If calling, please ask for Democratic Services

Climate Committee

Tuesday 19 October 2021, 9.30am

Remotely, via Microsoft Teams

Members

Cr Nash (Chair)

Cr Brash

Cr Kirk-Burnnand

Cr Lee

Cr Connelly (Deputy Chair)

Cr Gaylor

Cr Laban

Cr van Lier

Dr Maria Bargh

Recommendations in reports are not to be construed as Council policy until adopted by Council

Climate Committee

Tuesday 19 October 2021, 9.30am

Remotely, via Microsoft Teams

Public Business

Please note these minutes remain unconfirmed until the Climate Committee meeting on 19 October 2021.

Report 21.377

Public minutes of the Climate Committee meeting on Tuesday 17 August 2021

Taumata Kōrero – Council Chamber, Greater Wellington Regional Council
100 Cuba Street, Te Aro, Wellington at 1pm.

Members Present

Councillor Nash (Chair)
Councillor Connelly (Deputy Chair)
Councillor Brash
Councillor Gaylor (Remotely, via Microsoft Teams)
Councillor Kirk-Burnnand
Councillor Laban
Councillor Lee (from 2.15pm)
Councillor van Lier
Dr Maria Bargh

The member who participated at this meeting remotely via Microsoft Teams, counted for the purpose of quorum, as per clause 25B of Schedule 7 to the Local Government Act 2002.

Karakia timatanga

The Committee Chair opened the meeting with a karakia timatanga.

Public Business

1 Apologies

There were no apologies.

2 Declarations of conflicts of interest

There were no declarations of conflicts of interest.

3 Public participation

There was no public participation.

4 Confirmation of the Public minutes of the Climate Committee meeting on 25 May 2021 – Report 21.219

Moved: Cr Connelly / Cr van Lier

That the Committee confirms the Public minutes of the Climate Committee meeting on 25 May 2021 – Report 21.219

The motion was **carried**.

5 Update on progress of action items from previous Climate Committee meetings – August 2021 – Report 21.324 [For Information]

Jake Gilmer, Manager, Strategic and Corporate Planning, spoke to the report.

6 Climate Adaptation, Resource Management Reform and Te Tiriti o Waitangi – Background to Presentation by Professor Catherine Iorns Magallanes – Report 21.349 [For Information]

Al Cross, General Manager Environment Management, introduced the report and Professor Catherine Iorns Magallanes, Professor of Law at Victoria University of Wellington. Professor Iorns Magallanes spoke to the Committee and tabled a presentation. The Chair thanked both Professor Iorns Magallanes and Suze Keith, Kaitohutohu/Strategic Advisor, Climate Change, for their work.

Noted: Councillor Lee joined the meeting during the discussion on the above item.

7 Climate Emergency Response Programme Status Update – Report 21.351 [For Information]

Jake Roos, Climate Change Advisor, spoke to the report. Jimmy Young, Manager, Parks, introduced Annette Richards, Project Lead, Parks Restoration, who has been employed by Greater Wellington for a three year fixed term.

8 Climate Action in the 2021-31 Long Term Plan – Report 21.347 [For Information]

Jake Roos, Climate Change Advisor, spoke to the report.

Karakia whakamutunga

The Committee Chair closed the meeting with a karakia whakamutunga.

The public meeting closed at 2:54pm.

Councillor T Nash

Chair

Date:

Climate Committee
19 October 2021
Report 21.389

For Information

UPDATE ON PROGRESS OF ACTION ITEMS FROM PREVIOUS CLIMATE COMMITTEE MEETINGS – OCTOBER 2021

Te take mō te pūrongo
Purpose

1. To update the Climate Committee (the Committee) on the progress of action items arising from previous Committee meetings.

Te horopaki
Context

2. Items raised at Committee meetings, that require actions by officers, are listed in the table of action items from previous Committee meetings (**Attachment 1** - Action items from previous Climate Committee meetings – October 2021). All action items include an outline of the current status and a brief comment.

Ngā hua ahumoni
Financial implications

3. There are no financial implications from this report, but there may be implications arising from the actions listed.

Ngā tūāoma e whai ake nei
Next steps

4. Completed items will be removed from the action items table for the next report. Items not completed will continue to be progressed and reported. Any new items will be added to the table following this Committee meeting and circulated to the relevant business group/s for action.

Ngā āpitihanga
Attachment

Number	Title
1	Action items from previous Climate Committee meetings – October 2021

Ngā kaiwaitohu
Signatories

Writer	Luke Troy – Kaiwhakahaere Matua Rautaki/General Manager Strategy

He whakarāpopoto i ngā huritaonga **Summary of considerations**
Fit with Council's roles or Committee's terms of reference The action items are of an administrative nature and support the functioning of the Committee.
Implications for Māori Māori have a vested interest in climate change issues to the extent identified in **Attachment 1**.
Contribution to Annual Plan / Long term Plan / Other key strategies and policies Action items contribute to Council's and Greater Wellington's related strategies, policies, and plans to the extent identified in **Attachment 1**.
Internal consultation There was no internal consultation.
Risks and impacts: legal / health and safety etc. There are no known risks.

Attachment 1 to Report 21.389

Action items from previous Climate Committee meetings

Meeting date	Action	Status and comment
25 May 2021	**Research into the transition to a low emissions economy– Report 21.189** **Resolution:** Recommends that officers commission research in partnership with WellingtonNZ into the economic transition to inform the Regional Economic Development plan and direct action specifically for the Wellington region, that takes account of the nature of our economy and that supports a just transition.	**Status** Ongoing. **Comment** Discussions with WellingtonNZ are ongoing to ensure close alignment between the RED Plan and this piece of research. Later in August WellingtonNZ are employing an additional person to write the plan, which will assist. We've also met with Auckland Council to gain insight into their climate change and economy research to help identify what approaches will be most valuable.

Climate Committee
19 October 2021
21.464

For Information

CLIMATE EMERGENCY RESPONSE PROGRAMME STATUS UPDATE

Te take mō te pūrongo
Purpose

1. To update the Climate Committee (the Committee) on the Climate Emergency Response Programme.

Te tāhū kōrero
Background

Greater Wellington Climate Emergency Response Programme

2. Council declared a climate emergency in August 2019. This decision responds to the urgency climate change presents and encourages a step change in how Greater Wellington Regional Council (Greater Wellington) addresses climate change, both corporately and in how it uses its influence in the Wellington Region.

3. To demonstrate Council's commitment to changing the status quo, the declaration of a climate emergency was strengthened by Council adopting two ten-point action plans - a Corporate Carbon Neutrality Action Plan and a Regional Climate Emergency Action Plan. These action plans are collectively referred to as the Greater Wellington Climate Emergency Response Programme (the Programme).

4. Officers have provided a status report on the Programme (**Attachment 1** - Climate Emergency Response Programme Status Report (October 2021)). The overall status of the Programme is on track for the quarter to October 2021. This is due to the sharpened focus on climate action in the 2021-31 Long Term Plan (LTP), and the corresponding resource allocation in line with the size of the task ahead. An overview of the current status for each action plan item:

Action Plan	Complete	On track	At risk	Significant delays
Corporate Carbon Neutrality	1	7	2	0
Regional Climate Emergency	1	4	5	0

5. One action has reverted to the "on track" status, having been at risk previously. This is action 7, Parks reforestation. The Parks reforestation of 1350ha was agreed to in the LTP and Low Carbon Acceleration Fund (LCAF) funding approved for planning, Project Lead and mana whenua engagement. Reforestation of two sites (150ha) is underway. Procurement has begun to progress retirement and restoration in Belmont Regional Park, specifically Waitangirua (West) and Kilmister Block (East). A supplier has been

contracted to produce a detailed restoration and planting plan for Waitangirua. This will result in work being able to commence before year three, and the target of 100ha per annum being met.

Te tātaritanga
Analysis

Key achievements this quarter

6. Emissions reduction pathways, that will enable Greater Wellington Regional Council (Greater Wellington) to meet its climate goals, have been successfully included in the LTP budget.

7. Recruitment of the Parks Restoration Project Lead has been successful. Procurement to plan the phase down of grazing and restoration across the Parks network is underway. We are in discussions to find a workable solution to engaging with mana whenua on the Parks projects while a new model for working with mana whenua is still being worked through at the organisational level.

8. The Wellington Region Climate Change Forum (the Forum) met for the first time on 27 August 2021. Councillor Nash was elected as the elected member co-Chair of the Forum. It was noted that while the new terms of reference provide for a co-governance model with mana whenua, there are not yet any appointments from mana whenua to the Forum and as such, the election for the mana whenua co-Chair could not be held. The Forum heard from the Honourable James Shaw, Minister for Climate Change, on the local government implications relating to the National Emissions Reduction Plan and National Adaptation Plan, which are nearing completion. The Forum also had updates on the first meeting of the Wellington Region Leadership Committee (WRLC) and the climate change-related projects of the Wellington Regional Growth Framework (WRGF). The Forum agreed for Councillor Nash to present on the Forum's behalf to the WRLC with the purpose of bringing attention to the significant climate-related implications of the WRGF and to offer the Forum's assistance to the WRLC.

Action items update

9. Officers have completed the scope of work and procurement plan for the development of a Low Carbon Economy Transition Report. The purpose of the report is to describe a practical vision and the key shifts needed to create a low carbon economy in the Wellington- Horowhenua area. It will describe the risks that climate change poses to key economic sectors and their opportunities to respond. It will also inform the development of a new Regional Economic Development Plan (REDP). Officers are now meeting with consulting firms to finalise our approach and determine if the work can be completed within the proposed, scope, timeline and budget.

Ngā hua ahumoni
Financial implications

10. There are no direct financial implications from this report. There may be financial implications over time as individual project analysis occurs, business cases are made and budget decisions are taken.

Ngā tūāoma e whai ake nei
Next steps

11. Updates will continue to be provided to each Committee meeting as the Programme progresses.

Ngā āpitihanga
Attachment

Number	Title
1	Climate Emergency Response Programme Status Report (October 2021)

Ngā kaiwaitohu
Signatories

Writers	Jake Roos – Climate Change Advisor Katharina Achterberg – Programme Coordinator Climate Change
Approvers	Kathryn Malone – Acting Manager, Strategic and Corporate Planning Francis Ryan – Acting General Manager, Strategy

He whakarāpopoto i ngā huritaonga Summary of considerations
Fit with Council's roles or with Committee's terms of reference Updating the Climate Committee on the Programme's status fits with its specific responsibility to "Oversee the development and review of Council's climate change strategies, policies, plans, programmes, and initiatives (including Council's Climate Emergency Response Programme); and recommend these matters (and variations) to Council for adoption."
Implications for Māori There are implications for mana whenua and Māori from this report. They will be impacted by the choice of emissions reduction pathways that Greater Wellington takes to meet its climate goals, and as a result of the bid for resourcing engagement with mana whenua for the approved Low Carbon Acceleration Fund projects. Regional climate planning must work to address the implications of climate change adaptation and mitigation on Māori/mana whenua.
Contribution to Annual Plan / Long Term Plan / Other key strategies and policies Much of the work carried out this quarter has been focussed on advancing the Climate Emergency Response Programme.
Internal consultation The Strategic and Corporate Planning department were consulted in the development of this report.
Risks and impacts - legal / health and safety etc. There are no identified risks relating to the content of this report.

Attachment 1 to Report 21.464

Climate Emergency Response Programme Status Report (October 2021)

Corporate Carbon Neutrality Project

	Short description	Status Aug Q	Status Oct Q	Progress	% complete last Q	% complete this Q
1	Carbon policy	Complete	Complete	Policy endorsed by Executive Leadership Team (ELT), support package to accompany policy completed, policy launched mid-August, roll out to business underway	95	100
2	CEO accountability	On track	On track	Completed for 2020/21.	100	100
3	Electricity supply	On track	On track	Having investigated and ruled out pursuing reducing electricity emissions through the purchase of renewable energy certificates through our supplier Meridian, there are no further options for increasing GW's renewable electricity supply except investing/establishing new renewable electricity generation capacity directly. Utility-scale solar and wind installations are financially viable in the right circumstances but pursuing these would be a significant new venture outside GW's usual activities.	90	90
4	Accelerate EV bus fleet	On track	On track	Electric bus fleet will increase to 108 by December 2023. Planning for a fully decarbonised bus fleet by 2030 is underway, subject to central government funding.	25	25
5	Greater Wellington EV fleet	On track	On track	Internal EV charging infrastructure is increasing with new build in Masterton. Implementation of the fleet optimisation study findings including a significant switch to EVs will commence in 2022.	60	60
6	Off road EV supply	At risk	At risk	Awaiting market developments. Dependent on suitable vehicle being available – there is likely to be something in 2021/22. However, 10 new diesel utes were purchased last quarter to replace end of life and damaged utes in the fleet.	5	5
7	Parks reforestation	At risk	On track	Parks reforestation of 1350ha – agreed to in the LTP; LCAF funding approved for planning, Project Lead and mana whenua engagement, 2	17	20

Attachment 1 to Report 21.464

Climate Emergency Response Programme Status Report (October 2021)

	Short description	Status Aug Q	Status Oct Q	Progress	% complete last Q	% complete this Q
				sites (150ha) underway. Procurement has begun to progress retirement and restoration in Belmont Regional Park, specifically Waitangirua (West) and Kilmister Block (East). A supplier was found to negotiate delivery of a second tier Restoration Plan with. This will result in work being able to commence before year three, and the target of 100ha per annum being met.		
8	Grazing phase out	At risk	At Risk	Policy directions identified through Toitū Te Whenua Parks Plan to phase out grazing and plan restoration activities as above. In September consultation commenced for a proposed new stock grazing licence covering 208 hectares in QEP and closed on 1 October. Many submitters cited the need of climate action in their submissions. This stock grazing licence proposal will be the subject of an Environment Committee report. LCAF funding is leading the development of a restoration plan for parks. Consultants have been engaged and the 'Reclothing Papatuanuku Parks Restoration Plan' is in progress. Mana whenua will be engaged but not the public. This is because recent public feedback received in 2020 on the draft parks plan and the LTP will be used to inform the plan. The Restoration Plan will include passive and active restoration to support emission reduction. Toitū Te Whenua allows for grazing for farming education purposes at Battle Hill Park and for small scale, low impact grazing where benefits can be demonstrated in other parks where the activity is permitted. The Restoration Plan will help identify the areas where grazing may be appropriate and where environmental effects can be minimised.	15	15
9	Align Council Controlled	On track	On track	All company organisations remain at differing stages of development but continue to work towards reducing their carbon emissions. CentrePort have produced an Emissions Reduction Plan as part of their Statement of Corporate	10	10

Attachment 1 to Report 21.464

Climate Emergency Response Programme Status Report (October 2021)

	Short description	Status Aug Q	Status Oct Q	Progress	% complete last Q	% complete this Q
	Organisation (CCO) targets			Intent. The Wellington Regional Stadium Trust have undertaken a number of intimates towards carbon neutrality and waste minimisation. Their initial focus has been to reduce the amount of waste going to landfill and increase the recycling options for events. The stadium are working on plans to become a carbon neutral venue and wish to work with both settlers on this during the current year.		
10	Low-carbon fund	On track	On track	Fund operational, fully allocated to parks restoration for the 2021-24 period. The value of NZUs continues to rise, which might present an opportunity to increase the total size of the fund to support additional activities.	90	92

Regional Climate Emergency Project

	Short description	Status Aug Q	Status Oct Q	Progress	% complete last Q	% complete this Q
1	Governance	Complete	Complete	Climate Committee established	100	100
2	Climate change impacts analysis	On track	On track	Tools reviewed, new guidance created, to build capability/capacity across business. Carbon policy completed; Climate Change Consideration guide revised. To be rolled out to the business through Climate Response Organisational Change Plan: slow-down of plan progress due to carbon footprint and procurement support resource diversion over the August quarter.	30	35

Attachment 1 to Report 21.464

Climate Emergency Response Programme Status Report (October 2021)

	Short description	Status Aug Q	Status Oct Q	Progress	% complete last Q	% complete this Q
3	Strategy review & GM champion assigned	On track	On track	General Manager (GM) Strategy is Programme Sponsor. New direction, set through the two 10-pt plans, provides components of a revised strategy. The WRGF is home to new regional climate projects on mitigation and adaptation that will build upon the 2015 Climate Change Strategy.	55	55
4	Central Government advocacy	On track	On track	Greater Wellington recently submitted on the Infrastructure Commission's advice to government, which included climate change considerations. RMA reform consultation has started with the publication of the Natural and Built Environments Bill (NBEA) exposure draft, which Greater Wellington submitted on.	NA (ongoing)	NA (ongoing)
5	Support the region's TAs to adapt	At risk	At risk	The Wellington Region Climate Change Forum (WRCCF) (councillor reps and mana whenua) meets quarterly, officer level equivalent meet 6-weekly. The comprehensive Resource Management Act 1991 (RMA) reform that is underway will include two new acts (on spatial planning and adaptation). The Wellington Regional Leadership Committee (WRLC) has finalised the Wellington Regional Growth Framework (WRGF) and has agreed on the 3 year-work programme. This work programme includes 2 climate projects which are to be led by the WRCCF. Both the RMA changes and the WRLC will provide greater clarity on roles and responsibilities on local adaptation issues. The Climate Committee will have opportunities to progress this action.	10	10
6	Technical research to support regional adaptation	At risk	At risk	Work underway, responsibilities lie across Greater Wellington teams and Wellington Region territorial authorities (TAs), WRGF interaction identified will improve alignment and lack of resourcing in this area. As above, the RMA reforms include a new adaptation act and the WRGF has begun its next phase in July. Both will provide Greater Wellington with more clarity and opportunities for progress, such as a joint regional	20	30

Attachment 1 to Report 21.464

Climate Emergency Response Programme Status Report (October 2021)

	Short description	Status Aug Q	Status Oct Q	Progress	% complete last Q	% complete this Q
				Climate Change Risk and Impact Assessment (CCRIA) proposed to be delivered this financial year.		
7	Funding	At risk	At risk	One Billion Trees (1BT), shovel-ready and jobs for nature funding will improve regional outcomes for climate but is opportunistic and ad hoc.	10	10
8	Regional mitigation	At risk	At risk	Regional inventory completed for 2019. The WRCCF will provide advisory role to the climate related projects under the WRGF and regional carbon reduction project has been advanced to year 1 of the WRGF, as agreed by the WRLC at their inaugural meeting. The low carbon economy research project commissioned by the Climate Committee provides the opportunity to support regional mitigation. It is expected the National Emissions Reduction Plan (consultation October 2021; final May 31, 2022) will provide some direction on the level of reduction required by each sector.	10	20
9	Increase forested area	At risk	At risk	Work underway with Greater Wellington Parks and with Hutt City Council. Additional action funded through 1BT, shovel-ready and jobs for nature. Underlying issues including partnering with iwi, TAs, communities, Ministry of Primary Industries (MPI), limited capacity to progress to date.	12	12
10	Embed regional emissions reduction targets in key programmes	On track	On track	Good collaboration occurring with Regional Land Transport Plan, Wellington City Council and Let's Get Wellington Moving (LGWM) on agreeing targets. Recent changes at LGWM at the governance level and added climate workstream which includes a Greater Wellington climate change advisor, along with strong climate focus in the WRGF, and working with WellingtonNZ on economic transition. Modelling is yet to be undertaken to understand the RLTP pathway to emissions reduction target of 35% by 2030.	25	25

Climate Committee
19 October 2021
Report 21.200

For Decision

FLOOD PROTECTION CLIMATE CHANGE POLICY AND APPROACH

Te take mō te pūrongo
Purpose

1. To advise the Climate Committee (the Committee) of the updated Flood Protection climate change policy and approach.

He tūtohu
Recommendations

That the Committee:

1 **Endorses** the updated Flood Protection climate change policy (Attachment 1) being:

The Flood Protection department will plan for climate change in assessing the degree of flood hazard risk, and in determining an appropriate response, using the latest guidance from the Ministry for the Environment.

a A 100-year future climate horizon will be used.

b For extreme rainfall events, this will be undertaken on a catchment-by-catchment basis and use the Representative Concentration Pathway (RCP) 6.0 scenario as a minimum. The RCP 8.5 scenario will also be assessed and used when related to guidance to others or the design of works that protect assets of high community importance (e.g. the location of a new hospital or protection of large populations). These RCP scenarios are currently estimated to result in a 20-30% increase in rainfall for the larger catchments we manage.

c Sea level rise associated with the RCP 8.5 H+ scenario will be used. This is assessed as approximately 1.35m rise in sea level over the 100 year climate change horizon.

2 **Recommends** the Flood Protection climate change policy is adopted by Council.

Te horopaki
Context

2. Flooding is a significant hazard in the Wellington Region that poses a risk to both life and property. Many of our communities are considered to be at risk – including urban areas within the Hutt Valley, townships on the Kāpiti Coast, Masterton and Greytown in the Wairarapa and rural areas throughout the Wellington Region. The 2004 flood in

the Waiwhetū Stream that caused major flooding to residential properties along Riverside Drive, the Hutt Park raceway and the industrial area in Gracefield is a recent reminder of the damage that flooding can cause.

3. The impacts of climate change on flood protection activities is predicted to be significant and how we plan and prepare for this is important. A summary of some of the predicted climate effects and the flood protection activities they are likely to impact is summarised in Table 1.

Table 1: Climate change effects and impacted flood protection activities

Climate change effect	**Description**	**Flood Protection activities impacted**
Increased rainfall	• Increased rainfall produces greater flows in our watercourses. This reduces the level of service of stop-banks and other fixed assets. • Increased rainfall can also lead to greater flows which in turn causes more erosion.	• Flood hazard modelling • River management • Engineering controls • District planning
Storms of increasing frequency and intensity	• Increased storm frequency and duration will increase the workload on Greater Wellington Regional Council (GW)'s duty flood warning and response staff. • Increased storm frequency and duration will increase erosion damage to infrastructure, recreational, amenity and farm land requiring increased effort to repair.	• Flood warning & response • River management • Engineering controls
Unpredictable weather patterns	• Changing weather patterns make predicting flooding more problematic including changing expected storm-tracks and prevailing wind direction.	• Flood warning & response • River management
Rising sea level	• Rising sea level is reducing the level of service of coastal and estuary flood defences. • Rising sea level is raising groundwater tables reducing the ground's ability to soak up rainfall leading to increased run-off. • Tidal impacts on river levels are being experienced further up watercourses which during can raise river levels and increase the duration of flood water effects.	• Flood hazard modelling • River management • Engineering controls • District planning
Increasing temperatures	• Increasing temperature is increasing the rain carrying capacity of storm systems	• Flood hazard modelling • River management
Increasing periods of droughts	• An increase in drought periods may impact the riparian planting programmes. • Increased periods of drought increases soil hardness which in turn increases run-off.	• River management • Environmental improvements
Carbon reduction requirements	• The move to electric vehicles may impact Flood Protection's procurement and operation of suitable plant and machinery.	• River management • Gravel management • Engineering controls

	• Embodied carbon in Flood Protection's operations needing to be addressed. • Rock and other core materials are having to be sourced outside of the region which leads to a greater carbon footprint.	

4. Section 7 of the Resource Management Act 1991 (RMA) requires that particular regard shall be given to matters related to climate change. The Flood Protection department is committed to the consideration of climate change impacts in our work including in the assessment of flood hazard.

5. Flood hazard modelling is a critical process carried out by the Flood Protection Department (the Department) to identify areas at risk of flooding.

6. Flood hazard modelling consists of three key elements: the collection of input data; hydrological modelling (rainfall and runoff characteristics); and hydraulic modelling (routing flow down the channel and across floodplains). The flood hazard modelling outputs are the flood levels and maps that inform district plans, provide the technical basis for the department's Floodplain Management Plans, and inform Civil Defence and emergency management actions. This is considered a critical process of the Flood Protection department.

7. The Flood Hazard Modelling Standard outlines a list of design flood events that are required to include an allowance for climate change and a number of sensitivity scenarios relating to climate change are also modelled as part of our flood hazard assessments. These processes are considered a robust methodology for paying particular regard to climate change.

8. The Flood Protection climate change policy relates to how the allowance for climate change is determined for any given catchment using the latest national guidance. This will then be applied through the Flood Hazard Modelling Standard to flood hazard modelling developed by Flood Protection. Additional approaches and actions for consideration of climate change are discussed in the analysis below.

9. In August 2021, the Intergovernmental Panel on Climate Change (IPCC) released "Climate Change 2021: the Physical Science Basis" as the first instalment of their Sixth Assessment Report which will be completed in 2022. It is anticipated that the Ministry for the Environment (MfE) will provide guidance on how to implement the latest recommendations from the IPCC with a New Zealand focus. Until this guidance is published, we will use the latest (2018) guidance from MfE.

Te tātaritanga
Analysis

Extreme rainfall

10. Since 2010, flood hazard modelling undertaken for or by Greater Wellington Regional Council (Greater Wellington) has included allowances for the impacts of climate change. Fixed values for increases in extreme rainfall and sea-level rise have been used. In 2013 (see Council report 13.720 Wellington Region – Flood Vulnerability and Climate Change

Impacts Scoping Study) the current allowances were adopted as a floodplain management planning principle. These are:

a The increase in rainfall intensity to be used for calculation will be 20% by 2100.
b The sea-level rise to be used for calculation is 0.8m by 2100.

11. As more sophisticated climate models have been developed, it has become apparent that the impact of climate change on extreme rainfall will not be linear, varying as a function of the rainfall duration and return period of any given event. MfE guidance has been developed to reflect this. In 2018, the National Insitute of Water and Atmospheric Research (NIWA) updated their extreme rainfall modelling, and produced a new High Intensity Rainfall Design System (HIRDS v4) to be used as the national reference for extreme rainfall changes due to climate change. The recommended percentage increases in rainfall for large flood events are now variable based on catchment characteristics, such as size.

12. The Flood Protection Climate Change Policy (**Attachment 1**) and Flood Protection Climate Change Policy – Guidelines for Implementation (**Attachment 2**) reflect the need to use the latest national guidance from MfE with a catchment specific analysis for extreme rainfall estimates.

13. Flood Protection will calculate both the RCP 6.0 and 8.5 scenarios as a sensitivity analysis. While scenarios can be discussed with communities it is recommended RCP 6.0 is adopted as a minimum. Using the MfE guidance this means, for example, for a catchment with a critical storm duration of 12 hours the increase in rainfall that would be applied under RCP 6.0 would be 23.3% for the 1% annual exceedance probability (AEP) event. For the same catchment and event, an RCP 8.5 scenario would be an increase in rainfall of 31.6%.

Sea-level rise

14. MfE recommends that all new infrastructure is built taking into account the sea-level rise associated with the RCP 8.5 H+ scenario. This is approximately 1.35m for 2121 (a 100-year horizon) as a climate change allowance.

Flood Protection climate change policy

15. The Flood Protection climate change policy states that the latest national guidance for incorporating climate change into flood risk assessments and responses will be used.

Dynamic Adaptive Policy Pathways (DAPP) and carbon calculators

16. Flood Protection is going to continue to use the DAPP approach for assessment of flood risk management options. This will form part of the updated Guidelines for Floodplain Management Planning (FMP) currently being developed by the department.

17. Adaptive planning approaches, such as DAPP, aim to anticipate uncertain future changes by co-developing combinations of short-term actions and long-term options in alternative pathways. These enable adaptive actions to be decided and implemented before a pre-agreed threshold is reached. This contrasts with the traditional ‘response and recovery’ approach to climate events, which is unsuited for increasingly more frequent coastal hazard events, for rising risks from ongoing sea-level rise, and for expected increases in intensity of rainfall and river flooding. The DAPP approach was

used in the development of the flood risk management components of the current RiverLink project.

18. Carbon calculators which can be used to assess design options and procurement options are also being assessed and developed for use by the Flood Protection department.

Assess the region's flood vulnerability

19. Flood Protection carrying out an assessment of the region's flood vulnerability which will assess:

    a Current flood vulnerability;

    b Changes in flood vulnerability with climate change;

    c Changes in flood vulnerability with proposed development; and

    d Changes in flood vulnerability with a combination of increased development and climate change.

20. The analysis will inform future planning by the department to ensure we are best placed to meet the changing climate. The department is working with Greater Wellington's Climate Change team on the assessment, and it will feed into the assessment of the regional Climate Change Risk Assessment currently being developed by the Wellington Region Climate Change Forum.

Future work

21. Flood Protection recognises that climate science is an evolving space as new reports, models, and approaches are developed. Upcoming projects that Flood Protection will be involved in include:

    a *Responding to updated MfE Guidelines* – It is recognised that the IPCC have recently released a climate report which presents revised climate scenarios. These will need to be interpreted by MfE. Once available we propose to review and update the Climate Change Policy in line with the latest guidance.

    b *Regional Climate Change Risk Assessment (CCRA)* - Flood Protection will support the Wellington Regional Climate Change Forum in the development of the Climate Change Risk Assessment, both through our technical expertise and understanding of flood risk.

    c Flood *Resilience Aotearoa* – Flood Protection is supporting the national initiative to understand flood risk across the country, its impacts and approaches to reduce and adapt to change.

    d *National Research* – Flood Protection will explore opportunities to engage in national research into climate change flood resilience including research into alternative to the current species used for erosion protection and riparian planting.

Ngā hua ahumoni
Financial implications

22. There are no direct financial implications associated with this policy. However, when including an allowance for climate change in flood hazard assessments, there may be financial implications for providing flood risk management options for this hazard.

Ngā tikanga whakatau
Decision-making process

23. The matters requiring decision in this report were considered by officers against the decision-making requirements of Part 6 of the Local Government Act 2002.

Te hiranga
Significance

24. Officers considered the significance (as defined by Part 6 of the Local Government Act 2002) of the matters for decision, taking into account Council's *Significance and Engagement Policy* and Greater Wellington's *Decision-making Guidelines*. Officers consider that these matters are of low significance due to their administrative nature.

Te whakatūtakitaki
Engagement

25. External engagement will be undertaken to inform Territorial Authorities once the policy has been adopted. There will also be engagement with the wider community on a project by project basis.

Ngā tūāoma e whai ake nei
Next steps

26. The Flood Protection climate change policy will be used in future flood hazard assessments.

Ngā āpitihanga
Attachments

Number	Title
1	Flood Protection Climate Change Policy
2	Flood Protection Climate Change Policy – Guidelines for Implementation

Ngā kaiwaitohu
Signatories

Writers	Francie Morrow – Project Manager, Floodplain Management Plans Andy Brown – Team Leader, Investigations, Strategy and Planning
Approvers	Graeme Campbell – Manager, Flood Protection Wayne O'Donnell – General Manager, Catchment Management

He whakarāpopoto i ngā huritaonga Summary of considerations
Fit with Council's roles or with Committee's terms of reference The Flood Protection Climate Change Policy is relevant to the Committee because it relates to the purpose of the Committee to oversee policies from a climate change perspective.
Implications for Māori There are no known implications for Māori. As part of implementing this policy, co-design and/or consultation with mana whenua of specific catchments will be involved when developing flood hazard maps.
Contribution to Annual Plan / Long Term Plan / Other key strategies and policies This policy supports the delivery of Flood Protection's long term plan activities.
Internal consultation Internal consultation has been undertaken with members of the Environmental Science, Environmental Policy, and Strategic and Corporate Planning departments as well as Flood Protection staff.
Risks and impacts - legal / health and safety etc. Risks associated with this project include: • Interface with stormwater modelling and district planning processes carried out by the Territorial Authorities. • Territorial Authorities being supportive of the climate change policy.

Attachment 1 to Report 21.200

Flood Protection climate change policy	
Purpose	A Flood Protection department policy for incorporating climate change into flood resilience work using the latest Ministry for the Environment (MfE) and NIWA guidance.
Vision	The Flood Protection department will demonstrate clear leadership and understanding of potential climate change impacts. The Resource Management Act (1991) requirement to pay particular regard to climate change will be met.
Rationale	The climate change policy specifies a consistent methodology for assessing climate change for flood resilience work. This includes how climate change is allowed for in our planning for flood risk management, the design of any flood mitigation structures and the approach to maintaining the flood resilience outcomes that have been established.
Policy Owner	Graeme Campbell, Manager Flood Protection
Responsibilities	Flood Protection Department
Application	This policy will be used in assessing climate change for flood resilience work, with particular importance for incorporating into flood hazard modelling for flooding from rivers and streams managed by Greater Wellington Regional Council (Greater Wellington).
Related Policy and Legislation	**External** Resource Management Act 1991 Local Government Act 2002 Civil Defence Emergency Management Act 2002 Reserves Act 1977 Soil Conservation and Rivers Control Act 1941 River Boards Act 1908 **Internal** Flood Hazard Modelling Standard (2021) Floodplain Management Plans (several) Climate change strategy (2015) Climate Consideration Guide (2020) Infrastructure Strategy (2021) Asset Management Policy (2021)
Effective Date	19 October 2021
Review Date	31 December 2024 or following release of updated MfE climate change guidelines.

Approved: _____ Date: _____
Manager, Flood Protection

Attachment 1 to Report 21.200

Flood Protection climate change policy	
Purpose and Principles	**Purpose** The purpose of this policy is to describe the approach the Flood Protection Department will use for incorporating climate change into flood resilience work. **Principle** When assessing flood risk and responses, the Flood Protection department needs to consider the impacts of climate change on extreme rainfall and sea-level. The effect of climate change on extreme rainfall should be determined on a catchment-by-catchment basis.
Policies	**To use latest national guidance for incorporating climate change into flood risk assessments and responses.** The Flood Protection department will plan for climate change in assessing the degree of flood hazard risk, and in determining an appropriate response, using the latest guidance from the Ministry for the Environment. A 100-year future climate horizon will be used. For extreme rainfall events, this will be undertaken on a catchment-by-catchment basis and use the RCP 6.0 scenario as a minimum. The RCP 8.5 scenario will also be assessed and used when related to guidance to others or the design of works that protect assets of high community importance (e.g. the location of a new hospital or protection of large populations). These RCP scenarios are currently estimated to result in a 20-30% increase in rainfall for the larger catchments we manage. Sea level rise associated with the RCP 8.5 H+ scenario will be used. This is currently assessed as a 1.35m rise in sea level over the 100 year climate change horizon.
Guidelines	Flood Protection climate change policy: Guidelines for implementation http://ourspace.gw.govt.nz/ws/floodmgt/_layouts/15/DocIdRedir.aspx?ID=FMGT-8-2416

Attachment 2 to Report 21.200

Greater Wellington
Te Pane Matua Taiao

Flood Protection climate change policy: Guidelines for implementation

April 2021

Attachment 2 to Report 21.200

Document Control

Version control

Title: Flood Protection climate change policy			
Date	**Description**	**Prepared by**	**Reviewed by**
26/11/2020	Memo detailing update to climate change policy	Tess Breitenmoser	Louise Algeo Francie Morrow Sharyn Westlake Andy Brown
21/4/2021	Report version of update to climate change policy	Francie Morrow	Andy Brown

Document approval

Title: Flood Protection climate change policy	
Approved by: 	
Andy Brown – Team Leader, Investigations, Strategy and Planning	*Date:* 14 May 2021
Approved by:	
Graeme Campbell - Manager, Flood Protection	*Date:*

Attachment 2 to Report 21.200

Contents

Attachment 2 to Report 21.200

1. Purpose

This report describes a Flood Protection department policy for incorporating climate change into design flood estimates using the latest Ministry for the Environment (MfE) and NIWA guidance from 2017 and 2018. The climate change policy will be used in assessing flood hazards, particularly for incorporating into flood hazard modelling for flooding from rivers and streams managed by Greater Wellington Regional Council (GWRC).

This is an update to the currently methodology and floodplain management planning principle.

2. Context

Section 7 of the Resource Management Act 1991 (RMA) requires that particular regard shall be given to matters related to climate change. The Flood Protection department is committed to the consideration of climate change impacts on the assessment of flood hazard.

The Flood Hazard Modelling Standard outlines a list of design flood events that are required to include an allowance for climate change and a number of sensitivity scenarios relating to climate change are also modelled as part of our flood hazard assessments. These processes are considered a robust methodology for paying particular regard to climate change.

The updates outlined in this report relate to how the allowance for climate change is determined for any given catchment using the latest national guidance. This will then be applied through the Flood Hazard Modelling Standard procedure.

3. Background

What is climate change?

Climate change is defined by the Intergovernmental Panel on Climate Change (IPCC) as the identifiable change in the climate over an extended period of time (IPCC, 2013). While this change can be due to natural variability, since the industrial revolution, we have increasingly seen the impacts of human activity on the climate. Scientists have measured warming which has been attributed to an increased concentration of greenhouse gases in the atmosphere which causes changes in weather patterns.

The IPCC have developed four global greenhouse emission scenarios that are used as the basis of climate models. The four standard Representative Concentration Pathways (RCP) for climate modelling represent different greenhouse gas concentration trajectories. These are RCP2.6, RCP4.5, RCP6.0 and RCP8.5. The climate models tell us how the climate in each part of the world might change over time, based on the radiative forcing (i.e. energy per time and per area, due to greenhouse gas absorption of solar radiation re-emitted by the surface) associated with each greenhouse scenario.

What impact does climate change have on the Flood Protection department's activities?

Climate change will significantly impact the frequency and severity of flooding from rivers and streams. There is sufficient certainty that climate change will cause an increase in flooding due to more extreme rainfall.

While climate change will cause warming, water shortages and drought, it will also cause flooding to become more frequent and intense. As the atmosphere warms, the moisture carrying capacity of the atmosphere increases, resulting in more severe storm events. The extent to which climate change will affect extreme rainfall will vary depending on the rainfall duration and return period of the storm event, with the largest impact for short duration and longer return period storms.

While the impacts of climate change on rainfall intensity will mostly impact flood hazard modelling through increases in extreme rainfall, it will also cause significant sea-level rise. As global temperatures increase, a combination of thermal expansion of the water and the melting of continental glaciers and ice shelves will cause sea-levels to rise. This will also impact flooding, particularly in lower reaches of rivers and streams.

A summary of some of the predicted climate effects and the flood protection activities they are likely to impact is summarised in Table 1.

Table 1: Climate change effects and impacted flood protection activities

Climate change effect	Description	Flood Protection activities impacted
Increased rainfall	• Increased rainfall produces greater flows in our watercourses. This reduces the level of service of stop-banks and other fixed assets. • Increased rainfall can also lead to greater flows which in turn causes more erosion.	• Flood hazard modelling • River management • Engineering controls • District planning
Storms of increasing frequency and intensity	• Increased storm frequency and duration will increase the workload on Greater Wellington Regional Council (GW)'s duty flood warning and response staff. • Increased storm frequency and duration will increase erosion damage to infrastructure, recreational, amenity and farm land requiring increased effort to repair.	• Flood warning & response • River management • Engineering controls
Unpredictable weather patterns	• Changing weather patterns make predicting flooding more problematic including changing expected storm-tracks and prevailing wind direction.	• Flood warning & response • River management
Rising sea level	• Rising sea level is reducing the level of service of coastal and estuary flood defences. • Rising sea level is raising groundwater tables reducing the ground's ability to soak up rainfall leading to increased run-off. • Tidal impacts on river levels are being experienced further up watercourses which during can raise river levels and increase the duration of flood water effects.	• Flood hazard modelling • River management • Engineering controls • District planning
Increasing temperatures	• Increasing temperature is increasing the rain carrying capacity of storm systems	• Flood hazard modelling • River management
Increasing periods of droughts	• An increase in drought periods may impact the riparian planting programmes. • Increased periods of drought increases soil hardness which in turn increases run-off.	• River management • Environmental improvements
Carbon reduction requirements	• The move to electric vehicles may impact Flood Protection's procurement and operation of suitable plant and machinery. • Embodied carbon in Flood Protection's operations needing to be addressed. • Rock and other core materials are having to be sourced outside of the region which leads to a greater carbon footprint.	• River management • Gravel management • Engineering controls

How has it been assessed/incorporated in the past?

Since 2010, flood hazard modelling undertaken for or by Greater Wellington Regional Council (GWRC) has included allowances for the impacts of climate change. Fixed values for increase in extreme rainfall and sea-level rise have been used. In 2013 (see Council report 13.720 Wellington Region – Flood Vulnerability and Climate Change Impacts Scoping Study) the current allowances were adopted as a floodplain management planning principle. These are:

- The increase in rainfall intensity to be used for calculation will be 20% by 2100.
- The sea-level rise to be used for calculation is 0.8 m by 2100.

The increase in extreme rainfall was based on a linear increase in rainfall of 8% per degree, with 2.5 degrees of warming by 2100 anticipated.

What is the latest guidance from Ministry for the Environment (MfE)?

Guidance on extreme rainfall

As more sophisticated climate models have been developed, it has become apparent that the impact of climate change on extreme rainfall will not be linear, varying as a function of the rainfall duration and return period. MfE guidance has been developed to reflect this. In 2018, NIWA updated their extreme rainfall modelling, and produced a new High Intensity Rainfall Design System (HIRDS v4) to be used as the national reference for extreme rainfall changes due to climate change. The recommended percentage increases in rainfall are shown in Table 2 as a function of rainfall duration and Annual Exceedance Probability (AEP). As previously stated, the factors tend to increase for short duration rainfall and for longer return periods. The maximum increase is 13.6% per degree of warming for a 1% AEP, one hour event. The lowest is 4.8% per degree of warming for a 50% AEP, 120 hour duration rainfall event.

Table 2: Percentage increases in extreme rainfall, derived from the current climate to a future climate that is 1 degree warmer (MfE, 2018, page 100)

		Annual Exceedance Probability (AEP)									
		50%	20%	10%	5%	3.33%	2.50%	2%	1.67%	1.25%	1%
Critical storm duration	1 HOUR	12.2	12.8	13.1	13.3	13.4	13.4	13.5	13.5	13.6	13.6
	2 HOURS	11.7	12.3	12.6	12.8	12.9	12.9	13.0	13.0	13.1	13.1
	6 HOURS	9.8	10.5	10.8	11.1	11.2	11.3	11.3	11.4	11.4	11.5
	12 HOURS	8.5	9.2	9.5	9.7	9.8	9.9	9.9	10	10	10.1
	24 HOURS	7.2	7.8	8.1	8.2	8.3	8.4	8.4	8.5	8.5	8.6
	48 HOURS	6.1	6.7	7	7.2	7.3	7.3	7.4	7.4	7.5	7.5
	72 HOURS	5.5	6.2	6.5	6.6	6.7	6.8	6.8	6.9	6.9	6.9
	96 HOURS	5.1	5.7	6	6.2	6.3	6.3	6.4	6.4	6.4	6.5
	120 HOURS	4.8	5.4	5.7	5.8	5.9	6.0	6.0	6.0	6.1	6.1

These factors are applied to the respective level of warming predicted by each IPCC scenario for New Zealand as a whole, for different future time periods, to determine total percentage increase in rainfall. The different levels of warming predicted for New Zealand are listed in Table 3.

Table 3: New Zealand land-average temperature increases relative to 1986-2005 for four future emissions scenarios (MfE, 2018, page 100)

	2031-2050	2056-2075	2081-2100	2101-2120
RCP 2.6	0.59	0.67	0.59	0.59
RCP 4.5	0.74	1.05	1.21	1.44
RCP 6.0	0.68	1.16	1.63	2.31
RCP 8.5	0.85	1.65	2.58	3.13

The total increase in rainfall for a given annual exceedance probability and duration storm event should be determined using these two tables.

Guidance on sea-level rise

MfE guidance (2017) on sea-level rise is based on the IPCC (2013) projections, except that it includes a more extreme projection. The MfE guidance on sea-level rise includes an additional, more extreme emissions trajectory (RCP 8.5 H+), to reflect the possibility of a future extreme sea-level rise. This scenario should be considered by local government authorities to ensure planning and policy decisions are appropriately cautious when considering the potential implications of sea-level rise on communities. In particular, MfE recommends that all new infrastructure is built taking into account the sea-level rise associated with the RCP 8.5 H+ scenario.

The average sea-level rise for the different RCP projections, are shown in Figure 1.

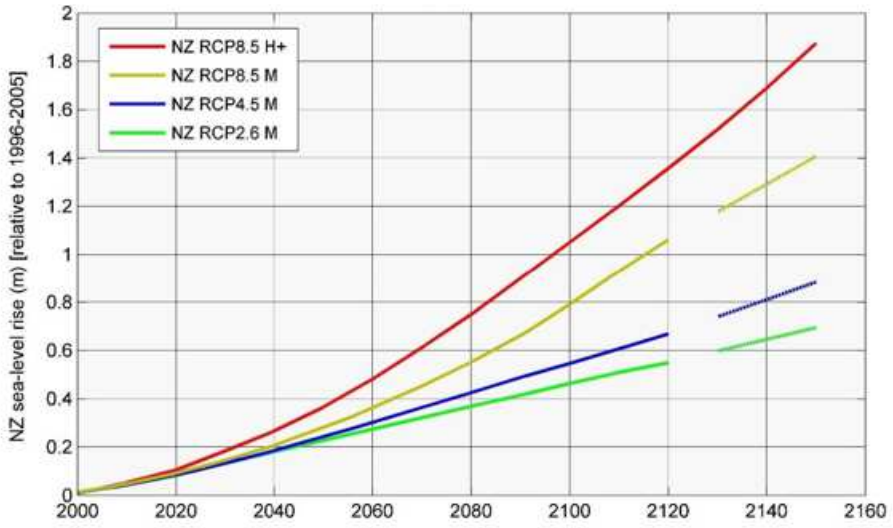


Figure 1: NZ sea-level rise projection scenarios to 2150 (Ministry for the Environment, 2017, page 105)

4. Guidance for Flood Protection

When modelling flood hazard, the Flood Protection department needs to consider the impacts of climate change on extreme rainfall and sea-level. The effect of climate change on extreme rainfall should be determined on a catchment-by-catchment basis, considering the design storm. By knowing the critical duration and annual exceedance probability of the design storm event, the average percentage increase in rainfall per degree of warming can be determined. This will then be applied to a predicted degree of warming. Having a standardised procedure for flood hazard mapping makes the process transparent to internal and external stakeholders.

The degree of warming is unknown and MfE does not make recommendations regarding which scenario should be used for rainfall increases. Multiple scenarios should be considered to allow informed decisions based on a range of possible outcomes. Where one value is required, for example for district plan flood hazard maps, the Flood Protection department should assess the appetite for risk with the local community. It is recommended that the RCP6.0 or RCP8.5 scenario is used. The RCP 6.0 scenario is a high mitigation scenario that provides a balance between being appropriately risk-adverse and also giving a pragmatic approach. This approach aligns with current GWRC procedures. The RCP8.5 is seen as a realistic scenario if no measures are taken worldwide to curb climate change.

The RCP 6.0 scenario should be used as a minimum. Both the RCP 6.0 and 8.5 scenarios should be used for sensitivity analysis. All RCP scenarios (RCP2.6, 4.5, 6.0 and 8.5) could be used in sensitivity analyses during flood hazard modelling to understand the range of possible effects of climate change. Furthermore, to align with MfE guidance, a dynamic adaptive approach is recommended.

As an example, in a catchment with a 12 hour critical storm duration and 1% AEP return period storm the average increase in rainfall per degree of warming is 10.1%. Using the RCP 6.0 scenario, the warming out to 2120 is 2.31 degrees. Hence, the increase in extreme rainfall used in flood investigations out to 2120 would be 23.3% (10.1% x 2.31 degrees).

An excel spreadsheet tool (available here: FMGT-8-2359) has been developed to assist the Flood Protection department in determining the appropriate increase in extreme rainfall for a given catchment.

Flood hazard modelling is used for design of flood protection assets, as well as guidance for wider development. As such, in accordance with Ministry for the Environment guidance a recommended sea-level rise out to 2120 of 1.35m should be used.

5. Steps for Flood Protection to follow

During flood hazard modelling, the impacts of climate change on flooding must be considered, both in its impacts on extreme rainfall and through sea level rise.

Extreme Rainfall: determined on a catchment by catchment basis

1. Determine the design inputs:
   (a) Critical duration - determined in each catchment and detailed in the hydrology report.
   (b) Flood size - will reflect the design flood event. For most catchments throughout the region, the design storm will have a 1% Annual Exceedance Probability.
2. Use MfE guidelines (Table 2) to determine the average rainfall increase per degree of warming:
   (a) Based on the critical duration and return period of the design storm.
3. Use each RCP scenario to determine the various increases in rainfall corresponding to projected warming by 2120 (or a 100-year horizon).
4. Use RCP scenarios for sensitivity analysis and community appetite for risk to determine flood hazard mapping scenario.

Sea-level rise: use 1.35 metres for 2120 climate change allowance.

It should be noted that these recommendations are the minimum consideration, with effects only out to 2120. When considering flood protection measures, a dynamic adaptive approach will be necessary,

with allowance to increase the level of protection progressively, once the science and the emission outcomes become more certain.

6. Review and updating of this policy

Our understanding of climate change and predicted scenarios is constantly developing. Therefore, how climate change is considered during flood hazard modelling needs to be reviewed and updated periodically. While the procedure outlined in this report will likely remain the same, the input information will need to be updated. This includes the projected temperature increases, emission pathways and the timeframe being used. A review of this policy or the floodplain management planning principle should occur when significant new climate change guidance is released by MfE or organisation-wide procedures are adopted by GWRC.

7. References

Allan, A. 2013. Wellington Region – Flood Vulnerability and Climate Change Impacts Scoping Study. Wellington: Environmental Wellbeing Committee, Greater Wellington Regional Council.

Ministry for the Environment 2018. Climate Change Projections for New Zealand: Atmosphere Projections Based on Simulations from the IPCC Fifth Assessment, 2nd Edition. Wellington: Ministry for the Environment.

Ministry for the Environment 2017. Coastal Hazards and Climate Change Guidance for Local Government. Wellington: Ministry for the Environment.

NIWA 2018. High Intensity Rainfall System Version 4. Wellington: National Institute of Water & Atmospheric Research Ltd.

IPCC, 2013: Climate Change 2013: The Physical Science Basis. Contribution of Working Group I to the Fifth Assessment Report of the Intergovernmental Panel on Climate Change. Cambridge University Press, Cambridge, United Kingdom and New York, NY, USA.

Climate Committee
19 October 2021
Report 21.467

For Information

LOW CARBON ACCELERATION FUND UPDATE

Te take mō te pūrongo
Purpose

1. To inform the Climate Committee (the Committee) of the status of the Low Carbon Acceleration Fund and work to develop options for its extension.

Te tāhū kōrero
Background

2. On 21 August 2019, Council declared a climate emergency, set a target for carbon neutrality by 2030 and adopted two ten-point action plans to ramp up climate action.

3. One of the actions agreed on 21 August 2019 was to establish the Low Carbon Acceleration Fund (the LCAF). Council approved the design of the LCAF at its 9 April 2020 meeting (Design of the Low Carbon Acceleration Fund (Report 20.112)). It was formally established through the 2020/21 Annual Plan.

4. The LCAF is designed to help spur a step change in Greater Wellington Regional Council's activities to reduce its emissions and put it on track to achieve Council's carbon reduction goals, primarily corporate carbon neutrality from 2030. The LCAF funds activities or initiatives that reduce net emissions more quickly and/or at a greater scale than otherwise would occur. At the time of its establishment, it was decided to exclude projects at Wellington Water Limited, Centreport and Wellington Regional Stadium, although emissions from these form part of the Greater Wellington Regional Council (Greater Wellington) Group's carbon footprint.

5. The fund is based on Greater Wellington's 255,660 'free allocation' NZUs (emissions units) gifted to it by the Government in 2012 for its pre-1990 forests. At the time the LCAF was established, the approximate value of these units was $8 million, so it was agreed that $8 million of funding in total would be allocated: $2 million in 2020/21 through the Annual Plan, and the remainder as part of the 2021-231 Long Term Plan. All of this funding was allocated to native ecosystem restoration/reforestation in regional parks. To the end of September 2021, $219,000 has been spent in total, on the approved restoration projects at Queen Elizabeth Park and Kaitoke and planning for the remainder of the programme.

6. Council agreed that each year the Climate Emergency Response Programme Board would review the performance of the LCAF and suggest to the Committee any adjustments to its details and settings. This work will be undertaken in the coming months.

Te tātaritanga
Analysis

7. The value of NZUs changes with the traded price of these units in the NZ Emissions Trading Scheme and, therefore, so does the potential value of the LCAF. The table below summarises past current and possible future values of Greater Wellington's 255,660 free-allocation NZUs.

	Spot price 5/10/2020	Spot price 5/10/2021	Futures contract, fixed 5/10/21 for April 2026	Treasury 2031 carbon price estimate low	Treasury 2031 carbon price estimate high
$/NZU	$ 34.85	$ 64.50	$ 73.75	$ 101.00	$ 200.00
Value of Council's free-allocation NZUs at the specified price (in millions)	$ 8.90	$ 16.5	$ 18.9	$ 25.8	$ 51.1

8. As the value of the NZUs is rising, the LCAF functions via a loan to take advantage of it. The loan will eventually need to be repaid, including interest, from the sales of Greater Wellington's free-allocation NZUs. Provided their value continues to rise faster than interest costs, there is a net financial benefit to Greater Wellington from taking this approach.

9. Not all the NZUs need to be sold at the same time and spreading out their sale over many years mitigates the risk of a price drop, or the government introducing a tax on capital gains. They could also be sold on the futures market for supply on a future date, not at the point of sale. Greater Wellington's Treasury advice regarding financial strategy will be sought as part of the review.

10. Possible new applications of the LCAF utilising funds afforded by a reassessed value could include other internal projects that fit the fund's existing criteria (see **Attachment 1**). As all activities that have been adopted as part of the 2021-31 Long-Term Plan are technically now 'business as usual', this would mean these new LCAF projects would need to be all-new activities or involve making planned activities occur sooner. The review will scan the organisation for potential projects of this kind.

11. As well as this, the LCAF's criteria could be modified in any number of ways to make a larger range of projects eligible, both those within Greater Wellington as an organisation, and potentially those outside it as well. The review will also consider options of this kind and their merits and disadvantages.

Ngā tūāoma e whai ake nei
Next steps

12. It is intended that the results of this review, with recommendations, will be brought to Committee in February 2022.

Ngā hua ahumoni
Financial implications

13. There are no financial implications arising from this report.

Ngā āpitihanga
Attachment

Number	Title
1	Low Carbon Acceleration Fund Criteria 2020-21

Ngā kaiwaitohu
Signatories

Writer	Jake Roos - Climate Change Advisor
Approver	Kathryn Malone – Acting Manager, Strategic and Corporate Planning Francis Ryan – Acting General Manager, Strategy

He whakarāpopoto i ngā huritaonga **Summary of considerations**
Fit with Council's roles or with Committee's terms of reference
The Climate Committee's delegation includes to "oversee the development and review of Council's climate change strategies, policies, plans, programmes, and initiatives…"
Implications for Māori
Tangata Whenua engagement on any recommendations developed as part of the LCAF review will be undertaken, should any of the recommendations contained in the February 2022 report to the Committee be adopted.
Contribution to Annual Plan / Long Term Plan / Other key strategies and policies
The review of the LCAF will be taken with reference to how it can best contribute to the Council's agreed objectives, strategies and policies, especially those relating to climate change.
Internal consultation
No internal consultation has been undertaken for this paper.
Risks and impacts - legal / health and safety etc.
There are no risk and impacts arising from this paper.

Attachment 1 to Report 21.467

Low Carbon Acceleration Fund Update

Low Carbon Acceleration Fund Criteria 2020-21

Originally circulated to GW staff 8 May 2020

Purpose

The Low Carbon Acceleration Fund (LCAF) is intended to help our organisation achieve the goal of becoming 'carbon neutral' by 2030 through funding projects that will reduce our corporate carbon footprint. ('Carbon' means all greenhouse gases, expressed in units of tonnes of CO_2 equivalent)

Who can apply?

GW activity managers. Council Controlled Organisations and CentrePort Wellington, while they form part of the corporate carbon footprint, cannot apply at this time.

What areas of council activities are eligible?

Improvements to bus and rail assets, buildings, vehicle fleet, and GW-owned and/or managed land use change. Novel activities such as renewable energy investments will also be considered.

How much funding is available?

Approximately $2M will be allocated from the LCAF to projects in 2020-21. There will be up to four rounds of applications considered during 2020-21, although later rounds may not proceed if funding is fully allocated in earlier rounds. Subject to the outcome of the 2021-31 Long Term Plan process, the LCAF may resume in 2021-22.

The LCAF is divided into these categories:

- 40% **Land sector** – changing land use and environmental restoration (e.g. tree planting)
- 40% **Energy and other** – electric vehicles, renewable energy, energy efficiency or anything that is not land sector.
- 20% **Project development and feasibility** – for developing a project from a concept to a fully costed proposal/business case.

Note the percentages are a guide – councillors are able assign the funding differently if they wish.

There are no maximum or minimum values set for applications, but decision makers may ask you to revise the amount requested depending on what other bids are received.

What are the assessment criteria?

Projects must represent additional activity and carbon savings that would not have occurred (or occurred as soon) without the LCAF funding.

Projects will be favoured if they:

- Have a high value of carbon saved per $ of LCAF funding relative to other projects
- Have additional benefits – e.g. biodiversity, flood protection, public amenity
- Are of strategic significance to achieving carbon reduction goals – e.g. may lead to further reductions by increasing capability in the organisation or testing a promising approach
- Have a high likelihood of being successfully delivered
- Can demonstrate real, measurable, permanent and additional carbon savings.

Attachment 1 to Report 21.467

Low Carbon Acceleration Fund Update

Note the fund focus is on projects that will reduce GW's carbon footprint. Carbon savings that would accrue to others from the project will be counted as an additional benefit but not included in the calculation of carbon saved per $ invested.

Process

The Climate Team in Strategic and Corporate Planning will provide advice and technical support to applicants.

The Climate Emergency Response Programme Board will impartially vet the applications that are presented to councillors, and may choose to exclude some. Reasons for exclusion:

- Proposal not sufficiently detailed
- Carbon saving per $ of funding requested too low ($ per tonne CO_2e too high)
- Project would have happened anyway
- Risk vs. reward ratio too poor

The Board may also seek additional information or propose changes to applicants.

Funding applications and allocations will be reviewed by the Climate Committee and recommendations for allocations made to full Council for adoption.

Round one deadline 5pm 31 May 2020

Applications must include the following information under these headings and in this order:

1. **Applicant**: The team of council applying and the point of contact
2. **Project Proposed**:
    a. A full explanation of the proposed project: what/when/where/who/how
    b. An explanation of if or when the project could proceed if it didn't receive LCA funding
    c. How progress will be tracked.
3. **Carbon reduction**: An estimate of total carbon savings compared to 'business as usual'. Distinguish between:
    a. carbon savings that would accrue to GW (i.e. the amount by which our corporate carbon footprint will reduce), and
    b. those that would accrue elsewhere.

    These may be broad estimates for project development/feasibility applications. Guidance on how to assess carbon savings is provided (GW Emissions Measurement Guide). Please contact the Climate Change Team (climatechange@gw.govt.nz) for assistance if required.

    These calculations must be peer reviewed before submitting.
4. **Costs**: The costs of the implementing the proposal compared to 'business as usual'
    a. identify amount sought from LCA Fund and any other sources of funding
    b. provide some breakdown of costs e.g. project management vs. direct costs.
5. **Co-benefits**: Describe and if possible quantify any co-benefits.

Attachment 1 to Report 21.467

Low Carbon Acceleration Fund Update

6. **Risks**: Identify any risks to the project successfully delivering the estimated carbon saving. Rate their probability and impact respectively (low/medium/high). Guidance on how to rate risks can be found in the Risks and Issues Register (& assessment matrix) provided by the Programme Management Office *http://gwennie/job-tools-and-guides/project-management/project-management-templates/*).

7. **Carbon calculations**: Please provide us with your carbon calculations required to complete step 3 and who peer reviewed them.

Climate Committee
19 October 2021
Report 21.479

For Information

CARBON FOOTPRINT SYSTEM

Te take mō te pūrongo
Purpose

1. To advise the Climate Committee (the Committee) of Greater Wellington Regional Council's 2019-2020 Carbon Footprint and improvements to the process.

Te tāhū kōrero
Background

2. The carbon footprint process involves data acquisition, consolidation, auditing, reporting and improvement. Maintaining appropriate resourcing and a quality process are essential to properly measure and understand how to reduce Greater Wellington Regional Council's emissions, as committed to in the 2021-31 Long Term Plan (LTP). The carbon footprint is central to delivering the Corporate Carbon Neutrality Action Plan **(Attachment 1)** and the Carbon Neutral Government Programme (CNGP) requirements.

3. Greater Wellington Regional Council (Greater Wellington) Group's (Greater Wellington Group's) carbon footprint process is among the largest and most complex in New Zealand. This complexity results from the Greater Wellington Group's size and portfolio of different business types, each with unique emissions profiles (see **Attachment 4** – Greater Wellington Group Emissions Inventory Report and Certification 2019-2020).

Te tātaritanga
Analysis

Carbon Footprint update

4. Annual reporting and certification of the carbon footprint has been completed (see **Attachments 2, 4, and 5**). Total Greater Wellington Group emissions were down 1 percent over the 2019/2020 financial year period, compared to the base year. This 1 percent drop also showed a significant improvement when compared to the 9.3 percent average growth of the corporate footprint over the previous three years. However, it would be premature to assume that emissions are trending downward. The economic impact of COVID-19 on services reduced the emissions total to less than the previous year. Some business groups increased their emissions total while others decreased. (For details see **Attachment 2** - Carbon Footprint 2019-2020 FY Presentation).

Emissions Management and Reductions Plan Update

5. Progress on the existing Greater Wellington Emissions Management and Reduction Plan (EMRP) (see **Attachment 6)** has been very good over the period. This plan is a direct

adaptation of Greater Wellington's Corporate Carbon Neutrality Plan. Some quick wins relating to governance of the initial ten year reduction plan have already been achieved and the major afforestation project is underway. The existing plan covers Greater Wellington corporate operations, not Council Organisations.

6. Emissions reductions in some business groups have been lost to increased total emissions by other business groups, including Council Organisations. To decrease emissions the GW Group will need to be more intentional to reduce emissions, and identify ways to decouple emissions growth from service level demand across all aspects of operations including those at a corporate level.

Carbon Footprint business requirements and process improvement

7. The carbon accounting ISO 14064 audit standards have become more demanding. Greater Wellington is now required to complete some additional tasks. These are listed below along with other related recommendations:

Requirements

a An annual Opex financial scan to provide transparency of any significant emissions related spending (Finance owned).

b Requirement to create and maintain emissions liability registers:

i Greater Wellington Corporate: buildings and operations (Jigsaw Properties owned).

ii Metlink services: bus and rail fleet (Metlink owned).

iii Afforestation (Parks owned).

c Ensure grazing licence records are consolidated and kept up to date (Corporate Services (Legal) owned).

d Review and update Greater Wellington's emissions management and reduction plan (EMRP) prior to Q3 2022 (see Attachment Five). Toitu's *Carbon Reduce* programme requires that Greater Wellington's *direct* (Scope 1 and 2) emissions are in an emissions management and reduction plan - we will have to consider whether this is practical. For example, corporate workplace travel reduction plans are added and business groups are made responsible for reducing their travel related carbon budget. Greater Wellington electrical energy management assessments are carried out and material reduction opportunities are included in the emissions management and reduction plan.

e Introduce records of the carbon footprint *significance* to the organisation: footprint report *use* and *users* and *decision* documentation (to support Opex Scan).

Process improvements

a Move to monthly emissions data record keeping. Two years of audit experience tells us that a move from annual to monthly emissions data record keeping is required. This enables people to stay more aware of the reporting process throughout the year and ensure verification records are accurately kept up to date.

b Request Council Organisations to independently audit their own carbon footprint to ISO 14064 standard, and report that to Greater Wellington.

(For detail see **Attachment 3** – Carbon Footprint Business Resource Requirements).

8. Carbon management technology system

a GW Group's carbon footprint process is among the largest and most complex in New Zealand. The footprint process takes five months, is very inefficient and time consuming for staff. It has 30 people involved and uses an estimated 1,190 hours of staff time per annum. It has 95 emissions source totals, supported by 45 spreadsheets that consolidate millions of data points. The process of data acquisition, consolidation, audit and engagement with 20 carbon data owners and 10 external stakeholders is manually managed by one person. The current process is inefficient and does not serve current or future business needs. It also presents business continuity and data security risks.

9. Given the resource drain, scale and complex nature of the carbon footprint process, ELT has approved acquisition of a carbon management (technology) system to properly manage data acquisition, store related verification records, and assist with verification of data during audit.

Ngā hua ahumoni
Financial implications

10. Funding of the new carbon management system is available within Greater Wellington's existing budget, and total business costs over three years will be on-par with the costs of the current manual system.

Te huritao ki te huringa o te āhuarangi
Consideration of climate change

11. This activity is climate positive as it is fundamental to the Climate Emergency Programme and the Carbon Neutral Government Programme. The carbon footprint activity is fundamental to understanding Greater Wellington carbon footprint to know when emissions totals have changed.

12. Emissions from the carbon management system will be immaterial. The general assumption has been made that emissions resulting from cloud systems and data storage of this kind will produce multiple resource efficiencies that will contribute to lower emissions than manual input or paper based options on the whole.

Ngā tūāoma e whai ake nei
Next steps

13. Planning for the implementation of the Carbon management (technology) system has begun. System implementation is anticipated prior to independent audit in April 2022.

Ngā āpitihanga
Attachments

Number	Title
1	Corporate Carbon Neutrality Action Plan
2	Carbon Footprint 2019-2020 FY Presentation
3	Carbon Footprint Business Resource Requirements
4	GW Group Emissions Inventory Report 2019-2020
5	GW Group Carbon Footprint Certification Disclosure
6	Emissions Management and Reduction Plan (EMRP)

Ngā kaiwaitohu
Signatories

Writers	Ben Barrett – Corporate Sustainability Advisor
Approvers	Kathryn Malone – Acting Manager, Strategic and Corporate Planning Francis Ryan – Acting General Manager, Strategy

He whakarāpopoto i ngā huritaonga Summary of considerations
Fit with Council's roles or with Committee's terms of reference
The matters raised in this report directly relate to the functions of the Climate Committee.
Implications for Māori
No implications specifically for Māori relating to carbon reporting have been identified.
Contribution to Annual Plan / Long Term Plan / Other key strategies and policies
The carbon footprint process is a priority activity that supports the 2021-31 Long Term Plan.
Internal consultation
All Greater Wellington Group business groups have been consulted during the carbon footprint data consolidation and audit process. A Greater Wellington Group-wide Carbon Data Owner group was formed. Carbon Data Owner workshops were held to better understand user experience of interacting with the carbon reporting and audit process, and to accurately identify business carbon management requirements. Newly approved business requirements are additional to existing activities. Further definition and scoping will need to take place in each case. Engagement with all business groups will continue throughout the year as usual to complete the carbon footprint process.
Risks and impacts - legal / health and safety etc.
Failing to invest in and maintain the carbon footprint data and improve data quality could become a reputational risk, or a legal risk if reporting becomes mandatory. Not keeping up with carbon footprint requirements would be contrary to Long Term Plan goals and prevent meaningful emissions measurement for emissions reductions. The carbon footprint is central to delivering the Corporate Carbon Neutrality Action Plan and the Carbon Neutral Government Programme (CNGP) requirements. Greenhouse gas disclosure and reporting is moving closer to becoming a government requirement and legally mandated activity. Greater Wellington needs to continue to enhance its carbon footprint data acquisition and audit processes to keep up with ISO 14064 carbon accounting standards and government expectations.

Attachment 1 to Report 21.479

Corporate Carbon Neutrality Action Plan

1. Introduce a carbon reduction policy for the organisation. Decisions must consider what impact they will have on the carbon target(s), with a strong bias towards those options that will avoid, reduce or absorb emissions. The carbon reduction policy will be reflected in procurement policy.

2. Allocate responsibility for corporate carbon emissions and attainment of the targets to the chief executive, with an associated performance indicator.

3. Investigate securing renewable electricity supplies for GWRC operations including via procurement, partnerships and/or direct investment.

4. Accelerate the implementation of an electric bus fleet in the region by 2030.

5. Adopt a target of a fully-electric corporate vehicle fleet by 2030 (if mature technology is available).

6. Investigate and evaluate options for off-road and high performance electric vehicles including through conversion, joint procurement or partnerships with manufacturers.

7. Allocate resources to accelerate reforestation planting in regional parks, plan future phases, secure external funding where possible and develop agreements with DOC regarding acquiring carbon credits associated with planting in Queen Elizabeth Park.

8. Review the future of grazing leases in regional parks as part of the review of the Parks Network Plan and options to use this land for native reforestation where appropriate to earn carbon credits.

9. Work with the Boards and executive of CCOs, in particular CentrePort Wellington to align their level of ambition and programmes for reducing emissions with that of GWRC.

10. Sell down the free allocation of carbon credits (NZUs) GWRC received for its pre-1990 forests to create a 'low carbon acceleration fund' to reduce the rates impact of this programme of work.

The measures in this plan will be developed further but identify our immediate courses of action and major areas of work needed to achieve our targets and live up to the expectation created by declaring a climate emergency.

Attachment 2 to Report 21.479

Greater Wellington Group

Carbon Footprint 2019-2020

(COVID-19 pandemic year 1)

Greater Wellington
Te Pane Matua Taiao

Attachment 2 to Report 21.479

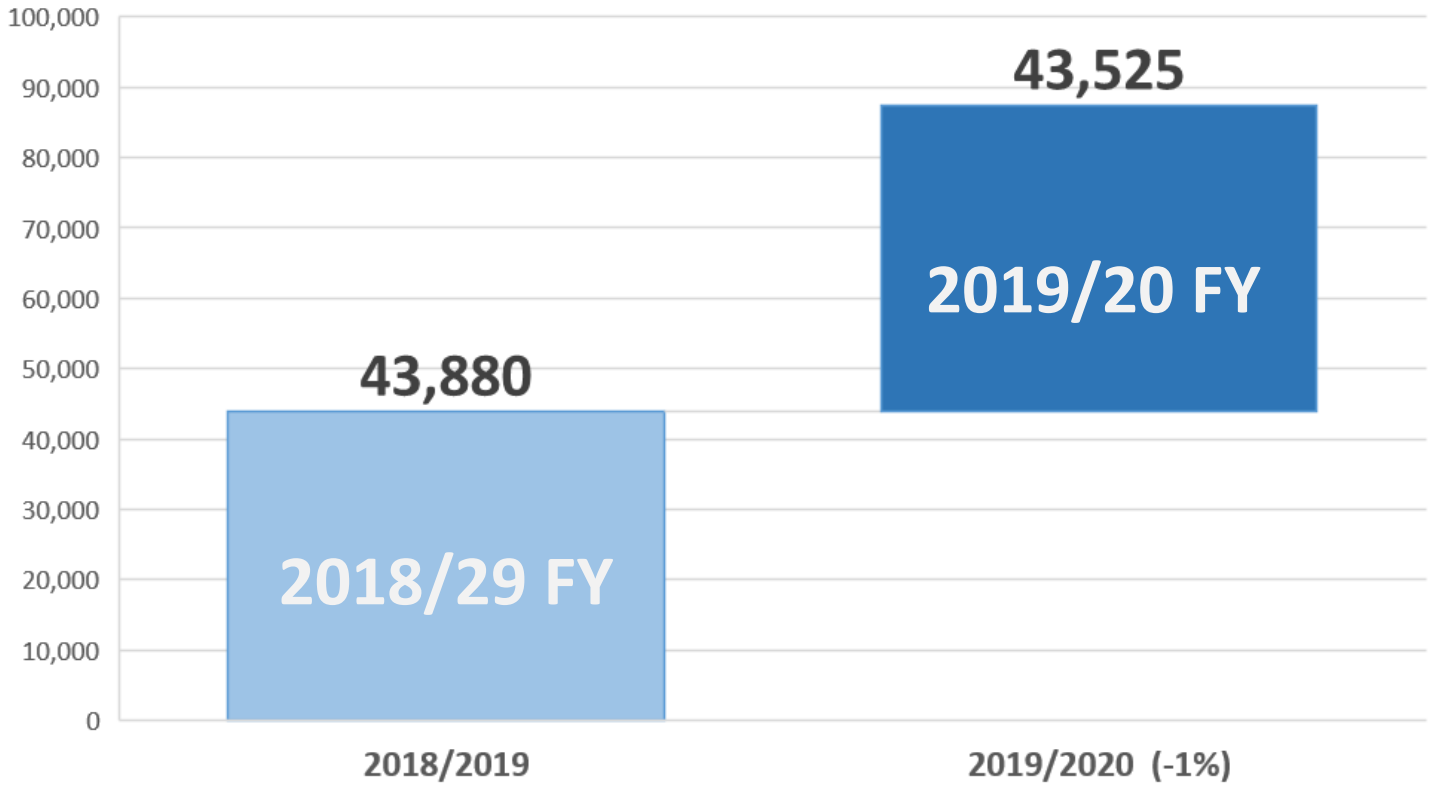
GW Group Carbon Footprint – 2019/2020 FY

Total footprint: 43,525 tonnes CO_2 equivalent

Corporate and operations footprint only: 1,949 tonnes CO_2 equivalent

Attachment 2 to Report 21.479

GW Group base year comparison – tonnes CO_2 equivalent



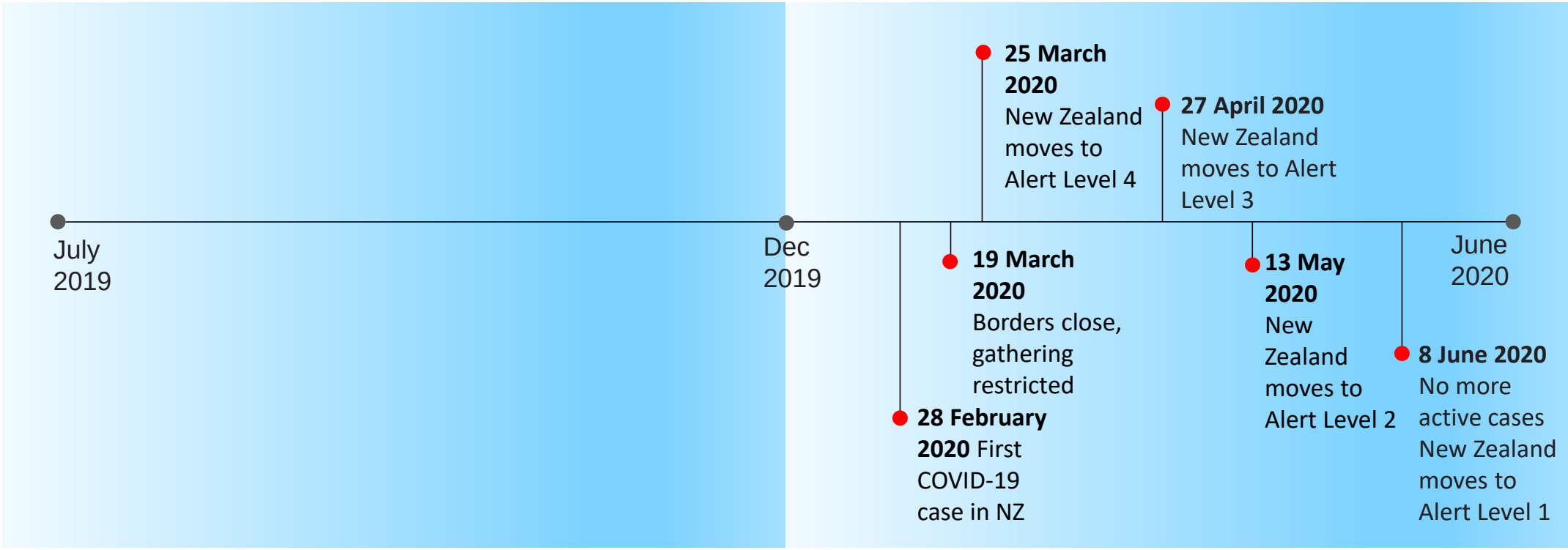
Attachment 2 to Report 21.479

Group business comparison – tonnes CO_2 equivalent

Group	2017/18 base year tonnes CO_2eq	2019/20 tonnes CO_2eq (COVID Year 1)	Change
GW Corporate and operations	33,509	32,905	↓ - 1 %
Metlink	22,716	22,500	↓ -1 %
Environment/Catchment/Parks	9,846	9,547	↓ - 3 %
Wellington Water	6,269	6,854	↑ 9 %
CentrePort	3,355	3,530	↑ 5 %
Wellington NZ & Stadium	746	237	↓ - 68 %
Total	**43,880**	**43,525**	↓ -1 %

Attachment 2 to Report 21.479

New Zealand COVID-19 impact timeline 2019/2020 FY



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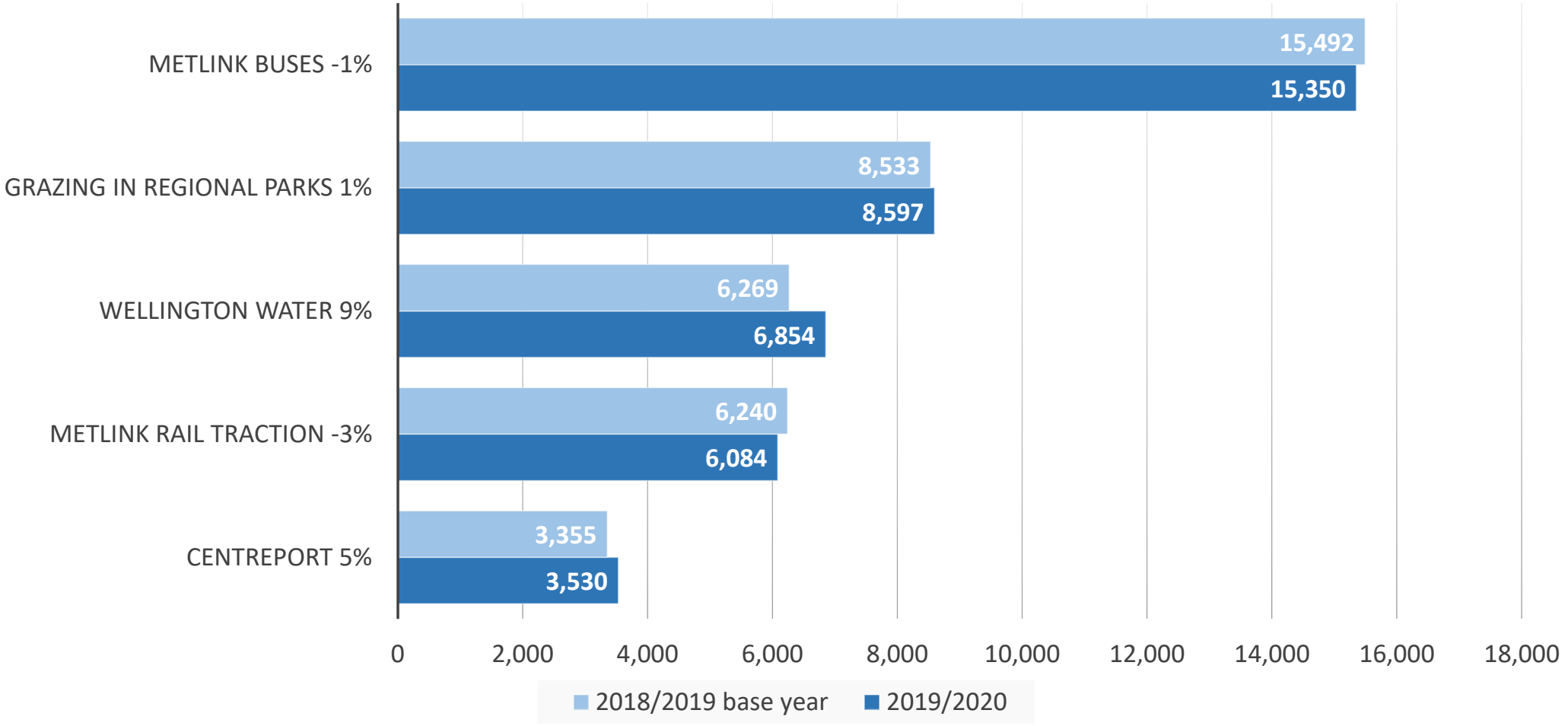
Large emissions level comparison – tonnes CO_2 equivalent



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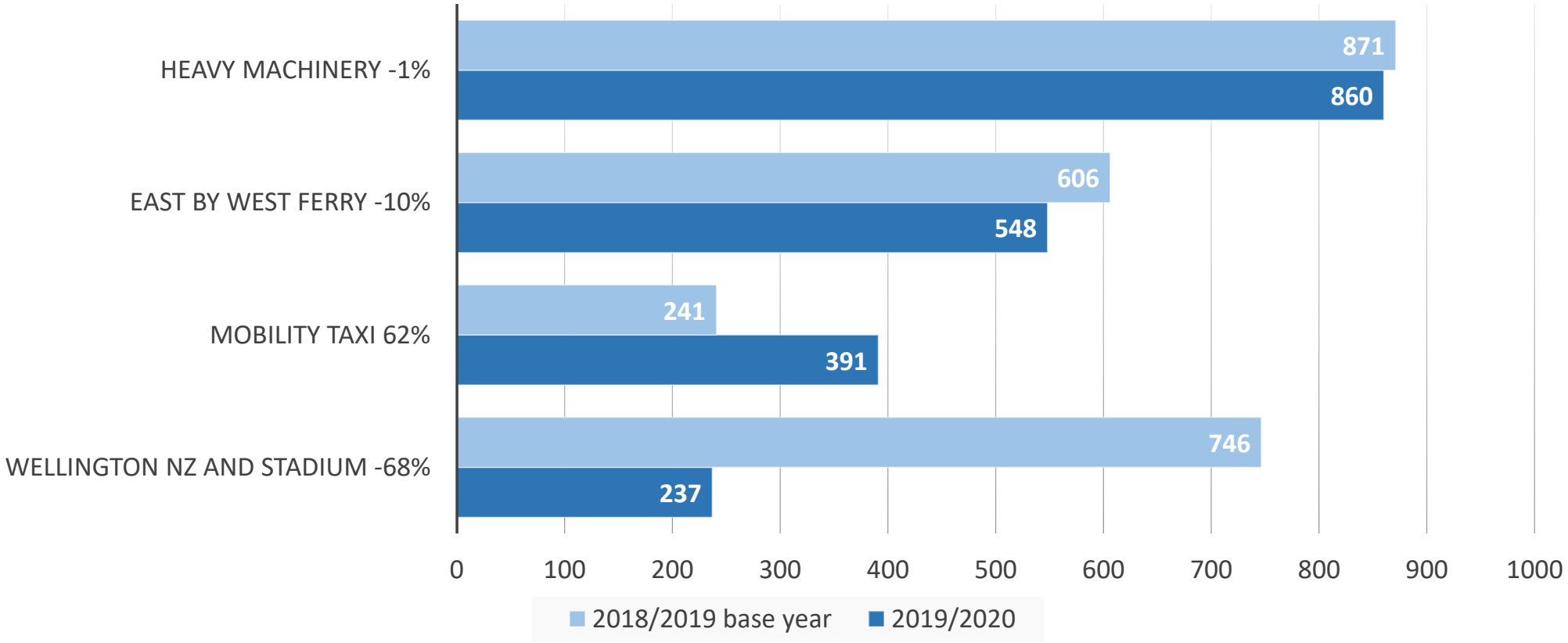
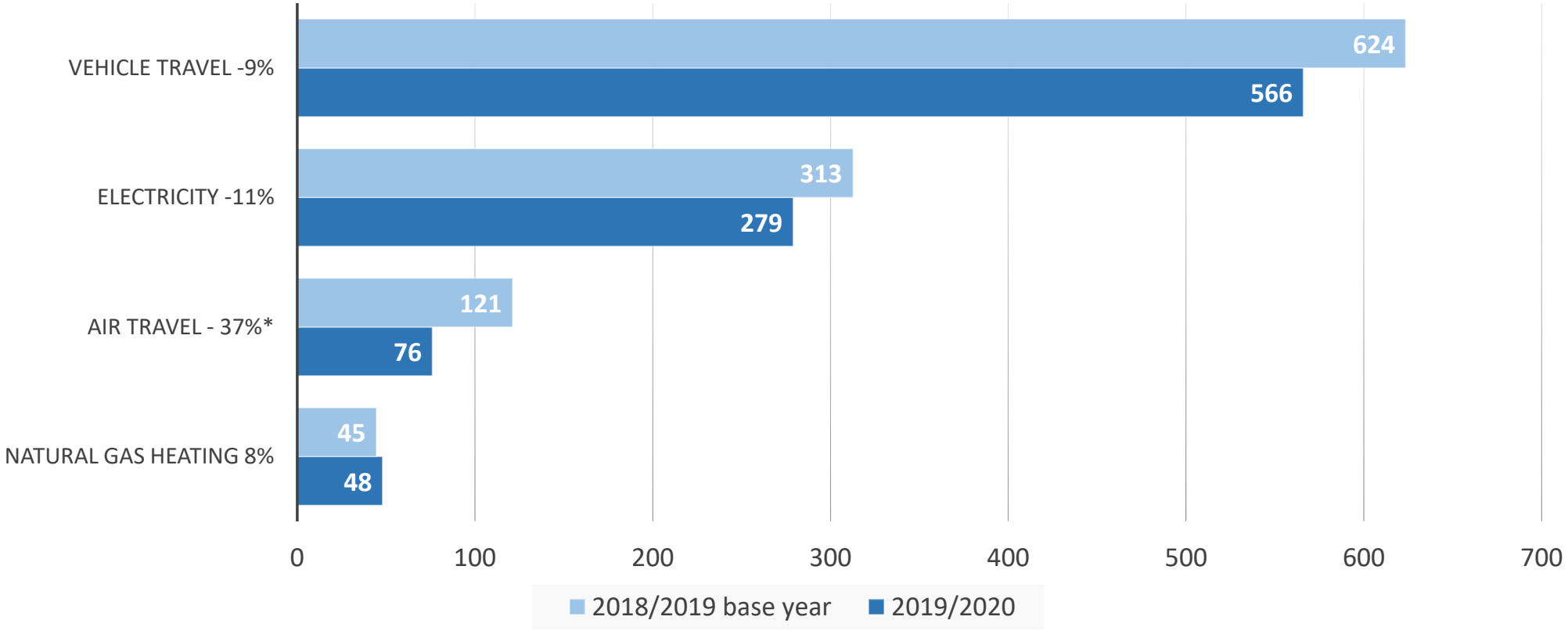
Medium emissions comparison – tonnes CO_2 equivalent



Attachment 2 to Report 21.479

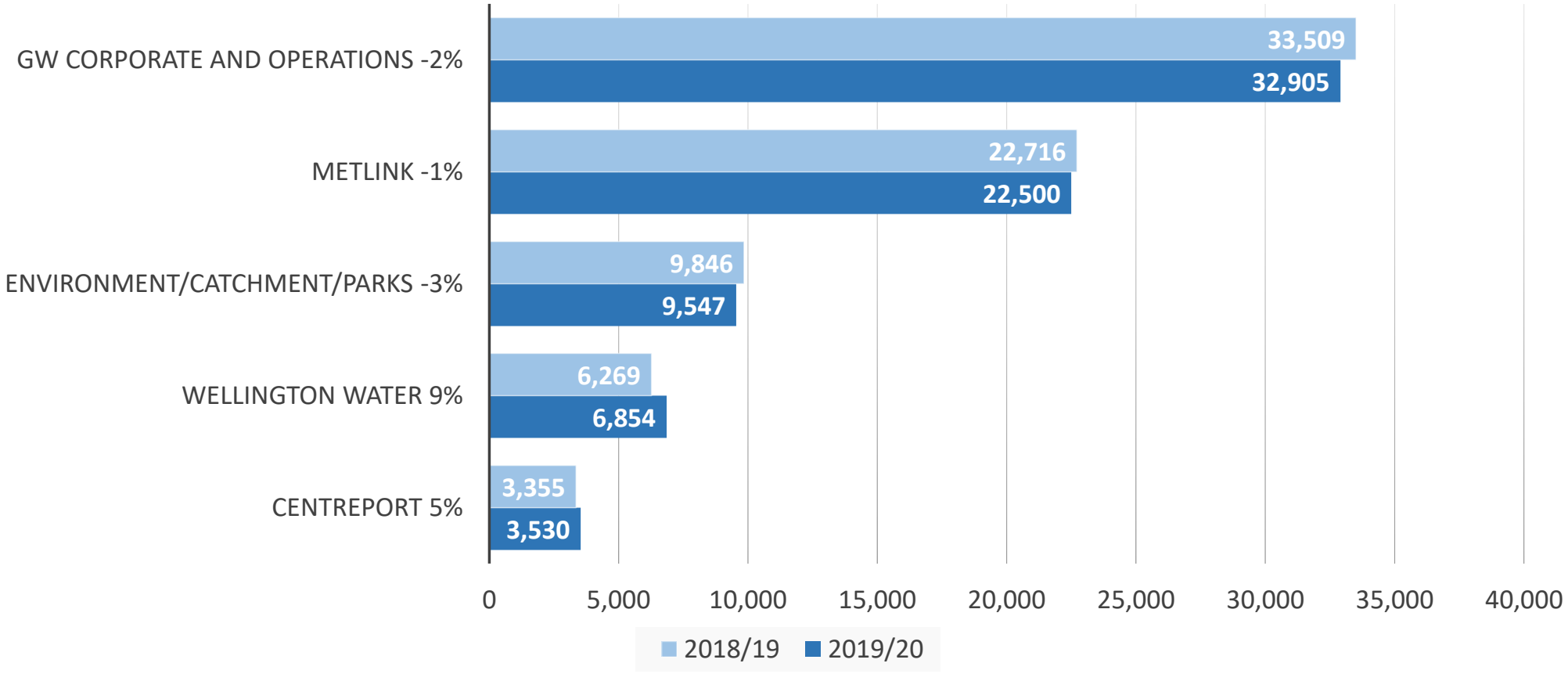
Corporate & Operational comparison – tonnes CO_2 equivalent



* There was an 8% rise in total international air travel compared to the base year (in the 8 months prior to COVID19 in NZ)

Attachment 2 to Report 21.479

Group business comparison – tonnes CO_2 equivalent



Attachment 2 to Report 21.479

Conclusions

- Total GW emissions down 1% – big improvement on 9.3% average growth per annum (Positive outcome of COVID-19 – prevented emissions growth, showed it is possible)
- Management needs to be intentional about reducing emissions in coming years. Increasing organisational resource is required to measure, monitor and assess emissions reduction opportunities
- Emissions from essential public services (water, public transport, freight) – are likely to rise before they can be reduced between 2025-2030
- Significant investment in avoiding, reducing or lowering carbon emissions of '*material*' assets and projects is required over the next decade

Attachment 2 to Report 21.479

Greater Wellington Group

Carbon Footprint Process

Greater Wellington
Te Pane Matua Taiao

Attachment 2 to Report 21.479

Carbon footprint rationale

Strategic priority:

- Long Term Plan – Responding to the climate emergency
- Aligning with Government direction: Zero Carbon Act Low – CNGP, and Climate risk reporting (TCFD)

Operational:

- Continuous and consistent emissions measurement to understand materiality and manage reductions
- Prepare for monetising and offsetting the carbon footprint*

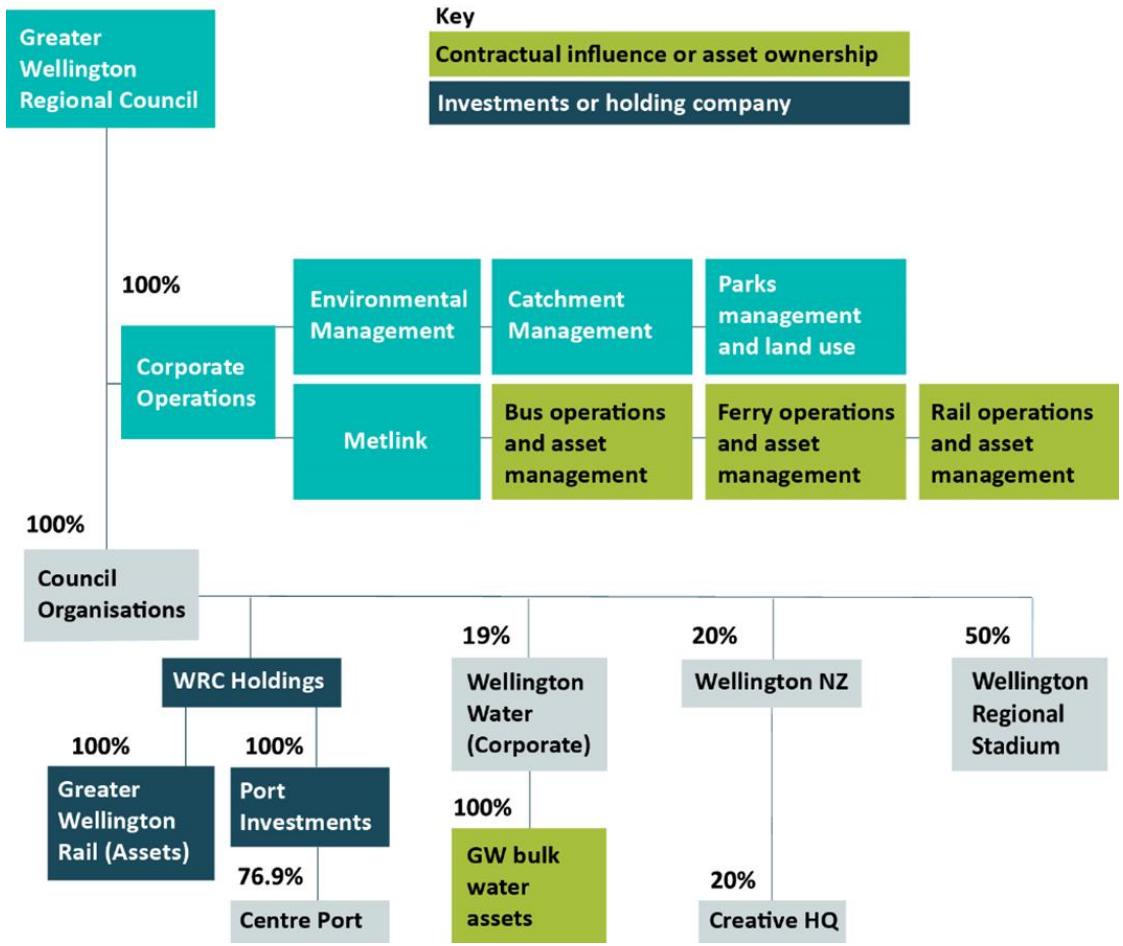
Outcome:

- Low carbon operations - carbon neutral by 2030 - Corporate Carbon Neutrality Project completed

*** At August 2021: To offset total footprint is $50 / $tCO_{2\text{-}e}$ = $2.2m. Social cost ($350 / $tCO_{2\text{-}e}$) of carbon footprint is $10.9m per annum. GW's ETS units value estimated at ≈$14m.**

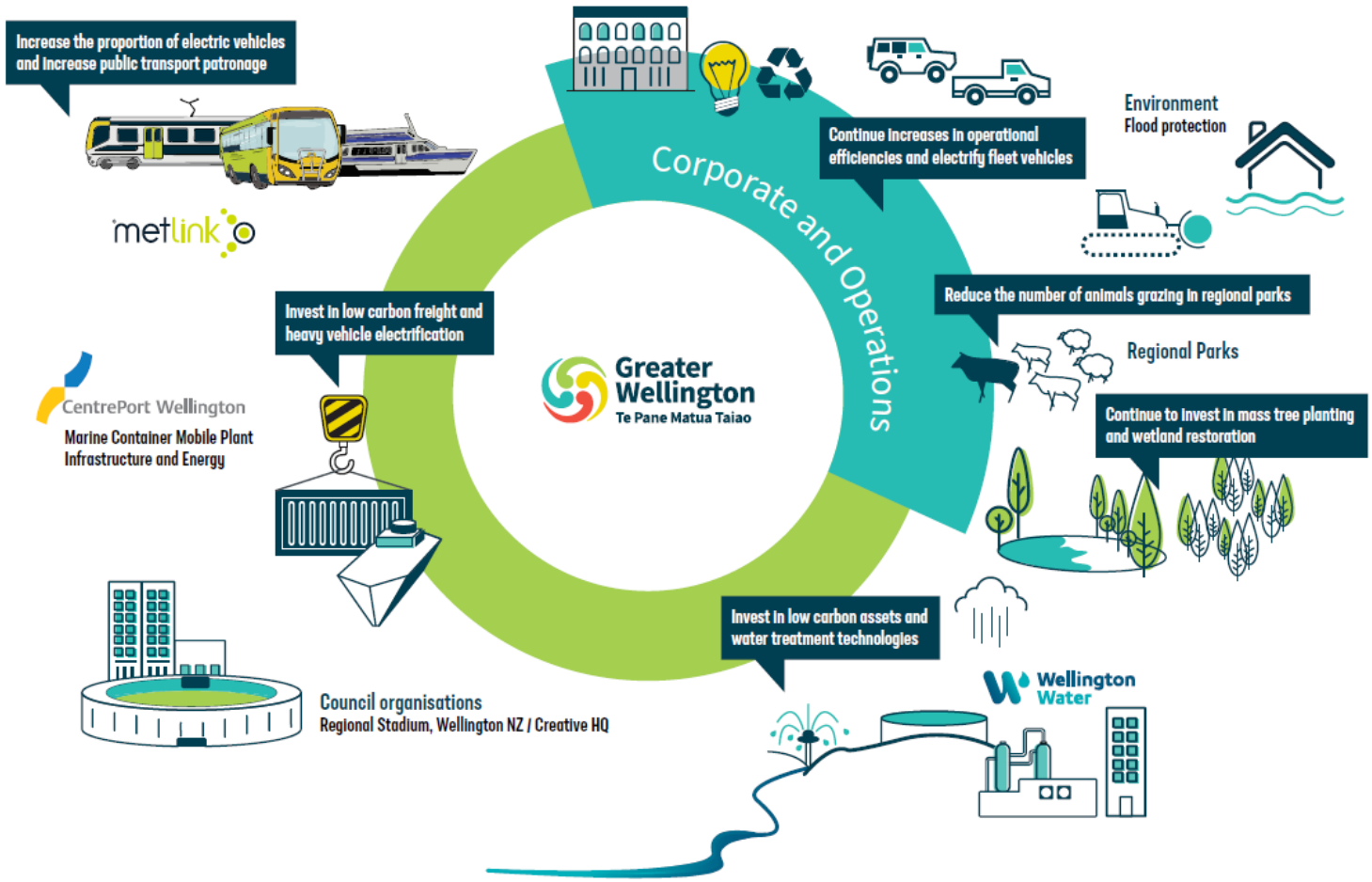
Attachment 2 to Report 21.479

Operational emissions boundary



Greater Wellington Group carbon emissions

sources and reduction opportunities



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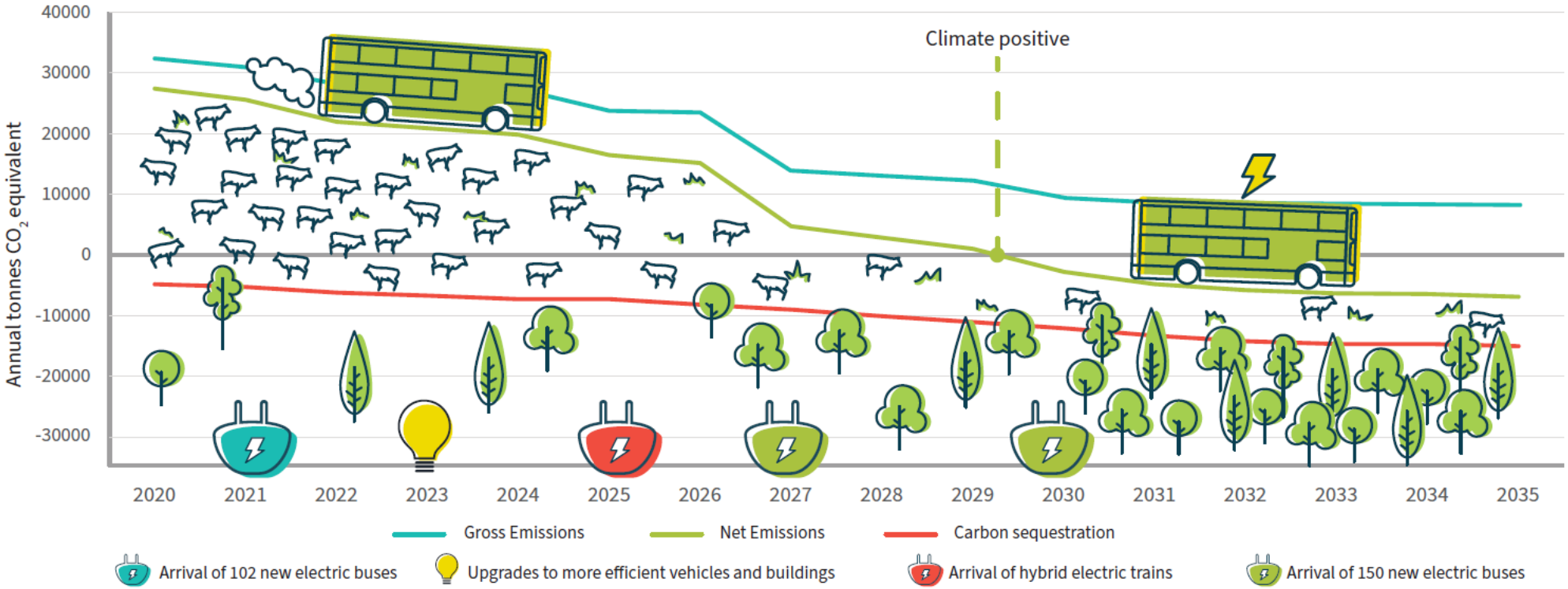
Our carbon reduction pathway



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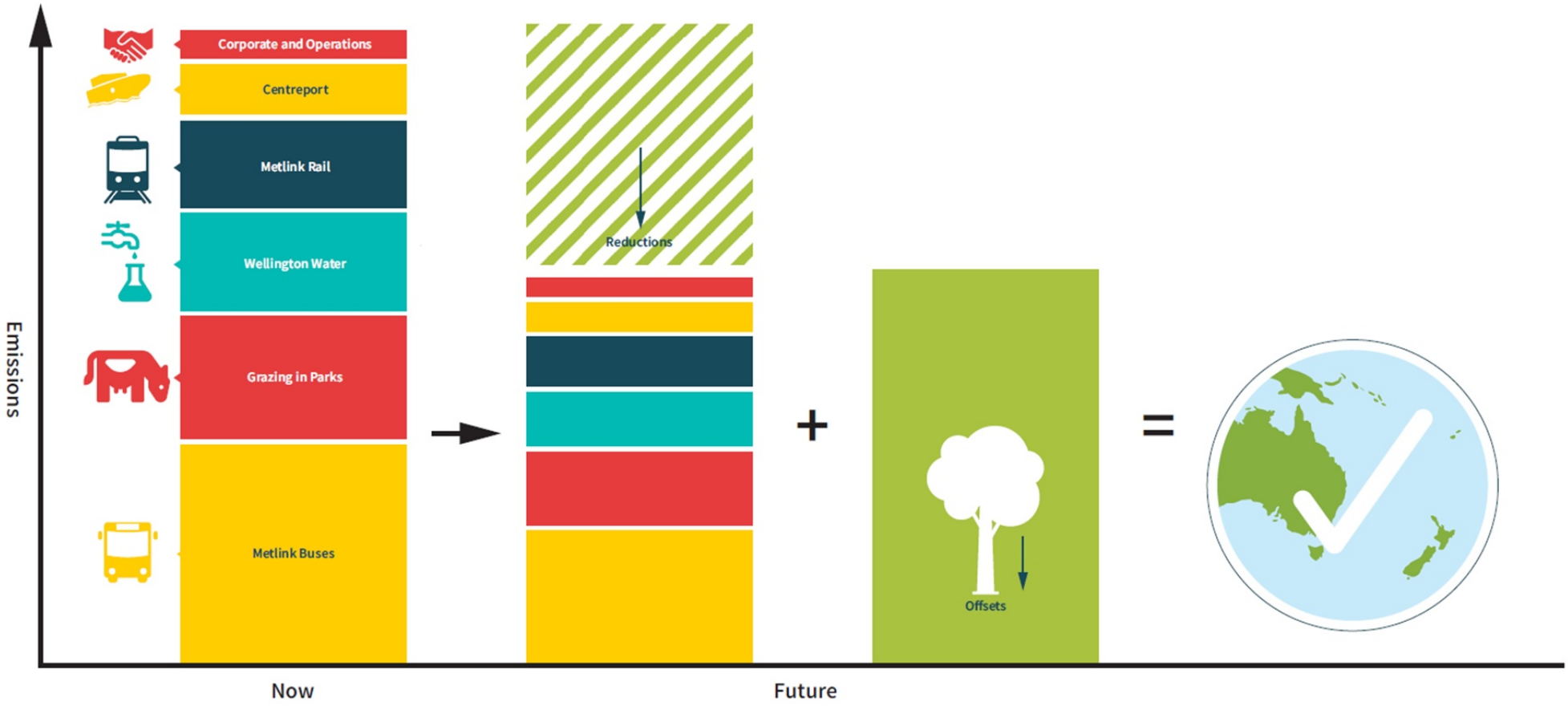
Greater Wellington – the path to carbon neutrality



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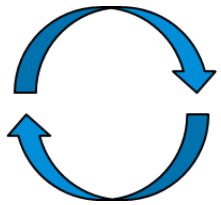
Cycle of continuous improvement

1. Measure:
- Collect source data
- Calculate and report emissions

2. Manage:
- Set targets
- Set reduction projects



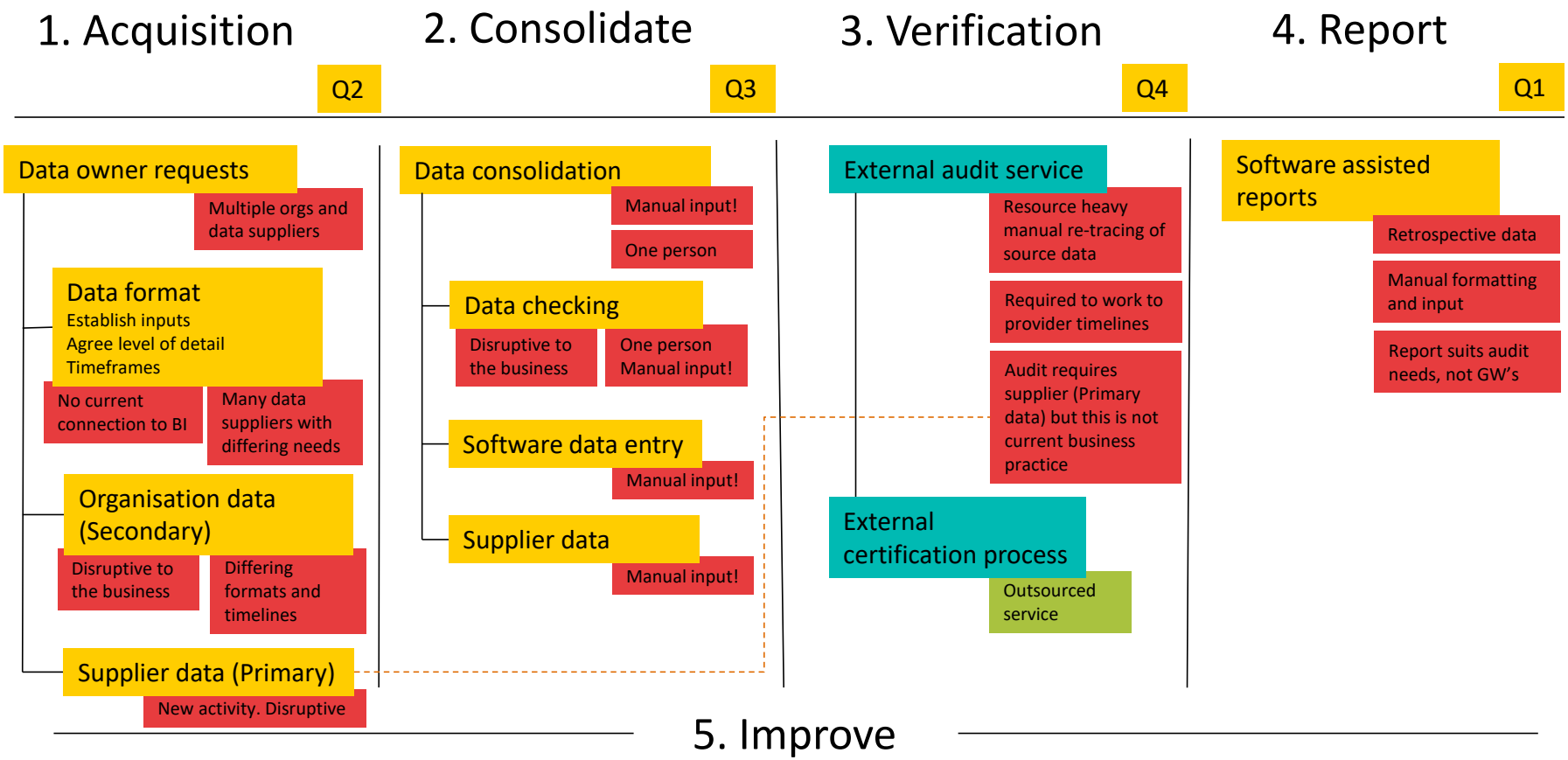
3. Verify
- Independently audit data
- Question methods and assumptions

4. C&E:
- Certification awarded.
- Engage to drive change
- Communicate achievements

5. Improve:
- Identify data gaps
- Improve collection process methods

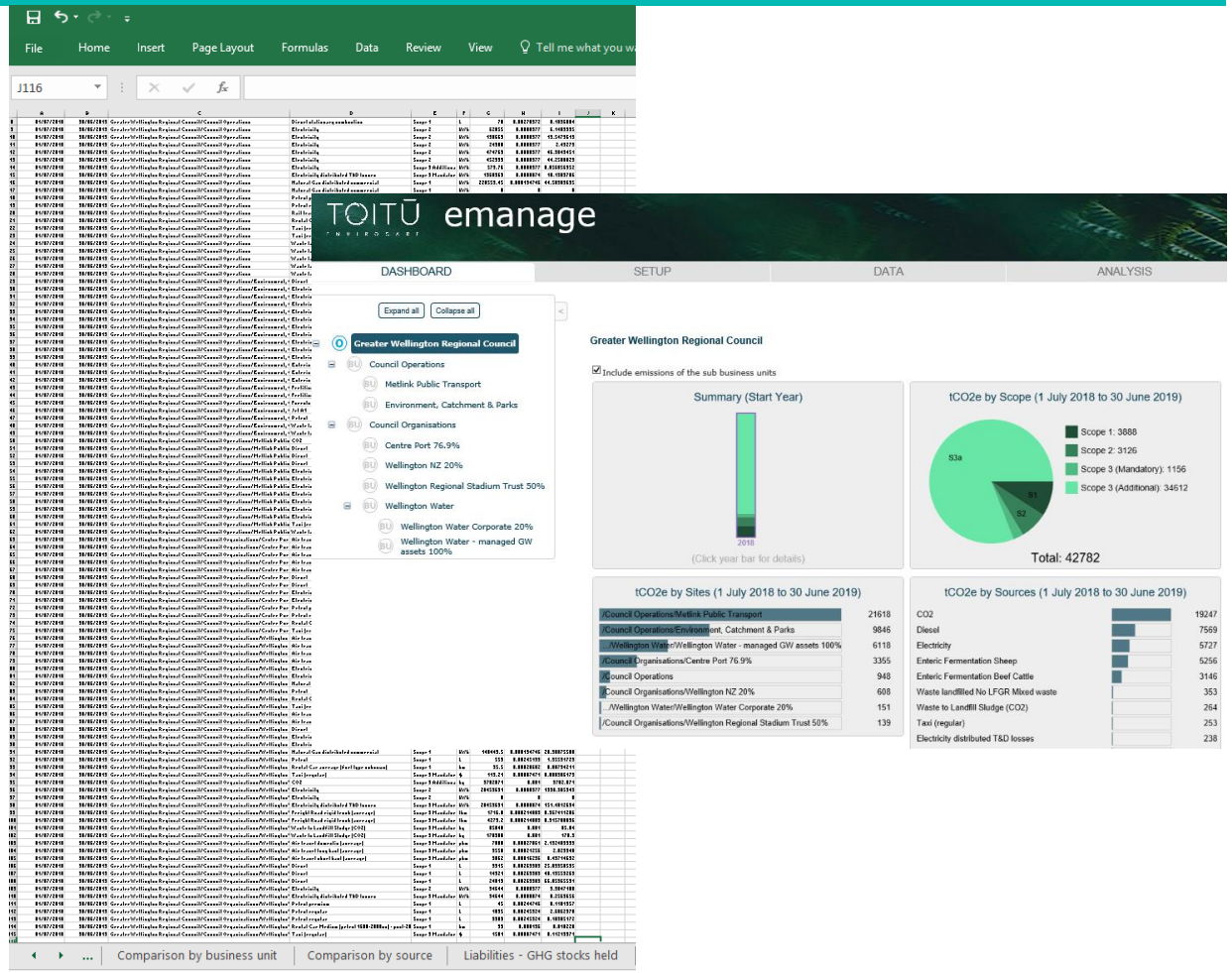
Attachment 2 to Report 21.479

Carbon footprint process



Data consolidation

- **30** people involved, a collaborative GW Group effort
- **95** emissions sources
- **45** spreadsheets and
- **1,000,000s** of data points
- Audit: two auditors, one month
- **5** month process end to end



Attachment 2 to Report 21.479

Carbon Footprint – additional business requirements & improvements

1. Acquisition and implementation of a GW Group level carbon management (technology) system
2. Complete additional audit requirements for ISO-14064 by Q3, 2022:

Requirements

An annual Opex financial scan (Finance owned)

Emissions liability registers (Jigsaw, Metlink, Parks owned)

Ensure grazing licence records are kept up to date (Corporate Services (Legal) owned).

Review and update GW emissions management and reduction plan (EMRP)

Add documentation: *significance*, *use*, *users* and *decision* documentation (to support Opex Scan)

Improvements

Move to monthly emissions data record keeping

Request Council Organisations independently audit their own carbon footprint to ISO 14064 standard

Attachment 2 to Report 21.479

End of 2019-20 FY Presentation
Slides below are for additional information

Greater Wellington
Te Pane Matua Taiao

What is a carbon footprint?

- **Carbon footprint**: the amount of carbon dioxide [equivalent] released into the atmosphere as a result of the activities of a particular individual, organization, or community (Oxford Languages, 2020).
- **Carbon equivalent** (CO_2eq) is the metric unit to express an aggregate of radiative forcing (warming) created from any greenhouse gas over time that is equivalent to one unit of carbon dioxide, (IPCC - 100-year time horizon)

Carbon dioxide	CO_2
Methane	CH_4
Nitrous oxide	N_2O
Nitrogen trifloride	NF_3
Hydrofluorocarbons	HFCs
Perfluorocarbons	PFC_s
Sulphur hexafluoride	SF_6

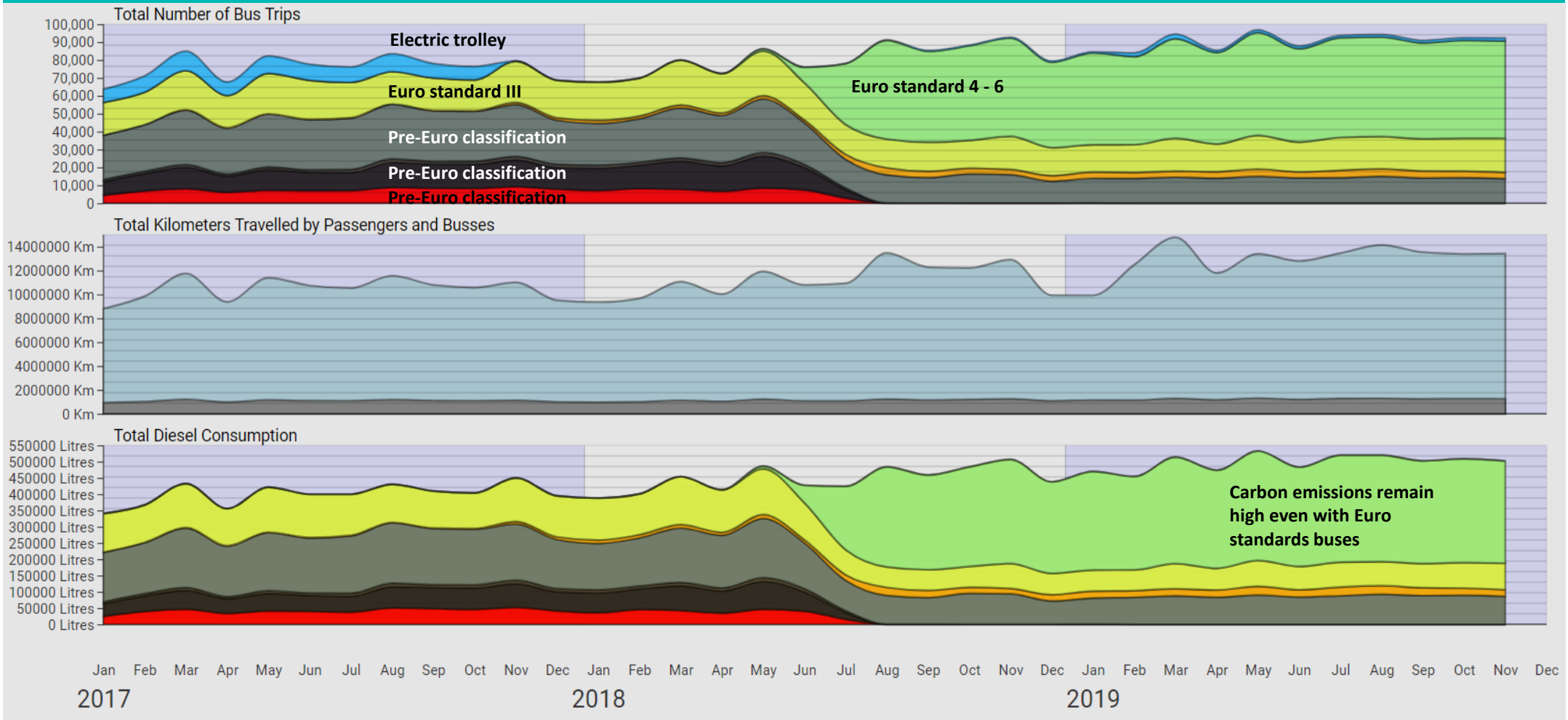
Emissions equation

E = Q x F

- **E** = emissions from the emission source in kilograms of carbon dioxide equivalent
- **Q** = activity data; e.g. litres of fuel purchased or used, kWh energy, pkm, $ (taxi), m3 of material, kg of refrigerant gas released, etc.
- **F** = emissions factor for a particular source of emissions

Bus modelling

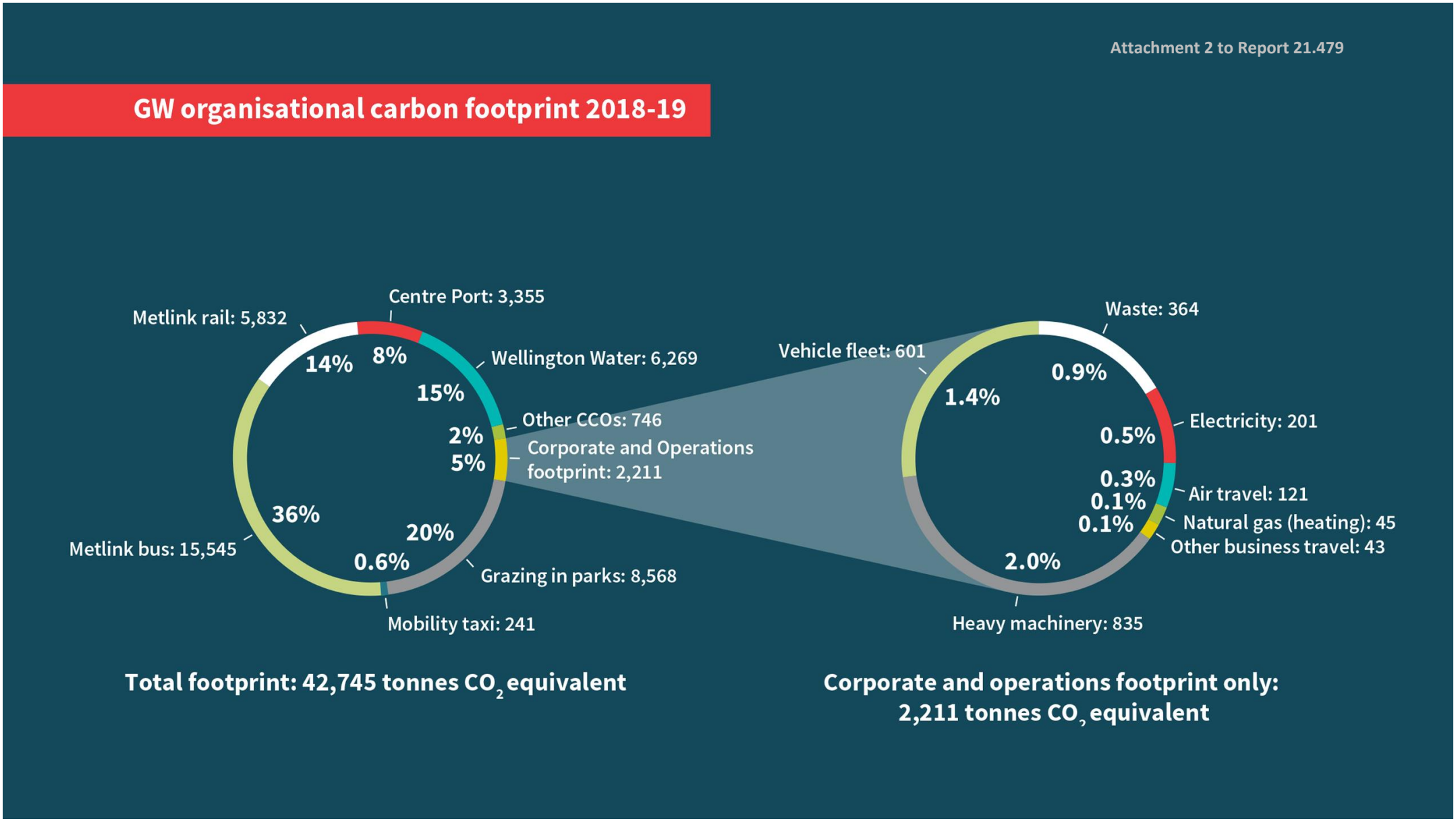
Attachment 2 to Report 21.479



Attachment 2 to Report 21.479

Animal grazing in regional parks

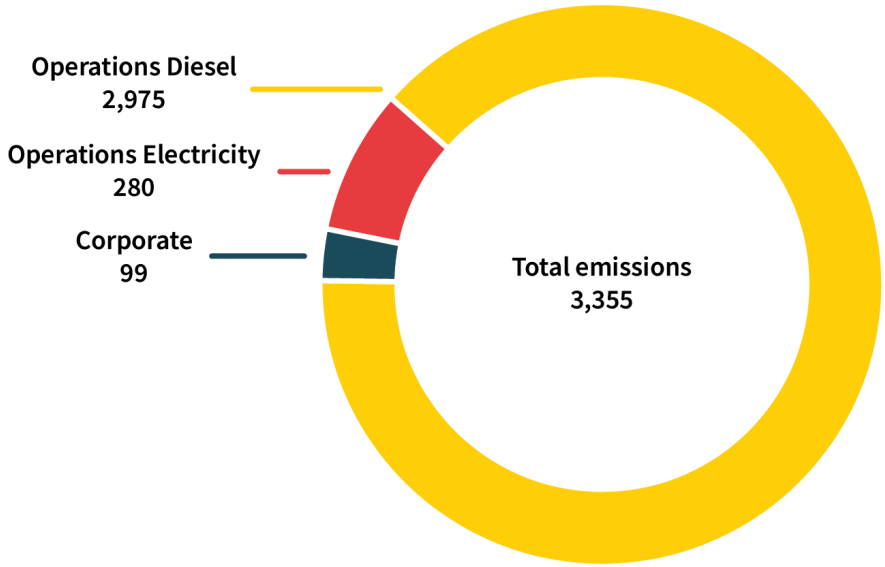
Park	Site	Cows	Sheep	Horses
Battle Hill Farm Forest park	Battle Hill Farm	Up to 1,000	Up to 2,000	10
Belmont Regional Park	Notting Hill Farm	137	320	
	Toviewadream Farming	360	6,500	
East Harbour Regional Park	Baring Head		Up to 700	
Kaitoki Regional Park	Hutt Valley Pony Club			8
Queen Elizabeth Park	Beetham	600	8,000	
	Kapiti Pony Club & Martin Grazing			50
Totals		**2,097**	**17,520**	**58**


Attachment 2 to Report 21.479
GW organisational carbon footprint 2018-19
Centre Port: 3,355
Metlink rail: 5,832
Wellington Water: 6,269
14%
8%
15%
2%
5%
Other CCOs: 746
Corporate and Operations footprint: 2,211
36%
20%
0.6%
Metlink bus: 15,545
Grazing in parks: 8,568
Mobility taxi: 241
Total footprint: 42,745 tonnes CO2 equivalent
Waste: 364
Vehicle fleet: 601
0.9%
1.4%
0.5%
Electricity: 201
0.3%
0.1%
0.1%
Air travel: 121
Natural gas (heating): 45
Other business travel: 43
2.0%
Heavy machinery: 835
Corporate and operations footprint only: 2,211 tonnes CO2 equivalent

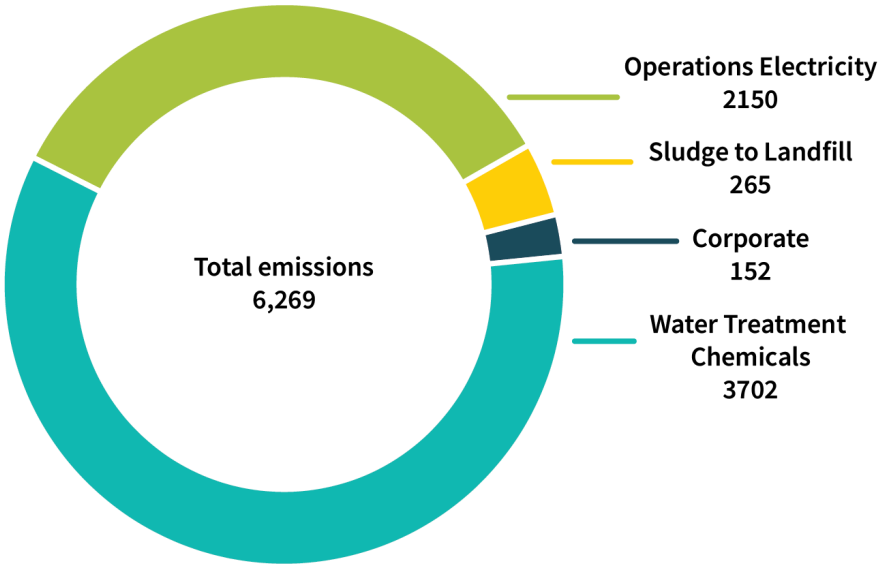
Attachment 2 to Report 21.479

Carbon emissions - CentrePort and Wellington Water (tCO_2eq)

CentrePort footprint



Wellington Water footprint (GWRC share)



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What we've learnt about GW's footprint

Major emissions sources	Largest reduction opportunities
1. Diesel transport fuel	Electrification of Metlink system
2. Grazing of animals in regional parks	Reduction of grazing licences and total number of animals
3. Contracts (transport fuels and earth works)	Material climate change considerations in all contracts and procurement (all initiatives and matters)
4. Corporate fleet vehicles	Electrification and reduction of vehicle numbers and kilometres travelled
5. Office accommodation energy	Improve building performance of new office accommodation. Use of electricity to vent, cool and heat. Renewable energy
6. Workplace travel	Low carbon alternatives to workplace travel, lower kilometres travelled. Improve travel choices i.e. A2B rideshare apps.
7. Operational waste	Lower operational waste

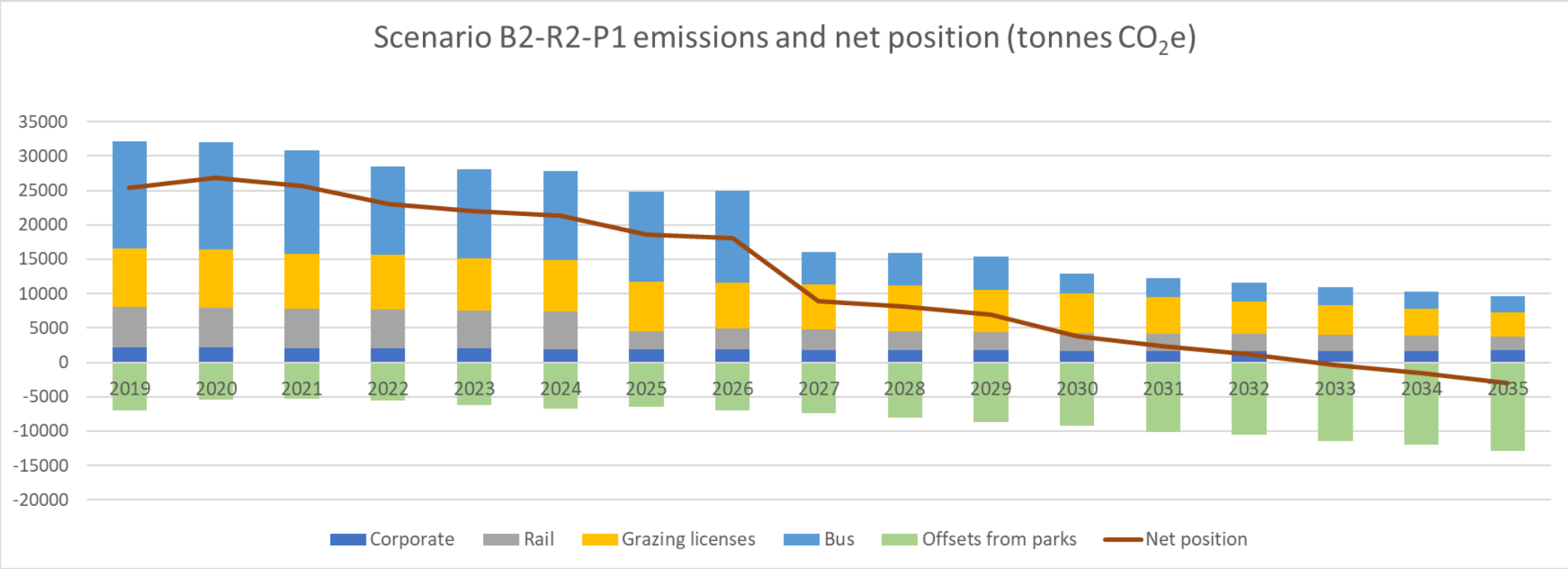
Attachment 2 to Report 21.479

Carbon emissions reduction targets

- 40% reduction in net emissions in 2025
- 100% reduction in net emissions in 2030 (carbon neutral or net-zero)
- Carbon negative by 2035 (units being generated by GW exceed gross emissions)
- Set five-yearly carbon budgets

Attachment 2 to Report 21.479

Carbon reduction scenario B2-R2-P1

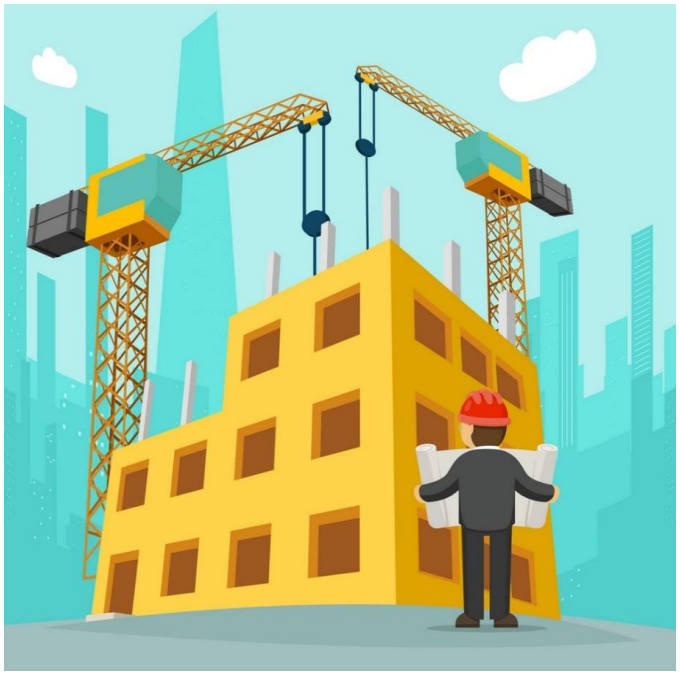


- **Carbon negative 2035 target achieved**

Attachment 2 to Report 21.479

Councillor directives following the 2019 carbon workshop

- 100% renewable electricity by 2035
- All electric corporate fleet by 2030
- Higher building energy performance in accommodation (Cuba Street and Masterton)
- Reduce emissions from Metlink system and grazing in Parks as much as possible



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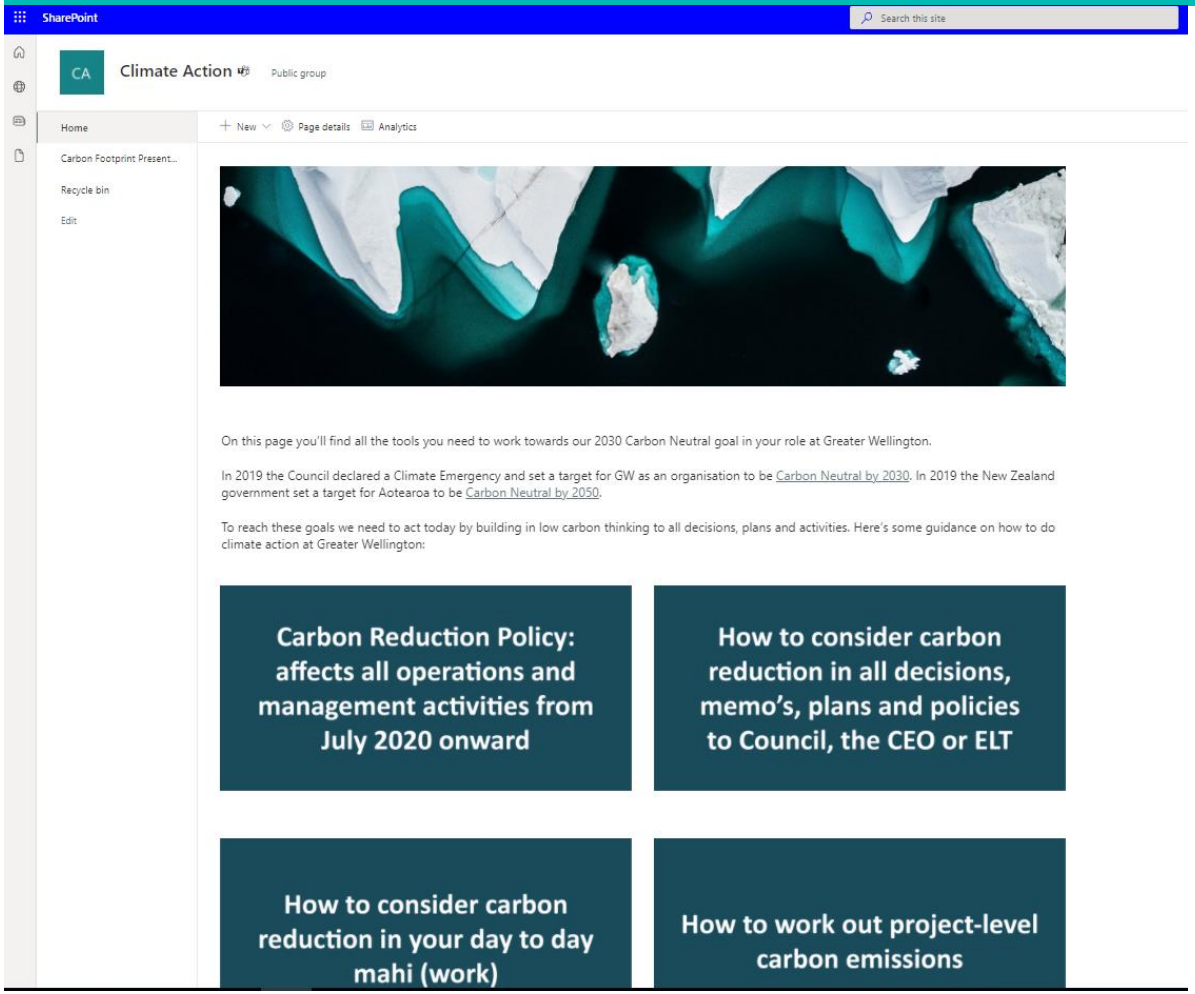
Climate Action site



Attachment 3 to Report 21.479

Carbon Footprint Business Resource Requirements

Attachment Three

Carbon Footprint Business Resource Requirements

1. **Acquisition and implementation of a GW Group level carbon management (technology) system:** see Appendix Five – Carbon System business case.

2. **Complete additional ISO-14064 audit requirements before end Q3 2020**
   - **2.1. Grazing licence contract reporting** with links to each contract document. Updated, as individual grazing licence contracts are changed or renewed (Corporate Services and or Jigsaw Properties owned).
   - **2.2. Annual Op-ex financial report scan** – A requirement of the ISO 14064 (2018) to prove to auditors that any significant Opex spend within the period has not been omitted from the carbon footprint. (Finance owned activity).
   - **2.3. Emissions Liability registers** across the Group will need to be completed by 30 March 2022 and maintained for audit across the GW Group thereafter.

     Required inventories include:
     - **2.3.1.** GW Corporate: buildings and operations (Jigsaw Properties owned).
     - **2.3.2.** Metlink services: bus and rail fleet (Metlink owned).
     - **2.3.3.** Afforestation (Parks owned)

     To quantify emissions liabilities, up to date asset registers detailing liabilities totals are a requirement of the carbon accounting standard ISO 14064 (2018).

     Inventories of measured greenhouse gas liabilities include: stored fuels, refrigeration, heating venting and conditioning (HVAC) gases, or forest stocks, that are at risk of being *unintentionally* released into the atmosphere over the period (financial year). Any escaped GHG's, for example refrigerant gases, are accurately recorded by maintenance contractors and accurate records kept for reporting.

3. **Monthly record keeping** – Council business groups and Council Organisations to record emissions related data on a monthly basis. Eventually report emissions data on a monthly basis directly into a Group level carbon system.

4. **Council Organisations to independently verify carbon emissions to (ISO14064 standard) annually.** Council Organisations required to report independently audited carbon footprint data to ISO 14064-3 standard from 1 July 2020 to 30 June 2021 period onward.

Attachment 3 to Report 21.479

Carbon Footprint Business Resource Requirements

5. **Emissions Management and Reduction Plan (EMRP)**. A review and update of the reduction plan is required by 30 March 2022, this will require cross-business resource for consultation and assessment and CEO signature approval.

6. **Corporate emissions reductions plans for direct emissions.** Toitu – Envirocare standard requires Greater Wellington to directly own management and reduction of corporate emissions Scopes 1 and Scope 2, for inclusion in the Emission Management and Reduction Plan:

   Direct emissions include Scope 1 (fleet vehicles, workplace travel car reimbursement, air travel) and Scope 2 emissions (electricity). This includes direct emissions budget setting and management, reduction of total emissions and or show emissions intensity at business group level.

Attachment 4 to Report 21.479

GREENHOUSE GAS EMISSIONS INVENTORY REPORT

Toitū carbonreduce and Toitū carbonzero programme

Greater Wellington Regional Council

Person responsible: Luke Troy

Prepared by: Ben Barrett

Dated: 17 September 2021

For the period: 01 July 2019 to 30 June 2020

Base year: 01 July 2018 to 30 June 2019

Verification status: Reasonable scope 1 & 2, Limited scope 3

Attachment 4 to Report 21.479

Attachment 4 to Report 21.479

DISCLAIMER

The template has been provided by Enviro-Mark Solutions Limited trading as Toitū Envirocare. While every effort has been made to ensure the template is consistent with the requirements of ISO 14064-1:2006, Toitū Envirocare does not accept any responsibility whether in contract, tort, equity or otherwise for any action taken, or reliance placed on it, or for any error or omission from this report. The template should not be altered (i.e. the black text); doing so may invalidate the organisation's claim that its inventory is compliant with the ISO 14064-1:2006 standard.

This work shall not be used for the purpose of obtaining emissions units, allowances, or carbon credits from two or more different sources in relation to the same emissions reductions, or for the purpose of offering for sale carbon credits which have been previously sold.

The consolidation approach chosen for the greenhouse gas inventory should not be used to make decisions related to the application of employment or taxation law.

This report shall not be used to make public greenhouse gas assertions without independent verification and issue of an assurance statement by Toitū Envirocare.

Attachment 4 to Report 21.479

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GREENHOUSE GAS EMISSIONS INVENTORY SUMMARY

Table 1: GHG emissions data summary.

	2019	2020
Scope 1	3,887.87	3,981.88
Scope 2	3,126.00	3,055.18
Scope 3 Mandatory	1,156.49	757.26
Scope 3 Additional	35,709.54	35,731.15
Scope 3 One time	0.00	0.00
Total gross emissions	43,879.91	43,525.47
Certified green electricity	0.00	0.00
Purchased emission reductions	0.00	0.00
Net GHG emissions (all scopes)	43,879.91	43,525.47
Total gross GHG emissions per Turnover/revenue ($Millions)	95.99	83.74
Total mandatory GHG emissions per Turnover/revenue ($Millions)	17.87	15.00

Note: total mandatory emissions includes scope 1, scope 2, and scope 3 (i.e. excludes scope 3 one-time and scope 3 additional). Refer to inventory spreadsheet for full time series.

Table 2: Gross organisation GHG emissions by scope for current measurement year.

Indicator	tCO_2e
Scope 1	
Other fuels	107.86
Passenger vehicles - default age	0.07
Passenger vehicles - post-2015	0.02
Transport fuels	3,873.93
Scope 2	
Electricity	3,055.18
Scope 3	
Electricity	246.83
Freight	1.35
Other fuels	9.54

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Indicator	tCO_2e
Passenger vehicles - default age	9.40
Retired Indicators	2.76
Scope 3 Additional	35,731.15
Transport - other	148.54
Waste	338.83
Total	43,525.47

Table 3: GHG emissions inventory summary by scope and business unit.

Component gas	Scope 1	Scope 2	Scope 3	Total	Removals	After removals
CH_4	6.01	126.95	8,780.25	8,913.21	0.00	8,913.21
CO_2	3,913.97	2,924.71	27,301.46	34,140.13	0.00	34,140.13
HFCs	0.00	0.00	0.00	0.00	0.00	0.00
N_2O	61.91	3.53	406.70	472.13	0.00	472.13
NF_3	0.00	0.00	0.00	0.00	0.00	0.00
PFCs	0.00	0.00	0.00	0.00	0.00	0.00
SF_6	0.00	0.00	0.00	0.00	0.00	0.00
Total	3,981.88	3,055.18	36,488.41	43,525.47	0.00	43,525.47

Table 4: Mobile and stationary combustion of biomass.

Biomass	Quantity	Tonnes Biogenic CO_2
No activity recorded	n/a	n/a

Table 5: Deforestation of two hectares or more.

Source	Mass	tCO_2e
Deforestation tCO_2e (tCO_2e)	1,207.17	1,207.17

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Table 6: GHG stock liability (see Table 13: for mass of individual gases).

Source	Units	Quantity	Potential Liability tCO_2e
Diesel commercial	litres	177,750.00	473.48
HFC-32	kilograms	188.00	126.90
R-410A	kilograms	3.20	6.68

Table 7: Land-use liabilities.

Type of sequestration	Liability tCO_2e
Contingent liability (carbon sequestered this reporting period)	5,368.37
Potential sequestration liability (total carbon stock)	75,201.13

Table 8: Renewable electricity generation on-site.

Renewable generation on-site	kWh generated	tCO_2e avoided
No activity recorded	n/a	n/a

Table 9: Purchased emissions reductions.

Type of emission reductions purchased	Amount	tCO_2e
Certified green electricity (tCO_2e)	0.00	0.00
Purchased emission reductions (tCO_2e)	0.00	0.00
Total	0.00	0.00

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1 INTRODUCTION

This report is the annual greenhouse gas (GHG) emissions[1] inventory report for the named organisation. The inventory is a complete and accurate quantification of the amount of GHG emissions that can be directly attributed to the organisation's operations within the declared boundary and scope for the specified reporting period. The inventory has been prepared in accordance with the requirements of the **measure**-step[2] of the Programme, which is based on the *Greenhouse Gas Protocol: A Corporate Accounting and Reporting Standard (2004) and ISO 14064-1:2006 Specification with Guidance at the Organization Level for Quantification and Reporting of Greenhouse Gas Emissions and Removals*[3]. Where relevant, the inventory is aligned with industry or sector best practice for emissions measurement and reporting.

2 STATEMENT OF INTENT

This inventory forms part of the organisation's commitment to gain Programme certification.

This inventory reports into the Toitū carbonreduce programme. This inventory also reports to the Carbon Disclosure Project (CDP).

3 ORGANISATION DESCRIPTION

Greater Wellington Regional Council promotes quality of life through environmental management while meeting the economic, cultural and social needs of the community.

Our responsibilities include environment management, flood protection and land management, provision of regional parks, regional public transport planning and service procurement, and catchment for several metropolitan water supplies. The Council has equity share in several Council Organisations including Centre Port, Wellington Water, Wellington NZ, and Wellington Regional Stadium Trust.

The Council has a Climate Emergency Programme of work involving adaptation and mitigation relating to the region and in corporate operations. The Council has committed to reduce emissions as much as possible over the next decade and become carbon neutral by 2030. The Council has committed to begin offsetting 40% net neutral emissions by 30 June 2025 and ten percent more each year after that until 2030. The Council has aspiration to be a net carbon sink providing greenhouse gas emissions offsets for other organisations. The Councils goals contribute directly to specific United Nations Sustainable Development Goals. The Council is also signatory of the Carbon Disclosure Project (CDP) and publically discloses all its carbon data in its Annual Report.

4 ORGANISATIONAL BOUNDARIES INCLUDED FOR THIS REPORTING PERIOD

Organisational boundaries were set with reference to the methodology described in the GHG Protocol and ISO 14064-1:2006 standards. The GHG Protocol allows two distinct approaches to be used to consolidate GHG emissions: the equity share and control (financial or operational)

[1] Throughout this document "emissions" means "GHG emissions".
[2] Programme refers to the Toitū carbonreduce and the Toitū carbonzero programme.
[3] Throughout this document 'GHG Protocol' means the *GHG Protocol Corporate Accounting and Reporting Standard* and 'ISO 14064-1:2006' means the international standard *Specification with Guidance at the Organizational Level for Quantification and Reporting of Greenhouse Gas Emissions and Removals*.

approaches. The Programme specifies that the operational control consolidation approach should be used unless otherwise agreed with the Programme.

A financial control consolidation approach was used to account for emissions. Overall an equity control approach has been used to determine the actual influence on emissions the Council has all on business across its Group of companies. A large proportion of the services provided to the public by Greater Wellington are delivered through service provider contracts and or Council Organisations that have separate governance and management.

The equity control approach has been applied where Council Organisations are part owned by Greater Wellington and managed by others. The equity approach has been used for business that Greater Wellington has full control over, and where it remains in full ownership of assets regardless if others manage those assets. An equity control approach has also been used for major contracts where Greater Wellington is the financial sponsor and has strong influence of the resulting contractual procurement requirements that determines the nature of the subsequent business.

Greater Wellington is the parent company of all operations and the Council Organisations (the Group) on the chart. Corporate parts have operational control. Council organisations are joint ventures with an equity share. This share is designated on the chart as percentage. For contracts and where asset ownership is managed by others, financial control and contractual control gives Greater Wellington high level of influence over the nature of the business procured and how that will be managed. In those cases full ownership of greenhouse gas emissions is designated to Greater Wellington as the service procurer and sponsor. All business on this chart flows through Greater Wellington financal accounts.

GWRC emissions boundary

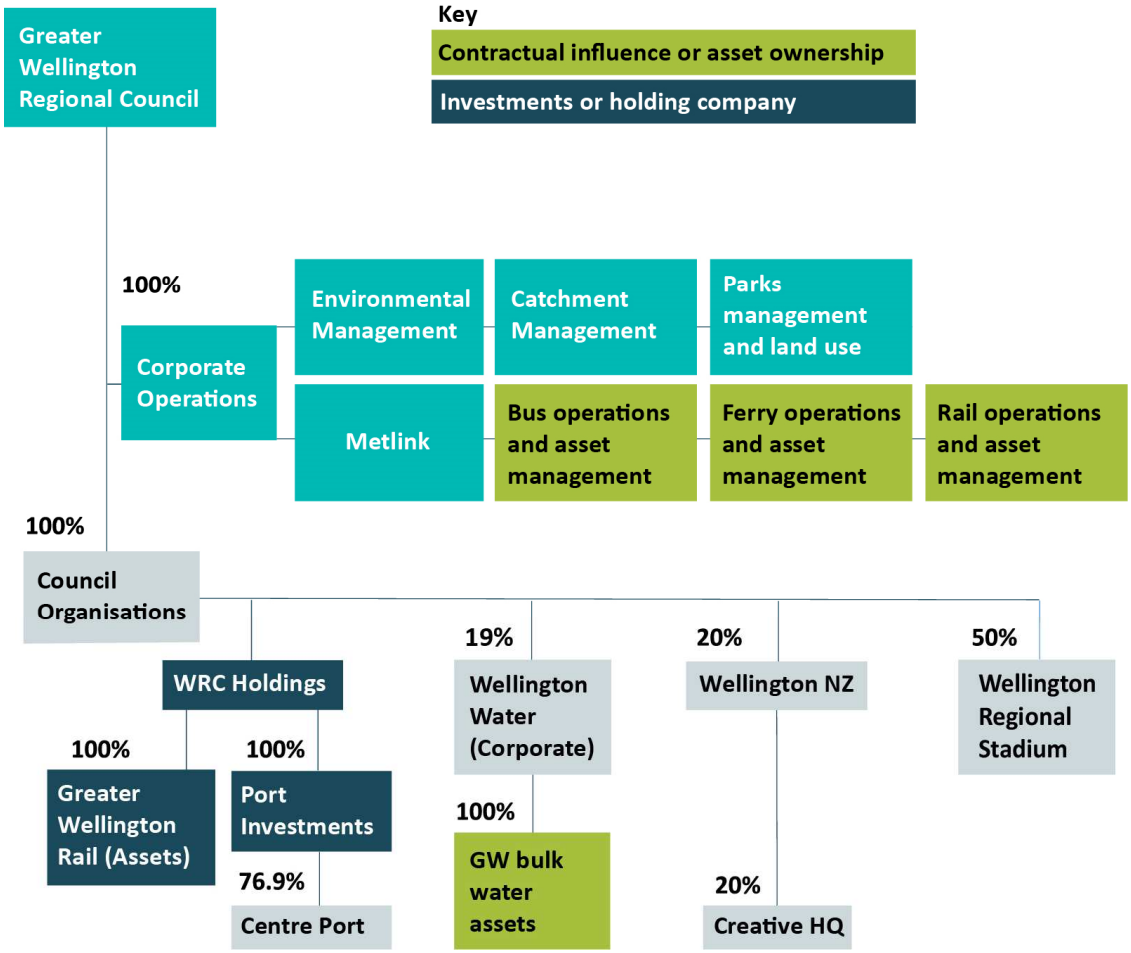

Figure 1: Organisational structure.

Table 10: Brief description of business units in the certifying entity.

Business unit	Address	Purpose
Greater Wellington Regional Council		
Corporate operations	100 Cuba Street, Te Aro Wellington, 6011, New Zealand	Corporate office & environmental services base
Centre Port	1 Hinemoa Street, Pipitea, Fryatt Quay, Wellington 6011	Corporate office & port operations
Wellington Water	Level 4, IBM House, 25 Victoria Street, Petone, Lower Hutt	Corporate office
Wellington Economic Development Agency (Wellington NZ)	See Wellington City Council pre-audited data	Corporate office

Business unit	Address	Purpose
Wellington Regional Stadium Trust	See Wellington City Council pre-audited data	Corporate office

5 ORGANISATIONAL BUSINESS UNITS EXCLUDED FROM INVENTORY

Corporate operations bundle all up all corporate business unit emissions. Public transport and Environment business units have significant emissions in their own right. These have been separated out to assist reporting. Creative HQ is accounted for in the Wellington NZ inventory.

6 GHG EMISSIONS SOURCE INCLUSIONS

The GHG emissions sources included in this inventory are those required for Programme certification and were identified with reference to the methodology described in the GHG Protocol and ISO14064-1:2006 standards. Identification of emissions sources was achieved via personal communications with Greater Wellington Regional Council staff, and cross-checked against operational expenditure records for the reporting period. These records were viewed in order to see what activities may be associated with emissions from all of the operations.

As adapted from the GHG Protocol, these emissions were classified into the following categories:

- **Direct GHG emissions (Scope 1):** GHG emissions from sources that are owned or controlled by the company.
- **Indirect GHG emissions (Scope 2):** GHG emissions from the generation of purchased electricity, heat and steam consumed by the company.
- **Indirect GHG emissions (Scope 3):** GHG emissions required by the Programme that occur as a consequence of the activities of the company but occur from sources not owned or controlled by the company. Inclusion of other Scope 3 emissions sources is done on a case-by-case basis.

After liaison with the organisation, the emissions sources in Table 11 have been identified and included in the GHG emissions inventory.

On behalf of the public it serves, Greater Wellington Regional Council Group has voluntarily committed to measure (and own) all known greenhouse gas emissions that it has financial, operational, and or equity share control over. These emission include direct and indirect, scopes 1, 2 and 3 mandatory and additional. The organisation has included all meaningful emissions from across the Greater Wellington Group, including Council Organisations, and where it has a high influence on contracts that have significant levels of emissions. Stationary energy, diesel and natural gas has been reported, some sources are reported zero, that indicates there was no use of the fuel form that source in the period. Centre Port includes air travel, due to their travel agent business no longer able to report due to COVID19 pandemic, no travel records are attainable and a zero has been reported for the period.

Table 11: GHG emissions sources included in the inventory

Business unit	GHG emissions source	GHG emissions level scope	Data source	Data collection unit	Uncertainty (description)
Council Operations	Air travel domestic (average)	Scope 3	From Debbie Wilson at APX travel management to Ben Barrett, Corporate Sustainability Advisor, Greater Wellington	pkm	It is assumed data source represents a complete and accurate account of all travel activity.
Council Operations	Air travel short haul (econ)	Scope 3	From Debbie Wilson at APX travel management to Ben Barrett, Corporate Sustainability Advisor, Greater Wellington	pkm	It is assumed data source represents a complete and accurate account of all travel activity.
Council Operations	Bus travel (city)	Scope 3	2019FY-Survey data from Ben Barrett, Corporate Sustainability Advisor. Analysis by Christoph Gerds, Senior Data Analyst / Modeller	pkm	This internal workplace travel survey data was adjusted from staff travel survey, it represents an estimate of monthly workplace travel.
Council Operations	Car Average (unknown fuel type)	Scope 3	Vehcile reimbursement report data by Kevin Jo, Financial Systems Analyst, Greater Wellington	$	It is assumed data source represents a complete and accurate account of this travel activity.
Council Operations	Composting	Scope 3 Additional	Automated Report by service provider Waste Management to Ben Barrett, Corporate Sustainability Advisor	t	It is assumed data source represents a complete and accurate account.
Council Operations	Diesel	Scope 1	Reported by Tim Penwarden, Building Manager, Jigsaw Property	L	It is assumed data source represents a complete and accurate account of all diesel backup purchasing. It is assumed that the building maintenance provider has supplied a complete and accurate record.

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Business unit	GHG emissions source	GHG emissions level scope	Data source	Data collection unit	Uncertainty (description)
Council Operations	Electricity distributed T&D losses	Scope 3	Calculated from electricity data business group total	kWh	It is assumed the supplier has provided accurate data.
Council Operations	Electricity	Scope 2	Report by Geoff Williams, Senior Advisor Strategy, Wellington Water. From supplier reports - Meridian Energy	kWh	It is assumed the supplier has provided data for all meters. It is assumed data source represents a complete and accurate account of all charging activity.
Council Operations	Electricity	Scope 3 Additional	E-road (vehicle tracking SAAS) - ChargeNet transaction data report by Pat Gray, Fleet Administrator	kWh	It is assumed that electric vehicle charging provider has supplied a complete and accurate records.
Council Operations	Natural Gas distributed commercial	Scope 1	Reported by Tim Penwarden, Building Manager, Jigsaw Property	kWh	It is assumed data source represents a complete and accurate account.
Council Operations	Petrol premium	Scope 1	E-road (vehicle tracking SAAS) report by Pat Gray, Fleet Administrator	L	It is assumed data source represents a complete and accurate account of this travel activity.
Council Operations	Petrol regular	Scope 1	E-road (vehicle tracking SAAS) report by Pat Gray, Fleet Administrator	L	It is assumed data source represents a complete and accurate account of this travel activity.
Council Operations	Rail travel (national)	Scope 3	2019FY-Survey data from Ben Barrett, Corporate Sustainability Advisor. Analysis by Christoph Gerds, Senior Data Analyst / Modeller	pkm	This internal workplace travel survey data was adjusted from staff travel survey, it represents an estimate of monthly workplace travel.
Council Operations	Taxi (regular)	Scope 3	GW Finance report using Taxi Charge NZ data by Nela Prahbu Leader, Financial Services	$	It is assumed the supplier has provided complete and accurate transactions data.

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Business unit	GHG emissions source	GHG emissions level scope	Data source	Data collection unit	Uncertainty (description)
Council Operations	Waste landfilled LFGR Mixed waste	Scope 3	Report by waste service provider Waste Management to Ben Barrett, Corporate Sustainability Advisor	t	It is assumed the supplier has provided complete and accurate transactions data.
Council Operations/Environment, Catchment & Parks	Diesel	Scope 3 Additional	Financial reports by Stephen Hill, Strategic Business Partner, Greater Wellington	L	It is assumed the supplier has provided complete and accurate transactions data.
Council Operations/Environment, Catchment & Parks	Electricity distributed T&D losses	Scope 3	Calculated from electricity data business group total	kWh	It is assumed the supplier has provided complete and accurate transactions data.
Council Operations/Environment, Catchment & Parks	Electricity	Scope 2	Energy Pro report by Lily Wang, Data Steward, Wellington Water	kWh	It is assumed the supplier has provided data for all meters. Invoices are monitored and Energy Pro software used to collect and report data.
Council Operations/Environment, Catchment & Parks	Enteric Fermentation Beef Cattle	Scope 3 Additional	GW Land use report by Andrea Brandon, Climate Change Lead, Greater Wellington	head	It is assumed that land use data provided is accurate. Assumed maximum animal head allowable per land use (grazing) contract. MfE 2016 land use workbook used.
Council Operations/Environment, Catchment & Parks	Enteric Fermentation Horses	Scope 3 Additional	GW Land use report by Andrea Brandon, Climate Change Lead, Greater Wellington	head	It is assumed that land use data provided is accurate. Assumed maximum animal head allowable per land use (grazing) contract. MfE 2016 land use workbook used.
Council Operations/Environment, Catchment & Parks	Enteric Fermentation Sheep	Scope 3 Additional	GW Land use report by Andrea Brandon, Climate Change Lead, Greater Wellington	head	It is assumed that land use data provided is accurate. Assumed maximum animal head allowable per land use (grazing) contract. MfE 2016 land use workbook used.
Council Operations/Environment, Catchment & Parks	Fertiliser use Lime	Scope 3 Additional	GW Land use report by Andrea Brandon, Climate Change Lead, Greater Wellington	t	It is assumed that land use data provided is accurate. MfE 2016 land use workbook used.

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Business unit	GHG emissions source	GHG emissions level scope	Data source	Data collection unit	Uncertainty (description)
Council Operations/Environment, Catchment & Parks	Fertiliser use Nitrogen	Scope 3 Additional	GW Land use report by Andrea Brandon, Climate Change Lead, Greater Wellington	t	It is assumed that land use data provided is accurate. MfE 2016 land use workbook used.
Council Operations/Environment, Catchment & Parks	Jet A1	Scope 3 Additional	Financial reports from Stephen Hill, Strategic Business Partner, Greater Wellington	L	It is assumed the supplier has provided complete and accurate transactions data.
Council Operations/Environment, Catchment & Parks	Petrol	Scope 3 Additional	Financial reports from Stephen Hill, Strategic Business Partner, Greater Wellington	L	It is assumed the supplier has provided complete and accurate transactions data.
Council Operations/Environment, Catchment & Parks	Waste landfilled LFGR Garden and Food	Scope 3	Financial reports from Stephen Hill, Strategic Business Partner, Greater Wellington	t	It is assumed the supplier has provided complete and accurate transactions data.
Council Operations/Environment, Catchment & Parks	Waste landfilled LFGR Mixed waste	Scope 3	Financial reports from Stephen Hill, Strategic Business Partner, Greater Wellington	t	It is assumed the supplier has provided complete and accurate transactions data.
Council Operations/Metlink Public Transport	Diesel	Scope 3 Additional	Rail data by Rhys Hayward, EMU Fleet Engineer, Rail Assets, Greater Wellington	L	It is assumed the supplier has provided complete and accurate transactions data.
Council Operations/Metlink Public Transport	Diesel	Scope 3 Additional	Ferry data from East by West, Coralie Christian to to Ben Barrett, Corporate Sustainability Advisor. Owner Rob Braddock, Manager, Greater Wellington	L	It is assumed the supplier has provided complete and accurate transactions data
Council Operations/Metlink Public Transport	Diesel	Scope 3 Additional	GW public transport model Hamish Clark, Data Engineer, Greater Wellington	L	It is assumed that data provided from modelling is accurate to individual trip level. See bus model notes and assumptions in documentation.

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Business unit	GHG emissions source	GHG emissions level scope	Data source	Data collection unit	Uncertainty (description)
Council Operations/Metlink Public Transport	Electricity distributed T&D losses	Scope 3	Calculated from business group total electricity data	kWh	It is assumed that data provided is accurate.
Council Operations/Metlink Public Transport	Electricity	Scope 2	Energy Pro data report by Lily Wang, Data Steward, Wellington Water	kWh	It is assumed the supplier has provided data for all meters. Invoices are monitored and Energy Pro software used to collect and report data.
Council Operations/Metlink Public Transport	Electricity	Scope 3 Additional	GW public transport model Hamish Clark, Data Engineer, Greater Wellington	kWh	It is assumed that data provided from modelling is accurate to individual trip level. See bus model notes and assumptions in documentation.
Council Operations/Metlink Public Transport	Electricity	Scope 3	Rail data by Transdev to Rhys Hayward, EMU Fleet Engineer, Rail Assets, Greater Wellington	kWh	It is assumed the supplier has provided accurate data for all meters.
Council Operations/Metlink Public Transport	Taxi (regular)	Scope 3 Additional	Kamielle Tauaneai, Total Mobility, Metlink to Ben Barrett, Greater Wellington	pkm	It is assumed the supplier has provided complete and accurate transactions data.
Council Operations/Metlink Public Transport	Waste landfilled LFGR Mixed waste	Scope 3 Additional	Waste Management report from Service Resources Ltd by Nick Herbert to Mitchel Davis, Rail Assets, Fixed Asset Adviser, Metlink, Greater Wellington	t	It is assumed the supplier has provided complete and accurate waste weights and transactions data.
Council Organisations/Centre Port 76.9%	Diesel	Scope 1	Travel data report from Tandem Travel by Jeff Shiu to William Woods, Strategic Planning Manager, Centre Port	pkm	It is assumed data source represents a complete and accurate account of this travel activity.
Council Organisations/Centre Port 76.9%	Electricity distributed T&D losses	Scope 3	Travel data report from Tandem Travel by Jeff Shiu to William Woods, Strategic Planning Manager, Centre Port	kWh	It is assumed data source represents a complete and accurate account of this travel activity.

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Business unit	GHG emissions source	GHG emissions level scope	Data source	Data collection unit	Uncertainty (description)
Council Organisations/Centre Port 76.9%	Electricity	Scope 2	Travel data report from Tandem Travel by Jeff Shiu to William Woods, Strategic Planning Manager, Centre Port	kWh	It is assumed the supplier has provided data for all meters. Invoices are monitored and software used to collect and report data.
Council Organisations/Centre Port 76.9%	Petrol premium	Scope 1	Bulk tank and fuel card report from BP to Tim Gresham, Centre Port. Marine fuel report compiled by Charles Smith, Marine Manager, Centre Port	L	It is assumed data source represents a complete and accurate account of this diesel purchasing.
Council Organisations/Wellington NZ 20%	Air travel domestic (average)	Scope 3	See Wellington City Council EIR	pkm	See Wellington City Council EIR
Council Organisations/Wellington NZ 20%	Air travel long haul (econ)	Scope 3	See Wellington City Council EIR	pkm	See Wellington City Council EIR
Council Organisations/Wellington NZ 20%	Air travel short haul (econ)	Scope 3	See Wellington City Council EIR	pkm	See Wellington City Council EIR
Council Organisations/Wellington NZ 20%	Electricity distributed T&D losses	Scope 3	See Wellington City Council EIR	kWh	See Wellington City Council EIR
Council Organisations/Wellington NZ 20%	Electricity	Scope 2	See Wellington City Council EIR	kWh	See Wellington City Council EIR
Council Organisations/Wellington NZ 20%	Natural Gas distributed commercial	Scope 1	See Wellington City Council EIR	kWh	See Wellington City Council EIR
Council Organisations/Wellington NZ 20%	Petrol	Scope 1	See Wellington City Council EIR	L	See Wellington City Council EIR

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Business unit	GHG emissions source	GHG emissions level scope	Data source	Data collection unit	Uncertainty (description)
Council Organisations/Wellington NZ 20%	Rental Car average (fuel type unknown)	Scope 1	See Wellington City Council EIR	$	See Wellington City Council EIR
Council Organisations/Wellington NZ 20%	Taxi (regular)	Scope 3	See Wellington City Council EIR	$	See Wellington City Council EIR
Council Organisations/Wellington Regional Stadium Trust 50%	Air travel domestic (average)	Scope 3	See Wellington City Council EIR	pkm	See Wellington City Council EIR
Council Organisations/Wellington Regional Stadium Trust 50%	Air travel long haul (econ+)	Scope 3	See Wellington City Council EIR	pkm	See Wellington City Council EIR
Council Organisations/Wellington Regional Stadium Trust 50%	Air travel short haul (econ)	Scope 3	See Wellington City Council EIR	pkm	See Wellington City Council EIR
Council Organisations/Wellington Regional Stadium Trust 50%	Diesel	Scope 1	See Wellington City Council EIR	L	See Wellington City Council EIR
Council Organisations/Wellington Regional Stadium Trust 50%	Electricity distributed T&D losses	Scope 3	See Wellington City Council EIR	kWh	See Wellington City Council EIR
Council Organisations/Wellington Regional Stadium Trust 50%	Electricity	Scope 2	See Wellington City Council EIR	kWh	See Wellington City Council EIR
Council Organisations/Wellington Regional Stadium Trust 50%	Natural Gas distributed commercial	Scope 1	See Wellington City Council EIR	kWh	See Wellington City Council EIR
Council Organisations/Wellington Regional Stadium Trust 50%	Petrol	Scope 1	See Wellington City Council EIR	L	See Wellington City Council EIR
Council Organisations/Wellington Regional Stadium Trust 50%	Rental Car average (fuel type unknown)	Scope 1	See Wellington City Council EIR	pkm	See Wellington City Council EIR

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Business unit	GHG emissions source	GHG emissions level scope	Data source	Data collection unit	Uncertainty (description)
Council Organisations/Wellington Regional Stadium Trust 50%	Taxi (regular)	Scope 3	See Wellington City Council EIR	$	See Wellington City Council EIR
Council Organisations/Wellington Water/Wellington Water - managed GW assets 100%	CO_2-e from bulk water treatment chemicals	Scope 3 Additional	Report by Geoff Williams, Senior Advisor Strategy, Wellington Water	t	It is assumed the supplier has provided accuarte data.
Council Organisations/Wellington Water/Wellington Water - managed GW assets 100%	Electricity distributed T&D losses	Scope 3	2017/18 Genevieve Smith, Beca for Fraser Clark, Principal Advisor, Strategy, Wellington Water	tkm	It is assumed the supplier has provided complete transactions data. Assumption on dry sludge weight was made from sludge wet mass weight. Assumption on freight distances were obtained from Google Maps.
Council Organisations/Wellington Water/Wellington Water - managed GW assets 100%	Electricity	Scope 2	Calculated from electricity data business group total	kWh	It is assumed the supplier has provided accurate data.
Council Organisations/Wellington Water/Wellington Water - managed GW assets 100%	Freight Road rigid truck (average)	Scope 3	2017/18 Genevieve Smith, Beca for Fraser Clark, Principal Advisor, Strategy, Wellington Water	km/t	It is assumed the supplier has provided complete transactions data. Assumption on dry sludge weight was made from sludge wet mass weight.
Council Organisations/Wellington Water/Wellington Water - managed GW assets 100%	Waste to Landfill Sludge (CO_2)	Scope 3	2017/18 Sludge to landfill estimate by Genevieve Smith, Beca for Fraser Clark, Principal Advisor, Strategy, Wellington Water	t	It is assumed the supplier has provided complete transactions data. Assumption on dry sludge weight was made from sludge wet mass weight.
Council Organisations/Wellington Water/Wellington Water Corporate 20%	Air travel domestic (average)	Scope 3	2017/18 Travel data report from by Arina Anderson, FCM Travel Solutions for Fraser Clark, Principal Advisor, Strategy, Wellington Water	pkm	It is assumed the supplier has provided complete and accurate transactions data

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Business unit	GHG emissions source	GHG emissions level scope	Data source	Data collection unit	Uncertainty (description)
Council Organisations/Wellington Water/Wellington Water Corporate 20%	Air travel long haul (average)	Scope 3	2017/18 Travel data report from by Arina Anderson, FCM Travel Solutions for Fraser Clark, Principal Advisor, Strategy, Wellington Water	pkm	It is assumed the supplier has provided complete and accurate transactions data
Council Organisations/Wellington Water/Wellington Water Corporate 20%	Air travel short haul (average)	Scope 3	2017/18 Travel data report from by Arina Anderson, FCM Travel Solutions for Fraser Clark, Principal Advisor, Strategy, Wellington Water	pkm	It is assumed the supplier has provided complete and accurate transactions data
Council Organisations/Wellington Water/Wellington Water Corporate 20%	Diesel	Scope 1	2017/18 Fuel report by Graham Bennett, City Care for Lily Wang, Data Steward, Wellington Water	L	It is assumed data source represents a complete and accurate account of all travel activity.
Council Organisations/Wellington Water/Wellington Water Corporate 20%	Electricity distributed T&D losses	Scope 3	Calculated from electricity data business group total	kWh	It is assumed the supplier has provided accurate data.
Council Organisations/Wellington Water/Wellington Water Corporate 20%	Electricity	Scope 2	Report by Geoff Williams, Senior Advisor Strategy, Wellington Water	kWh	It is assumed data source represents a complete and accurate account of all travel activity.
Council Organisations/Wellington Water/Wellington Water Corporate 20%	Petrol premium	Scope 1	2017/18 Fuel report by Graham Bennett, City Care for Fraser Clark, Principal Advisor, Strategy, Wellington Water	L	It is assumed data source represents a complete and accurate account of all travel activity.
Council Organisations/Wellington Water/Wellington Water Corporate 20%	Petrol regular	Scope 1	2017/18 Travel data report from by Arina Anderson, FCM Travel Solutions for Fraser Clark, Principal Advisor, Strategy, Wellington Water	L	It is assumed data source represents a complete and accurate account of all travel activity.

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Business unit	GHG emissions source	GHG emissions level scope	Data source	Data collection unit	Uncertainty (description)
Council Organisations/Wellington Water/Wellington Water Corporate 20%	Rental Car Medium (petrol 1600-2000cc) - post-2015	Scope 1	2017/18 Report to Fraser Clark, Principal Advisor, Strategy, Wellington Water	$	It is assumed the supplier has provided complete and accurate transactions data.
Council Organisations/Wellington Water/Wellington Water Corporate 20%	Taxi (regular)	Scope 3	2017/18 Report to Fraser Clark, Principal Advisor, Strategy, Wellington Water	$	It is assumed the supplier has provided complete and accurate transactions data.

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6.1 Other emissions – HFCs, PFCs and SF_6

No refrigeration or air-conditioning or other equipment containing hydrofluorocarbons (HFCs) is used in the operations and therefore no emissions from these sources are included in the inventory.

No operations use perfluorocarbons (PFCs), Nitrogen Trifluoride (N3) nor sulphur hexafluoride (SF_6), therefore no holdings of these are reported and no emissions from these sources are included in this inventory.

6.2 Other emissions – biomass

No biomass is combusted in the operations and therefore no emissions from the combustion of biomass are included in this inventory.

6.3 Other emissions – deforestation

Deforestation has been undertaken but is excluded (eg due to deminimus or operational control reasons). Forestry emissions managed separately.

6.4 Pre-verified data

Pre-verified data is included in this inventory. Included in this inventory is Toitū pre-verified data (from Wellington City Council's inventory): Council (Controlled) Organisations (CCO) - Wellington NZ (20% equity share), Wellington Regional Stadium Trust (50% equity share).

7 GHG EMISSIONS SOURCE EXCLUSIONS

Emissions sources in Table 12 have been identified and excluded from the GHG emissions inventory.

Forestry emission management is separate to the corporate emissions inventory.

Table 12: GHG emissions sources excluded from the inventory

Business unit	GHG emissions source	GHG emissions level scope	Reason for exclusion
GW Coucnil Operations	Reimbursed: Air Travel/ rental cars	Scope 3 Mandatory	Most emissions (estimated to be over 99%) from travel is included in the EIR. There is a very small proportion (believed to be estimated at < 1%) of travel that has been reimburdsed separtely to the coroprate booking service. This record has not been coded separately in the general ledger from that of booked services, as a result a report is unobtainable. Calculating this would have taken excessive amount of time and we have excluded this due to the programme de minimis rule.
GW Coucnil Operations	Refrigeration	Scope 1 Mandatory	It is assumed that refrigeration (various flourocarbons) is at a very low level (well under 1% of toal emissions) and calculating this would be very tieme consuming. As a result there is no current record of refrigerants. Refrigerants have been excluded based on the programme de minimus rule.

Business unit	GHG emissions source	GHG emissions level scope	Reason for exclusion
GW Coucnil Operations/ Environment	Fertiliser	Scope 3 Mandatory	Fertiliser use in plant nursaries and all lease holdings, except Queen Elizabeth Park (which is included in the inventory).
GW Coucnil Operations	Couriers & Posatge	Scope 3 Mandatory	It is assumed that this activity is at a very low level, under 1% of total emissions. No general ledger code exists for these activites, as a result there is way to report this data. Calculating this would have taken excessive amount of time and this has been excluded this based on the programme de minimis rule.
GW Coucnil Operations	Waste to landfill	Scope 3 Mandatory	Waste excluded for CentrePort, Wellington Water (corporate), Wellington NZ and Wellington Regional Stadium Trust.
GW Coucnil Operations	Rental vehicles	Scope 3 Mandatory	Estimated de minimis. Excluded based on the programme de minimis rule.
CentrePort	Workplace travel reimbursements	Scope 3 Mandatory	No data available
CentrePort	Waste to landfill	Scope 3 Mandatory	No data available
CentrePort	Refigeration	Scope 1 Mandatory	Estimated de minimis. Excluded based on the programme de minimis rule.
Wellington Water (corporate)	Refigeration	Scope 1 Mandatory	No data available
Wellington Water (corporate)	Workplace travel reimbursements	Scope 3 Mandatory	No data available
Wellington Water (corporate)	Waste to landfill	Scope 3 Mandatory	No data available

8 DATA COLLECTION AND UNCERTAINTIES

Table 11 provides an overview of how data were collected for each GHG emissions source, the source of the data and an explanation of any uncertainties or assumptions made. Estimated numerical uncertainties are reported with the emissions calculations and results.

All data was calculated using Toitū emanage and GHG emissions factors as provided by the Programme.

A calculation methodology has been used for quantifying the GHG emissions inventory using emissions source activity data multiplied by GHG emissions or removal factors.

To date fluorocarbons have not been inventoried and are assessed as widely distributed and hard to measure. Assessment of the fluorocarbons across the group is noted for future inventory improvement.

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9 GHG EMISSIONS CALCULATIONS AND RESULTS

GHG emissions for the organisation for this measurement period are provided in Table 1 where they are stated by greenhouse gas, by scope, by business unit and as total emissions.

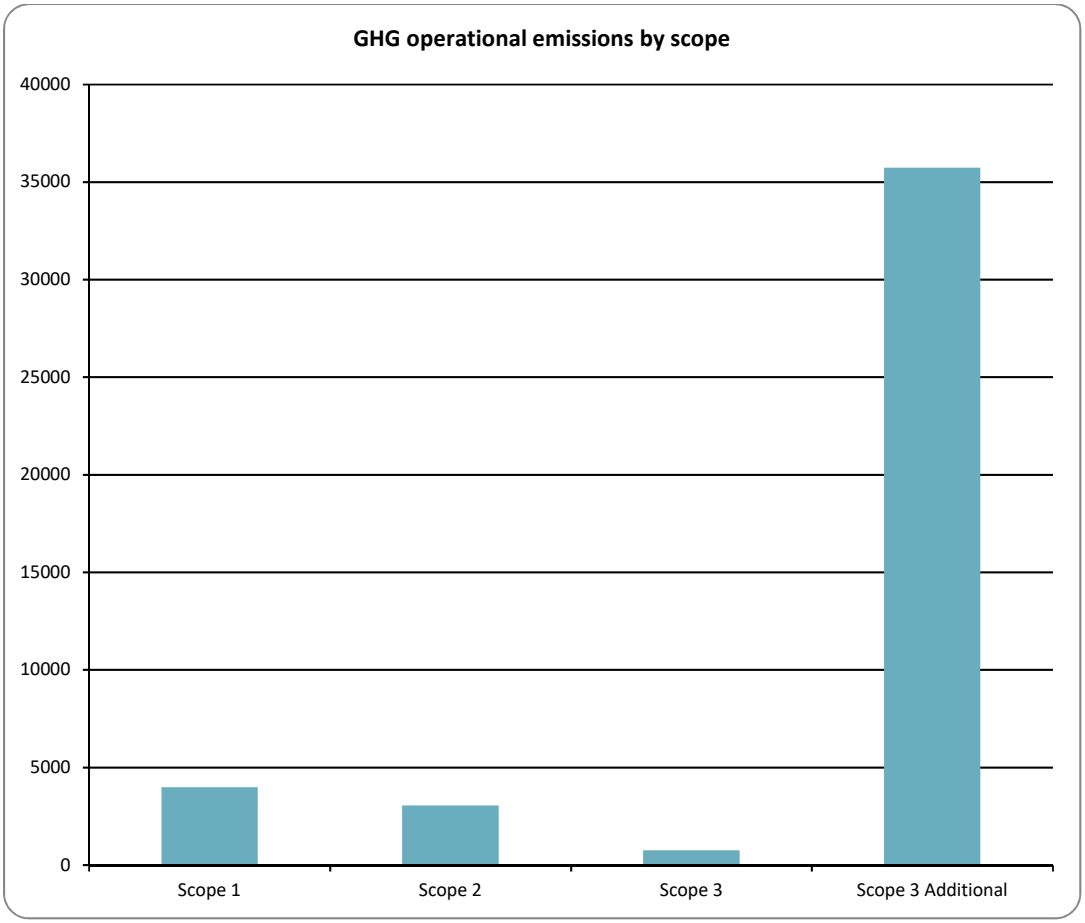

Figure 2: GHG emissions (tonnes CO_2e) by scope

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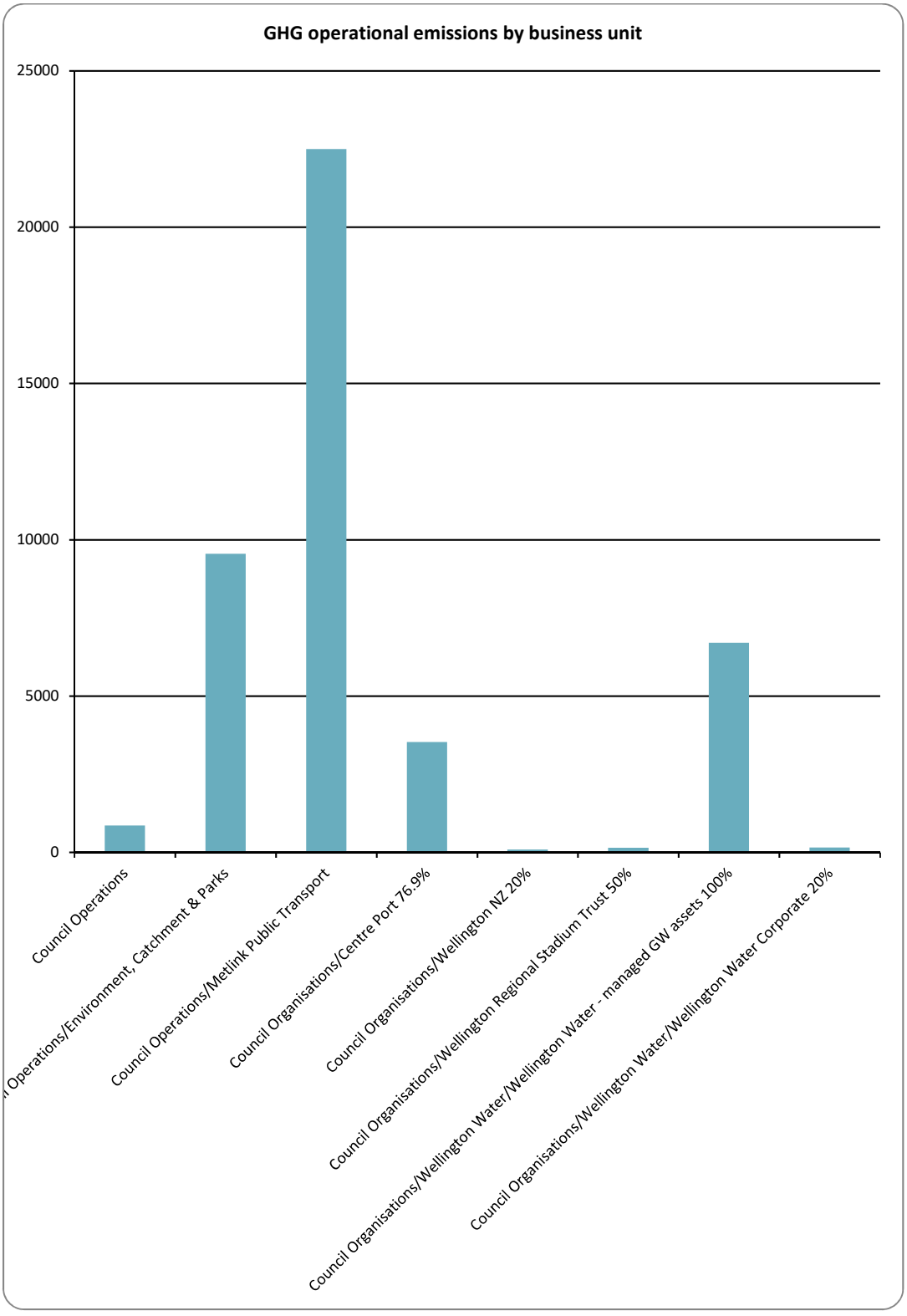

Figure 3: GHG emissions (tonnes CO_2e) by business activity.

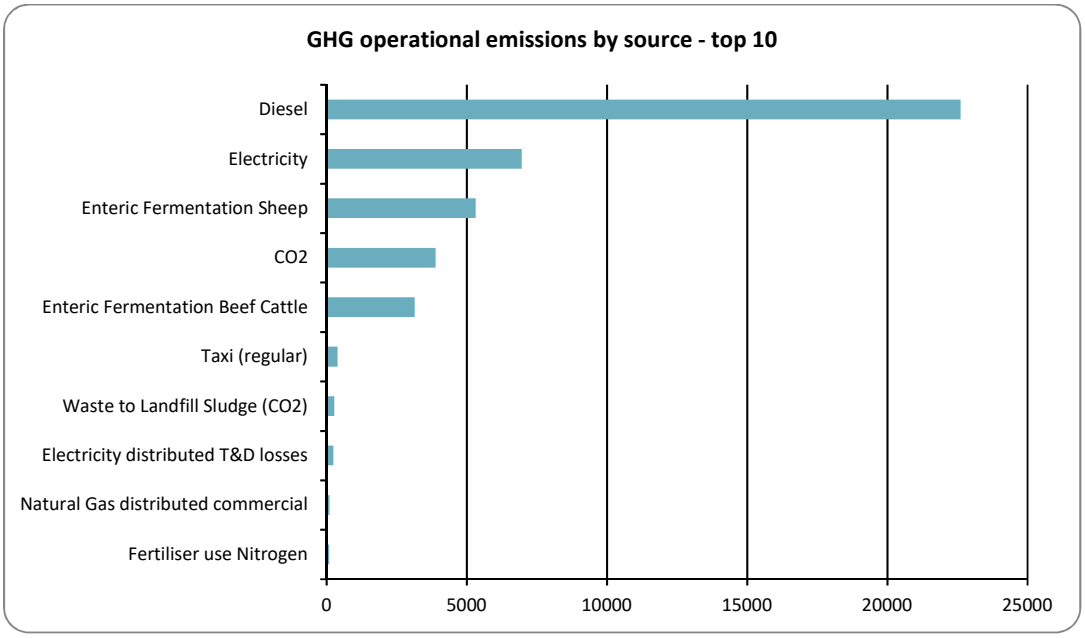

Figure 4: GHG emissions sources by source.

The inventory report and any GHG assertions are expected to be verified by a Programme-approved, third-party verifier. The level of assurance is reported in a separate Assurance Statement provided to the directors of the certified entity.

10 EMISSIONS REDUCTIONS AND REMOVALS ENHANCEMENT

GHG emissions for the organisation for the current reporting period are detailed in Table 1.

The organisation will have an updated management plan in place for managing and reducing emissions in the future in order to maintain Programme recertification.

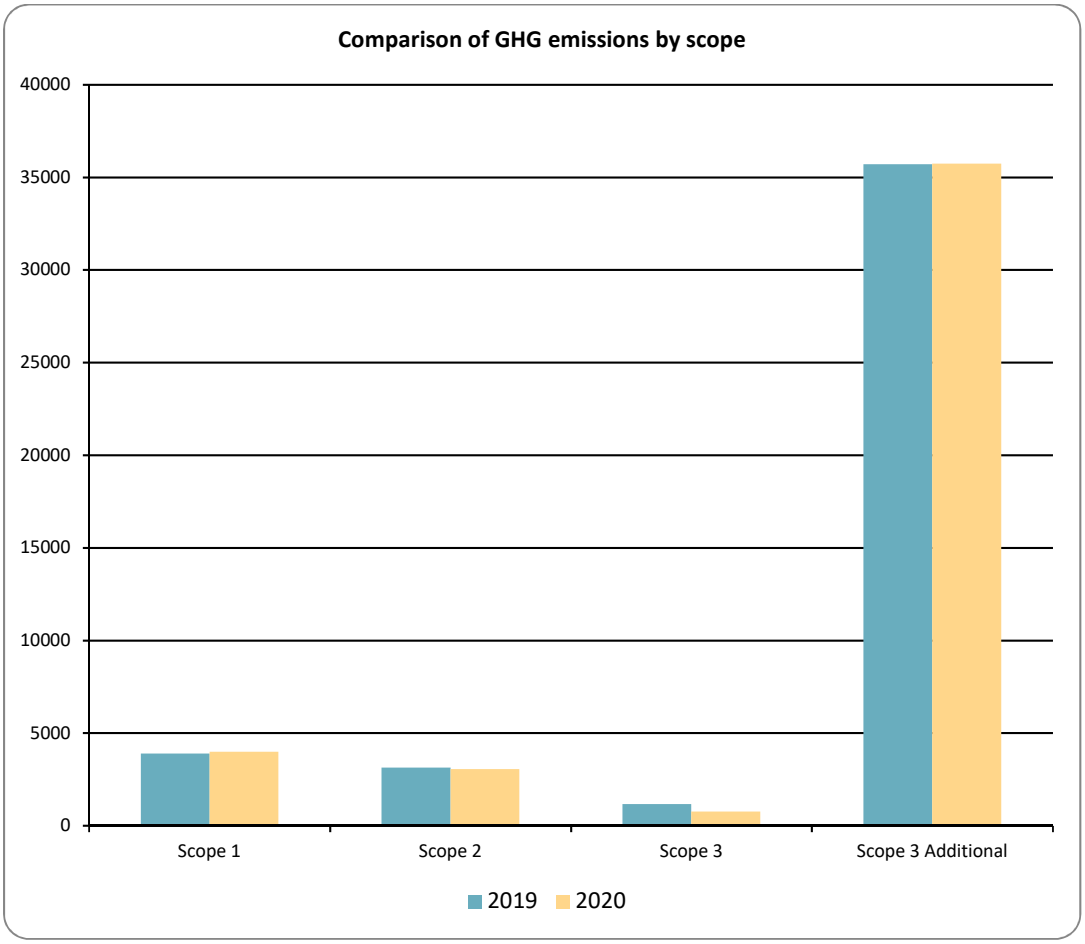

Figure 5: Comparison of GHG operational emissions by scope between the reporting periods.

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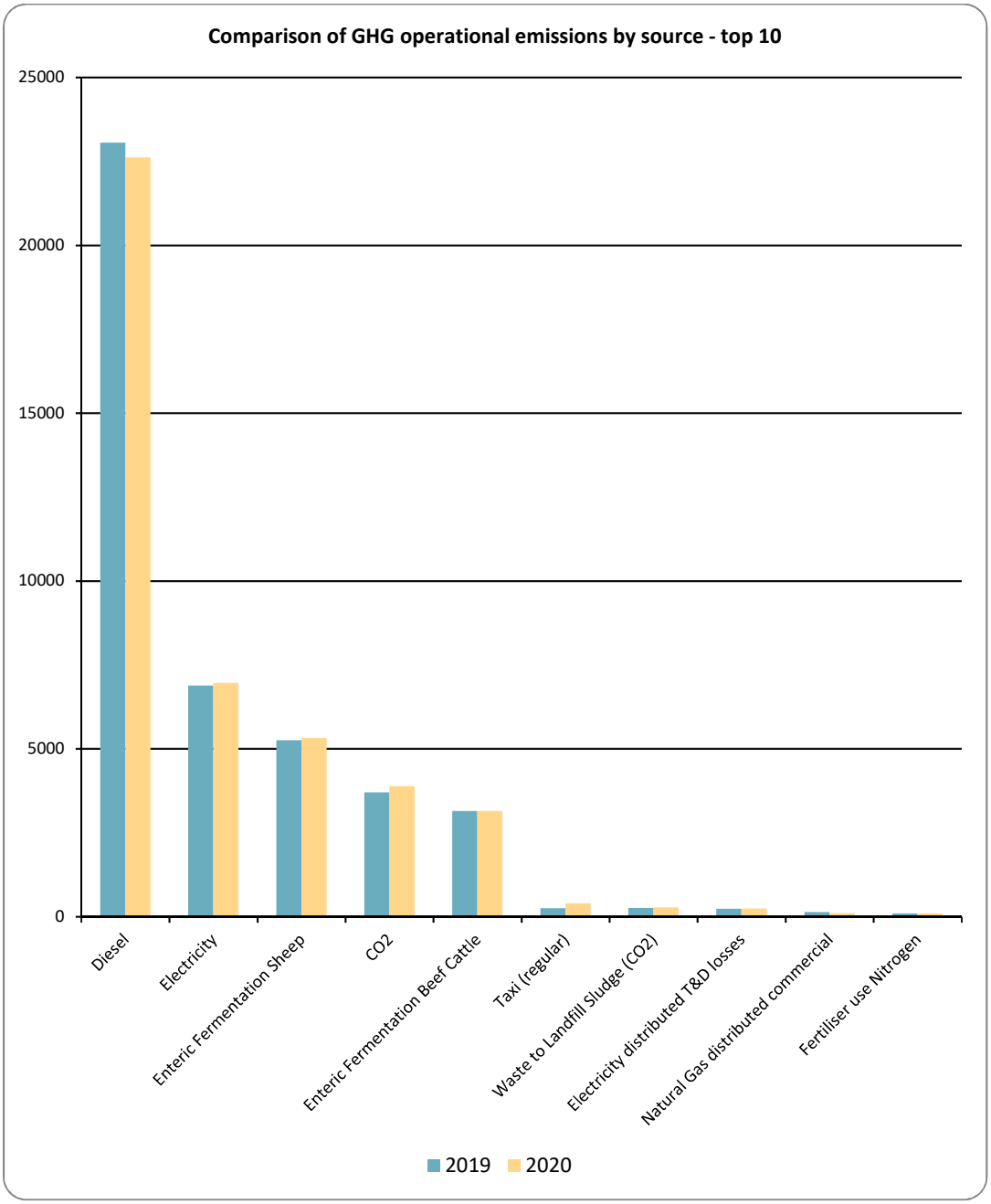

Figure 6: Comparison of GHG operational emissions by emissions sources between the reporting periods.

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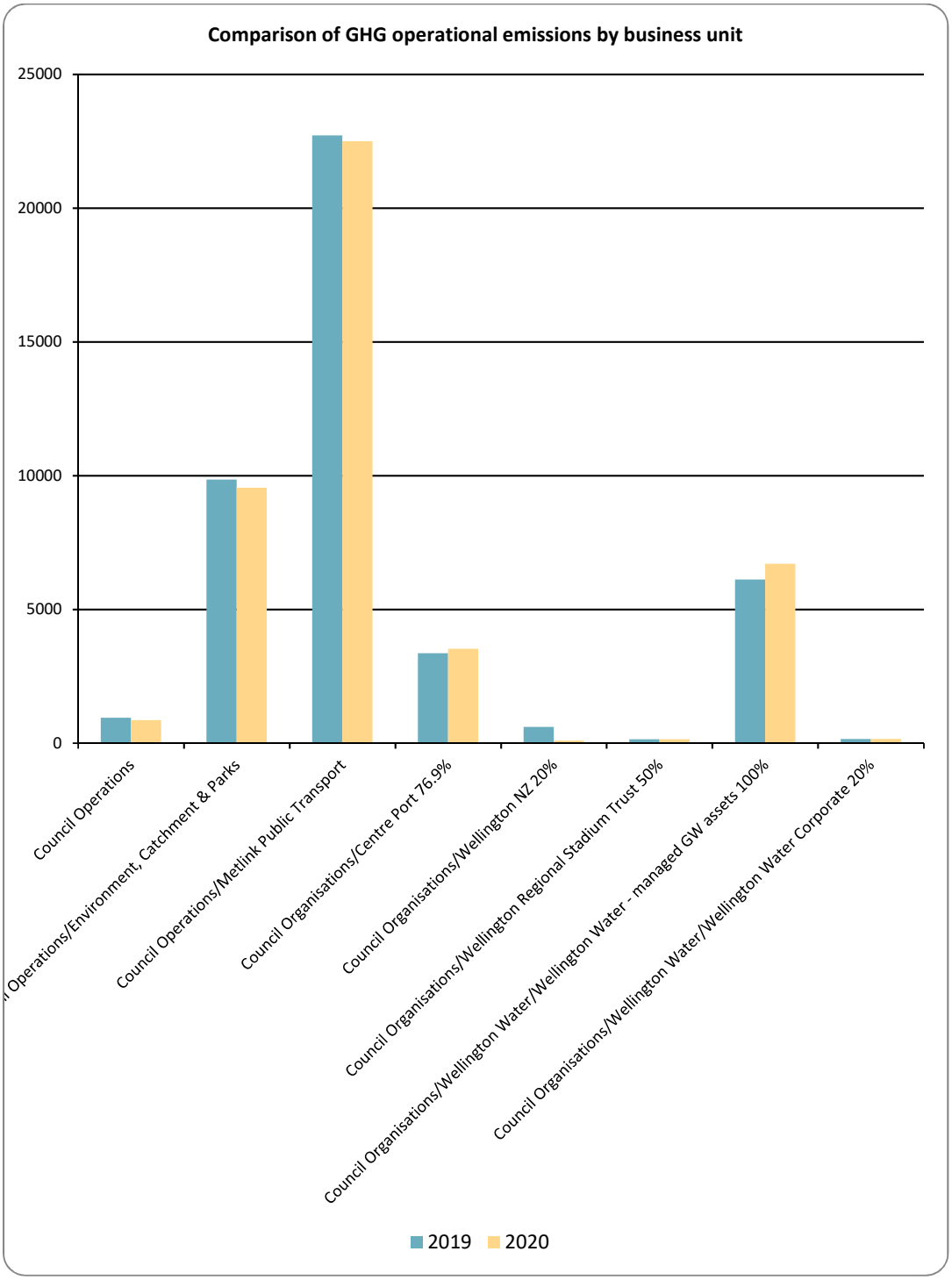

Figure 7: Comparison of emissions by business unit between the reporting periods.

11 LIABILITIES

11.1 GHG stocks held[4]

HFCs, PFCs and SF_6 represent GHGs with high global warming potentials. Their accidental release could result in a large increase in emissions for that year, and therefore the stock holdings are reported under the Programme (Table 13).

GHG stocks have not been reported in this inventory. Forestry emissions managed separately.

Table 13: HFCs, PFCs and SF_6 GHG emissions and liabilities.

Business Unit	Source	Units	Amount held - start of reporting period	Amount held - end of reporting period	Potential Liability tCO_2e
Greater Wellington Regional Council	Diesel commercial	litres	178245	177750	473.48
Greater Wellington Regional Council	HFC-32	kilograms	(no data)	188.00	126.90
Greater Wellington Regional Council	R-410A	kilograms	(no data)	3.20	6.68

11.2 Land-use change

Organisations that own land subject to land-use change may achieve sequestration of carbon dioxide through a change in the carbon stock on that land. Where a sequestration is claimed, then this also represents a liability in future years should fire, flood or other management activities release the stored carbon.

Land-use change has not been included in this inventory. Forestry emissions managed separately.

12 PURCHASED REDUCTIONS

Purchased reductions could include certified “green” electricity, verified offsets or other carbon-neutral-certified services. Organisations may choose to voluntarily purchase carbon credits (or offsets) or green electricity that meets the eligibility criteria set by a regulatory authority. The reported gross emissions may not be reduced through the purchase of offsets or green tariff electricity.

Certified green electricity has not been included in this inventory.

Generated on-site renewable electricity is included in the inventory. Mini hydro-generation assets owned by Greater Wellington and managed by Wellington Water are feed by bulk water and assists bulk water pumping. The hydro-generation was 1,286,258 kWh over the period.

[4] HFC stock liabilities for systems under 3 kg can be excluded.

13 DOUBLE COUNTING / DOUBLE OFFSETTING

Double counting / double offsetting has not been included in this inventory.

14 REFERENCES

International Organization for Standardization, 2006. ISO14064-1:2006. Greenhouse gases – Part 1: Specification with guidance at the organisation level for quantification and reporting of greenhouse gas GHG emissions and removals. ISO: Geneva, Switzerland.

World Resources Institute and World Business Council for Sustainable Development, 2004 (revised). The Greenhouse Gas Protocol: A Corporate Accounting and Reporting Standard. WBCSD: Geneva, Switzerland.

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SUMMARY OF TOITŪ CARBONREDUCE CERTIFICATION

GREATER WELLINGTON REGIONAL COUNCIL

Year 2 of 3 year certificate period

Greater Wellington Regional Council meets the requirements of Toitū carbonreduce certification having measured its greenhouse gas emissions in accordance with ISO 14064-1:2006 and committed to managing and reducing its emissions in respect of the operational activities of its organisation including Council Controlled Organisations that report financially into the council and JVs, excluding Greater Wellington Rail Limited, Port Investments Limited, Harbour Quays A1 Limited, Harbour Quays D4 Limited, Harbour Quays F1F2 Limited, Direct Connect Container Services Limited and WRC Holdings Limited

Greater Wellington Regional Council promotes quality of life through environmental management while meeting the economic, cultural and social needs of the community. This inventory reports into the Toitū carbonreduce programme. This inventory also reports to the Carbon Disclosure Project (CDP).

Our responsibilities include environment management, flood protection and land management, provision of regional parks, regional public transport planning and service procurement, and catchment for several metropolitan water supplies. The Council has equity share in several Council Organisations including Centre Port, Wellington Water, Wellington NZ, and Wellington Regional Stadium Trust.

The Council has a Climate Emergency Programme of work involving adaptation and mitigation relating to the region and in corporate operations. The Council has committed to reduce emissions as much as possible over the next decade and become carbon neutral by 2030. The Council has committed to begin offsetting 40% net neutral emissions by 30 June 2025 and ten percent more each year after that until 2030. The Council has aspiration to be a net carbon sink providing greenhouse gas emissions offsets for other organisations. The Councils goals contribute directly to specific United Nations Sustainable Development Goals. The Council is also signatory of the Carbon Disclosure Project (CDP)and publicly discloses all its carbon data in its Annual Report.

EMISSIONS SUMMARY[1]

Greater Wellington Regional Council's emissions for this year (01 July 2019 to 30 June 2020) were 43,525.47 tCO_2e. The operational GHG emission sources included in this inventory are shown in Figure 1 below.

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

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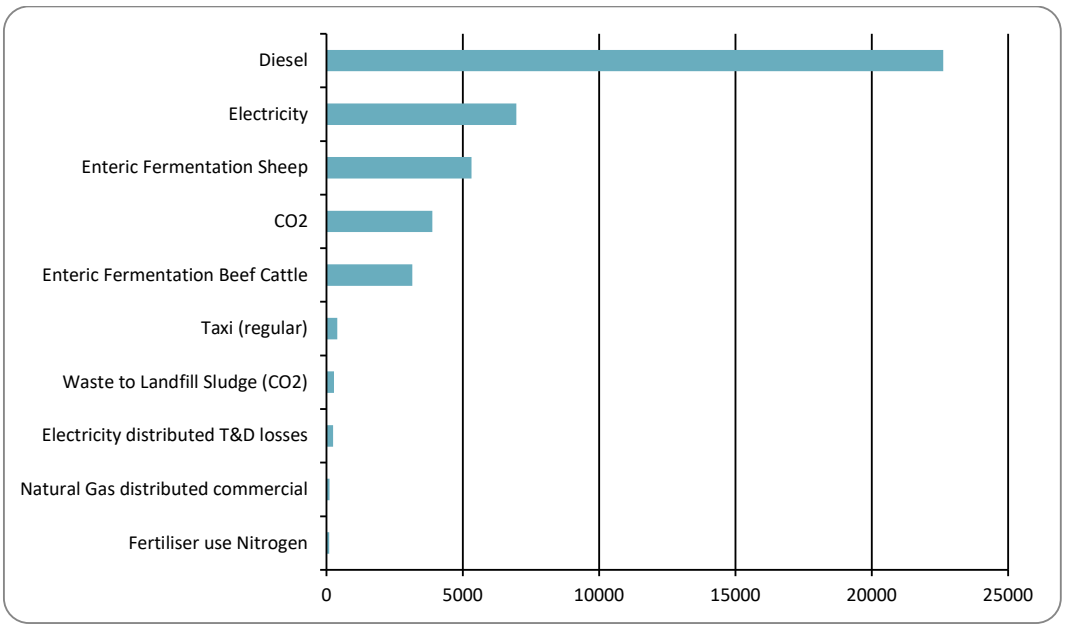

Figure 1: GHG emissions by emissions source

Emissions as tonnes of carbon dioxide equivalents (tCO_2e) for this period were:

Scope	tCO_2e
Scope 1	3,981.88
Scope 2	3,055.18
Scope 3 Mandatory	757.26
Scope 3 Additional	35,731.15
Scope 3 One time	0.00
Total gross emissions	**43,525.47**

EMISSIONS REDUCTIONS

To reduce its emissions, Greater Wellington Regional Council has developed a GHG emissions management plan and reduction targets. Some of these plans include:

- Electrifying the bus fleet
- Procurement of energy efficient office
- Reduce stock grazing emissions
- Low carbon vehicle fleet

An assessment of materiality was made against the defined threshold. From this analysis it is concluded that the stated emissions are free from material error.

This is the 2nd year of reporting under the Toitū carbonreduce programme. An absolute increase in Scope 1 and 2 emissions of 23.20 tCO_2e has occurred against base year. A reduction in emissions intensity (for Scope 1, 2 and mandatory Scope 3 emissions) of 1.31 tCO_2e/$M has been achieved based upon a 2 year rolling average.

TOITŪ CARBON REDUCE ISO 14064-1 ORGANISATION

EMISSIONS BOUNDARIES

Greater Wellington is the parent company of all operations and the Council Organisations (the Group) on the chart. Corporate parts have operational control. Council organisations are joint ventures with an equity share. This share is designated on the chart as percentage. For contracts and where asset ownership is managed by others, financial control and contractual control gives Greater Wellington high level of influence over the nature of the business procured and how that will be managed. In those cases, full ownership of greenhouse gas emissions is designated to Greater Wellington as the service procurer and sponsor. All business on this chart flows through Greater Wellington financial accounts.

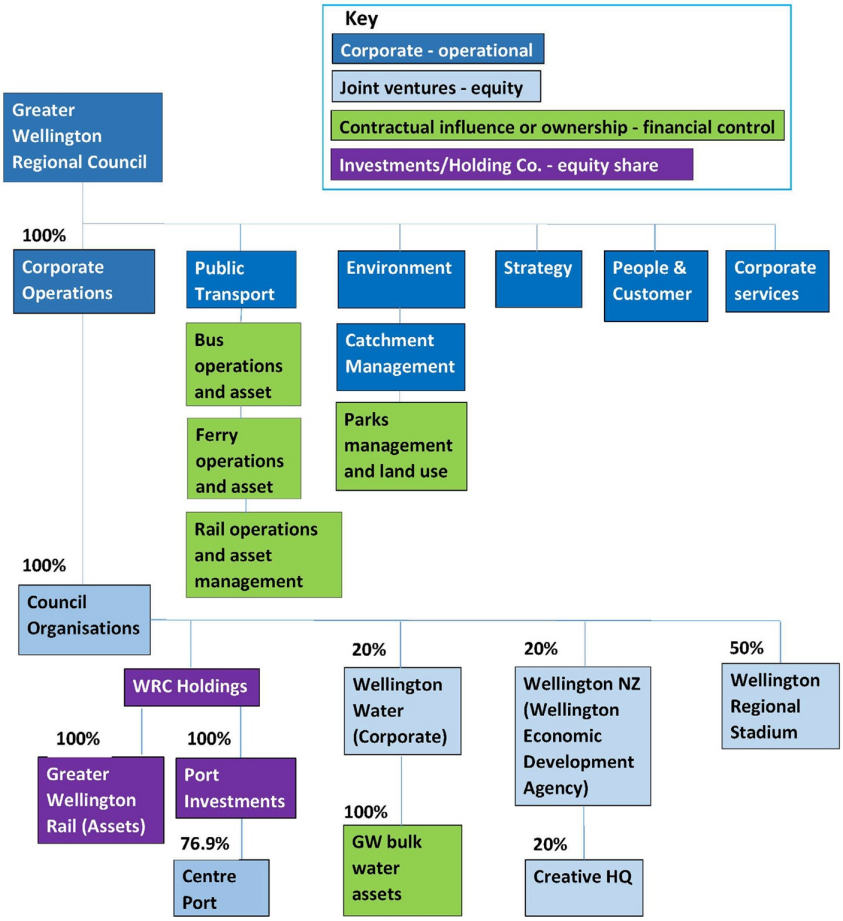

Figure 2: Organisational structure showing business units included and excluded

A financial control consolidation approach was used to account for emissions. Overall an equity control approach has been used to determine the actual influence on emissions the Council has all on business across its Group of companies. A large proportion of the services provided to the public by Greater Wellington are delivered through service provider contracts and or Council Organisations that have separate governance and management.

The equity control approach has been applied where Council Organisations are part owned by Greater Wellington and managed by others. The equity approach has been used for business that Greater Wellington has full control over, and where it remains in full ownership of assets regardless if others manage those assets. An equity control approach has also been used for major contracts where Greater

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Wellington is the financial sponsor and has strong influence of the resulting contractual procurement requirements that determines the nature of the subsequent business.

This is with reference to the methodology described in the GHG Protocol and ISO 14064-1:2006 standards.

The following emissions sources were excluded from the inventory for this measurement period:

- Forestry emission management is separate to the corporate emissions inventory.
- CentrePort and Wellington Water: air travel, and rental cars (no data available for the period).

Business unit	GHG emissions source	GHG emissions level scope	Reason for exclusion
GW Council Operations	Reimbursed: Air Travel/ rental cars	Scope 3 Mandatory	Excluded due to the programme *de minimis* rule.
GW Council Operations	Refrigeration	Scope 1	Refrigerants have been excluded based on the programme *de minimis* rule.
GW Council Operations	Couriers & Postage	Scope 3 Mandatory	Excluded this based on the programme *de minimis* rule.
GW Council Operations	Waste to landfill	Scope 3 Mandatory	Excluded based on the programme *de minimis* rule.
GW Council Operations	Rental vehicles	Scope 3 Mandatory	Excluded based on the programme *de minimis* rule.
GW Council Operations	Fertiliser	Scope 3 Mandatory	Fertiliser use in plant nurseries and all lease holdings, except Queen Elizabeth Park (which is included in the inventory).
CentrePort	Workplace travel reimbursements	Scope 3 Mandatory	No data available
CentrePort	Waste to landfill	Scope 3 Mandatory	No data available
CentrePort	Refrigeration	Scope 1	Estimated and then excluded based on the programme *de minimis* rule
Wellington Water (corporate)	Refrigeration	Scope 1	No data available
Wellington Water (corporate)	Workplace travel reimbursements	Scope 1	No data available
Wellington Water (corporate)	Waste to landfill	Scope 1	No data available

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

CERTIFICATE DETAILS

Certification status – Toitū carbonreduce certified organisation

Certificate number – 2020057J, Year 2 of 3 year certificate period

Valid until – 23 June 2023

Measurement period – 01 July 2019 to 30 June 2020

Base year – 01 July 2018 to 30 June 2019

Verified by – Enviro-Mark Solutions Limited

Level of assurance – Reasonable scope 1 & 2, Limited scope 3

Data quality score – Fair

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(04) 384 5708 info@gw.govt.nz

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EMISSIONS MANAGEMENT AND REDUCTION PLAN

Toitū carbonreduce and Toitū carbonzero programme

Greater Wellington Regional Council

Person responsible: Tracy Plane

Prepared by: Ben Barrett

Dated: 16 July 2020

For the period: 1 July 2018 to 30 June 2019

Base year: 1 July 2018 to 30 June 2019

Verification status: Limited for mandatory emissions sources

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Approved for release by:

Greg Campbell

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INTRODUCTION

This document is Greater Wellington Regional Council's (**GWRC**) annual greenhouse gas (**GHG**) Emissions Management and Reduction Plan (**EMRP**). The plan is one part of the requirements to achieve certification from Toitū's Carbonreduce programme.

RATIONALE

Climate change is beginning to have a wide and varied effect on the GWRC Group of companies. The Wellington Region climate change projections and impacts summary (commissioned by GWRC) shows that given the current global emissions trajectory, the intensity of the regional impact of climate change will continue to increase. More severe droughts, infrequent and more intense rainfall, larger storms and climate-related events are anticipated. This will affect all parts of GWRC operations and the greater Wellington region that we seek to protect and enhance.

GWRC has been measuring its carbon emissions since 2015. From this year, we have committed to measuring and auditing our carbon footprint in accordance with Toitū's carbonreduce programme. The programme's rigorous international standards regarding emissions measurement, management, and accountability will assist GWRC in achieving its carbon reduction commitments.

In 2019, GWRC committed to reducing emissions as much as possible – becoming carbon-neutral by 2030 (refer to the Corporate Carbon Neutrality Action Plan).

TOP MANAGEMENT COMMITMENT

GWRC Chief Executive has climate-change-related KPIs and responsibilities. At the beginning of 2020, newly-elected Councillors formed a Climate Committee that governs the Climate Emergency Response Programme of work.

PERSON RESPONSIBLE

Chief Executive is the sole employee of the Council which oversees Chief Executive's performance. The Chief Executive is responsible for Council operations and public service delivery that directly influence our climate change response, carbon emissions reductions, intensity, and neutrality. The Chief Executive is supported by the Executive Leadership Team of General Managers responsible for delivering operational carbon emission reductions strategy and management.

AWARENESS RAISING AND TRAINING

The Climate Response Programme includes a project *Climate Response Organisational Change Plan* reaching across the organisation in terms of awareness of, and training in, climate change and emissions reductions. This plan also targets organisational capacity development in the area of emissions reductions issues. A Programme Board delivers outcomes to the Chief Executive, ensuring ongoing engagement with all staff in relation to emissions reductions over a number of years.

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SIGNIFICANT EMISSIONS SOURCES

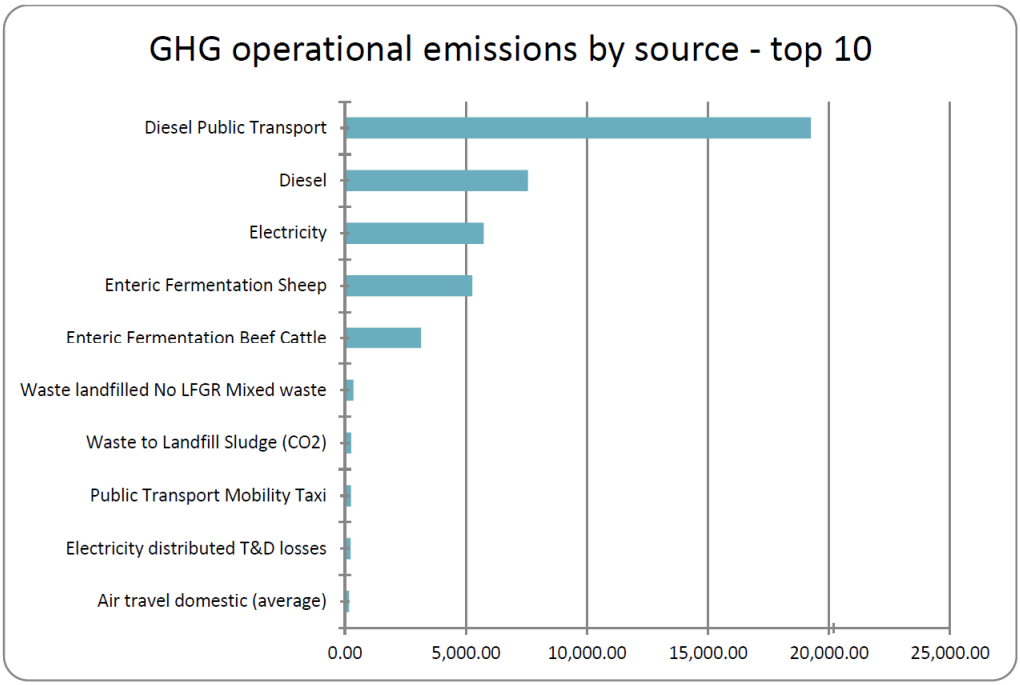

Figure 1: GHG emissions by source

As required under the Toitu carbon reduce programme, this emissions management and reduction plan (**EMRP**) addresses GWRC's largest emissions sources as reported in the emissions inventory report (**EIR**). FY2018/19 marks a turning point as the Council voluntarily assumes responsibility over the GWRC Group of companies' emissions on the public's behalf. The Council declared a climate emergency, and committed to becoming carbon-neutral by 2030. The major influence on reducing emissions will come through strategic decisions, policy and service procurement processes and contracts that can incentivise low-carbon outcomes.

Though GWRC does not have direct operational control of the majority of emissions resulting from its Group of companies' activities, it does have equity control (financial influence) over contractors and Council organisations. Due to this influence, GWRC 'owns' responsibility for influencing the emissions reduction and carbon neutrality of the entire GWRC Group of companies.

Our public services are mostly supplied by contracted service providers and Council organisations with separate governance and management. However, GWRC funds these services, is a shareholder of Council organisations, and determines the contracts through the procurement process – having a strongly influencing the nature of business that these suppliers undertake over the procurement lifecycle.

The **largest** source of emissions is diesel transport fuel used for Metlink public transport services. Diesel used in transport and heavy machinery represents the greatest opportunity for emissions reductions, especially through the use of emerging vehicle electrification technologies.

The **second largest** source of emissions is grazing animals on the Council-owned land and in regional parks. Land use change has been identified as a possible area for emissions reductions in the parks Network Plan Review.

The **third largest** source of emissions is purchased electricity used across corporate offices, operations, and service delivery, including public transport stations and parks network facilities.

Significant energy is also consumed by council organisations Wellington Water and CentrePort – particularly, to pump water from catchments for municipal distribution. With the procurement of its two main corporate offices underway, GWRC aims to significantly increasing its office electricity efficiency over the next two years. This is a once-in-a-decade opportunity to influence the sustainable performance of buildings, and harness resulting emissions reductions.

TARGETS FOR EMISSIONS REDUCTION

GWRC is committed to managing and reducing its emissions in accordance with the Toitu's carbon reduce programme requirements. **Table 1** below outlines specific, measureable, achievable, realistic, and time constrained (**SMART**) emission reduction goals with targets.

We have committed to becoming carbon-neutral by 2030, and becoming 40% net carbon-neutral by 2025. We will influence the GWRC group of companies' (using proportional equity share influence) to attain the same targets. These goals are in line with the need to keep average global temperature rise below 1.5^{o}C from pre-industrial levels).

The GHG emissions management and reduction plan (EMRP) also meets the requirements of the New Zealand government outlined in the *Climate Change Response (Zero Carbon) Act 2019*. The EMRP is also in line with the purpose of the *Local Government Amendment Act 2019* - for local authorities to play a broad role in promoting social, economic, environmental, and cultural well-being of their communities, taking a sustainable development approach. The EMRP also responds to the United Nations Sustainable Development Goals 17: Action on Climate Change.

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Emissions reduction initiative	Target (%)	2018/19 FY Baseline (tCO_2e)	Target date	Metrics/KPI	Responsibility	Rationale
Electrifying bus fleet	75*	15,545	30 June 2030	Total bus fleet emissions	GM Metlink	Accelerate implementation of electric bus fleet in the region by 2030. * Subject to agreement and financial/planning support from other central and local government authorities, and if mature and appropriate technology is available.
Procurement of energy-efficient office	32	115	30 June 2023	Total CO_2e resulting from all purchased main office energy (electricity and gas)	GM Corporate Services	Reducing energy is best done at building construction. Procurement and construction of two energy efficient office accommodation sites (Wellington and Masterton) are underway. In the Wellington office, we will conduct annual NABERS energy performance assessments over the 15-year lease agreement period. Ongoing incremental energy performance improvements are anticipated.
Reducing stock grazing emissions	90*	8,433	30 June 2030	Absolute reduction in stock head numbers	GM Environment Group	Review the future of grazing leases in regional parks as part of the Parks Network Plan, and options to use this land for native reforestation where appropriate (to earn carbon credits) * Subject to multiple land owners and/or lessees adopting GWRC policy and guidelines
Low-carbon vehicle fleet	80*	1,134	30 November 2030	Absolute reduction in total emissions from GWRC Group fleet vehicles	GM Corporate Services	EV are low emissions vehicles and the region has very high level of renewable energy supply. GWRC already has an EV-First (compulsory first option) Policy in place, and adopted a target of a fully-electric/low-carbon corporate vehicle fleet by 2030. * Subject to mature technology being available

Table 1: Emission reduction targets

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Objective	Actions	Responsibility	Completion date	KPI
Chief Executive's responsibility for emissions targets	Allocate responsibility for corporate carbon emissions and attainment of the targets to the Chief Executive, with an associated performance indicator	Chief Executive	30 June 2020	Chief Executive has a Climate Change KPI.
Carbon Reduction Policy	Introduce a carbon reduction policy for the organisation. GWRC's decisions will consider the impact on carbon target(s), with a strong bias towards the options that will avoid, reduce, or absorb emissions. Carbon Reduction Policy will be reflected in procurement policy	GM Strategy	30 June 2021	Percentage of business cases and projects using policy/emissions reductions resulting from policy base year
Carbon-neutral Group by 2030	Align Council organisations to reduce emissions and become carbon-neutral by 2030		30 June 2022	Council organisations demonstrate consistent EIR and EMRPs with KPIs, stating commitment to becoming carbon-neutral by 2030 in annual reports and other public documentation.
Secure 100% renewable and/or carbon-neutral electricity supplies	Investigate securing renewable electricity supplies, partnerships, and/or direct investment. GWRC is currently exploring the possibility of electricity contract with associated emissions measurement and reduction options	GM Corporate Services	30 June 2021	Total renewable and-or carbon-neutral-purchased electricity per year.
Explore electric vehicle options	Investigate and evaluate options for off-road and high-performance four-wheel-drive electric vehicles	GM Strategy	30 June 2021	Options report and fleet transition roadmap completed
Establish a low-carbon acceleration fund	Use potential liquidity of the free allocation of carbon credits New Zealand [emissions] units (NZUs) GWRC received for its pre-1990 forests to create a low carbon acceleration fund	Treasury	30 June 2020	Fund established, and available
Accelerate reforestation planting in regional parks	Allocate resources to accelerate reforestation planting in regional parks, plan future phases, secure external funding where possible, and develop agreements with the Department of Conservation regarding acquiring carbon credits associated with planting in Queen Elizabeth Park	GM Strategy GM Environment Group	30 June 2030	Additional afforestation

Table 2: Projects to reduce emissions

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SPECIFIC EMISSIONS REDUCTION PROJECTS

Table 3: highlights emission sources that contributed to poor data quality and describes the actions that will be taken to improve the data quality in future inventories.

Table 3: Projects to improve data quality

Emissions source	Actions to improve data quality	Responsibility	Completion date
Flurocarbons	Assess mobile emissions resulting from refrigerants in air conditioning of public transport (buses and rail)	GM Metlink	30 May 2021

The emissions inventory identified various emissions liabilities. **Table 4** details the actions that will be taken to prevent GHG emissions from these potential emissions sources.

Table 4: Projects to prevent emissions and reduce liabilities

Emissions source	Actions to reduce liabilities	Responsibility	Completion date
Air conditioning/refrigeration units	Regular servicing, and prevention of damage to units	Property manager	Ongoing
Fuel storage tanks		Site managers	
Unintended harm/spills	Regular training and accident prevention, incident reporting system	Health and safety	

UNINTENDED ENVIRONMENTAL IMPACTS

Environmental impact	Carbon policy	Carbon-neutral group	Electricity	Reforestation
Resource use				
Electricity consumption				
Fuel consumption				
Water consumption				
Wastewater discharge				
Waste to landfill				
Air, land, and water quality				
Transport congestion				
Biodiversity				
Land use				
Flooding				
Local economy				

Table 5: Environmental impacts

Key:

- Significant positive impact
- Some positive impact
- No change
- Some adverse impact

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KEY PERFORMANCE INDICATORS

KPI	2019
Turnover/Revenue (NZDM)	457.14
Total gross GHG emissions per Turnover/Revenue (NZDM)	93.59
Total mandatory GHG emissions per Turnover/Revenue (NZDM)	17.87

Table 6: Key Performance Indicators

MONITORING AND REPORTING

Greenhouse gases will be monitored annually, and reported publicly in the Annual Report. The Chief Executive's climate-change-related KPI is monitored by the Council, with the Executive Leadership (GMs) responsible for delivering carbon targets and projects to the Chief Executive. Emissions reduction targets and project KPIs are provided in the respective tables in this report.

TABLE 5: GHG INVENTORY RESULTS

	FY-2018/19
Emissions source totals	
Scope 1	3,887.87
Scope 2	3,126.00
Scope 3 Mandatory	1,156.49
Scope 3 Additional	34,611.92
Total gross emissions	42,782.28
Reporting reductions	
Five-year average (tCO_2e)	42,782.28
Five-year average (tCO_2e) (Scopes 1 and 2)	7,013.87
Emissions intensity reductions (base year data, no change)	
Turnover/Revenue (NZDM)	457.14
Emissions intensity (tCO_2e/NZDM)	93.59
Five-year average emissions intensity (tCO_2e/NZDM)	93.59

Table 8 GHG inventory results