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Good evening, welcome to another Auckland Conversations event. The Auckland Conversations provide us, you will know, an opportunity to inspire and stimulate your thinking about challenges facing Auckland of all types. Tonight we're focusing on Climate Change and how we can transition New Zealand to a climate resilient and productive economy. So, thank you for joining us tonight. It's very good to see you all here. We were worried that you might be out barbecuing or whatever you do in Auckland. And, welcome to those joining us online for the streaming. I'm Kim Hill and I'll be facilitating the conversation this evening. A few housekeeping items, in the unlikely event of an emergency an alarm will sound and we will be directed out of the building by ushers. Which is posh, isn't it, ushers? The bathrooms are located near the bar which is on the left as you leave the room. No, the bar is on the right, the bathrooms, as I know, are straight over there to your left, lest you be confused between the bar and the toilets. And finally, could you turn all your cellphones off or at least mute them. A special welcome this evening to all Auckland Council elected members, glad you could join us. We would like to acknowledge our event partner the Ministry for the Environment. Our thanks for their support. Our thanks to Auckland Conversations partner sponsor Resene, and also thanking the programme supporters, Brookfields Lawyers, Boffa and Miskell, Architectural Designers New Zealand, New Zealand Planning Institute, and MR Cagney, and the New Zealand Green Building Council. So, tonight we're going to be joined by a group of panellists representing sectors that are both effected by and taking action to address Climate Change. I'll introduce them in a moment. The format for tonight will primarily be a discussion with our panellists, but we'll start off with a presentation from the Ministry for the Environment and Statistics New Zealand on the state of our atmosphere and climate. You're welcome to tweet during the event. Use hashtag Auckland Conversations, AKL Conversations. And, if you'd like to join in we'll be taking questions from the floor during a Q and A that follows the panel discussions. You can ask questions via Twitter, the hashtag Auckland Conversations feed will be monitored. And, if time allows we will include questions during the panel discussion and the Q and A session. I'm sorry about my voice. I'm hoping it won't get any worse. We always try to ensure that the Auckland Conversations events are inclusive and accessible. So, on demand viewing of the event, a full

transcript, and captioning and presentations will be available on the Auckland Conversations website in the next few days. As you will hear in a moment the scale of the Climate Change challenge is large. It's an extensional challenge as some have called it. And, the need for action is now. Transitioning to a lower emissions and resilient economy will be critical for New Zealand's prosperity and everyone, everyone will have a role to play in helping the shift. It's significant that we're having this conversation in Auckland, our largest, our fastest growing city. Auckland welcomes about 45,000 new residents a year. It's about 865 people each week. Bearing in mind we don't have a government quite yet. That may change. It's also significant that this is a shared event between the Ministry for the Environment and Auckland Council because it will take collaboration to effect any change and certainly the change that's required. New Zealand government, whoever it may be, needs Auckland as much as Auckland needs the government. And, Auckland is, and will be, a vital player in New Zealand's economic growth and the prosperity and our response to Climate Change. And, as we'll hear today, responding to Climate Change does not necessarily mean sacrifice. It doesn't mean sacrifice in productivity. It doesn't mean, necessarily, sacrifice in wage growth. If it's done properly actions to reduce emissions might actually provide competitive economic advantage. And, what's more many of the pre-requisites for a low carbon transition are the key ingredients for a successful city, transport and housing choice and affordability, clean energy provision of quality and accessible public green space, smart repurposing of waste, and a high quality and safe built environment. Today, we're here where we're already doing good things and what more we need to do to transition the economy to meet the challenge of Climate Change and take advantage of the opportunities to build the future. The future is something that people are increasingly, and for the first time, in my memory, the future is becoming something that people regard with gloom and a certain ominous foreboding. And, it would be good to turn that around. Today, the latest, the third in the Ministry for the Environment and Statistics New Zealand environmental reporting series was released. Can I invite Liz MacPherson, head of Statistics New Zealand, to introduce it.

- It's my absolute delight today to kick start the Auckland Conversation on future proofing the New Zealand economy by telling you about the release of our report today. Our Atmosphere and Climate 2017, which Vicky and I released today, it's actually the fifth in our environmental reporting series. Our first report together was about air in 2014. And, we've come a long way since then. Together, we've brought you marine and fresh water reports, plus environment2015 which gave an overview of all of our environmental domains. And, next year, our scientists and statisticians will bring together our data and scientific evidence about land. Now, we do these reports because we want every New Zealander to have robust and trusted information about our environment. And, that's because it is only through the actions that we take collectively that we'll create positive change. We're all in this together. That's why the Ministry for the Environment and ourselves, Stats New Zealand report on the state on different aspects of the environment every six months and our environment as a whole every three years. Regular reports enable us to more fully understand our environment, track the positive and negative impacts of human activities over time and identify some of the key challenges and opportunities based in New Zealand. This is a real partnership. We bring out different areas of expertise and environmental science, Stats New Z and science of measurement and data analysis. Neither of us could do

this on our own. And importantly, the environmental reporting framework that we use uses the independence of the government statistician to be sure that the reports are impartial and independent of the government of the day. In their report a World That Counts focused on the UN Sustainable Development goals the UN says the following:

Data are the life blood of decision making. Without data we cannot know how many people are born and what age they die, how many men, women, and children, still live in poverty, how many children need educating, how many doctors we need to train or schools to build, how public money is being spent and to what effect, whether greenhouse gas emissions are increasing, or the fish stocks in the ocean are dangerously low. How many people are in what kind of work, what companies are trading and whether economic activity is expanding.

Back here in New Zealand it is our hope that data will help us unlock opportunities, solve complex problems, and importantly drive action. My hope is that the powerful combination of good science and complex data in today's report, Our Atmosphere and Climate 2017, will do just that. So, I'm absolutely delighted to show you a video of our key findings and it is my real hope that it will truly provide a great backdrop for your conversation tonight.

- Our reporting looks at pressures state and impacts on the environment and tracks change over time. Here are some key findings from Our Atmosphere and Climate 2017. Atmospheric carbon dioxide levels have passed 400 parts per million, the highest levels in at least 800,000 years. Carbon dioxide levels in the atmosphere have increased 23% since 1972. This is the biggest driver of Global Warming. Global gross greenhouse gas emissions have risen 51% from 1990 to 2013. This increase in emissions has largely been driven by burning fossil fuels for electricity, heat, transport, manufacturing, and construction. New Zealand's gross greenhouse gas emissions have risen 24% from 1990 to 2015, while agriculture makes up nearly half of our emissions road transport has had one of the largest increases, increasing 78% in the 26 years to 2015. New Zealand has experienced a one degree Celsius temperature increase over a century. A one degree increase over a century may seem small but it is a rapid change for the climate and already affecting natural systems slow to adapt. 2016 was New Zealand's hottest year on record. New Zealand has experienced its five hottest years in the last 20 years. New Zealand glaciers have lost a quarter of their volume since 1977. The Fox and Franz Joseph glaciers have retreated about three kilometres since 1940. It is now too dangerous for tourists to be guided on the glaciers or on the valley floor. Sea levels have risen 14 to 22 centimetres at four main New Zealand ports from 1916 to 2015. Warming oceans and melting glaciers are driving global sea level rise threatening coastal housing and infrastructure. Ocean acidity has increased experiencing a .03 pH decrease over the last 19 years. The ocean absorbs excess carbon dioxide in the atmosphere which increases its acidity. This can make it harder for shellfish to form shells and harm plankton vital for a healthy food chain. 169,000 hectares of New Zealand's forest has been removed from 2000 to 2015 for other land use. In 2015 New Zealand's forest removed 67% of our carbon dioxide emissions. However, if deforestation continues to outpace the area of new forest planted it will reduce the amount of CO₂ forests remove from the atmosphere. If emissions continue unabated the Earth could warm by more than four degrees Celsius by 2100. The greater the warming the higher the global risks from more intense storm events, loss of coastal settlements, to drought, and loss of biodiversity. Rapid substantial reduction in greenhouse gas emissions can reduce these risks. The global

production of ozone depleting substances has dropped 98% from 1986 to 2015. Global action on restoring the ozone has led the ozone hole to shrink. It is expected to stop forming by the middle of this century.

- I like the way they brought us the good news about the ozone at the end. Vicky Robertson is Secretary for the Environment, Ministry for the Environment and I'd like her to come and talk about the implications of some of what we've just seen.

- It's surprising how much you can learn in three minutes, isn't it? And, it is sobering as come see us. We haven't sugar coated it for you and there's some concerning numbers in there that New Zealand needs to take stock of. I just want to take a moment to acknowledge my team and the stats team for putting that together and putting that together in a way that is really accessible for all New Zealanders not just you here tonight. So, thank you to the team. I think there is hope, though. Climate Change is a critical global issue that's critical for New Zealand as well. We're not a large global contributor and people ask me that all the time, "Well, what can we do?" I think it's currently, we are certainly affected locally by global trends and emissions and there are things that we can do domestically that are really important. But, it's important for us to act. One of the things I talked about today was even if we're a small player and reducing global emissions New Zealand is one of the highest emissions, has one of the highest emissions per capita in the OECD. So, we're the fifth highest. So, I don't know about you but that doesn't sit well as a New Zealander. So, there are things that we can do. We can influence globally and we've done that very well. We can lead by example and we can be world leading and cracking some of the harder issues like methane gas. We also need to look at how we're resilient and how we adapt as a country. So, this report underscores the impacts of Climate Change. Have a read, I'm sure you'll enjoy it. And, most importantly though, talk to people, make it a dinner table conversation. I know with the youth of today and the Millennials coming through this is something that's really, really important to them. So, a welcome audience there. So, for us, transitioning to that low emissions economy for New Zealand is really important. It's not just important from an environmental perspective, though, as a small trade dependent country our green brand is absolutely critical for our future prosperity. And, it is getting more critical for what will be our future customers. I'm really pleased that Liz and I have been in Auckland today; it's been a great day partnering on this topic. And Auckland's really important in this. Auckland represents about 20% of emissions for New Zealand. One of the good news stories that have come out of the international efforts really has been that ozone depleting substances. And, it just shows you that if we do things we can make a difference. So, a lot of people also say well what's government doing and where's government leadership in this. And, I'm sure Ken will get into this later when we get in the panel and I'm looking forward to that. But, we have seen some really solid foundations for me it feels like we're at the beginning of getting on the field to make a difference here. We were quick to sign the Paris agreement, one of the first countries to ratify and now we're in the phase of well how do we actually think about meeting the targets that are in that agreement. We've also worked on emission trading scheme and we now have a carbon price of \$18. So, it's starting to shift into what we would say is an effective mechanism. Not there yet, but it's really moving along. We've also invested \$50 million a year in the climate research and particularly around the methane. So, the Paris agreement it's come into force faster than

anyone had anticipated and really confirms the direction for the future. The next task of government, of course, when it is finally landed is how we'll meet our emissions and our targets that we have. Which most of you in this room will know what they are. One of the really significant shifts though is committing to a common understanding of the opportunities for New Zealand. So, there are a couple of things that have been kicked off. One is around the productivity commission looking at both the transition path for New Zealand in terms of risk but also benefits. There are some potentially competitive advantages for New Zealand in getting ahead of the curve about climate action. The government itself has set up experts around agriculture, forestry, and adaptation to provide an evidence base and to start to think about that pathway forward. So that'll help us all navigate these challenging areas and it is a challenge. It's not an easy thing. There are lots of opportunities though and there's a lot of shift that's happening. One of them that we talk about is the New Zealand super fund has recently talked about moving 950 million into impact investments and away from companies with high exposure to carbon emissions. So, that was part of Adrian Orr talked about building their fund's resilience, so great leadership there. What's in line for the next year? One of the things that we have done in the public sector is recognise that there's an interplay between environment, economic, cultural and social issues and really start to work together as a collective accountable public service. And, I know that sounds like well why you weren't doing that before, but let me tell you that are not easy to achieve. So, we have now got a transition hub in place which is going to look at how we transition to a low emissions economy. That is people from dock, NB, and two northeast lens NPI to Purna Kukure MOT and treasury. So, bringing that whole, the best of our brands together and working with people who can make a difference. We're looking at that transaction through all of our sectors and we're looking at where the gains can be made. So, looking forward to really pushing on that. There are major developments here that are actually looking for how they shift. So, in Auckland, for example, our transport Monaco is looking at how they might use smart designs so we don't lock in future emissions, which is really important. The city rail link is another great case study and I'm sure Andrew might talk to that later. So, a decade ago we wouldn't foresee the change agents and the technologies we have today. I think the conversation we're having today is very different from even when I started in this role two years ago. And, I think that is fantastic. We do know we must be ready to embrace the technology. And, one of future foot farms will be one of the conversations that we'll be trying to generate and build new business models and drive change. So, to make room we must open up our perspective and I suppose one of the things we see is that it's not one single action or one government leadership that's going to make the shift here. It really is the interplay between sectors and between people. So, a bit of system shift if you like. And, maximising the benefits both from an environment point of view and economic point of view. And, reduce some of the unintended consequences that it might have on our social inequities if you like. So, we're all about mainstreaming emissions reductions and thinking about what that pathway might look like. So, the prize is to bend the curve and make or New Zealand the most liveable place in the world and deliver a prosperous economy for all New Zealanders. So, I just want to finish off with the question I get often which I've tweeted today and been cheekily teased about it. But, one of the questions I get asked is what can I do? So, we have helpfully put together a bit of what can I do guide on our website. So, go and have a look at it and next time you're having those conversation about well it's just about x, y, z needs to y something maybe hook into the

conversation about what all New Zealanders can do. We've launched that today, so have a look. And, there are a lot of good stories on there about what others are doing. That's one of the things I've been really heartened by and you'll see a little bit of that today from the panel. So, thank you for coming. It's fantastic to see such a large audience today. I'm sure you'll enjoy Kim and the panel. I know I've enjoyed meeting her this afternoon. And, she's already given me a bit of a bollocking, so. We'll look forward to that.

- Oh, she thought that was a bollocking. You know the Parliamentary Commission for the Environment, I mean as Vicki suggested, right, I intend to mock the government's lack of commitment direction in dealing with Climate Change. But, the Parliamentary Commission for the Environment while accepting that many have criticised the government's emissions target as not ambitious enough the bigger issue she said is how do we chart the pathway, how do we change the direction in which we are travelling. You saw the gross figure on that video of by how much New Zealand's emission have risen by. The net figure between 1990 and 2015 New Zealand's net emissions have risen by 64%. All the people on our panel tonight are committed to doing exactly what the Parliamentary Commission for the Environment said we should do. Change the direction in which we're travelling. Forget the targets, change the direction in which we are travelling. Please let me introduce them. You've met Nicky, Nicky? You see that's how dreadful it was today between us. You've met Vicky already. Let me introduce Rangimarie Hunia the Chief Executive of Ngati Whatua Orakei Whai Maia, the organisation charged with advancing the aspirations of the Hapu from social, economic, environmental points of view. Helen O'Sullivan is chief executive of Ockham Residential which aims for affordable, quality, sustainable housing. I met somebody tonight who's bought one, no two Ockham apartments. David Woods, chairman of the Impact Enterprise Fund which aims for market rate returns plus beneficial social, and environmental outcomes. Martin McMullen is with the NZTA connected Journey Solutions director is his title. I've got no idea what that means, but innovation and new technology are his specialties. And Jim Quinn is chief of strategy for the Auckland Council. Please welcome them all ladies and gentlemen. Al Gore, the sainted Al Gore, said that there's a danger of moving from denial to despair without stopping on the way. And, it does occur to me that given that 50% of our emissions, and let me talk to you first, Vicky, about this 50% of our emissions in New Zealand are from the agricultural sector and report, after report, after report says we have no hope of making a dent in our Climate Change emissions unless we change our land use. And, you know what that means, right? How can anybody in Auckland, Vicky, make a difference?

- One of the other key things in this report is about road transport. So, it's one the fastest increasing emissions is in road transport, so it's 78% over the period that we measure. So, car use in New Zealand is one of the highest in the OCD and we have quite an old fleet. So, there is quite a bit in there that Aucklanders could do and I think there is some interesting things that NZTA is thinking about in terms of thinking about your transport use as a service. So, I think that would be good to hear about. Just on agricultural emissions there are three guesses that are important in their end. So, it's not just about land use but also how we treat methane, nitrous oxide, and carbon dioxide. And, farmers who are really productive are also doing very well on reducing their emissions and carbon dioxide use. So, that's fantastic and good farmers are

doing that. Nitrous oxide is basically fertiliser and we need to keep working on what do we do about that. And, methane's the hard one. Nobody in the world has actually cracked how do you stop cows and sheep burping. So, even if we have fewer cows they're still going to burp. So, a lot of research in there and I don't think it's as far away as we might think. So, there is hope in that. One of the things that has been really interesting lately is that is during the dairy action plan accord was announced and that is dairy farmers looking for the first time at measuring their methane emissions, looking at action plans for reducing the emissions on farms. So, that's got to happen too.

- Just to get the elephant in the room out of the door, if you'll excuse the metaphor, can I just check with the panellists in the interests of the climate have any of them or would any of them be willing to give up animal products. Jim?

- Got me, unlikely I think. I do like them so.

- I'll do it if Jim does it.

- Yes.

- Okay, no, no, no stop it there. In the interest of the environment you've given up animal products?

- Yes.

- Completely, no milk, no meats.

- No meat, dairy I'd be a little hesitant on, but everything else okay.

- All right, I'm glad I drilled down into that one. Helen?

- No, but I'm willing to shop sustainably as a consumer.

- Helen drives very fast cars and uses a lot of fossil fuels ladies and gentleman.

- But, I commute in a Lyft.

- I'm just saying, yes next.

-not yet, one day maybe.

- Vicky?

- I have reduced the use of animal products.

- All right, I don't know whether this is actually.

- Not completely.

- You might like to mull this over in the course of the proceedings, should we really be putting our mouths where our mouths are or is that just a step too far? In the interest of finding out what is being done or as the Parliamentary Commission on the Environment put it, how far we are along the path let me first of all ask Helen what she thinks she's contributing in terms of Ockham residential.

- One of the things we're trying to do at Ockham, I think medium density housing is a large part of the solution here. We are building, we love building our properties on transport nodes so we build them right next to train stations, on top of train stations, right next to cycle paths so that the opportunity is there to actually live a low emissions lifestyle in stint of your journey to and from your employment. But, and also, I think one of developments Daisy, has no car parking at all but it has two shared cars which will be run as part of the shared car system.

- They're electric vehicles, right?

- One of them's a hybrid and the other is, we've provided for an electric car at the moment, we going to just try it cause there's some complications around getting electric cars in the shared scheme. So, we've provided for that as a future proofing option. And also, in our newer developments we're providing for the potential to build in charging for electric cars when people are at that point and they want to actually bring them into the car parks and the buildings. So, they can actually do that in the future.

- One of the reasons that it interests me, what you're doing and this is by no means an advertisement for Ockham Residential, but a lot of people would say people can't do without their cars. They want their gardens, they want their cars, and they're going to have to live way the hell out of Auckland because there's nothing affordable. You've said if people can be persuaded that they don't need that stuff then everything can be turned around.

- Yeah, I think so, because the thing is proximity is the most important thing I think for housing. We can all, like I live in Auckland so I don't have to drive an hour and half every night and morning to get to and from work. Now, that's why I live there because I think it's one of the most awesome cities in the world. But, I'm not going to spend three hours a day commuting to do it. So, building houses that people can afford in places that they want to live at prices and places they want to be I think is a distinct part of the solution to it. But, like Godard said something like 95% of the time your car sits still and I know I live in one of our developments and I think I've driven my car once so far this week. I really am going to have to make the decision at some point but a car share would be a great solution for that, just the money I have tied up in it is ridiculous.

- Second only, of course, to property developers in the list of the most hated people investment

fund managers, which brings me to David. David claims to be able to make a profit while doing good. How does that work?

- Thank you, Kim, I think if you look at the UN sustainable goals and the OECD's target to meet them for us to meet all those goals by 2030 we need another \$20 trillion invested. So, conventional ways of funding just aren't going to get there. So, what we find more and more coming out of Europe in the US and now increasingly here in New Zealand is people saying we'll invest in your housing project or in this clean water project but we want measurable environmental outcomes that are better in terms of water quality, in terms of silt levels, in terms of use of the water, drinking water, not just a financial return. And, it works with a combination of government who can often think longer than the private sector, philanthropists who often give grants to help the studies to set the structures up, and pension funds Adrian Orr was quoted earlier and other investors doing it, so it's a combination of everybody. And, this area is growing dramatically in many parts of the world and 2/3rds of the fund managers claim looking backwards the results not to sacrifice financial return they just take a bit more risk to get a measurable environmental or social outcome as well.

- And, how did the results of the investment get measured.

- There are a number of independent bodies. This tends to come out of well banked statistics and long term statistics and organisations like that then setting themselves up. You've got an organisation in New Zealand, I don't want to plug anybody, called EviroStrat who, if you look at the measures for water quality and water projects and water funds have a whole list of metrics that the borrower and the lender sit down and say what are we going to measure against.

- But, it requires sacrifice on the part of the individual to say I will gainsay some of the profit in order that I will improve the planet.

- Well, there's two answers to that. One is if you take a bit more risk, no you don't give up, you just take more risk but the other answer is to quantify what an environmental or social return is worth to you. What's it worth to give somebody an affordable, let somebody buy an affordable house and lower health bills and improve education levels. How do you put a monetary value on that? How do you put a monetary value on better water quality? And, that's where the debate is, at the moment, in New Zealand and particularly with younger investors their saying to stale, male, and pale brigade that run the financial industry we want to see things done differently.

- Is this also to do with the change in the accounting system, a change from measuring things in terms of GDP or is that another issue?

- No, I think that's a separate issue.

- Right, Martin--

- But that's coming.

- Hey?

- That's coming.

- Will it help?

- I think so.

- Yeah, yeah.

- Martin, you were talking before and it all comes down to giving people choice, right? Not, I think the parlance these days is nudge, nudging people towards things rather than shoving them towards things because it's the right thing to do. And, you were telling us about an interesting quality that you have in Queenstown. Can you elaborate on that?

- Yes, on the 24th of August we launched a pilot into Queenstown around an application that gives people live transport choices regardless of the modes. And, that really wants to start to create like a mobility marketplace.

- So, people arrive in Queenstown, they go to somewhere and say how do I get from here to there?

- Yeah, that's right.

- And you say, you can't get there from here. No, it's a joke that only the Irishman will understand. Yes, and you give them a choice of what?

- Any mode, so any commercial or active mode of transport will be able to be procured from there. So, in Queenstown you've the ski shuttles, the public transport, the taxis, ride share, carpool, water taxis, heli-skiing if you're into heli-skiing, e-bikes, normal cycling, and also walking options as well. What we want to do is create the marketplace so people can sell their services into it, but eventually what we want to start to do is influence people's behaviours by making micro investments into that marketplace to encourage them to do the right mode of transport because what we really need in Queenstown is a fine example of this is we need to either get people into alternative modes of transport or increase the utilisation of the vehicles that we've already got in Queenstown.

- And, you'll be using a price mechanism for this? Would you be raising the price of the things that you don't want people to do?

- Well, that's what by having a marketplace that allows you to influence those things in the future if the pilots are successful. You encourage, and that's not just around transport choices but you factor in sustainability into that as well. So, if your travel choices are actually improving the

environment that you're in you may find that you may get some sort of incentivization in the future. If your travel choices are actually undermining the environment that you're in you may find that may be some cost loading put on what you want to do. But, ultimately you'll have a choice either way.

- How do you feel about this in here? I mean, this is the only way people can exercise full choice in that sense is if they have loads of money, right? Otherwise, your lack of money limits your choice. Is Martin talking about a perfect world or is he talking about stuff that can really work?

- Look now, I think Martin is talking from his context and I think when I look at the Ngati Whatua context particularly, I think the most important part for us is that change doesn't happen overnight. Current change is an intergenerational pursuit. And so, when I think about the ups and downs and we talk about generational change here to me it's about making sure that intergenerational values, philosophies, and principles are sustained over generations. That's how you make the biggest difference, I think, in this dynamic here. Where it comes to inequality I think alleviating poverty and environmental sustainability must go hand in hand.

- All right, we were talking about thank you. We're talking about the long view of Maori earlier and how that makes it, in a way, easier to imagine the consequence of actions not taken or actions taken. Do you think that that's evident in terms of what you were doing?

- Oh, without a doubt. When I think of Ngati Whatua's view of the world that's not about Rangimarie in the current position. I've inherited a legacy. I've inherited a view of the world. I've inherited a particular philosophy and practise. When I think about environmental sustainability, Climate Change, and the like for us the basis of that is Papatuanuku. And, we think about her, we think about her as Mother Earth, we think about her as the procreator. And, we think about her in terms of where we return to when we leave this world. And, the question around what do we give, what is her legacy, are we okay with creating harm for her with our mother? Are we okay with that? I think a lot of those views and perspectives make it a lot easier to practise over time, there are a whole lot. And, I think the other part for us is there has to be a level of resilience. And Vicky, you talked about this, right? Resilience means things might happen in this generation, but the reality is we've got to be really clear about the outcome in the long game. And, I think we have looked back, we are trying to adapt to that and we are trying to ensure that we move forward toward that.

- Can you give me an example of how?

- Oh yeah sure, look I think 1951 for an example, Ngati Whatua had quarter of an acre that was an so we have had loss of land, we have land alienation, we have had poverty, we have had death. We had become wards of the state. We've had every single ugly circumstance that we are talking about really openly actually in the New Zealand context. Not more than two generations later, cause my mom was born at that time, not more than two generations later we've got a billion dollars and we practise what Martin's talking about. You cannot think about, in our view, intergenerational wealth creation if you don't also think about growing people at the

same time. So, I think you can do it. I think we have done that. And now, we're also at a point where you get to a point in life where you have the means to make your own decisions. And, for us, the biggest change we're making is when we put our own skin in the game, when we put our own investment into the game and we look for partners who actually have the same view, long term view about change, prosperity, and beauty of New Zealand. That's what I think is really beautiful about the way that we are thinking.

- Thank you for that. Jim as Chief of Strategy Auckland Council, I mean that's a big title, right? You have to pull all these threads together. It's a city where people have different ideas, people have different aspirations. Liz was talking before about how action needs to be collective when it comes to Climate Change which is a huge umbrella term we use, right? She must be some kind of socialist, right? I mean, I know neoliberalism is dead, but collective action? Can you see Auckland as a place where collective action can take place?

- I don't think we have much choice. I think we have to act. I think Auckland's advantage, the amalgamation of Auckland's created a collective view of the whole of Auckland rather than a scrap between eight or nine different factions. We're, of course, in a political system which will change every term or multi-terms, but we've got a very strong underpinning of the Auckland plan a long term view, a 30 year view. I think somebody asked me today is there a silver bullet for this, and of course, there's not. You've got to do lots of little things all the time and you've got to have some very grand long views. And, you've got to stick to them cause if you take a fetish approach I think you're nailed. So, we're doing great small things and I just learned that this afternoon the building we're in on Albert Street has got a Green Star six rating now, which is a big step. But, it's one building, which is a good thing.

- Does everybody know what that means? Can you explain perhaps in a little more detail about what that means?

- I don't have the technical detailed ja-mor. Correct me, but look it's the highest standard a building can be fitted to, we had to retro fit this because we moved into it. But, it's all of the way it uses energy, the way it's fitted out, and the way the climate control works. So, it's a really good use of the environment. It's about having the right sort of lighting from a sustainability perspective. So, we're doing things such as that. I think one of the interesting things Vicky talked about, roads. One of the big switches, I think, Auckland's got to get to is everybody knows we've got congestion. We're all a bit relieved that NZTA colleagues have built a tunnel for us, which has eased it a bit for now.

- It'll just encourage them though, won't it?

- Well yeah, and the big switch for me, I'm intrigued cause I'm involved in thinking through what pricing signals we give to help people make a choice. We've got Auckland Transport and NZTA investing well in electric trains and other modes of transport. But, when I talk folk most folk say to me, "I really can't wait till you solve this congestion thing "so that everybody gets out of my way." Rather than what am I going to do to get out of the way. And, I think if we can just flick

that one switch because we're growing, we're I think it's 90 million journeys a year now from a very low base. So, we've really making some great strides and Mira's leading, has led the talk about the plastic bags. We've got the million trees initiative. So, it's about doing big things that are symbols of dragging us all to think collectively about those sorts of outcomes.

- Well, thank you for that nudge in the direction of the mayor. We'll stop for a non-commercial break now. The mayor, of course, is en route to Paris to the conference looking at cities dealing with Climate Change, but we have a video message from Mister Goff.

- Kyord Akoto is one of the very first signatories to the Paris Accord New Zealand has pledge to take action to reduce emissions and limit our impact on the environment. Auckland, New Zealand's largest city with more than a third of our country's population has an important role to play in achieving those targets. There's a lot we're already doing to reduce our emissions. We're encouraging more people and particularly school students to use active modes of transport with more cycle and walk ways. Good for health, good for the environment. We're promoting public transport. Over 19 kilometres of bus lanes have been rolled out in the last year and we're trialling electric buses. Train patronage has soared to 20 million passenger trips a year. We're three years ahead of target. We've replaced diesel trains with electric trains saving over nine million litres of diesel a year and reducing carbon emissions by 80%. And, we're extending electrification to Pukekohe. Once completed the city rail link will reduce Auckland's carbon emissions by 268,000 tonnes over 40 years. We're supporting car sharing schemes in Auckland. For each car shared it takes up to 13 private vehicles off the road. And, we're working with government to promote the uptake of electric cars. I've got one myself, quiet, clean, low cost to run. We've replaced 12 and a half thousand street lights with LED bulbs resulting in a 72% energy reduction. With an ambitious target of 08 by 2040 we're already reducing curb side waste collection by 30%. And, we've planted over 150,000 native trees already this year towards our million trees target this term. Greening our city, protecting our streams and waterways and creating carbon sinks to reduce our greenhouse emissions and we support energy conservation in buildings. The first stage alone of the redevelopment of the Wynyard Quarter is predicted to deliver in excess of four gigawatt hour's worth of electricity savings which equates to 687 tonnes of carbon. It's a good start, but there's so much more to do. Council can't do it alone. All of us need to work in the best interests of our planet and future generations. I'm sorry I can't be with you today but I wish you well in your discussions around how we can create a more sustainable Auckland.

- Electric vehicles, let's talk about electric vehicles. The Parliamentary Commission for the Environment, John Wright says this is the number one thing we can do. And certainly, as Phil Goff said in Auckland there's a huge scoop for having electric vehicles. Is there the infrastructure for them, if not, when will it be there? Are you best able to talk to this, Jim?

- Man, I'm sure I could have a crack. I think most folk who, the first hurdle people go through is ranging anxiety. That's mostly solved, I think that issue has gone a long, long way. And most folk will charge at home and return home. So, the public requirement is much less than I think people intuitively think. But, there are stations, or whatever they're called being installed, there's

I know they're opening one in New Market. So, the capability is there. I think, like every industry, we seem to have when the opportunity was there to have a single way of getting things done, industry have given us a few. So, there's adaptive requirement on some cars, I believe. But, the point is the ability is there. It's about people being prepared to go there now.

- We need not only for people to have electric vehicles but also to share electric vehicles with others, right? There's no point in everybody driving an electric vehicle cause we'll just have to drive more roads. And that will divert resources from something else even though greenhouse gases will saved, presumably. When will electric vehicles be cheap enough and available enough to people? Do you know?

- Well, they're getting cheaper and cheaper all the time. I think the last time I looked you could pick up a 2013 Nissan Leaf on Trade Me for less than \$10,000 now. There's actually a factor the cost of not paying the fuel in over three years it will have paid for itself.

- Yeah, but you need the money in the first place, right? It's like solar power.

- Absolutely.

- The investment needs to happen before the pay off.

- But, that goes with all car payments, and that's where I think one of the things that will be realistically achieved in the next 10 years or so are shared fleets of cars where that's things like City Hop today. And then, as the technology becomes more mature it'd move into shared fleets of autonomous or semi-autonomous vehicles. But, they are still just cars. We really need to change people's behaviours to get them to be more active using public transport. And then, as a further mitigation is shared fleets and then the last resort should be driving your own car.

- Do you need more sorry Helen you wanted to say something.

- There are some practicalities around that. There's a report recently about a Sydney apartment building where they've got three Teslas and when all three of them are charging the lift doesn't work.

- Nor the toasters I imagine.

- I imagine that's a problem as well.

- But nevertheless, the idea behind electric cars is kind of brilliant. Is the government putting enough incentives into encouraging people to get into them, any ideas?

- I haven't seen a lot, I guess, I think the practicalities around the infrastructure are probably the big thing. We've looked at it in our apartment buildings because it's all very well if you've got a house and a garage and you can plug it in when you get home. But, if you've got an apartment

building with 60 car parks in it how do you wire up 60 car parks? If we put in sufficient electric car charging for all 60 of those car parks to be charging we'd have had to put another quarter of a million dollars' worth of transformer on the side, which is probably not going to be used for a while. And, there's a whole trade off around housing affordability there. And, I think those conversations and the joined up thinking around that is probably where local and central government have to take a real lead role in terms of what's the best outcome for New Zealand inc and how do we achieve that cause the short term decision may be quite a different one to the long term decision.

- One of the suggestions, sorry Vicky carry on.

- I was just going to say one of the issues is supply. So, how do you actually create credit off demand in New Zealand for electric vehicles so therefore the price will come down and therefore the infrastructure won't be such a big barrier. And, I mean, we do have goal of 64,000 electric vehicles by 2021 which is a good start. 30 private sector firms have also pledged to basically have their fleets committed to be these by 2019. So, I think some of this will change pretty rapidly. I think the other bits important though that Martin was talking about that EVs are kind of the current wave of new technology, but personalised air transport's not too far away either. So, that whole thinking about our mobility as a service and what--

- Personalised air transport?

- Yeah, and so that's being trialled at the moment. So, there's a race on to, you saw the drawings in Abu Dhabi in Dubai with the police officers, I think there's trials potentially happening--

- This is not a useful thing to say though, is it? Because I'm not going to buy the electric vehicle because I'm going to be hanging out for the personalised air transporter.

- Well, I think the point is that there'll be some people who want an EV and there'll be some people who end up wanting to be picked up from their own house and almost be like an Uber or shared taxi--

- But, it's not what I expected from somebody from the Ministry for the Environment. She's talking about a technological fix, ladies and gentlemen. And, this is not what I ever thought I'd hear you say. But, it brings us on to an important issue, technological fixes do we need to hang out for them or do we need to change our behaviour now? Jim.

- I think both. I don't think, it's not a coin toss. We need to act now, we do what's within our capability--

- But, you know, there are people who say, "Ah, don't worry about it, we'll have the vaccination "to stop the cow's belching that methane. "And we'll have the personalised air transportation "so we won't have to build roads anymore. "Everything will be fine."

- Yeah, but you've got to live within what you can foresee right now. And, if you just wait for everything I just don't think you'll achieve anything. So, yes we're all working on different future things that we're aware of, waiting to see how those models evolve, waiting to see when they tip. All of these things seem to take longer to tip than you intuitively think. But, we've got to get on and do things now because the problem is here now. SO, I don't think it's a coincidence.

- I agree, and I think New Zealanders kind of want to do that. We've seen that with plastic bags. We're not waiting until there's a new way of having our groceries put into biodegradable bags. Consumers actually have driven New World and Countdown coming out and saying we're going to phase these out. So, I think, I mean people want to do things in New Zealand, that's my experience.

- So, I mean, that's an interesting example you raise, actually because there are people who say the government should have done something. The government should have banned those plastic bags. You're saying it's better if people reach decisions by themselves.

- Well, I don't know about you Kim, but when somebody tells me to do something I don't tend to do it. Or, if I do it I do the very minimum thing that you've asked me to do cause I don't like authority. And, most Kiwis, I mean that whole piece of power in the consumer's hand and it's much better, well from my point of view, much better that we don't have to regulate everything in order to get change. Because, the world is changing so fast that regulation will never keep up with that and so we need people to nudge into different behaviour and drive some of, consumers can drive some of the change here.

- But, you also don't want to terrify the wits out of people too much so that they become paralysed and unable to change.

- No, that's right.

- You've got to co-create the future with them. That's the really thing, we've got to think big and start today. And, the best way of understanding what the future's going to look like is we create it together. And, I think that is where technology and behaviour change go hand in hand and you don't do stuff to people, you do it with them.

- There are unintended consequences from technology, of course. And, a lot of people are adverse to seeing it as part of the solution because of that. Have you got examples of how technology can positively and without unintended consequences help the situation? I mean, even EVs are a moot point because they still have to be manufactured, right? What are you going to do with your old cars? That's a huge period of wasted resources before there's any gain.

- Yeah, but that's still about getting things done now and living with what we've got, but look at it at its simplest. Look at what LED lights are doing for us now and that's a pretty minor tech

change, but it's really enhancing or reducing the power use and enabling us to live with in the hydro resources we've got rather than having to build coal fired or whatever other options. So, look at these small examples like that right through to the big ones. And, Martin, I know, is thinking a lot about mobility as a shared service and automatic cars and all the benefits that come from those things. But, there are things that we will worry about stranding assets on the way through, but we're still going to act now and do those all those smaller steps.

- Just to add to what Jim said I think if you look at what the UK has done where they've just banned, said no more petrol cars after 2040. It's giving people time to adapt and find the technical solutions but also change their behaviour, just gives them long enough to do it.

- That kind of contradicts what we were just saying, of course, doesn't it? That there is a time for the government to say this is the line in the sand and this is what's going to happen. I mean, the UK government also has a Climate Change Act which has commissioned for Climate Change and has carbon budgets and it has targets and it has accountability if those targets aren't met. It's clearly a great deal more worried, committed, and authoritarian than we are.

- All of those, but it has a much higher population density.

- Does that make it more necessary to be authoritarian, is that what you're suggesting? I mean, really, yes it has like 60 million people or whatever but what is the difference?

- It's not my field, particularly, but I think that if you look at highly concentrated urban areas than there is, perhaps, less democracy in those than in areas like New Zealand where population density is relatively low.

- Except that, of course--

- I do think the problem's a lot more noticeable where you've got a greater urban concentrations.

- But also the opportunities are greater, right?

- Yeah, but also it was built some time ago with old tech, I mean, one of the great opportunities that Auckland's got is we're going to intensify with modern tech and modern thinking. And, we've got the one off shot of delivering intensity with good amenity, good sustainable environment, with good sustainable assets and do it extremely well. And, we'd have failed miserably if we repeat all of those mistakes we can visibly see who were built when the technology simply wasn't understood or there.

- Right, just let's talk about New Zealand inc rather than Auckland accepting that Auckland is a major component, a major stakeholder, a shareholder in that. How does New Zealand improve its productivity, improve its value while taking Climate Change seriously in all the ways we've mentioned and more?

- I think stop debating whether we believe all of this and just accept it, get a common set of facts and launch from there so that we all, though you started this evening talking about collective initiative. Martin talked about co-designing a future. I think it's all about how we all work together to land there. And, I personally find it tiring debating whether the issue is as big as it is or it isn't. And, I accept there are different ways to get to better endpoint but we've just got to absolutely believe and go. And, I think reports like that have been launched this afternoon really help ground a stable base of fact and people collectively will move from there.

- I mean, I haven't heard anything, sorry Martin. I haven't heard anything tonight that feels like a sacrifice. It all makes sense if you are people living apart from giving up meat and dairy products. It all makes sense to people living in a collective, in a community and not wanting to waste stuff, because what is the point of that? And so, it all sounds very constructive. But, there's got to be some sacrifice somewhere, right? What is that sacrifice, what does it look like? How are you going to persuade people to give up and what?

- I'm not sure it's a sacrifice. I mean some things will be, I'm sure, but I think it's more the absolute call to make a decision to do things a different way and accept that changing patterns, habits, and so forth is hard. Cause I think we are comfortable with what we do and sometimes ignorance will kill us about the consequence of it.

- I think there's a negative sacrifice in some ways. Like, in some ways Auckland is at the moment we're being tortured out of our cars by the CRL construction because if you try to drive through Auckland Central it's almost impossible. And so, you realise--

- Is that a plot, do you think?

- Well, I think it's an unintended consequence but in many ways it's a positive one. It's training us to use public transport. Actually, this isn't bad, this works, I can do this. It's not that painful. And so, I guess it's kind of you give up pain in exchange for good stuff. And, that kind of ultimately gets us further ahead. Actually, it doesn't have to be sacrificing your good living standard. It's actually take an alternative approach to a better life.

- So, I keep coming back to what Rangimarie said before. If you take a long view and think about okay so one of the things that's really important to me and living New Zealand is having the ability to go and get my hunga-kai to be able to travel in a pretty short distance and live quite close to my work and where we play. If you take an enough long term view then you basically start to value that into your short term decision making and that's what New Zealand has the opportunity to do. So, it might be a short term sacrifice, as you say, it might mean that we actually change some of what we do in the next decade but one thing I know we are good at is adapting and being innovative and finding new ways of doing different things that mean that actually we take these things into account. And, I think that's the prize here.

- Yeah, I think if you are talking about it as New Zealand inc point of view, New Zealand's a really attractive place to live. As you might tell I'm not originally from New Zealand. I'm a

Welshman by birth, but having worked in and around San Francisco the cultures aren't too dissimilar to New Zealand but this is just a better, easier standard of life. And, if you're trying to rent a property in San Francisco in the technology business if you don't take it there and then you've lost it you come to New Zealand. You think about you've got organisations like Zero based out of Wellington and Searo-druery from the Hawke's Bay. Why aren't we making the regions attractive places to attract high calibre technology businesses where the work, life balance is phenomenal and you start to bring highly skilled workers to those regions.

- Is that a rhetorical question, why aren't we making the regions more attractive? Have we got a government yet?

- It becomes technology isn't really geographical specific and it attracts highly skilled, highly ethical people who are very much environmentally conscience as well to come and want to be part of New Zealand. And, we don't have any problems attracting people from the US at the moment to come and want to live and work here. And, I think that's one of our unique selling points in the future is a great place to live and work.

- What worries me about all this is that, and it's about choice and it's about encouraging people to make the right decision for the future, that you need a certain amount of personal resources to make those choices. How do you stop the inequities that are clear in New Zealand and clear in Auckland from growing even larger? Any comment on that anyone? Cause they will grow larger.

- I think that's a fabulous question, Kim. I think the piece here when you link inequity with digital innovation the two are inextricably linked. They're linked, right?

- Very closely.

- They're very closely linked. The reality, whether we like it or not is that digital innovation will be a key part of this world. And, it will have an impact on the business models that we use and it will be mechanisms for greater efficiencies. That is a fact. And, I think about AI, AI in terms of artificial intelligence in my view is a global trend that will change the way in which the labour force will move. So, when I think about that and I think about inequities and I think about the 250,000 Maori people who are living in Tamaki alone, when I think about the rates of educational underachievement we need to change that landscape really quickly. And, digital innovation will do that because digital mediums will allow us to go further and faster. I think the other part about that is that if it's done well enough, particularly in the school environment schooling doesn't begin at nine and finish at three, schooling starts before that and ends past that. I have real concerns, personally as a mother of four, and looking after over 1500 of our tribal descendants under the age of 18 that not enough of them have those mediums at their fingertips to be able to even think about how do we, when we know that the digital revolution is going to influence communications, transportation, and energy the reality is if we're not clear about how those children are embarking, becoming digital natives in that space they will not be able to get to the point where you choose whether you want a Tesla that can charge in a flash

apartment or whether you've got an electric car, that will not be a choice. So, I think sacrifice is not really the right word for me. I think this is about changing perceptions, behaviours, and norms in the city so that actually our babies, cause all of us we're all adults here, right? I don't got no, my kids aren't screaming so I know they're not in the crowd. But, I think, sometimes we're trying to have a conversation around the converted where in actual fact the conversation belongs in the hearts of our babies. Our babies, my baby, my seven year old has been the one that's influenced the buying of these bags. She is just fanatical. We walk into the supermarket we don't have the bag, we don't get the things mom wants, we're outta there. They are the ones that are changing behaviours and that's where true leadership, true change, and true sophistication is going to occur, in the city you're going to get the shift.

- Sanctimonious kids, don't you hate them. David, you were saying earlier that one of the groups of people who are really wanting the type of impact investment that you're offering are the Millennials. This seems to have been a seat change in that generation.

- I think there has very much so, that they have much stronger value codes. They're growing up in a society where many countries in the western world our children and their children are looking at having a lower standard of living than their parents for the first time since the second World War. So, you're seeing it now in the way that people invest and you're seeing it increasingly in supply chain procurement where it's also going the same way. Where you're asking the supermarket where they buy their coffee, where they buy their groceries, their supplies that they sell to you, how it's all produced. So, everybody coming up behind us is becoming more and more aware of environmental and social inequalities and wants us to do something.

- So much to say so little time. If we bring the lights up there may, I hope, be questions from the audience and I'll be able to see if anybody's putting their hand up with a question. And, there will no doubt be microphones en route to you. If you have any questions from any of the panel there's a question, well you pick them out cause I can barely see.

- Hi yes, my name's Damien Light. My question is around power generation, and renewable energy. I had the privilege recently of going to Taipei in Taiwan and the council there is investing in intelligent, green housing particularly for their estate housing. So, all their buildings have solar panels, their eco efficient and their effectively self-contained power stations. So, they completely run themselves.

- Well, do they call that passive, eh?

- Well, I think they called it intelligent design or intelligent, I can't remember the term they used for it but really, really clever. And, it's just one of those things I think we need to see more of. And, I'm just interested in what we can do from a property point of view and a council point of view to make that the default so that we're building better futures, I guess.

- Thank you, yeah we have Daisy is a nine Home Star property. And, it has solar panels on the

roof which power the common area, power the lift, power the common what's the word I'm after sorry, I'm completely failing to get that one. It's also providing a common central hot water heating. And then, we've got a heat exchange system which enables us to manage the climate control by basically draws in cold air and exchanges it for the warm stuff to manage the heating process. It is, it's been quite an exercise to achieve it. And, the interesting thing is finding people in the market that value it cause you've got to trade off to a certain degree between that and what people are prepared to pay for and can afford in the affordable housing space. Daisy's been an interesting experiment for us. How can you make that the standard I guess it is about people actually demanding that in the market place but also it comes down to scale, being able to do that so that you don't have to choose between a house or a sustainable house so that actually you can afford something which is a house and is sustainable.

- I'll jump on for this one, but we've just done a housing development in Nor-a-kay not more than five kilometres along the waterfront here. And, it was funded by the tribe by Ngati Whatua Orakei and we developed 30 medium density homes and we have a philosophy about being sustainable and living that as a practise in its design and its concept and actually in the way that people live. We've trialled, so we've got the solar panels but we've also got the Tesla. We're the first ones to try all the Tesla batteries in the home. And, that has been fantastic. I think in terms of the design we also wanted to make sure that it was appropriate for intergenerational living. It's cool that nan lives with the kids that lives with the grand kids and they all grow up together. We also made sure that all of our planting was native plants which we grew on our nursery which has obviously got a carbon foot print cause it's only about 500 metres down the road. We also use swales because we wanted to make sure that when the water, any kind of storm water left those homes in that development it would be clean because that water was going into the Waitemata. And, the Waitemata is our ancestor. So we were not happy that the idea that we would continually perpetuate polluting the Waitemata was not good. So we've been able to do that. The other thing, I think is that we have set a standard, a housing standard for us that allows us to be, the homes to be high quality. So, we've had some really great architects come on board. We have had all of the best technology because the other reality for us to was too many of our kids were being susceptible to what I call third world diseases. Rheumatic fever as a result, or preventable illnesses as a result of mouldy, damp, cold homes is not a reality. I think the other intelligent part for what I think our tribal leaders have done is that you have to put some money in. If you want that to be the standard that requires you to give something up. So, the homes, the land that is on there for us we put the land in and said it's an absolute privilege to one live on your tribal land, two to live in a community, and three be part of this what I say an ecological and sustainable future. So, I think that's what New Zealand offers because we have a small population. We have a close population. You can't go very far in this country without knowing anyone. There's a beauty in that and I think there is a real desire and I would hope it's a desire here for Tamaki that we all want to be close community. So, when I think about Taipei and I think about other case in countries, I think about population, and I think about us there's no excuse. There is really no excuse. It's just about how much we're prepared to do it and how quick we're all going to put something in to allow it to occur.

- Thank you.

- There's a hand up at the back there was somebody else first? Stand up and talk into the microphone.

- Hi, my name's Chris. I live in Auckland, and I'm aware it sits between two harbours. And sea level rise seems to me to be something that hasn't quite been mentioned here tonight. Not be a sanctimonious 60 year old but I actually walk around and bike around the harbour each year a bit. And, I notice how high around the Wynyard Quarter that the water gets on the harbour. And, I watch the developments going on down there, the buildings and I've looked at the plans and I don't see anything about what we're going to do about wave surge and the sea getting higher. So, I was just interested how that factors into these conversations.

- Good question, I think that's a question for Jim Quinn, chief of strategy.

- Yeah look, it's certainly an issue. I'm involved in a planning exercise somewhere else in the world and just supporting them. And, I know that made the fundamental call cause I'm thinking 100 years out at the moment, that they'll turn commercial land, residential land and park land because they unlike that part of the world have decided at this time not to engineer their way out of it and they'll let nature have it back in the 100 year zone. So, I think what you'll see is governments in the wider stance of the world really think about this. There's a lot of monitoring happening, certainly a lot of thinking in term of how close to the tide mark we can be in our unity plan and there will be more and more of that as we think ahead. I think you're right though. I don't think it's a debate that being had in the community in any structured way yet. And, it's talked about, people think about it. And, I think, at the moment, people are more concerned about storm surge because that's what they see first. And, I think the long term risk of inundation is something that people will think about. And, some people will say that technology will fix this before we get there, I'm sure in the way that Kim asked earlier I think would be a brave quarter just wait and pray that we can fix it with technology.

- So Jim are you just banking on going on people going nah, that's too close to the water. We don't want to rent there or build there. Or, is the council going to put strictures down, per se?

- We think hard about what land we're allowed to be use what flood plain risk there is now. The energy plan covers large tracts of that. I think the concern more is the really long term. And, also responding to historical decisions that have been made, maybe not as well informed as we can be now as well. So, we're caught in all of those things and we deal with all of them but I think be assured it's being thought about, it's being planned for. I just don't think we've engaged enough yet. And, I don't think we're ready to either.

- Martin, did you want to add to that? No. Did somebody else put their hands up out there? Yes, microphone's on its way.

- Matty Waller's my name. A question for the panel as an impatient 65 year old oh no, 67, how urgent do you think this topic is?

- Take it from one end and don't know, seize the microphone.

- This many I might not be able to see you but you look 35, I'm sure. Oh, I think this is critical and I think is a very cool conversation to be having here. I think it needs to be wider spread. I think there needs to be a practicality element about what do we do when we get back into the homes. I think it's too obvious in the city of Tamaki to not be having this conversation. I think about sea level changes in actual fact earlier in the year we were trying to use buckets for our that had gone underwater. Now, this is not the impact that your ancestors are now underwater because of a whole lot of things does create a level of urgency that isn't about whether a building is going up. It's kind of a lot more fundamental. So, I think people are getting it. I think it's critical. I'm just not sure that we're partnering in the right way to get the different results. We partner in the same way and expect exceptionally different results.

- And, I think it's urgent, there's no doubt. The problem is it is vast and I think you can overwhelm yourself. So, I think you need the stuff that is right now urgent must be done, we need to act. There's stuff that we need to be planning for and doing and we need, it's broad and it's long and we need to just keep moving, but we need to have a plan. So, the strategy part of it is key as well.

- I'm stuck in the middle. Just as the new boy in New Zealand to put one perspective because I think it's all very urgent but I heard a very pertinent comment yesterday at a seminar in Wellington where the very prominent lady said that Ngai Tahu started thinking seriously about Climate Change when they realised Aorangi would be without snow in 25 years.

- I think for me absolutely it's urgent and we definitely need a plan but it needs to be a joined up plan. There's lots of planning being done in isolation. It needs to be more of a cohesive plan across all agencies local and social government.

- Yeah, I agree. What Jim said alluded to earlier Auckland has a huge opportunity right now. We are intensifying now. Now, is the time to have this conversation because we're going to look awfully silly in 25 years' time if we've forgot. And start sort of as you say intensifying around the edge of the water.

- We have a government, by the way. Right, I don't know about that but anyway it's New Zealand First and Labour and the Greens. So, it's going to be an interesting few months. There was a question over there. Yeah, microphone coming just here.

- Okay, this is great let's have this conversation. So, where could a city hub for Auckland be that's on higher land that we could start thinking about with transport nodes now?

- Oh.

- Well, there's acres of land that's well above sea level so I don't think that the where could it be

issue is so big. The issue is on the edges clearly because, we are, as somebody said surrounded by coasts. So, here look I think it's not about moving wholesale or doing anything in that regard. In my view, it's about thinking through where the risks are and having a manners view over the long term.

- Anybody else? No, I mean, that didn't sound terribly urgent Jim with all due respect.

- Yeah, yeah but it's not, it's important that we talk about it and it's important we plan for it. It's not here today and so we need to be sensible and manage the different aspects of this. I think we've got far more urgent issues right now and that is the quality of the water, the quality of the air, the plastic bags. There's all sorts of things right now that are real issues for us this minute. That's not to diminish the other ones. I think we just need to step through things in a really clear way and think about when and what we're going to do for those wins.

- Okay, another question? Yeah, at the back there, thank you.

-thank you. I have two questions but the second one just got a little bit more important. I just wondered from a government and a local government perspective what would a zero carbon act mean for you guys? And how would you respond to that from your various departments?

- This is a zero carbon act, which like the UK legislation would set targets but they would be zero carbon by say 2050 something like that, is that what you're thinking? I take that as a yes, anybody commenting.

- Well, I think the simple answer is the more targeted we get and the more regulatory it gets the more we have to make sure we have a plan that achieves that. So, I don't think it changes the problem it just changes the urgency, the need for resource to achieve that and focuses on that specific thing as Vicky said earlier. It is only one of the things, so that's not a bad thing to focus on but we've got all of these things to focus on whether it's the quality of our water, sea, the gulf, all of those things. Carbon isn't the only issue.

- Well no, but Climate Change is the existential issue. And, if we do have an ongoing Labour New Zealand First and Green's government the chances of legislation might appear to be slightly higher than the other two. Do you think that's a good idea, Vicky.

- Well, I think what the targets are in that legislation's going to be quite important. So, I notice that the Green party has quite a different one from the Labour Party so we'll see what shakes out of that. I think the underlying thing behind having targets and legislation really gets at the issue that we've had in New Zealand which is let go of cross partisan, bipartisan agreement to that we need to get on the pathway to Climate Change. So, I think depending what the in depth target is you can achieve that through different mechanisms. One of them is having legislative targets. But, I think the underlying point of political certainty that we are going to move to action and a pathway towards a low emissions economy is the critical point.

- There was another question.

- Oh yeah, I've got it. All of us have got to clap.

- I'm sorry. What, did you want to say something?

- No, I'm just teasing, Rangimarie.

- Yeah, hand up at the back there.

-my name's Anna. I'm just wanting to get your comments on pricing. And, what I'm thinking is when we talk about behaviour change there's only a very small proportion of the population that are interested in doing something drastic for behaviour change and we can go back to that question about would you stop eating meat. That's a really good example of population at large. So, I think behaviour change only does a very small little bit. And then, we had comments around Vicky about I don't like being told what to do cause if I'm told what to do I don't want to do it. And then, Helen was talking about with the CRL and that that creates a crises which then forces you to make different decisions and you're not exactly making a sacrifice. You're just trying to make the best decision given the situation that's there. So, what I'm wanting to understand from you is what are your thoughts about pricing in order to effect behaviour change which maybe isn't so much about sacrifice it's just about making decisions with the situation that you have?

- I think I'm involved in any view of whether we institute congestion charging and you'll know that came out of the Auckland transport alignment programme. I think there's no doubt that pricing designed well can influence behaviour. It's also clear that pricing designed badly or too blunt a club will almost always have unintended consequences. So, I think the key thing is do I think pricing's a place is one of the tools, it's got a great place that will drive behaviours. Just be really sure you want the outcome you designed for. And, that's where we're working through in that one area now. But, there's no doubt there are other parts, ETS type things have their place as well. And, they'll work best if they're comprehensive and really have the right behaviours driven.

- You've got to be so careful with pricing cause pricing definitely can be a lever to influence behaviour but it's so careful to provide alternatives, to provide the alternative you actually want to encourage the use of or you actually just introduce inequality and make it harder for people who are already struggling to get from a to b or to do whatever it is that they need to do. So, there have to be alternatives and sometimes it has to be a conversation about New Zealand inc, Auckland inc subsidising the amenity for people to transfer to.

- I think the other thing is price is a very important lever for how people make choice cause that's what it is about but also the time, the quality of the experience and the environmental sustainability of the choices that you're making are also important drivers. We need to make sure you put people who are formed around how they play out as well around not just pricing in isolation.

- There's a question here and we'll need to make it the last one. So, make it a very good one, no pressure.

- I'll try my very best. everyone. I am Satirie Kikovan from Fiji. I represent Nature Fiji MareqetiViti, Fiji's only local membership conservation NGO. And, of course, as a conservation NGO I will always try to make you think about nature and other species that make our place our home. First question, I hear that there's so much efforts towards technological solutions, what are you doing about encouraging natural solutions? Nature has a way of fixing itself if you enable it to. And, I'm just wondering if there'd be more efforts towards this lateral solutions.

- Could you be more specific about what you're thinking?

- As natural solutions? Reforesting areas that are degraded, better land use management, maybe thinking, being careful about pesticide use, all of those factors. And, another thing about pricing very interesting to hear the issues of change in behaviour and sacrifice. I just wanted to remind you that in Fiji it's great that you get to choose whether to eat meat or not, in Fiji in the Pacific we get to lose our homes. And, if that's not a big enough price, I don't know what is.

- Thank you, it's a fair point that the natural solution, I don't know whether the panel think that things have gone too far for that. I don't think the natural solutions are being ignored, per se, we're aware it comes back to land use, of course, doesn't it that's urgent?

- They're not being, I think some the million trees is part of using nature more there and forest programme. So, there's a range of things. Look, as we've said all night I just don't think there's a single answer. We have to do everything to reverse what's been done to continue to develop more and we need to think both about what's in the now and long because there's no sort of bullet here.

- Sorry Vicky.

- I just wanted to say thank you for sharing and just reminding us that there are impacts outside of New Zealand that are really severe than what we're currently experiencing. There's a trees account initiative too at the moment that had an aim of 4.7 million trees in the ground over this last year and they've put in eight million trees over this last year so that's pretty phenomenal. There's also some amazing work that's going on around and learning of our own cultural heritage about how you might think about preserving and conserving and making decisions about nature. So, I think those are bringing some of those indicators into our decision making and some of that is actually coming through in terms of the reporting that we're doing with stats. So, I think those are good starts for us.

- Thank you and thank you for that as well. I think that it's easy to think that it's all about us and although we are a small country as we've been hearing tonight we can exemplify something that may, who knows, embarrass or encourage or shame others into doing similar things. I quoted

the sainted Al Gore earlier as going from or warning against going from denial to despair in one easy step. And, I think that the conversation we've had tonight proves that there is a stop between those two. Given the stats we'd all be forgiven for heading for despair but you know if the problem is so great and we have to change so much about how we do things it's all impossible but maybe it is about the journey and not the destination. Maybe there is no destination, maybe it's the collective striving that will be sufficient. It's about demonstrating willingness and commitment and there will be we talk about tipping points in terms of the climate. Is it too late, is it too late? Well, we could have a tipping point here in Auckland. We could have a tipping point beyond which people would be unable not to do something constructive whether it be constructive within their own community or constructive within New Zealand. Our most recent governments, of course, have found it too hard to stick to their own targets and they've taken a less than urgent approach to Climate Change. Can New Zealanders act without a government mandate? Well, I think the conversation tonight has shown that we can. Besides, we've had a government for several weeks we haven't had one at all so, it kind of puts the relevance of the government in perspective. I want to thank our speakers Dickie Robertson and Liz MacPherson earlier and Vicky, of course, on the panel as well with Rangimarie, and Helen, and David, and Martin, and Jim. Thank you to the audience here as well as online and to the sponsors and supports of Auckland Conversations. Next up by way of an advertisement Wednesday, November the 15th the topic Creating Safe Streets for Auckland and it features Dr Matts-Ake Belin who's a project leader for Vision Zero Academy. And, if you keep an eye on the Auckland Conversations website you can get more details in advance. Thank you all for coming tonight and enjoy the rest of your evening.