



26 March 2021

Attn: Submissions Analysis Team
Climate Change Commission
PO Box 24448
Wellington 6142

Via upload at haveyoursay.climatecommission.govt.nz

Dear Sir / Madam,

SUBMISSION ON THE CLIMATE CHANGE COMMISSION'S FIRST PACKAGE OF ADVICE

Queenstown Lakes District Council (QLDC) would like to thank the Commission for the opportunity to present its submission on the first package of advice to government. This submission has been prepared in partnership with QLDC's Climate Reference Group.

QLDC would like to congratulate the Commission on a complex and thought-provoking piece of work. As such, QLDC and its Climate Reference Group are keen to support and inform the Commission throughout this process and into the future. In this spirit, our submission seeks to offer a picture of the barriers local government faces in relation to climate action and offers a number of recommendations for consideration in the Commission's work ongoing.

Whilst the response is reasonably expansive, there are three key challenges for the district that QLDC is keen to share with the Commission:

- ***Spatial Planning*** - effective spatial planning and improved urban form will be essential for emissions reduction in the district.
- ***Electrification*** – significant energy network challenges will need to be overcome to decarbonise extensively.
- ***Tourism*** - the role of the visitor economy and tourism policy in reducing emissions is absent from the advice.

QLDC would like to take the opportunity to be heard on its submission. It should be noted that due to the timeline of the process, this submission will be ratified by full council retrospectively at the next council meeting.

Yours faithfully,



Jim Boulton
Mayor



Mike Theelen
Chief Executive

1.0 Background

- 1.1 The Queenstown Lakes District (QLD) has an average daily population of 50,552 (visitors and residents) and a peak daily population of 102,348¹. The district's residents are highly climate-conscious and passionate about the integrity of the environment, inspiring many to participate in climate action, sustainability and conservation initiatives.
- 1.2 In June 2019 the Council declared a climate and ecological emergency and has since established a Climate Action Plan, focussing on emissions reduction mitigation activities as well as adaptation considerations².
- 1.3 This submission has been prepared by QLDC, in partnership with the members of the Council's Climate Reference Group (CRG), which are listed at Appendix 1. The CRG is helping to set the priorities outlined within QLDC's Climate Action Plan and provide guidance to the Council. QLDC has prepared an Emissions Reduction Roadmap for the district and has developed a Sequestration Study.
- 1.4 The district is experiencing some of the most severe economic impacts from the global pandemic, given its pre-pandemic reliance upon the international visitor economy. The QLDC Recovery Team (stood up as part of the Emergency Operations Centre in response to COVID 19 initially) is focussed upon building back better across three key transitions; transition to a better tourism system, transition to a reliable workforce and transition to a zero waste, net zero emissions future for the district. Many aspects of the Commission's recommendations have the potential to significantly effect the way in which this is achieved.
- 1.5 Reduced emissions are central to the adoption of a regenerative approach to recovery, a mindset advocated by the district's Regenerative Recovery Advisory Group³.

2.0 Introduction

- 2.1 Broadly speaking, QLDC is highly supportive of the direction being taken by the Climate Change Commission (CCC) and looks forward to an ongoing dialogue that will shape and define a just transition to a decarbonised economy.
- 2.2 QLDC strongly supports the advice to pursue the 1.5 °C targets and to limit offshore mitigation. The recommended breakdown of the emissions budget is also considered appropriate.
- 2.3 This submission outlines thematically the barriers to change from a local government perspective and a series of recommendations for the Commission to consider. These barriers and recommendations are summarised in full at Appendix 2.
- 2.4 This submission is divided into three component parts:
 - Part A – Strategic Direction
 - Part B–Key Challenges – Spatial Plan, Electrification, Tourism
 - Part C - Additional Topic Areas – Transport, Agriculture, Forestry and Waste

¹ <https://www.qldc.govt.nz/community/population-and-demand>

² <https://www.qldc.govt.nz/your-council/our-vision-mission/climate-action-plan>

³ <https://www.qldc.govt.nz/recovery/regenerative-recovery-advisory-group>

- 2.5 QLDC also broadly supports the submissions composed by both Local Government New Zealand (LGNZ) and Taituarā on behalf of the local government sector. QLDC also supports position and submission of Zero Waste Network NZ.

Part A – Strategic Direction

3.0 Path to 2035 and Policy Direction

- 3.1 The need for an equitable, inclusive and well-planned climate transition is fully supported. This needs to be viewed with an holistic approach to wellbeing and a true focus on social equity.
- 3.2 QLDC fully supports the approach of ‘locking in net zero’ and the focus placed upon decarbonising sources of long-lived gas emissions.
- 3.3 QLDC supports the five emissions Budget Recommendations within the advice.
- 3.4 QLDC has identified three key challenges that will need to be addressed in the district in light of the advice provided by the CCC. These will be addressed in detail in Part B.
 - 3.4.1 Spatial Planning - effective spatial planning and improved urban form will be essential for emissions reduction in the district.
 - 3.4.2 Electrification – significant energy network challenges will need to be overcome to decarbonise extensively.
 - 3.4.3 Tourism - the role of the visitor economy and tourism policy in reducing emissions is absent from the advice.
- 3.5 QLDC further notes that some of the key policy areas are unevenly addressed, with some areas explored in significant detail, whilst others (notably agriculture, waste and urban form) appearing light in evidence and detail. These policy areas are explored in detail in Part C.

Principles and enabling recommendations are supported

- 3.6 QLDC fully supports the five principles outlined in the report and notes that principle two (decarbonise the economy) and principle six (increase resilience to climate impacts) are particularly pertinent for QLDC as a territorial authority.
- 3.7 QLDC broadly supports the enabling recommendations provided in the advice and acknowledges the need for cross-party support, partnership with iwi and partnership between central and local government. It is essential that Te Tiriti o Waitangi is central to this work in order to provide more equitable outcomes for all New Zealanders.
- 3.8 QLDC notes that enabling recommendation four (partnership between local and central government) and recommendation five (establishing the views of all New Zealanders) are of particular significance for QLDC and its community. QLDC has been working in partnership with central government to deliver a Spatial Plan and this method of working has been highly successful. QLDC has an engaged community that would appreciate more effective input into matters relating to climate change.

Behaviour change needs greater emphasis

- 3.9 QLDC supports the actions to create a multisector strategy, but doesn’t consider the emphasis on behaviour change (necessary action 16) to be sufficient. QLDC’s position is

that effective behaviour change at every level of the system will be essential in supporting technological solutions and giving effect to the Commission's advice in an urgent and timely fashion. There is potentially limited capacity and capability in relation to these skillsets and methodologies within the system currently.

- 3.10 The need for behaviour change approaches is acknowledged at Necessary Action 16, but the recommendation should be expanded to recognise the need for institutional, business, community and household-level change. The advice relating to behaviour change should also be, more ambitious, more creative, more detailed and further reaching than stated in this section. QLDC notes that effective behaviour change should be a proactive, enabling recommendation as opposed to a reactive, necessary action.
- 3.11 Government can provide significant support to the public and private sectors through the incentivisation, regulation and funding of the process of behaviour change. Public Private Partnerships and investment in innovative technologies will play an important role.
- 3.12 Central government will need to demonstrate clear leadership and role model good behaviour in reducing its emissions. It may also need to support other regional and local civic institutions to do the same. For example, central government could provide funding avenues for the development of low emissions civic buildings in regional locations where central government and corporate leadership is less visible.

Barriers to Local Government

B1 – Local government does not currently have high levels of behavioural change management expertise throughout the sector.

Recommendations:

R1 – Advise the Government to work with local authorities to develop a programme of capacity-building for behavioural change management skills in local government.

R2 – Provide advice on the potential for government to regulate for and fund the behaviour change needed to support technological shifts and reduce emissions at pace.

R3 - Develop effective advice on behaviour change in the multi-sectoral strategic approach and make it an enabling recommendation rather than a necessary action.

R4 – Advise central government to seek opportunities to fund and support low emissions civic facilities in regional locations.

4.0 Navigating the System

Local government plays a critical role

- 4.1 The Commission's focus is on the importance of the big picture, but does not address the role of local communities and local economies. However, if small local businesses and communities could be incentivised to change their behaviours and reduce emissions,

significant benefits could be achieved. Local solutions need to be linked to global goals in building a global citizen mindset.

- 4.2 Local government plays a key role in the systems that operate at a local level, having control or influence over many activities that cut across a range of different sectors.
- 4.3 This presents an opportunity in terms of emissions reduction, as local government is well positioned to navigate the complex landscape of networks, interdependencies, linkages, limitations, multipliers and co-benefits that inhabit the local system.
- 4.4 QLDC requests further consideration of the role to be played by local government in the development of place-based emissions reduction policy. Local democracy can help to provide credibility, build trust, knowledge and generate action through local networks.
- 4.5 However, in order to be effective and to ensure consistency across the sector, local government will require enabling frameworks, funding, incentives, regulation, disclosure processes and tools to be provided by central government. This will be a critical success factor in implementing the Commission's advice effectively at a local level.
- 4.6 A consistent approach would be particularly useful in the development of emissions reduction modelling methodologies, carbon accounting practices and greenhouse gas auditing processes. There is currently no consistent set of tools for monitoring and evaluating emissions at a local level.

Working within jurisdictional boundaries

- 4.7 Climate Change does not recognise jurisdictional boundaries. QLDC recognises that the report has fixed national boundaries, but greater consideration should be given to carbon leakage and NZ's role in international supply chains that significantly increase global emissions..
- 4.8 Mitigation solutions should be developed and implemented at the appropriate level, whether within local, regional or national boundaries, to maximise efficiency and effectiveness. It is also essential that any solutions considered by government take into account the specific local geography, ecology and culture of a place.

Systems Change needs national leadership

- 4.9 Whilst local level behaviour will be important to contribute to mitigation initiatives and local adaptation plans, broader systems change will be far more complex and a partnership approach with central government will be essential.
- 4.10 Local government will experience a series of major reforms over the next three years that could significantly change the way that local authorities operate. Three waters reform and review of the Resource Management Act will have major implications for urban growth, service delivery and planning. It will be essential that these reforms prioritise and enable emissions reduction by local government. The need for legislative and policy alignment in this regard is explored in Part B.

4.11 Taituarā's 'Navigating Critical 21st Century Transitions'⁴ is broadly consistent with the approach to transition taken in the draft advice. This demonstrates the linkages between the transition to a climate resilient and low emissions Aotearoa and other enabling transitions needed. The commission could strengthen its emphasis on the cross-cutting nature of many of the challenges and encourage the local government sector to engage with this model more explicitly.

Barriers for Local Government:

B2 – Whilst local government is well-positioned to navigate the local system, consistent tools, frameworks and resources to guide emissions reduction initiatives, monitoring and reporting are lacking.

B3 – Territorial authorities focus within their boundaries, which may not always be the most efficient or effective approach, and yet collaboration can be challenging. In addition, activity is highly dependent upon budgets, capabilities, capacity, priorities and political will.

B4 – The sector will be navigating major reforms (Three Waters and RMA) whilst focussing on emissions reduction approaches.

Recommendations:

R5 - Advise central government to provide a suite of frameworks, tools, incentives and resources to develop emissions reduction initiatives and monitoring.

R6 – Give greater consideration in the advice of carbon leakage and NZ's role in international supply chains that significantly increase global emissions.

R7 - The Commission's advice should emphasise the challenges and opportunities that are inherent in the complexity of the system so they may be overcome and leveraged (respectively). The advice should also reference the Critical Transitions work of Taituarā.

⁴ <https://taituara.org.nz/CriticalTransitions>.

Part B – The District’s Key Challenges

5.0 Summary

5.1 Whilst QLDC has taken this opportunity to outline its position in relation to a range of issues in the report, there are three key challenges for the district:

- **Spatial Planning** - effective spatial planning and improved urban form will be essential for emissions reduction in the district.
- **Electrification** – significant energy network challenges will need to be overcome to decarbonise extensively.
- **Tourism** - the role of the visitor economy and tourism policy in reducing emissions is absent from the advice.

6.0 Effective spatial planning and improved urban form will be essential for emissions reduction

6.1 QLDC supports some of the actions proposed in relation to land use and urban form, but the approach is generally considered to be insubstantial. The focus of land-use planning has been primarily on agriculture and forestry, with insufficient focus on urban development.

6.2 Necessary action ten seeks to better understand the relationship between emissions, transport, land use, infrastructure and urban form but stops short of outlining a mechanism for doing that well. Spatial planning could be an effective tool in building that understanding, but consistent and co-ordinated approaches will be needed to embed best practice across the country. Necessary action ten needs to explore the potential for spatial planning in more detail.

6.3 QLDC has been working in partnership with central government for the past 18 months to develop a spatial plan⁵. It has been an extremely valuable process that has taken an holistic approach to the relationship between urban form and community wellbeing. The spatial plan is based upon the three principles of wellbeing, resilience and sustainability and aims to ‘whaiora’ or ‘grow well’.

6.4 Key outcomes of the QLDC spatial plan are;

- Consolidated growth and more housing choice,
- Public transport, walking and cycling are everyone’s first choice
- A sustainable tourism system
- Well-designed neighbourhoods that provide for everyday needs
- A diverse economy where everyone can thrive

6.5 Spatial planning can drive the intensification of urban areas, encouraging higher density living and mixed land use that drives mode shift. It can also reduce the emissions associated with infrastructure provision. If afforded the appropriate status and powers, spatial planning could be used to restrict types of development in specific locations. The implications of this for emissions reduction, should be considered in detail during the RMA reforms.

⁵ <https://letstalk.qldc.govt.nz/49239/widgets/266124/documents/197292>

- 6.6 The way in which the district grows in future will have huge implications for the ability of its communities to reduce emissions. The relationship between urban form, transport and emissions reduction behaviour change is particularly pronounced. If the district isn't designed to have 10-15 minute neighbourhoods, it will be nearly impossible to achieve the mode shift from private vehicles to public or active transport.
- 6.7 Public transport delivery is highly fragmented across central, regional and local government and is generally improved only if demand can be demonstrated. The responsibility for effective delivery needs to be streamlined and opportunities to demonstrate leadership in the provision of strategic public transport developed proactively – 'build it and they will come'. Spatial planning can help to build a case for a progressive approach.
- 6.8 Consolidated growth and urban forms can create energy efficiency opportunities, through the development of distributed heating networks and more efficient service delivery. QLDC is seeking to achieve this at its Lakeview development⁶.
- 6.9 The Commission's advice needs to provide more detailed recommendations that explore the relationship between urban form and transport mode shift. Targets for mode shift and behaviour change would be useful.
- 6.10 It's also important to note that the small developer community in the district is not always able to secure funding from major lenders for projects of this nature. Central government needs to incentivise lenders to fund progressive development ideas that both align with spatial planning and reduce emissions.

Legislative and policy alignment is needed, accompanied by clear tools and guidance

- 6.11 The RMA reform process has signalled that a Spatial Planning Act is likely to form part of the future of urban planning. It will require clear legislation, guidance, training and tools if it is to be implemented effectively and emissions reduction needs to be at the centre of the approach, aligned with the commission's advice.
- 6.12 QLDC has been working to achieve emissions reduction in its spatial plan project, but this could be significantly strengthened by legislative and central government support. Necessary action ten needs to explore this in more detail.
- 6.13 Greater guidance is required from central government in relation to the delivery of urban development that encourages emissions reduction and promotes community wellbeing. In addition to the RMA reforms, the Building Act may also need to be reviewed in order to spark innovation and incentivise lower-emissions practices and technologies. It will be vital to change the building and resource approvals system to prevent continuation of the status quo.
- 6.14 Three Waters Reform legislation must be designed to ensure the proposed new water entities and local government can operate efficiently together to achieve emissions reductions, rather than focussing purely on maximising the cost efficiency of delivery. Necessary action 15 (part c) discusses the implications of RMA reform but does not include the challenges and opportunities associated with Three Waters Reform.

⁶ <https://www.qldc.govt.nz/your-council/major-projects/lakeview-development>

- 6.15 This body of work will also need to align with MBIE’s ‘Building for Change’ programme and the National Policy Statement for Urban Development (amongst others). Necessary Action Nine needs to be far more extensive and expansive in its approach.

Climate-conscious homes need to be affordable

- 6.16 Housing affordability is a significant issue for the district (SOURCE) and currently, the cost of buying or building a low-emissions / low impact home is high. This exacerbates inequality and access to the housing market, both of which challenge principle five and Necessary Action One of the Commission’s advice. Both of these components emphasise the importance of transition to a low-emissions future in an equitable and inclusive way.

- 6.17 The Commission could explore the affordability issue in more detail, suggesting mechanisms that could potentially bridge this gap:

- 6.17.1 Incentivisation of the market to deliver different housing typologies i.e. higher density, smaller homes or innovative co-housing schemes
- 6.17.2 Regulation of housing quality, and size, through the District Plan .e.g. a more permissive regime for low impact / passive homes
- 6.17.3 Amendment of the Building Act to require and encourage low impact / passive design
- 6.17.4 Mechanisms to move towards lower embodied carbon in construction materials, avoid construction waste and increase circularity.

Barriers for Local Government:

B5 – QLDC has partnered effectively with central government to develop a spatial plan, but there is currently no legislative framework and toolkit available to ensure consistency of approach.

B6 – Legal frameworks have previously discouraged co-ordinated spatial planning in favour of effects-management.

B7 – RMA and Building Act reform is required to make necessary changes to the planning system which will enable and incentivise emissions reduction

B8 - Public transport delivery is highly fragmented across central, regional and local government and is generally improved only if demand can be demonstrated.

B9 – Demonstrating leadership through the development of low-emissions facilities can be challenging for local government, due to rates implications and affordability for the community.

Recommendations:

R8 - Add spatial planning as a component within Necessary Action Ten (urban form).

R9 - Expand Necessary Action Nine (building efficiency) to incentivise new technologies and innovation.

R10 – Advise government to ensure that the Spatial Planning Act empowers local government to develop and implement spatial plans that focus upon emissions reduction.

R11 – Advise central government to incentivise lenders to fund high density living developments when aligned with the district’s spatial plan.

R12 - Give greater consideration in the advice to reform of the public transport model at a national level, streamlining responsibilities and enabling a progressive funding model.

R13 – Encourage central government to set national and local targets for transport mode shift that are based on an understanding of the capacity of the grid and the current and future demand for electricity across all sector.

R14 - Add three waters reform and local government reforms need to Necessary Action 15 (which addresses the need for alignment with RMA reform) to ensure changes are aligned with the objectives, tools and processes needed to reduce emissions.

R15 – Advise central government to ensure all RMA reforms align with the commission’s advice and require emissions reduction.

R16 – Advise central government to amend the Building Act to enable the application of higher standards in construction, reducing emissions and assessing whole-of-life emissions costs.

R17 – Within the advice, explore creative opportunities for central government to demonstrate leadership and innovation in relation to urban form and centrally funded civic buildings.

7.0 Electrification of the district is challenging, given significant energy network challenges

- 7.1 In principle, QLDC supports the necessary actions relating to increasing renewable energy supply (Time Critical Necessary Action Three and Necessary Action Five), the reduction of emissions from process heat (Necessary Action Seven) and the reduction of emissions from industrial processes (Necessary Action Eight).
- 7.2 However, for the district to electrify further, the vulnerabilities of the electricity supply will need to be addressed. Therefore Necessary Action Six will be critical for QLDC, in scaling up the provisions of low emission energy sources that present an alternative to the current model.
- 7.3 In this section QLDC outlines the challenges further electrification will pose for the district, in order to provide insight to a complex and unique situation. QLDC fully supports this policy direction and hopes this provides impetus to resolve a significant problem, ensuring the district can take full advantage of low emissions electricity, without compromising resilience.
- 7.4 Prior to the pandemic and the CCC's report, the district acknowledged the need to transform the energy system for the following reasons:
- Electrical capacity in the district is limited
 - Resilience of supply is low
 - Heating affordability is a critical issue
 - The transition from natural gas to lower emissions solutions will be a necessary, but difficult change for the district over timeframes posed
 - The CCC's recommendations may not be affordable without significant network investment
- 7.5 In aggregate, these challenges compromise the district's ability to be resilient, affordable and able to meet its emissions reduction aspirations.
- 7.6 Furthermore, these challenges erode the district's ability to provide a reliable, modern economic infrastructure. In the competition for highly mobile international investments, the electricity supply presents a risk. This risk has significant implications for the district's ability to diversify its industry and attract new investments.
- 7.7 QLDC believes that the district's unique energy context presents an imminent need and opportunity to transform in partnership with government.
- 7.8 Both Queenstown and Wanaka will face significant, if slightly differently paced challenges in relation to electrification due to the status of the current network.

Electrical Capacity in the district is limited

- 7.9 The line servicing Queenstown is nearing current capacity⁷, with a number of operational and other enhancement solutions either underway or in the planning phase with Transpower, Aurora and Powernet. Whilst this may provide additional capacity in the

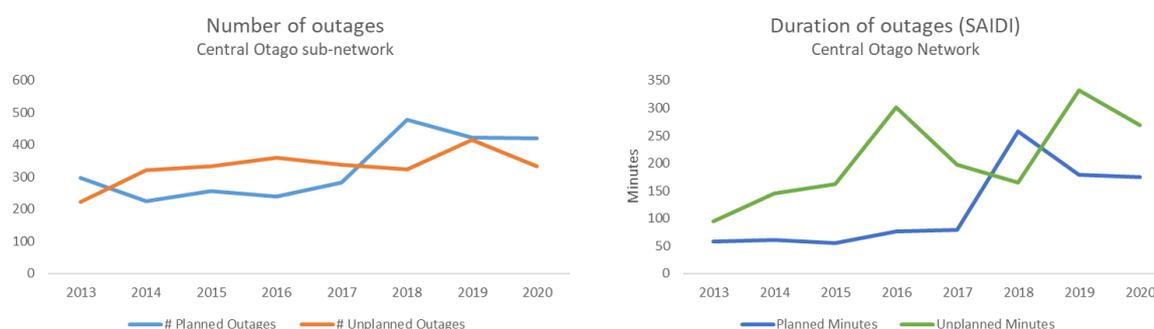
⁷Transpower's 2020 Transmission Planning Report, section 19.4.2.4, page 303-4. "Peak load at Frankton is forecast to exceed the n-1 winter thermal capacity of the 110kV Cromwell-Frankton circuits from 2021"
<https://www.transpower.co.nz/sites/default/files/publications/resources/TPR%202020.pdf>

short – medium term, it does not address the resilience of the line and the affordability of the product long term.

Resilience of supply is low

- 7.10 The current network lacks resilience, with one spur line providing power through the Kawarau Gorge to Queenstown (Transpower) and two single lines from Cromwell to Wanaka (Aurora). Queenstown is one of the largest population and economic centres served by a single spur line.
- 7.11 The risks of a full power outage are significant, whether due to a weather-related or seismic event. When these occur at the height of winter, alternative sources of fuel are essential.
- 7.12 Residents are familiar with mid-winter power outages⁸, and understand the importance of non-electrical heat sources. The removal of gas heating will reduce the current resilience of the communities here, especially as wood fire usage is limited by air quality regulations.
- 7.13 Due to Aurora’s historic under-investment in the district’s network, the communities are experiencing increased costs and levels of unplanned outages. This is addressed in full on the Commerce Commission’s website⁹, but Aurora notes that this level of unplanned outages are likely to continue for five years¹⁰.

Figure X – Increasing number and duration of outages on Central Otago sub-network
 (Source: Aurora Annual Information Disclosures to Commerce Commission)¹¹



- 7.14 Aurora, PowerNet and Transpower are considering a range of investment options to improve this low level of resilience. However, investment in the Transpower spur line alone will not improve resilience. Therefore the group is exploring a combination of

⁸ During a significant snow event on 17/18 September 2018, Queenstown suffered a total loss of supply that lasted 20 minutes, due to a failure on Transpower’s lines. The same weather event caused longer interruptions of supply to ~4,500 customers on Aurora’s network, some of which experienced outages lasting a number of days due to the hazardous conditions.

⁹ <https://comcom.govt.nz/regulated-industries/electricity-lines/projects/our-assessment-of-aurora-energys-investment-plan>

¹⁰ Aurora Asset Management Plan 2020, p52: “Reversing this trend can be expected to take some years, as there is likely to be a lag between implementing our investment plans and observing the results. In this context, stabilising current levels of performance is itself a considerable challenge for us during the CPP Period”

¹¹ Aurora has exceeded its regulatory reliability thresholds for the last six regulatory period. Aurora’s Asset Management Plan 2020, page 51.

smarter distribution investment¹² and the use of local generation and storage (distributed energy resources, or DER¹³). These investments may be significant, and will have to be met by the district's businesses and households.

- 7.15 The district is also seismically active and the impacts of a rupture of any number of local or regional fault lines would likely bring the transmission line down in tough to access mountain locations such as the Nevis Bluff¹⁴. This outage could last at least a number of days¹⁵, and probably longer in an island-wide earthquake scenario such as AF8. More worrying is that this event could conceivably occur in winter when households are under the highest level of temperature "stress"¹⁶.
- 7.16 The Commission's advice will inevitably accelerate the need for this investment and have a consequential impact on affordability.
- 7.17 QLDC is keen to work with the Commission as a case study (which is not related to dry year-risk¹⁷) where the "electrification of everything" will, without smart investment and innovation, reduce resilience.

Heating affordability is a critical issue.

- 7.18 Electricity is the main source of heating for the district, followed by wood and then gas. There are low levels of reticulation for gas in the district and bottled gas is expensive¹⁸.
- 7.19 The cold alpine environment in the district brings issues of energy poverty into stark relief, with 14% of the district claiming they are not able to heat their home adequately, largely due to unaffordability¹⁹.
- 7.20 The Commission's emissions reduction modelling requires significant electrification of heating and transport. This binds the community and the economy to the electricity

¹² By interconnecting disparate parts of the district, thus reducing the reliance of the two main population centres on a single line

¹³ Aurora's agreement with SolarZero in the Upper Clutha is an example of the possibilities here - https://www.thenews.co.nz/digital-edition/?edition=NWW_2021_02_18&pub=nww

¹⁴ . The potential impacts of an Alpine Fault rupture (~1-in-300 years) on the transmission system have been investigated at a high level (see "Safer South Island Alpine Fault Earthquake Response Framework", Emergency Management Southland, p57), but the damage sustained from a rupture of the Cardrona-Nevis (1-in-1,000 year and Moonlight (1-in-500 year) fault is likely to be substantially higher than AF8.

¹⁵ Private correspondence with Transpower.

¹⁶ The recent events in Texas offer a worrying scenario not observed in Christchurch due to the timing of the earthquake, and the resilience of the power system.

¹⁷ The CCC's management options seem largely tied to national hydro risk, rather than local network resilience issues – see p90

¹⁸ According to 2018 census, gas is stated as a "main type of heating" in 18% of households across the district (26,000 households). In some areas, such as Jacks Point, Lake Hayes Estate, Queenstown East and Wanaka Central, this gets higher than 30%.

¹⁹ In our 2020 Quality of Life Survey, 14% of respondents stated that they were either unable to heat their home, or only sometimes able to heat their home. This has been reasonably consistent over the past 3 years of surveys. The main reasons for not being able to heat their homes were affordability (74%), or poor glazing/insulation (50%) The households who are unable to heat their home are typically Maori (13% unable to heat their home) or on a visa (18%), and live in Queenstown Central (10%).

supply further, making the implications of widespread power outages increasingly serious²⁰.

- 7.21 The Queenstown Lakes district, along with Central Otago and Dunedin, is facing a substantial affordability challenge as a result of Aurora's Customised Price-quality Path. Queenstown and Wanaka will face \$650 per annum increases over the next 3 years²¹.
- 7.22 If the Commission's advice accelerates transmission and distribution investment in the district, the impact of this on household electricity bill is likely to be far more substantial than the consultation document infers²².
- 7.23 Suggesting insulation, purchasing of LED lightbulbs, or switching to heatpumps to a group of households that cite affordability as a challenge is not equitable, without offering some financial assistance.
- 7.24 On this, the CCC claims that "*The Government's Warmer Kiwi Homes programme continues to provide funding to those on low incomes who own their own home to install insulation or more efficient heating*"²³. This assistance is only available to Community Services Card holders, or low-income households who live in Deprivation Index decile 8, 9 and 10. At the time of the last Census, there were only 160 people living in the two statistical areas which fell into this Deprivation category in the district²⁴.
- 7.25 This contrasts with the result from the QLDC 2020 Quality of Life Survey cited above, suggesting 14% of the district (est. 6,000 people) are not always able to heat their homes – primarily due to affordability, but also due to lack of double glazing (50% of the reasons selected) or insulation (45% of the reasons selected)²⁵.
- 7.26 Given the issues concerning the affordability of electrification, QLDC requests that the Commission urge government to consider changing the criteria for the Warmer Kiwi Homes environment to better meet the needs of low-income households in a cold alpine environment (climate zone three).
- 7.27 QLDC further notes that the current Accommodation Supplement boundaries need full review as they are no longer fit for purpose in a high growth environment. The current boundaries present create inequities that exacerbate the issues raised above.

²⁰ Indeed we note that one of the 8 key messages from Business NZ's BEC2060 energy scenarios project was that "*Careful investment in the resilience of our electricity system is required to ensure the wider economic reach of electricity is not compromised by the very problem it is trying to fix. Climate change will bring a stormier, windier future.*" Page 4 of "New Zealand Energy Scenarios: Navigating our flight path to 2060", BEC2060 Report, downloaded from [BEC2060 Energy Scenarios](#)

²¹ https://comcom.govt.nz/__data/assets/pdf_file/0015/228021/Consumer-summary-paper-12-November-2020.pdf

²² Page 82: "Household electricity bills..." This adequately captures the *mechanics* of how regional pricing works, and what it reflects, but ignores any impact of the Commission's proposed policies, which in some cases will be highly location-specific. We accept that this would require modelling at a much higher resolution than the CCC has attempted thus far, but the fact that it is more difficult should not obscure the fact that it is absolutely necessary to understand the distributional impacts. This seems important as the CCC itself states that the transition needs to "[prioritise] support to those most adversely impacted and least able to adjust" (page 80).

²³ p83

²⁴ QLDC is unsure as to how many in the district hold Community Services Cards.

²⁵ <https://www.qldc.govt.nz/community/community-research#quality-of-life>

The transition from natural gas to lower emissions solutions will be a necessary, but difficult change for the district

- 7.28 The Commission highlights that approximately 5,000 households in the district currently use gas as a main form of heating and will therefore experience an increase in gas bills of \$150/year by 2035, if they have not taken steps to eliminate their need for gas as a fuel²⁶.
- 7.29 QLDC supports the Commission's recommendation for government assistance to low income households in transitioning from gas to electricity. This should be based upon a locally-relevant definition of need, which reflects upon affordability thresholds in the district.
- 7.30 The Commission also comments that *"there are a number of small businesses that currently rely on natural gas. For example, restaurants, cafes and bars often use natural gas for cooking. These businesses will need to move away from natural gas to lower emissions solutions."*²⁷ Given the dominance of tourism in Queenstown, we expect that, in addition to households, there will be a significant impact for the many thousands of businesses – many of them small businesses - in the local hospitality sector. These businesses collectively employ 20% of the district's workforce²⁸.

The CCC's recommendations may not be affordable without significant network investment

- 7.31 The Commission has not focussed on how the proposed policies may affect different regions and districts in different ways. While the Commission notes the vagaries of regional energy pricing²⁹, and lightly touches on the effect of climate on demand³⁰, QLDC believes that the Commission will find that there will be highly location-specific complexities which will make transitioning to low-emissions local economies that much harder for communities to manage alone.
- 7.32 The advice posits that *"most households would see a reduction³¹"* in energy bills. The Commission also acknowledges the role that technology and efficiency plays in managing electricity bills, noting that *"reducing demand at peak times helps the entire energy system as there is less need to upgrade electricity lines, avoiding potential additional costs for households. This would require both the adoption of technologies for demand response, and innovative business and pricing models.....combined with smart charging technologies."*³² QLDC agrees with this position.
- 7.33 However, as outlined above, the Commission's proposed policies may have the direct effect of increasing demand and thus accelerating the need for network upgrades in places like the Queenstown Lakes District. These investments could be hundreds of millions of dollars, all of which would be charged to the the district's communities. The urgent acceleration of behaviour changes initiatives and technologies will be required, in order mitigate the impact of such charges on the wellbeing of our communities.

²⁶ Climate Change Commission Consultation Paper, p92

²⁷ Climate Change Commission Consultation Paper, p92

²⁸ Infometrics 2019 Annual Economic Profile, which shows that 6,502 of the district's 30,008 strong workforce are employed in the "accommodation and food services" sector.

²⁹ Climate Change Commission Consultation Paper, p82

³⁰ *ibid*

³¹ Climate Change Commission Consultation Paper, p81

³² Climate Change Commission Consultation Paper, p83

7.34 The Commission’s proposed policies eliminating gas for heating and accelerating the uptake of electric vehicles (EVs), reinforces QLDC’s policy direction. However, the Commission’s advice increase the speed with which the district will have to move, probably beyond the ability of it to do so without assistance from Government. As such, QLDC seeks an audience with the Commission, and wider government, to discuss how to partner in the transformation of the district towards a “thriving, productive and climate-resilient economy³³”.

Barriers for Local Government:

B10 – The electricity network in the district is nearing its capacity and has suffered from significant under-investment over many years. As such, the district is challenged in terms of the resilience of the network, the affordability of electricity and the ability to electrify extensively.

B11 – The electricity system does not provide a comprehensive forum for community voice and redress. Therefore QLDC is obliged to address this unique challenge and navigate the system without precedent or guidance.

B12 – Despite supporting the transition away from gas in principle, QLDC needs to balance the resilience of a community that needs alternative power sources during outages and civil defence emergencies that compromise electricity supply.

B13 - The Commission’s proposed policies – particularly around the elimination of gas as a heating fuel, and acceleration of the uptake of EVs – reinforce the direction QLDC is heading in. However, these policy directions increase the speed with which the district has to move, probably beyond its ability to do so without assistance from central government.

Recommendations:

R18 – Give greater consideration within the advice to highly location-specific complexities which will make transitioning to low-emissions local economies that much harder for communities to manage alone. Queenstown Lakes District can be used as an example of where the “electrification of everything” will, without smart investment and innovation, reduce resilience.

R19 – Meet with QLDC and central government agencies to discuss how to partner effectively in relation to the energy challenge.

R20 – Recommend central government review of the conditions of the Warmer Kiwi Homes initiative and the Accommodation Supplement, to assess whether these interventions the needs of low income families in a cold alpine environment.

³³ Climate Change Commission Consultation Paper, p80

8.0 Tourism and Tourism Policy are absent from the advice

A mature, national conversation is required about the future of tourism

- 8.1 Tourism and the international visitor economy plays an important role in the emissions profile of New Zealand. The Queenstown Lakes District is an important contributor to what was (pre-COVID 19) the country's largest export industry. It's important that in planning the future direction of the tourism system, the externalities of the unavoidably high levels of air travel are taken into account. At a national level, a mature and reasoned conversation is required to fully understand the whole of life cost of visitors, with regard to both emissions and economic inputs.
- 8.2 The Commission's advice needs to address the recent reports from the Parliamentary Commissioner for the Environment and seek to navigate an effective, respectful path forward. Tourism has made a considerable contribution to the national economy for a number of years and in the interests of enduring change, progress should be made in a collaborative fashion.
- 8.3 Tourism is currently central to the economic wellbeing of the majority of residents in the Queenstown Lakes District³⁴. Work is underway to diversify the economy and to focus on a destination management approach that works toward a better form of tourism. However, these initiatives will take several years to come to fruition, requiring a regenerative mindset and a whole of system approach throughout.
- 8.4 Manaakitaka* and kaitiakitaka*³⁵ run deeply in the tourism industry and many are taking significant steps within their spheres of influence to effect positive and meaningful change. However, most of the businesses are small to medium enterprises, facing economic survival challenges through COVID 19. Their ability to prioritise emissions reduction is highly variable and further support from government will be needed.

New Zealand needs to attract values-driven visitors and capture better data

- 8.5 The landscapes and environment, of outstanding natural beauty, of the Queenstown Lakes District attract a steady stream of visitors, providing a daily reminder of how essential the environment is to the tourism product offering. Prior to COVID 19, the average day population of the district was 67,129 people, of which 61% were residents and 39% were visitors. Over peak periods, the visitor numbers could swell the peak day population to 123, 249³⁶.
- 8.6 New Zealand is marketed as a great place for independent travel and its Freedom Camping legislation supports this approach. A review of visitor attraction is required to ensure values-driven visitors are attracted effectively and served by products that reduce their carbon footprint as far as possible.
- 8.7 It's essential for the district to understand the impact of visitors on emission-reductions initiatives and to better understand how international visitor emissions can be mitigated at a national, regional and local level. Central government could play an important role in the provision of consistent, district-level data.

³⁴ 77% of people work in tourism, accommodation and hospitality.

<https://ecoprofile.infometrics.co.nz/queenstown-lakes%2bdistrict/Tourism/TourismEmployment>

³⁵ Manaakitanga and kaitiakitanga in the local Kāi Tahu dialect.

³⁶ <https://www.qldc.govt.nz/your-council/council-documents/annual-plans>

International visitor transport should be orchestrated at a national level

- 8.8 A significant challenge for local government is a lack of ability to control or influence visitor numbers and flow.
- 8.9 International visitor transport should be orchestrated at a national level. This would enable central government to deploy strategic nudges and behavioural economics to influence change, smoothing peaks and troughs whilst understanding threshold volumes.
- 8.10 Whilst emissions attribution becomes complex in this space, it is clear that increased international visitors to New Zealand typically result in increased international visitors to the Queenstown Lakes District. The proposal for a new international airport at Tarras may result in a significant increase in international visitor road transport to the district and all of the associated emissions.

Barriers for Local Government:

B14 – It is extremely difficult for local government to control or influence visitor numbers and flow.

B15 – Whilst QLDC has worked effectively to understand visitor numbers for the district, this has required development of a specific and detailed approach. Local government (and the wider industry) lack easily accessible, comprehensive, timely data about visitor flows and numbers at a local level.

B16 – Diversification initiatives and Destination Management Plans take a period of time to come to fruition.

Recommendations:

R21 – Specifically address the transition to a better, more regenerative form of tourism within the advice, exploring ways to reduce the emissions of the tourism system.

R22 – Identify a national-level approach within the advice for moving dialogue around the future of tourism forward in a mature, respectful way.

R23 – Advise central government to make consistent, reliable data systematically available to local government at a district level to enable effective decision making in relation to emissions reduction.

R24 – Advise central government to review destination marketing approaches and support legislation to attract values-driven visitors and develop low-emission tourism products.

R25 – Advise central government to orchestrate international visitor transport at a national level, strategically influencing it to smooth visitor flow and numbers in order to potentially limit the number of inbound international tourists

Part C – Additional Matters

This section will address transport, agriculture, forestry, conservation land, waste and other points.

9.0 Transport

- 9.1 QLDC fully agrees with Necessary Action Two – develop an integrated national transport network to reduce travel by private vehicles and increase walking, cycling, public and shared transport. Again, spatial planning would help to unlock the potential for this to occur, but the constraints of the electricity network in the district will significantly effect the potential for EV transition.
- 9.2 Based upon the emissions audit undertaken, transport contributes the majority of emissions to the district’s profile³⁷. It is a high priority for the district and as such three key themes have been identified for the commission to reflect on:
- Transition from internal combustion engine (ICE) to EV is a short-term solution - the personal private vehicle paradigm needs to be shifted
 - Full transformation of public and active transport networks is required.
 - Freight and haulage innovation will be essential

Transition from ICE to EV is a short-term solution – the personal private vehicle paradigm needs to be shifted

- 9.3 QLDC only partially supports Time Critical Necessary Action Two and Necessary Action Three (accelerate light electric vehicle uptake), due to the electrification issues outlined in section seven. Significant improvements to the electricity network in the district are required if full EV transition is envisaged³⁸. Emerging solutions may improve capacity issues, with new innovation in photo voltaic roof tiles and car paint, but the technology is currently very new.
- 9.4 QLDC has recently transitioned its fleet to EVs and supports the positive reduction in emissions this can achieve, but does question its desirability as a fundamental system change. Whilst emissions are reduced, it fails to tackle the personal transport paradigm that exists across New Zealand.
- 9.5 Reliance on transition to personal EVs may reduce national emissions, but is an imperfect solution as it does not encourage mode shift toward public and active transport. The lack

³⁷ Greenhouse Gas Inventory, Tonkin & Taylor, 2020 (available here: <https://www.qldc.govt.nz/your-council/our-vision-mission/climate-action-plan>)

³⁸ Emissions Reduction Roadmap as source: “Under the High Change (WB2) pathway, if all light passenger vehicles and light commercial vehicles are battery electric by 2050 then approximately 280 GWh/year of electricity would be required to charge these vehicles. For comparison, Queenstown used 261 GWh of electricity in 2019 with a control period peak demand of around 70MW. 280 GWh/year for If all electric vehicles in Queenstown in 2050 charged at exactly the same time, it would could equate to 70 MW of additional peak instantaneous demand. (133 MW in total), depending on when the vehicles are charged.” However, international evidence suggests that, due to diversity in the times that people choose to charge their vehicles, the likely peak charging load on the system will be between 20% and 40% of this total, i.e., between 14MW and 28MW, a 20%-40% increase on current peak demand. See <https://data.nrel.gov/submissions/69> and ICF (2016), “Overview of the Electric Vehicle market and the potential of charge points for demand response”. We are grateful for Vector’s assistance in bringing this literature to our attention.”

of a high-quality, low-emissions, integrated regional public transport network (i.e., intercity buses and trains) is an obstacle to reducing domestic aviation emissions, to households reducing their number and use of motor vehicles, and is a cause of transport poverty for non-car owners.

- 9.6 Transition to Evs also places NZ at risk of creating significant emissions offshore during the manufacturing and importing process. These emissions include;
- embodied carbon in electric vehicles
 - disposal of the existing fleet
 - loss of co-benefit opportunity associated with alternative travel modes
- 9.7 A significant review of national standards will be required to ensure EV imports are high quality, ethically sourced and able to be recycled/repurposed easily.
- 9.8 EV transition will be slow without provision of considerable financial incentives, as shown by the MACC's in QLDC's Emissions Reduction Roadmap. This will be essential in ensuring that all households that need them have equitable access to EVs
- 9.9 There remains a significant cultural attachment to individual personal transport and cars that can only be addressed by a range of interventions that include a combination of incentives and disincentives (such as road pricing). Only with the correct balance of these will New Zealand be in a position to break existing patterns of travel and overcome the barriers to mode shift e.g. taking public transport or using active travel. A transition to EVs will also not reduce the need to build the infrastructure to support additional vehicles.
- 9.10 In light of this, QLDC strongly recommends that further research is undertaken to fully understand the whole of life emissions cost (and other environmental impacts) of EVs before committing to investing in this as the primary nationwide solution.
- 9.11 QLDC further recommends that the Commission advise the government to invest significantly in the development of world-class public and active transport. The current mechanisms for funding public transport under the Land Transport Management Act may require extensive review in order to encourage change.

Full transformation of public and active transport networks is required.

- 9.12 Greater emphasis should be placed on investing in the transformation of the public and active transport networks, at a local, regional and intercity level. Queenstown's transport business case adopted by the Queenstown Lakes District Council in January 2021³⁹ is working towards a mode shift of 40% toward public transport by 2028 and 60% by 2048 on its busiest route (*Queenstown Transport Business Case, 2021*).
- 9.13 Massive mode shift and innovation will be essential, with a complete change in behaviour needed. Whilst this is a truly daunting prospect, New Zealand needs to take a bold approach. Public and active transport should be in the forefront of the urban and regional network design as well as in future urban developments and redevelopment of existing urban areas.

³⁹ Queenstown transport business case (Agenda item 5; p. 85). (2021). Queenstown Lakes District Council.

- 9.14 Public transport will be key to fundamental mode shift, as there are groups and circumstances that will not be able to use active transport as a consistent commuter option. This is particularly pronounced for people with young children, older people and disabled people. Public transport is a more appealing option for many during cold winters in the district.
- 9.15 “Shifting from cars to public transport can deliver a 65 per cent emissions reduction during peak times and a 95 per cent reduction in emissions during off peak times from the commuters that make the shift⁴⁰.”
- 9.16 Investment should concentrate on convenient, affordable, reliable and clean public transport⁴¹ as well as separated, safe bicycle and walking infrastructure. Shared vehicle schemes may also contribute. Investing in these modes creates a transport system that has co-benefits of health improvements, increased connection with nature and other people, reduced-carbon infrastructure, reduced consumption and congestion; all of which can be multipliers of further emissions reduction.
- 9.17 Given that “One-sixth of household car trips in New Zealand are under 2km long and almost half are less than 6km long” and 63% less than 10kms long, moving these road users to bikes, foot and public buses could offer significant emissions reductions⁴².
- 9.18 If there is no safe footpath or no safe cycling place, people will not be able to walk or cycle from home. The Republic of Ireland last year agreed to commit 20% of its roading budget to cycling and pedestrian infrastructure⁴³. Greater support needs to be given to local government and community groups that are focussed on building community-connecting networks of tracks and trails, most notably in this district, the Queenstown Trails Trust, Upper Clutha Tracks Trust, Queenstown Mountain Bike Club and Glenorchy Trails Trust.
- 9.19 RMA reform needs to focus on the role of spatial planning and developer regulation in ensuring that communities living in subdivisions and developments are well-provided for with adequate local shops, services and job opportunities. Subdivisions and developments need to be designed for multiple mode travel with the focus of movement being on the pedestrian/active modes and public transit rather than the car. Densities, housing typologies and design also play a role in this with increased densities making it more feasible for a good public transport system.
- 9.20 Further innovation is required to enable broader use of e-bikes where possible and other alternative transport solutions e.g. gondolas or trackless trams. For example, Lisbon and many other cities have share e-bike or e-scooter schemes,⁴⁴ whilst Sweden subsidises 25% of e-bike purchases⁴⁵. National level schemes are essential to ensure equitable access to these opportunities, with a particular emphasis on the share economy, which reduces consumerism and unnecessary waste. Further consideration of these schemes is

⁴⁰ Climate Change and Public Transport. (n.d.). Retrieved February 7, 2021, from <http://bic.asn.au/information-for-moving-people/climate-change-and-public-transport>

⁴¹ Higashide, S. (2019). Better Buses Better Cities

⁴² Ministry of Transport, Household Travel Survey, 2003–2009. (n.d.).

⁴³ 20 per cent of Ireland’s transport budget to be spent on cycling and walking under new coalition agreement in massive boost to active travel. (2020, June 15). Road.Cc. <https://road.cc/content/news/20-cent-irelands-transport-budget-active-travel-274541>

⁴⁴ (*Hilly Lisbon Launches Electric Bike Share System in Bid to Solve Congestion*, 2017).

⁴⁵ Twitter, T. (n.d.). Sweden Offers a 25% Subsidy for Electric Bike Purchases. Treehugger. Retrieved February 6, 2021, from <https://www.treehugger.com/sweden-offers-subsidy-electric-bike-purchases-4857202>

recommended by central government to identify models that could be implemented across the country.

- 9.21 The lack of a high-quality, low-emissions, integrated regional public transport network (i.e., intercity buses and trains) is an obstacle to reducing domestic aviation emissions, to households reducing their number of motor vehicles, and is a cause of transport poverty for non-car owners.

Freight and haulage innovation will be essential

- 9.22 QLDC fully supports Necessary Action Four – increased use of low carbon fuels for trains, ships, heavy trucks and planes. It will be essential to continue to innovate in this space as it may be the last aspect of road transport to be electrified. Hydrogen solutions should be explored further, but the processes still require a considerable amount of electricity. This will remain challenging until the electricity supply issues are resolved in the district.

Recommendations

R26 – Recommend a significant national-level behaviour change programme to shift the personal private vehicle paradigm.

R27 – Review the funding mechanisms within the LTMA to ensure that public transport can develop to meet emissions reduction aspirations.

R28 – Recommend a significant review of standards to ensure NZ's EV imports are high quality, ethically sourced and able to be recycled/repurposed easily.

R29 – Recommend that the whole-of-life emissions cost of EVs and funding constraints should be understood before committing to this as a nationwide solution.

R30 – Advise that subdivisions and developments need to be designed for multiple mode travel with the focus of movement being on the pedestrian/active modes and public transit rather than the car and should be considered in the RMA reform.

R31 – Give greater consideration to shared active transport schemes.

R32 – Advise that development of a high-quality low-emissions, integrated regional public transport network (i.e., intercity buses and trains) is required.

10.0 Agriculture

- 10.1 QLDC does not support the actions proposed for agriculture. Time Critical Necessary Action Four (reducing biogenic agricultural emissions through on-farm efficiency and technology) does not provide strong enough guidance or sufficiently bold targets. Necessary Action 11 (options for alternative farming systems and practices) does not provide enough detail or exploration of preferable alternative models.

- 10.2 Biogenic methane levels need to be reduced significantly. For methane, the global temperature impact depends (as a first order approximation) on the sustained *rate* of emissions. Therefore, to reduce its historical contribution to temperature change,

methane emissions rates need to be reduced. The lower the emissions rate of methane the lower the contribution of sustained SLGHG emissions to global temperature.

- 10.3 The package of recommendations and the delayed reduction of biogenic methane from livestock agriculture does not meet the principle of intergenerational equity, relying on future generations to meet this challenge instead of addressing it now.
- 10.4 This package underestimates the level of positive change that can be achieved by the agricultural sector, which is occurring through exemplar high-country farms and stations in the district.
- 10.5 Given that this sector is the second highest source of greenhouse gas emissions in the district, QLDC recommends that the Commission partner with progressive agriculturalists to determine a more ambitious pathway for emissions reduction.
- 10.6 The agricultural footprint in the district is quite different to much of New Zealand, as much of the land area in use is above 300 metres, with the predominant type of livestock being sheep (301,462), followed by deer (37,778) then beef (20,757). Dairy cattle numbers are much lower (3,985) and there is 256 ha in viticulture⁴⁶.
- 10.7 The Commission has missed an opportunity to propose answers that build up carbon on farms throughout the district. Greater consideration of nature-based solutions (NBS) is required⁴⁷, for example:
 - Conservation agriculture – where sustainable agriculture production systems comprise a set of farming practices adapted to the requirements of crops and local conditions of the District, whose farming and soil management techniques protect the soil from erosion and degradation, improve its quality and biodiversity, and contribute to the preservation of the natural resources, water and air, while optimizing yields. These include (i) minimum soil disturbance through no tillage for annual crops, (ii) maintenance of permanent soil covers with ground covers, and (iii) cropping system diversity with crop rotation.
 - Nutrient management where the efficient use of farming to improve productivity is balanced to the soil nutrient input with the farming requirements.
 - Trees on croplands. Trees absorb and store vast amounts of carbon throughout their life. Planting trees on croplands can provide windbreaks and shelter for crops, prevent erosion, diversify production and maintain moisture levels, while reducing carbon emissions.
 - Biochar usage. Crop residue can be baked in special oxygen-free furnaces to convert it to a form of charcoal called biochar, which does not easily decompose. This adds carbon to the soil.

⁴⁶ Stats NZ, 2017 Agricultural Production Statistics

⁴⁷ Iseman, T. and Miralles-Wilhelm, F. 2021. Nature-based solutions in agriculture – The case and pathway for adoption. Virginia. FAO and the Nature Conservancy. <https://doi.org/10.4060/cb3141en>

- 10.8 The package of recommendations for agriculture misses significant opportunities to be progressive in a space for which New Zealand is an acknowledged, influential industry leader.

Recommendation:

R33 – Revisit the advice for agriculture and provide the sector with a leadership opportunity to demonstrate its ability to reduce emissions significantly.

11.0 Forestry

- 11.1 QLDC supports Time Critical Necessary Action Five and Necessary Action 12, which seek to manage forests to provide a long-term sink and contribute to inter-generational equity. This is an approach adopted by QLDC in the harvesting and re-planting of Coronet Forest⁴⁸.
- 11.2 The introduction of permanent forest initiatives is welcome, as previous plantation forestry solutions were inadequate in the face of climate change mitigation.
- 11.3 QLDC recommends that further emphasis could be placed on the repurposing of plantation forestry toward other climate-conscious operations, such as for the development of timber-framed built developments.

Recommendation:

R34 – Further emphasis in the advice could be placed on the repurposing of plantation forestry toward other climate-conscious operations, such as for the development of timber-framed built developments.

12.0 The Conservation Estate and LINZ Lands

- 12.1 The Conservation Estate, LINZ administered lands, and QEII Trust Lands - which include a significant area of the landscapes and environment of natural beauty of the Queenstown Lake District - occupy an area of 767,000 hectares, or 82% of the land area⁴⁹.
- 12.2 These include indigenous forests, woodlands, shrublands, tussock grasslands, wetlands, alpine vegetation and lakes. Carbon storage in several of these ecosystems (generally some 50% of their organic content) is especially important, particularly the wetlands. The biodiversity values while very high, could and should be increased with more effective control of introduced mammalian herbivores and predators by the Department of Conservation. Considerable additional areas are secured in formally and permanently protected covenants.

⁴⁸ <http://www.lakesenvironmental.co.nz/assets/Uploads/Council-Documents/Full-Council-Agendas/2017/17-August-2017/4.-Adoption-of-Coronet-Forest-Management-Plan-2017-covering-report/4a.-Draft-Coronet-Forest-Management-Plan-2017.pdf>

⁴⁹ Carbon Sequestration Study (Prepared for Queenstown Lakes District Council) 2020

- 12.3 The indigenous forests and tussock grasslands also store large amounts of carbon in both below- and aboveground components. The upland snow tussock grasslands, in good condition, may have above-ground standing crops of 3.8-8.7 kg sqm (narrow-leaved snow tussock: *Chionochloa rigida* grassland) or to 1.6-6.6 kg sqm (slim snow tussock: *C. macra* grassland)⁵⁰.
- 12.4 Ecosystem services have been described for the indigenous tussock grasslands, where water yield in the upland snow tussock grasslands may reach 80% of the measured precipitation (c.1365mm p.a.) in fog-prone areas of the Queenstown Lakes District, which supplement the precipitation especially in the semi-arid areas⁵¹.
- 12.5 It is vitally important to protect these areas from degradation to preserve the carbon storage and ecosystems services⁵² in the tussock grasslands.

Recommendation:

R35 – Advise government to prioritise the protection of areas containing tussock grasslands in the LINZ lands and Conservation estate.

13.0 Waste

Targets, actions and investments need to be more ambitious and tangible

- 13.1 QLDC supports Necessary Action 13, which seeks to reduce emissions from waste.
- 13.2 However, the proposed package needs to be supported with far more detail, providing long-, medium- and short-term solutions as seen in other sections of the report.
- 13.3 The targets offered are too conservative and whilst they may be achievable they may prevent investment in systemic change of infrastructure and services that would achieve NZ's circular economy⁵³ and zero emission goals.
- 13.4 Elimination and diversion of waste has been largely left to under resourced community groups and councils when clearly the system requires a wider commitment.
- 13.5 Efforts should focus on industry, manufacturers and consumers by developing targets to reduce emissions from the production and disposal of consumer goods. It is recommended that targets for emissions associated with consumer goods be developed in conjunction with the review of the New Zealand Waste Strategy and the development of regulated product stewardship schemes.

⁵⁰ Mark, 1993. Indigenous grasslands of New Zealand, in Coupland, R.T. and Goodall, D.W. (eds). Natural Grasslands: Eastern hemisphere. Ecosystems of the World 8B. Amsterdam, Elsevier: 372-410.

⁵¹ Holdsworth, D.K. and Mark, A.F. 1993. Water and nutrient input/output budgets: effects of plant cover at seven sites in upland snow tussock grassland of eastern and Central Otago, New Zealand. J. Roy. Soc. N.Z. 20: 1-24.

⁵² Mark, A.F., Barratt, B.I.P. and Weeks, E. 2013. Ecosystem services in New Zealand's indigenous tussock grasslands: Conditions and trends, in, Dymond, J.R. (ed). *Ecosystem Services in New Zealand*. Lincoln, Manaaki Whenua Press. 1-35.

⁵³ <https://www.mfe.govt.nz/waste/circular-economy>

- 13.6 It is recommended that targets for local government are developed with Ministry for the Environment in the revision of the New Zealand Waste Strategy and the Critical Transitions framework being developed by Taituarā⁵⁴.
- 13.7 The Commission needs to ensure that the focus of the waste advice is not just on emissions generated at municipal landfills often operated by or on behalf of Councils. A greater portion of emissions from waste is generated and managed by the private sector (e.g. construction waste landfills, or green waste landfills) which are outside of Council's control.
- 13.8 Waste data needs to be improved. Data collection must extend beyond the current list of municipal landfills to include all other types of landfills in New Zealand. This will help confirm where the actions and targets need to be focussed
- 13.9 The Commission should recommend investment of waste levy funds be in physical infrastructure that is scalable, adaptable to change, and focussed at the top of the waste hierarchy or with the highest emissions reduction potential.
- 13.10 The Commission's advice should recommend that expansion and investment into landfill gas capture (for energy use) does not perversely incentivise sending organics to landfill.
- 13.11 Beneficial reuse of landfill gas from legacy material in landfills needs to be noted as a positive initiative. However, to ensure investment in LFG capture does not become dependent on organics being sent to landfill, organics must be banned from landfilling.
- 13.12 QLDC recommends that the Commission aims higher for organics diversion from landfill. The current low target will result in investment only occurring in areas of high density population where the majority of emissions from waste are created. A higher target will ensure a NZ wide approach is taken.
- 13.13 Emphasis on the waste hierarchy for organics is critical. Investing in landfill gas capture technology and recovery of energy must not trump capture of organic material for beneficial use in the carbon cycle. Beneficial use of biomass to feed the soil is in keeping with the waste hierarchy and is supportive of regenerative ecosystems.
- 13.14 The advice should note that beneficial reuse of organics be focused on soil regeneration as this co-benefits local food resilience
- 13.15 Organic waste into soil helps maintain and restore soil quality, structure and improves water retention capacity. This means that soils do not dry out quickly when water is scarce and reduces the risk of flooding during increased rainfall events. Healthy soils also work as carbon sinks and therefore can sequester even more carbon. Once applied to soils through compost, biochar or digestate, organic matter ensures carbon storage for many decades. The Commission should recommend the development of a comprehensive strategy to build organic matter back into soil and include banning organics/food/timber from landfill. Transition to a climate-neutral economy means organic materials must be considered within a closed loop carbon cycle.

⁵⁴ <https://taituara.org.nz/CriticalTransitions>.

- 13.16 Organics diversion from landfill is often focussed on garden and food waste, but higher global warming potential may come from disposal of textiles, paper, cardboard and timber. These materials need to be included in the priority products for mandated product stewardship schemes. Shifting the burden of emissions and landfill away from Councils and back to the user and consumer of products and services will be more effective and more equitable.
- 13.17 The advice does not provide tangible actions, which misses the opportunity to drive significant behavioural change. Many households start their journey to a more sustainable way of living with reduced emissions through an initial interest in waste reduction and the circular economy.
- 13.18 Investment in alternative social infrastructure including resource recovery networks, repair hubs, learning centres, swap shops etc and technical capital infrastructure such as composting, recycling processing or construction waste facilities requires staged targets to commit to the major capital investments that tend to have 15 - 20 year lifecycles.

Transformational change to waste cycles and responsibilities is needed

- 13.19 The Commission could recommend the government use an indigenous maori worldview of the circular economy⁵⁵ to help identify steps towards a regenerative and resilient New Zealand.
- 13.20 Stronger more ambitious targets beyond 2035 need to be set now to allow for scaled investment planning in the diversion infrastructure and necessary policy changes to reach circular economy and zero emissions goals
- 13.21 Significant, widespread transformational change is required to disrupt current waste cycles. This will be particularly essential in relation to the building industry. Policy tools that enable low embodied emissions construction materials and construction methods need to be enabled not just focussed at end of life disposal.
- 13.22 The Commission's advice needs to emphasise that changes to the RMA that ensure low emissions, low waste construction is adopted. Change regulations so that the urban form takes a user friendly approach to ensure organics and other waste stream materials are more easily accessed. E.g. communities have access to de-centralised urban shared composting opportunities. Multi-Unit Developments are designed so that materials can be more readily diverted from landfill, e.g. single stream collection areas.
- 13.23 Establishing mandatory product stewardship schemes to a wide range of products and prioritising products with high emissions potential will be essential. Products with high emissions potential in landfill are not necessarily products with high embodied carbon i.e. the large amount of carbon emitted during production. The emission reduction gains from reducing embodied carbon are far greater than the gains from reducing emissions from waste. Some work on shifting responsibility to producers has seen success through mandating priority products under the Waste Minimisation Act but the scope of materials is limited. Expand the scope of materials to include for example all high emitting materials – timber (all forms), fibre (paper, card), textiles.

⁵⁵ <https://youtu.be/Udo3OR4KCds>

13.24 The proposals are likely to result in increasing the cost of waste disposal. In order to capture data and to penalise producers for inappropriate disposal, a 'Duty of Care' must be introduced to be able to track waste and contribute to a more circular economy.

13.25 The Commission could advise government to support and resource community groups such as 'Zero Waste Network' to expand their resource recovery network and enable behavioural change through education programmes e.g. Para Kore and Enviroschools.

13.26 The government can also ensure opportunities to limit waste and emissions is embedded into tertiary and vocational education paths such as engineering and construction.

13.27 Additionally support for and easier access to resources needs to be provided so that businesses, NGOs, communities and individuals can better understand their emissions profile.

Product stewardship schemes can be better deployed to manage HFCs

13.28 Ensure safe collection and disposal of HFCs in imported finished products through product stewardship scheme and set timeline to ban imports where alternatives are not used.

13.29 The Commission should urge that regulated product stewardship schemes for refrigerants and other synthetic greenhouse gases be urgently implemented and extended to 'legacy' HFCs in existing equipment.

Barriers to Local Government

B17 – If targets for waste are not ambitious enough, nor regulated effectively, prioritising investment in change is limited.

B18 – The majority of waste produced is outside of Council's influence.

B19 – Historically, the reduction and diversion of waste from landfill has been largely left to under resourced community groups and councils with limited sphere of influence.

Recommendations:

R36 – Waste targets should be set higher and staged at intervals before and beyond 2035 to encourage investment in systemic change infrastructure and services, particularly for organics. Alignment should be sought with the revision of the NZ Waste Strategy (NZWS), and the NZWS should consider emissions reduction, not just waste reduction.

R37 – Advise central government to develop a comprehensive strategy to build organic matter back into soils and ban organic material from landfill including; food, textiles, fibre, biosolids and timber.

R38 – Advise central government to support and resource community groups to expand their resource recovery network and enable behavioural change

R39 – Advise central government to utilise RMA reform to effect urban design to enable participation in low-waste and low emission lifestyles and be used to mandate low emissions, low waste construction.

14.0 Other Points

- 14.1 QLDC supports enabling recommendation five’s need for a national-level ‘Citizens’ Assembly’ forum on emissions reduction, to help inform central government policy. Inclusive and effective consultation, engagement and public participation will critical to the success of emissions reduction policy.
- 14.2 The commission’s advice should consider the potential for social enterprise and impact investment. Such investors can create lasting and transformational change in relation to emissions reduction. The government could use its position as an institutional lender, regulator and major procurement body to incentivise such operations.
- 14.3 The Emissions Trading Scheme presents significant challenges for local government in the way it operates currently, due to the incompatibility of local government budget setting with uncertain prices. The ETS as a scheme does not work well for local government bodies or smaller emitters due to the complexity of the mechanism. This complexity for local government needs to be taken into account in Time Critical Necessary Action 7 and Necessary Action 19, which relate to driving low emission choices through the ETS and improvements to the scheme.
- 14.4 QLDC supports the future inclusion of international shipping and aviation emissions within NZ’s emissions accounting system.

Barriers to Local Government:

B20 – The Emissions Trading scheme is not well-designed for local government bodies and small emitters. The price uncertainty is incompatible with local government financial management practices.

Recommendations:

R40 – Advise central government to improve the utilisation of the ETS for local government bodies. Consider the potential of a sub- or secondary scheme which creates a separate mechanism or market for local government bodies and other small emitters to engage with the ETS at lower risk and lower cost-variability component to aid with financial security.

R41 – Explore the potential for social enterprise and impact investment to create change and emissions reduction within the advice.

Appendix 1: Climate Reference Group members

Bridget Legnavsky: Chair

QLDC Councillor Niki Gladding

QLDC Councillor Glyn Lewers

Dr Jim Salinger: International climate change expert

QLDC Councillor Quentin Smith: Infrastructure Committee Chair

Alec Tang: Climate action in local government expert

Gail Thompson: Nominated by Te Ao Marama on behalf of rūnaka

Otago Regional Councillor Alexa Forbes

Esther Whitehead: Wakatipu Community Leader

Vacancies: Biodiversity Expert, Upper Clutha Community Leader

Appendix 2: Summary of Barriers to Local Government and Recommendations

Barriers to Local Government:

B1 – Local government does not currently have high levels of behavioural change management expertise throughout the sector.

B2 – Whilst local government is well-positioned to navigate the local system, consistent tools, frameworks and resources to guide emissions reduction initiatives, monitoring and reporting are lacking.

B3 – Territorial authorities focus within their boundaries, which may not always be the most efficient or effective approach, and yet collaboration can be challenging. In addition, activity is highly dependent upon budgets, capabilities, capacity, priorities and political will.

B4 – The sector will be navigating major reforms (Three Waters and RMA) whilst focussing on emissions reduction approaches.

B5 – QLDC has partnered effectively with central government to develop a spatial plan, but there is currently no legislative framework and toolkit available to ensure consistency of approach.

B6 – Legal frameworks have previously discouraged co-ordinated spatial planning in favour of effects-management.

B7 – RMA and Building Act reform is required to make necessary changes to the planning system which will enable and incentivise emissions reduction

B8 - Public transport delivery is highly fragmented across central, regional and local government and is generally improved only if demand can be demonstrated.

B9 – Demonstrating leadership through the development of low-emissions facilities can be challenging for local government, due to rates implications and affordability for the community.

B10 – The electricity network in the district is nearing its capacity and has suffered from significant under-investment over many years. As such, the district is challenged in terms of the resilience of the network, the affordability of electricity and the ability to electrify extensively.

B11 – The electricity system does not provide a comprehensive forum for community voice and redress. Therefore QLDC is obliged to address this unique challenge and navigate the system without precedent or guidance.

B12 – Despite supporting the transition away from gas in principle, QLDC needs to balance the resilience of a community that needs alternative power sources during outages and civil defence emergencies that compromise electricity supply.

B13 - The Commission's proposed policies – particularly around the elimination of gas as a heating fuel, and acceleration of the uptake of EVs – reinforce the direction QLDC is heading in. However, these policy directions increase the speed with which the district has to move, probably beyond its ability to do so without assistance from central government.

B14 – It is extremely difficult for local government to control or influence visitor numbers and flow.

B15 – Whilst QLDC has worked effectively to understand visitor numbers for the district, this has required development of a specific and detailed approach. Local government (and the wider industry) lack easily accessible, comprehensive, timely data about visitor flows and numbers at a local level.

B16 – Diversification initiatives and Destination Management Plans take a period of time to come to fruition.

B17 – If targets for waste are not ambitious enough, nor regulated effectively, prioritising investment in change is limited.

B18 – The majority of waste produced is outside of Council’s influence.

B19 – Historically, the reduction and diversion of waste from landfill has been largely left to under resourced community groups and councils with limited sphere of influence.

B20 – The Emissions Trading scheme is not well-designed for local government bodies and small emitters. The price uncertainty is incompatible with local government financial management practices.

Recommendations:

R1 – Advise the Government to work with local authorities to develop a programme of capacity-building for behavioural change management skills in local government.

R2 – Provide advice on the potential for government to regulate for and fund the behaviour change needed to support technological shifts and reduce emissions at pace.

R3 - Develop effective advice on behaviour change in the multi-sectoral strategic approach and make it an enabling recommendation rather than a necessary action.

R4 – Advise central government to seek opportunities to fund and support low emissions civic facilities in regional locations.

R5 - Advise central government to provide a suite of frameworks, tools, incentives and resources to develop emissions reduction initiatives and monitoring.

R6 – Give greater consideration in the advice of carbon leakage and NZ’s role in international supply chains that significantly increase global emissions.

R7 - The Commission’s advice should emphasise the challenges and opportunities that are inherent in the complexity of the system so they may be overcome and leveraged (respectively). The advice should also reference the Critical Transitions work of Taituarā

R8 - Add spatial planning as a component within Necessary Action Ten (urban form).

R9 - Expand Necessary Action Nine (building efficiency) to incentivise new technologies and innovation.

R10 – Advise government to ensure that the Spatial Planning Act empowers local government to develop and implement spatial plans that focus upon emissions reduction.

R11 – Advise central government to incentivise lenders to fund high density living developments when aligned with the district’s spatial plan.

R12 - Give greater consideration in the advice to reform of the public transport model at a national level, streamlining responsibilities and enabling a progressive funding model.

R13 – Encourage central government to set national and local targets for transport mode shift that are based on an understanding of the capacity of the grid and the current and future demand for electricity across all sector.

R14 - Add three waters reform and local government reforms need to Necessary Action 15 (which addresses the need for alignment with RMA reform) to ensure changes are aligned with the objectives, tools and processes needed to reduce emissions.

R15 – Advise central government to ensure all RMA reforms align with the commission’s advice and require emissions reduction.

R16 – Advise central government to amend the Building Act to enable the application of higher standards in construction, reducing emissions and assessing whole-of-life emissions costs.

R17 – Within the advice, explore creative opportunities for central government to demonstrate leadership and innovation in relation to urban form and centrally funded civic buildings.

R18 – Give greater consideration within the advice to highly location-specific complexities which will make transitioning to low-emissions local economies that much harder for communities to manage alone. Queenstown Lakes District can be used as an example of where the “electrification of everything” will, without smart investment and innovation, reduce resilience.

R19 – Meet with QLDC and central government agencies to discuss how to partner effectively in relation to the energy challenge.

R20 – Recommend central government review of the conditions of the Warmer Kiwi Homes initiative and the Accommodation Supplement, to assess whether these interventions the needs of low income families in a cold alpine environment.

R21 – Specifically address the transition to a better, more regenerative form of tourism within the advice, exploring ways to reduce the emissions of the tourism system.

R22 – Identify a national-level approach within the advice for moving dialogue around the future of tourism forward in a mature, respectful way.

R23 –Advise central government to make consistent, reliable data systematically available to local government at a district level to enable effective decision making in relation to emissions reduction.

R24 – Advise central government to review destination marketing approaches and support legislation to attract values-driven visitors and develop low-emission tourism products.

R25 –Advise central government to orchestrate international visitor transport at a national level, strategically influencing it to smooth visitor flow and numbers in order to potentially limit the number of inbound international tourists

R26 – Recommend a significant national-level behaviour change programme to shift the personal private vehicle paradigm.

R27 – Review the funding mechanisms within the LTMA to ensure that public transport can develop to meet emissions reduction aspirations.

R28 – Recommend a significant review of standards to ensure NZ's EV imports are high quality, ethically sourced and able to be recycled/repurposed easily.

R29 – Recommend that the whole-of-life emissions cost of EVs and funding constraints should be understood before committing to this as a nationwide solution.

R30 – Advise that subdivisions and developments need to be designed for multiple mode travel with the focus of movement being on the pedestrian/active modes and public transit rather than the car and should be considered in the RMA reform.

R31 – Give greater consideration to shared active transport schemes.

R32 – Advise that development of a high-quality low-emissions, integrated regional public transport network (i.e., intercity buses and trains) is required.

R33 – Revisit the advice for agriculture and provide the sector with a leadership opportunity to demonstrate its ability to reduce emissions significantly.

R34 – Further emphasis in the advice could be placed on the repurposing of plantation forestry toward other climate-conscious operations, such as for the development of timber-framed built developments.

R35 – Advise government to prioritise the protection of areas containing tussock grasslands in the LINZ lands and Conservation estate.

R36 – Waste targets should be set higher and staged at intervals before and beyond 2035 to encourage investment in systemic change infrastructure and services, particularly for organics. Alignment should be sought with the revision of the NZ Waste Strategy (NZWS), and the NZWS should consider emissions reduction, not just waste reduction.

R37 – Advise central government to develop a comprehensive strategy to build organic matter back into soils and ban organic material from landfill including; food, textiles, fibre, biosolids and timber.

R38 – Advise central government to support and resource community groups to expand their resource recovery network and enable behavioural change

R39 – Advise central government to utilise RMA reform to effect urban design to enable participation in low-waste and low emission lifestyles and be used to mandate low emissions, low waste construction.

R40 – Advise central government to improve the utilisation of the ETS for local government bodies. Consider the potential of a sub- or secondary scheme which creates a separate mechanism or market for local government bodies and other small emitters to engage with the ETS at lower risk and lower cost-variability component to aid with financial security.

R41 – Explore the potential for social enterprise and impact investment to create change and emissions reduction within the advice.