

## **CARBON NEUTRAL NZ TRUST**

WAIHEKE BRANCH

Submission  
to the  
Auckland Council  
on  
Auckland's Climate Action Framework

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## Introduction

1. Carbon Neutral New Zealand Trust (CNNZT)'s Waiheke Branch is a group of concerned citizens committed to addressing the issues of climate change and its ramifications for our local economy, environment, culture and way of life. Our goal is for Waiheke to be the first carbon neutral populated island in New Zealand.

We believe that without the concerted efforts of locally based businesses, communities and individuals utilising a bottom-up, grass-roots approach, no or limited meaningful change will result. Positive and sustainable behavioural change relies not only upon coercion, regulation or economic incentives but on an educated public willing to sacrifice short-term economic gains for longer-term equitable growth in incomes and well-being, plus improved environmental, social, health, cultural and economic outcomes.

To achieve its goal Carbon Neutral Waiheke has developed tools for individuals, households and businesses to assess their own greenhouse gas emissions, reduce their emissions and where appropriate offset their emissions. A carbon calculator, reduction and offsetting strategies are available on the Trust's website [www.carbonneutralnz.org.nz](http://www.carbonneutralnz.org.nz).

2. CNNZT Waiheke thanks Auckland Council for its continuing work in the area of climate change and for acknowledging the climate emergency.
3. CNNZT Waiheke recognises that there is a pivotal role for Auckland Council in setting the climate action policy framework; passing appropriate bylaws; establishing supporting networks; working with industry sector bodies, academia and the community to seek a broad consensus on the steps required to meet the climate emergency, fulfil the Paris Climate Agreement and transition to a low carbon economy.
4. We note that Auckland's greenhouse gas (GHG) emissions targets are to achieve a reduction of 10 to 20 percent by 2020, 40 per cent by 2040 and 50 per cent by 2050. (*Xie, S., Auckland's Greenhouse Gas Inventory to 2016 Technical Report 2019/002*) whereas under the Paris Agreement New Zealand has committed to reduce its carbon emissions by 30% below 2005 levels by 2030 and by 50% from 1990 levels by 2050.
5. CNNZT Waiheke believes that Auckland, in addressing the issue of the climate crisis, must continue to be a leader and work closely with the C40 Cities Climate Leadership Group and Local Governments for Sustainability (ICLEI). We support the use of the Global Protocol for Community-Scale Greenhouse Gas Emissions Inventories.

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## Overview

6. The *Purpose* of the Climate Change Action Framework.

CNNZT Waiheke considers the stated purposes to:

1. Increase Auckland's resilience to the impact of climate change, and
2. Reduce emissions that cause climate change....

..... are too weak and need to be strengthened given that Auckland Council has declared a climate emergency and that New Zealand's average temperature has already increased by one degree Celsius since early 1900s (*MfE & Stats NZ, 2017b*) and the country is experiencing the negative effects of climate change such as coastal erosion, flooding and droughts.

(In the spring of 2015 the global average temperature increase was 1.1 degree Celsius and concentrations of CO<sub>2</sub> exceeded 400 parts per million for the first time. This has resulted in the Arctic's summer sea ice disappearing; irreversible melting of parts of the Greenland and West Antarctic ice sheets; loss of many warm-water coral reefs; the disappearance of many mountain glaciers and once in 100 year weather events happening regularly. (*IPCC Report, Sept 2019*))

*We recommend that the Purpose of Auckland's Climate Action Framework be enlarged to include a third purpose, namely, **Increase carbon sequestration.***

To reduce the level of greenhouse gases in the atmosphere a twofold approach is needed – namely to emit less and sequester more.

7. CNNZT Waiheke considers that the target of keeping the temperature rise within 1.5 degrees Celsius and getting Auckland to net zero carbon emissions by 2050 is too slow and lacks ambition.

*We recommend instead that Auckland should be attempting to **reverse global warming and achieve net zero carbon emissions by 2030.***

Such a bold target will help to give hope to the young people of the city and provide a challenge to businesses, communities and individuals to seek innovative and creative solutions. It would indicate to the citizens that Auckland Council really does see climate change as an emergency and that business as usual is not an option.

We note that Norway, an acknowledged climate change leader, has committed to achieving climate neutrality by 2030.

Without such a positive approach Auckland is likely to suffer major adverse environmental, social and economic impacts.

8. CNNZT Waiheke considers that expressing "Auckland carbon budget as 164 mega-tonnes of carbon dioxide equivalent (MtCO<sub>2</sub>e) over the next 33 years." (*Auckland Climate Action Framework report pg. 18*) is meaningless to the average citizen.

Instead, the carbon budget should be expressed in per person terms. We note that in 2016 Auckland's gross emissions were 7.0 tonnes CO<sub>2</sub>e and net 6.3 tonnes per capita. (*Xie, S Auckland's Greenhouse Gas Inventory to 2016 Technical Report 2019/002*)

To achieve the 50 per cent reduction target by 2050 the per capita carbon budget will need to be less than 3 tonnes given the likely population increase of the city.

It is vital that local emission budgets aligns with local climate action plans, local adaptation and mitigation plans and strategies and are equivalent or exceed the national emissions budgets being set by central government. Such

budgets need to be developed in partnership with the local community and iwi as their input will be crucial to achieve public acceptance and to ensure that the appropriate behavioural changes occur.

If each citizen clearly knows what target they need to achieve within a specific timeframe they can use the free online carbon footprint calculators available to measure and reduce their carbon footprint.

9. The *Key Moves* suggested are adequate but we would strongly recommend that two additional *Key Moves* be included namely,

9.1 *Protect, enhance and restore our marine environment.*

The marine environment deserves its own section given that the oceans absorb 90% of the world's greenhouse gas emissions and that Auckland sits between two oceans (the Tasman and Pacific) and has two major harbours the Manukau and Waitemata/Hauraki Gulf.

Healthy oceans are a critical component of the management of carbon emissions. However, already the ocean's temperatures are rising, acidification is occurring, fishing stocks are being over-exploited and marine ecosystems are being destroyed.

In addition, the world's coastal wetlands can store five times as much carbon over the long-term than tropical rainforests and "*According to the journal Nature the soil of mangrove forests alone may hold the equivalent of more than two years of global emissions – 22 billion tonnes of carbon much of which would escape if these ecosystems were lost.*" (Project Drawdown, Pg 112)

Therefore, the *Actions* subsection of this new *Key Move* should include:

- Commitment to 30% of the Hauraki Gulf being in marine protected areas by 2030
- implementation of Sea Change – the marine spatial plan finalised in December 2016 to ensure sustainable management of the Gulf
- revamping the role and governance of the Hauraki Gulf Forum so that it can be the champion of the Gulf and implement sections 7 and 8 of the Hauraki Gulf Marine Park Act.
- banning all future wetland and mangrove reclamations
- stopping all future wharf extensions in the Port of Auckland
- opposing further marina developments in the Hauraki Gulf
- controlling coastal erosion and storm surges
- managing and minimising waste water and sediment runoff from farms, new and existing subdivisions, road surfaces, sewerage into the region's waterways and harbours
- ensuring marine biodiversity is maintained and biosecurity measures are sufficient to prevent the introduction of damaging flora, fauna and pathogens

9.2 *Manage Climate Risks including Existential Risks*

Under the current **Key Moves** areas risk management is mentioned as an *Action* in *Key Moves 3 and 7*. However, whilst CCNZT Waiheke supports adaptation planning and climate risk assessment we are deeply concerned by the failure to distinguish between conventional risk and existential risk management.

The Auckland Climate Action Framework Actions adopts a conventional risk management approach using a mitigation and adaption approach based on probability and consequence of an outcome. Whilst a very useful tool for business, government and communities it depends upon known probabilities reflected in the normal distribution or (bell shaped) curve and likely impacts.

However, it is not applicable to "*Climate change (which) is as existential risk to human existence; that is, an adverse outcome that would either annihilate intelligent life or permanently and drastically curtail its potential.*" (Bostrom, N. *Existential risk prevention as global priority, Global Policy Vol. 4 Issue 1 February 2013*).

*"Existential risks are not amenable to the reactive (learn from failure) approach of conventional risk management, and we cannot necessarily rely on institutions, moral norms, or social attitudes developed from our*

*experience with managing other sorts of risks. Because the consequences are so severe – perhaps the end of human global civilization as we know it – “even for an honest, truth seeking and well-intentioned investigator it is difficult to think rationally in regard to existential risks.” (Bostrom, N. & Cirkovic, M., Global Catastrophic Risks, Oxford University Press, Oxford 2008 as quoted in Spratt, D & Goodman, S : Disaster Alley: Climate Change, Conflict & Risk, Breakthrough National Centre for Climate Restoration, Melbourne 2017)*

Climate change is an existential risk also involving biodiversity loss and biosecurity issues. It requires thinking “outside the box” to avoid a failure of imagination given the likelihood of passing certain tipping points (critical thresholds) that could cause major changes in the climate system.

In the Auckland context a consideration of existential risk would mean that instead of measuring the impact of sea level rise using the normal historic data set of 1.7mm per annum rise from 1900 to 2008 or the IPCC 2014 assessment report of 0.55 meters by 2100 the impact would be measured using the NOAA sea-level report released in August 2017 which predicted a rise of 2.5 meters by 2100 or if a 4 degree Celsius temperature increase eventuates (which is close to the current global pathway) the impact would be calculated using a 8.9 meter sea level rise.

Any adaptation plan should not be based on a top down bureaucratic driven approach to planning but should instead be a partnership approach in terms of both funding and knowledge to best inform the plans. The public must be told the truth that the speed and extent of future human-induced climate change impacts have been badly underestimated. They deserve to know about existential risks and should be an essential partner.

10. CNNZT Waiheke notes that the international aviation and maritime sectors are excluded from the Paris Climate Agreement and as a consequence the amount of New Zealand’s gross and net carbon emissions are underestimated. This effect is noticeable when a New Zealand household or business completes their carbon footprint calculator as air travel is frequently the largest component of the business or household’s carbon missions.

We contend that to address the climate emergency Auckland Council and Auckland Tourism, Events and Economic Development (ATTED) should reduce their emphasis on international tourism as an income earner for Auckland as a return journey between Australia and New Zealand is responsible for 390 kgs per economy class passenger and between Europe and New Zealand 7.2 tonnes per economy class passenger.

Cruise ships are even worst. George Marshall, from the Climate Outreach Information Network has calculated that for a trip from Southampton to New York on the Queen Elizabeth 11 *“Every passenger is responsible for 9.1 tonnes of emissions. Travelling to New York and back on the QE11, in other words, uses almost 7.6 times as much carbon as making the same journey by plane.”* This calculation excluded the environmental costs of water treatment and disposal, waste, sewerage and oil-contaminated water. *(The Guardian 20 December 2016)*

Auckland Council should make an explicit commitment to reduce the number and size of cruise ships visiting Auckland, to reduce the number of international flights arriving at Auckland airport and actively engage in climate mitigating efforts to decrease the impact from unregulated tourism.

11. CNNZT Waiheke is concerned that the *Actions* suggested in the Auckland Council Climate Action Framework do not outline any quantitative or qualitative measurement tools, indicators, timelines, reporting framework or organization/s responsibilities that maybe used to measure progress towards each action goal. We believe the Framework document should include a section outlining the measurement tools that may be used.
12. The Auckland Climate Action Framework Plan, if it is to be effective, must be endorsed and supported by the Auckland Council Controlled Organisations, namely:
  - Auckland Tourism, Events and Economic Development (ATTED)
  - Auckland Transport (AT)
  - Panuku Developments
  - Regional Facilities
  - Watercare Services
  - Ports of Auckland.

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Without their support and endorsement the *Key Moves* will fail. If necessary the Auckland Climate Action Framework should be imposed on these organisations which are funded by the ratepayers of the city but are not responsible through a democratic process to the citizens.

Unfortunately, there is widespread evidence that the actions of many of these CCOs directly undermine the aims and objectives of the proposed Auckland Climate Action Framework.

13. Due to the existential nature of the climate crisis the Auckland Climate Action Framework should be viewed as an **overarching framework** that must be considered in all bylaws, policies and actions undertaken by Auckland Council and its associated CCOs.

14. Case Study – Waiheke Island

Waiheke, as an island and a geographically distinct community in New Zealand's largest city could be used as a test case for many of the *Key Moves* and *Actions* suggested in Auckland's Climate Action Framework.

The island is dependent on imported energy, food, building and construction materials and relies on ferries as the transport mode to access the island.

Waiheke could provide an ideal testing site for such climate mitigation ideas as micro-wind systems, micro-grids, smart grids, smart thermostats, building insulation and retrofitting, electric bikes and vehicles, home water saving, septic tank systems, industrial recycling and community owned solar and wind-farms.

It could be the first NZ centre to have its entire light vehicle fleet run by EVs

Waiheke is already experiencing climate adaption issues such as coastal erosion, slips, floods and droughts. As a consequence local government, the private sector, communities and individuals adaption initiatives could be tested on the island for effectiveness.

Waiheke could also provide a venue to test the regenerative effects of marine permaculture, kelp farming and coastal wetland restoration as a way of generating carbon credits as well as restoring a damaged and dying marine environment.

## Specific Concerns

### Key Move 1 – Lay the Foundation

CNNZT Waiheke supports this *Key Move's* purpose, measure of success and future wants. The actions suggested are also supported however we would suggest:

- add an action - evidence will be collected , assessed and reported to show the levels of GHG emissions at a regional, industry sector, local board and individual level;
- add an action - the impact of the GHG emissions of all Auckland Council controlled organizations are reported;
- add an action - District Health Boards ,as elected boards, will be encouraged to use a similar climate change impact framework and reporting system.

To support local government to address the climate crisis local government needs to lobby central government to urgently change legislation such as:

- the Environment Protection Authority legislation to give it the ability to consider objections to marine drilling for fossil fuels based on climate change implications.
- the Resource Management Act which suggests councils adapt rather than try to prevent climate change and which forbids the consideration of climate change risks in criteria for applications for resource use.
- the Public Finances Act to require contractors to consider their greenhouse gas emissions
- the Building Act to consider climate change implications and require the use of green building techniques that promote better building insulation, installation of solar panels, EV charging portals and roof-top gardens

### Key Move 2 – Enhance, restore and connect our natural ecosystems

CNNZT Waiheke supports this *Key Move's* purpose, measure of success and future wants. The actions suggested are also supported however we would suggest:

- expand the action - the indigenous biodiversity and ecosystems action to include not only indigenous and vulnerable flora, fauna and ecosystems but all ecosystems.  
(This is needed given that the UN Intergovernmental Science Policy Platform on Biodiversity and Ecosystem Services (IPBES) states that nature is in the worst shape in human history. Other commentators suggest that the world has begun a sixth mass extinction as humanity has wiped out 60% of mammals, birds, fish and reptiles since 1970.)  
(*WWF, Living Planet Index*)
- add an action - report annually the results of efforts in pest and predator eradication and management including kauri dieback and invasive weeds;
- add an action - tree protection bylaws will be changed to retain and increase existing levels of carbon sequestration;
- add an action - Auckland Council will plant trees on vacant Council land;
- add an action - the number and area covered by Auckland Council, QE11 and DOC covenanted land and regional parks is increasing annually;
- add an action - protect the region's most fertile soils so that they remain available for market gardening and horticulture use.

### Key Move 3 – Make development and infrastructure climate-compatible

CNNZT Waiheke supports this *Key Move's* purpose, measure of success and future wants. The actions suggested are also supported however we would suggest:

- explain what is meant by the action “ensure new infrastructure is climate-proof and resilient”
- add an action - all building construction projects to include a carbon footprint assessment of the building process (construction and demolition) when applying for building or demolition permits.

- add an action - water supply options have been increased by supporting households and businesses to use integrated systems to collect rain water, use grey water and manage waste water. (This is common practice in many cities around the world.)  
(This is important given the growing global water crisis which has been identified as a major impact of climate change and above all other elements will impact on the health and well-being of peoples and nations. Between 1970 and the mid-1990s, the amount of economically available water per person globally dropped by more than 35% according to the United Nations. Some estimates project a gap of 40% between global water requirements and accessible water supply by 2030. (*WRG, Charting our Water Future Economic Frameworks, McKinsey and Company, 2009*)
- add an action - waste water and contamination from sewerage runoff entering into the Hauraki Gulf and the Manukau Harbour is significantly reduced.
- add an action - ensure the city's urban design guarantees existing and future owners access to sunlight through the use of maximum building heights in different areas of the city.

#### Key Move 4 – Transform existing buildings and places

CNNZT Waiheke supports this *Key Move's* purpose, measure of success and future wants. The actions suggested are also supported however we would suggest:

- add an action –all building design aligns with the green building code and/or sustainable architectural principles  
(This is important given that in countries such as the UK 40% of GHG emissions are caused by the built environment (*Moore, R: Building Sustainable Castles in the sky, Guardian Weekly, 13 September 2019 pgs. 24-25*)
- add an action - solar systems to become mandatory on all new buildings – residential, commercial and public
- add an action - new or retrofitted buildings have mandatory E vehicle charging facilities for cars, scooters and bikes
- add an action – new and retrofitted building design includes the ability to have roof-top gardens, to link with microgrids systems and community co- heating systems
- add an action - encourage the use of windpower in the Wynard and Auckland Quarters plus in commercial and industrial precincts
- add an action - the car parking requirements for residential and commercial buildings have been reduced
- add an action - changes to the Building Act to promote better building insulation, installation of solar panels, EV charging portals, car parking etc. have been achieved

#### Key Move 5 – Deliver clean, safe and equitable transport options

CNNZT Waiheke supports this *Key Move's* purpose, measure of success and future wants. The actions suggested are also supported however we would suggest:

- add an action - rapidly expand the availability and affordability of ferry services using the Waitemata and Hauraki Gulf;
- add an action - phase out the use of fossil fuel cars in the Auckland district by 2030;
- add an action - encourage changes in road use patterns by giving priority to EVs, buses and imposing a congestion tax on vehicles brought into downtown Auckland;
- add an action- rapidly increase the safe use of EScooters, mobility scooters by providing suitable infrastructure, regulations and safety requirements;
- add an action - report bi-annually the percentage of land used for car transport and parking network;
- add an action - investigate the option of community owned transport;
- add an action – decrease the levels of car ownership and reduced annual kilometer usage.

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## Key Move 6 – Move to a zero carbon, climate-resilient economy

CNNZT Waiheke supports this *Key Move's* purpose, measure of success and future wants. The actions suggested are also supported however we would suggest:

- add an action – promote the business **opportunity** available to engage productively in developing a low-emission economy that grows incomes equitably and promotes social and environmental well-being.  
(This is supported by internationally recognised climate change thinkers such as Stern (*Stern, 2015*) who consider climate change has the potential to usher in a new economic age similar in impact to the industrial or information ages. Economic evidence from disruptive technological changes such as the internet, mobile phones, social media and artificial intelligence shows that early adopters of the technology reap most of the innovation and economic rewards. (*Seba, T. Clean Disruption of Energy and Transportation, Clean Planet Ventures, California, June 2014*)
- expand the action – leverage public sector and large businesses supply chains to deliver on climate outcomes by adding by “using social procurement protocols in all purchasing contracts”;
- add an action – refocus the emphasis on regional economic growth to sustainable economic growth;
- add an action – determine Auckland’s ability to deal with population growth including possible climate refugees (This is important as climate change is likely to increase the risk of large-scale migration, associated civil unrest and conflict. People from several Pacific Island states are likely to be amongst the first people displaced as a result of climate change. Such issues will need to be considered in Auckland Council’s Climate Risk Assessments and Plans.)
- expand the action – embed circular principles into Auckland’s economy by adding “including banning unlicensed dumps, substantially increasing the waste levy and encouraging product stewardship”.

## Key Move 7 – Help Aucklanders become more resilient and reduce their carbon footprint.

CNNZT Waiheke supports this *Key Move's* purpose, measure of success and future wants. The actions suggested are also supported however we would suggest:

- add an action – Undertake public education and behavioural change to enable citizens to engage actively in addressing their consumption levels to decrease their green house gases emissions and increase their sequestering of carbon.
- expand the action – Unlock barriers and support community-based initiatives that reduce emissions and build resilience in a fair way by adding “that reduce consumer consumption, the use of single use containers and plastic bags and waste.”
- add an action – Encourage responsible pet ownership.
- add an action – Support the development of alternative refrigeration systems and require their proper disposal
- (This is important given that hydrofluorocarbons (HFCs) have the capacity to warm the atmosphere 1,000 to 9,000 times greater than carbon dioxide. (*Hawke, P; Drawdown, Penguin Books, USA 2017, Pg. 164*)

## Key Move 8 – Te puawaitanga o te tangata

CNNZT Waiheke supports this *Key Move's* purpose, measure of success and future wants. The actions suggested are also supported however we would suggest:

- add an action – support strengthening the Hauraki Gulf Forum to give it a more direct role in statutory planning and policy processes by changing its composition to a co-governance model with mana whenua.

## Key Move 9 – Youth and intergenerational equity

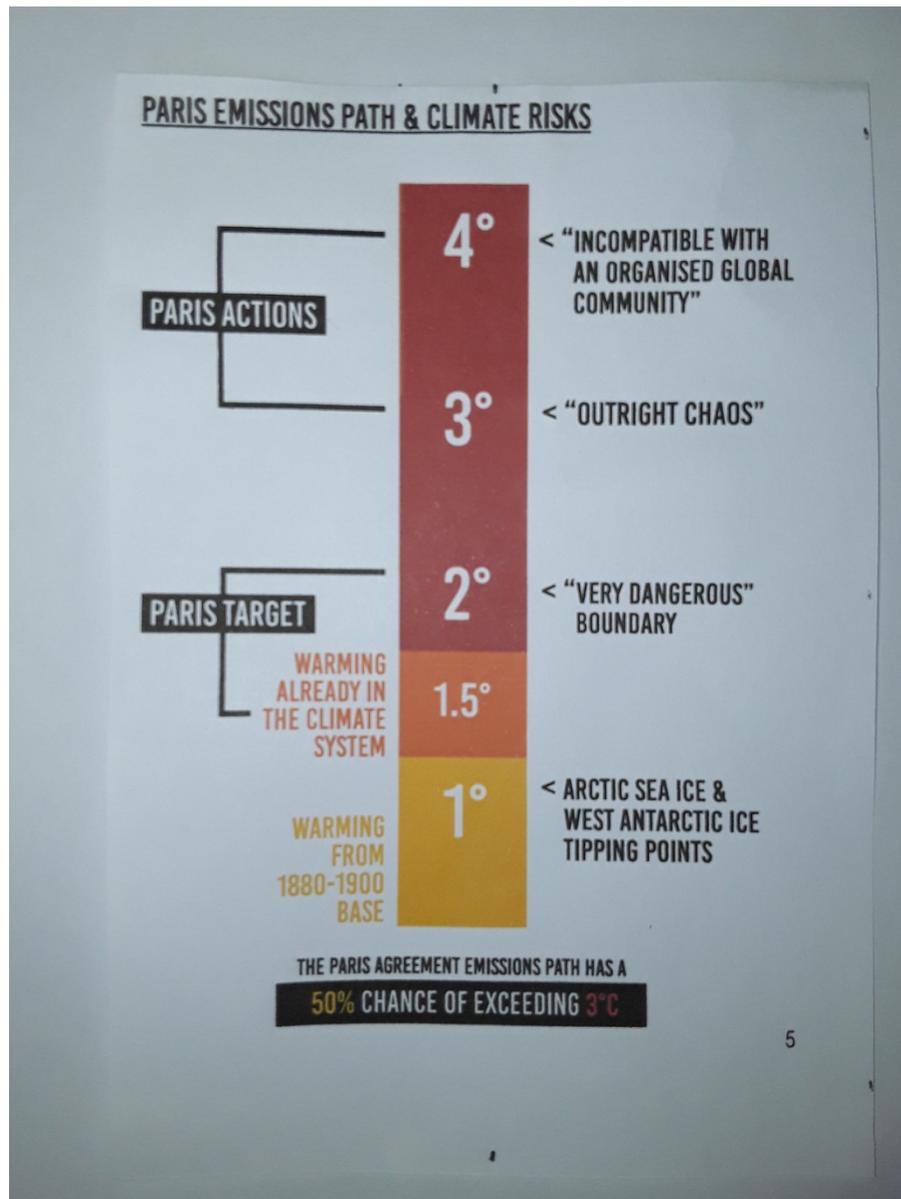
CNNZT Waiheke supports this *Key Move's* purpose, measure of success and future wants. The actions suggested are also supported however we would suggest:

- add an action - all climate action bylaws, policies and decision-making will be based on the use of Conserver Society “minimum regrets planning” and the “seventh generation principle” (based on an ancient Iroquois

philosophy that the decisions we make today should result in a sustainable world seven generations into the future) to ensure intergenerational concerns are addressed.

- Insert in the second action ("Establish a rangatahi governance ropu group ... second clause insert the words "... in relation to the climate emergency.

(This is important as around the world millions of young people and adults have supported Greta Thunberg's call for action as they realize the world is facing not gradual, controllable and largely benign climate change but a climate crisis as can be seen from the diagram below which outlines the Paris Climate Agreement Emissions Path and its associated Climate Risks.)



(Source: Dunlop & Spratt, *Disaster Alley: Climate Change Conflict and risk, Breakthrough National Centre for Climate restoration, Melbourne 2017*)

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## Key Move 10 – Shift to decentralized renewable energy

CNNZT Waiheke supports this *Key Move's* purpose, measure of success and future wants. The actions suggested are also supported however we would suggest:

- expand action – develop and deliver local and regional decentralized renewable energy systems by adding “including solar, wind-power, micro-grids, co-generation, community heating schemes.”
- add an action – use the resource and building consent process to make green energy alternatives such as solar water heating and roof top solar panels mandatory on all new houses and commercial buildings
- add an action – to phase out the use of wood fires by 2025 and LPG fires by 2030.

CNNZT Waiheke has undertaken work to determine whether rooftop PV solar energy systems could provide sufficient electricity to meet the expected extra demand created by the conversion of the light transport fleet from fossil fuels to electricity and concluded that if 80% of private dwellings in New Zealand (1,479,200 houses) installed on their roofs 3.34 kWp of solar panels this would generate sufficient electricity to charge a similar number of EVs. If in addition, 563,000 businesses installed 13.2 kWp this would generate sufficient energy to charge approximately 2 million EVs based on such vehicles travelling double the distance of a private vehicle.

Our conclusions are supported by Russell Watson, Network Engineering Manager, Northpower who states that *“To power one million EV you would need around 2,600 GWh per annum which equates to 6% of New Zealand’s present electricity generation”* (Based on a 40 km daily commute or around 15,000 kms of driving per year and efficiency of 6km/kWh) and *“If all the consented wind generation was constructed it could potentially charge 3.5 million EVs.”* He went onto say *“If we are smart then there is the ability to charge significant numbers of EVs without major upgrades in grid and distribution networks.”* (Russell Watson, Whangarei EV & AV Symposium – Grid Impact of EVs, 28 May 2018).

## Key Move 11 – Grow a low-carbon resilient food system

CNNZT Waiheke supports this *Key Move's* purpose, measure of success and future wants. The actions suggested are also supported however we would suggest:

- add an action - promote community gardens, home gardening, crop swaps and reduction in food waste
- change the action – increase demand for local, seasonal and low carbon food to include information on origin and carbon miles
- add an action – ensure packaging of food is minimal, compostable in a home compost or as a last resort recyclable and that food producers provide product stewardship over both the product and its packaging.
- change the action - implement kerbside food scraps collection across urban Auckland to “Promote home and community composting of organic waste and implement kerbside food scraps collection across urban Auckland.”

## Conclusion

CNNZT Waiheke is aware that there appears to be a disconnect between the laudable aspirations identified in this climate action framework and the day-to-day actions of Auckland Council and its CCOs.

To ensure that the public, businesses and communities have faith in the framework it will be necessary to ensure that the framework is embedded in all Auckland Council's and its CCOs policies and practices; that the actions are measureable and staff accountable.

## How does this translate into action?

CNNZT Waiheke supports the proposed pathway to translate the Auckland Climate Action Framework into action and looks forward to working with Auckland Council to avert the climate crisis.

We believe that the final framework needs to be adopted by other major industry groups including Auckland's District Health Boards, Auckland Airport, Department of Corrections, Ministry of Housing and other government and industry sector groups.