon Neutral Government Programme (CNGP) sets out requirements or actions for Kāinga Ora to contribute to New Zealand's emissions reduction efforts.

The CNGP requires Kāinga Ora to:

- measure, verify and report its emissions annually
- set gross emissions reduction targets and longer-term reduction plans
- introduce a plan to reduce its emissions
- offset remaining gross emissions from 2025<sup>4</sup> to achieve carbon neutrality.

As a result of the CNGP, we are undertaking a travel optimisation project to reduce corporate emissions in line with a 1.5°C pathway (42 percent reduction). Through the project, staff travel budgets were reduced by 8 percent in 2023/24 – the first in a series of planned reductions. We also continue to replace our hybrid vehicles with fully electric vehicles through our ongoing fleet electrification programme and are investigating opportunities to optimise our vehicle fleet. This has resulted in decreased emissions associated with fuel use as well as decreased fuel costs for Kāinga Ora.

In 2023/24, we invested in improving processes for collecting emissions input information and data quality and assumptions in our emissions calculations.

We also submitted our first Emissions Reduction Plan to MfE before the 1 December 2023 deadline. This sets out our emissions reduction targets and our strategy to minimise the carbon footprint of our operations in line with a 1.5°C pathway (see the case study on page 11).

## Case study: Our Emissions Reduction Plan (ERP)

### Actions to date

Kāinga Ora has been committed to taking action to reduce our emissions since our first Environment Strategy was published in 2019. Since 2019, we have invested in or committed to programmes that deliver significant emissions reductions. Through existing and funded programmes we estimate the following.

- Intensification of housing through our public housing programme, including in our large-scale projects, will reduce our customers' transport emissions. This would reduce total emissions by 16 percent in 2034/35 compared to the baseline if we had not delivered these programmes.
- Our programme to retrofit and renew existing public housing will reduce total emissions by seven percent by 2034/35 compared to the baseline.
- Electrifying our fleet of corporate vehicles will reduce our corporate emissions by 17 percent every year, resulting in a 0.2 percent total reduction by 2034/35 compared to the baseline.

### Actions to take

There is a gap between what Kāinga Ora is planning to do now and what would be required to align with an emissions pathway that limits global average temperature increase to 1.5°C above pre-industrial levels (1.5°C aligned targets).

Our ERP outlines the actions we can take to achieve these targets. Actions with the most impact would include:

- tightening our land development criteria to ensure we only invest in areas that minimise customer transport emissions could achieve an eight percent total emissions reduction in 2034/35
- delivering a programme that supports our public housing customers to increase their use of bikes could achieve a seven percent reduction in our total emissions by 2034/35
- replacing hot water systems with hot water heat pumps could achieve a three percent reduction in our total emissions by 2034/35.

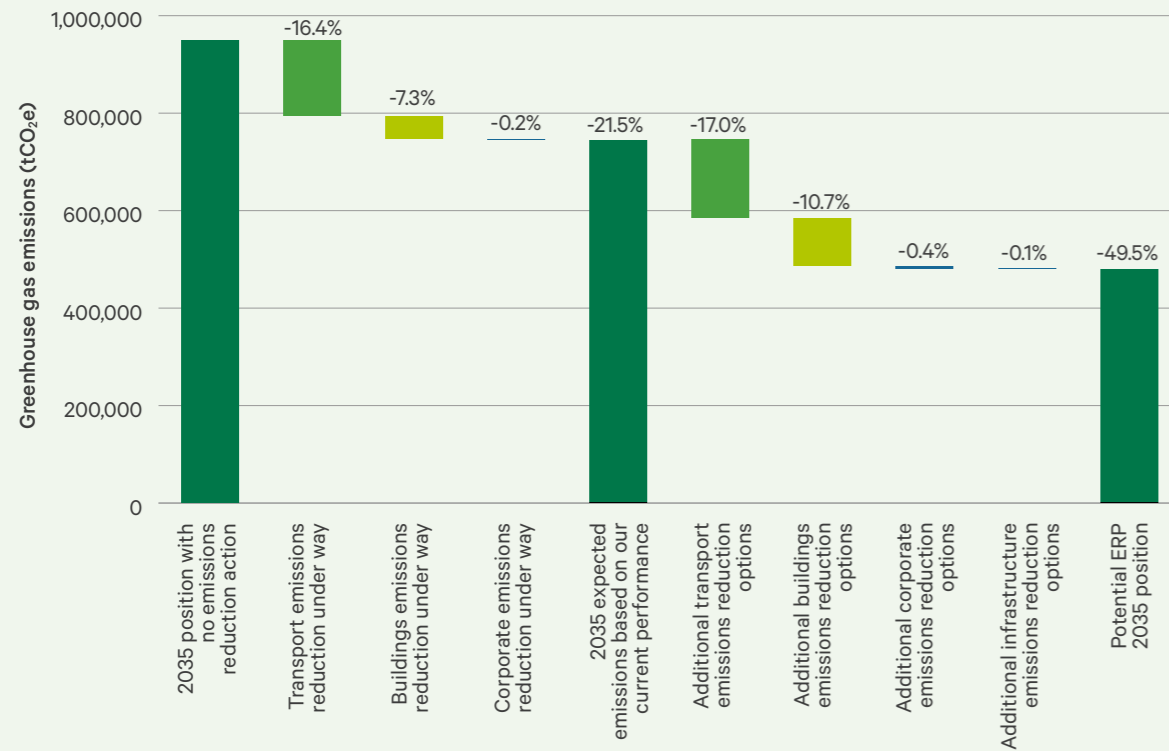
In addition, we are required to adopt a 42 percent corporate emissions reduction target under the CNGP. This results in a 0.4 percent reduction in total emissions by 2034/35.

Combined with the actions we are already funded to deliver, fully adopting the reduction pathways of our ERP could result in a 52 percent emissions reduction compared to if Kāinga Ora took no action. At present, reduction pathways have not been adopted.

We expect each of these actions will also deliver significant improvements for our customers and communities through better access to amenities, shorter travel distances, more active lifestyles and energy cost savings.



Figure 3: Summary of 2034/35 potential emissions reduction opportunities outlined in the Kāinga Ora Emissions Reduction Plan



**Funding and operating settings**

Our commitment to sustainability means we are currently delivering our maximum emissions reduction potential under current financing and legislative settings. Therefore, most of the pathways described in our ERP will require a change to our policy or operating settings. There are also broader trade-offs that may need to be considered such as how delivering on the pathways may interact with our ability to deliver our other statutory functions and objectives.

**Timing**

The projected emissions reductions assume interventions begin to be implemented within one year of publication. This will require us to prioritise feasibility work that enables us to seek endorsement and funding to implement the changes. Delays to this will limit the emissions reductions potential presented in our ERP.

**Scenario analysis undertaken**

Table 1: Scenario analysis summary

	<b>Orderly</b> Limit temperature rise to 1.5°C (with overshoot)	<b>Disorderly</b> Limit temperature rise to 2°C	<b>Hot house</b> Temperature rise >3°C
<b>Time horizons</b>	'Short term' refers to the 1 to 3-year period (2027), to align with the central government electoral cycle in New Zealand. 'Medium term' refers to the 4 to 30-year period (2054), to align with Kāinga Ora strategies. 'Long term' refers to the 31 to 50-year period (2074), to align with the expected useful life of dwellings before significant renewal activities are required.		
<b>Reference scenarios</b>	SSP1-2.6   CCC Tailwinds   NZGBC Orderly	SSP2-4.5   CCC Headwinds   NZGBC Disorderly	SSP3-8.5   CCC Current Policy Reference   NZGBC Hot house
<b>Key assumptions</b>	An 'Orderly' 1.5°C scenario where decarbonisation policies are enacted immediately and smoothly (globally, in New Zealand and within the sector). Rapid but coordinated transition. Whole-of-life carbon emissions reduction requirements for buildings is at 90 percent by 2050. The construction sector grows significantly as carbon-supporting infrastructure is replaced with greener, low-carbon infrastructure. It is assumed the New Zealand Government's response is consistent with the global response.	A 'Disorderly' scenario where significant decarbonisation is delayed until 2030 (globally, within New Zealand and within the sector). This leads to global warming being limited to <2°C by 2100. The sector faces high transition risk after 2030 as entities rush to decarbonise. Initially, the construction and property sector is slow to decarbonise, but 'fast movers' get the opportunity to utilise materials, capital and knowledge. It is assumed the New Zealand Government's response is consistent with the global response.	A 'Hot House World' scenario where global warming reaches >3°C above pre-industrial levels by 2100 (globally, within New Zealand and within the sector). No further decarbonisation policies transition risks but extreme physical climate risks, particularly towards the end of the century. It is assumed the New Zealand Government's response is consistent with the global response.
<b>Impact on Kāinga Ora</b>	Kāinga Ora is put under pressure as struggling communities face further challenges associated with the cost of transition and there is an increased need for public housing. Funding is available to account for the costs of upgrading homes to be climate resilient and delivering new builds with lower emissions.	Kāinga Ora is faced with needing to deliver more housing, repair damages from more frequent and intense weather events and compete with other developers to access resources, all with no additional funding. From the 2030s onwards, directives for improving the climate performance of new and existing builds are given without adequate financial support.	Food insecurity, cost rises, unemployment and immigration have all created huge and growing demand for social housing. Without additional funding, Kāinga Ora is unable to provide enough housing to meet demand. Where government funding is available, it is directed towards the comfort and safety of Kāinga Ora customers in a changing climate instead of reducing the emissions caused by new and existing builds.

## Climate-related risks

**Key: Anticipated impacts**

- Minimal
- Minor
- Moderate
- Major
- Massive





### Physical risks<sup>5</sup>

**Table 2: Kāinga Ora physical risks and their anticipated impacts**

Risk	Description
<b>Land becomes unviable for residential use resulting in financial losses and reduced ability to provide housing.</b>	Increases in frequency and/or intensity of climate-related events or land-use policy changes driven by climate change leads to land becoming uninhabitable and/or unviable for development. This gradual reduction in efficacy of assets results in impaired land values, losses on sale, increased adaptation costs and reduced ability to provide appropriate properties for customers to live in.

#### Anticipated impacts

It is **likely** Kāinga Ora could see this risk materialise in the **short** term. Potential impacts<sup>7</sup> include the following.

Financial	Reputation	Goals and outcomes
 <p><b>Impact: Massive</b></p> <ul style="list-style-type: none"> <li>Asset write-off, costs and/or revenue losses.</li> </ul>	 <p><b>Impact: Moderate</b></p> <ul style="list-style-type: none"> <li>Region-wide credibility gap with stakeholder impacts.</li> </ul>	 <p><b>Impact: Moderate</b></p> <p>&lt;10% variance in:</p> <ul style="list-style-type: none"> <li>annual SPE targets</li> <li>strategic plan outcomes</li> <li>project/programme outcomes/benefits</li> <li>contractual KPIs.</li> </ul>
Customer		
 <p><b>Impact: Minimal</b></p> <ul style="list-style-type: none"> <li>&lt;5% reduction in customer satisfaction.</li> <li>Some/isolated customer complaints.</li> </ul>		

5. Risks related to the physical impacts of climate change. Physical risks emanating from climate change can be event driven (acute) such as increased severity of extreme weather events. They can also relate to longer-term shifts (chronic) in precipitation and temperature and increased variability in weather patterns such as sea-level rise.






6. Refer to page 67 for our likelihood definitions.

7. Impact ratings are consistent with the consequence ratings in the Kāinga Ora Risk Management Framework.

Risk	Description
<b>Buildings and/or land experience substantial damage impacting Kāinga Ora financial position and operations.</b>	Increased frequency and severity of rainfall and storm surge events may lead to significant damage to Kāinga Ora assets, resulting in financial losses, remediation costs and other operational impacts.  Exposure to one-off large losses is partially mitigated by geographic spread of portfolio. However, this spread also increases frequency and likelihood of smaller, regionally distributed losses.

#### Anticipated impacts

It is **likely** Kāinga Ora could see this risk materialise from the **short** term onwards. The severity of impacts will depend on the scale of the event. Potential impacts include the following.




Financial	People	Service delivery	
 <p><b>Impact: Massive</b></p> <ul style="list-style-type: none"> <li>Asset write-off, costs and/or revenue losses.</li> </ul>	 <p><b>Impact: Massive</b></p> <ul style="list-style-type: none"> <li>Widespread and sustained reduction in staff productivity.</li> <li>&gt;3 months resource capability or capacity gap.</li> </ul>	 <p><b>Impact: Massive</b></p> <ul style="list-style-type: none"> <li>1 week frontline service disruption.</li> <li>1 month backend service disruption.</li> <li>Sustained performance failures by service provider.</li> <li>6 months unplanned repairs on properties.</li> <li>300 properties affected or undelivered.</li> </ul>	
Time	Goals and outcomes		
 <p><b>Impact: Moderate</b></p> <ul style="list-style-type: none"> <li>10% delays to key milestones or critical path.</li> <li>10–20% increase in remaining programme/project duration.</li> </ul>	 <p><b>Impact: Moderate</b></p> <p>&lt;10% variance in:</p> <ul style="list-style-type: none"> <li>annual SPE targets</li> <li>strategic plan outcomes</li> <li>project/programme outcomes/benefits</li> </ul>		



Risk	Description
<b>Customer health, safety and wellbeing compromised by rainfall and storm surge events affecting properties.</b>	Increased frequency and severity of rainfall and storm surge events may lead to significant damage to Kāinga Ora assets. Results of this include potential harm to customers, impacted customer wellbeing and inability to meet housing demands (due to early asset retirement, redirection of funds).

**Anticipated impacts**






It is **likely** Kāinga Ora could see this risk materialise for a small proportion of our homes from the **short** term onwards. The severity of impacts will depend on the scale of the event. We would experience greater exposure to impacts in areas where we hold more properties and our exposure and vulnerability to risks is higher. Potential impacts include the following.

Wellbeing, safety and compliance	Customer	Reputation
 <p><b>Impact: Massive</b></p> <ul style="list-style-type: none"> <li>• Potential loss of life.</li> </ul>	 <p><b>Impact: Moderate</b></p> <ul style="list-style-type: none"> <li>• Up to 15% reduction in customer satisfaction.</li> <li>• Regionalised customer complaints.</li> </ul>	 <p><b>Impact: Moderate</b></p> <ul style="list-style-type: none"> <li>• Region-wide credibility gap with stakeholder impacts.</li> </ul>

Risk	Description
<b>Supply chain significantly disrupted by acute and chronic climate-related impacts.</b>	Increased frequency and severity of weather events may lead to construction supply chain disruption and shortages as well as vulnerability of trades to changing costs. This could result in increased costs and uncertainty/delays in the Kāinga Ora development pipeline. In turn, this could lead to an inability to meet contractual agreements and SPE targets.

**Anticipated impacts**







It is **possible** Kāinga Ora could see this risk materialise from the **short** term onwards. Potential impacts include the following.

Financial	Time	Goals and outcomes
 <p><b>Impact: Massive</b></p> <ul style="list-style-type: none"> <li>• Material costs.</li> </ul>	 <p><b>Impact: Moderate</b></p> <ul style="list-style-type: none"> <li>• 10% delays to key milestones or critical path.</li> <li>• 10–20% increase in remaining programme/project duration.</li> </ul>	 <p><b>Impact: Moderate</b></p> <p>&lt;10% variance in:</p> <ul style="list-style-type: none"> <li>• annual SPE targets</li> <li>• strategic plan outcomes</li> <li>• project/programme outcomes/benefits</li> <li>• contractual KPIs.</li> </ul>
<p><b>Reputation</b></p>  <p><b>Impact: Minor</b></p> <ul style="list-style-type: none"> <li>• Localised stakeholder impacts.</li> </ul>	<p><b>Legal and regulatory</b></p>  <p><b>Impact: Minor</b></p> <ul style="list-style-type: none"> <li>• Event results in internal regulatory investigation with significant changes to internal systems</li> </ul>	

Risk	Description
<b>Increasing average temperatures result in Kāinga Ora homes not providing an adequate level of protection from heat stress.</b>	As a result of a generally warming climate and an increase in heatwaves, Kāinga Ora homes may no longer provide an adequate level of heat protection. This results in decreased customer wellbeing and hauora, increased energy costs to the customer and potential reputational impacts for Kāinga Ora. Acute heatwave events may lead to extreme temperatures where the need to protect our people and contractors impacts Kāinga Ora service delivery.

**Anticipated impacts**

It is **almost certain** Kāinga Ora could see this risk materialise from the **medium** term onwards. Potential impacts include the following.

Customer	Reputation	Wellbeing, safety and compliance
 <p>Impact: Minor</p> <ul style="list-style-type: none"> <li>Up to 10% reduction in customer satisfaction.</li> <li>Localised customer/external stakeholder complaints.</li> </ul>	 <p>Impact: Minor</p> <ul style="list-style-type: none"> <li>Localised stakeholder impacts</li> </ul>	 <p>Impact: Minor</p> <ul style="list-style-type: none"> <li>Harm or illness managed by first aid.</li> </ul>
People	Time	Goals and outcomes
 <p>Impact: Minimal</p> <ul style="list-style-type: none"> <li>Some/isolated reduction on staff productivity.</li> <li>&lt;2 weeks resource capability or capacity gap managed by existing resources.</li> </ul>	 <p>Impact: Minimal</p> <ul style="list-style-type: none"> <li>Delays to milestones not on critical path.</li> <li>&lt;5% increase in remaining programme/project duration – 0 to 30 days.</li> </ul>	 <p>Impact: Minimal</p> <ul style="list-style-type: none"> <li>Slight variance to SPE targets that are dealt with routinely.</li> </ul>



**Transition risk<sup>8</sup>**

**Table 3: Kāinga Ora transition risk and its anticipated impacts**

Risk	Description
<b>Failure to meet emissions reduction or adaptation obligations.</b>	An inability to develop and deliver strategies to meet climate-related emissions reduction and adaptation obligations could lead to Kāinga Ora failing to comply with governing legislation resulting in litigation, impact on social licence to operate and failure to protect customer wellbeing and organisational assets.

**Impacts**

It is **possible** Kāinga Ora could see this risk materialise from the **medium** term onwards. Potential impacts include the following.

Reputation	Legal and regulatory
 <p>Impact: Moderate</p> <ul style="list-style-type: none"> <li>Region-wide credibility gap with stakeholder impacts.</li> </ul>	 <p>Impact: Moderate</p> <ul style="list-style-type: none"> <li>Legislative or regulatory investigation without prosecution.</li> </ul>

8. Risks related to the transition to a low-emissions, climate-resilient global and domestic economy such as policy, legal, technology, market and reputation changes associated with the mitigation and adaptation requirements relating to climate change.

## Control environment

Kāinga Ora puts management controls in place to the degree it can within the current funding settings. In Tables 2 and 3, we have presented the potential impacts to Kāinga Ora if risks are untreated.

As an asset owner, Kāinga Ora has a commercial imperative to better understand higher-risk assets and take actions to address risk where necessary. Legislative and policy direction also encourages us to reduce emissions. Financial constraints can affect the pace at which Kāinga Ora moves to address risks or reduce emissions.

In the current funding environment, Kāinga Ora is well placed to build a full understanding of its exposure to risks and can develop controls to manage them. However, risks will be managed and emissions reduction action will be taken where it is commercially appropriate for Kāinga Ora to do so.

The government is tasked with balancing the potential impacts of these risks with their associated costs in making funding decisions. Allocation of additional funding would allow for acceleration of risk assessment and treatment activities as well as improved ability to address non-financial elements of risks.



## Climate-related opportunities

### Physical opportunity

Table 4: Kāinga Ora physical opportunity and its anticipated impacts

Opportunity	Description	Anticipated impacts
Increased portfolio resilience results in lower cost/resource impacts when extreme weather events occur.	We are actively working on setting organisational guidance on climate risk assessment criteria, roles and responsibilities and risk appetite. This could result in changes to our criteria for acquiring or redeveloping on land.	It is <b>likely</b> Kāinga Ora could see the following impacts in the <b>medium</b> term. <ul style="list-style-type: none"> <li>• Reduced land and building remediation costs resulting from acute climate-related events relative to if this work was not undertaken.</li> <li>• Reduced resource impacts resulting from acute climate-related events relative to if this work was not undertaken.</li> <li>• Increased average value of land held as land in non-hazard-prone areas is likely to increase in value.</li> </ul>

### Transition opportunities

Table 5: Kāinga Ora transition opportunities and their anticipated impacts

Opportunity	Description	Anticipated impacts
Corporate emissions reductions/efficiencies provide cost savings.	The CNGP requires us to reduce our corporate emissions by 42% by 2029/30. Any corporate emissions from 2025 <sup>9</sup> must be offset so there is an incentive to reduce them as quickly as possible. To meet these requirements, we have started a travel optimisation project, which has committed to: <ul style="list-style-type: none"> <li>• reduce travel budgets by 8% each year up to 32% in 2027/28</li> <li>• reduce the size of our corporate vehicle fleet each year up to a 38% reduction in 2027/28.</li> </ul>	It is <b>almost certain</b> Kāinga Ora will see the following impacts in the <b>short</b> term. <ul style="list-style-type: none"> <li>• Reduced travel budgets resulting in less costs associated with flights, accommodation, rental cars, hotels and spending on meals.</li> <li>• Reduced fleet size resulting in decreased spending on maintenance and replacement of vehicles as well as a potential reduction in indirect fuel spend and emissions in the short term.</li> </ul> These emissions reduction initiatives also reduce the cost of offsets once introduced.

9. This date is currently under review by MfE.

Opportunity	Description	Anticipated impacts
Climate-related migration increases potential rental income.	We receive funding based on the market rental value of our homes. Migrants moving to New Zealand to avoid acute or chronic climate change impacts overseas may increase demand pressure or reduce supply in the country’s housing market, increasing market rents.	It is <b>possible</b> Kāinga Ora could see increased rental income in the <b>long</b> term.
Contributing to our customer wellbeing outcomes.	There is an opportunity to contribute towards our customer wellbeing outcomes by using our residential build and renewal programmes to: <ul style="list-style-type: none"> <li>increase the energy efficiency of our public and supported housing</li> <li>ensure appropriate density is delivered in areas with good amenity and public/active transport options.</li> </ul>	<p>It is <b>possible</b> for Kāinga Ora to deliver improved customer wellbeing outcomes in the <b>medium</b> term.</p> <p>It is <b>possible</b> Kāinga Ora will realise some operational efficiencies because of this in the <b>medium</b> term such as:</p> <ul style="list-style-type: none"> <li>reduced maintenance activity</li> <li>reduced tenancy management required relating to conflicts arising from carparking disputes.</li> </ul>
Access to lower-cost redevelopable land.	As New Zealand attempts to go through managed retreat processes, marginal developable land is likely to become available. This land may be reconfigurable to enable housing development. This presents opportunities for land to be acquired by Kāinga Ora at a value lower than what we usually experience in the market, but any additional adaptation costs will need to be considered.	It is <b>possible</b> lower-cost land will be available to Kāinga Ora in the <b>short</b> term.

## How climate-related risks and opportunities serve as an input to internal capital deployment and funding decision-making processes

Climate-related risks and opportunities are factored into investment decision-making through our regional planning process and in more detail once projects are established in the early stages of the Kāinga Ora Investment Management Framework.

Development projects working through the Kāinga Ora investment management pathway are required to identify and assess the exposure and vulnerability of housing, customers and community to climate hazards. Projects that are considered significant (based on set internal criteria) require flood risk assessments if a potential flood risk has been identified through due diligence work. Significant projects also require a full climate risk assessment and must establish plans to ensure identified climate-related risks are appropriately managed. Significant projects delivering more than 200 properties must also undertake a carbon impact assessment. In making recommendations, these projects must assess the financial impact of ensuring the project aligns with the Kāinga Ora Environment Strategy.

Projects not considered significant must describe how the project has considered current and future climate risks as well as details on mitigation measures to minimise these risks. They must also describe how the project has considered reducing emissions.

Conclusions on climate risks and opportunities relevant to a project are included in the upfront recommendations to the approving committee. They are considered alongside other factors such as purchase price and return on investment.

## Risk management

### Processes for identifying and assessing climate-related risks

Kāinga Ora undertakes a formal climate-related risk identification and assessment exercise annually. Risks are identified through scenario analysis workshops and engagement with senior leaders. Assessment involves using a climate change-specific methodology and the Kāinga Ora Risk Management Framework to determine risk ratings across short-term, medium-term and long-term timeframes (see page 13 for timeframe definitions). All parts of the value chain are included.

The climate change-specific methodology aligns with the National Climate Change Risk Assessment produced by MfE. Risks are assessed using exposure and vulnerability criteria on a risk matrix with a four-point scale (low, moderate, high, extreme). Adaptive capacity is also factored into the assessment of risk using the same four-point scale but in inverse order, where a low ability to adapt presents a high level of risk. This generates a first-pass risk rating, which is used to inform and sense check ratings determined using the Kāinga Ora Risk Management Framework.

The Kāinga Ora Risk Management Framework is based on ISO 31000:2018. Absolute (inherent) risk ratings are determined using five-point scales for likelihood (rare, unlikely, possible, likely, almost certain) and consequence (minimal, minor, moderate, major, massive). Ratings are determined across orderly, disorderly and hot house scenarios (see page 13 for scenario definitions) for short-term, medium-term and long-term timeframes. Ratings across scenarios and timeframes are then used to determine an enterprise risk management present risk rating, which is used for integration into overall Kāinga Ora risk management processes.

Effectiveness of controls is assessed to develop a controlled risk rating. Risk owners and oversight bodies are assigned based on the type of risk and its controlled risk rating.

### Processes for managing climate-related risks

Climate-related risks are tracked in the Kāinga Ora Active Risk Manager (ARM) system. Within ARM, we document related controls and their effectiveness. Actions have been assigned to specific personnel within the organisation to improve controls where they are ineffective.

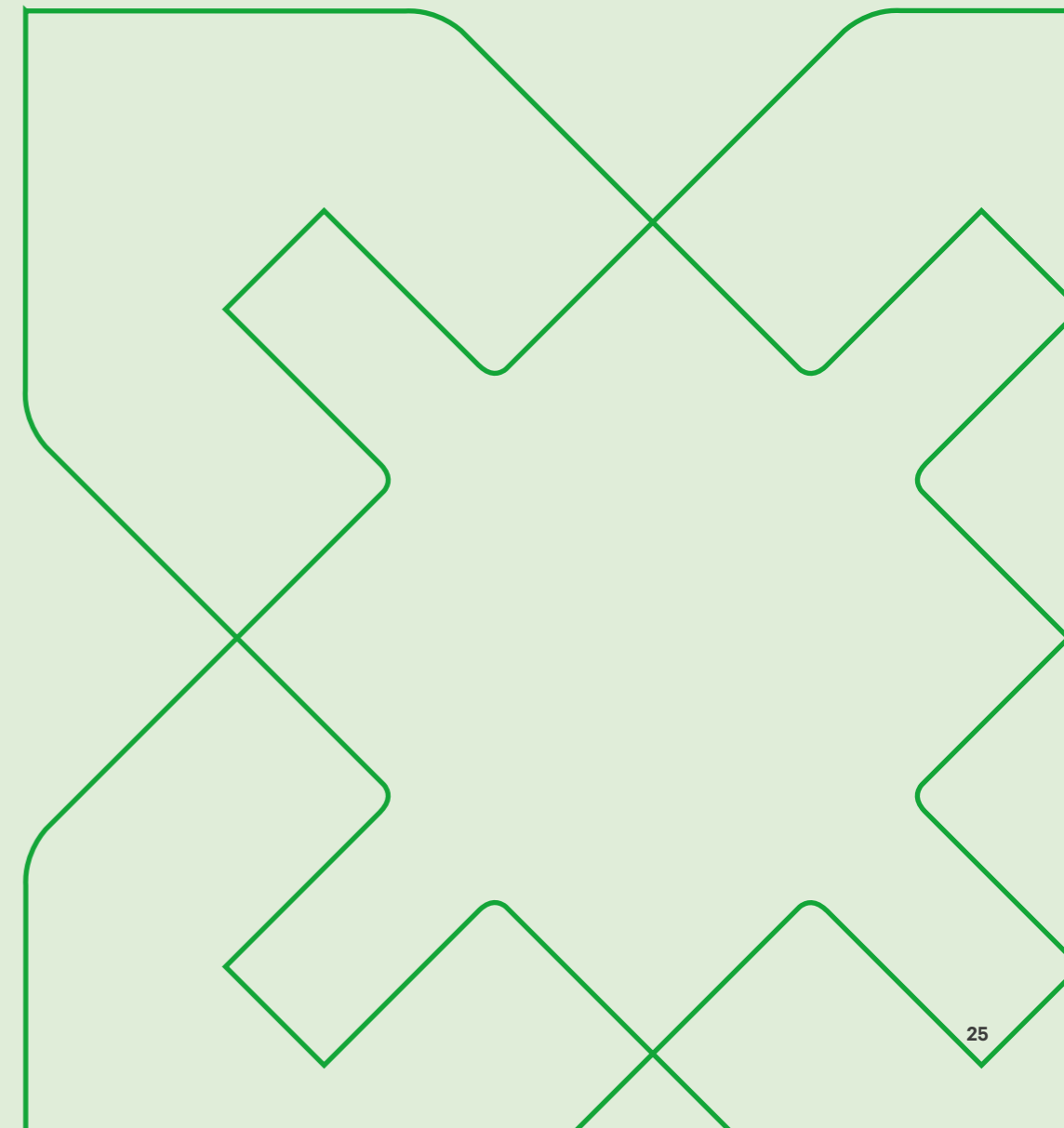
Individual climate-related risks are aggregated into a single overarching risk – impact of climate change on our assets and operations – for the purposes of presentation in the organisational Top Risk Report. This is presented alongside other strategic-level risks and has a high controlled risk rating. Risks on the Top Risk Report are tracked and reviewed by the Board’s Finance, Risk and Assurance Committee on a six-monthly basis.

### Metrics and targets

The Kāinga Ora Greenhouse Gas Emissions Inventory is presented in the next section, including information on GHG emissions reduction targets and performance against targets.

Kāinga Ora does not yet use formal metrics, key performance indicators or targets to measure and manage non-GHG climate-related risks and opportunities.

# Greenhouse Gas Emissions Inventory 2023/24



## Overview of the Kāinga Ora Greenhouse Gas Emissions Inventory

This section describes the Kāinga Ora Greenhouse Gas Emissions Inventory and the methods used in its calculation. It also sets out details of restatements to comparative figures and our targets set through the Kāinga Ora Emissions Reduction Plan. The last section includes detailed information on inclusions, exclusions and assumptions applied in the preparation of the inventory.

This inventory is prepared in line with the requirements of ISO 14064-1:2018 and the GHG Protocol Corporate Standard. It complies with the emissions reporting requirements of both the NZ CS and the CNGP. It includes emissions from our corporate activities, purchased goods and services and capital goods as well as emissions from sources related to buildings (public and supported housing), infrastructure development and customer transport.



**Table 6: Kāinga Ora emissions groups and their requirements**

Kāinga Ora emissions group	Description	CNGP requirements
Corporate emissions	Emissions from our corporate and employee-related activities.	<ul style="list-style-type: none"> <li>• Measure emissions.</li> <li>• Set a target in line with a 1.5°C pathway.</li> <li>• Report emissions.</li> <li>• Offset (from 2025)<sup>10</sup> all emissions sources in the corporate emissions group.</li> </ul>
Buildings emissions	Emissions from construction and maintenance of Kāinga Ora homes (embodied emissions), building design and consenting services, as well as energy and water consumed (operational emissions) in the homes.	<ul style="list-style-type: none"> <li>• Measure emissions.</li> <li>• Set a target, where possible, based on the reduction potential within the organisation.</li> <li>• Report emissions.</li> </ul>
Infrastructure emissions	Emissions from the energy and materials used to construct infrastructure we develop (embodied emissions).	<ul style="list-style-type: none"> <li>• Measure emissions.</li> <li>• Set a target, where possible, based on the reduction potential within the organisation.</li> <li>• Report emissions.</li> </ul>
Other purchased goods and services and capital goods emissions	Emissions from purchased goods and services and capital goods not related to construction or infrastructure development.	<ul style="list-style-type: none"> <li>• Measure emissions.</li> <li>• Set a target, where possible, based on the reduction potential within organisation.</li> <li>• Report emissions.</li> </ul>
Transport emissions	Emissions arising from the vehicle kilometres travelled by people living in homes that Kāinga Ora owns.	<p>Kāinga Ora is not required to set a target, report or offset emissions in this group.</p> <p>However, transport emissions associated with the movement of people living in our homes makes up 43% of all emissions Kāinga Ora has some control or influence over so we have opted to report and set a target for the transport emissions group.</p>

10. This date is currently under review by MfE.

## Emissions summary

Table 7: Kāinga Ora 2023/24 emissions inventory and baseline comparison

	tCO <sub>2</sub> e 2023/24	tCO <sub>2</sub> e 2022/23	tCO <sub>2</sub> e intensity 2023/24	tCO <sub>2</sub> e intensity 2022/23	Intensity metric
<b>Corporate</b>					
<b>Scope 1 (Category 1)</b>					
Direct fuel use	770	961	0.22	0.30	per FTE <sup>11</sup>
<b>Scope 2 (Category 2)</b>					
Purchased electricity for corporate activities (location-based)	289	203	0.08	0.06	per FTE
<b>Scope 3</b>					
<b>Category 3</b>					
Business travel	1,546	2,110	0.45	0.66	per FTE
Staff working from home	102	113	0.03	0.04	per FTE
Employee commuting	2,343	2,372	0.68	0.74	per FTE
Direct fuel use well-to-tank	188	227	0.05	0.07	per FTE
<b>Category 4</b>					
Embodied emissions in purchased fleet vehicles	1,920	2,226	0.55	0.69	per FTE
Waste to landfill	145	52	0.04	0.02	per FTE
Corporate electricity transmission and distribution losses	29	41	0.01	0.01	per FTE
Wastewater treatment	178	179	0.05	0.06	per FTE
Water supply	16	16	0.00	0.00	per FTE
<b>Total corporate emissions (SPE Org_1.8 and Org_1.9)<sup>12</sup></b>	<b>7,526</b>	<b>8,500</b>	<b>2.17</b>	<b>2.65</b>	<b>per FTE</b>
<b>Buildings</b>					
<b>Scope 2 (Category 2)</b>					
Electricity purchased by Kāinga Ora for public and supported housing (location-based)	437	147	0.00	0.00	per occupant
<b>Scope 3</b>					
<b>Category 4</b>					
Embodied emissions from:					
- Existing portfolio	10,972	10,682	0.05	0.05	per occupant

11. Average full-time equivalent employees (FTE) in 2023/24 was 3,463.

12. Kāinga Ora SPE measures.

	tCO <sub>2</sub> e 2023/24	tCO <sub>2</sub> e 2022/23	tCO <sub>2</sub> e intensity 2023/24	tCO <sub>2</sub> e intensity 2022/23	Intensity metric
- New builds (SOI 5.2) <sup>13</sup>	163,212	89,337	13.06	12.41	per occupant
- Retrofits	3,176	2,722	1.45	1.74	per occupant
Emissions from building design and consenting services	23,447	20,046	100.13	89.20	per \$m spent
Public and supported housing transmission and distribution losses	32	13	0.00	0.00	per occupant
<b>Category 5</b>					
Operational emissions from existing portfolio (SOI 5.3)	50,035	48,325	0.25	0.25	per occupant
Embodied construction emissions financed through home ownership products	19,265	13,126	169.22	169.22	per \$m financed
<b>Total building emissions</b>	<b>270,575</b>	<b>184,397</b>	<b>1.35</b>	<b>0.95</b>	<b>per occupant</b>
<b>Infrastructure</b>					
<b>Scope 3</b>					
<b>Category 4</b>					
Embodied emissions from infrastructure development	19,143	18,089	124.46	116.14	per \$m spent
<b>Other purchased goods and services and capital goods</b>					
<b>Scope 3</b>					
<b>Category 4</b>					
Other purchased goods and services and capital goods	11,803	13,183	56.79	58.74	per \$m spent
<b>Transport</b>					
<b>Scope 3</b>					
<b>Category 6</b>					
Enabled emissions from customer transport (SOI 5.4)	237,558	225,131	1.19	1.15	per occupant
<b>Total emissions</b>	<b>546,605</b>	<b>449,300</b>	<b>2.73</b>	<b>2.30</b>	<b>per occupant</b>

13. Kāinga Ora SOI measures.

## Direct emissions separated by GHG group

**Table 8: Direct emissions separated by GHG group**

	2023/24			2022/23		
	t	GWP	tCO <sub>2</sub> e	t	GWP	tCO <sub>2</sub> e
<b>Scope 1 (Category 1)</b>						
<b>Direct fuel use</b>						
Carbon dioxide (CO <sub>2</sub> )	737	1	737	922	1	922
Methane (CH <sub>4</sub> )	0.35	28	10	0.43	28	12
Nitrous oxide (N <sub>2</sub> O)	0.09	265	23	0.11	265	28
<b>Scope 2 (Category 2)</b>						
<b>Purchased electricity for corporate activities</b>						
Carbon dioxide (CO <sub>2</sub> )	278	1	278	197	1	197
Methane (CH <sub>4</sub> )	0.37	28	10	0.18	28	5
Nitrous oxide (N <sub>2</sub> O)	0.001	265	0.3	0.001	265	0.24
<b>Electricity purchased by Kāinga Ora for public and supported housing</b>						
Carbon dioxide (CO <sub>2</sub> )	420	1	420	143	1	143
Methane (CH <sub>4</sub> )	0.56	28	16	0.14	28	4
Nitrous oxide (N <sub>2</sub> O)	0.002	265	0.5	0.001	265	0.17
<b>Total direct emissions (scope 1 and 2)</b>						
Carbon dioxide (CO <sub>2</sub> )	1,435	1	1,435	1,262	1	1,262
Methane (CH <sub>4</sub> )	1.28	28	36	0.75	28	21
Nitrous oxide (N <sub>2</sub> O)	0.09	265	23	0.11	265	28
<b>Combined total direct emissions</b>			<b>1,494</b>			<b>1,311</b>

GHG quantities have been converted to tCO<sub>2</sub>e using the global warming potential (GWP) from the Intergovernmental Panel on Climate Change (IPCC) Fifth Assessment Report. The time horizon is 100 years.

## Restatement of comparatives

The following changes have been made to comparative figures. The reason for these changes is noted in further detail below. Restatements align to the Kāinga Ora recalculation policy set out on page 39.

**Table 9: Restatements of comparative figures**

	tCO <sub>2</sub> e 2022/23 restated	tCO <sub>2</sub> e 2022/23	tCO <sub>2</sub> e intensity 2022/23 restated	tCO <sub>2</sub> e intensity 2022/23	Intensity metric
<b>Restatement of absolute and intensity figures</b>					
Operational emissions from existing portfolio	48,325	195,117	0.25	1.05	per occupant
Enabled emissions from customer transport	225,131	263,394	1.15	1.42	per occupant
<b>Restatement of intensities only</b>					
Embodied emissions from new builds	No change	No change	12.03	26.68	per occupant
Embodied emissions from retrofits	No change	No change	1.45	0.6	per occupant
<b>Comparatives for newly measured emissions sources</b>					
Emissions from building design and consenting services	20,046	N/M	89.20	N/M	per \$m spent
Embodied construction emissions financed through home ownership products	13,126	N/M	169.22	N/M	per \$m financed
Other purchased goods and services and capital goods	13,183	N/M	58.74	N/M	per \$m spent

N/M = not measured



## New energy use assumptions for operational emissions from existing portfolio

Kāinga Ora has improved its assumptions around operational energy use from existing portfolio dwellings. The impact of this change exceeds our restatement threshold for our base year. Previous estimates of household energy use were based on modelling of reference buildings that assumed all customers heated their homes to 20°C, 24 hours a day, seven days a week, all year round. This is a standard modelling approach for building design, but research shows that most New Zealand households do not heat their homes this consistently, especially those with lower incomes.

To adjust our modelling for this, we used the results from the BRANZ Household Energy End-use Project (HEEP1). This is the most comprehensive study of household energy use undertaken in New Zealand. However, this study is based on data that is approximately 20 years old, so to confirm its validity, we cross-checked its results against more recent but less comprehensive data, including:

- Ministry of Business, Innovation and Employment average electricity consumption data for households (2022)
- Energy Efficiency and Conservation Authority presentation on household energy use (2024)
- actual energy use in 41 Kāinga Ora properties located in Auckland and Christchurch (2023/24).

All three sources confirmed total household energy use remains much the same as reported in the HEEP1 study. Improvements in technology since then such as the introduction of heat pumps and improved insulation levels have resulted in improved living conditions rather than reductions in energy use. We therefore used the HEEP1 data to estimate the annual energy use per square metre of dwelling for each climate zone.

We also know different building typologies and different build standards have differing thermal performance. This was not accounted for in the HEEP1 study, so we adjusted the numbers based on Kāinga Ora-produced thermal modelling to account for this.

Finally, we also switched to using MfE emissions factors for electricity generation and transmission rather than BRANZ factors. This ensures the factor used is consistent with calculations for other emissions sources.

## Improved assumptions used in determining enabled emissions from customer transport

Kāinga Ora has improved several of the assumptions made in modelling customer transport use.

- Emissions associated with housing enabled for the private market through large-scale projects are now excluded from our boundary because Kāinga Ora has no control over ongoing enabled emissions from these sites. This treatment is consistent with other emissions groups.
- Electricity generation and transmission emissions factors used for electric vehicle modelling have been brought in line with MfE emissions factors to ensure consistency across all sources.
- Modelling was changed to be based on Ministry of Transport Household Travel Survey regions, which are more granular than the Kāinga Ora operating regions the modelling was previously based on.
- Modelling information has been undertaken on a per occupant basis rather than per household for greater accuracy.
- Vehicle kilometres travelled (VKT) data was updated to reflect the most recent household travel data available.

The impact of these changes exceeds our restatement threshold for our base year.

## Changes to assumed occupancy rate for emissions intensity calculations

Kāinga Ora has improved its occupancy assumption in 2023/24. The impact of this change exceeds our restatement threshold for our base year intensity metrics. This change affects the emissions intensity of:

- electricity purchased by Kāinga Ora for public and supported housing
- embodied emissions from new builds
- embodied emissions from retrofits
- operational emissions from existing portfolio
- enabled emissions from customer transport.

Our assumed occupancy rate is now based on the actual recorded average number of Kāinga Ora occupants per bedroom across the year rather than modelled reference building occupancy.

## Comparatives for newly measured emissions sources

Some scope 3 emissions have been added to our inventory for 2023/24. We now have data and processes to calculate scope 3 emissions from:

- building design and consenting services
- construction emissions financed through home ownership products
- other purchased goods and services and capital goods.

For these sources, we have elected to provide comparative figures to aid readers in comparing emissions year on year.

## Summary of targets and reduction strategies

GHG emissions reduction targets have been included to meet the MfE CNGP requirements. These were set as part of our 2023 Emissions Reduction Plan, which has been provided to MfE but has not been made publicly available. Reduction targets are set as a percentage, so restatements of the base year have not impacted the targets set out below. No target has been set for the other purchased goods and services and capital goods emissions group due to the uncertainty in using spend-based emissions factors for measurement, and the low reduction potential of this category.

**Table 10: Emissions reduction targets as set out in the 2023 Kāinga Ora Emissions Reduction Plan**

	Corporate	Buildings	Infrastructure	Transport
Within our current funding and operational settings, we expect to...	Reduce corporate emissions by 27% by 2024/25 and 42% by 2029/30 compared to CNGP baseline for 2022/23	Reduce buildings emissions by 14% by 2034/35 compared to 2019	Reduce infrastructure emissions by 0% by 2029/30 compared to 2022/23	Reduce transport emissions by 26% by 2034/35 compared to 2019
To have 1.5°C aligned targets, we would need to...		Reduce buildings emissions by 41% by 2034/35 compared to 2019	Reduce infrastructure emissions by 42% by 2029/30 compared to 2022/23	Reduce transport emissions by 41% by 2034/35 compared to 2019
Reduction strategies to achieve this include	<ul style="list-style-type: none"> <li>Reduce business travel</li> <li>Downsize our fleet</li> <li>Electrify our fleet</li> <li>Have a sustainable taxi policy</li> </ul>	<ul style="list-style-type: none"> <li>Improve our design and build standards</li> <li>Install hot water heat pumps</li> <li>Install mechanical ventilation with heat recovery</li> <li>Explore low-carbon structural materials</li> </ul>	<ul style="list-style-type: none"> <li>Roll out successful pilots across our portfolio</li> <li>Concentrate and intensify housing in the right locations</li> <li>Adopt low-carbon materials</li> <li>Research and trial new low-carbon materials and technologies</li> </ul>	<ul style="list-style-type: none"> <li>Concentrate and intensify housing in the right locations</li> <li>Support access to bikes and e-bikes</li> <li>Reduce barriers to electric vehicles for our public housing customers</li> </ul>

Reductions for buildings and transport in the Kāinga Ora Emissions Reduction Plan refer to 2035 (rather than 2030) and are compared to 2019 industry settings (rather than our 2022/23 base year). The CNGP requires us to report on our gross emissions reduction that can be achieved based on our reduction potential for 2024/25 and 2029/30 against our 2022/23 baseline. They are based on what we expect is achievable within our current funding and operational settings. For CNGP purposes, targets have been translated to the following.

**Table 11: Emissions reduction targets for CNGP purposes**

	Corporate	Buildings	Infrastructure	Transport
CNGP targets	Reduce corporate emissions by 27% by 2024/25 and 42% by 2029/30.	Reduce absolute operational emissions from existing portfolio by 0% by 2024/25 and 13% by 2029/30.  Reduce new build emissions intensity (per occupant) by 1% by 2024/25 and 2% by 2029/30.	Reduce infrastructure emissions intensity by 0% by 2024/25 and 0% by 2029/30.	Reduce customer transport emissions intensity (per occupant) by 0.44% by 2024/25 and 2.82% by 2029/30.

## Performance against targets

The information on performance against targets below is presented to align with CNGP requirements.

Kāinga Ora is currently experiencing changes to its mandate and operating settings. This introduces uncertainty in the future trajectory of buildings, transport and infrastructure emissions. Several work programmes are progressing feasible initiatives that aim to reduce emissions intensity in these areas. Future absolute emissions depend on the organisation’s appetite for low-carbon solutions, and this is unknown currently.

### Absolute targets

Table 12: Performance against absolute targets

	Effective CNGP target (tCO <sub>2</sub> e)		Actual results (tCO <sub>2</sub> e)			
	2024/25	2029/30	2023/24	2022/23	% change	
Corporate emissions	6,205	4,930	7,526	8,500	-11%	↓
Operational emissions from existing portfolio	No reduction	45,920	50,035	48,325	+4%	↑

### Corporate emissions

Kāinga Ora reduced its corporate emissions in 2023/24 through targeted initiatives such as our Travel Optimisation Programme. This programme is ongoing and involves electrifying and optimising our vehicle fleet as well as reducing business travel. Kāinga Ora also expects average FTE to be lower in 2024/25 than 2022/23. Therefore, it is likely the organisation is on track to meet its 2024/25 and 2029/30 emissions targets, which are mandatory under the CNGP.

### Operational emissions from existing portfolio

Absolute operational emissions from existing Kāinga Ora public and supported housing have increased slightly because of a higher number of homes in the portfolio. Kāinga Ora is currently designing homes to meet New Zealand Building Code clause H1 Energy efficiency 5th edition requirements and expects this to increase energy efficiency of our future stock.

## Intensity targets

Table 13: Performance against intensity targets

	Effective CNGP target (tCO <sub>2</sub> e/unit)		Actual results (tCO <sub>2</sub> e)			
	2024/25	2029/30	2023/24	2022/23	% change	
Emissions from new builds (per occupant)	11.91	11.79	13.06	12.41	+5%	↑
Transport emissions (per occupant)	1.17	1.15	1.19	1.15	+3%	↑
Infrastructure emissions (per \$m spent)	No reduction	No reduction	124.46	116.14	+7%	↑

### Emissions from new builds (per occupant)

Emissions intensity from new builds increased due to the higher embodied construction emissions associated with higher-density typologies, which Kāinga Ora delivered more of in 2023/24 compared to the previous year.

### Transport emissions (per occupant)

Transport emissions intensity increased due to the higher assumed VKT of net new homes added to the portfolio in 2023/24.

### Infrastructure emissions (per \$m spent)

Emissions intensity from infrastructure projects increased because several Kāinga Ora large-scale projects with higher emissions factors are currently in the construction phase.

## Description of the organisation

Kāinga Ora was established as a Crown entity (for the purposes of the Crown Entities Act 2004) on 1 October 2019 under the Kāinga Ora – Homes and Communities Act 2019 (the Kāinga Ora Act).

We have two core roles of:

- delivering social housing and being a responsible landlord as an agent for the Crown
- partnering to lead and facilitate urban development projects of all sizes.

We are the largest tenancy services provider in New Zealand with a total portfolio of over 75,000 homes. We currently provide housing for over 191,000 customers and their whānau in over 70,000 public housing homes across the country. We also have almost 4,000 supported housing homes in our portfolio, and a further 900 homes have been leased since 2021 by Te Āhuru Mōwai, the community housing arm of Ngāti Toa in Porirua.

As the government’s lead developer in urban development, we are responsible for planning, coordinating and undertaking large and small housing development projects to create a diverse mix of social, affordable and market housing.

The Urban Development Act 2020 provides us with ways of planning and funding complex or challenging urban development through the Specified Development Project (SDP) process along with powers of land acquisition for the purposes of urban development.

To deliver the government’s housing priorities, we partner with others, including councils, government agencies, local government, Māori, iwi and hapū, infrastructure providers, private developers and community housing providers.

Kāinga Ora does not directly have obligations under te Tiriti o Waitangi (the Treaty of Waitangi). Our relationship with the Treaty of Waitangi is to recognise and respect the Crown’s responsibility to consider and provide for Māori aspirations.



## Organisational and reporting boundaries

This inventory covers the Kāinga Ora Group, which consists of Kāinga Ora – Homes and Communities (Parent) and its 100 percent subsidiaries Housing New Zealand Limited (HNZL) and Housing New Zealand Build Limited (HNZB). The Parent is responsible for all corporate emissions. HNZL is responsible for embodied and operational emissions from our public and supported housing. HNZB is responsible for embodied emissions from infrastructure development and emissions arising from the transport activity of people living in our public and supported housing. HNZB prepares land for development and sells it to third parties for the delivery of market and affordable housing. Ongoing emissions from assets vested or sold to third parties are outside the boundary.

We have used the operational consolidation approach to account for our emissions. Significant emissions are defined as those that make up at least one percent of the total inventory.

### Persons responsible for the inventory

Ultimate responsibility for this inventory sits with the Kāinga Ora Board. The Sustainability and Climate Strategy team has responsibility for compiling the inventory on behalf of the organisation.

### Reporting period covered

This inventory covers the financial year from 1 July 2023 to 30 June 2024 (2023/24).

### Biogenic removals

Biogenic removals are excluded from the inventory.

### Historical base year

The historical base year used is the financial year 1 July 2022 to 30 June 2023 (2022/23). This was the first year Kāinga Ora measured and reported all scope 1, 2 and 3 emissions from its operations and represents a normal operating year for the organisation. It aligns with the Kāinga Ora base year used for CNGP purposes.

### Historical base year restatement policy

The Kāinga Ora base year restatement significance threshold is five percent. This threshold applies to both increases and decreases in emissions. Restatements may be triggered by single large changes or from several small changes that are cumulatively significant.

Situations that may trigger a restatement of base year emissions include structural changes, inclusion of emissions sources not previously measured, methodological changes or correction of errors. Restatements will not be triggered for operations that did not exist in the base year, organisational growth or decline, or insourcing or outsourcing of activities.

### Assurance

The inventory presented has been independently verified by Ernst & Young Limited (EY) to a limited level of assurance. EY is also the appointed audit service provider of Kāinga Ora on behalf of the Office of the Auditor-General.

## Information on emissions sources included

Table 14: Information on emissions sources included

Kāinga Ora Group	ISO category	Emissions source	Data source	Method	Emissions factors used	Assumptions and associated uncertainties
Corporate	1	Direct fuel use	Summary of fuel card purchases from our fuel provider.	Average-data method: Calculated total litres of fuel purchased from suppliers.	MfE emissions factors (2024): Transport fuels.	<ul style="list-style-type: none"> <li>It is assumed staff have used their fuel card to make fuel purchases and that the listing supplied by the provider is complete.</li> <li>A control is in place to prevent fuel card use for personal vehicles. Vehicle mileage is logged upon refuelling, and any anomaly will trigger investigation.</li> <li>Uncertainty exists due to the use of a volume-based emissions factor.</li> </ul>
	2	Purchased electricity for corporate activities	Summaries of billed kWh volumes from our energy providers.	Average-data method: Calculated total kWh used.	MfE emissions factors (2024): Purchased grid-average electricity – annual average.	<ul style="list-style-type: none"> <li>Reporting of purchased electricity is location-based.</li> <li>It is assumed providers have supplied data for all ICPs.</li> <li>It is assumed the purchased grid-average electricity – annual average emissions factor adequately represents the emissions impact of all kWh used throughout the year. This is a limitation because in reality it will vary based on generation mix.</li> <li>Uncertainty exists due to the use of an annual average volume-based emissions factor.</li> </ul>
		On-road EV charging	Summary of billed Wh volumes from our on-road charging providers.	Average-data method: Calculated total Wh used converted to kWh.	MfE emissions factors (2024): Purchased grid-average electricity – annual average.	<ul style="list-style-type: none"> <li>It is assumed the provider has supplied data for all chargers.</li> <li>Uncertainty exists due to the use of an annual average volume-based emissions factor.</li> </ul>
		Staff EV home charging claims	Report of staff claims for EV home charging.	Spend-based method: \$ amount claimed for home charging converted into kWh using MBIE energy prices (2024): real annual average energy prices – regular petrol – 2023.	MfE emissions factors (2024): Purchased grid-average electricity – annual average.	<ul style="list-style-type: none"> <li>It is assumed staff have made claims for all home charging and that staff energy prices align with MBIE annual average prices.</li> <li>Uncertainty exists due to:                             <ul style="list-style-type: none"> <li>the use of average energy prices</li> <li>the use of an annual average volume-based emissions factor.</li> </ul> </li> </ul>

Kāinga Ora Group	ISO category	Emissions source	Data source	Method	Emissions factors used	Assumptions and associated uncertainties
<b>Corporate</b>	3	<b>Business travel – air travel</b>	Travel bookings report from supplier.	Average-data method: Outputs for air travel are calculated using the distance travelled (in km) by plane type and split by domestic, international short-haul, international long-haul and class type.	MfE emissions factors (2024): Air travel.  UK DEFRA well-to-tank emissions factors (2024): Air travel.	<ul style="list-style-type: none"> <li>It is assumed data source represents a complete and accurate account of all travel activity. The organisation has a rule that all staff must book via the company travel provider.</li> <li>There is a limitation where factors for specific plane types are not provided by MfE. The factor for the plane type that is most similar is used.</li> <li>It is assumed air travel distances are the exact distance between origin and destination and do not include changes in route due to weather conditions or other factors. This is a limitation</li> </ul>
		<b>Business travel – hotel stays</b>	Travel bookings report from supplier.	Average-data method: Hotel nights provided by travel provider, split by country.	MfE emissions factors (2024): Hotel stay (individual countries).	<ul style="list-style-type: none"> <li>There is a limitation where UK well-to-tank factors have been used because well-to-tank emissions information is not yet available in New Zealand. These factors are considered the best approximation because the UK is also an island nation that imports fossil fuels from overseas.</li> </ul>
		<b>Business travel – car hire</b>	Travel bookings report from supplier.	Average-data method: Record of hire cars booked through travel provider and km distance travelled.	MfE emissions factors (2024): Default rental car emissions factors per km travelled.	<ul style="list-style-type: none"> <li>Uncertainty exists due to:                             <ul style="list-style-type: none"> <li>variations in actual flight distances travelled</li> <li>variations in energy usage between different hotels</li> <li>variations in efficiency between different rental cars</li> <li>the use of volume-based emissions factors.</li> </ul> </li> </ul>
		<b>Staff claims for purchased fuel and mileage</b>	Internal expense management system.	Spend-based method: \$ spend claimed converted to litres of petrol using MBIE energy prices (2024).	MfE emissions factors (2024): Transport fuel – regular petrol.  UK DEFRA well-to-tank emissions factors (2024): Petrol (average biofuel blend), litre.	<ul style="list-style-type: none"> <li>There is a limitation where it is assumed that the amount claimed for mileage entirely represents fuel use and does not include reimbursement for vehicle wear and tear.</li> <li>There is a limitation where it is assumed that staff-owned vehicles use regular petrol and that prices paid for petrol are consistent with the national average.</li> <li>UK well-to-tank factors have been used as per above.</li> <li>Uncertainty exists due to:                             <ul style="list-style-type: none"> <li>the use of average energy prices</li> <li>the use of a volume-based emissions factor.</li> </ul> </li> </ul>

Kāinga Ora Group	ISO category	Emissions source	Data source	Method	Emissions factors used	Assumptions and associated uncertainties
<b>Corporate</b>	3	Car travel by taxi and rideshare	Internal expense management system.	Spend-based method: \$ spend converted to km travelled using MfE emissions factors (2023): Taxi travel – regular – dollars spent.	MfE emissions factors (2024): Taxi travel – regular.  UK DEFRA well-to-tank emissions factors (2024): Passenger vehicles and travel – land; Taxis – regular taxi, km.	<ul style="list-style-type: none"> <li>It is assumed taxis use regular petrol. This is a limitation because some taxis may use other fuel types.</li> <li>UK well-to-tank factors have been used as above.</li> <li>Uncertainty exists due to:                             <ul style="list-style-type: none"> <li>variation in efficiency between different taxi or rideshare vehicles</li> <li>the use of a derived spend-based emissions factor.</li> </ul> </li> </ul>
		Staff working from home	Employee commuter survey by Abley – CarbonWise tool.	Average-data method: An organisation-wide survey that captured typical weekly patterns of working from home and commuting journeys by vehicle type – a third party calculated the annual emissions.	MfE emissions factors (2024): Working from home.	<ul style="list-style-type: none"> <li>One survey was undertaken in autumn 2024 and extrapolated to represent the entire year. A limitation exists as a single survey does not capture the potential variation in staff travel/working from home habits between seasons.</li> </ul>
		Employee commuting	Employee commuter survey by Abley – CarbonWise tool.	Employee commuter survey by Abley – CarbonWise tool.	Factors obtained from Toitū Envirocare for e-bikes and e-scooters.  MfE emissions factors (2023): Various transport modes.	<ul style="list-style-type: none"> <li>The response rate for the survey was 27%. This sample has been extrapolated across all staff. It is assumed the survey respondents are representative of the entire population of Kāinga Ora employees. This is a limitation.</li> <li>Uncertainty exists due to:                             <ul style="list-style-type: none"> <li>survey data being used to represent the population</li> <li>the use of a volume-based emissions factor.</li> </ul> </li> </ul>
		Direct fuel use well-to-tank	Purchased fuel report.	Average-data method: Accurate records of litres of fuel purchased from supplier.	UK DEFRA well-to-tank emissions factors (2024): Petrol (average biofuel blend), litre; Diesel (average biofuel blend), litre.	<ul style="list-style-type: none"> <li>It is assumed staff have used their fuel card to make fuel purchases and that the listing supplied by the provider is complete.</li> <li>A control is in place to prevent fuel card use for personal vehicles. Vehicle mileage is logged upon refuelling, and any anomaly will trigger investigation.</li> <li>UK well-to-tank factors have been used as above.</li> <li>Uncertainty exists due to the use of a volume-based emissions factor.</li> </ul>

Kāinga Ora Group	ISO category	Emissions source	Data source	Method	Emissions factors used	Assumptions and associated uncertainties
Corporate	4	Embodied emissions in purchased fleet vehicles	Internal records of vehicles purchased in 2023/24.	Average-data method: Applied emissions factor information from International Energy Agency to the total number of vehicles purchased.	International Energy Agency comparative life-cycle GHG emissions of a mid-size BEV and ICE vehicle (2021) – Battery electric vehicle Base case: Vehicle manufacturing; Batteries – assembly and other; Batteries – minerals.	<ul style="list-style-type: none"> <li>• There is a limitation where it is assumed PHEV vehicles have the same embodied emissions impact as BEV vehicles.</li> <li>• Uncertainty exists due to:                             <ul style="list-style-type: none"> <li>– variation in life-cycle emissions of different vehicles</li> <li>– the use of a volume-based emissions factor.</li> </ul> </li> </ul>
		Waste to landfill	Reporting from our waste provider for our Wellington office.	Average-data method: Collected data for tonnes of waste produced for the entire 7 Waterloo Quay building and calculated percentage of office space Kāinga Ora has. Calculated tonnes of waste produced per person at this office. Calculated average employee office access nationwide multiplied by average tonnes of waste per person.	MfE emissions factors (2024): Waste disposal to municipal (class 1) landfills with gas recovery – office waste.	<ul style="list-style-type: none"> <li>• It is assumed per-person waste generated at 7 Waterloo Quay is consistent with per-person waste generated at other Kāinga Ora offices. This is a limitation.</li> <li>• It is assumed Kāinga Ora generates waste in a proportion consistent with its floor area in the buildings.</li> <li>• It is assumed the proportion of people who come into the office at offices with automated access information is consistent with the proportion who come into other Kāinga Ora offices. This is a limitation.</li> <li>• It is assumed each employee only uses a single access card on a given day and that no tailgating occurs.</li> <li>• It is assumed all waste goes to landfills with landfill gas recovery.</li> <li>• Uncertainty exists due to:                             <ul style="list-style-type: none"> <li>– the approach of using waste generated at a single office to represent all offices</li> <li>– the use of a volume-based emissions factor.</li> </ul> </li> </ul>
		Electricity transmission and distribution losses	Summaries of billed kWh volumes from our energy providers.	Average-data method: Calculated total kWh used.	MfE emissions factors (2024): Transmission and distribution losses for energy consumption.	<ul style="list-style-type: none"> <li>• It is assumed the providers have supplied data for all ICPs.</li> <li>• It is assumed the purchased grid-average electricity – annual average emissions factor adequately represents the emissions impact of all kWh used throughout the year. This is a limitation because, in reality, it will vary based on generation mix.</li> <li>• Uncertainty exists due to:                             <ul style="list-style-type: none"> <li>– likely variation in emissions based on geographical location</li> <li>– the use of a volume-based emissions factor.</li> </ul> </li> </ul>



Kāinga Ora Group	ISO category	Emissions source	Data source	Method	Emissions factors used	Assumptions and associated uncertainties
Corporate	4	Wastewater treatment	Average employees in the period.	Average-data method: Calculated using the average number of employees in the period and applied the per capita emissions factor.	MfE emissions factors (2024): Domestic wastewater treatment – average for wastewater.	<ul style="list-style-type: none"> <li>It is assumed usage by employees is consistent with the average applied by MfE in determining the factor.</li> <li>It is assumed permanent employees, fixed-term employees, contractors and casual employees use Kāinga Ora offices at the same rate. This is a limitation.</li> </ul>
		Water supply	Average employees in the period.	Average-data method: Calculated using the average number of employees in the period and applied the per capita emissions factor.	MfE emissions factors (2024): Water supply.	<ul style="list-style-type: none"> <li>Uncertainty exists due to:                             <ul style="list-style-type: none"> <li>likely variation in emissions based on geographical location</li> <li>the use of a volume-based emissions factor.</li> </ul> </li> </ul>
Buildings	2	Purchased electricity for public and supported housing communal areas	Summary of billed kWh volumes from our energy providers.	Average-data method: Accurate records of kWh used.	MfE emissions factors (2024): Purchased grid-average electricity – annual average.	<ul style="list-style-type: none"> <li>Reporting of purchased electricity is location-based.</li> <li>It is assumed the provider has supplied data for all ICPs.</li> <li>Uncertainty exists due to the use of an annual average volume-based emissions factor.</li> </ul>
	4	Embodied emissions from existing portfolio	<p>Designed schedule of quantities for a standard 3-bedroom single-storey stand-alone home:</p> <ul style="list-style-type: none"> <li>pre-1970 build standard</li> <li>healthy homes standard</li> <li>6 Homestar v4.1.</li> </ul> <p>Internal reporting outlining Kāinga Ora public and supported housing details and attributes.</p>	<p>Average-data method: Reference building embodied emissions associated with maintenance and replacement (modules B2 and B4) for our existing portfolio are calculated using BRANZ LCAQuick v3.4.4.</p> <p>Reference building outputs are then applied to the Kāinga Ora portfolio based on:</p> <ul style="list-style-type: none"> <li>building performance standard</li> <li>number of bedrooms.</li> </ul>	BRANZ LCAQuick v3.4.4 modules B2 and B4.	<ul style="list-style-type: none"> <li>It is assumed the useful life of all buildings is 50 years. This is a limitation because the actual useful life of buildings may vary.</li> <li>It is assumed the embodied emissions associated with the maintenance of a stand-alone home are similar for other typologies. This is a limitation.</li> <li>It is assumed each additional bedroom is 9 m<sup>2</sup> and emissions intensity of bedrooms is the same as the rest of the dwelling. This is a limitation because bedroom size and emissions intensity may vary.</li> <li>The assumed occupancy rate used to determine occupancy for most housing types is 1.09 people/bedroom (2022/23: 1.11) based on the number of people registered in each home. However, there is a limitation that the exact number of people will vary if occupancy has changed but Kāinga Ora has not been informed. Kāinga Ora does not collect occupancy data for transitional housing and community housing provider leases, so it is assumed that these are occupied at the same rate as public and non-public housing. The assumed occupancy rate for Community Group Housing is 1.00 people/bedroom (2022/23: 1.00).</li> <li>It is assumed that electricity is the sole energy source. In reality some stock use gas, wood and geothermal energy, but this has been assessed as not material.</li> <li>Uncertainty exists due to:                             <ul style="list-style-type: none"> <li>the use of reference buildings to represent actual dwellings</li> <li>the assumptions used in life-cycle analysis of products and services included in reference buildings.</li> </ul> </li> </ul>

Kāinga Ora Group	ISO category	Emissions source	Data source	Method	Emissions factors used	Assumptions and associated uncertainties
Buildings	4	Embodied emissions from new builds	<p>Designed schedule of quantities for:</p> <ul style="list-style-type: none"> <li>• 1-bedroom apartment</li> <li>• 2-bedroom 3-level walk-up</li> <li>• 2-bedroom duplex</li> <li>• 3-bedroom single-storey stand-alone home.</li> </ul> <p>Internal reporting outlining Kāinga Ora public and supported housing additions.</p>	<p>Average-data method:</p> <p>Reference building embodied emissions associated with new construction (modules A1–A5) are calculated using BRANZ LCAQuick v3.4.4.</p> <p>Reference building outputs are then applied to the Kāinga Ora portfolio based on:</p> <ul style="list-style-type: none"> <li>• building typology</li> <li>• number of bedrooms.</li> </ul> <p>Embodied emissions (modules A1–A5) are reported upon building construction completion.</p>	BRANZ LCAQuick v3.4.4 modules A1–A5.	<ul style="list-style-type: none"> <li>• It is assumed the useful life of all buildings is 50 years. This is a limitation because the actual useful life of buildings may vary.</li> <li>• It is assumed reference buildings are representative of the actual homes built. This is a limitation because emissions from actual homes built will vary based on a multitude of factors.</li> <li>• It is assumed apartments, duplexes and terraced buildings take 1 year to construct, walk-ups take 2 years and apartments take 3 years. This is a limitation because, in reality, the time taken to build will vary.</li> <li>• Embodied emissions from market housing purchased by Kāinga Ora but constructed before 1 January 2023 have not been included. It is assumed that market homes delivered after this date and purchased by Kāinga Ora have had no prior use. Therefore, the embodied emissions are attributable to us.</li> <li>• It is assumed each additional bedroom is 9 m<sup>2</sup> and emissions intensity of bedrooms is the same as the rest of the dwelling. This is a limitation because bedroom size and emissions intensity may vary.</li> <li>• The assumed occupancy rate used to determine occupancy for most housing types is 1.09 people/bedroom (2022/23: 1.11) based on the number of people registered in each home. However, there is a limitation that the exact number of people will vary if occupancy has changed but Kāinga Ora has not been informed. Kāinga Ora does not collect occupancy data for transitional housing and community housing provider leases, so it is assumed that these are occupied at the same rate as public and non-public housing. The assumed occupancy rate for Community Group Housing is 1.00 people/bedroom (2022/23: 1.00).</li> <li>• Uncertainty exists due to: <ul style="list-style-type: none"> <li>– the use of reference buildings to represent actual dwellings</li> <li>– the assumptions used in life-cycle analysis of products and services included in reference buildings.</li> </ul> </li> </ul>

Kāinga Ora Group	ISO category	Emissions source	Data source	Method	Emissions factors used	Assumptions and associated uncertainties
<b>Buildings</b>	4	<b>Embodied emissions from retrofits</b>	Designed schedule of quantities for a standard Kāinga Ora retrofit.  Internal reporting outlining Kāinga Ora retrofit details.	Average-data method:  Reference building embodied emissions associated with retrofits (modules A1–A5) are calculated using BRANZ LCAQuick v3.4.4.  Reference building outputs are then applied to Kāinga Ora building retrofits based on number of bedrooms.	BRANZ LCAQuick v3.4.4 modules A1–A5.	<ul style="list-style-type: none"> <li>It is assumed the useful life of buildings is 50 years from the date of retrofit. This is a limitation because the actual useful life of buildings may vary.</li> <li>It is assumed all retrofit buildings are stand-alone houses and that reference buildings are representative of the actual homes retrofitted. This is a limitation because typology and other attributes of retrofit buildings may vary.</li> <li>It is assumed each additional bedroom is 9 m<sup>2</sup> and emissions intensity of bedrooms is the same as the rest of the dwelling. This is a limitation because bedroom size and emissions intensity may vary.</li> <li>The assumed occupancy rate used to determine occupancy for most housing types is 1.09 people/bedroom (2022/23: 1.11) based on the number of people registered in each home. However, there is a limitation that the exact number of people will vary if occupancy has changed but Kāinga Ora has not been informed. Kāinga Ora does not collect occupancy data for transitional housing and community housing provider leases, so it is assumed that these are occupied at the same rate as public and non-public housing. The assumed occupancy rate for Community Group Housing is 1.00 people/bedroom (2022/23: 1.00).</li> <li>Uncertainty exists due to:                             <ul style="list-style-type: none"> <li>the use of reference buildings to represent actual dwellings</li> <li>the assumptions used in life-cycle analysis of products and services included in reference buildings.</li> </ul> </li> </ul>
		<b>Emissions from building design and consenting services</b>	Internal reporting from Kāinga Ora accounting system.	Spend-based method:  Total expenditure on purchased goods and services and capital goods is extracted from our accounting system and aggregated by purchase order category. Each category is reviewed to determine whether it pertains to building design and consenting services – otherwise, it is excluded and instead reported in purchased goods and services.  The most appropriate spend-based emissions factor is used to calculate emissions.	Consumption emissions modelling prepared for Auckland Council by Market Economics Ltd (2023): various factors.	<ul style="list-style-type: none"> <li>It is assumed within a category the type of spending is relatively uniform and the emissions factors used are most appropriate for the category of spend.</li> <li>Uncertainty exists due to the use of spend-based emissions factors.</li> </ul>

Kāinga Ora Group	ISO category	Emissions source	Data source	Method	Emissions factors used	Assumptions and associated uncertainties
Buildings	5	Operational emissions from existing portfolio	Operational energy use (module B6): <ul style="list-style-type: none"> <li>BRANZ Household Energy End-use Project (HEEP1).</li> <li>In-house modelling of building performance using a combination of ECCHO, DesignBuilder and Passive House Planning Package.</li> <li>Internal reporting outlining Kāinga Ora public and supported housing details.</li> </ul> Water use (module B7): <ul style="list-style-type: none"> <li>In-house modelling of building performance using a combination of ECCHO, DesignBuilder and Passive House Planning Package.</li> <li>Internal reporting outlining Kāinga Ora public and supported housing details.</li> </ul>	Average-data method: Operational energy use (B6) is determined for reference buildings: <ul style="list-style-type: none"> <li>Pre-1970s single-storey stand-alone home with 3 bedrooms, no improvement, healthy homes standard and 6 Homestar v4.1 standard, climate zones 1–6.</li> <li>Duplex with 3 bedrooms. No improvement, healthy homes standard and 6 Homestar v4.1 standard. Climate zones 1-6.</li> <li>3-level walk-up with 3 bedrooms, no improvement, healthy homes standard and 6 Homestar v4.1 standard, climate zones 1–6.</li> <li>Apartment with 3 bedrooms, no improvement, healthy homes standard and 6 Homestar v4.1 standard, climate zones 1–6.</li> </ul> Energy use is estimated based on the results of HEEP1, which is the most comprehensive study of household energy use undertaken in New Zealand. Adjustments are then made to take account of differing energy use associated with: <ul style="list-style-type: none"> <li>building typology</li> <li>building performance standard.</li> <li>New Zealand Building Code clause H1 <i>Energy efficiency</i> 5th edition climate zone</li> <li>number of bedrooms.</li> </ul>	MfE emissions factors (2024): Purchased grid-average electricity – annual average. BRANZ LCAQuick v3.4.4 module B7.	<ul style="list-style-type: none"> <li>It is assumed the useful life of all buildings is 50 years. This is a limitation because the actual useful life of buildings may vary.</li> <li>It is assumed energy and water are used at a constant rate throughout the year. This is a limitation because, in reality, use depends on a number of factors, including seasons and weather.</li> <li>It is assumed the HEEP1 sample is representative of our customers’ energy use.</li> <li>It is assumed no Kāinga Ora homes exceed the 6 Homestar v4.1 performance standard. In reality, a small portion do, but the impact of this is immaterial for portfolio operational emissions.</li> <li>It is assumed each additional bedroom is 9 m<sup>2</sup> and emissions intensity of bedrooms is the same as the rest of the dwelling. This is a limitation because bedroom size and emissions intensity may vary.</li> <li>The assumed occupancy rate used to determine occupancy for most housing types is 1.09 people/bedroom (2022/23: 1.11) based on the number of people registered in each home. However, there is a limitation that the exact number of people will vary if occupancy has changed but Kāinga Ora has not been informed. Kāinga Ora does not collect occupancy data for transitional housing and community housing provider leases, so it is assumed that these are occupied at the same rate as public and non-public housing. The assumed occupancy rate for Community Group Housing is 1.00 people/bedroom (2022/23: 1.00).</li> <li>It is assumed buildings are unoccupied for 90 days before they are disposed of. This is a limitation because the time buildings are unoccupied for before disposal will vary.</li> <li>Uncertainty exists due to:                             <ul style="list-style-type: none"> <li>the use of reference buildings to represent actual dwellings</li> <li>the assumptions used in life-cycle analysis of products and services included in reference buildings</li> <li>the age of the findings in the BRANZ HEEP1 project.</li> </ul> </li> </ul>
	Buildings	5	Construction emissions financed through home ownership products	Internal records of financing for new builds.	Spend-based method: Applied spend-based factor for construction to the total \$ amount of new build financing through the First Home Grant and First Home Partner schemes. <sup>14</sup>	Consumption emissions modelling prepared for Auckland Council by Market Economics Ltd (2023): Residential building construction.

Kāinga Ora Group	ISO category	Emissions source	Data source	Method	Emissions factors used	Assumptions and associated uncertainties
Infrastructure	4	Embodied emissions from infrastructure development	Internal records of spend on infrastructure projects.	Spend-based method: Total expenditure for each project multiplied by an emissions factor calculated to reflect the specific project.	Spend-based factors have been developed based on the Kāinga Ora infrastructure emissions baselining work completed in 2023.  These are based on different Kāinga Ora precincts (e.g. Roskill, Māngere) and different sectors (e.g. building site preparation, stormwater, utilities).	<ul style="list-style-type: none"> <li>• Spend-based factors have been developed based on detailed design quantities as opposed to as-built data.</li> <li>• It is assumed spend-based factors represent actual consumption data.</li> <li>• Uncertainty exists due to the use of spend-based emissions factors.</li> </ul>
	4	Other purchased goods and services and capital goods	Internal reporting from Kāinga Ora accounting system.	Spend-based method: Total expenditure on purchased goods and services and capital goods extracted from our accounting system and aggregated by purchase order category.  Each category is reviewed to determine whether it is already accounted for elsewhere in the emissions inventory and, if so, excluded from this emissions group.  Where a category is not already accounted for, the most appropriate spend-based emissions factor is used to calculate emissions.	Consumption emissions modelling prepared for Auckland Council by Market Economics Ltd (2023): Various factors.	<ul style="list-style-type: none"> <li>• It is assumed within each category the type of spending is relatively uniform and the emissions factors used are the most appropriate for the category of spend.</li> <li>• Uncertainty exists due to the use of spend-based emissions factors.</li> </ul>

14. Note that both schemes are no longer offered by Kāinga Ora from May 2024.

Kāinga Ora Group	ISO category	Emissions source	Data source	Method	Emissions factors used	Assumptions and associated uncertainties
Transport	6	Enabled emissions from customer transport	<p>Socioeconomic inequalities in GHG emissions from household travel (Shaw et al., 2024).<sup>15</sup></p> <p>Ministry of Transport Household Travel Survey 2015–2023 – regional travel differences.</p> <p>Ministry of Transport Annual Motor Vehicle Fleet Statistics (2022) – national VKT.</p> <p>NZTA Vehicle Emissions Prediction Model (VEPM) 7.0 – vehicle emissions factors.</p> <p>Internal reporting outlining Kāinga Ora customer details.</p>	<p>Average-data method: Transport emissions are calculated by multiplying (VKT) by an emissions factor.</p> <p>To calculate VKT, we have used an Otago University Study that found people living in the most deprived areas have an average weekly VKT of 158 km.</p> <p>A regional factor (derived from the Ministry of Transport Household Travel Survey) has then been applied to adjust this VKT for different New Zealand regions.</p> <p>The emissions factor applied is based on NZTA’s VEPM but has been adjusted to allow for a 25% slower rate of EV uptake that better reflects our customer profile.</p> <p>Additional adjustments have been made to allow for emissions associated with charging electric vehicles.</p> <p>The value of assumed transport emissions per occupant (determined by the above steps) is then multiplied by the total number of customers to determine total emissions.</p>	<p>NZTA VEPM 7.0: Light vehicle fleet average emissions factors.</p> <p>MfE emissions factors (2024): Purchased grid-average electricity – annual average.</p>	<ul style="list-style-type: none"> <li>• It is assumed EV uptake for our customers is 25% slower than the Ministry of Transport EV uptake rate.</li> <li>• It is assumed our customers are within the NZDep quintile 5.</li> <li>• It is assumed actual Kāinga Ora customer travel behaviour is represented by national VKT data with the relevant adjustments applied.</li> <li>• The assumed occupancy rate used to determine occupancy for most housing types is 1.09 people/bedroom (2022/23: 1.11) based on the number of people registered in each home. However, there is a limitation that the exact number of people will vary if occupancy has changed but Kāinga Ora has not been informed. Kāinga Ora does not collect occupancy data for transitional housing and community housing provider leases, so it is assumed that these are occupied at the same rate as public and non-public housing. The assumed occupancy rate for Community Group Housing is 1.00 people/bedroom (2022/23: 1.00).</li> <li>• There is a limitation where it is assumed customers only travel in the origin city (i.e. the city where they are recorded as living)</li> <li>• Only emissions from customer use of private motor vehicles are included. Emissions from customer public transport use are excluded.</li> <li>• Uncertainty exists due to:             <ul style="list-style-type: none"> <li>– likely regional and overall variation in EV uptake</li> <li>– likely variation in New Zealand average VKT each year</li> <li>– likely variation in the travel habits of individual customers compared with average VKT data</li> <li>– differences in the demographic of occupants compared with individuals who filled out the Household Travel Survey</li> <li>– the use of a volume-based emissions factor.</li> </ul> </li> </ul>

15. <https://www.sciencedirect.com/science/article/pii/S2214367X24000838>.

## Exclusions

The table below sets out the emissions sources excluded from the inventory and the reason for exclusion.

Embodied emissions from civil infrastructure within our superlots (such as carparks, gardens, foundations and pathways) are excluded due to the lack of detailed information available to capture and measure these items reliably.

**Table 15: Information on emissions sources excluded**

Category	GHG Protocol subcategory	ISO 14064-1:2018 subcategory	Included	Reason for exclusion
1. Direct emissions and removals	Scope 1	Stationary combustion	No	Office generators – two of our offices have generators that run for a very limited time per year. Emissions are assessed to be immaterial.
		Mobile combustion (including company owned or leased vehicles)	Yes	
		Emissions – industrial processes	No	Kāinga Ora has no direct emissions from industrial processes.
		Removals – industrial processes	No	
		Leakage of refrigerants	No	Building owners do not explicitly on-charge costs for refrigerants used in chillers/AC.
		Treatment of waste	No	Kāinga Ora does not directly treat waste.
		Treatment of wastewater	No	Kāinga Ora does not directly treat wastewater.
		Emissions – land use, land-use change and forestry	No	Kāinga Ora does not undertake any of these activities.
		Removals – land use, land-use change and forestry	No	
		Fertiliser use	No	

Category	GHG Protocol subcategory	ISO 14064-1:2018 subcategory	Included	Reason for exclusion
1. Direct emissions and removals	Scope 1	Addition of livestock waste to soils	No	Kāinga Ora does not undertake any of these activities.
		Addition of crop residue to soils	No	
		Enteric fermentation	No	
		Addition of lime to soils	No	
		Open burning of organic matter	No	
2. Indirect GHG emissions from imported energy	Scope 2	Imported electricity	Yes	Electricity is the sole source of energy used in Kāinga Ora offices other than the two generators mentioned in Category 1.
		Imported energy	No	
		Imported electricity for electric vehicles	Yes	
3. Indirect GHG emissions from transportation	Scope 3: Upstream transportation and distribution	Upstream freight – paid by the organisation	Yes	Kāinga Ora does not charge customers or others for freight.
		Upstream freight – paid by suppliers/others	Yes	
		Downstream freight – paid by the organisation	Yes	
	Scope 3: Downstream transportation and distribution	Downstream freight – paid by the customer/others	No	
		Employee commuting	Yes	
	Scope 3: Employee commuting	Business travel – transport (non-company owned vehicles)	Yes	
		Business travel – accommodation	Yes	
	Scope 3: Employee commuting	Working from home	Yes	

Category	GHG Protocol subcategory	ISO 14064-1:2018 subcategory	Included	Reason for exclusion
4. Indirect GHG emissions from products used by organisation	Scope 3: Purchased goods and services	Purchased goods and services	Yes	
	Scope 3: Capital goods	Capital goods	Yes	
	Scope 3: Fuel and energy-related activities	Purchased fuel and energy-related activities	Yes	
	Scope 3: Waste generated in operations	Disposal of solid waste – landfilled	Yes	Emissions from the disposal of buildings not associated with larger infrastructure projects are not included because they are assessed to be immaterial.
			No	Kāinga Ora does not dispose of solid waste that is not landfilled.
			No	Kāinga Ora does not dispose of liquid waste that is not wastewater.
			Yes	
			Yes	
	Scope 3: Upstream leased assets	Use of assets	No	There a no non-electricity emissions from the use of upstream leased assets.
	Scope 3: Fuel and energy-related activities	Transmission of energy (T&D losses)	Yes	
Client-supplied electricity		No	Kāinga Ora does not use client-supplied electricity.	

Category	GHG Protocol subcategory	ISO 14064-1:2018 subcategory	Included	Reason for exclusion
5. Indirect emissions associated with the use of products from the organisation	Scope 3: Use of sold products	Use stage of sold products	No	Kāinga Ora is not in the business of selling tangible products.
	Scope 3: Downstream leased assets	Downstream leased assets	Yes	
	Scope 3: End-of-life treatment of sold products	End-of-life stage of sold products	No	Kāinga Ora is not in the business of selling tangible products.
	Scope 3: Investments	Investments	Yes	Embodied emissions enabled through investments are included. Ongoing operational emissions from equity-share investments are excluded because they are assessed to be immaterial.
	Scope 3: Franchises	Franchises	No	Kāinga Ora has no franchises.
	Scope 3: Processing of sold products	Processing of sold goods	No	Kāinga Ora is not in the business of selling tangible products.
	6. Indirect GHG emissions from other sources	Scope 3: Downstream transportation and distribution	Client and visitor transport	Yes





## Independent Limited Assurance Report to the Directors of Kāinga Ora – Homes and Communities

### 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 Kāinga Ora – Homes and Communities’ (“Kāinga Ora”) Greenhouse Gas (“GHG”) Emissions Inventory Report, including Scope 1, Scope 2 and Scope 3 emissions, for the year ended 30 June 2024 has not been prepared, in all material respects, in accordance with the Criteria defined below.

### Emphases of Matter

We draw attention to the uncertainty in the calculation approaches and assumptions noted in table 14 on pages 40 to 59. There is particular uncertainty in the calculation approaches and assumptions used to estimate the embodied emissions in Kāinga Ora new, existing, and retrofit properties, its customer transport and infrastructure development emissions, and the use of spend-based emissions factors in its other purchased goods and services and capital goods and financed emissions.

In addition, an element of the Criteria applied by Kāinga Ora (the Carbon Neutral Government Programme) was specifically designed for GHG reporting by certain Government organisations. As a result, the Report may not be suitable for another purpose.

Our conclusion is not modified in respect of these matters.

### Scope

Ernst & Young Limited (“EY”) has undertaken a limited assurance engagement, as defined by International Standards on Assurance Engagements, to report on Kāinga Ora

GHG Emissions Inventory Report, including Scope 1, Scope 2 and Scope 3 GHG emissions, for the year ended 30 June 2024 on pages 25 to 63 (“the Subject Matter” or “Report”) within the Climate Statements 2023/24.

Other than as described in the preceding paragraph, which sets out the scope of our engagement, we did not perform assurance procedures on the remaining information included in the Climate Statements and accordingly we do not express a conclusion on this information.

### Criteria applied by Kāinga Ora

In preparing the Report, Kāinga Ora applied the Greenhouse Gas Protocol: A Corporate Accounting and Reporting Standard (revised version) (2004), Corporate Value Chain (Scope 3) Accounting and Reporting Standards (2011), ISO14064-1:2018 Greenhouse gases — Part 1: Specification with guidance at the organization level for quantification and reporting of greenhouse gas emissions and removals, and the Carbon Neutral Government Programme: A guide to measuring and reporting greenhouse gas (the “Criteria”).



### Kāinga Ora Responsibility

The Directors are responsible, on behalf of Kāinga Ora, 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 Report 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 Report 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.

In addition to this limited assurance engagement, Ernst & Young provides audit services on behalf of the Auditor-General to Kāinga Ora. Partners and employees of our firm may deal with Kāinga Ora on normal terms

within the ordinary course of trading activities of the business. We have no other relationship with, or interest in, Kāinga Ora.

### Our Independence and Quality Management

We have complied with the independence and other ethical requirements of the Professional and Ethical Standard 1 *International Code of Ethics for Assurance Practitioners (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 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.
- Checking that emissions factors and methodologies have been correctly applied as per the Criteria.
- Checking organisational and operational boundaries to test completeness of GHG emissions sources.
- Comparing year on year activity-based GHG data.
- Considering sources of GHG emissions and the measurement methodology.
- Checking the inputs, assumptions, and calculations within the building, infrastructure, and transport GHG emission models.
- Confirming the sources of data used in calculating the GHG emissions.
- Identifying and testing assumptions supporting the calculations.

- 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 Kāinga Ora, or for any purpose other than that for which it was prepared.

*Ernst & Young Limited*

**Ernst & Young Limited**  
Wellington, New Zealand

24 September 2024

A member firm of Ernst & Young Global Limited

**Appendix**

**Kāinga Ora likelihood definitions**

**Table 16: Kāinga Ora likelihood definitions**

Likelihood	Probability	Chance
Almost certain	>80%	Is expected to occur and is almost inevitable (i.e. once in 12 months)/this event or comparable event has happened in the last 12 months
Likely	6–80%	Is expected to occur in most circumstances, not surprised if it happens (i.e. once in the next 3 years)/this event or comparable event has happened in the last 3 years
Possible	40–60%	Might occur in some circumstances (i.e. once in the next 5 years)/this event or comparable event has happened in the last 5 years
Unlikely	5–40%	Might occur in some circumstances, but would be surprised if it happens (i.e. expected once in the next 10 years)/this event or comparable event has happened in the last 10 years
Rare	<5%	Highly unexpected. Might occur, but only in exceptional circumstances (i.e. not expected in the next 10 years)/this event or comparable event has never happened

---

Copyright © 2024. This copyright work is licensed under a Creative Commons Attribution-Non-Commercial 3.0 New Zealand licence.

---