

9.4 CLIMATE CHANGE UPDATE REPORT

Information Only - No Decision Required

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| Report To: | Strategy and Policy Committee |
| Meeting Date: | 26 May 2022 |
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| Report Number: | RSPC22-05-4 |

1 Summary

1.1 This report provides:

- a quarterly update on the Tasman Climate Action Plan; and
- climate change updates in brief at the regional, national and international levels.

2 Draft Resolution

That the Strategy and Policy Committee receives the Climate Change Update Report RSPC22-05-4.

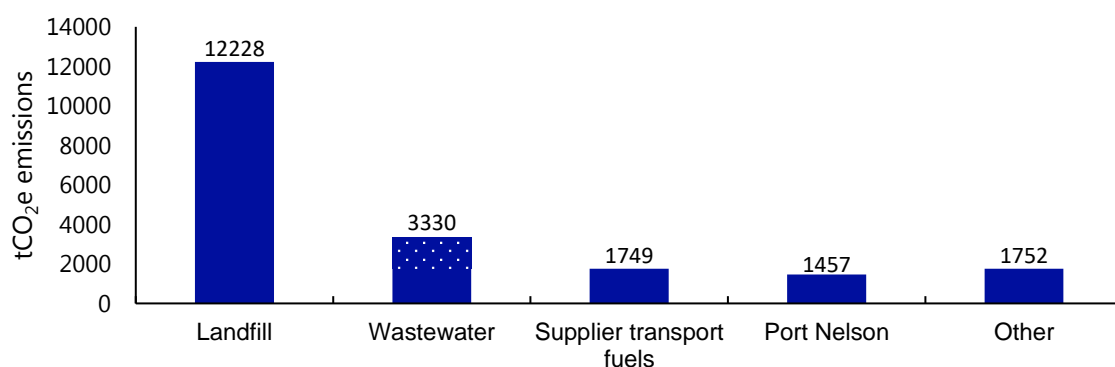
3 Background

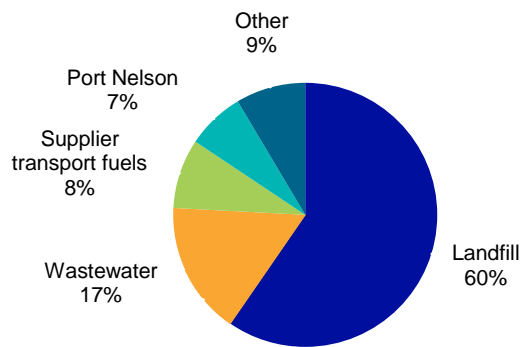
- 3.1 The Tasman Climate Action Plan (Action Plan) was adopted by Council on 12 September 2019 (RCN19-09-11). The Action Plan contains three focus areas and actions under four goals.
- 3.2 An internal working group comprising 12 staff from across Council meets bi-monthly to ensure the Action Plan progresses.
- 3.3 This report summarises highlights from the last quarter (January-March).

4 Update on progress with implementing the Tasman Climate Action Plan

Measuring emissions

- 4.1 During the last quarter, staff focused on measuring greenhouse gas emissions for both Council operations and the Tasman region. Staff continue to collate and analyse data for the latter project.
- 4.2 Staff have prepared a report on the Council's emissions and have arranged for an external auditor to verify our findings. Once the report is verified, we will present it at a future Strategy and Policy Committee meeting. This report will serve as a baseline for future reporting. A summary of the unverified report follows.
- 4.3 Tasman District Council's net emissions for the July 2020–June 2021 period were 20,776 tCO₂e (tonnes of carbon dioxide equivalents). This figure does not include emissions associated with the construction of the Waimea Community Dam, which will be presented separately in this report as it is a one-off project.
- 4.4 Emissions from the Waimea Dam construction were 7,278 tCO₂e and made up 26% of our gross carbon emissions for 2020/2021.
- 4.5 Excluding emissions associated with the dam's construction, Council's primary emissions source this year was landfills by a significant margin. Council's other large emission sources were wastewater treatment plants, supplier transport fuels, and our 50% share of Port Nelson. These sources make up 91.7% of our gross carbon emissions for 2020-21.





4.6 Once the auditor verifies this report, staff will identify and prioritise activities to reduce emissions from Council operations. We will incorporate these actions into the revised Tasman Climate Action Plan.

Energy efficiency initiatives

4.7 Staff analysed the pump operations at various water pump stations and found that we can run the pumps more efficiently at different setpoints. By changing these setpoints, Council now pumps the same volume of water for less energy.

4.8 The commissioning of the new Pomona Road water reservoir has resulted in a more emissions-efficient pumping operation. This result is because greater water volume allows us to target pumping at times of the day when energy demand is low and fewer greenhouse gases are emitted.

4.9 Staff ordered a solar PV array for installation on the roof of the Richmond Library. Staff expect this will be operational within six months. The solar PV array/battery at the Motueka Library is now operational.

Waste reduction, green waste, and composting programmes

4.10 The Second-Hand Sunday events are continuing to run. The next event is on 18 May. At the last event in February, participation was lower than usual due to wet weather.

4.11 On 27 April, staff opened applications for a new Waste Minimisation Projects Grant to support community projects that avoid or reduce waste. This grant is intended to support larger scale projects, with typical funding of \$5000 or greater per application. Applications close on 29 May, and the Community Grants Subcommittee will review these applications in July. Staff have received strong interest in this programme.

4.12 In April, staff launched a new waste minimisation grant for schools, early childhood centres, and community groups. This grant is for small projects, and applications are open year-round. Typical allocation for each grant will be in the vicinity of \$500, however applications of up to \$1,000 will be considered.

4.13 Staff expect these two new grants will contribute to a culture where we create less waste and associated greenhouse gas emissions.

4.14 Throughout May, staff will run a promotion where everyone who purchases a compost bin, bokashi, or worm farm using our \$20 subsidy will go in the draw for an at-home compost tutorial. This promotion is instead of compost workshops, which staff postponed due to Covid-19.

Review and implementation of Nelson Tasman Future Development Strategy

- 4.15 A review of the Nelson Tasman Future Development Strategy (NTFDS) is ongoing and gives effect to the National Policy Statement on Urban Development 2020. This work is in partnership with Nelson City Council (NCC).
- 4.16 The NTFDS plans for how and where growth will occur in the Nelson-Tasman region in the next 30 years. This strategy will inform several activity management plans, particularly for infrastructure servicing.
- 4.17 The NTFDS received 558 written submissions and four hearing days took place in early May. The NTFDS subcommittee will decide on a final version of the strategy to recommend to the joint committee of the Nelson City and Tasman District councils later in the third quarter of 2022.

Coastal Management Project

- 4.18 The Coastal Management project identifies high-level options that will enable our region to adapt to sea-level rise.
- 4.19 Following community engagement on coastal management options in September and October 2021, staff published a [summary community feedback report](#) in mid-April. Staff will use this information to inform choices for adapting to climate change, including costs, benefits, and adverse effects. Through the RMA reform and National Adaptation Plan, central government direction will guide this process.

5 Regional update

Local climate risk assessment project

- 5.1 We are continuing to work with NCC staff to progress plans for a joint local climate risk assessment. Marlborough District Council is also being approached to see if it is interested in working on this project with both councils. The project aims to provide a good overview of the climate change risks for the Tasman District presented in a consistent way and within a single report as a point of reference. The intention is to provide a qualitative description of the District's climate risks in the natural environment, built environment, economic, governance, and human domains.

University research project

- 5.2 The Executive Leadership Team recently approved the involvement of up to four Council staff in a climate change research project undertaken by a Victoria University of Wellington student covering the Nelson/Tasman region.
- 5.3 The student's Masters thesis looks at climate change risks and how an adaptive planning approach can reduce these risks. The student has invited staff from Nelson City Council and Tasman District Council to participate in this research.

Nelson Tasman Climate Forum

- 5.4 The Nelson Tasman Climate Forum's leadership group has been focusing on developing projects relating to actions identified in the Forum's 'Climate Action Book':

| Project Title | Current Status |
|---|----------------|
| Building a Nelson Tasman network aimed at reducing regional greenhouse gas emissions from organic waste | In progress |

| Project Title | Current Status |
|---|--|
| Partnering with others in the Blue Carbon' Core & Restore: Enhancing Estuaries in Te Tau Ihu' project | In progress |
| Training course in community-based social marketing | In progress |
| The Climate Fresk – an Interactive and Educational Game about Climate Change | In progress |
| Local Climate Action Week 4-11 June 2022 | In progress |
| Raising the Nelson Tasman Climate Forum's Profile | In progress |
| Climate Conversations: Outreach Beyond the Comfort Zone | In progress |
| Social marketing campaign | In progress |
| Letter writing campaign about packaging waste | In progress |
| Quantifying carbon sequestration in the region | In progress |
| A-Z directory on how to reduce waste | In progress |
| Sea level rise - 3D display model | In progress |
| Climate Action Book Distribution Project | In progress |
| Earth Emotions Exhibition - NZ PhotoFest | In progress |
| Repair Café (monthly) | In progress |
| Engaging local government on biodiversity and carbon storage overlap | In progress |
| Government Submissions | In progress - ongoing |
| Supporting the protection and restoration of Snowdon's Bush, Brightwater | In progress - ongoing |
| Map of edible trees on public land across the region | On hold |
| Staying Healthy and Connected Workshop | Completed |
| Microforest demonstration | Completed - but potentially ongoing at new locations |
| Climate Action Book Poster | Completed |
| Student Art Expo 2021 | Completed |
| Cawthron Science Prize | Completed |

5.5 One of the events planned for the upcoming local Climate Action Week is a panel with councils, where the Forum will invite Councillors and staff to discuss the actions each council is taking (to be held online on the evening of June 9th).

5.6 The Transport Group of the Forum has largely focused on submissions on Council's Walking and Cycling Strategy and the NCC Parking Strategy, among others.

5.7 The Education Group of the Forum is currently engaged in three school-based projects:

- (a) a student-based version of the [Climate Fresk](#);
- (b) a Climate Change Arts Expo for students at the Refinery Art Space, Nelson; and

- (c) connecting with secondary school science, education, and social science departments on how the Forum may be able to support climate change education across curricula.

Nelson City Council

Dynamic Adaptive Pathways Planning (DAPP) – coastal hazards and lower Maitai River

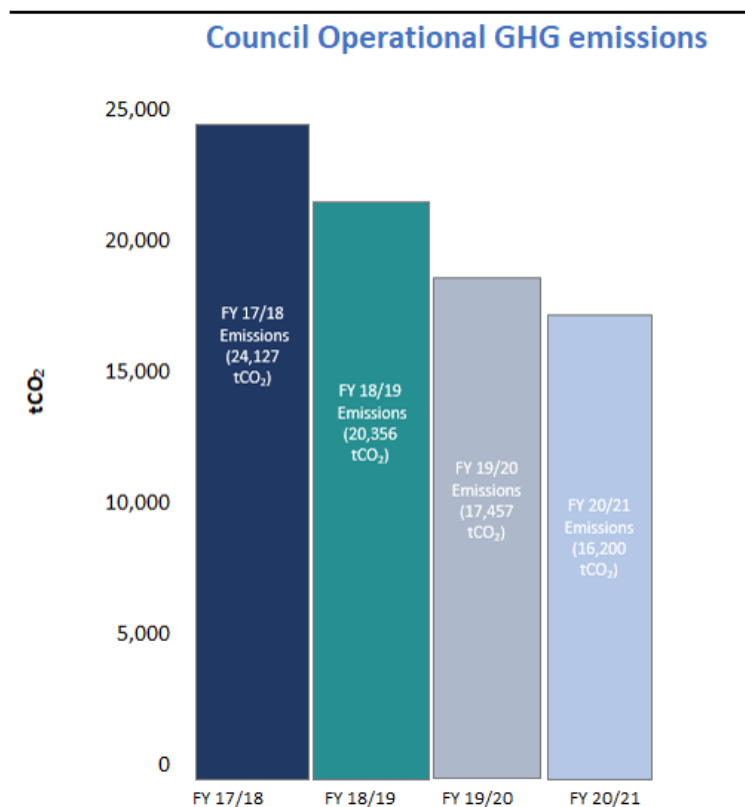
- 5.8 NCC is preparing to engage with the community in June and July 2022 on coastal hazards and lower Maitai River flooding, following the ‘DAPP’ process recommended by the Ministry for the Environment. It aims to achieve the following outcomes from this engagement:
- improved community understanding of the impacts of climate change on the coast and lower Maitai River;
 - identification of Nelson communities’ values in relation to the low-lying coastal and river floodplains; and
 - improved understanding of future opportunities to participate in NCC planning to address climate change impacts.
- 5.9 Feedback received will enable the development of detailed options and assessment of the associated costs before NCC holds further community conversations to decide on its adaptation plan. The plan will need to be agile and dynamic, to take into account the latest science and data as it comes to light.

Iwi carbon footprint

- 5.10 NCC is supporting iwi to develop internal capability to produce their own operational carbon footprints. By measuring GHG emissions, iwi will be able to identify the highest sources of GHG emissions and prioritise initiatives to reduce them. This project will be delivered within a “pay it forward” scheme, where Council will work with one iwi to upskill them in developing a carbon footprint, and then this iwi will share their knowledge with other Te Tau Ihu iwi. Ngāti Apa ki te Rā Tō has confirmed their participation in this collaborative initiative and the project will run from June to December 2022.

NCC carbon footprint audit

- 5.11 NCC has completed the verification of its fourth operational carbon footprint inventory for the financial year 2020/2021. The total greenhouse gas (GHG) emissions for this period is 16,200 tonnes of CO₂, a 33% reduction in comparison to the base year (2017/2018). The highest reduction in emissions was from landfills and the wastewater treatment plant. The NCC [website](#) has been updated to include the latest inventory data.
- 5.12 The graph below represents the GHG emissions estimated for each financial year since 2017/2018. In accordance with ISO 14064-1, the baseline for 2017/2018 was recalculated to take account of methodology and emission factors changes. However, the 2018/2019 and 2019/2020 inventories were calculated using different baseline methodology. Therefore, comparisons between the base year (2017/2018) and 2020/2021 accurately show the actual emissions reductions, but comparisons with 2018/2019 and 2019/2020 should be treated with caution.



6 National update

Draft National Adaptation Plan consultation

- 6.1 On 28 April, the Government released the [draft National Adaptation Plan](#) and a consultation document seeking feedback on the plan. The National Adaptation Plan will set direction on how Aotearoa New Zealand will adapt to the unavoidable impacts of climate change and address key climate change risks up to 2028. It does this by outlining the Government's objectives to address these risks, and the strategies, policies, and proposals New Zealand will take over the next six years to adapt to priority risks from climate change. The consultation document also seeks feedback on proposals for flood insurance and managed retreat policies. The consultation closes on 3 June.
- 6.2 Staff have prepared a draft submission on the Plan, which is with Councillors for comment. The submission deadline is 3 June 2022, meaning we will need to ask for retrospective approval to formally adopt this submission.
- 6.3 The plan will be finalised by Government and released in August 2022.

New data on relative sea-level rise

- 6.4 On 2 May, the 'NZ SeaRise: Te Tai Pari O Aotearoa' programme released location-specific sea level rise projections out to the year 2300 for every 2 km of the coast of Aotearoa New Zealand. These projections can be accessed through a [new online tool](#) that illustrates sea-level rise and vertical land movement (VLM) incorporated under potential climate change scenarios. The tool shows which parts of New Zealand's coastline are gradually moving up (uplift), which are moving down (subsidence), and which are static. The NZ SeaRise data shows that the Tasman District is generally subsiding between 1mm–4mm per year.
- 6.5 This new research suggests that nationally, rising sea levels will impact many locations as soon as 2040, rather than 2060, due to land subsidence being factored in – and our time to

react is effectively being squeezed. Staff understand that these new projections will inform MfE's national adaptation plan and will be used to help develop an update of MfE's 2017 Coastal Hazards and Climate Change Guidance.

- 6.6 Sea level rise is a well-known consequence of our changing climate. Since 2019 we have been working with our Tasman Bay/Te Tai o Aorere and Golden Bay/Mohua communities to work towards long-term adaptive planning for sea level rise and coastal hazards. To date, we have published a coastal hazards map viewer (2019), a coastal risk assessment (2020), and community engagement on high-level coastal management options (2021). This work draws on best practice as set out in MfE's 2017 Coastal Hazards and Climate Change Guidance.
- 6.7 As part of the Council's Coastal Management Project, staff commissioned Beca Ltd in 2019 to provide advice on potential tectonic or seismic uplift and/or subsidence of coastal margins in Tasman. The purpose of this advice was to assist Council in considering the impacts of future sea level rise on the coastal areas of the District, i.e. to determine if we needed to also allow for changes in the land level as well as predicted sea level rise for coastal planning purposes.
- 6.8 The 2019 Beca report concluded that the majority of the District's coastline is subject to slow long-term uplift, with slow subsidence in the eastern part of the Moutere Depression (i.e. the Nelson/Richmond coastline). This differs considerably from the projections presented in the NZ SeaRise data which has essentially identified subsidence along the entire coastline. The Beca report was primarily based on longer-term geological evidence (e.g. landforms, fault rupture history, sense of fault movement - particularly reverse faults due to crustal compression, existence or absence of raised terraces and coastal marine benches). The NZ SeaRise project, in comparison, utilises satellite-based radar altimetry data over a much shorter period (2003 to 2011). It is hoped that as further detail of the NZ SeaRise predictions and the data that it is based on becomes available, a better understanding of the relative sea level rise rates across Tasman's coastline can be achieved. Overall, this new information adds to our understanding of our changing coastal environment as a result of climate change. Staff understand MfE will be providing more guidance on the application of this new data shortly.

Emissions Reduction Plan (ERP)

- 6.9 The Climate Change Response Act 2002 requires the Government to prepare emissions reduction plans setting out how New Zealand will meet emissions budgets. These will act as stepping-stones (or interim targets) toward our 2050 emissions reduction targets.
- 6.10 The Government released its [first ERP](#) on 16 May 2022. The ERP contains strategies, policies and [actions](#) for achieving New Zealand's first emissions budget and contributing to global efforts to limit global temperature rise to 1.5°C above pre-industrial levels. It aims to reduce emissions and outline ways to mitigate the impacts that reducing emissions will have on people, along with targeted policies for specific sectors (transport, energy and industry, building and construction, agriculture, forestry and waste). It also sets the direction for how future emissions budgets will be met.
- 6.11 Climate Change Minister, James Shaw, released the first three emissions budgets on 9 May. The emissions budgets are a sinking lid on emissions.
- 6.12 Cabinet has agreed that the first three emissions budgets will be:
- **Emissions Budget 1 (2022–2025):** 290 megatonnes of carbon dioxide equivalent greenhouse gasses (72.4 megatonnes per year)

- **Emissions Budget 2 (2026–2030):** 305 megatonnes (averages 61 megatonnes per year) [in principle]
- **Emissions Budget 3 (2031–2035):** 240 megatonnes (48 megatonnes per year) [in principle]

- 6.13 The emissions budget 1 average is 72.4 megatonnes per year. This equates to two megatonnes per year less than the five-year average leading up to this point (2017-2021), and 3.1 megatonnes less than projected emissions for 2022 to 2025.
- 6.14 The emissions budget 2 average is 61 megatonnes per year. This equates to an average of 13.4 megatonnes per annum, nearly twenty percent below average annual emissions from 2017 to 2021.
- 6.15 The emissions budget 3 average is 48 megatonnes per year. This equates to an average of 26.4 megatonnes per annum, or about thirty-five percent, less than the average annual emissions from 2017 to 2021.
- 6.16 Rather than setting a target for emissions to reach a certain level in a single year, an emissions budget represents a multi-year target. The Government’s view is that the budget-based approach established through the Zero Carbon Act is better for the climate, as it is not only emissions in a single year that impact climate outcomes.
- 6.17 The emissions budgets announced on 9 May are not the same as New Zealand’s Nationally Determined Contribution (NDC) under the Paris Agreement, which is also managed as a multi-year emissions budget (from 2021 to 2030).
- 6.18 The Zero Carbon Act requires there to be three consecutive emissions budgets (one current and two prospective), in place at any one time. The law requires that these budgets be met through domestic alone.
- 6.19 The Paris Agreement, on the other hand, recognises that while countries need to take action at home, they can also work with other nations to cut emissions. That is why New Zealand’s new NDC goes beyond the domestic emissions budgets that Cabinet has agreed.
- 6.20 The Climate Change Commission will provide updated advice on the second emissions budget in 2024 and the third later in the decade.

ETS - The use of exotic species for permanent forest

- 6.21 In April, staff drafted a submission to the Ministry for Primary Industries on the proposals to amend the Emissions Trading Scheme (ETS) set out in the [discussion document](#): *‘Managing exotic afforestation incentives - A discussion document on proposals to change forestry settings in the New Zealand Emissions Trading Scheme’*. The Council was asked to retrospectively adopt this submission at the 19 May Full Council meeting.

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| <h2>7 International updates of interest</h2> |
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IPCC Sixth Assessment Report

- 7.1 The United Nations Intergovernmental Panel on Climate Change (IPCC) has published its sixth report assessing climate change. This report involved 234 scientists from 66 countries, building on more than 14,000 scientific papers, and consists of three topics: (1) the Physical Science Basis; (2) Impacts, Adaptation, and Vulnerability; and (3) Mitigation. The IPCC will publish a summary report of its findings in September 2022.

- 7.2 The IPCC released the “Impacts, Adaptation, and Vulnerability” section of this report in February 2022 and the “Mitigation of Climate Change” section in April 2022. A summary of their findings on these two topics follows.

Impacts, Adaptation, and Vulnerability

- 7.3 Human-induced climate change has already resulted in more frequent and intense extreme events, like droughts, storms, and wildfires. Across sectors and regions, the most vulnerable people and systems are disproportionately affected.
- 7.4 Climate change has reduced food and water security. Challenges for water management will be exacerbated and particularly challenging for regions with constrained water resources. Climate change has increasingly put pressure on food production, security, and access, especially in vulnerable regions.
- 7.5 Climate change and related extreme events will significantly increase ill health and premature deaths. Heatwaves will continue to increase with additional warming. Climate-sensitive disease risks will increase with warming temperatures. Mental health challenges, including anxiety and stress, are expected to increase, particularly for children, adolescents, the elderly, and those with underlying health conditions.
- 7.6 The vulnerability of ecosystems and people to climate change differs substantially among and within regions. Approximately 3.3 to 3.6 billion people live in contexts that are highly vulnerable to climate change. Current unsustainable development patterns increase exposure to climate hazards. Climate and weather extremes are increasingly driving displacement in small island states.
- 7.7 Near-term actions that limit global warming to close to 1.5°C would substantially reduce losses and damages related to climate change but cannot eliminate them all.
- 7.8 An average of 9% of terrestrial species will likely face extinction at global warming levels of 1.5°C, increasing up to 11% at 2°C, 16% at 3°C, 21% at 4°C, and 26% at 5°C.

Mitigation

- 7.9 The average annual emissions during the 2010-2019 period were higher than any previous decade, although the rate of growth decreased. Global emissions dropped temporarily in early-2020 due to the COVID-19 pandemic but rebounded by the end of the year.
- 7.10 The top 10% of households with the highest emissions contribute 34-45% of all global emissions. The bottom 50% only contribute 13-15% of all global emissions. New Zealand has one of the highest household emission rates per capita globally.
- 7.11 The costs of many low-emission technologies have fallen since 2010. Solar energy costs decreased by 85%, wind energy by 55%, and lithium-ion batteries by 85%. Low-emission technologies have seen rapid uptake. Solar power uptake has increased by 900%, and electric vehicle use has seen a 10,000% growth in the last decade. Tailored policy packages are primarily responsible for this growth.
- 7.12 Without strengthening climate policies beyond those currently in place, global warming will likely result in a median increase of 3.2°C by 2100. Delays in climate action will make it more likely to reach higher temperatures because of a “lock-in” effect. Rapid decarbonisation efforts will be needed to stay within our global carbon budget
- 7.13 To limit warming to 1.5°C, global emissions must peak no later than 2025, emissions must reduce by approximately 45% compared to current levels, and net-zero CO₂ emissions must be reached by the early 2050s. Modelled pathways to limit global warming to 1.5°C or 2°C require immediate and ambitious climate action by governments.

- 7.14 The global economic benefit of limiting warming to 2°C exceeds the cost of mitigation. Mitigation options costing USD\$100 per tonne of CO₂e (carbon dioxide equivalents) or less could reduce global emissions by at least half the 2019 level by 2030.
- 7.15 Several mitigation options, notably solar energy, wind energy, electrification of urban systems, urban green infrastructure, and reduced food waste and loss, are technically viable, are becoming increasingly cost-effective, and are generally supported by the public. The IPCC also advocates for changes in the urban form alongside programmes that encourage changes in consumer behaviour.
- 7.16 The IPCC explicitly references the potential of electric vehicles (EV) to reduce emissions. The costs of electrified vehicles are rapidly decreasing, and EVs have seen dramatic uptake.
- 7.17 Effective and equitable climate governance that builds engagement with civil society actors, political actors, businesses, youth, media, indigenous peoples, and local communities is necessary to influence successful climate policy. International cooperation is a critical enabler for achieving ambitious climate change mitigation goals.

8 Conclusion / Next Steps

- 8.1 Good progress on Tasman initiatives has been made in this quarter. However, the Government's plans and the most recent IPCC report underscore just how critical action to mitigate and adapt to climate change is. There is no room for complacency.
- 8.2 Staff will continue to present quarterly reports on climate change to the Strategy and Policy Committee. Staff will also present a detailed annual progress report on implementing the Tasman Climate Action Plan to the November 2022 Strategy and Policy Committee meeting.
- 8.3 Staff have initiated a review of the Tasman Climate Action Plan and have planned two workshops with Councillors on this topic in June and July 2022.

Attachments

Nil