WAI 3325 – CLIMATE CHANGE PRIORITY INQUIRY

HEARING WEEK 8

HELD AT WAITANGI TRIBUNAL OFFICES, WELLINGTON

MONDAY 25 MAY 2026 - FRIDAY 29 MAY 2026

Tribunal:	Judge Stephanie Milroy Kevin Prime Professor David Williams Basil Morrison Prue Kapua
Crown Counsel:	Jeremy Prebble Nixon Fong Grace Seeley Claire Downey
Claimant Counsel:	Jasper Sontier Dr Grant Hewison Tania Te Whenua Eve Rongo Amylee Temese Michael Sharp Darshini Dorn Bryce Lyall Umar Kuddus Arabela Boatwright Tamahou Thoms Tara Hauraki Matanuku Mahuika Harriett Morrow Madiha Ali Majka Cherrington Tom Bennion Ms Kudrat Sam Vincent Jack Potaka Annette Sykes
Interpreter:	[No Interpreter]
Witnesses:	**Day 1 - [Monday 25 May 2026]** Siobhan Routledge William John Martin

Day 2 - [Tuesday 26 May 2026]
Grahame Morton
John Hooker and Alison Cole
Professor Alexander Gillespie
Kelly Stratford

Day 3 - [Wednesday 27 May 2026]
Professor Claire Charters
Professor Timothy Naish
Dr Ivo Geoffrey Bertram
Dr Richard Meade

Day 4 - [Thursday 28 May 2026]
Dr Anthony Cole
David Tong
Professor Ilan Noy
Professor Alexander MacMillan

Day 5 - [Friday 29 May 2026]
Professor Catriona Macinnis-Ng

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PLEASE NOTE: In recognising that the spelling of names, dialect, and kupu differ across hapū and iwi, we acknowledge that each kupu has a whakapapa that is valid. With respect of these differences, the following transcripts have been specified for continuity in our mahi. The dialectal variations have been transcribed verbatim.

HEARING COMMENCES ON MONDAY 25 MAY 2026 AT 9.03 AM

KARAKIA TIMATANGA (KEVIN PRIME)

(09:03) KEVIN PRIME: (MIHI)

Nā reira, e ngā reo, e ngā mana, e ngā wā kāinga, huihuinga tāngata, ki a koutou te katoa kua uru mai roto i te whare i te rā nei me koutou katoa kua hono mai mā runga i te ipurangi, tēnā rā koutou. Nau mai, haere mai ki roto i tēnei noho a tātou, 'hakauru mai. E mihi ana rā hoki ki o tātou aituā maha kua hinga atu ki tua o te ārai, e kī anō rā te kōrero kua tangihia rātou, kua mihia, kua poroporoakitia, nā reira rā me kī kua ea. Engari, he poto noa ake nei tēnei 'hakatau mai i a koutou kia uru mai ki roto i tēnei noho a tātou, nā reira, huri noa roto i tō tātou noho i te rā nei, tēnā koutou, tēnā koutou, kia ora tātou.

(09:05) JUDGE STEPHANIE MILROY: (MIHI)

Tēnā koe e Kevin i paihere i a tātou ki te taha wairua. Tēnā koutou katoa. Nau mai, haere mai ki tēnei nohoanga o te Rōpū Whakamana i te Tiriti. Welcome to this hearing week 8 of our Climate Change Inquiry. I will just begin by taking appearances. And so firstly, the Crown.

(09:05) MR JEREMY PREBBLE: (MIHI, APPEARANCE)

Tēnā koe, e te Kaiwhakawā, otirā tēnā koutou ki ngā mema o Te Rōpū Whakamana i Te Tiriti o Waitangi. Ko Prebble ahau. Kei konei mātou ko Mr Fong, ko Ms Downey mō te Karauna.

Your Honour, Nixon Fong, Mr Fong will be online this week from Auckland and Ms Seeley has another engagement, so apologies for today, but will be here for the remainder of the week. Tēnā koe.

JUDGE MILROY:

Loader Legal.

(09:06) MR JASPER SONTIER: (MIHI, APPEARANCE)

Tēnā koe e te Kaiwhakawā. Ko Sontier taku ingoa. We're appearing today on behalf of Wai 2821, Mereana Peka; Wai 3361, Thomas Henry; and Wai 3490, Rita Beckmannflay. And unfortunately, I don't think Dr Hewison will be able to join us today so it will just be me.

JUDGE MILROY:

Thank you, Mr Sontier. Te Whenua Law.

(09:06) MS TANIA TE WHENUA: (MIHI, APPEARANCE)

Tēnā koe Ma'am. Ko Te Whenua tēnei. Kei konei ahau hei rōia mō ngā kaikerēme Wai 3285, Te Urunga o Kea, o Te Arawa; Wai 3286, Ngāti Uepōhatu tēnā. Tēnā tātou.

JUDGE MILROY:

Thank you, Ms Te Whenua. Oranganui Legal.

(09:07) MS EVE RONGO: (MIHI, APPEARANCE)

Tēnā koe e te Kaiwhakawā. May it please the Tribunal, counsel's name is Rongo and I am accompanied with Ms Amylee Temese and we represent Ngāti Koata, Wai 3277. Kia ora.

JUDGE MILROY:

Kia ora, thank you. Mauao Legal Chambers.

(09:07) MR MICHAEL SHARP: (MIHI, APPEARANCE)

Tēnā koe e te Kaiwhakawā. I appear for – Michael Sharp here appearing for Wai 3340, Totaranui Nama Ono Trust. I am also appearing for the Māori Council clients who will be introduced by Ms Dorn. Your Honour, I will be appearing for most of this week, on some days I won't be able to appear, but Ms Dorn will be appearing for my clients during those times.

JUDGE MILROY:

Thank you, Mr Sharp. Kokiri Chambers.

(09:08) MR BRYCE LYALL: (MIHI, APPEARANCE)

Ata mārie e te Kaiwhakawā. Tuatahi, e te pā whakawairua, te kaituku karakia, tēnā koe. Tuarua, he mihi nui ki te Rōpū Whakamana i te Tiriti o Waitangi, e koutou mā. Ko Lyall tōku ingoa. Ka tū nei ahau mō Ngāti Ruapani ki Waikaremoana, mō Te Upokorehe, mō Ngāti Porou ki Hauraki, mō Te Waimate Taiamai ki Kaikohe Claims Alliance. Tēnā rā tātou.

JUDGE MILROY:

Kia ora. Thank you, Mr Lyall. Phoenix Law.

(09:08) MS ARABELA BOATWRIGHT: (MIHI, APPEARANCE)

Tēnā koe e te Kaiwhakawā, otirā tēnā koutou e te Rōpū Whakamana i te Tiriti o Waitangi. Ko Ms Boatwright tōku ingoa. Kei te tū tahi ahau me tāku rōia matua a Kuddus, nō te tari o Phoenix Law. E whakakanohi ana mātou mō ngā kaikerēme e rua tekau mā rua. E te Kaiwhakawā, I note that our claimants within this inquiry have not changed since the last hearing week, so in the interest of time, I won't go through all 22 of them.

However, just a technical issue I believe, we are finding it a little bit troubling to hear the Tribunal in terms of the Tribunal's side, in terms of volume, if that could please be addressed as well.

JUDGE MILROY:

Sorry, I didn't quite catch that, Ms Boatwright.

MS BOATWRIGHT:

We're just – my senior and I are just finding it a little bit troubling to hear the Tribunal in terms of volume, when your Honour is talking, that's all.

JUDGE MILROY:

All right. We will see what we can do about the – but don't ask me how we're going to do it, but we will try.

MS BOATWRIGHT:

That's okay. We just wanted to raise that, thank you.

JUDGE MILROY:

All right. Thank you. Kahui Legal.

(09:10) MR TAMAHOU THOMS: (MIHI, APPEARANCE)

Tēnā koe e te Kaiwhakawā. Kāti rā, ki a koe Matua Kevin, tēnā koe i tāu honohono ai te pō ki te ao, te ao ki te pō, ā, rātou ki a rātou, tātou ki a tātou. E te Kaiwhakawā, te Taraipiunara, ko Thoms tōku ingoa, appearing on behalf of Wai 3287, a claim by Mr Chris Insley on behalf of Te Taumata.

I just note that due to the earliest commitments, Mr Mahuika and Ms Hauraki and myself will be managing appearances throughout the week via the Zoom, possibly in-person and via the livestream. Tēnā koe.

JUDGE MILROY:

Tēnā kor Mr Thoms. Woodward Law.

(09:11) MS DARSHINI DORN: (MIHI, APPEARANCE)

Tēnā koe e te Kaiwhakawā, otirā, tēnā koutou e te Rōpū Whakamana i te Tiriti o Waitangi. Ko Ms Dorn ahau. I appear for the following claims: Wai 2607, for Mr Tane Cook on behalf of the Mataatua District Māori Council; Wai 3412, Ms Jennifer Takuta-Moses for herself and the Wairoa Māori Committee; Wai 3413, Ms Grace Hoet for herself and the New Zealand Māori Council; and Wai 3414, Mr Anthony Olsen for himself and the Matiti Māori Committee. Tēnā koe.

JUDGE MILROY:

Tēnā koe. Thank you Ms Dorn. Annette Sykes and Co. Not available as yet. Dixon and Co.

(09:12) MS HARRIET MORROW: (MIHI, APPEARANCE)

Tēnā koe e te Kaiwhakawā. Ko Ms Morrow tōku ingoa appearing alongside my friend Ms Ali for Dixon and Co Lawyers. We act for Wai 2003, Te Wahapū, participating on a watch brief basis and, Ma'am, we respectfully seek leave to attend via the YouTube link and reappear via Zoom if necessary.

JUDGE MILROY:

Yes, thank you Ms Morrow. Tūkau Law.

(09:12) MS MAJKA CHERRINGTON: (MIHI, APPEARANCE)

Ata mārie e te Kaiwhakawā, otirā koutou ngā mema o te Rōpū Whakamana i te Tiriti. Tēnā koe, Matua Kevin, nāu i whakapuare tō tātou nei hui i tēnei ata, he mihi ka tika ki a koe. Counsel's name is Ms Cherrington and I appear on behalf of three claims in this inquiry: Wai 682, Te Rūnanga o Ngāti Hine; Wai 1464, 1456, Te Kapotai; and Wai 2397, the Ngāti Hine Health Trust – Ngāti Hine Forestry Trust, sorry.

JUDGE MILROY:

Tēnā koe Ms Cherrington. And Mr Bennion.

(09:13) MR TOM BENNION: (MIHI, APPEARANCE)

Āe, e te kaikarakia, Kevin, tēnā koe, ngā mihi. E te Rōpū Whakamana i te Tiriti o Waitangi, tēnā koutou. Te Karauna, tēnā koe. Ngā mihi ki a koutou ngā kanohi o te rā. Ngā rōia me ngā kerēme katoa, tēnā koutou, ngā mihi ki a koutou katoa.

Bennion rāua ko Kudrat mō ngā kerēme e toru: Emily Bailey, Wai 3262; Owen Lloyd, 507; and Muaūpoko Tribal Authority, 2139. Ma'am, when we come to the – first of all to say, we are the only claimant lawyers present today and I don't know that we said that we would be, but so – kei te pai on the kai, we're good with that, we've sorted that. We arrived on our bicycles this morning so we think we're here in the spirit of the day.

But just to say that when we come to the conference later in the week, we do want to raise a couple of key issues which is, one is about the announcements you would have heard overnight, the follow-up on the change to the law to remove the ability to take tort claims about climate, which was we know mentioned by the Crown in the 12th May memo but there's now some concerning questions about discovery and whether we need more materials about that.

The second matter would be, I think, how this Tribunal might deal with the changing Treaty reference in the Climate Change Response Act, which is going to be dealt with next week. Well, there's a Tribunal next week dealing with that issue generally across all of the statutes but there might be a question about whether and how this Tribunal might want to deal with that as well, but I am just signalling that for the conference later in the week. Kia ora.

JUDGE MILROY:

Yes, thank you Mr Bennion. We – just for everybody's information, we have a gap on Thursday afternoon and that's the preferred time for the Tribunal to have the judicial conference that's been signalled. So, that would be – we'll have afternoon tea and then we will have the judicial conference, because I am sure everyone would appreciate, after the last week we had, going home a bit earlier on the Friday.

So, the agenda items include the request for deferral of the closing submissions week, hearing. And then, there are various things that have happened during – it seems to be a very fast moving area at the moment, so there are various matters that have arisen. Apart from the ones that Mr Bennion mentioned, there have also been a recent Climate Change Commission report which I have asked to be put on the record together with RNZ media report on that. Yes, so those matters will be raised.

Just before we turn to the witness, are there any other matters that people wish to raise for that judicial conference ?

MS TE WHENUA:

Yes, Ma'am. Ms Te Whenua speaking. Are you able to hear me?

JUDGE MILROY:

Yes.

MS TE WHENUA:

In addition to those matters, there's also been recent policy decisions on the part of the Crown with respect to Te Tai Rāwhiti, very recent, to decline a tripartite proposal that was put to the Crown around a safe transition with respect to their whenua and that proposal was put by, I understand, local government, regional and district, alongside community including land owners and Māori. And so, the declining of that policy or that proposal is something we would like to put on record as well at this late stage for Ngāti Uepōhatu.

JUDGE MILROY:

Thank you, Ms Te Whenua. Any other matters?

MR SHARP:

Your Honour, Michael Sharp here. It's just the, you recall that coordinating counsel filed a memo relating to Iwi Leaders Forum and the summons which the Tribunal has declined, but there's still the outstanding question of any questions in writing for the Iwi Leaders Forum.

JUDGE MILROY:

Thank you Mr Sharp, we will discuss that on Thursday. Any other matters?

MS CHERRINGTON:

Tēnā koe Ma'am, Ms Cherrington speaking. It's just a preliminary timetabling matter for today. I just indicated to my friends via email that we no longer need our 40 minutes of cross-examination time this afternoon so I am just indicating that now so that that can be either absorbed all through the day or I might have some friends that may wish to take that time but just thought I'd announce it here so the Tribunal is aware.

JUDGE MILROY:

All right, thank you Ms Cherrington. Any other bids? That seems to be it. All right, so thank you for that. I will now hand over to the Crown to introduce our witness for this morning.

MR PREBBLE:

Thank you Ma'am. It is Nixon Fong who will do the witnesses today. In the spirit of the hybrid nature of this proceeding.

JUDGE MILROY:

All right, thank you. Over to you Mr Fong.

(09:19) MR NIXON FONG: (CALLS)

SIOBHAN ANNE ROUTLEDGE (SWORN)

Q. Tēnā koe, Ms Routledge. Can you see me and hear me clearly?

A. Yes, I can.

Q. Thank you. Thank you for coming to the inquiry with your evidence this morning. Can I begin by just asking you some questions of formality. Can you please confirm your full name for the Tribunal?

A. Siobhan Anne Routledge.

Q. And can you confirm that for the purposes of this inquiry, you have prepared a brief of evidence?

A. Yes, I have.

Q. And for the Tribunal's benefit, the appellation number is #A129, and Ms Routledge, can you also confirm that you have prepared a summary of your evidence to present this morning?

A. Yes, I have.

Q. Thank you. I invite you to present that summary now.

(09:20) SIOBHAN ROUTLEDGE: (#A129-(b))

Thank you. Can you hear me okay? Okay.

REFERS TO SUMMARY OF EVIDENCE #A129(b)

Tēnā koutou katoa. Ko Siobhan Anne Routledge tōku ingoa. I am Director Aviation at the Ministry of Transport. I have been employed by the Ministry since 2017. Over that time, I've had several senior leadership positions in the Ministry before my current role.

My role immediately before my current one was Acting Deputy Chief Executive Policy. There, I was responsible for a broad portfolio of transport policy areas, including aviation, maritime, public transport, urban development, resilience and security, as well as oversight of the Ministry's regulatory operations.

The evidence I am giving today is intended to explain the role of the Ministry of Transport in relation to climate change mitigation, particularly through emissions reduction policy affecting the transport sector. In doing so, I will refer to a range of Government policies, legislation, and planning instruments that shape how the transport system responds to climate change.

I note at the outset that in my previous role I worked closely on some of the workstreams discussed in my evidence, namely those relating to the Transport Chapter of the Second Emissions Reduction Plan, but I was not personally involved in the development or decision-making behind some of the other matters I refer to. I have however reviewed relevant files and conferred with my colleagues.

Lastly, this is my first occasion giving evidence before the Waitangi Tribunal and I am genuinely keen to assist you in any way that I can.

So, just by way of background, the Ministry of Transport really provides policy advice on the transport system and the transport system, of course, plays a fundamental role in New Zealand society. It connects people to work, education, whānau and communities and it enables goods to move to markets both domestically and internationally. Our transport system includes land transport (both road and rail) as well as domestic aviation and maritime transport. Rail moves bulk freight and supports metropolitan passenger

services; aviation and maritime provide essential connectivity in a country with dispersed communities and long coastlines.

In terms of what the Ministry of Transport does, we act as the Government's primary policy adviser for the whole of the transport system. We are responsible for developing transport policy and the legislative framework governing the transport system. We also support the Minister of Transport and the Secretary for Transport in their statutory roles. From a policy perspective, transport decisions and transport infrastructure are long-lived: decisions that are made today about roads, rail, ports, and public transport systems can shape outcomes for decades.

For these reasons and more, we take a long-term, integrated approach to transport policy, and will consider things like economic performance, safety, accessibility, urban form, and environmental matters together.

I pause here to note that the Ministry does not *directly* deliver the bulk of transport services. That's because service delivery, regulation, and operational decision-making are largely undertaken by transport Crown entities and state-owned enterprises like the New Zealand Transport Agency – Waka Kotahi, Maritime New Zealand, the Civil Aviation Authority, and KiwiRail. So, in practice, Government sets policy and funding frameworks; independent entities apply those settings to deliver services, regulate operators, and invest in infrastructure.

Each of these entities operates under their own statutory mandate and has varying degrees of independence from Ministers. Their boards are responsible for day-to-day operations, and the Minister sets expectations through mechanisms like letters of expectations and regular performance reporting. Operational decisions though are generally taken independently, within legislative and policy settings.

Given the central role that land transport plays in the daily movement of people and goods throughout New Zealand, and its significance to economic, social,

and safety outcomes, I want to outline, by way of distinction, the respective roles of the Ministry of Transport and the New Zealand Transport Agency – Waka Kotahi within the transport system.

As I mentioned, the Ministry of Transport is the core public service department responsible for providing policy advice to the Minister of Transport. We develop transport legislation and strategy, exercise system stewardship, and we monitor the performance of the transport Crown entities. As a Ministry, we do not have an operational or frontline role in delivering land transport services. By contrast, NZTA is a Crown entity established under the Land Transport Management Act 2003 and is governed primarily by the Crown Entities Act 2004. Its statutory functions cover a wide range of activities, including revenue collection, and regulatory compliance and enforcement such as driver licensing and vehicle certification.

NZTA is also responsible for managing and investing in much of the land transport network. A defining feature of the land transport system in New Zealand is that NZTA has a high degree of statutory independence in respect of investment decision-making. NZTA determines which transport activities are included in the National Land Transport Programme and therefore are approved for funding under the National Land Transport Fund. This process is designed to be at arm's length from Ministers, informed by robust cost-benefit analysis, and it reflects the reality that investment choices involve trade-offs, given that funding is always limited.

In determining the National Land Transport Programme, NZTA must give effect to the Government Policy Statement on land transport and take into account Regional Land Transport Plans.

Turning now to the transport sector's greenhouse gas emissions, these rose steadily from 1990, and peaked in 2018 before declining temporarily in 2020 as a result of COVID travel restrictions. For the 2022 calendar year, the largest share of transport emissions came from the light vehicle fleet, made up primarily of cars and other vehicles used for personal travel. Heavy vehicles, such as

medium and heavy trucks, accounted for a large portion of the remaining transport emissions, with smaller proportions coming from domestic aviation, rail, and domestic shipping and pipeline transport. This emissions profile is a key driver of transport-related climate policy.

The Ministry, in recent years, has undertaken considerable work to respond to climate change and reduce carbon emissions, particularly since the enactment of the Climate Change Response (Zero Carbon) Amendment Act 2019. I note the majority of this work preceded the Government's subsequent reassessment of its climate strategy, including emissions reduction policies that were implemented or announced by the previous Government. Nonetheless, while policy settings have evolved following the October 2023 election, the core framework for emissions budgets and Emissions Reduction Plans remains.

As the Tribunal will be aware, the Government must prepare an Emissions Reduction Plan, or "ERP", for each budget period, setting out the policies intended to meet those budgets. These are developed by the Ministry for the Environment, taking into account advice from the Climate Change Commission. All ERPs to date have included a dedicated transport chapter containing policy initiatives to reduce emissions – which in turn inform the work of the Ministry of Transport.

Starting with the Government's first Emissions Reduction Plan, or "ERP1", this was published in May 2022 and covered the first emissions budget period between 2022 and 2025. Within ERP1, the transport chapter identified three broad focus areas:

1. First was reliance on private cars and supporting people to walk, cycle and take public transport;
2. Second was rapidly adopting low-emissions vehicles; and
3. Third was beginning work to decarbonise freight and heavy transport.

To provide direction and clarity, ERP1 also included a set of transport-specific sub-targets to be achieved by 2035, which the ERP1 noted were “ambitious” and “challenging to achieve”. These included:

1. reducing total kilometres travelled by the light vehicle fleet by 20 percent;
2. increasing zero-emissions vehicles to 30 percent of the light fleet;
3. reducing freight transport emissions by 35 percent; and
4. reducing the emissions intensity of transport fuels by 10 percent.

Turning now to the Government’s second Emissions Reduction Plan, or ERP2, this was published in December 2024 and applies to the second emissions budget period between 2026 and 2030. As described in Hemi Smiler’s evidence, “ERP2 introduced several actions intended to complement the ETS as New Zealand’s main tool to reduce net emissions. These actions focussed on strengthening the ETS and encouraging investments in low-emissions technologies and practices in agriculture, energy, industry and waste.” From a transport perspective, ERP2 continues to recognise the light vehicle fleet is a prevailing source of transport emissions by placing a strong emphasis on both electrification and supporting the functioning of the New Zealand Emissions Trading Scheme. I note this emphasis sits alongside the Government’s broader ‘Electrify NZ’ work programme.

The transport chapter in ERP2 is structured around two overarching pillars:

1. to ensure that credible and effective markets support the climate transition; and
2. to ensure that clean energy is abundant and affordable.

I note that, in regard to these policies sitting within an ETS context, the role of these policies is complementary – that is they help remove barriers to the New Zealand ETS price functioning effectively, such as unlocking new options for decarbonisation, and enabling investment to flow into low-emissions options. For that reason, the transport policies in ERP2 are not intended to significantly reduce emissions themselves. They instead expand the range of

opportunities to reduce emissions that are affordable and incentivised under the ETS cap.

By way of example, investment in public transport expands low emission travel choices, making it easier for households to shift away from higher-emitting transport as fuel prices adjust under the ETS. In addition, I also note the Government's recent announcement of more than $50 million in interest-free loans to expand electric vehicle charging stations. These initiatives assist to address a market co-ordination problem that the ETS on its own cannot resolve. In other words, because private investors are unlikely to install additional public chargers until enough people drive electric vehicles, and range-anxiety generates reluctance to buy electric vehicles, by providing loans to bring forward investment in charging infrastructure the Loan Programme will help unlock private investment and support faster uptake of electric vehicles, which thereby reduce emissions.

Key actions in ERP2 therefore include accelerating the rollout of publicly accessible electric-vehicle charging infrastructure across New Zealand, with the aim of delivering a comprehensive national charging network ahead of demand. Looking out to 2050, we anticipate higher electric vehicle uptake supported by a dense and reliable charging network.

ERP2 also discusses improving public transport. A quote from the ERP2 notes that: "Realising the benefits of reliable and accessible public transport will require continued planning, delivery and maintenance to support growing populations and meet demand."

With that in mind, the ERP2 includes major planned public transport projects the Government is or intends to invest in, including projects such as the Auckland City Rail Link, the Eastern Busway, the Northwest Rapid Transit Corridor, the Airport-to-Botany project, and rail upgrades in the lower North Island. I also note that, in terms of the Government supporting public transport authorities to invest in bus decarbonisation, the ERP2 reiterates the

Government's policy that public transport authorities are required to purchase only zero-emissions buses for their fleets from 1 July 2025.

Work on the key transport actions in ERP2 is well underway and on track. A key achievement to date is the Ministry's policy work to advance the target of a network of 10,000 public electric charge points by 2030. The Ministry led the development of the electric vehicle Charging Infrastructure Loan programme and is responsible for monitoring its delivery. As I mentioned earlier, the Government recently announced more than $50 million in interest-free loans to expand electric vehicle charging stations. ChargeNet and Meridian will also co-invest $60 million in the scheme, raising the total to $110 million.

Alongside this co-investment, the Supercharging Electric Vehicle Infrastructure work programme co-ordinates actions across government agencies to remove barriers and facilitate private sector delivery of charging infrastructure. The Ministry contributes to this programme of work. The programme includes:

1. Reducing red tape and regulation, including removing the requirement for a resource consent for the installation of public electric vehicle chargers.
2. Enabling standards for smart chargers to expand their uptake. Smart chargers help people charge their EVs at home during non-peak electricity periods.
3. Addressing barriers such as high connection costs (such as, charge points being connected to the electricity supply) and improving the efficiency of connection application processes across the 29 electricity distributors.

Progress towards the 10,000 public charge points goal is building. At present, there are just over 1800 public charge points in place. This number is expected to increase significantly following the implementation of the first round of loans, under the EV Charging Infrastructure Loans Programme.

I now turn to the land transport system, and the Government's Government Policy Statement on Land Transport, or "GPS". The land transport system is primarily funded through fuel excise duties, road user charges, motor vehicle registration and licensing fees, and Crown grants which are directed into the National Land Transport Fund, or "NLTF". The NLTF is the primary source of funding for land transport in New Zealand, however revenue also comes from outside the NLTF, for example local authority and Crown funds.

As I mentioned before, there is a distinction between the Ministry of Transport and NZTA's roles when it comes to the land transport system. In this case, NZTA administers the Fund and must give effect to the GPS when preparing the three-year National Land Transport Programme and making land transport investment decisions. Basically, the GPS sets the strategic direction for land transport investment by providing strategic priorities, activity classes and funding ranges over a 10-year horizon; NZTA translates that into the National Land Transport Programme that sets out specific projects and services. This Programme 'gives effect' to the GPS, as required by statute, and is also informed by regional priorities as set out in Regional Land Transport Plans.

There are several constraints that shape what a GPS can achieve in a three-year window, a key constraint being the share of revenue required to maintain and operate the existing network. Often, for example, there will be pre-committed road maintenance and improvements already underway, and there may be debt servicing obligations too. These baseline demands mean the room for transformational change of the land transport system, as informed by the GPS and given effect to by the National Land Transport Programme, can be narrow. The GPS cannot be all things to all people, and will inevitably always involve some form of trade-off between its strategic priorities given constrained funding.

I pause to reiterate here that the GPS is the Government of the day's policy document. Unsurprisingly, the nature and the policy direction of GPSs have changed over time since the first GPS came into effect in 2009. The strategic priorities in earlier GPSs were focussed on for example economic growth and

productivity, as well as value for money and road safety. Whereas, GPS 2018 and 2021 elevated the environment and climate change respectively as key strategic focal points.

The current GPS, GPS 2024, reintroduced a focus on increasing economic growth and productivity, with the aim of setting "the balance between investing in new projects and ensuring we maintain and repair our existing infrastructure." GPS 2024's four strategic priorities are economic growth and productivity, increased maintenance and resilience, safety, and value for money. The increased maintenance and resilience strategic priority is relevant to climate change in that it seeks to "enable[…] us to effectively manage and reduce current and future risk, and adapt to" the challenges of weather events and natural disasters.

I want to turn now to reiterate some of the key levers for reducing transport emissions outlined in my written evidence and what we're doing in these spaces.

First, I turn to public transport and cycleways investment, which is also signalled in GPS 2024. Reliable, frequent, accessible public transport services in major cities can shift trips to lower-emissions modes of transport, reduce traffic congestion and improve the productivity of existing infrastructure by moving more people through constrained corridors.

I want to note here that the current National Land Transport Programme provides that $6.4 billion is forecast for investment in public transport, and $460 million in footpath and cycleway improvement and maintenance. These forecasted investments lie downstream of commitments made in the GPS 2024, in particular, investment from the National Land Transport Fund of up to $2.3 billion in public transport for public transport services, as well as up to $3.1 billion for public transport infrastructure. I also note that the National Land Transport Programme includes contributions from local Government and direct Crown funding, meaning more investment than was initially signalled in the GPS is possible.

The second key lever is Electric vehicles. As I've mentioned, uptake in electric vehicles depends on confidence that charging is easy and reliable. Public charging delivered ahead of demand removes a known barrier for households who cannot install home charging and for businesses that rely on dependable access enroute and at depots. We call this "range anxiety". As concerns about range anxiety fade, buyers are likely to focus more on cost of ownership, availability, and performance of electric vehicles.

On that note, I'd like to briefly talk about the Clean Vehicle Standard and the former clean vehicle discount. The Clean Vehicle Standard aims to influence the supply of lower-emissions light vehicles by setting annual fleet-average carbon dioxide targets for vehicle importers. Vehicles either perform better than the target and they earn credits; or they perform worse and they incur charges. The intent with the Clean Vehicle Standard is importers are bringing in enough low emission vehicles to offset charges on high emitting vehicles with credits. The Standard was reviewed in 2024, which concluded that the targets at that time were unlikely to be achieved and the Standard's expected reductions in carbon emissions would not be realised as a result.

As an urgent measure to improve the workability of the Standard and to provide some market relief, new targets were set in 2024 to be applied from 2025 onwards. Also, last November the Government passed legislation enhancing flexibility measures to make it easier and cheaper for importers to comply with the Standard. These measures included extending emissions credit life and payment obligation deferrals, as well as removing a legislative restriction on credit transfers between the new and used import sectors. The new targets maintain a level of ambition in carbon dioxide emissions close to that to other jurisdictions.

The Minister of Transport has also announced the launch of a full review into the standard, with recommendations to Cabinet by July 2026 – this work is underway. To provide relief while the review is being carried out, the charges were temporarily reduced for 2026 and 2027 only.

By contrast, I am going to briefly mention the Clean Vehicle Discount—*which provided rebates for lower-emissions purchases funded by charges on higher-emitting vehicles*— which was repealed at the end of 2023. Before its repeal, modelling suggested removal would not alter the sector's contribution to the first emissions budget, and distributional evidence indicated that rebate benefits were often skewed toward higher-income households, with lower uptake among some groups including Māori and Pacific peoples.

The third lever relates to decarbonisation of the heavy-vehicle fleet, which carries most of our freight and plays a key role in other sectors like waste removal and construction. I acknowledge in New Zealand and globally the policy work in this space is at an earlier stage than for light vehicles, but two key initiatives for reducing emissions in this space are:

1. The first being reviewing regulatory barriers to low and zero emissions heavy vehicles including the Vehicle Mass and Dimension rule and driver licence weight categories. Analysis of vehicle mass and dimension requirements was undertaken to inform the development of potential changes, with NZTA consulting on a range of reforms to improve heavy vehicle productivity in two phases during 2025 and 2026. In terms of driver licence weight categories, in early 2025 the NZTA issued an exemption allowing Class 1 driver licence holders to drive heavier electric variants of existing diesel trucks. This exemption removes a regulatory barrier that added cost to be able to operate these electric trucks due to the extra battery weight. NZTA is currently considering a permanent change to this license category.
2. The second key initiative is providing, through the Low Emissions Heavy Vehicle Fund, grants to support the purchase of low and zero emissions heavy vehicles or conversion of heavy vehicles to hybrid or zero emissions technology. This is led by the Ministry of Business, Innovation and Employment and the Energy Efficiency and Conservation Authority. As of April 2026, the Fund has provided grants of $3.54 million to support

the purchase of 124 low emissions trucks: 120 of which are battery electric vehicles and the others are hydrogen-diesel hybrid conversions.

Finally, my evidence briefly touched on international aviation and maritime. International aviation and international shipping are not included in New Zealand's domestic targets and budgets under the Paris framework. For aviation, New Zealand participates in the International Civil Aviation Organization's Carbon Offsetting and Reduction Scheme for International Aviation—CORSIA—which moves to mandatory phases from 2027 under the Civil Aviation Act 2023. For shipping, the International Maritime Organization's 2023 strategy sets a pathway to net-zero greenhouse gas emissions by 2050, with indicative checkpoints in 2030 and 2040. Officials will continue to participate in negotiations on this strategy when they restart in October this year.

My evidence seeks to explain how the Ministry of Transport and transport Crown entities contribute to New Zealand's response to climate change in the transport sector. The Ministry's role is primarily strategic and stewardship-focused, while operational decisions and investment choices are largely made by independent entities within legislative and policy settings.

Transport emissions present a significant challenge, particularly with respect to the light vehicle fleet. The Emissions Reduction Plans, together with the Emissions Trading Scheme and the Government Policy Statement on Land Transport, provide the overarching framework within which transport emissions are pursued, while also recognising equity considerations and the long-term nature of transport system change.

Ngā mihi ki a koutou. I'm happy to answer any questions.

JUDGE MILROY:

Thank you, Ms Routledge. We have questions first from Bennion Law.

(09:48) MR BENNION TO SIOBHAN ROUTLEDGE:

Q. Tēnā koe Ms Routledge and thanks for your evidence and I understand from a brief discussion this morning, the Ministry is going to be rolled into the sort of the super ministry that's being created. Is that something that's underway?

A. Yes. From the 1st of July, we will become a part of the Ministry of Cities, Environment, Regions and Transport.

Q. Thanks. Does NZTA still sit outside?

A. Yes, it does. Yes, it's an independent Crown entity.

Q. Okay. Just so – before we get into – I want to look into your organisation briefly in a minute, but before we get there there's one figure I just want to clarify. In terms of, at paragraph 6 you say: "Transport emissions are 17.5 percent of New Zealand's gross." And I was looking at ERP1 which is in your attachments, and it says transport emissions are 17.5 – 70 percent of gross domestic, but also 39 percent of total domestic, which I understand to mean household emissions. Do you understand the 39 percent figure? Maybe we can bring that up on the screen. It struck me as a very high percentage. Do you see that 39 percent of total domestic emissions?

A. I would probably have to defer to some of my colleagues on that question.

Q. All right, we can follow that up because I think its referring to household versus other emissions, but we can check that out. Okay, thank you. Can I just come to your organisation, Te Manatū Waka, and I was looking at briefly, your annual report of 2025 and I just – you are about 200 employees, about $50-60 million organisation.

A. Āe.

Q. Just a couple of things I wanted to look at. First of all, in terms of your "Our Why", what your role is and how you exist, I just wanted to bring up a couple of things here. This isn't in the materials, and my apologies, I'll provide it later, I just wanted to look at a couple of key aspects from your ministry's role: "Impartial expert and trusted advisors to government seeking to create conditions for transport systems and maximise economic and social benefits and minimise harm", and you have a specific – as part of that greenhouse gas emissions, you are monitoring

those as part of that part of your vision as well. Yes? Yes, and just one thing while we're there too, that interested me, if we come down the page under Resilience and Security, I was – page 12 – you see resilience and security there. Just going back to the comments you just made about the money having to be put into a repairing infrastructure and the climate issues there. I notice this comment: "We do not have a performance measure for resilience and security as no data is available to appropriately measure transport system resilience and security. However, frequency and scale of extreme weather events continue to impact resilience." So, does that remain the case, that you don't have a measure, or you don't' have data to measure transport system resilience and security at the moment? You are still working on that?

A. Look, it is correct that we don't have that performance measure. I would say though, obviously, the activity and the analysis done by NZTA, which is obviously looking kind of in more detail at the performance and resiliency of the roading system, would have more micro data.

Q. All right. But you've expressed there, I guess, in your annual report, that that's a gap that you think needs filling at some stage.

A. Not aware that we've got particular work underway on that, but I certainly could check that.

Q. All right. And just lastly on your annual report, you are part of the carbon neutral government programme, you have been?

A. Correct.

Q. And that remains ongoing?

A. I believe so, yes.

Q. Yes. And – and we will come back to this later, but I noticed within your own agency, you are reporting some pretty good figures. You've got your air travel, international air travel is down significantly, and your domestic air travel is down significantly.

A. Correct, yes.

Q. Yes.

A. We are a small ministry.

Q. Yes, I understand. It did say about 200 employees, I understand that. Do you measure – in terms of that carbon neutral programme for

government, do you measure that neutrality across other departments or each department is just reporting on its own efforts to reach that goal?

A. My understanding is that each department measures itself –

Q. All right.

A. – yes, under the Public Service Commission Guidelines.

Q. All right. And I'm just looking – I see you've got a target of something like – your target's set against – all those targets for that programme are set against the 1.5 degree efforts – you stay within 1.5 degrees in terms of preindustrial levels. That's how that programme is set?

A. Correct.

Q. And I think you are on target for, I see a 42 percent reduction by 2030. Does that sound about right?

A. It sounds about right, but I would also note that we are becoming part of the new ministry. So, what that means in that context would need to be worked through.

Q. Yes, that could get interesting. All right. Okay. So, then I want to come to your discussion about the ERP1 Emissions Reduction Programme 1 goals and I just wanted to examine briefly the ERP1 goals and then to see what happened to them. Can I just make this general observation. It would be fair to say, wouldn't it, that – at paragraph 19 you say: "The ERP1 set four and ambitious and challenging to achieve goals." It will be fair to say that in setting those, the work with or understanding of the Māori economy or how Māori might participate in that was kind of quite central to the ERP1 goals. Is that fair?

A. Look, there was a strong commitment under ERP1 to work in partnership with Māori on the delivery of those actions.

Q. Yes, and that included, I think, discussion about the circular economy approach. That's also in there, in the ERP1 I see, enable Māori to shape and benefit from a transition to a circular economy, that was also part of the –

A. Right, yes.

Q. So, I just wanted to come to the goal and then go to your materials, so just page 454 of the PDF – of your #A129(a) attached materials, I think I've got this right.

WITNESS REFERRED TO #A129(a), ATTACHED MATERIALS, PAGE 454

So, just the four targets that are down there, the government is committed to four targets. We've got "reduce the total vehicle kilometres travelled by the light fleet by 20 percent by 2035…Increase zero-emissions vehicles to 30 percent of the light fleet…Reduce transport by 35 percent by 2035…and intensity of fuels by 10 percent." And I just wanted to come to the next page, just come down to 455.

WITNESS REFERRED TO #A129(a), ATTACHED MATERIALS, PAGE 455

I just see there: "To achieve these targets, the Government must work with key partners to take initial actions… This includes partnering with Māori to incorporate Māori-led solutions and supporting communities and businesses for an equitable transition." So, the idea of equitable transition working with Māori is very much central to these ERP1 goals?

A. (No audible response)

Q. Right. And you don't mention it in you evidence, but the government or I might have missed it, but government makes a decision to exit from these ERP1 goals as an internal decision and doesn't go out and consult with Māori about that before it makes that internal decision.

A. So, as I understand it, there was obviously a consultation about the discontinuation of ERP1 actions. It was handled through the ERP2 process.

Q. Right. So, the decision was made to exit these goals and then in the ERP2 process the question was put to people, how do you feel about the fact that we're exiting these goals, are there any comments you want to make about it? That's how that works?

A. That's broadly my understanding.

Q. So, no prior, no consultation with iwi to say we're thinking about getting rid of these goals, what's your feeling about that given you are quite central to them?

A. Like I say, my understanding is that it was really handled through the consultation of ERP2.

Q. All right. Okay. So, can I just come again to the ERP2, just pulling this a little bit further. You are familiar with the Climate Emergency Response Fund, right. And that was – I've got a number of about four and a half

billion set aside and it's proportional to what's coming through from the Emissions Trading Scheme. So, I understand that a lot of the actions under ERP1 were progressed or funded through the Climate Emergency Response Fund, because I see a whole lot of transport items measured there, yes?

A. That's correct, yes.

Q. Okay. And am I right in understanding that, for example, on the national light vehicle kilometres travelled reduction plan, that a national plan was actually drafted and finalised in July 2023 and then government stopped work on that programme when it ditched the ERP1.

A. I would need to confirm that, but my understanding is that it was certainly well advanced.

Q. Okay. Also, under the ERP – actually, let's just take this up briefly because I think – let's just confirm your thinking on that. Again, I just – I pulled up a treasury document and then realised that so many of the items that we seem to be talking about in this hearing are actually happening inside of that Climate Emergency Response Fund, including a lot of the iwi matters. So, I am just checking a couple with you. But if we go to that – Yes, we'll confirm that – we might get that confirmed later in writing. But I also understand that under part of ERP1 was work on a social – what we call a Social Leasing Scheme where people on low incomes could be become more financially resilient and have reliable access to safe low emission vehicles through a leasing scheme, right? And that would certainly address the concern that you talk about in your summary, about – I think you are saying – you say: "The clean vehicle discount…" – paragraph 42 – "…provides rebates for low emission purchases that might be helpful to middle class households, but it's going to be harder for low income households." So, the Social Leasing Scheme was aimed at lower income houses, their ability to get EVs, right?

A. Yes.

Q. And that might have been use, for example, to Māori households, lower income Māori households.

A. That's correct.

Q. Right. Now, my understanding is that work was undertaken to prepare for a role out trial of that scheme and that was also stopped as part of ERP1 – the ERP1 actions being stopped?

A. Correct.

Q. Okay. Thank you. I put this to you, you say in your evidence that the ERP1 targets were ambitious targets. It's fair to say, isn't it, that these ambitious – government has removed what were ambitious targets, is a statement of fact, that's clear isn't it?

A. The government has removed those targets, that is correct, but the government obviously has taken a different approach to ERP2 which, you know, is designed to achieve emission budgets as well.

Q. Yes, but just to be clear, it's removed targets which were described as ambitious, it's moved on to other targets, but those former targets were described as ambitious, and they are now gone.

A. That bit is correct.

Q. Okay. Do you know – you've got several references through your evidence to the government now having an approach which is one of it fundamentals is something called going for growth, that's one of its core targets or approaches now to thinking about emissions reductions and how to fit those Going for Growth approach.

A. I don't recall writing Going for Growth in my evidence.

Q. I think you do – no, I'm looking at a government paper. I'm looking at the government's response to the aviation emissions target that is proposed by the climate change commission. The government said, one of the reasons – the Ministry of Transport recommends option 1, support international multilateral efforts. So, I think that's not putting aviation emissions in and this option also aligns with New Zealand's economic interests including the governments Going for Growth agenda. Does that make – do you remember that?

A. That's correct, yes.

Q. Okay. I'm just interested – the Climate Change Commission's advice on – let's think about aviation. Climate Change Commission's advice on aviation seems to have been based on estimates of how much headroom there was or how many emissions might still be possible to emit before

we met the 1.5 degree target. Yes, that was its thinking, it said 'look, there's some emissions left that can be emitted and we have to think about aviation within that space.'

A. And only the Climate Change Commission can answer for its analysis but that accords with my read of the document, yes.

Q. Yes. That's their approach. And that emissions budget that is left, that is going to be a budget for everything that we do. Yes, that's their thinking. I was just intrigued about the fact that they were using a 2023 report for the budget that's left. Are you familiar with the latest UN Environmental Programme Report of, I think it's November 2025 which says there's essentially no budget left?

A. No, I'm not personally across that, no.

Q. Okay. Do you know if the – it strikes me the New Zealand's Government in its decisions on aviation and on aviation particular because that was a recent decision, it's strikes me that it's not aware of or is not factoring that latest report, which I think is called Over Shoot or something, it says that there's essentially no budget left.

A. Look, I couldn't answer to that. I mean, I would note that the International Civil Aviation Organisation has designed that that global scheme, you know, based on clear evidence as well.

Q. Yes, okay. It doesn't strike me that they've taken account either. But if we are in a situation where the remaining budget is essentially gone, than that does mean that you – government would need to rethink its approach and assessment, wouldn't it, because there's no remaining budget before 1.5 degrees is reached.

A. I mean, I think I would want to defer to the Ministry for the Environment on that sort of question because it does relate to New Zealand's, you know, entire emissions profile and the range of sectors that contributes to our emissions budgets as well.

Q. All right. In terms of the work that your ministry has done so far, you haven't taken any policy decisions based on the idea that there's no remaining budget, carbon budget. You have assumed there's some carbon budget in your assessment so far.

A. We always work with the Ministry for the Environment to make sure that we are taking a whole of government approach to understanding emissions, profiles and where we are at with emissions budgets.

Q. All right. So, if they advised you an emissions budget was gone, was essentially gone, that would alter how you would approach your assessment, presumably.

A. I would expect so.

Q. All right. Just while we're – lastly then on – we're ahead of time, actually. On the aviation decision which was – look, let's – the Climate Change Commission said, 'let's put aviation – make it part of our reductions targets, international aviation' because domestic already is, international aviation and international shipping. And the Ministry of Transport's response was to say, 'Leave it out. We are happy with the ICAO approach.' You didn't, it seems to me, undertake any analysis of – your approach seems to be, let's just keep in mind what the international – what the international players are doing, but I don't think you undertook any particular analysis of the speed or expectations of international aviation, either New Zealand's – New Zealand airlines operating international or otherwise how fast they are getting to any of the targets the ICAO proposes.

A. It's a good question. Obviously in our sort of aviation role, we are monitoring, you know, the trends around the world with sustainable aviation fuels. We do monitor what other countries and other jurisdictions are doing around things like mandates for sustainable aviation fuels. We are seeing some more availability of those fuels. We've certainly seen in the past some work by Air New Zealand to invest more in those types of fuels. So, I think we have a reasonable understanding of what's happening across different markets for decarbonisation of aviation. I think we are also conscious too that the core **(inaudible 10:12:03)** scheme that I refer to is the global international mechanism for the reduction of aviation emissions leading up to the period up to 2050 and it has been our sort of analysis that it is appropriate for New Zealand to participate in that scheme because it does provide a level playing field for New Zealand airlines, provides them with continued access to overseas

markets, but also ensures that they are subject to a scheme that is used for other airlines as well.

Q. Okay. Then just lastly, can I just check again on the ERP1, I just want to see what's remaining, so let's go to that one. So, this is in your materials, #A129(a), that 478.

WITNESS REFERRED TO #A129(a), PAGE 478

It's a heading, we all have a role to play in reducing transport emissions and this is ERP1. I just want to check under ERP2 what is actually remaining of this approach. So, you see there's, 'We all have a role to play in reducing transport emissions…' just down the bottom there, second to last paragraph it says: "Māori partnership will be important to delivering equitable transport outcomes for Māori living in urban centres, rural communities and on marae. Future work on policies must also consider how to mitigate social and equity impacts that transport policies might create for Māori and what solutions could be put in place to address those issues. The ministry will work in partnership with Māori as the policies for this plan and future emissions plans are progressed. Build partnerships to uphold the principles of the Treaty." Under ERP2, what of or if any of that in terms of specific actions remains?

A. It would be my assessment that some of the intent of that does remain. ERP2 includes that continued focus on public transport and I am very mindful that public transport decisions need to be taken in consultation, you know, with communities and with the transport disadvantage. So, I would expect that there will be continued partnership and continued engagement.

Q. So, in all seriousness, your answer is public transport.

A. That's certainly a part of my answer, yes that is – public transport is an important driver of emission reduction.

Q. But just pushing a bit on this, to be fair, that doesn't at all really touch the sides of what I've just read out, does it? It's a – public transport is not something – it's something that's not about equitable – it's not really about partnering with Māori in the present – either in the workings or development or operations of public transport, isn't it, those are matters

that happen with the regional councils and district councils, those sort of things, doesn't it?

A. I understand your point, that it's not a partnering arrangement in the way that you have described.

Q. All right. I had a bit more time, but I think those are all the questions I've got. So, thank you very much for your answers.

JUDGE MILROY:

Thank you Mr Bennion. We have questions from Mr Sharp.

MR SHARP:

Thank you, Ma'am.

(10:16) MR SHARP TO SIOBHAN ROUTLEDGE:

Q. Ms Routledge, my name is Michael Sharp. I'm just checking you can hear me.

A. I can, thank you.

Q. Thank you. Thank you for your evidence. I just have some questions starting with paragraph 30 of your evidence.

WITNESS REFERRED TO #A129, PARAGRAPH 30

You said, ERP2 is not expected to reduce emissions significantly. Now, I just want to drill down on that a bit further. So, I just want to, if I can, just bring up the ERP2 on transport and I just notice I can't share the screen, for some reason, I wonder if that could be adjusted.

TECHINCAL ISSUE – SHARESCREEN ENABLED (10:17:11 – 10:17:20)

MR SHARP TO SIOBHAN ROUTLEDGE: (CONTINUES)

Q. Sorry, can you see that ERP2 Transport section? That's correct?

A. Yes.

WITNESS REFERRED TO ON SCREEN - ERP2 TRANSPORT SECTION

Q. So, this is a useful summary and got key actions and policies and then the next box it says, 'Contributions towards a second emissions budget…'

and it refers to a target 10,000 public EV charging points by 2030, and the contribution is 0.01 mega tonnes of CO2, equivalent. That's correct?

A. That's correct.

Q. Yes. So, if you look at the key actions and policies, a part from the 10,000 EV charging policy, there's other policies, such as reviewing regulatory barriers, for motion innovation, continuing to support aviation section. So, they're just matters where there's no term commitments, just reviews and so on. So, there can't be any reduction in emissions modelled from those other policies. That seems to be the case, doesn't it?

A. That is correct.

Q. Now, just with the – if I can just move on to the policy to – it will reduce – emits the charges. Okay, let's stop share. With the reducing the charges – sorry, increase in number of chargers, I understand in your evidence you've just said there's about 1800 at present and the target by 2030 is 10,000 and you hope to reach that target in about three and a half years by, mainly by interest free loans, **(inaudible 10:19:42)** dollar interest free loans. Is that the situation?

A. Yes, that's broadly correct, yes.

Q. Yes. So, I just wonder, is there any modelling? Are you likely to reach that 10,000 target because it seems to be a lot of chargers being introduced in the next three and a half years. Is there any modelling on how you are going?

A. Yes, look, there is a lot of work underway. So, the government announced, I think actually, a few weeks ago, the concessionary loans that are being agreed with Meridian and ChargeNet, and that results in a total investment of $110 million and that's forecast, I believe, to result in an additional two and a half thousand chargers that will be rolled out over coming years. That doesn't get you to the 10,000 chargers, and we have provided advice to government that additional funding will be required to get to that 10,000. So, where we are at now is we've got the 1800, another two and half thousand or so expected from this current round of investment and then a further investment would need to be made to get to 10,000.

Q. Thank you. And also, that impact on emissions of policies, that of course doesn't take into account the impact on emissions of the rollback of policies from ERP1. That's correct?

A. Depends what policies you are talking about. A number of policies that were rolled back weren't expected to have any particular emissions, impacts in and of themselves, others may have.

Q. Yes. I will come back to that, but in general, it doesn't take into account the impact of the roll back of the ERP1 policies. That's correct?

A. Well, it takes into account, you know, our emissions profile and what we need to get to our net-Zero climate change response act.

Q. Right. Okay, once again, it doesn't take into account the roll back of the ERP1 policies on emissions?

A. Don't believe so.

Q. Thank you. Because I noticed in the technical annex to the ERP2, it says that the 2023 projected emissions with present policy sittings, 2050 will change because of a number of factors including the discontinuation of clean car discounts. That's correct?

A. That is correct.

Q. Yes. And with the clean car discount, at paragraph 64, you said something like, it's not expected to impact on total emissions. Go to paragraph 64. So you said, "Before the scheme is repealed, modelling showed that removal of the scheme was not expected to affect achievement of the transport sector's contribution to the first emissions budget." I just got a question of clarification on that, because I noticed in the Cabinet Paper on the roll back on the clean car discounts, that's at your appendices at 1.4767, it estimates that the discontinuation of the scheme will add emissions 1100 to 2200 kilo tonnes by 2050. So, the discontinuation of the clean car discount is going to add to projected emissions. That's correct?

A. I wouldn't necessarily say that is correct. I mean, it was clear that the removal of the discount scheme wasn't going to affect EV1, but obviously the modelling we did suggest that it could play an impact over the 2050, but it is also subject to what alternative policies are in place, the total effect of the removal of that scheme would have.

Q. Well, it's always subject to alternative policies, but just when you do – you've got modelling in the Cabinet Paper to show the discontinuation of that scheme on its own will have the impact on emissions by 2050. That's correct, isn't it?

A. Yes, but it is clear in the absence of policies.

Q. And also – I just noticed in the next paragraph, 65, of your evidence, you said that: "Wealthier New Zealanders were most likely to have benefited from the scheme, and there was evidence that Māori were likely to have benefited less than other ethnicities from the scheme." So, I just want to clarify, that's an equity issue that you are talking about there, isn't it, as to who will immediately benefit from getting a discount. But from my understanding that the broader intent of the policy, was that those who could afford a new car, under $70,000, I'm not sure if that is classified as wealthy, but those people would then be able to pass down cars in the second-hand market so there will be a broader distribution of low emission cars throughout the community. That's correct, that was the broader intent of the policy?

A. Well, make it easier for people to buy electric vehicles and thereby an increase of volume in stock of electric vehicles in the country.

Q. Thank you. Now, at para 56.

WITNESS REFERRED TO #A129, PARAGRAPH 56

I just turn to the clean car standards which were – you just talk about how they were relaxed, and you say that: "This responded to the results of the target review, which concluded the original targets in section 175 of the LTA were not likely to be achieved, and that the standard's expected reductions in carbon emissions would not be realised as a result." Now, that paper that you refer to, that's a paper that you prepared?

A. One of my team prepared.

Q. Right, because I think at your appendices 002136 has got your name on it. So – well, from that paper, I understand, it's not saying that the standards won't drive down emissions, it seems that they will, but what you are saying is the ERP1 targets are likely to be achieved and on the other hand, it's going to be higher vehicle costs so a balance you are

recommending, that the standards be reduced. Is that a summary, good summary?

A. It's broadly correct, yes.

Q. So, the relaxing of those standards in the current policies is going to have the effect of having an increase figure of emissions. That's correct?

A. It will potentially change the mix of vehicles coming into the country, so it may be partly correct.

Q. Well, if you are going to have a greater number of high emitting vehicles, then logically, it will result in a higher emissions, that's a fair conclusion, isn't it?

A. It does depend on the circumstances under which vehicles are brought into the country. You know, depending on economic conditions and consumer preferences, you do see different mixes of vehicles coming in. You know, we've certainly seen through the current fuel price increase, given the Middle East, you know, consumers are going back to EVs at a higher rate than they were previously. So, I think it's just a slightly more nuanced argument there in terms of what is actually brought into the country.

Q. Yes, but we are talking about projection with the impact of the policy, not broader market factors. So, that policy, on its own, will result in higher emissions in the future. That's correct?

A. Well, in the future, I'm not so sure, but that will be correct, noting also that those emissions are subject to the, you know, the ETS.

Q. Yes, of course. I just want to go to paragraph 37.

WITNESS REFERRED TO #A129, PARAGRAPH 37

You talk about the GPS and your – broadly what you are saying – what I understand it, and thanks for the explanation of the GPS that was – that clarified a number of matters how that interfaced with the whole transport policy settings. So, as I – the new GPS, I think you say at para 42, removes climate change as a primary objective, and instead the objective relating to climate change is restricted to what is in ERP2. Is that a fair summary?

A. I mean, the GPS and the ERP2 do sort of cross reference each other to an extent and the GPS acknowledges that the emissions reduction plan

is the government primary tool for setting out its expectations around climate change and emissions reduction.

Q. Right.

JUDGE MILROY:

Mr Sharp. Sorry, Mr Sharp. I can tell you have got more questions to ask, but we are now at morning tea time, so if we can defer your questions until after morning tea.

MR SHARP:

Yes, I can **(inaudible 10:31:26)**. I've only got two more questions, so I am happy to do that.

JUDGE MILROY:

All right, thank you. So, we will return at 11 o'clock and Mr Bennion, I can see that there is food out there, so you won't need to dive into your lunch box.

HEARING ADJOURNS: 10.31 AM

HEARING RESUMES: 11.02 AM

JUDGE MILROY:

Welcome back everybody. We're resuming with questions from Mr Sharp.

(11:00) MR SHARP TO SIOBHAN ROUTLEDGE: (CONTINUES)

Q. Thank you, Ma'am. Ms Routledge, just before we took the break we were just looking at GPS 24 and the climate change focus and that being restricted to the ERP2 projects. So, as I understand from your evidence, the general focus of GPS 24 is on economic returns and value for money. Is that correct?

A. GPS 24 has four strategic priorities. So, economic growth and productivity safety, resilience, and value for money, so four strategic priorities.

Q. Thank you for clarifying that. So for example, you were talking before

with Mr Bennion about public transport and the impact on emissions. So, at paragraph 46 of your evidence you're referring to walking and cycling, walking and cycling investment. So that on its own, the objectives for that is if it's justified by economic and public safety factors as I understand it, so that's the relevant factors that apply to walking and cycling paths?

A. I think that's partly correct. I'd also note that walking and cycling does have co-benefits in terms of emissions reduction and also health for individuals as well. You know, when we do or when NZTA looks at making investments, it does think about those wider co-benefits that can be achieved.

Q. So just to drill down on that, so under the GPS 24, so for example cycling and walking paths, they need to be justified by economic and public safety factors. So even though they may have incidental benefits for reducing emissions, from what I understand, that can't be reason for investment in cycle paths or walking paths on its own. Is that correct?

A. That is correct.

Q. So just a last question I have, at paragraph 19 you refer to the general targets in ERP1 related to transport, and Mr Bennion referred those to you, for example, zero emission vehicles, reduce – to increase the 30% of the light fleet, reducing total kilometres travel by light fleet by 20%, reducing emissions from freight transport by 35%, and reduce intensity transport fuel by 10% by 2035. Those are no longer specific targets in ERP2, but do you have any idea how we're tracking towards those 2035 targets that did exist in ERP1?

A. The main thing that the Ministry monitors is the uptake of zero emissions vehicles. We do continue to monitor that. I think it's well known that when the clean car discount was removed, we did see a dip in electric vehicles being sold. Over the last year we've seen that restabilise and recover and even quite recently through the Middle East fuel issues we've seen an increase in electrification of vehicles. We do continue to monitor that and we are anticipating continued uptake. The technical annex that the Ministry for the Environment provides does put some future forecasts for electrification of the vehicle fleet which does show continued uptake. And I would note too that since the clean car discount programme was in place

and subsequently removed we have seen additional choice and competition and new models of electric vehicles coming into New Zealand. We have seen a price drop of those quite significantly. They were previously around 60,000 for an EV. You can now get one for around 30,000. So we are seeing that market change happening.

Q. Yes because broadly, well, antidotally It seems to be that cheaper EVs are significantly more expensive than equivalent internal combustion engine vehicles. Is that your understanding at the moment?

A. That is the trend that we're seeing, yes.

Q. Yes. Thank you, Ms Routledge. Thank you for your evidence and for answering my questions.

(11:06) MR UMAR KUDDUS TO SIOBHAN ROUTLEDGE:

Q. Good morning. Can you hear me?

A. Yes.

Q. Yes. Thank you very much Ms Routledge for your evidence. Now, I see that you are the Acting Deputy Chief Executive, Policy Group, at the Ministry of Transport. I want to ask you, in that role, your team provides advice to the Minister of Transport on environmental and climate related transport policy, yes?

A. Just to clarify, I was previously the Acting Deputy Chief Executive Policy. I'm no longer in that role. I'm back at my substantive role as Director Aviation. But under the Acting Deputy Chief Executive, yes, we did – I did have those responsibilities.

Q. And you accept that transport decisions made today can shape outcomes for decades particularly in relation to roads, rail networks, ports and public transport systems, yes?

A. Yes, that's correct.

Q. The Ministry is therefore not simply advising on short term transport settings but on long term systems that affect how communities access work, schools, health services, whānau and markets, yes?

A. Correct.

Q. And for rural Māori communities, transport infrastructure is not just a convenience. It is often the difference between being connected or being isolated. You'd accept that, wouldn't you?

A. Yes I would.

Q. You explained that the Ministry does not self-deliver most transport services as you said in your summary this morning and that operational decisions are largely made by Crown entities such as NZTA, yes?

A. Correct.

Q. The Ministry still advises however on the National Policy Framework that shapes those decisions, yes?

A. Correct.

Q. And the government policy statement from Land Transport sets the Crown's strategic priorities for transport investment over a 10-year period, yes?

A. Correct.

Q. So whilst NZTA has operational independence, the Crown still determines the policy settings and investment priorities that guides the system, that's correct, yes?

A. That's correct.

Q. Now I'll just move on to the evidence that you gave regarding ERP. You acknowledge in your evidence that ERP1 recognised the transport system is inequitable, yes?

A. That's correct.

Q. The ERP transport chapter specifically acknowledged that Māori, Pasifika, disabled people, low income households, older people, children, and rural communities are often under-served by the transport system overburdened by negative impacts, yes?

A. Yes, that was what the ERP1 said.

Q. You'd accept that that is a significant acknowledgement by the Crown, yes?

A. I believe so.

Q. It means that before any transitions occur, Māori and rural communities are already starting from a position of disadvantage in the Transport system. You'd accept that, wouldn't you?

A. I accept there's always more to do to improve outcomes for all people, correct.

Q. Now on the ERP2, the ETS price contributes to petrol prices at the pump, yes?

A. Yes.

Q. Your evidence says that ETS unit price contributed around 14 to 15 cents per litre to petrol prices, yes?

A. That's correct.

Q. And the ERP2 technical annex acknowledges that fuel costs represents a higher share of income for lower income households, yes?

A. Correct?

Q. It also acknowledges lower income households needing a private vehicle are less able to meet the upfront costs of switching to an EV or hybrid, yes?

A. That's correct.

Q. That is precisely the issue raised by Wayne Ngata in the claimant evidence you respond to, isn't it, that Māori in isolated communities often rely on private vehicles, lack of public transport and cannot afford EVs or readily access EV services?

A. That is correct.

Q. Your answer in the brief of evidence is that public transport generally reflects population density and need and that it is not unusual that isolated community have less public transport, yes?

A. That is correct.

Q. But that does not solve the inequity, does it?

A. You could argue that, yes.

Q. Well what do you see as solving the inequity there? Do you have a solution perhaps?

A. Well I'm mindful that in the ERP2 technical annex, you know, there was the acknowledgement of those inequities for low income people, including Māori, and that there can be regional inequities too. The government's role in income support is a particular kind of mitigation there. I think also when we do think about particularly kind of rural and more isolated people in the way that you've described, part of the response too is also about

kind of the safety and resilience of our roads as well so that people have really good access to where they want to travel and they know that they're travelling on roads that are well maintained and safe for them as well.

Q. Now I just want to move on and talk about public transport, cycling in rural Māori communities and you say the current national Land Transport programme forecasts $6.4 billion for public transport and $460 million for footpaths and cycleway improvements and maintenance, yes?

A. That's correct, yes.

Q. Those investments are concentrated mainly where public transport systems exist, particularly in urban centres, yes?

A. Yes.

Q. And therefore, those **(inaudible 11:14:06)** may – whilst they may be important they do not directly assist many rural Māori communities do they?

A. They don't.

Q. So for a whānau in Kaeo, Maketū or Waiomio or remote Hawke's Bay, those investments do not necessarily provide a practical alternative to private vehicle use do they?

A. They don't.

Q. So when the Crown points to public transport investment as part of transport transition, the Tribunal should understand that much of that benefit is not reaching rural Māori communities, yes?

A. That is correct.

Q. Thank you. Now, I'm just weary of time and I'll ask my last set of questions and they focus on infrastructure reliance. So turning to Climate impacts on transport infrastructure, you'd accept that climate change will increase the severity and frequency of extreme weather events and that these will have increased impacts on infrastructure including transport infrastructure, yes?

A. Correct.

Q. You also acknowledge that the claimant evidence that has discussed roads and bridges being damaged and communities being isolated after severe weather events, yes?

A. Yes.

Q. Sorry, I missed that Ms Routledge.

A. Yes.

Q. That is consistent with the claimant evidence of Ms Kawiti who describes Waiomio or describes her Waiomio whānau becoming isolated during floods with road access submerged, power cuts and food and water supplies being disrupted, yes?

A. Yes.

Q. And there's a number of other claims that have given some fairly similar evidence. So these are not just isolated examples. They show a pattern of rural Māori communities being disproportionately exposed when the transport infrastructure fails, doesn't it?

A. Yes.

Q. Now, your evidence says that following Cyclone Gabrielle there was a specific additional funding including $567 million to NZTA for immediate work on state highways and affected areas, but that is largely reactive funding after disaster strikes, isn't it?

A. It is, but I'd also note under the government policy statement on Land Transport there's been a very significant focus on resilience.

Q. It does not necessarily mean the Crown has proactively protected rural Māori communities from being isolated before the next disaster does it now?

A. Look, I don't know if I would argue that. I would note that the GPS does have that very strong strategic priority around resilience, and the intent of that strategic priority is to be more proactive and more preventative so that the roads are in better state and more able to withstand natural storms and disasters. So I think the focus really is on much more prevention to ensure that those people don't – are less affected by that risk of being isolated and cut off.

Q. Well you talk about preventative measures Ms Routledge but the issue is that where roads bridged in highways near these Māori communities are owned by different controlling authorities such as the NZTA, local councils and regional councils, there is a real risk that responsibility becomes fragmented, doesn’t it – isn’t it?

A. I don't know if I would say that. It would probably depend a little bit on the particular circumstances. I'd be really conscious that the NZTA is responsible for state highways and it does have that very clear responsibility. It does work very closely with regional and local councils. So I'm not clear that there is that risk that you've identified. But I've also talked to NZTA and they are very committed to working with local and regional government.

Q. But in practice, Ms Routledge, isn't, you know, when you've got these competing entities, isn't it – doesn't it come down to an issue where essentially you have a situation where each entity passes the buck on to the other without really doing much before the next disaster strikes?

A. Look, I'm not aware of that. I would note that each roading controlling authority is responsible for developing a regional Land Transport plan. It does that in close consultation with a whole range of communities and it does it in close consultation with the NZTA. So I think there is a good understanding at that regional level of the regional needs of all of those communities.

Q. And then from the perspective of an affected Māori community like that of Ms Kawiti's or Ms Ratima who has also given evidence much in the same light and also Ms Awhirangi Lawrence. From their perspective it may not matter which agency owns the road but what matters is whether the Crown systems ensure that they are not left isolated. You'd accept that, wouldn't you?

A. Absolutely. Thank you very much, Ms Routledge. I have no further questions, Ma'am, and I seek leave to put some questions in writing however if that's all right.

JUDGE MILROY:

Yes, thank you Mr Curtis. Our next questions are from Ms Rongo.

QUESTIONS FROM MS RONGO – NIL

(11:20) MS TE WHENUA TO SIOBHAN ROUTLEDGE:

Q. Tēnā koe, Ms Routledge. Are you able to hear me well?

A. Tēnā koe. Yes I am, thank you.

Q. Ka pai. My name is Ms Te Whenua and I appear for two claimant groups within this inquiry, one being Te Arawa's Climate Change Committee, Te Urunga o Kea and the other being Ngāti Uepōhatu. Ngāti Uepōhatu are situated in the Waiapu Catchment Ruatōrea area of Te Tai Rāwhiti. So my questions are coming from their particular perspective today. And what am I going to do is I'm going to follow up on my friend Mr Kuddus' approach which is just to really take a look at your Manatū Waka role as the government's lead advisor on transport infrastructure and policy. Now, is it correct that the Ministry for Transport, Manatū Waka has a Māori strategy called He Arataki?

A. Yes, that is correct.

Q. And Ma'am, may I share my screen and just bring that up for the benefit of the parties and the Tribunal, the strategy?

WITNESS REFERRED TO HE ARATAKI STRATEGY

Q. Ms Routledge, is this a copy of the strategy to your knowledge?

A. Yes it is.

Q. Ka pai, and it's correct isn't it, that the purpose of the strategy as highlighted there up the very top, if you can see my cursor, I'm not quite sure, it says a transport system, the purpose is a transport system that enables Māori to flourish, that's correct?

A. That is correct.

Q. And it's correct isn't it that the strategy supports the Ministry's obligations as a Treaty partner which is down here to the left at number four, that's correct?

A. That is correct.

Q. And in addition, with respect to the links, ngā hononga, of this strategy with – sorry, the Māori strategy with your ministerial strategic focuses for Te Manatū Waka, it's correct isn't it that you develop, the Ministry develops the Ministry's understanding as to why Māori are disproportionately impacted by transport incomes and recognised that Māori partnership is critical to understanding the issues and opportunities for Māori in transport and that the Ministry respect the vital role of iwi

Māori in the economic and social fabric of New Zealand, that's a critical strategic link, isn't it?

A. Yes it is.

Q. Kia ora. Lastly, in terms of the strategic priority areas, it's correct that the Ministry's policy design and advice delivers improved Transport sector outcomes for Māori as a key strategic priority, that's correct, isn't it?

A. That is correct.

Q. Thank you. I'll stop share here, but against that backdrop, I'd like to ask, does the Ministry specifically incorporate Treaty considerations into climate resilience planning for roading infrastructure?

A. So I just need to be clear about our role versus the NZTA's role. So the Ministry obviously provides that strategic oversight of the Government policy statement on Land Transport. So our role is to set those strategic priorities, establish the revenue required for the GPS to be delivered and to set activity classes. We don't make individual decisions about roads. The NZTA does make those individual decisions and it has an investment management approach where it works through carefully how different investments would meet strategic priorities as set out in the GPS but it also considers other matters such as climate impacts as well.

Q. Yes, thank you. I suppose what I'm getting at is with respect to the strategic and policy advice that you provide as a lead advisor on transport infrastructure and policy. Does that specific advice incorporate te Tiriti o Waitangi?

A. It does on a case by case basis, and we're obviously very conscious of our obligations under the Land Transport Management Act where there are obligations to work with Māori. We're also very conscious of the Cabinet office circular around te Tiriti requirements.

Q. Ka pai. In terms of that case by case basis, you're aware that Te Tai Rāwhiti has been repeatedly isolated by extreme weather events, correct?

A. Correct.

Q. And that as a result of those events, Te Tai Rāwhiti communities experience recurring road closures, infrastructure failures and loss of access to essential services?

A. Correct.

Q. So in terms of that case by case basis does your policy advice involve an analysis of Te Tai Rāwhiti vulnerability to infrastructural damage, extreme weather events and resilience across time?

A. So I just sort of reiterate that with the government policy statement on Land Transport there is a strategic priority around resilience, and while the Ministry as such doesn't look at particular regions in the way that you've described it is our intent that funding can flow to those regions where resilience is an important factor. And then we're really conscious that, you know, the NZTA works very closely with the relevant councils there and the communities to understand the specific needs of those communities and we're very conscious that Tai Rāwhiti and the way that you've described has been very impacted by weather events. But it's also probably best for NZTA and the councils to work together to come up with the best mix of solutions that both address the kind of immediate problems but also are more preventative in their nature.

Q. Just to be clear, is that a no?

A. I don't believe that's a no, it’s a – I’m just trying to explain the way the Ministry applies its policy focus and that we take a national approach, and the importance of resilience has been clearly recognised.

Q. Thank you. Has the Ministry developed any framework for prioritising resilience investment with respect to policy advice for Māori communities who face repeated isolation from flooding or storm damage?

A. We haven't done that separately ourselves, but again I just refer you back to the work that NZTA does with regional councils and local communities so that there's a very clear understanding of what those regions need in terms of their resilience.

Q. Ka pai. I think I'll leave my questions there, Ma’am.

JUDGE MILROY:

Thank you, Ms Te Whenua. We now have questions from the Tribunal.

(11:29) KEVIN PRIME TO SIOBHAN ROUTLEDGE:

Q. Thank you. Most of MY questions have been asked but Ms Routledge when you were reading you evidence at paragraph 41 I think it is, you said, when you were reading it, it says June 2026 and you said July. Has that slipped a bit or…

A. Is that paragraph 41 of my evidence that you're referring to?

Q. Sorry, of the one you were reading, the summary.

A. Right, sorry. This is in regard to the clean car standard?

Q. Paragraph 41.

A. Yes, so that work is underway at the moment and it is expected to go to Cabinet in June this year, 2026.

Q. Okay, so June, not July.

A. Not July, no. June.

Q. Yes, thank you, no that's all. Thank you.

(11:30) PRUE KAPUA TO SIOBHAN ROUTLEDGE:

Q. Kia ora, Ms Routledge. I just had a couple of questions. I just wanted to clarify the comments around the loan which obviously is something that's happened more recently that's included in your summary. As I understand it, that loan is just to the two companies that have also agreed to contribute, is that right?

A. Yes that's correct.

Q. So it's not to the private sector generally, it's just it'll be ChargeNet and Meridian?

A. Sorry, it is to those two parties, but they did respond to a wider request for proposals. So other parties had the opportunity to also apply for that.

Q. Okay. But the actual decision was that the money will just go to those two. The interest free loans would just go to those two companies?

A. Yes, that's correct.

Q. And I think at the time that the Minister for Transport at the time as well said that the loans were preferable to grants, is that correct?

A. Yes that is correct.

Q. Okay. What do you understand to be the current situation in regard to electric vehicles in terms of what percentage they make up of new cars?

A. I would have to check the figures for you in terms of the current percentage. I'm conscious I think in New Zealand we have around 120,000 electric vehicles in the fleet as a whole but that is at the moment a small proportion of the entire fleet.

Q. All right. It seems at the time that in 2023 EVs accounted for 27% of new vehicle sales. As at March 2026 one in nine cars sold are electric. Does that sound right to you in terms of the numbers?

A. It sounds reasonable, yes.

Q. And is that, given the one in nine, is that a pretty low number for electric vehicles?

A. I think it's hard to say if it's a high number or a low number, but obviously over time we are expecting to see more and more uptake of electric vehicles.

Q. And is that on the basis that there will be more charging stations?

A. More charging stations will certainly help, it'll help address those issues around range anxiety that people have, so they'll have more confidence that they know that when they are travelling across regions and around the country they will have access to reliable fast charging structures. But we'd also expect other things to come into play as well. We are seeing, as I said earlier, that a few years ago the average cost of an EV could be around that $60,000 mark. At the moment we've seen that price really come down and you can get an EV for around 30,000. So as we're seeing more choice, more brands, more models coming into New Zealand we are seeing that higher uptake starting to re-emerge.

Q. So what's your view about whether for example the road user charges on electric vehicles, would that increase uptake?

A. That will expose EV owners to paying road user charges, so that will be a financial cost on them, so that may slightly disincentivise their willingness to buy an EV. That is a change from the previous policy, absolutely.

Q. And I think you referred to it as well to say that the issue of having 10,000 chargers, more chargers of whatever level by 2030 is probably an overly ambitious target?

A. I definitely didn't say that.

Q. I'm paraphrasing. Would you say that it is – well, what do you consider is the likelihood of meeting 10,000 by 2030?

A. I think it's – look, it will be ambitious and it will require investment to get there but I'm also mindful that as of about a year ago we had 1,300 or so chargers We're now up to 1800. We've got another two and a half thousand coming on stream. The technology is constantly improving and some of the other policy changes that have been made around no longer needing a resource consent to put a charger in should help. But as I've said additional investment would be required.

Q. So when you say two and a half thousand, by what date?

A. Look, I'd have to double check that.

Q. Okay. The other question relates to, I think, the issue of you made a comment here, let me just find in paragraph 33 and 34 I think of your summary. Essentially, from your outline of the GPS that were in the GPS that are, would it be fair to say that the identification or elevation or priority of environment in climate change has changed now from what was 2018 in 21 to what is now 2024?

A. Yes that would be fair.

Q. And just finally, I just, in terms of the issue in relation to Māori, first of all, would it be fair to say that with the ERP2 and the changes from ERP1 and so on that there's been a shift towards a more market-led extractive perhaps and technology dependent approach rather than a sort of just transition. Would that be a fair assessment of the differences that have occurred?

A. That would be a fair description.

Q. And do you agree that in the situation for Māori that as a general observation would you see that Māori carry the burdens both of the physical impacts of climate change as we've heard during the course of this on land and so on and on the communities but also perhaps carry the economic costs when the transition isn't quite as smooth as it could be, would that be a fair assumption?

A. I think it's broadly fair. I think we are really conscious as with Ms Te Whenua's questions that particular regions, particularly

Tai Rāwhiti and Northland are more impacted by weather events and that does have a real cost for those communities.

Q. Thank you, Ms Routledge.

(11:39) BASIL MORRISON TO SIOBHAN ROUTLEDGE:

Q. Thank you, Ms Routledge, for your brief and explanations so quite a few of the questions that I had have been answered. I saw a news **(inaudible 11:39:45)** major trucking company moving into hydrogen fuelled vehicles and I forget the number forgive me but there was something lined up ahead of them. Question: I know you mentioned it in your evidence but has there been any growth of the hydrogen vehicle take-up exponentially in the last short while?

A. Look, again, I'd have to come back to you on that.

Q. Okay.

A. I think the hydrogen vehicle levels have been very, very small.

Q. Yes.

A. And so it's really coming off a very small base. So I think we are seeing some increase. But what that increase looks like we can certainly come back to you on.

Q. Okay, thank you. The next question is we've talked about rural communities who have in many cases deprivation at various levels because of things we've talked about already. How are we getting the spread of charging stations across the country that reflect when you might have, it's been mentioned here, a small community and there might only be two vehicles in the community so it won't compare with putting a charging station in Mangere in Auckland for instance. How do you balance some of that up so if you go and get that rural community to also take up the opportunity of a $30,000 or thereabouts EV because there is a charging station within 20 minutes, half an hour, how are you differentiating between a charging station in Māngere that might have 500 vehicles a day go through it versus a small rural community with all those deprivation issues we've talked about but wishing to move that way. How do you split that?

A. Thank you. That's good question. So the decisions that have been taken on the rollout of EV chargers have been taken by NIFCO. So that – so not by the Ministry itself. But the way we designed the policy was that you should see that spread of chargers being rolled out across communities in New Zealand. There was a strong preference from ministers to undertake cost-benefit analysis for the majority of those charge points.

Q. Yes.

A. So it would tend to favour those more densely populated areas, but there was a clear acknowledgement from ministers that we should be thinking also about other parts of the country where like you say they've got more dispersed populations, lower numbers of people. So while I can't answer to the exact decisions that have been taken, the policy design was to get that balance across different types.

Q. So there's a mechanism there to consider 10 people a day in Ruatorea accessing it versus 500 people a day in Māngere for instance?

A. That is correct, yes.

Q. Okay. The second part is the Regional Transport plans and strategies. There is quite a process to go through. Can you just take us through please for the record, a regional transport plan starts off as an issue and ends up after considerable consultation by road users and other parts of the community, can you just take us through a little bit to arrive at not only the social use if you like of residential vehicles but also the Transport network, whether it's a milk tanker or whether it's a cattle truck up a backcountry road. How does all that fold into the regional council carrying out the function of working with NZTA, local authorities and other people, other agencies?

A. We could get you some more information on this because obviously NZTA is the lead agency on how those regional Land Transport plans are developed. But at a high level, the way I would describe it is that the Road Controlling Authority which tends to be the regional council is the lead in developing those plans. It'll take advice from its own internal people, its own roading engineers, traffic engineers, the people who are looking at the state of the local network that they have so that they have

a really good understanding of the state of the network that they serve. They'll also be taking into account things like their own public transport plans, which most regional authorities have and starting to build a picture of their priorities. And then alongside that there is a lot of consultation which is done under the Local Government Act with a range of communities. Each Road Controlling Authority will handle that in a slightly different way, you know, depending on their operating practices.

Q. Okay. How does it fit in to charging in homes for instance. Is there any, during that putting together that strategy and programme of having charging stations or charging facilities in their home, is there any support that goes into that?

A. Look, I'm not aware of Regional Land Transport Plans, particularly considering charging.

Q. Okay.

A. I'm not aware of that.

Q. No, it's fine. The last question is electric bicycles. I understand there is a private provider putting in charging stations for electric bikes across the country. Is that coming in under Regional Transport Strategies and Plans, do you know?

A. I'm not aware of that. That was something I'd need to check for you.

Q. I know the rail trail or the cycleway trail business that there is a company that's putting these charging stations and I just wondered whether they were – there was any linkage between that physical asset and a vehicle charging either/either, together. Thank you.

(11:46) PROFESSOR DAVID WILLIAMS TO SIOBHAN ROUTLEDGE:

Q. Tēnā koe. I think I heard your preference was Routledge, was it, for your name?

A. That is correct.

Q. Because I would've said Rutledge but Routledge is your preference so I should call you that. Thank you for your evidence. David Williams is talking to you now. And Mr Bennion has already referred to paragraph 6 of your full submission, full brief of evidence, and so what we're talking about today is 17.5% of the gross greenhouse emissions coming out of

New Zealand, and that figure is from ERP2 according to your footnotes, so that's December 2024, it's pretty up to date. So it's a very large proportion of the total greenhouse emissions that New Zealand, New Zealanders are responsible for. Just to say that before I ask my question, one of the difficulties I have as a Tribunal member is that our jurisdiction relates to the Crown. Now, you are of the Crown but many of these other entities are state-owned enterprises with a minister being the shareholder or independent in some way or other, and so part of your, several of your answers today sort of say well actually we don't control that, these other people control it. So it makes it difficult to know how the Crown can be accountable overall given that we're dealing with a very huge proportion of the total emissions. And so, that leads me then to paragraph 22 of your summary today and I highlighted the sentence which says that the Transport policies and ERP2 are not intended to significantly reduce emissions themselves. So just a very broad question really. We've had decades of scientists telling us about the impact of greenhouse gas emissions and we've had conferences and parties year by year and looking at Paris Agreements and all sorts of other things. So that for the Ministry of Transport at the moment, you are happy that the ERP Transport policies are not intended to significantly reduce emissions?

A. I think we acknowledge the overall approach in the ERP2 where the Emissions Trading Scheme is doing, you know, the heavy lifting on emissions reduction, and then our focus really is on what sort of complementary policies might be needed to support the ETS to play its role but also to channel investment into those sorts of things that need to be addressed through removing regulatory or other market barriers.

Q. So further to Ms Kapua's question, that's primarily market mechanisms to encourage people to move to electrification of vehicles whether light or heavy?

A. Primarily, yes.

Q. Primarily. Secondly, second question, paragraph 40 of your summary you're talking about the clean vehicle standard and setting the annual fleet average CO2 targets for vehicle importers, and last sentence of

paragraph 40, the new targets maintain a level of ambition in CO2 emissions close to that of lead jurisdictions. Can you tell me who the lead jurisdictions are?

A. I would particularly note that we are looking to be a sort of equivalent to Australia. So that is one jurisdiction which is leading.

Q. Not China, for example?

A. No, I don't think I've seen China in the analysis that we've done.

Q. They produce a lot of E-vehicles and I think been quite a lot higher than we are at the moment. Is that worth looking at? The policies that China implements?

A. I think that is correct. Yes, they are very heavily investing in electrification of vehicles. You know, we are seeing a huge number of EVs coming out of China these days.

Q. But I mean usually compares itself with Australia, Canada, US, UK or EU something or rather, so there must – whoever wrote lead jurisdictions must have had something in mind. So could you put in writing what the lead jurisdictions were that were referred to please?

A. Sure, sure.

Q. That would put it on the record for us. My remarks are just purely saying, well, China can do some of these things why can't some of the rest of us. But there we are. That's my personal opinion. That's my questions thank you and thank you for your evidence.

(11:51) JUDGE MILROY TO SIOBHAN ROUTLEDGE:

Q. Thank you Ms Routledge. Just following on a little bit from what Professor Williams was asking you, it says in paragraph 40, a level of ambitions CO2 emissions close to that of lead jurisdictions, and as you're finding out that information of what the lead jurisdictions are, I'd like to know what "close" means. Now, I've got a question, most of my questions have been asked, but you refer in paragraph 57.2 of your main brief to the, well, first of all, to the Land Transport (Clean Vehicle Standard) Amendment Bill (No 2) which was introduced in August 2025, and I'm just wondering when it's anticipated that it will become law?

A. I will check that for you. Yes, I will check that for you.

Q. Thank you. I'm not asking about the bill itself as such, but it refers to enhancing this – you're referring to the bill enhancing the Standard's flexibility measures by, at 57.2, extending the use of borrowing of future target over-achievement beyond 2025. And I was just wondering what the expectation of future target over-achievement is?

A. This is where the Clean Vehicle Standard gets quite technical so it might be better that we do follow up with a proper response for you, and yes, I just need to just check whether it's a sort of over a three year period or a four year period. It is quite a technical area.

Q. But there is an expectation that there will be an over-achievement in terms of the Clean Vehicle Standard that at some point all our vehicles will be clean and not emitting carbon or whatever?

A. Yes. What this refers to is that the credit regime that has been in place has often had quite short periods maybe sort of two to three years where those credits are available, and then when we see the sort of economic conditions change so that, you know, there are less vehicles coming into the country or there's less interest in electric vehicles, that those credits that have been obtained by vehicle importers have then sort of expired. So the intent here is more about how do we give a little bit more flexibility and a little bit more time so that when conditions are good and you're seeking an over-achievement that those credits can last a little bit longer in times when conditions aren't so good.

Q. If you could give us a full answer about that because I'm not really understanding what the philosophy behind allowing that extension of time is.

A. Yes. We can come back to you with a full answer on that.

Q. Thank you, and I'm just checking my question at paragraph 64, and again this is the Clean Vehicle – I think it might have been asked actually, sorry. But at paragraph 64, before the scheme was repealed, modelling showed that removal of the scheme was not expected to affect achievement of the transport sector's contribution to the first emissions budget. Can you tell me why that was?

A. Again, probably it's a good thing to follow up with written answer but, you know, obviously when we were looking at the removal of the scheme it seemed the modelling was clear that it wouldn't be affecting EB1.

Q. Not sure what that means, that I suppose if you could encapsulate that within the following-up that would be lovely.

A. Yes.

Q. Thank you. And then lastly paragraph 65, where we're talking again about the fact that Māori and along with Pacific peoples were less likely to have benefited from the scheme. You might need to follow-up. I'm just wondering how the issue of actually reducing emissions by having this Clean Car Discount Scheme and therefore encouraging even wealthier New Zealanders to buy electric vehicles, how the fact that the reduction in emissions and the fact that when they buy their new machine a couple of years later there's more cheaper used EVs available, how the reduction in emissions was taken into account, because I would've thought that reducing emissions was a benefit to everyone including Māori and other disadvantaged groups?

A. I mean the discount did provide that incentive for people to purchase electric vehicles, but I'd also just like to signal that the clean car –
Clean Vehicle Standard is also an important mechanism which is designed to improve the availability of low-emission vehicles that are affordable to all New Zealanders as well. So while the Clean Car Discount played a role, other things like the Clean Vehicle Standard also helped to bring in higher numbers of low emission vehicles.

Q. But your evidence does refer to flexibility being given to – which will mean, I think, that higher emitting vehicles will be coming into New Zealand as well, hopefully, as low emitting electric vehicles. So I'm not quite sure how the two policies work together to remove emissions or reduce emissions?

A. Yes I think it’s a fair question. So the discount provided a rebate on electric vehicles and then it also provided a charge on higher emitting vehicles. And the idea of that scheme was that the rebates given out would be covered by the charges collected so that at the individual level there would be a stronger incentive to buy low emissions vehicle, and

those wanting to buy high-emission vehicles, often utes, paid a charge. So that really did affect people at the kind of individual level. We were really conscious with the Clean Car Discount that that scheme was unlikely to be sustainable in the way that it was designed. Over time we would have seen that charges would have become higher and higher and then the rebates provided would have become quite low. So there were some questions about the sustainability of that scheme. And I think we were also conscious of wealthier New Zealanders were more likely to benefit from it than people living in rural regions where there were limited access to electrified utes could have been penalised by it. So there were some equity issues with that particular scheme, but that, as I say, was at more at the individual level. The Clean Vehicle Standard is aimed more at vehicle importers and really trying to incentivise them to bring in a mix of low emission vehicles and to do more of that over time. But it also does provide some flexibility, just acknowledging that New Zealanders do like have access to things like utes, which are higher emissions. So the idea really is to kind of get to that kind of net balance so that we're seeing more and more low emissions vehicles coming in and hopefully over time less high emissions vehicles.

Q. Thank you. My last question, I think it’s my last question, is about the reference in the Land Transport Act to Māori and the Treaty, and I'm just wondering is it one of the pieces of legislation that is going to be affected by the proposals to standardise the – because I can’t remember –

A. Look, I know that there had been some work on that, but where that's landed I would need to come back to you on.

Q. Yes, if you could do that, thank you. So thank you. Those are all my questions and I'll hand you back to Mr Fong who may have some questions by way of re-examination.

QUESTIONS FROM MR FONG – NIL

MR FONG:

It remains for us to thank her for her time and helpful evidence to the Tribunal.

JUDGE MILROY:

Can I thank you again for your time and attendance today and for the helpful evidence that you provided.

MR BENNION:

If it assists, the hearing next week is going to be examining the Land Transport Amendment Act change and it is to remove the Treaty reference entirely from that legislation.

JUDGE MILROY:

Thank you.

MR PREBBLE ADDRESSES JUDGE MILROY – TIMETABLE (12:03:39)

HEARING ADJOURNS: 12.04 PM

HEARING RESUMES: 1.01 PM

JUDGE MILROY:

Welcome back from lunch.

JUDGE MILROY ADDRESSES COUNSEL – TIMETABLE, JC THURSDAY (13:02:07)

JUDGE MILROY:

We now have our witness Mr Martin here with us so thank you for being able to come earlier than expected and I will just hand you over to your counsel to introduce you.

(13:03) MR FONG: (CALLS)

DR WILLIAM JOHN MARTIN (SWORN)

Q. Tēnā koe, Mr Martin. Can you hear me clear? (no audible response) By way of formalities, can I get you to confirm to the Tribunal that your full name is William John Martin?

A. Yes.

Q. For the purposes of this inquiry you have filed a brief of evidence dated the 29th of September 2025?

A. Yes, correct.

Q. Yes. And the appellation number for the Tribunal's benefit is #A135, and you have prepared also speaking notes summarizing the evidence, correct?

A. Yes, correct.

Q. Can I now invite you to present your summary. Thank you.

(13:04) DR WILLIAM MARTIN: (#A135-(b))

E te Rōpū Whakamana i te Tiriti o Waitangi, e ngā mema o te Taraipiunara, tēnā koutou. E ngā rōia o ngā kaikerēme, tēnā koutou, tēnā kōrua pea. E ngā rōia o te Karauna, tēnā hoki kōrua, koutou. He uri tēnei nō Ngāti Wai, Ngā Puhi, Ngāti Whātua me Ngāti Tamaterā.

Ki taku mahi nei, ko te Pou Pūtaiao Māori ahau ki MBIE, ki Hīkina Whakatutuki. Otirā, tēnā koutou katoa. Chairperson, members of the Tribunal, counsel for the claimants and counsel for the Crown, I acknowledge you all and thank you for the opportunity to present my evidence today.

READS SUMMARY OF BRIEF OF EVIDENCE #A135(B)

My name is William John Martin, also known as Willy-John Martin.
I am the Director of Māori Science, Innovation and Technology at the Ministry of Business, Innovation and Employment.

This oral summary is a summary of my written Brief of Evidence.

It is intended to highlight the main themes already before the Tribunal. I have also included a section on the recent public announcements relating to science system reform made after the filing of my brief of evidence.

My role at MBIE is focused on science system stewardship. This involves stewarding policy and investments. I am responsible for advice on how the

MBIE designs and administers science funding, its mechanisms to address the Crown's Treaty obligations and respond to Māori interests.

Although I have a research background, I currently do not conduct research myself, and I do not make funding decisions on individual projects.

My evidence therefore addresses the structure and operation of the public science system, stewarded by MBIE on behalf of the Crown, rather than the merits of any particular research proposal.

The public science system is not a single fund or programme.
It is a plural system, made up of different funding instruments with different purposes.

These include funds that are mission-directed, contestable investigator-led, capability-building, and, at times, emergency or urgency-based funding.

Each instrument is designed to meet different objectives, and Māori participation and leadership occur in different ways, and to different degrees, across that system.

The diversity of funds, topics, purposes, and delivery mechanisms is essential to accurately assess whether policy approaches are sufficient to support inclusion and uphold Te Tiriti o Waitangi/ the Treaty of Waitangi.

This assessment must also account for the sequence in which decisions are made across policy design and the different stages of implementation.

Climate change research is addressed across the science system, rather than in one standalone fund.

It appears in mission-directed programmes, such as national science challenges; in contestable research funds; and in targeted responses to specific events, such as extreme weather.

Vision Mātauranga is the Crown's primary framework for recognising Māori interests within publicly funded research.

It seeks to support Māori participation, Māori capability, and Māori-led research, including the use of mātauranga Māori.

There is no single formula nor quota that determines how Vision Mātauranga should be expressed in every context.

The aim is to apply each funding tool in a way that is appropriate to its subject, objectives, and structural design. There is rarely a single "right" approach; instead, value lies in approaches that demonstrably contribute to the intended policy outcomes.

In my written evidence, I mention the Deep South National Science Challenge as an example of Māori climate research receiving support through a significant national climate initiative.

There may be a range of views on whether the level of activity was adequate, however Deep South included a dedicated Vision Mātauranga programme funding 25 Māori-led or Māori-centred research projects.

These projects addressed issues such as coastal adaptation, mahinga kai, community resilience, relocation, and mātauranga-based climate knowledge.

I also refer to the Māori-determined Extreme Weather Fund, which was established following the 2023 North Island extreme weather events.

This fund was designed as an urgency response.

It involved Māori-led decision-making and funded projects delivered directly by iwi/Māori organisations.

My evidence does not assert that the current level of funding is sufficient in all aspects.

However, I do state that there is no single correct percentage of science funding that must be Māori-led.

Funding levels are influenced by factors such as workforce capacity, community readiness, alignment with Māori priorities and alignment with scientific goals.

All publicly funded research is required to satisfy standards of accountability and quality. When there is limited system capacity in a particular area—such as the low level of Māori STEM capability—this should be recognised as a limiting factor. As I discussed in my evidence, this is one reason that might explain the proportion of research funding for Māori climate research or "by Māori for Māori" initiatives.

It is also important to recognise that most mātauranga Māori activity rightly sits outside the Crown science system and with community, and should not be assumed to be entirely absent or undervalued as a result.

The public science system is currently undergoing reform. Those reforms include consideration of how mātauranga Māori and Māori research aspirations can be recognised and enabled within the future science, innovation and technology system.

Consistent with paragraphs 40 and 41 of my written evidence, there is no plan to review or remove the Vision Mātauranga policy. Further, the detailed arrangements for the future funding system are still being developed.

My written evidence describes the past funding arrangements and the pre-reform science system. It does not anticipate, nor seek to predict, the specific funding outcomes of the current reforms.

Since I filed my brief in September 2025, there have been public announcements relating to science system reform, and I understand the Tribunal has been asked to consider whether my evidence remains current in that context.

By way of context:

- On 14 October 2025, the Government announced reforms to the science, innovation and technology system, including the establishment of Research Funding New Zealand (RFNZ) as the single funding decision maker for most research funding decisions across the system, within a new outcomes-focused framework organised around four pillars.
- On 1 April 2026, MBIE published the first report of the Prime Minister's Science, Innovation and Technology Advisory Council. That report recommends structuring investment around four pillars, including Environmental sustainability and resilience, and reallocating $122 million toward advanced technologies, alongside a shift toward a more mission-led funding balance.

MBIE has published information about these reforms on its website – entitled "A new funding strategy for the science system", "Refocusing the science, innovation and technology system", and "Research Funding New Zealand". I attached this information to my talking points to provide further context.

The Government has not yet issued its Science Investment Plan in response to the Council's advice. MBIE has indicated that the Science Investment Plan will set system-wide strategic research priorities, and that RFNZ will develop Pillar Investment Plans to operationalise those priorities.

For present purposes, my evidence remains current and accurate as a description of science funding arrangements and funding decisions as they operated, and as funding has occurred, up to the date of this Tribunal hearing.

The reform signals changes in how national priorities will be identified and how funding decisions will be structured, but implementation is at an early stage and it is not yet possible to state how climate change-related research (including Māori climate research) will be managed or funded in practice under the new settings.

In summary:
My evidence outlines the ways that Māori climate research has been funded across multiple parts of the public science system.

It shows that the decisions made and approaches taken, such as including Māori-led and Māori-determined topics, have occurred at various parts of the system using a range of mechanisms.

My evidence does not claim that the system is perfect, nor that all inequities have been resolved. It does not attempt to resolve what approaches are 'right,' rather that there are various elements to consider, and more than one option possible at any stage.

Those are the matters I wished to highlight for the Tribunal. Tēnā koutou.

JUDGE MILROY:
Thank you for your summary, Mr Martin. We now have questions from claimant counsel and we begin with Tūkau Law.

MR LYALL:
Your Honour, I think Tūkau Law indicated that they wouldn't be taking up the time that they'd requested when they gave appearances this morning.

QUESTIONS FROM TUKAU LAW – NIL

QUESTIONS FROM WOODWARD LAW – NIL

(13:18) MS TE WHENUA TO DR WILLIAM MARTIN:

Q. Tēnā koe, e tā. Ko Tania Te Whenua taku ingoa, nei au ka mihi atu ki a koe i whai wā mō tēnei tō tātou kaupapa. Tēnei uri o Ngāi Tūhoe, Te Whakatōhea e mihi atu ki a koe te uri o Ngāti Wai.

A. Tēnā koe.

Q. Tēnā koe. Now, just for positioning I am counsel for two claimant groups within this inquiry. One is Ngāti Uepōhatu, the claimant there is Tui Warmenhoven of the Waiapu Catchment Ruatōrea rohe, and the second is Te Urunga o Kea o Te Arawa whose witness Sandy Morrison is one whose affidavit you replied to in your evidence. So I'll be looking at that with respect to my questions to you today. Just to start, I'm going to look at the point that you make in your affidavit and also in your summary today we point out at page 2 of your speaking notes that there's really a single right approach with respect to funding of research science and innovation for Māori communities in particular and you note that instead value lies in approaches that demonstrably contribute to the intended policy outcomes. Now with respect to those intended policy outcomes, the intended policy outcomes that we're seeing with our current government's approach are predominantly economic, aren't they?

A. Yes, there is a strong emphasis on economic development and economic growth in line with the Going for Growth agenda.

Q. Kia ora. Now turning to your paragraph 13, and you highlight there MBIE's core responsibilities with respect to advising government on science and innovation policy, developing policy in response to Ministerial directions and government priorities. Just confirming, that's your core responsibility, correct?

A. Can you say that again? Thanks.

Q. Yes, sorry. Just referring to your paragraph 13 and confirming MBIE's core responsibilities include advising the government on science and innovation policy, developing policy in response to Ministerial directions and government priorities and implementing that policy through the design and management of funding mechanisms and programmes, that's correct?

A. Yes, that's correct.

Q. And MBIE also monitors the performance of Public Research Organisations to support and inform shareholding Ministers, correct?

A. Yes, that's correct.

Q. And in addition you lead strategic planning and system stewardship and ensure that science investments are aligned with national priorities and deliver public value. That's correct, isn't it?

A. Yes, that's correct.

Q. As part of that stewardship, do you agree that this would include responsibilities for ensuring the system operates consistently with Treaty obligations?

A. Yes, I would agree with that, yes.

Q. Thank you. And do you accept that the Crown's obligations are not limited to permitting Māori participation in New Zealand's Crown-funded research science and innovation systems but require positive steps to ensure equitable participation and outcomes?

A. Could you repeat the question? It's got a number of parts to it so I just want to make sure that I understand the totality of it.

Q. Sure. Do you accept that the Crown's obligations are not limited to permitting Māori participation in the publicly funded research science and innovation system? First of all, do you accept that?

A. It depends what you mean by participation because leadership is also participation as well as participation within the project itself, if it's a project, as impactive contributor as well as a recipient of the outcomes of the project. So it depends specifically what you mean by participation because we see all of those different types of participation throughout our different projects.

Q. That's good. So you confirm that participation by Māori on all of those various levels that you've highlighted here are in your view important components of the Crown's obligations with respect to Māori participation in Crown-funded research, science and innovation?

A. Yes.

Q. Ka pai. And do you also accept that the Crown's obligations additionally require positive steps to ensure that that participation is equitable?

A. Hmm. I don't really know how to answer that question. The reason why is because I'm not sure if you mean the equitability at the – in terms of equitability of access versus equitability of outcomes and equitability of participation in part of the project as well. So, can you give me a bit more information on what element of that you refer to?

Q. Yes, yes. I guess if we consider on one level what Professor Morrison's affidavit and evidence addresses, her evidence is regarding equitable participation through funding, that's correct, isn't it?

A. I believe that was her implication that she didn't really say in the evidence but she did give a percentage of funding citing evidence that she felt or believed that investment was not adequate. So, if I understood her evidence correctly.

Q. Yes. Ma'am, with your leave, may I share for the benefit of everybody, the parties and Mr Martin, Professor Morrison's affidavit here?

WITNESS REFERRED TO PROFESSOR MORRISON'S AFFIDAVIT, #A055

Q. Thank you. Mr Martin, are you able to see the brief of evidence of Professor Morrison dated the 28th of April?

A. Yes.

Q. Ka pai. Now, I'll just to turn to her paragraph 25. Here, she's making a particular point that the budget for the Deep South Challenge Funding was up to 51.1 million over 10 years, whereas the Vision Mātauranga Māori stream which was the only stream with a specific focus on funding Māori-led climate responsive research had a budget of only 10% of the whole budget, is that correct?

A. I'd have to trust the evidence, so I guess so.

Q. Thank you. And at your paragraph 45 of your brief of evidence, you note that there's no right percentage of funding that should be allocated to Vision Mātauranga or "by Māori for Māori" projects, instead funding decisions must reflect a range of factors which you go on to list. That's correct, isn't it?

A. It is correct, yes.

Q. But for the record, you've previously noted in your summary today you're not making a claim that Māori are funded equitably by the system, are you?

A. I do not make that claim, yes.

Q. Ka pai. Now, is it correct that MBIE does not have a system wide target requiring equitable proportional funding outcomes for Māori researchers or Māori-led research?

A. Yes, that's correct.

Q. And there's no mandatory, minimum proportion of research science funding allocated to Māori-led science, that's correct, isn't it?

A. That's correct.

Q. MBIE has not provided evidence showing Māori receive funding proportionate to need, nor population, nor Treaty obligations, has it?

A. We don't measure those things as targets, correct.

Q. That's right, and so MBIE doesn't measure nor hold, therefore nor publish comprehensive data comparing Māori and non-Māori success rates or access to all major science funding streams, correct?

A. That's not correct. We publish – there are some parts of data that we publish, for instance, we publish or have published in the past under our equity diversity of inclusion policy the success rates of applicants related to diversity data that we have. We also have published the success rights of different groups that have applied and been successful in our various grants and we do hold that data, and we also undertook a report about three years ago, I can't recall which year, that analysed the level of investment in Māori research, science and innovation, and that information is publicly available.

Q. Thank you. So given that you hold and measure those aspects, you have a sense of the scale of the inequity or otherwise, is that correct?

A. We definitely have a sense of the scale of funding. I'm not sure I would call it inequities because a lot of the research system is underpinned by a set of skills that you really need to operate in the research system. And so, it's a well-known shortcoming of our kind of pipeline that we lose a lot of Māori science capability very early on during the high school stages, and so when we have these capabilities move through into the science system as researchers we tend to fund them to the extent that they are there, if that is clear. And so, I, from some data that I recall, I'm not sure of the current data but the data from some three or four years ago, Māori

overperformed and the – their success rates in terms of how many applied to funding and how many were successful. And so, what I took that to mean at the time is that once Māori are in the system they're quite successful, but the problem is that there aren't that many that have research skills that are here in the system and can operate as scientists and researchers. So when you mention equity, I'm not sure, that can mean a lot of things. If it means that we don't fund the same percentage or we fund a low percentage of Māori-led funding based on population that's probably correct but if it's about whether Māori are performing in the science system at a lower level than everybody else, I would say that's probably not correct.

Q. Thank you, that's really helpful. It does loop into a line of questions that I was going to ask you later which I will bring forward and then loop back if I may to some of that inequity questioning, and I'm going to refer to your paragraph 47, which where you give some of the reasons around the difference in funding that Professor Morrison pointed out, for example your paragraph 47. All right, and I'm just navigating there myself. Yes, so here at your paragraph 47, which I'm happy to share also for the benefit of parties and the Tribunal, you're making the point that around a structural constraint, the pool of qualified Māori researchers particularly from the STEM workforce is severely limited, affecting the volume of several proposals submitted for funding. So I'm going to share this. Dual screens, and I'm all over the show but I'm going to get there. I believe this is it. You can see your paragraph 47 on the screen?

A. Yes.

Q. Yes, ka pai. So a fundamental point that I wanted to make which I think you've addressed somewhat is that the low number of Māori employed within the scientific institutions is not evidence of a low number of qualified or capable Māori scientists, is it?

A. I don't believe that's true.

Q. You don't believe my statement's true or you don't believe that – a low number of Māori employed within scientific institutions equates to a low number of qualified or capable Māori scientists?

A. What it sounds like to me is that your question is saying that the institutes or organisations don't employ or the vast Māori STEM researchers out there but I would say that there aren't that many out there.

Q. You don't think – do you agree that an underrepresentation of Māori within the science workforce should not be conflated with an absence of a Māori scientific capability?

A. Can you repeat the question?

Q. Do you agree that an underrepresentation of Māori within the science workforce should not be conflated with an absence of Māori scientific capability?

A. Why I find it hard to answer that question is because it highly depends on the areas in which Māori are currently well represented in. And so, I'll give you, for instance, I only know three or four Māori physicists, astrophysicists, and so it won't matter how – what your target is if there's not enough Māori astrophysicists, and so I find it really difficult to know whether that 2% is reflective of what you're saying, this pool of, like, there's a big pool of researchers out there, or whether there's, which is what I believe, that the spread of research capability is simply not at a high enough level in some areas. Yes.

Q. Thank you. I'm going to refer by means of evidence that we have before the Tribunal back to Professor Morrison's brief of evidence, and here if we're looking at the degree of capability with respect to the Deep South Challenge, Professor Morrison lays out the number of expressions of interest that were received at her paragraph 59 to 60 for example, 22 expressions of interest, and 10 of those were invited to submit a full proposal, four projects being awarded. So, you'd accept that the capability exceeds the funding available, especially with respect to this example, do you accept that?

A. No. The reason I say no is because on one ins – if you look at any fund, it doesn't matter if it's Māori or not, if it's mainstream, it's always awash with expressions of interest and awash with applications. And on top of that, not all expressions of interest or applications, proposals submitted, indicate that those proposals are ready for funding. And so, there's often a case that those EOIs can't really be used as a good indication across

the board, Māori on non-Māori, of the capability or readiness of applicants.

Q. Do you think the invitation to submit a full proposal is a better indicator?

A. That's a good – yes, definitely.

Q. Ka pai. And so here, just for completeness, whereas for the Te Taura Fund at paragraph 59 of Professor Morrison's brief of evidence, she notes that 10 applicants were invited to submit a full proposal and only four projects were funded. Is that a good indication, do you think, of the capability being present but the funding not meeting that need?

A. I really couldn't say either way because it's often the case where so many funding applications occur this way. And so, full proposals are not really indicative of capability or alignment to the policy objectives. So I'll give you another example is when it came to our Māori capability funds this time around, the He Ara Whakahihiko Capability Fund, we had the ability to fund 19 proposals. We only funded 17 proposals. Yet we had in excess of 70 proposals received. The panel was all but one exclusively Māori researchers, and so that panel believed that only 17 at that particular point in time were of a level of capability that should be funded at that time. It's not to say that it won't grow over time, but nevertheless if you looked at the number of proposals that you would receive and use that as a measurement of capability, then you would be wrong. But however, if you look at the level of fundable proposals, that's a better measure.

Q. Thank you. Now, I think I'm coming near to my time.

MS TE WHENUA ADDRESSES JUDGE MILROY – TIME, CONTINUE QUESTIONS

Q. Thank you, Ma'am. Now, on this point, Vision, I want to raise Vision Mātauranga because Vision Mātauranga, specific priority is to support Māori science capability in the system, is that correct?

A. Yes, yes.

Q. Great. So I guess would you accept that the existence of Vision Mātauranga itself reflects the recognition – the Vision Mātauranga reflects that recognition and that despite Vision Mātauranga existing

approximately for 20 years Māori still remain underrepresented in many areas of the science sector?

A. Can you say that again? Again, there's a number of elements to your question.

Q. Yes, sure, sorry about that.

A. That's okay, yes.

Q. So, despite the existence of Vision Mātauranga, it's for approximately 20 years if I'm not wrong, Māori still remain underrepresented in many areas of the science sector. That's essentially your evidence, isn't it?

A. Yes, yes.

Q. Okay, now to close, I want to get to climate change in Māori vulnerability. You accept that climate change disproportionately affects Māori communities? Do you accept that climate change disproportionately affects Māori communities?

A. I believe that's the case but I don't have data. That's my assumption that climate change affects coastal, rural communities highly. Having said that, there are also other metropolitan areas who don't know yet that they are climate vulnerable, but time will – the modelling tell us that it affects everybody.

Q. Do you accept that effective climate adaptation research is important for Māori communities?

A. Yes.

Q. Do you accept that inequitable access to climate research funding may prejudice Māori communities' ability to respond to climate risks?

A. Not so much research funding but research capability.

Q. So you, your position is that inequitable research capability may prejudice Māori communities' ability to respond to climate risk?

A. Yes.

Q. And we've just discussed that MBIE through Vision Mātauranga is charged with supporting the growth of that research capability, that's correct, isn't it?

A. To an extent, yes.

Q. And my final question, would you accept that under investment in Māori-led climate adaptation research may impact active protection of Māori communities?

A. If that were the case then it would.

Q. Thank you. Thank you very much, Mr Martin. No further questions.

JUDGE MILROY:

Thank you, Ms Te Whenua, and my apologies, Mr Lyall, you were actually first in the list of people to ask questions. I had skipped down to the next section inadvertently but it's over to you Mr Lyall. My apologies.

(13:49) MR LYALL TO DR WILLIAM MARTIN:

Q. Ngā mihi, your Honour. Tēnā koe, Doctor.

A. Tēnā koe.

Q. My name is Lyall and I represent four claimant groups, they were the groups that filed the memorandum of counsel asking if you'd be able to update some of the evidence given the time that elapsed since you filed your initial brief of evidence, so I wanted to acknowledge that you have done that through your speaking notes and filled that gap as much as you can, but also acknowledging that it's a difficult time for us to pin things down in evidence given that we're midstream in reform, so I think we'll rope our way through things a little today as much as we can. The first thing that I wanted to try to get some clarity on if we could was the Vision Mātauranga policy which dates back to 2005. For those coming through the record later on it's found at Record of Inquiry #A135(a).

WITNESS REFERRED TO ROI #A135(A)

Q. The policy itself, looking at it, I mean, you'd agree it's a robust document and quite ahead of its time in many ways at 2005. Just because as I've mentioned the record we won't be able to pick up a nod in the later transcript. My apologies.

A. Yes. Yes.

Q. Now, you've been clear that at the date that your evidence was prepared and then again today that you're not aware of any consideration to remove or amend that policy, what I'd like to understand more if we can

is given that that's been embedded across the investment areas through MBIE but we're going to see the establishment of RFNZ, is that the Research Foundation of New Zealand, and MBIE will be passing on that responsibility. In what ways can the Tribunal have some assurance that that embedded policy as it's been done through MBIE will carry on? Can we have any certainty as of today's date?

A. So, at the moment RFNZ, Research Funding New Zealand has been established. The four pillars have been announced. At the moment, they have, each have a pillar advisory group that has been formed to create the strategy or the approach for each of those pillars. The current working approach has been that Vision Mātauranga will sit across those pillars and for the health pillar, that relevant health policies will be taken into account within that pillar as well. While the information relating to this is yet to be released officially, I can also say that RFNZ, the intent of RFNZ is to form a cross pillar group that includes the Māori members of each of those pillars that can give their advice not only to their own pillars on Vision Mātauranga but also discussed with, amongst themselves, the common issues and approaches that they are seeing across all four pillars. So, in time that will be more official and we can provide information regarding that as it becomes available, but I share that because the pillar members themselves know that that is the case.

Q. Just under the Health pillar while we're there, so the understanding that we have is the Health Research Council is currently, or as far as their website suggests, remains currently the principal funder of health research, and that's going to be disestablished and brought within that health pillar of Research Funding New Zealand. Now, appreciating that again we're in a situation where we're lacking a lot of the detail, isn't there a – would you agree that there's a concern, or caution is needed here, because when we're dealing with public health it doesn't necessarily lend itself to those growth or commercialisation imperatives that this rejigging of the research system is being aligned with?

A. Is your question that the health pillar should not only be about commercialisation?

Q. Yes, well, I think the Health Research Council is a long-standing council and has very clear structures in place to ensure that the Māori voice is represented within its processes, and when we're dealing with public health there's also equity and prevention research that also needs to be taken into account, so the concern or the area that I'm suggesting, there does need to be some caution about would be if you're disestablishing that body that has that institutional knowledge and bringing it within the RFNZ at this point, which is focused more on that commercial or growth focus. Isn't there a clash of ideology there perhaps or a risk that some of the institutional knowledge or benefit that the Health Research Council brings will be lost?

A. I agree that –

Q. I'm talking in thesis' rather than sentences and I apologise.

A. Yes, I agree that we have to be careful. I agree that we want to retain the positive things that the Health Research Council have learned over the years. And I also agree that the health pillar should not be only commercial, and I can reassure you that it is not only commercial, that a better working health system, better treatments, more efficient treatment of patients, that's really critical to a health system that works well for Māori and for all of New Zealanders. And also where New Zealand has a particular special role in its communities like Māori and Pacific communities, the health system is really critical in those elements. So all of those are definitely on the radar of the Pillar Advisory Group and how that is embedded is still part of the work of the pillar to progress.

Q. Just a couple of other things to tidy off in the time that I have with you today. The report that you've put on the record at #135(a), The Science System Advisory Group Report, chaired by Sir Gluckman, there we have one of the proposals for a dedicated funding pillar for Mātauranga Māori research. You said that in your evidence that that hadn't yet been considered by Cabinet. Do we take it that that's still the case today to your knowledge?

A. Yes, correct.

Q. I think, again, there's a concern that I'd like your view on that we're having these systems set up RFNZ set up, funding pillars set up, and the work is

being done but the Māori interest, given the – this has been treated as a something to be sorted once the decisions are made. How, well – I'll rephrase that sorry, it's a very – I'm trying to get too much into each question given my time's short and I think the fastest way home is the short sentences. Apologies. So we've got these pillars being set up.

A. Yes.

Q. But we're going to be dealing with a recommended Mātauranga Māori funding stream after decisions are made. Are you aware of the reason for doing that after decisions are made why hasn't it been progressed?

A. So, the government's reccom – sorry. The Science System Advisory Group has given its advice. The Prime Minister's Council then has given its advice to the Government and then the Government itself will then make its position on what it will take forward. So, when it comes to a dedicated Mātauranga Māori stream, that wasn't carried forward into the Prime Minister's Science Council, but the Prime Minister's Science Council have also said that they didn't feel confident in making recommendations about Mātauranga Māori as none of its members felt confident they had a background in the appropriate knowledge, and so they've asked Research Funding New Zealand to do that and have been highly supportive of Research New Zealand doing well in that area, and they are actively considering that at the moment.

Q. That's helpful context given the documents that we have, and I was going to raise that as a concern with that Science Innovation and Technology System Report, given the Mātauranga Māori section of that is a few sentences, and the consultation that they rely on occurred seems to be in 2022 to get their broad themes. You're aware of this without me having to take you to the document? Is that –

A. Yes, I'm aware.

Q. Yes. There I think the question really is do you consider that there's a lost opportunity there in not having that Māori voice represented at the ground level while that group was making its or preparing its report?

A. It was our recommendation that there be somebody representing that body of evidence.

Q. The report says that the Council has not yet had the opportunity to give this aspect the depth of consideration it deserves. Is it contemplated that the group will have another go at things? Is there another report that's going to be prepared or is it framed in that way, are you aware?

A. I'm not sure. I do know that it's in the cord of RFNZ now to develop the approach in relation to Vision Mātauranga and Māori interests, and just to say as well that we have talked to Māori a lot over the last five years and that body of evidence we still see as quite current, and so all the Māori members in particular of RFNZ I believe are well positioned to embed that into the, both their own connections and expertise, augmented by the many consultation information and analysis we've undertaken, and my view is that that group of people will serve Māori well across the pillars as they are developed.

Q. I think this is a relatively niche area in terms of the Māori interest perhaps so might not be something that you'd necessarily be sending out for the broader scale of consultation. But how confident are you that the right people are being talked to at the moment to ensure that you're well informed or RFNZ is well informed?

A. I'm fairly confident. The people representing Māori interests across each of the pillar groups are well suited for those pillars. So the one in the Primary Industries or the two people in Primary Industries are very, very steeped in Māori businesses in the Primary Industries. The person in Health and Society pillar is very expert in societal issues, and the rest is the case as well. Not only are they aware of Māori interests but they're aware of Māori interests in their particular fields.

Q. I think there's going to be a difference between having a knowledge of the Māori interest through MBIE and those past consultations and getting an informed view on the current policy that's being developed. Is it planned that there'll be a boutique or broader engagement with te ao Māori on these changes before RFNZ embeds them or is the people within the pillars going to be the reliance?

A. RFNZ is at the moment planning their stakeholder engagement. Having said that, their stakeholder engagement plan won't be able to – won't have the timeframe to widely engage at an extensive national level, so

regardless of whether it's Māori or non-Māori it will largely be targeted to those I believe who have expertise and interests in the particular topics of the pillars.

Q. And I guess it goes without saying in some respects but that consultation can only be on effectively where RFNZ has landed, not the development of the approach or the change of the, almost the purpose or mission statement of the group, can it?

A. Are you saying they can't reinvent the purpose of the pillar? If so –

Q. Well, I would like your view on, I mean, if the view of that engagement is this is terrible go back to the drawing board, is that an option given the late stage of engagement?

A. I couldn't really say, I couldn't really say at this stage. I don't know whether it will be seen as sufficient or not.

Q. I think that goes back to where we started with having issues about where we are in this process and the uncertainty. So those are my questions today. Ngā mihi.

A. Tēnā koe.

MR PREBBLE:

Your Honour, sorry to interrupt you. I just am making inquiries with MFAT at the moment because it may well be we finish early and I just wouldn't want claimant counsel to feel like they need to be caught short on time given I suspect we're going to have quite a lot of time today and it might well be that Grahame Morton who's giving evidence for the Ministry of Foreign Affairs and Trade is not available this afternoon but I'll update you if we do finish early.

JUDGE MILROY:

Thank you, Mr Prebble.

(14:07) MR BENNION TO DR WILLIAM MARTIN:

Q. Tēnā koe, Dr Martin.

A. Tēnā koe.

Q. I'm down for 20 but now I might be 25.

A. Kei te pai.

Q. Three degrees, three science degrees in?

A. Biomedical science, biology and the undergraduate degree.

Q. Okay, nice, I was just intrigued to see that. So, I guess my questions are first of all about some of the existing funding and then I'll have a couple of questions about the new regime and what it's doing. But I just want to go to 12.4 of your brief of evidence, so that's your main evidence, the earlier evidence that you put in, and you've got emergency and urgency funding heading there and I was intrigued by this comment: In response to significant events such as COVID-19 and extreme weather in early 2023, funding may be prioritised to support urgent research needs. While not a formal category, this mechanism has been used. So I was wanting to understand what – is this some of the Vision Mātauranga funding that we're talking about here? Which particular funding are we talking about and what was it and what was reprioritised? As some indication of what's **(inaudible 14:09:23)**.

A. Yes, I can't really say for the COVID fund, that was before my time at MBIE. But the urgency response to Gabrielle was I'm not sure where the money was ringfenced from but it was really to try and ensure that communities across the board can collect data in response to their needs, responding to Gabrielle, and at the time a certain proportion was pulled to the side to focus on Māori communities and their interests at the time.

Q. And pulled aside from where? From what fund?

A. I'm not sure where it was reprioritised from, I don't recall.

Q. But I assume that anything's that's – funding that's been contestable and somebody's got contestable funding, that's ringfenced in a sense.

A. Correct.

Q. This funding you're talking about here must be something that's in a slightly more generalised category I'm assuming?

A. Yes or what will often happen is that a sum, a funding stream comes towards completion, and then so it can be – if there is extra funding there then it can be reprioritised to something that the Government is interested in at the moment, or if it is – yes, that's another way.

Q. Because I'm just, you know, through this inquiry there's this moment where we've got recovery happening –

A. Yes.

Q. – and the resilience building, looking to the future, and it's interesting to see that in the research area there's a little bit of that issue happening as well by the looks. So in relation to that too, the Climate Emergency Response Fund, that big $4.5 billion fund that government had set aside, the last government set aside, I've just been looking at Treasury reports on it. There's a whole bundle of, there's all sorts of research and matters, science and innovation matters as well, tipped into that fund. How do you understand that fund in relation to your evidence here? Are they two things that are completely separate?

A. There's so much separate things. $4.5 billion, is that what you're referring to?

Q. Yes.

A. I'm not aware of the details around that. I don't think that's a fund that MBIE Science is in charge of.

Q. Right, yes, it looked to be more departmental bits in a way by the look of it.

A. Yes, I'm sorry, I don't know specifically what fund you're referring to.

Q. All right. Now I just want to look at the annexes to your brief where you go through some of the research, and you've got Annex 1 is 25 Vision Mātauranga projects supported by the Deep South National Science Challenge and that second annex looks like, can I crudely call them, MBIE funding?

A. Yes, so they come from broad MBIE funds that MBIE Science administers.

Q. All right. So looking at the annex 1, this Vision Mātauranga, how have you drawn that table together? I might've missed it in your comments. Is this you going through – these are the Vision Mātauranga projects or there are more that we're not seeing?

A. There are more. So this is relating to the Deep South National Science Challenge. So the National Science Challenges, there were 11 of them now, it's been a while, I can't recall, because it finished a couple of years ago. They went for 10 years and one of them was this one, the Deep South National Science Challenge, and within that science challenge they

took this approach here of having that 10% to ringfence for Māori-centred or Māori-led research. That relates directly to Sandra Morrison's evidence and this is the detail of the projects that were funded through that Science Challenge.

Q. All right, and a couple of questions about these. I see a total there at the bottom of $5.49 million over 2016 to June 2024, so that's just under or five and a half million dollars over around about eight years that have been listed in this table?

A. Yes, it seems like that would be in line with the period that they were funding research.

Q. Right, and when I look at the projects and some of them in particular will be in that sort of 2023-24 area, these are contestable funds, this is contestable funding? Do we know?

A. I don't – I assume they're contestable but I don't really know.

Q. I mean I think all the projects the way I see them worded in this table is that they're all very much forward-looking but do we know it all, given the location of some of the projects, whether these were the communities that had been affected by Gabrielle and weather events and were seeking or using this funding or having this funding at the same time as they were, you know, in the aftermath of those events or associated with them anyway, do we know?

A. I couldn't answer that, but I'd say it's not likely because this happened over an eight year or eight to 10-year period, and so it would've been funding things that were of interest to Māori for climate research at the time.

Q. All right, and just looking at the amounts of money, I think 300,000 is the largest, it looks like 150,000 for maybe the majority, and then 250,000, that sort of thing. I assume there's some sort of, is there some sort of tiering there or tiered funding, a funding cap overall or anything of that nature? I mean, they seem to be fitting particular – hitting particular $50,000 tiers or if I can put it that way.

A. Yes, we, MBIE wasn't involved in decision-making around these particular funds. They sat with the Deep South National Science Challenge and

likely with Professor Sandra Morrison and her team itself, so they would be the ones to know how these were funded rather than MBIE.

Q. All right. So coming to Annex 2 and this is a longer report and contains a sort of real variety of projects. I'm just interested in the fact that the numbers very hugely from sort of well under a million to some, I think, one is over 100 million, but I'm struck by the fact that in the list of organisations that receive funding there's no Māori organisation that gets over a million dollars for research. Does that tell us anything? I think most go to universities and research institutes but I'm not seeing Māori organisations getting significant sums here.

A. I can't really say for sure, I don't know the entirety, because this is just relating to climate research. I know other Māori organisations receive more than that in their funding, for instance, Whakauae Research Institute has Independent Research Organisation Fund which is in excess of that. So, yes.

Q. And let me just note when I say over a million, I do notice there is one here, and I was wondering about this, there's an endeavour fund on page 9 of the pdf, Leveraging Te Reo Māori Natural Language Processing for Collaborative Climate Action, that's Te Reo Irirangi, so that's Te Hiku Media. Is that –

A. Yes.

Q. Anyway, I see $999,999. Any reason why they're $1 short of a million there? Do we know?

A. The fund was probably maxed at a million and so a lot of research organisations will usually aim for the maximum.

Q. I think Endeavour goes above that if I look, but okay.

A. It depends what part of Endeavour, whether it's the Smart Start ones or the programmes, the projects or the programmes, yes – Fast Start sorry.

Q. Okay. So then I just wanted to lastly come to the new plan and I'm turning to your speaking notes and I'm looking at the comment that you make, this is from page – on page 3, at the bottom of page 3 you're talking about the new proposals, and that's #A135(b) is the document.

WITNESS REFERRED TO SUMMARY OF EVIDENCE, #A135(b)

Q. I see that there's a comment there that you've got reallocating 122 million towards advanced technologies. Do we know if any of those are climate related?

A. There's no way to tell at this stage. So, this report here, the Prime Minister's Council Report, outlines some of where those reprioritisations will come from and they partly come from the bioeconomy and partly from health, partly from the environment, the majority of which had come from bioeconomy based on the projections.

Q. So bioeconomy in English is?

A. The primary industry related research.

Q. Right, okay, if I come down then, I'm just coming down into your attachments and that first page, the first page, that page 6 there, a new funding strategy for the science system, and you've got – they always say this, don't they. Reforms will make the system easier to navigate and improve value. Easier to navigate is always a good one. But the future state is going to have a clear strategy focused on driving economic growth. Funding directed to delivering on research priorities and incentivising commercial outcomes and then institution individuals more strongly incentivised to deliver growth to New Zealand economy and value to the private sector. If I put a general proposition to you, when I look at the Vision Mātauranga research and all of the projects that are there, in the climate area, incentivising commercial outcomes and value to the private sector, those aren't really options if you're working out how to be resilient and undertaking research for resilience in the face of climate change, would that be fair?

A. Yes.

Q. So that may be a problem if people are coming to government under this new reform and saying we want to do research on resilience, and the answer might be, well, what's the commercial outcome, is that a fair concern?

A. It's true that the emphasis on commercial outcomes is stronger across the board, but also that it's important to note that commercial outcomes aren't the only way to think about how the system delivers for people in communities and country. So it's more widely about economics, and so

being able to protect your home, your kāinga, all of those things may not be commercial but preventing damage and the resilience of your kāinga, your farm, whatever it may be, that is economic. And so, economic approaches are supported even when it's not commercial.

Q. Yes but in terms of these directives and this future state, I think you've accepted the focus is on commercial outcomes and value to the private sector, those are being given prominence now in research going forward. That's fair from those statements?

A. I'll just read what this Prime Minister's Council has said in their Environment sustainability and resilience description. One part of this, the pillar, has said that it supports resilience research including climate and Antarctic science that empowers New Zealand to adapt – anticipate, adapt to and mitigate climate risk and natural disasters through cutting edge research and predictive modelling. So while there is an increased emphasis on commercial outcomes across the board, elements relating to resilience that aren't commercial are still seen as valuable and it's anticipated that they will continue to be supported.

Q. All right. Thank you.

JUDGE MILROY:

Thank you, Mr Bennion. We now have Ms Rongo.

QUESTIONS FROM MS RONGO – NIL (ASKED/ANSWERED)

(14:25) PRUE KAPUA TO DR WILLIAM MARTIN:

Q. Kia ora, Dr Martin. Thank you for your evidence. I just had a couple of questions which have been touched on, I think, in some of the questions today, but I wanted to just ask whether you see mātauranga Māori as a distinct knowledge system with its own integrity?

A. Yes, that's what I believe.

Q. And do you see Western science as a distinct knowledge with its own integrity?

A. What people term Western science is in itself quite a plural knowledge system, but I think that it – I would say that it has a research process that is its own and distinctive.

Q. In your view, do you believe that mātauranga Māori should be validated through Western science?

A. I believe that on one hand it doesn't need validation, the communities – mātauranga Māori is its own thing in the hands of communities, it doesn't need any external kind of validation. If it's mātauranga Māori that's funded by the Government, then it probably does need some type of framing that allows it to be supported in the Government system in the way that allows it to be, to meet kind of the transparency requirements that the public often expect.

Q. Okay. So we've talked quite a bit about funding models and how those have maybe changed and so on. Would you say that there is a propensity to, to try to include mātauranga Māori within Western science through those frameworks, through those funding models?

A. There's very many different views on that. I can recall an article some years ago that believes that it should be entirely excluded, so that's one point of view. The Government has a position where it attempts to look for the advantages of mātauranga Māori and research, so that is definitely overture to include it. And you kind of get the spectrum between those depending on who you talk to.

Q. But do you think by virtue of the steps that are taken, that perhaps the Government view prevails?

A. Do you mean that the government includes mātauranga Māori?

Q. Includes – looks through these frameworks that it's an inclusive rather than as you pointed out first, there are some who see it sitting outside that actually it's to be included within this kind of **(inaudible 14:29:57)**.

A. Yes, the Vision Mātauranga policy is an active attempt to include mātauranga Māori where there is value in alignment with the lane in which the science system operates.

Q. And who determines when there's value?

A. Assessors. Assessors.

Q. Assessors for funding?

A. Correct.

Q. Okay. When you read your statement, you said in the paragraph 2, these include funds that are mission directed, contestable, investor-led capability building. Your written statement said investigator-led. So is it investor or investigator?

A. My apologies. It's investigator-led.

Q. Investigator. Thank you. The issues around the changes, and you've been asked a number of questions about the Research Funding NZ and so on, and you've referred to the fact of the Māori perspective perhaps being covered by people within some of those pillars representing Māori interests. In looking at the overall board and the pillars et cetera, doesn't seem to be a lot of Māori – recognisable Māori members across those pillars in the board, would that be fair?

A. What do you mean by recognisable?

Q. Recognisable in terms of if we – I mean, you've talked a lot about capability and that's a different issues as – and you've been asked some questions about how you assess that, but in terms of – if we're looking at a Te Tiriti partnership and we're looking at how that's reflected in the funding and that you've got your assessors, you've got the people who are making the decisions all within this Research Funding NZ, there aren't a lot of recognisable Māori researchers, mātauranga Māori, kaupapa Māori within those teams of people, are there? From my perspective in looking at them, I didn't notice a number.

A. So in the board there is one member who is well-known in the area and in the four pillars I guess they would not have been announced by this stage or updated but I'll probably have to leave it to the Tribunal to decide whether they are recognisable figures. When it comes to assessing applications and whether there's value to them, we always try to make sure that those who are assessing have capability in those areas. So if it's – if it has Māori or mātauranga related to, say, environment, then we put someone who is Māori who understands the environment very well, and if it's mātauranga related to Kōkōrangi then we would put someone with that astrological – astronomical knowledge on as an assessor. So our assessors are really pooled from the sector and the system. So

whether those are the right people, probably will have to differ to the Tribunal to decide.

Q. So can I just clarify who “we” is? When you just said, “we would put”, who is the we?

A. Yes, MBIE. Well, previously it would be MBIE and in the future it would be RFNZ. Most times when it comes to a proposal because the science system is involved in funding research of a number of topics, whether it be physics or the social sciences, resilience and, you know, technological innovations. So whenever an application is received, whether it be small or large and transitionary, assessment always occurs not only – not simply because they are a prominent person, but they're a prominent person that has some track record in the area in which they are assessing.

Q. Okay. In determining who you put where, do you consider input from wāhine Māori?

A. I would say we have more wāhine Māori who are pūkenga in the research system and who are contributing across our system from a Māori point of view, so yes.

Q. Thank you, thanks for your answers.

(14:36) PROFESSOR DAVID WILLIAMS TO DR WILLIAM MARTIN:

Q. Tēnā koe.

A. Tēnā koe.

Q. Just one thing from your answers to Ms Kapua, you mentioned social sciences just then. Did you mean to mention social sciences?

A. Yes.

Q. Social sciences and humanities were taken out of what was the Marsden Fund area.

A. Yes, that’s correct.

Q. What are the social sciences areas that MBIE deals with?

A. MBIE has a lot of funds, not just the Marsden. So the Marsden is managed or has been managed by the Royal Society in the past. And it's true that the social sciences and the humanities were deprioritised in the Marsden. The future research system, social sciences will fit under the

human – the health pillar. So, healthy people and thriving societies. So it's still – it will exist there primarily.

Q. Right, okay. So my questions relating to your evidence about Vision Mātauranga policy and what it looks like now as compared with what it used to be in the past. So your paragraphs 27 and 28 of your original evidence talk about that, going back to 2005 and then 2010 onwards, recognising Māori as key partners in research and innovation and recognising Māori knowledge, and you also go on in paragraph 28 to talk about advancing Māori-led research. It's not obvious from those two paragraphs in your brief that every single applicant for contestable funding in science and humanities had to fill out a Vision Mātauranga section to their application so that people talking about composition of Mozart's music used to have to put in a Vision Mātauranga section to their application, and many of them just said I talked to my Māori colleague in the apartment next-door and I hope that's good enough. Anyway, so for now and for the future, is Vision Mātauranga something that every single applicant will have to address as part of their application?

A. Our – the **(inaudible 14:39:14)** is, the position of MBIE and RFNZ at the moment and the Minister herself is that where it is applicable it should be undertaken. And where it isn't, it should state so and state why. And so, probably the most accurate way of saying it is that everyone will have to consider it but only those who align with the policy will need to do it.

Q. So the applicants themselves will need to say mātauranga Māori is not relevant to my research proposal?

A. Not only mātauranga Māori but other elements of it as well. For instance, if you're working in the Māori economy or that might not involve mātauranga Māori but it will involve Māori interests, and so Vision Mātauranga's wider than that and applicants will have to consider or do consider whether all of those elements relate, whether it relates to Māori people, knowledge or resources.

Q. All right. Well, in a sense that a lot of applied sciences is hopefully for the benefit all of us, all of us including to all Māori as well, doesn't it. So where does the Māori component come into it, if I can put it that way? Where does the Māori interest component…?

A. Yes, so there's a number of ways to think about this and wherever there is a high interest in – where there is a high interest in Māori knowledge, whether that knowledge be mātauranga Māori or a skill set that Māori are bringing to a project or programme then that is considered a light to the Vision Mātauranga policy. If there is a Māori resource that's involved, for instance land or a taonga or taonga species or a history, data, then that is considered in line with the policy. And then if there are any type of Māori experts that are involved in the project in any way or programme That is considered aligned. And so some projects can go from having all three of those to none of them, and in some cases that makes sense that they are aligned in all three, and sometimes it makes sense that they are not aligned in all three for a various number of reasons. So what we try to encourage most of all is where there is strong alignment in other words whenever there's obviously taonga Māori involved, mātauranga Māori involved to a material level and wherever people, knowledge and resources are involved or obviously aligned then we want to have enough of those that are high focused in those sorts of areas and we actually do see some of those come through. A where there is low Māori people, knowledge or resources in other projects that that also makes sense. What we've seen over the years is that if you try to force everybody to have Māori representation on projects that are of low priority to Māori or that don't have a lot of pūkenga Māori that are actively working in it then you end up pushing a box ticking exercise and then you have Māori researchers being tapped on the shoulder to put point one of their FTE on that project, and ultimately that puts a lot of pressure on our Māori researchers and our Māori community, and we want to make sure that we're not incentivising that double cultural labour. So if we – our strongest interest is to try to support those ones that are really strong to do really well and as in the areas that have less of the Māori – alignment to Māori current priorities or capabilities, that we don't try to force them to drag people from those other projects or programmes. So that's how we currently handle it.

Q. That’s very helpful, Dr Martin. Quite good news to hear actually. I'm sure for my – I’m in retirement from academia but those that are still in it would

like to hear what you've just said I think. So just to try and get some more clarity then. On the economic growth pillar, we had a Crown witness whose name I've forgotten who distinguished between the Māori economy and Māori in the economy. Mr Prebble?

A. [Mr Prebble] Kieran Murray.

Q. Just for the transcript, the evidence of –

A. The economist is who I think you're referring to. Commission –

Q. Yes. So when you've got some applications under this, the new MBIE controlled systems, it's going to be pretty useful for almost anyone be able to say this is going to assist either Māori in the economy or the Māori economy, and that would be relevant to a lot of applications, would that be your view?

A. It's a really, you bring up a really important point because if you look at it from one point of view, and this relates to your other point as well, everything is relevant to Māori in one way or another, but there are some things that are of special interest to Māori or special alignment to the Māori economy and some things are gonna be beneficial immediately and some are going to be beneficial much further down the track. So how do you, how do you balance those out? What we usually see is that our assessors, particularly our Māori assessors, they are really, really good at sniffing out the applications that have – that aren't authentic or legitimate. What they usually do is they look at the, this is from my own history as an assessor but also from what I observed from our Māori assessors, they look at the claims about how well aligned they are to Māori or the Māori economy or the Māori business or the Māori community, and then they judge how large the – how much of the application is speaking to that, then they look to who is legitimately involved and whether those researchers or communities are credibly the ones that should be involved in this project. And the thing that they really go to most of all is the budget. They look at the budget and they say, 'have they said that there's a strong Māori presence here? Oh yes, they've named the person, that's also good. How much are they paying them as part of the budget? Zero? Well, it's bad'. So they will score that very low. But if the project is a valid project, it said it's got a strong Māori

representation in terms of its interests, then the Māori involved are also credible in that area and then they have the appropriate budget applied to those Māori communities or researchers, that will be seen as a strong project. And so a lot of times the tick boxing exercise is addressed at the point of assessment because our Māori assessors are really well attuned from their own personal experiences but also from the experience of assessors that it all comes down to the budget.

Q. It all comes down to budge. Well thank you very much, and just if the budget could go up a bit you know that'll be good, but that's in someone else's hands. Thank you very much.

(14:48) JUDGE MILROY TO DR WILLIAM MARTIN:

Q. Thank you, Mr Martin. I've just got a couple of questions. Actually, just a carryon question from what you were discussing with Professor Williams, and from what you've said, the assessors have had a lot of experience in looking at or assessing projects for the various funding streams that existed prior to this new shake-up, so they're not new to the requirements of that. So is there a lot of continuity if I might put it that way in terms of the administration, the management and operation of RFNZ as compared to the previous funding system?

A. There definitely is because MBIE is the main secretariat for RFNZ. So, MBIE continues to provide the administration, the coordination that offers the options for who should be assessors and so on and then provides that to RFNZ to make their decisions. So we will more likely feed them the same experts that we would – prior had chosen ourselves because those are the experts. And so those will continue.

Q. Thank you for that, and my question is you mentioned a number of times that there is an issue with numbers of Māori researchers with the capability, with the capacity to take on some of these projects or to lead some of these projects, and I was just wondering how it is measured in terms of capability. Is it number of PhDs, number of published publications or how is that assessed?

A. In the past our assessors have had to reach a particular level of credibility. So in order to be able to assess they have had to have been assessed in

the past. They often have PhDs. If say, if it's an academic judgment they're making they usually are meant to be business owners if it's an innovation judgment that they're making on a particular fund. So we tend to be aware of some of those experts as they come through because they come through as applicants and also through our personal networks. We tend to know over time who's starting to come through. It's a bit more difficult on the business side, I think, because they are wholly independent from our system, whereas the researchers tend to come up through the education university or PRO system and then we see them because they're close to us. So we do expect a level of expertise for anyone that's assessing and a level of credibility so that if they are challenged either by the public or somebody else, that the decisions are defensible as they are experts in those areas and that's important across all of our funds whether they be Māori funds or not.

Q. Yes, I find myself wondering about the business because there's the focus on providing value to the private sector, and I guess we do think of the private sector – I tend to think of it as meaning business, but it's not necessarily business. Am I right in thinking that it's a wider grouping than just business owners?

A. Yes, I think how I've been thinking about it mostly is that the private sector is an avenue for how innovations and inventions or whatever they may be are released into the world for use. What we're seeing, it's a common real tension when it comes to the research system that researchers tend to research because they are very interested or fascinating areas to research without kind of considering, hey, how does this help society and, eventually, and what I think we want more of is for the research to turn into something that is either commercialised or integrated into, say, the public services or the health services that actually make a difference in the end. So while there is an increased interest in the private sector, it's really a push for greater translation of research knowledge into action and into making a difference for people, whether they purchase it as a service or a product or whether they're trying to access one of our social institutions. So while the desire is to have more economic activity, it's the

translation we really need. So it's more the research translates into a better more set up society as a consequence of research investment.

Q. So I still am not sure how that all is going to work. I'm presuming it's something like – because it's not meant to take the place of the patent system where somebody comes up with an invention, it goes to the patent office, they assess whether it works or not and then issue a patent or whatever for that, it's not meant to take place – it's a step before that, it's getting to the thing which you might go **(inaudible 14:55:41)**.

A. Yes, it's a few steps and there's still – some of these things are complicated to know what the main interventions are, so you could say for instance that one intervention is at the point where you're starting to explore an idea, you know, does anyone want that idea or is it just an interest piece, you know, or is that idea going to be better than an existing idea? So one way to increase that amount of ways in which research is solving real problems of people is to have an approach up front that says, oh, is this going to be valuable to society? And then there are other elements about how do you bring pieces of the system together to ensure that you're thinking about the whole of the life span of that thing. One example is that we are currently investing in a biodiscovery platform that is seeking to take advantage of our Māori economy and our unique flora and fauna to create more products and treatments that can benefit our communities economically from a health point of view and as businesses. So in order to, for that to be successful, you've got to think more about not just the research, but what about the regulation systems that allow you to sell internationally? What about the approach to mātauranga Māori that is appropriate for protection? What about marketing down the track? What about distributors? So in any system, you kind of have to think about all the bits of the system that need to work to get you somewhere at the end to turn into a product or a better service and then figure out where are the pieces that are the bottlenecks. So a real push for this particular reform is to look for those bottlenecks, to value realisation and ask more regularly is this going to benefit society.

Q. Well funnily enough I find it much easier to understand how mātauranga Māori, rongoā Māori and so on fits within the proposed new system in

terms of the research that might be necessary to look at particular species or whatever and what could be developed from that than other parts of the economy and so on, so yes, that's where my interest in this is that actually I think there's a lot of scope for research in relation to mātauranga Māori or Māori taonga and so on. All right, sorry.

A. I agree with that, yes.

Q. That leads on to my next question which was about the development of capability and where does that sit within this? Because Professor Morrison talked about different stages of research that would bring researchers on to the point where they would be able to make the funding application themselves and so forth. So how does that fit now within this new system?

A. In general, our position as MBIE is that the education system grows the capability to begin as a researcher and MBIE funds research and in other words researchers, once they've become researchers. Having said that, there are a couple of capabilities that we try our best to support and one is our – we have some targeted research funding for emerging researchers for established researchers and for senior researchers. They're called our Tāwhia Te Mana Fellowships. Within the first one we also ring fence a portion of those for Māori. And so, that's one way in which we try to improve the pipeline. We try to bring people who are coming through. You know, we can't reach back that far into the university system or the high school system but once they get to us we try our hardest to keep them. That's one way. Another way is that we invested in an initiative called Kanapu and Kanapu is run by – it's hosted at Waikato University, run by Ngā Pae o Te Māramatanga, the Māori-led Research Corps. Their entire job is to scoop up people who are coming through the research system and bring them together so they can navigate the research system together to create a network thereof and help them to navigate the funding environment. That's another way we try to build the capability. Another way we try to build capability is through the He Ara Whakahihiko Capability Fund. That used to be the Vision Mātauranga Capability Fund but it's much more targeted towards economic focuses now, which would include climate mitigation. There

is – in that fund we try to build capability through partnerships. So where communities or groups or individuals don't have the research training, they may partner with researchers, research organisations to kind of through that partnership lead to the outcomes that they are seeking for without having to become researchers themselves, although if they wanted to, they may. And a part of that capability fund, we employ a group called Moko Kauri. Their entire job is to work with applicants, two potential applicants to that fund to help them navigate our application systems. And so, if you have new research groups that are Māori communities or so on, that group can help them understand our application systems, they can at times partner them with the research organisations that they need to be interested. That's one way in which we've tried to bridge the gap between community interests and our systems. And so, those are the main ways in which sit in our ambit to try and build that capacity. Prior to this we had a fund called expanding the impact of Vision Mātauranga and under that policy we had a three tiered system called He Aka Ka Toro. And originally, it stair cased people through from various small projects to minimum, you know, sort of medium-sized projects. What we found, we only got to one round because the government changed and the priorities changed, but what I could see in that is that communities really do have science aspirations. They know where they want to get to but they have a real challenge knowing how to get there. So they'll want to do this business idea that needs research to get there but they don't know how to undertake the research. And so what I could see there is that the partnerships really matter because I don't think anyone wants to go and retrain as a researcher just to be a business person. But if you know how to partner with research skills or bring on someone maybe who is even Māori, we've got a few out there, Māori researchers, that can really bridge that gap. So we're really interested in not only looking after the Māori that come through our system as science and research experts but how can we partner, partner our research system with Māori interests so that they can receive the outcomes that they're seeking.

Q. Thank you very much for that. I'll have to leave it to the Education Inquiry to determine how successful or not the system is at bringing Māori into science and other areas of research. But thank you very much for your evidence. I'll just hand you back to Mr Fong in case there's any questions by way of re-examination.

QUESTIONS FROM MR FONG – NIL

MR FONG:

Just to thank Mr Martin for your time and your evidence today. Ma'am, before, well, once Mr Martin has been released, may we address you briefly on the documents relating to the tort reform. She won't take very long but I just want to address that before we close for today.

JUDGE MILROY:

Yes, all right. Well again, thank you Mr Martin for your time, or Dr Martin I should say, for your time. And as Mr Fong said, I am releasing you. There is some afternoon tea out there if you'd like some and it is afternoon tea time. Mr Fong or Mr Prebble, how much time is needed?

MR PREBBLE:

I think My friend Mr Fong can address you briefly. I don't think we need – we only need a couple of minutes and I would just say that unfortunately I have made inquiries with Ministry of Foreign Affairs and Trade and our witness for tomorrow morning is unavailable. We are essentially finished for the day unless there's something else that your Honour wanted us to do?

JUDGE MILROY:

No, I think we've finished for the day apart from Mr Fong's submissions. So Mr Fong, over to you.

(15:07) MR FONG:

Your Honour, we've heard from counsel this morning sort of raising questions about whether there are documents lying behind the update that the Crown has

provided last week about the reforms to the ability to bring tort actions relating to emissions reductions. So we've been advised by the Ministry of Justice that as of today those documents have been proactively released on the Ministry's website. Rather than putting the Tribunal through the trouble of finding the documents themselves, what we propose to do is to find those documents either later today or tomorrow morning just so the Tribunal has a record of all the proactively released documents which are relevant to this recent development.

JUDGE MILROY:

Thank you Mr Fong, that would be helpful to have them filed rather than me making the staff go through and try and find them. Thank you.

MR LYALL:

Kia ora, your Honour. On the documents, I wonder if we could enquire of my friend whether those documents that have been proactively released are the documents that Mr Smith I think was talking about in media as being received through discovery in that litigation track or whether these are different documents again? Because I think when we raised the documents this morning it was the former that we were talking to rather than something else.

MR FONG:

I'm not privy to what Mr Smith had said in that separate High Court litigation. What we are addressing, your Honour, it's just the documents underline the update provided last week. That comprises the key Cabinet **(inaudible 15:09:25)** briefings and Regulatory Impact Statement **(inaudible 15:09:28)**.

JUDGE MILROY:

So Mr Lyall, are you referring to the documents that were handed to the Prime Minister's person?

MR LYALL:

Yes, your Honour.

JUDGE MILROY:

Yes, from Z and Fonterra. Okay.

MR LYALL:

The Prime Minister's Office may or may not know about that **(inaudible 15:09:52)** given time, your Honour.

JUDGE MILROY:

Yes. Hard copies they were, Professor Williams' saying. So Mr Fong, I'm presuming that those are not the documents on the Ministry of Justice' website.

MR FONG:

I'm not sure but I highly doubt that.

JUDGE MILROY:

Right. Thank you. Any other last minute things before I ask because we are closing but you are welcome to stay for the afternoon tea, before we close today? So if I can just repeat that we seem to be running ahead of time and we may bring the judicial conference to an earlier time on the Thursday than I said. I said 3.30 but if we continue to run ahead of time it may be earlier than that so if people, if counsel can simply keep apprised of where we're at on Thursday morning so that they're ready for the judicial conference whenever it takes place. Now I'll hand over to our kaumātua to close for today.

KARAKIA WHAKAMUTUNGA (KEVIN PRIME)

HEARING ADJOURNS: 3.11 PM

HEARING RESUMES ON TUESDAY 26 MAY 2026 AT 8.59 AM

KARAKIA TĪMATANGA (KEVIN PRIME)

(09:01) JUDGE MILROY: (MIHI)

Tēnā tātou katoa. Welcome to the second day of our climate change hearing and welcome to you Mr Morton, who is our witness for this morning. Now, I understand it is Mr Fong who will be – no.

MR PREBBLE:

Myself, thank you, your Honour. Sorry, for the confusion.

JUDGE MILROY:

In that case, over to you, Mr Prebble.

MR PREBBLE:

Thank you, your Honour.

(09:01) MR PREBBLE: (CALLS)

GRAHAME ROBERT MORTON: (SWORN)

Q. Tēnā koe Mr Morton. Can you please confirm your full name for the Tribunal.

A. Grahame Robert Morton.

Q. And can you please confirm you have signed a brief of evidence dated 21 April 2026, in this proceeding.

A. I can confirm I have signed that brief of evidence.

Q. Do you have that before you today?

A. I have that in front of me.

Q. And for the record that is #A155. I understand that you have prepared some talking points of your evidence for reading to the Tribunal today. Is that correct?

A. That is correct.

Q. And that is #A155(a). If you could please read those to the Tribunal now, thank you Mr Morton.

A. Kia ora.

(09:02) GRAHAME MORTON: (#A155-(a),(b))

Tēnā koe, Madam Chair. Is it okay if I start with a short mihi first and then move on. Okay.

Mihi mai ki ngā mema o te Taraipiunara, me mihi anō ki ngā hunga, e ngā mana, e ngā reo, kei aku rangatira i te rā nei, tēnā koutou, tēnā koutou, tēnā koutou katoa. Kei te Manatū Aorere ahau e mahi ana. He hautū te pōtae Ope Whenuanui. Ko Grahame Morton tōku ingoa.

I grew up in the Bay of Plenty, I grew up in Pāpāmoa and Tauranga Moana. I am Pākehā. My father's family through my grandmother side arrived in Tamaki Makaurau in 1838, very early. My father's family on my grandfather's side arrived in the Bay of Plenty, in Katikati, in 1875 on the Lady Jocelyn, the first settler ship there and my sister remains in Katikati today. By that time, my mother's family, the Simon family were also in New Zealand, they were free Scots and they came from Scotland and after the split of the Scottish Presbyterian church, and they settled in Dunedin in the 1860s and then in Queenstown. And many of my forebears are ministers but they are not ministers of parliament, they are ministers of the cloth. So, that's my heritage on my mother's side.

I made my pilgrimage back to Dunedin, I want to the University of Otago and I undertook a History Honours Degree down there in my academic time, which was heavy on New Zealand's History under Professor Erik Olssen, Tom Brooking and John Stenhouse and Barbara Brookes. And after some time working elsewhere, I joined the Ministry of Foreign Affairs in 1997.

My first formative posting – for the first posting is always very formative, was in Rarotonga, in the Cook Islands and most of my offshore career since has been spent in Asia, so including being the High Commissioner in India and Ambassador in China, I've served twice in Beijing during my career and once on a shorter term in Washington.

I am appearing today in my capacity, current capacity as Deputy Secretary for the Americas and Asia and I would just like to acknowledge, obviously, the importance of the Tribunal of the inquiry and note that my testimony follows that of my colleagues Vangelis Vitalis and Victoria Hallum and MBIE's Paul Stocks has also testified on the critical minerals element of this inquiry. So, I look forward today to providing some additional information to them and I am happy to proceed with the rest of my statement which I will do now, if that's okay Madam Chair.

BEGINS READING THROUGH SPEAKING NOTES #A155(a)

So, I am, as I said, appearing as the Deputy Secretary for the Americas and Asia Group at MFAT, and in that capacity, I'm responsible for New Zealand's relationships across that broad region or both of those regions, all those regions, including with the United States.

And as part of that role, I was asked to oversee MFAT's engagement on the critical minerals negotiations with the United States, and that's working alongside Ministry for Business, Innovation and Employment, which obviously leads the domestic policy framework as Paul has explained in his earlier evidence.

So, in this summary, I will briefly outline MFAT's role in relation to critical minerals and regulation of the New Zealand industry, how that sits with the Government's Minerals Strategy to 2040 (the Minerals Strategy), and then turn to the more recent engagement with the United States.

The Government's Minerals Strategy was released in January 2025. That strategy was developed by MBIE and sets the overall direction for the sector, including how the Crown approaches both economic opportunities and its commitments under Te Tiriti.

MBIE leads that strategy. MFAT's role has been more recent and is more specific, it sits within what the strategy describes as Outcome 3 - building international partnerships to support resilient supply chains.

In practice, what that means is that we bring a foreign policy perspective to what is, at its core, a domestic policy area. That includes supporting participation in global discussions within the context of New Zealand's relationships with other countries and conducting government to-government engagement. We do that alongside MBIE, which has expertise in the industry and leads the domestic policy framework. That work together on our engagement offshore ensure we remain aligned with the Government's priorities, as set out in the Minerals Strategy.

Now, I know it can be confusing, but in practice, the leads in this work can vary. MBIE leads the international technical and regulatory work on critical minerals, and that includes some international works. So, it includes some work in the Organisation for Economic Co-operation and Development which we often refer to as the OECD and various other international forums as well as I refer to in my longer evidence. But MFAT has led the negotiations with the United States based on the Cabinet mandates that we have and on the advice that's developed with MBIE. The Minister for Resources has been the lead minister in this sector and in the division of roles in relation to the Minerals Strategy, MBIE is responsible for domestic policy settings – including all the regulatory frameworks and Treaty considerations in that context – and MFAT leads the government-to-government engagement on arrangements that support those domestic policy settings. The two of course overlap, and in practice we work very closely together to ensure that the Ministers receive coordinated advice.

There's been a sharp increase in global interest in critical minerals, and that's driven by the transition to low emissions technologies, such as batteries, electric vehicles, and renewable energy systems, and by concerns too about the concentration of supply chain with a very small number of countries and producers.

New Zealand has both opportunity and exposure within the sector. Our small critical minerals industry supplies the international market, and it has potential to grow, as New Zealand has minerals that customers do want. At the same time, New Zealand companies use a variety of critical minerals in processed form in their products. So, having reliable, cost effective access to critical mineral products is important.

MFAT's role is not about decisions on mining or extraction, those are firmly within domestic processes and law, but about ensuring New Zealand is well placed to achieve resilient supply throughout international engagement. That involves engaging with partners to understanding the evolving global landscape, to support New Zealand's economic and foreign policy interests, and to build relationships that might contribute to more resilient and transparent supply chains. Turning then to MFAT's engagement with Māori.

MFAT's starting point is that bilateral or plurilateral proposals can and do interest with Māori interests, particularly where they touch on natural resources, economic development, and the Crown's obligations under Te Tiriti. We therefore have established engagement arrangements to discuss such issues, consistent with the Mediation Agreement with Ngā Toki Whakarururanga, and our broader relationships with Māori partners. And Vangelis Vitalis in his evidence, spoke quite at length on these.

In the context of critical minerals, we activated these arrangements pretty early. My personal involvement is pretty brief, it's really since December 2025, however I have been briefed that questions were first raised on critical minerals in 2024, during discussions on the Indo-Pacific Economic Framework for Prosperity. At that time we ensured that concerns that were raised by interests groups, by Māori, were shared across agencies, particularly with MBIE as the domestic lead as it developed New Zealand's minerals strategy. And as Paul Stocks referenced, Te Tiriti is now central to the minerals strategy.

After we received draft text for the proposed US framework in December 2025, we also undertook prompt engagement with Ngā Toki Whakarururanga,

Te Taumata and FOMA. Our intent in that engagement was very specific. As I said, we are not responsible for determining domestic policy positions. Rather, we wanted to ensure that Māori partners were informed of developments where they had an interest and were able to provide input. Those perspectives fed into joint MBIE-MFAT advice to Ministers about engaging in the framework decisions – discussions and were reflected in the advice to Cabinet.

The Minerals Strategy itself recognises that the Crown's commitments are significant under Te Tiriti. MFAT's work sits within that strategy. In practical terms, for us, that means ensuring three things:

1. Engagement takes place early where proposals are relevant;
2. That Māori perspectives are incorporated into policy advice to Ministers; and
3. Any movement from discussions with partner countries into agreements or concrete steps that might affect New Zealand systems, is subject to New Zealand domestic systems and Cabinet processes.

MFAT highly values advice from MBIE as the lead policy agency on critical minerals. In our role is to represent New Zealand's positions in negotiations with partner countries, and conduct these in a way that is aligned and consistent with the domestic policy in the minerals framework.

If I turn, then to the engagement with the United States.

Discussion on the framework with the US began in late 2025, when the United States shared a draft of a proposed bilateral critical minerals framework.

It's important to understand the nature of that proposal. It was proposed as a non-binding framework, that is a high-level statement of cooperation and shared interest in strengthening collaboration on critical minerals. The US Proposed framework included exploring opportunities to support investment, technology development, and sustainable extraction and processing.

The US proposed framework was intended to support dialogue and potential future collaboration. It did not create any legal rights or entitlements in New Zealand. It did not include rights to access or exploit resources, did not authorise mining activity, and it did not fetter or alter New Zealand's domestic legal or regulatory settings, including in relation to Te Tiriti o Waitangi.

The sequence off engagement to progress this work is an illustration of how we then operate together across the public service.

MBIE led the assessment of the proposal against the New Zealand Minerals Strategy and our domestic, legal and policy framework. MFAT led the government-to-government engagement with the United States and the conduct of discussions against agreed negotiating positions.

Advice to Ministers was developed jointly, reflecting both domestic and foreign policy considerations, and including input from Māori engagement and the other parameters set by Cabinet.

In terms of process, once the initial US proposal was confirmed as something that engaged our Crown obligations and relationships, MFAT shared information with Māori partners in January 2026 and received feedback shortly thereafter. That feedback was recorded and incorporated into subsequent advice to Ministers and those are also concluded in the documents in this hearing.

Throughout the process to progress the US-proposed framework, MFAT operates within Cabinet mandates and ensured our engagement offshore stays aligned with agreed domestic process.

Cabinet considered the US proposed arrangement in early February 2026 and decided New Zealand would not enter into the framework at that time, instead it sought further advice and changes to the arrangement text. Cabinet subsequently instructed officials to re-engage with the United States on a non-binding and amended bilateral framework.

At this point, New Zealand has not entered into any arrangement or binding agreement with the United States on critical minerals.

Because of the current negotiating context, I do have to be careful about what we can say on the proposed framework. All elements of the text remain subject to ongoing discussions with the United States and to further Cabinet consideration. I am not able to provide further substantive detail while both the text and the Crown's position remain under active development.

Within those constraints though, I can confirm that MFAT and MBIE has progressed work on the framework on a coordinated basis. Engagement with Māori ensured relevant perspectives were included in the advice provided to Ministers.

Should a text be agreed in principle, it would be taken by the Minister for Resources and the Minister of Foreign Affairs to the relevant Cabinet committee, before final consideration by Cabinet to determine the Crown's approach.

So, summarising, MFAT's role is to support achieving the Government's objectives under the Minerals Strategy by facilitating New Zealand's engagement on critical minerals overseas. We do that in close coordination with MBIE as the sector policy lead ensures that New Zealand's engagement with partner countries is aligned with domestic policy settings in the advice provided to Ministers.

MFAT has ensured that all engagement with partners, including the United States, is coordinated, and consistent with Cabinet mandates informed by engagement with Māori.

It is important to note that the bilateral framework currently under development does not confer any special privileges or rights. The work underway to date does not alter New Zealand's domestic legal framework or the Crown's

obligations under Te Tiriti, which remain anchored in our domestic processes and law. Thank you Madam Chair

JUDGE MILROY:

Thank you for that evidence. We now have questions from claimant counsel, and we are beginning with Phoenix Law. Is that you, Mr Kuddus or Ms Boatwright.

MS BOATWRIGHT:

Tēnā koe e te Kaiwhakawā. That will be me taking cross this morning.

JUDGE MILROY:

Thank you.

(09:16) MS BOATWRIGHT TO GRAHAME MORTON:

Q. Tēnā koe Mr Morton. I just wanting to confirm that you are able to hear and see me.

A. I can now – tēnā koe – I have just worked out where the screen is.

Q. Kei te pai. Ko Ms Boatwright tōku ingoa. For a little bit of context, I represent a number of claimants within this inquiry hailing all over Te Ika a Māui, but predominantly in Te Tai Tokerau. Now, just to beginning, I just want to take you to paragraph 15 of your substantive brief of evidence.

WITNESS REFERRED TO BRIEF OF EVIDENCE #A155, PARAGRAPH 15

Where you discuss in full the engagement that MFAT took, that MFAT took on the proposed US and New Zealand framework at that early stage. Now, did the Crown extend that engagement to include other Māori organisations or was it just limited to the three rōpū that are mentioned in that paragraph?

A. At the January consultations were with three that were in that paragraph.

Q. Okay, okay. And by that point of engagement taking place and occurring at such an early stage, did Cabinet or the Crown signal any intention to engagement in the proposed framework that was being discussed on and attend the US hosted ministerial meeting at that time?

A. The process of consultation at that point was with the three groups. It was – came on the back of the consultation that had already been undertaken in regard to the Crown mineral framework – the Crown's minerals framework which MBIE had led and had intention to continue as they have done. So, they have had a number of hui this month and continue to do that with a much wider range of groups. So, the intent of that first – of the January consultation was to, from an MFAT point of view, was to pick up through our established processes with groups that we have, where we undertake negotiations, looking at international elements and ensure that we had an opportunity to hear views from those three groups.

Q. And were the views that were raised by the three rōpū that the Crown engaged with, were any concerns raised that then led to the Crown taking those into consideration when negotiating with the US?

A. Certainly the views that were expressed from the consultations in January were reflected fully in the advice given to Ministers.

Q. Thanks. Now, I just want to move further to paragraph 20 of that – of your substantive brief.

WITNESS REFERRED TO BRIEF OF EVIDENCE #A155, PARAGRAPH 20

Where you state that: "Officials concluded the proposed framework did not require a climate limitations of policy assessment because it was non-binding and did not directly involve policies with greenhouse gas emissions implications." In saying that, is it correct that the assessment conducted focused only on whether the framework itself directly created any emissions impacts?

A. The framework itself is non-binding and it does not change any specific parts of New Zealand domestic policy or regulation. That was the fundamental basis under which the assessment, as I understand it, which is led by MBIE with our agreement, was conducted. At the – for a non-binding framework, which does not change New Zealand practice, or law or regulation. The judgement was made that it did not, at that point, require a climate impact assessment.

Q. And so, would it be fair to say that mid that assessment, that was taken in collaboration, in conjunction with MBIE but there was no assessment

of whether any direct impacts that increase the development of minerals would have affected whenua Māori, water ways, wāhi tapu and any other rural communities that Māori will be predominantly based in?

A. I think that's a matter of, perhaps, wider scope and domestic policy which will be picked up in the course of any domestic permitting or other activity. Nothing in an arrangement, such as was proposed by the United States, affected any of the New Zealand regulation or law regarding mining, or consultation or engagement with iwi through local rohe or any circumstances such as that. And so, the assessment in terms of climate impact was in relation to the arrangement itself. And it was deemed that there was a requirement for a full climate impact on the arrangement given that it did not change the basis on which New Zealand regulated the industry itself.

Q. Just lastly, moving forward. Now, there's a huge emphasis that you place on the proposed US New Zealand critical minerals framework, not altering the domestic environmental regulatory settings that New Zealand has. And then you further say that any future decisions related to the mineral extraction development would remain subject to the current existing domestic legal process and approvals that are currently in place. Correct?

A. Correct. Correct. This does not change New Zealand law or practice.

Q. And so, there is a heavy reliance by the Crown on these current existing domestic safeguards, to be an important assurance within both domestic and international negotiations and conversations. Is that correct to say?

A. It is correct in that, it is shown by the level of Cabinet attention to this issue, with, what would be a non-binding arrangement. The Crown is very aware of the significance of the industry and of the significance of Te Tiriti within mineral strategy. So, in this sense, the scrutiny and attention given to a framework is indicated the government's intention to remain true to that strategy throughout.

Q. Does it indicate the government's intention to remain true to the principles of Te Tiriti as well throughout that?

A. I think that's probably answering for ministers beyond, but all I can refer to is that the minerals strategy itself has some very established pillars and Te Tiriti is one of those.

Q. Okay. Well, I just want to ask you, are you aware of the recent Supreme – the 2024 Supreme Court decision of *Smith v Fonterra*? Where the Court had confirmed that climate related harms may still be made actionable through the common law including nuance and negligence claims?

A. Only from the media, that's not an area of my expertise.

Q. Right, okay. The only reason why I bring that up is that your evidence relies quite heavily on existing domestic safeguards and accountability mechanisms remaining available. But the government is simultaneously considering restricting those certain climate related accountability pathways which – would you think that it would be appropriate to say that that would also have an impact on the current international negotiations that MFAT is engaging, and where there's new legislative changes that may be coming in to effect in response to that decision? That's the US-NZ framework.

A. Right. I don't think I am in a position to answer that question today, but I would be happy to, you know, take a written question. I think there would be – we're dealing there into a couple of hypothetical, so we would have to move forward before I could be in a position to even answer that, any kind of question about that. But I am happy to take a written question afterwards.

Q. Of course. I am happy to put that to you in writing and subsequently the rest of that pātai in writing to you. E te Kaiwhakawā, that's all my questions for Mr Morton, so tēnā koe Mr Morton –

A. Tēnā koe.

Q. – mō tō kōrero.

JUDGE MILROY:

Thank you, Ms Boatwright. Our next questions are from Sykes and Co.

MR SAM VINCENT:

Mōrena. Tēnā koe e te Kaiwhakawā. Should I just go for five minutes, perhaps, until the microbreak.

JUDGE MILROY:

Yes, that would be helpful.

(09:26) MR SAM VINCENT TO GRAHAME MORTON:

Q. Ata mārie Mr Morton. Can you hear me all right?

A. I can, thank you.

Q. All right. At paragraph 4 of your brief.

WITNESS REFERRED TO BRIEF OF EVIDENCE #A155, PARAGRAPH 4

You describe your designated role as the MFAT official responsible for MFAT's engagement on critical minerals, including with the US. So, are you the official with lead responsibility for critical minerals across all of MFAT?

A. Critical minerals is a developing part of MFAT. I am the senior official responsible for this negotiation and I – to the extent that that represents most of our activity for critical minerals, yes, I guess I am at the moment.

Q. Right. Is that to say that there might be someone else who have overall responsibility given that you don't cover everything, when it comes to MFAT's work in critical minerals?

A. No, not so much. It reflects that this is a developing area of work, that there are some areas in the past, such as IPF, where critical minerals has come up in the context of trade negotiations, discussions or trade action. The reality within is that I will be – I'm the lead official for critical minerals now, but obviously, as I have already explained to the Tribunal, the nature of critical minerals is that we have very close relationship with MBIE which leads on all of the domestic policy. MBIE also has some international part to its engagement, particularly in regards to technical and development work on the areas. Obviously, they have a lot more technical expertise in this sector than we do, so I just don't want to give the impression that we are doing all of the critical minerals work for all of the government, it's

not quite how it works, externally. But within MFAT, yes, I am the lead official.

Q. Thank you. And we've had the evidence of Paul Stocks as well. Can you detail the direct engagement you have had with Māori since assuming the role that you currently have in critical minerals.

A. My direct engagement has not been – has been through activating our link through Ngā Toki Whakarururanga and Te Taumata an Iwi Chairs in ensuring that we have consultation on the text. I have not been involved in hui myself nor, for that matter actually, have I been involved yet in direct negotiations with the United States. I've been involved in authorising the written negotiations for the United States.

Q. Right. So, where does that responsibility lie for that direct engagement and where does that person or those people who are doing it, where do they fit in in the decision-making chain across MFAT and MBIE in this work?

A. Well, I am responsible for it, but the engagement has happened through our established channels that are being established under our agreement with Ngā Toki Whakarururanga. Tony Watford has engaged most specifically with counsel and with representatives in bringing forward the information and returning that information to him. It's been elevated within and we've discussed regularly the engagement but that is a process that has been consistent for some time. I also work with Vangelis Vitalis on a regular basis who has had those – who has had routine conversations and has a regular dialogue and we'll be looking at our future engagement through that lens as well.

Q. So, this is an important subject matter for you, if I understand right, in terms of what the work that you do, and perhaps any advice that you prepared or how you action things, without you being the person who is doing that engagement.

A. Well, I have received full information from the engagement at all times, and I would expect that that engagement will continue. I've certainly been involved in ensuring that it does, and I would expect that we will have more conversations ourselves.

Q. All right. So, the critical minerals strategy has been discussed, first, to the first principle being Te Tiriti o Waitangi, not the principles of the Treaty but actually Te Tiriti itself. How does that first principle affect your approach to your responsibilities on critical minerals?

A. Well, the approach is informed in the sense that we have, in this case, with the arrangement text and engagement with the framework when it was arrived in December. Once we had made the assessment around the framework, we reached out to our partners under our established channels with the ministry, to ensure that Ngā Toki Whakarururanga, that Te Taumata, that others had the opportunity to look at that text and to provide feedback. We received that feedback and we provided that in our advice to ministers on how we should proceed. That is being the first and key element of how we represent our relationship in that respect, and we will, you know, that is an important part of the consideration that Cabinet is then provided with. We've also, following February, returned and there was further consultation and there was further advice that was provided to Cabinet which re-emphasised the views that we had received.

Q. Thank you.

JUDGE MILROY:

Mr Vincent, I think we are at the microbreak now, which we are re-establishing, thank you. So, we will be back in just a couple of minutes.

HEARING ADJOURNS: 9.32 AM

HEARING RESUMES: 9.38 AM

JUDGE MILROY:

Kia ora anō, Mr Vincent. We are resuming now so over to you again.

(09:38) MR VINCENT TO GRAHAME MORTON: (CONTINUES)

Q. Thank you your Honour. All right, Mr Morton. I will ask you my next question. In your experience, are international obligations to indigenous peoples treated as relevant in international critical minerals relationships?

A. I would say that I am not an expert on international – all international critical minerals situations. I think that's – it's probably a bit beyond my expertise to talk to all situations. What I can say in the New Zealand context is that the New Zealand critical – or New Zealand Minerals Strategy which includes the critical minerals aspects certainly does consider the interests of indigenous peoples as important and New Zealand's policy does as well.

Q. We do keep yourself across developments of which there are many moments, am I right in saying that?

A. That is correct.

Q. Right. And are you aware of where the rights of indigenous peoples are sitting in those discussions, in which there are many going on at the moment?

A. I would say that each discussion around the world would be governed by the position and the policies of the places in which it is happening and the comments on which I can make are really those that are related to New Zealand.

Q. Now, at paragraph 5 of your brief.

WITNESS REFERRED TO BRIEF OF EVIDENCE #A155, PARAGRAPH 5

You refer to the Crown's commitments under Te Tiriti o Waitangi and the Crown strategy. Now, Mr Stocks referred us to Cabinet Circular 19(5) as providing guidance on how MBIE applies its obligations in the context of critical minerals. And we've put that Cabinet Circular in our bundle for cross-examination, so it is there if we need it. Can you explain how you have approached questions on pages eight to 10 which are largely about rangatiratanga and putting that into practice and your work on critical minerals.

A. I think the distinction and probably one that Paul Stocks mentioned too, is relevant here, and that we certainly acknowledge the importance of Te Tiriti within the context of the Crown Mineral Strategy, which is relevant to this work, and the very extensive work that, on the New Zealand policy and permitting and domestic development side, that MBIE leads in regards to this. So, MBIE's consultation, which I think Paul mentioned in developing the strategy and then also, the further discussions that they

have underway in regards to critical minerals specifically, which they have launched this year. In regards to New Zealand, I mentioned, and the international aspect of it, we build from the domestic. We are looking at the clauses within the mineral strategy, which links to international links, which links to possibilities for bringing in some of the inputs that the minerals strategy requires from offshore. And in that sense, the obligations on Te Tiriti are the ones that I have talked to briefly. We've identified as being important, that when we have matters to do with critical minerals that require any, you know, that requires to think through negotiations, that we are seeking input, that we are corralling input, and that we are using that input and the advice that is given to ministers, to inform negotiations, in this case, we have done that and we have recorded that advice clearly and that advice put to Cabinet and Cabinet has, in turn, given the instructions to go and negotiate. So, in respect of the framework questions that you represent which cover both domestic policy and international engagement. We feel the combination of MFAT and MBIE work covers those questions.

Q. All right. At paragraph 7 and 11 of your brief.

WITNESS REFERRED TO BRIEF OF EVIDENCE #A155, PARAGRAPH 7 AND 11

You refer to global forums like the OECD. Other ways in which engagement is happening with foreign partners over trade policy and the other one is forge, which came out of the mineral security partnership. How has – how have you or how has MFAT engaged with Māori on those broad ranging relationships, noting that MBIE says that doing so is MFAT's responsibility.

A. There is – in respect of the negotiations between New Zealand and the United States on the arrangements, clearly MFAT has led the engagement points with Māori on those particular arrangement negotiation. In respect to the OECD, to Forge, to others which MBIE leads, they do that on the back of the basis of their technical lead across the critical minerals and resources area. That is informed by the consultation that they have undertaken on the minerals framework, and it is also going to continue to be informed by the consultations that they

have ongoing. The reality is that MFAT and MBIE talk frequently on critical minerals, and we talk on many areas including the results of consultation. So, I suspect that it is more a joint point than a single point in terms of consultation. But in respect of those areas where MBIE takes a lead, we would think of them as taking place within the context of the overall policy situation that has been established in which is them being, you know, has been endorsed and we are both following as public sector agency.

Q. And in short, does that mean to say that there isn't specific engagement occurring with Māori with respect to those international engagement?

A. No, I would say that – sorry, might not have been clear, the engagements that are being taken in the technical and strategic areas follow the – or the technical areas follow the policies that are being established under the minerals framework. There has been consultation already on the minerals framework and there is ongoing consultation that is undertaken by MBIE in respect of the critical minerals, part of that framework including that is ongoing right at the moment. So, there is consultation. Those international technical bodies around the OECD and others, are part of the overall minerals environment in which MBIE is working. They will be a part of the consultation that they are undertaking right at the moment. But I think of a specific, written questions around that, I am happy to take back or to redirect to MBIE, but that's where I would see the base of consultation at the moment.

Q. Ka pai. Now, you will be aware that the US has recently, has created a number of framework agreements on critical minerals with other countries and it has arranged binding commitments on critical minerals and some trade agreements. Have any of those agreements included protections for indigenous peoples, responsibilities and rights in relation to critical minerals?

A. I would have to take that back to research further, to give you an accurate answer across all of those arrangements or agreements, not all of which will be public. We would have to take that under referral and answer that separately.

Q. Okay. Would you accept that the current US administration has a track record of imposing tariffs when countries don't deliver what it wants?

A. I think that is offering a lot of comment on another administration which I probably won't do. I think, certainly, the United States administration sees tariffs as an element to trade policy and we are aware of it and we work on it often. But I think – but I won't talk to the motives of the administration.

Q. That's fine. I will just confirm your awareness though, of the president's – the US President's proclamation on critical matters on 14 January 2026, foreshadowing that tariffs could be imposed if the US wasn't happy with what a country agreed to or progressed in relation to critical minerals.

A. I am aware of the executive – the proclamation or executive order I think it is.

Q. Right. Now, at paragraph 16 of our brief.

WITNESS REFERRED TO BRIEF OF EVIDENCE #A155, PARAGRAPH 16

You have said that MFAT received the US draft framework agreement on critical minerals on 1 December 2025. Now, MFAT knew that Ngā Toki Whakarururanga had strong concerns over IPF and critical minerals and had raised that in the Tribunal. Now, I know you have already spoken to this, but I might just get some more clarity from you. Why was the requested comments not sent to them until the 14th of January 2026 and under conditions of secrecy with little time to respond.

A. I think if you look at my evidence put forward and my more extended evidence, you will see there is a timeline that is laid out for the consideration of the framework which notes that we did receive the framework on the 1st of December. We took a week or so to, with MBIE, confirm the scope and concept of that and then to consult with ministers and then entered the consultation period as soon as we could. As you saw, there is obviously, there is a period where Christmas takes many people out of commissions among those that one would want to consult with at that time, and that's understandable. And so, we undertook the consultation in early January rather than do it over the Christmas period.

The timeline is fully laid out in paragraph 27 of my brief of evidence from the 21st of April.

Q. Now, your brief of evidence was dated 21 April, so that's over a month ago now. Now, do I understand right that you said in your presentation this morning, that Cabinet has not yet agreed on a proposed critical minerals framework agreement with the US. Did I get that right or is that situation different from that?

A. No, that is still the case. That is the – there is no confirmed critical minerals arrangement in place for the United States. So, we are in a position where Cabinet – Cabinet has not agreed a text.

Q. Right. What is the timeline from here, particular with respect to future engagement with Māori and on the other side, with the US?

A. At the present time, the United States is considering or has been provided with proposed amendments to the text as agreed by Cabinet. It's hard to put a timeline on future negotiations because it requires the negotiating party to come back and their advice to be formulated and given to Cabinet. So, I am afraid I can't give you an absolute date on when that will be.

Q. The Minister for Resources hosted a critical minerals round table on the 13th of May which was attended by a high ranking US official who travelled especially for it and diplomats from Australia, Japan and South Korea, and there were Mining Sector representatives there, and I am taking this from a news article which is in our bundle of documents. An administerial representative said, 'the overall message is speed over caution and there was enthusiasm for special mining zones which are areas designated to facilitate, manage and regulate significant mining activities.' Do you know if there were any Māori there, and if so, who they were representing?

A. That was a domestic mining event that was hosted for the Minister for Resources. I was not present in there – present at that event and I would have – in order to answer your question, properly, would need to go back and check the – or find the list of participants.

MR VINCENT:

Your Honour, I note that I am about at my time estimate. I could ask further questions, but I also note that I am at my time estimate.

JUDGE MILROY:

Yes, thank you Mr Vincent. We do have 70 minutes of claimant cross-examination, and I am not sure which counsel are wanting to use that time. So, what I will do is just ask for anyone who is online at the moment, who are all here, whether they wish to ask any questions. If not, then you may have some of that time.

MR VINCENT:

Thank you.

JUDGE MILROY:

Mr Bennion, did you have any questions? Is there anyone online who wishes to ask any questions?

QUESTIONS FROM MS TE WHENUA – NIL

QUESTIONS FROM MS CHERRINGTON – NIL

JUDGE MILROY:

It doesn't appear as though there is anyone else who wishes to ask questions so I will hand it back to you Mr Vincent.

MR VINCENT:

Thank you, your Honour.

JUDGE MILROY:

Sorry, just one further thing. We do have your clients Mr Hooker and Ms Cole as the next witnesses. Kia ora, kia ora kōrua. So, once you have finished your questions we might well be at morning tea, but your clients would be willing to bring forward their time for giving their reply evidence. Good, thank you. Okay, so we will leave it with you for now.

MR VINCENT TO GRAHAME MORTON: (CONTINUES)

Q. All right, Mr Morton, I've gone through and picked a number of my prepared questions so I will go back and ask you and ask you some further ones to cover things off better.

A. Kia ora.

Q. Now, paragraph 6 of your brief.

WITNESS REFERRED TO BRIEF OF EVIENCE #A155, PARAGRAPH 6

You refer to New Zealand by playing a role in the international critical minerals economy and contributing our fair share. What does our fair share involve?

A. That particular reference is a reference to the minerals strategy. It's a quote from the mineral strategy and reflects that within the minerals strategy. There's a belief that we can develop New Zealand's critical minerals resources and participate. But that is – so, that is the reference. The quote, 'Fair share' is something I would then refer to the Ministry of Business, Innovation and Employment, to define, but it reflects that there is a growing demand for some of the minerals that are available and can be extracted in New Zealand. Whether that's through mining or whether that's through recycling or whether that is through a range of techniques and technologies, is something that is still being developed. This is a fledgling industry, in many ways in New Zealand, but I won't go too much into the domestic part of that, I think that is more appropriate for MBIE to respond to. But that is the basis for the quote. Certainly, in terms of fair share, it just means that there is a New Zealand resource that can be developed and it's a choice of New Zealanders as to how much that happens.

Q. Going back to Cabinet's decision from April, to reengage with the US on the US critical minerals framework agreement. You've said in your brief that this decision to reengage was to allow further consultation and to ensure transparency. What does transparency mean here?

A. Could you just refer me to the point in my brief which paragraph you are referring to, please.

Q. Yes. Paragraph 22.

WITNESS REFERRED TO BRIEF OF EVIDENCE #A155, PARAGRAPH 22

A. Twenty two. Yes. So, the point that that was referring to was the gap between the 4th of February and the advice that was provided to Cabinet in order to reinform reengagement with the Americans. Where there was engagement to confirm the views of the consulted groups and that was indeed provided to Cabinet before the April reengagement, we don't see that as being inappropriate or difficult. What we think of is that as informing the Cabinet decision which informs the mandate under which we are able to then negotiate with the Americans. We have that negotiation mandate that the text has been put to the Americans and that remains a negotiation that is in progress at the moment, so I can't really go any further on what now looks like. I can predict where the Americans will come back on that text. In terms of consultation, I mean, essentially the point of that is that we want to be clear that we are sharing information or shared information on the proposal, that we have received feedback and that we've incorporated the perspectives into the advice that has been given to ministers, who have then signed off on a mandate. We don't consider that that is then the full and complete consultation of all time. It also reflects that there is ongoing consultation in the sector led by MBIE about the development of the industry, but it does reflect the practical realities of government decision-making processes, where we have to provide advice, get our mandate, manage our negotiations and then once those negotiations have progressed further, report back on those negotiations to Cabinet for their understanding and decisions. So, that's the process, state of the process we're in at the moment. We're in that negotiation phase.

Q. I just want to ask a further question about the transparency issue. Because of course, the proposed text is confidential, and Ngā Toki Whakarururanga cannot consult with those who are affected but have not signed an NBC nor even dispose the text to the Tribunal. So, how can we have compliance with Te Tiriti when you can't have any of that sort of broader discussion?

A. Well, we're bound too by Cabinet confidentiality on some aspects as well. But I am not disputing that engagement with Māori partners is important. Engagement with Māori partners took place before Cabinet decisions

were made and perspectives from Māori partners were incorporated into the advice given to Cabinet. The subsequent steps that we are in at the moment reflect the fact that ministers have taken decisions on the back of that advice, but we don't have a next stage that we can come in and talk further upon. So, they have authorised further work within defined perimeters, is probably a fair way of saying it, where we are at in terms of negotiations and that is, you know, the basis of negotiations, we have a Cabinet mandate, we are in the negotiations and then once we have a response then we will be in a position to consider further steps but at present, we will be at those further steps once we're through and negotiations will have to including going back to the Cabinet for their consideration.

MR VINCENT ADDRESSES JUDGE MILROY – MICROBREAK (10:02:14)

JUDGE MILROY:

Yes, thank you Mr Vincent.

HEARING ADJOURNS: 10.02 AM

HEARING RESUMES: 10.07 AM

JUDGE MILROY:

Kia ora anō Mr Vincent. We will resume.

(10:08) MR VINCENT TO GRAHAME MORTON: (CONTINUES)

Q. Thank you, your Honour. Now, at paragraph 26 of your brief.

WITNESS REFERRED TO BRIEF OF EVIDENCE #A155, PARAGRAPH 26

You have said that MBIE and MFAT proactively released the advice to ministers about the critical minerals framework agreement draft, of that, with the US, but that release was heavily redacted, wasn't it, so we can't actually understand the advice.

A. The advice has been released. It does have redactions which relate either to negotiations or to international matters of sensitivity, were

redactable under the Official Information Act, but the advice is fairly full still. I think you can see within that the direction of travel.

Q. To be clear, Cabinet decided to negotiate with the US on the framework agreement despite Māori opposition. Would you agree with that?

A. Cabinet's been fully informed of the views of groups and has taken decisions on proceeding with the framework negotiation, so yes. There are – so, that reflects the views as it being – Cabinet has been aware of the views and the advice as is evident in the exhibit.

Q. You said at paragraph 20 of your brief that: "Any future movements or its binding commitments such as a likely binding, preferential critical minerals agreement to come, would require a fresh assessment." What would that require MFAT to do in terms of Te Tiriti o Waitangi under the Critical Minerals Strategy principle and the Cabinet Circular?

A. Well, there is a difference between a non-binding arrangement, such as being put forward presently, and a binding international treaty. I think you heard something from Victoria Hallum when she testified around the procedures that MFAT follows when we are negotiating treaties and the engagement requirement under a treaty. That is set out in quite a lot of detail in your evidence, and she is our international legal advisor, and we would follow the guidance that is well established for our engagement with treaties. In the event that there was to be a binding negotiation, which took things to a different level of engagement between New Zealand any other partner, if you are negotiating on critical minerals, that is different from a non-binding framework, such as what we are looking at this point, and would trigger different and quite clear set of consultation requirements.

Q. At the same time, isn't it extremely likely that any such binding preferential trade agreement on critical minerals, will build on existing critical minerals framework agreements like the one now under discussion?

A. The critical minerals framework arrangement is a non-binding engagement which looks at areas of cooperation for potential collaboration and that includes things like information sharing, legal and policy frameworks and understanding them. That's a necessary precondition for moving to – well, it's a precondition that would enable you

to understand the environment in your negotiating and better if you were to move to a binding arrangement in future. But certainly, there's no undertaking in New Zealand to do that, at this point, and New Zealand has not been invited to negotiate a binding treaty on critical minerals either at this point. So, that would have to be the subject of Cabinet consideration and other things if it was to emerge in the future, but we're not at that stage yet.

Q. Right. And if such an agreement does involve a number of countries and of course we have the plurilateral one under discussion at the moment which may be that's what this will be, that we become a party to. Won't that make it difficult to insert indigenous specific **(inaudible 10:13:20)**?

A. Sorry, I just lost the very last part of your question there.

Q. Won't that make it difficult to insert indigenous specific protections?

A. Well again, you are talking to a negotiation which we are not involved in, and in fact, I don't believe is really commenced. So, there's – we aren't in that situation at present. New Zealand, if we were to be involved in any future negotiation like that, we'd have to have Cabinet guidance on the terms under which New Zealand would negotiate. So, we've negotiated many agreements in different – and as you've heard from Vangelis Vitalis on trade and other things so that is always subject to the guns of Cabinet and Cabinet mandates.

Q. Given the position of the US and a similar vein, isn't it extremely unlikely that with agreements to come, that there will be protection or effective exceptions for climate action?

A. That would require me to speculate a lot on future agreements on the United States side and I don't think I should be doing that on a stand here. New Zealand would always formulate our mandates in respect of our interests and seek to negotiate the best outcomes that would see as determined by the Cabinet and Government of the day.

Q. Since your brief of evidence was filed, I'm not sure you have addressed this point specifically, can you give us an update on the advice to Cabinet on Māori views on the critical minerals framework agreement under discussion since then?

A. I think in the brief of evidence it refers to the two Cabinet papers including the April 2026 Cabinet paper which was filed in the brief cross-examination, that is the most recent Cabinet paper that was provided to Cabinet and includes in it several paragraphs referring to Māori interest group views on the proposed negotiation.

Q. All right. Now, do I understand it right from what you've said before, that there is no assessment of climate change application – there is no assessment for climate change applications with the draft critical mineral framework agreement?

A. That's correct. The assessment at this point is that with no changes to domestic permitting or domestic process or domestic mining attributable to the arrangement, that there is no climate impact assessment required at this point.

Q. Could we get to the stage of getting that climate change applications assessment when it comes to the binding agreement on critical minerals?

A. Well, we are not negotiating a binding agreement on critical minerals. If there was a separate negotiation at times in the future than a separate assessment would be conducted as to whether that was required or not. A treaty would be more likely to require it.

Q. I just ask because I think it's – I would like to understand at what stage the nexus is recognised –

A. I understand. It's good –

Q. – that's really –

A. Yes, I'm sorry. Yes, it's an understandable question. I think from the point – from our point of view we would consider anything that change New Zealand regulations or rules or policy in regard to mining or critical minerals in a practical sense which actually literally change the environment in which things would happen, as being a substantially bigger change than what is part of a non-binding framework discussions around information sharing and so on. So, there is a very different threshold for changes to New Zealand law, changes to New Zealand practice than there is with a non-binding threshold which is what we are looking at here. So, in that sense, I would just say, that would be a point at which you would consider these things again. I won't – it depend what

it was, I don't want to prejudge what a hypothetical situation, which we are not in, as to what the judgements would be. But that's a very different situation from non-binding framework such as we are looking at present.

Q. All right. I will take the chance to ask you some questions about what happened under IPF and the IPF agreements on supply chains, clean economy and critical minerals dialogue. Now, those IPF agreements on supply chains and clean economy, that being the climate related agreement. Would you agree with me that they make numerous references to indigenous peoples and their participation?

A. The IPF agreements are not agreements that I was involved in negotiating. I'm aware of the supply chain agreements. They didn't refer specifically to critical minerals or to – they refer again to key inputs and to critical goods. There was some operationalisation of the IPF in 2024. It is currently not moving anywhere. So, I would probably prefer – it's before my experience, if there are written questions you have around IPF and around the operations of IPF, I am very happy to take those back and answer them, but I don't want to overestimate on how much I can answer from the stand for you on the detail of those right now. But I am very happy to answer written question following on.

Q. Okay. I'll just test a bit if you have further knowledge and if not then we'll have to take that road.

A. Sure.

Q. Now, as Professor Jane Kelsey laid out in her third affidavit, she outlined the issue where Ngā Toki Whakarururanga was only engaged on the critical minerals dialogue once they had raised it and it had been going on for some time and then there was a meeting between Ngā Toki Whakarururanga and MBIE and MBIE and MFAT admitted that they dropped – ball by seeing that it raised Te Tiriti issues. Are you aware of this and if so, would you accept that?

A. I'm sorry, could you refer me to the particular point in her affidavit that you are referring to.

Q. Yes, I can. Do you have her third affidavit in front of you?

A. This is on the Indo-Pacific Economic Framework Prosperity Agreement related to a clean economy. Is this the one you are referring to?

Q. Yes, that's the right affidavit, I think.

A. And –

Q. I'll give you the point. Paragraph 66 of that affidavit.

A. Paragraph 66. Sorry, might need a bit to guide me a little bit. I haven't got 66 on my –

Q. This is the affidavit from 7 March 2025.

A. I'm sorry, I don't have that in my papers here.

Q. That's okay. I think – I just need to deal with this unless you are aware of this, I might have to deal with it –

A. Yes, I'm sorry, I might have to take this as a written question to follow up.

Q. All right. Just having a review of my question, if there's anything I've left out.

A. Sorry counsel, the affidavit I have from Ms Kelsey is 22nd of October 2024. Is this the one you are referring to?

Q. No, I am not. There was more than one.

A. Right. Sorry.

JUDGE MILROY:

Mr Vincent, we can bring up the relevant paragraph if that would help.

MR VINCENT:

That would help.

JUDGE MILROY:

Yes.

MR VINCENT:

Thank you, that would help.

JUDGE MILROY:

All right, we will do that now.

MR VINCENT:

And it's at page 23 of the affidavit.

MR VINCENT TO GRAHAME MORTON: (CONTINUES)

Q. So, from paragraph 66 onwards is what I am referring to.

WITNESS REFERRED TO SCREEN - PAGE 23, PARA 66 ONWARDS

JUDGE MILROY:

And if you could ask the question again, Mr Vincent, I've forgotten it myself.

MR VINCENT TO GRAHAME MORTON: (CONTINUES)

Q. Okay. So, according to Professor Kelsey in this affidavit, Ngā Toki Whakarururanga was only engaged on the critical minerals dialogue, that's (c) and (d), there in the affidavit, once they had raised it and both MBIE and MFAT admitted that the dropped the ball by not seeing it raise Te Tiriti issues. And my question is whether you would accept that?

A. I was not involved in the discussion around IPF at the time so I can't give you all the background or if the material that's outside of the affidavit. What I am aware of is that when Ngā Toki Whakarururanga indicated that they were interested in critical minerals and were wanting to be engaged, then certainly, that information was shared between the two departments and an effort was made to make sure that they were engaged. So, I am not exactly sure of the sequence at that point. I am just aware of the expectation that consultation will happen on critical minerals which was certainly informed the quick decision in December last year, when the US framework – or you were certainly aware that there was interest, and so there was an effort to make sure that Ngā Toki Whakarururanga's views were sought.

Q. And at paragraph 13 of your affidavit.

WITNESS REFERRED TO BRIEF OF EVIDENCE #A155, PARAGRAPH 13

You've said – on that issue with the critical minerals dialogue, that MFAT being sought to ensure appropriate visibility of the concerns of Ngā Toki Whakarururanga, including MBIE.

A. Yes.

Q. You've got that there?

A. Yes.

Q. So, what specifically did that involve ensuring appropriate visibility of their concerns?

A. Well, the engagement and consultation has been an important part of the discussion of Ngā Toki Whakarururanga. In respect to a specific question about 2024, I would have to take it under advisement and to go back and talk to those from 2024 about the specifics of that question. What I can say is just at the engagement under IPF is certainly informed and understanding of the Ministry of Foreign Affairs and Trade and in MBIE, that Ngā Toki Whakarururanga has an ongoing interest in critical minerals and that we will – and minerals strategy which was reflected both in the consultations for the MBIE engaged in for the 2025 minerals strategy and that the MFAT has followed in respect of the framework.

Q. Right. Would you agree with me that IPF's goal of creating a comprehensive map of IPF mineral reserves and resources and processing facilities was intended as a step towards expanding, extraction and trade of critical minerals among the countries participating?

A. I would have to – I mean, as I said, IPF itself is – it has different chapters including supply chains agreement which refers to critical inputs and key goods. IPF itself doesn't state that objective. Countries will seek to – you know, it certainly aimed in improving supply chains and improving trade. But IPF has not been active for some period in this area, and I won't talk again to the expectations or motives of other signatories to IPF.

Q. I'm not talking about the intentions of other signatories, but just the intention of the agreement itself and I think it will be supply chain's agreement. So, my question is, was that not – that supply chain agreement, was that not intended as a step towards expanding extraction and trade of critical minerals on the path that we are on now?

A. I don't there is a direct line. I think the IPF supply chain agreement is looking at improving the supply chains that are in place between the signatories for the flow of key inputs and critical goods, and it doesn't determine within the IPF agreement exactly which key goods that has to be outside of a broad area around the matter of onward – no, that would be the matter of ongoing work. So, there's not a direct line that says, 'this

happens, this happens, this happens', that's for how the signatories to the agreement will then seek to operationalise it with each other. So, the kinds of dialogues that you have referred to earlier including some of the ones that were then related back to MBIE for consultations, they refer to specific topics that are than taken up under IPF rather IPF dictating them.

Q. I think I can leave it there, your Honour. Thank you, Mr Morton.

JUDGE MILROY:

Thank you Mr Vincent. That's a good point to leave it because we are now at morning tea and we will come back at 11 o'clock and you are very welcome to morning tea.

GRAHAME MORTON:

Thank you very much.

HEARING ADJOURNS: 10.30 AM

HEARING RESUMES: 10.58 AM

JUDGE MILROY:

Welcome back. We are just going to complete evidence from evidence from Mr Morton with questions from the Tribunal and I have checked with the panel and Professor Williams has some questions.

MR UMAR KUDDUS:

Sorry Ma'am, before we progress, this is Umar Kuddus from Phoenix. I note that we've got Professor Gillespie on later this afternoon, I am just wondering in terms of getting him – sorry, I can see myself twice – there we are. Getting him on. He's indicated that he will be ready

(10:59) PROFESSOR DAVID WILLIAMS TO GRAHAME MORTON:

Q. Tēnā koe Mr Morton.

A. Tēnā koe.

Q. Mr Morton, first I just have a general question to you as a senior public civil servant of some standing. The way in which we frame consultation between the Crown and Māori, often assumes the Māori are out there and the Crown over here is a Pākehā institution, it's only filled with Pākehā. I ask the question because, in the particular case you are talking about today, you are reporting to two ministers, the Minister of Resources, Honourable Shane Jones and the Minister of Foreign Affairs, the Right Honourable Winston Peters, who represent a party, four of whose MPs are Māori. So, in the coalition governments that we've had since 1996, do civil servants, when they are preparing their evidence to ministers who are from a minority party within the coalition, is there some way in which the briefings to ministers has to take into account the fact that there are other members – other parties in the coalition that may have different views?

A. I think – that's an interesting question. I think the role for all public servants when we're providing advice to the government, is to do our consultations to engage and to put forward the free and frank advice that we can and to try and –

Q. Are those consultations from outside?

A. They are outside.

Q. Yes.

A. Certainly, ministers, and in respect to Cabinet papers and so on, Minister's own Cabinet papers, they are the responsible – that we provide all the advice, we provide all the suggestions, all the drafting that we can, but ultimately ministers ask, and ministers do shape policy as we know. So, the views of ministers in the coalition in engagement obviously affects what happens. We don't ever see inside the Cabinet room, we don't see some of the consultations and discussions that happen in Cabinet, that's appropriate. But certainly, the views and perspectives of ministers, the background will shape how they approach issues and approach decisions. And in this case, as you mention, we've got two very strong and significant ministers in the government who are overseeing things. I don't get affect to our overall process, who the minister is, but clearly the policy documents that ministers authorise and we have to be, you know,

we're not immune from the environment. We see the policies that are put out and we have to work with the policies and guidance that ministers provide. You know, we provide our best advice, they provide our guidance and our mandates, and we operationalise those.

Q. Well, thank you. It was just a matter of interest, really, as to how civil servants have to operate in an environment where, you know, ministers are not necessarily ad idem on all issues. Okay, so thank you. So, going to your brief of evidence in paragraph 31, at the end of it.

WITNESS REFERRED TO BRIEF OF EVIDENCE #A155, PARAGRAPH 31

You talk about MFAT's engagement on critical minerals that sits within in our broader role in supporting New Zealand's international partnerships, advancing foreign policy interests and working in partnership with Māori. And so obviously MFAT has to balance up security and critical supply issues, but also take account of geo political issues such as United States as an ally. What struck me about your brief of evidence is that, I'm right, aren't I, that people's Republic of China is our largest trading partner.

A. Correct.

Q. So, our largest trading partner doesn't get a mention, and that particular trading partner has to more critical minerals than just about anyone else in the world. So, when MFAT is dealing with direct requests in the United States, to what extent does those other background issues of New Zealand's trading relationships with other nations, get fed into how you respond to a particular request from an ally like United States?

A. Depends on the issue, but on this, on the critical minerals issue, advice on international relationships were part of the advice that's gone to Cabinet for them to consider. China is a very large part of the international critical minerals situation. It has over 90 per cent of the processing for lots of minerals and most of the New Zealand exports, of which are not large, but most of the New Zealand exports of critical minerals got to China for processing. Equally, quite a lot of the products that New Zealand companies use go to China as well. But one of the – in fact, one of the issues in international critical minerals trade which – and process – that countries are acutely conscious of and aware of, and I think we are all aware of over concentration right at the moment of

processing of particular commodities, is that when you have a market with over 90 per cent of processing of particular products happening in one place, that doesn't necessarily make for a long term stable market, it doesn't make for a particularly competitive one either. So, there is some definite merit in the diversification of critical minerals, supply chains over time. That will inevitably – I mean, China will continue to be a large part of critical minerals supply chains, I don't think there's any doubt about that. They have a lot of IP, they have many companies that are working on this, and they continue to be big suppliers. So, it's not a question of whether China will be critical minerals supplier or not in the future, it's just about whether it's desirable longer term to have a single supplier that is as dominate as that, in the future and that is something that New Zealand's production will continue. But at the moment, I mean, New Zealand does produce and does have strong relationships with China in the critical minerals field. So, it's not a binary choice when we look into the future, we would expect China to still be a significant producer in this field, but we also expect other countries, particularly Australia actually. Australia has a very big – has a big minerals endowment and is a big producer and refiner and we presume it will get bigger. And there's lots of things between New Zealand and Australia. So, rather than think of it just as a US, China thing, we are looking at a future in which there are probably more countries producing critical minerals and probably more places refining critical minerals in one kind or another and how New Zealand then links into those international supply chains, whether they are in the production side or whether they are in the consumption side, is something we will have to continue to work at for a while to make sure that our companies that need to use minerals and production, are able to access them and there are options out there for companies when they are looking to process as well.

Q. Right. Thank you. Just seemed to be that – so obvious that China's so important to critical minerals. You didn't think about putting it in to your evidence today.

A. No, but it's not really a defining factor of the US approach to us. So, we haven't covered all of the entire landscape, I guess, of critical minerals in

the world. But they are, in the grand scheme of things, there is a continuing growth and demand for critical minerals. There will need to be more and different minerals made available and that will, you know, require over time the diversification of processing so that people can access those.

Q. Thank you for your evidence.

A. Thank you.

Q. Thank you for your answers.

(11:08) JUDGE MILROY TO GRAHAME MORTON:

Q. Thank you. I just – actually, most of my questions were answered in your answer to Professor Williams. But I just one last point about paragraph 31, and it's really at the end there where you say, 'International engagement, New Zealand can expect as global supply chain shifts continue, and I just wondered what those supply shifts are and what's expected in the future.

A. That's a good question. I think earlier in my evidence I refer to the growing demand occurs for different kinds of products. So, if you think back to, you know, 2006, 2007, pre-iPhone days, the demand for any of the critical minerals that are now common and used in electronics wasn't really there. So, there is a whole range of minerals which are now being refined and used in much great quantities then there were – you know, that's only 20 years ago and is required change. What we will see in the future is a combination of different things. We will see that there are further new quantities required for the renewable – in particular renewable energies and in electronics. There are different minerals required there. The defence industries use critical minerals as well and there's also – probably – there is going to be a diversification of sorts in the ways that minerals are processed around the world because there is a need for more and there is also an interest in countries not being solely dependent on one supplier. So, this is a topic of conversation now among parts of – Europeans are talking about at the Japanese, Koreans, Americans, Australians, it's a live conversation around world and a live conversation happens when people don't know the exact answer about where that's

going to go. But as I said to Professor Williams, I think the scope of this is that a long term stable market will have more than one big refiner in the market because, as we've seen with other things, if you have over reliance on a single source, regardless of that source, then you are going to have a vulnerability in the market, that is long term – better to be diversified if you have market that has more than one producer, that's in everyone's interests. And that, in turn, will support the kinds of industries that need to draw product. One aspect that has changed in the last year or the last couple of years, is that there – and it's included in my evidence, is that there was a – that China has, itself, moved to better regulate and to manage its export of critical minerals. This is meant that there is – that that initial move has happened. It was than suspended after by the initial negotiations with the Americans, but it is a likely future situation where you look at the end use of minerals, the management and the distribution of minerals from China. If that happens, that can be a challenge on a strategic front, of course, if you are the Americans, but it can also just be a practical challenge. If you are small consumer of critical minerals in the world, such as New Zealand is, and you are facing all the competition for access from very large, you know, producers or very large users, than you need to be able to be confident you can work through licencing systems and so on. For New Zealand, there is an advantage on having alternative sources for a whole range of reasons and they are not all just – they are to do a lot of practical reason about how that works as well.

Q. Hence the importance of Australia. One of the issues about finding other suppliers is that, and this was raised, I think, in some of the questioning from Mr Vincent, in terms of finding other supplies, is that for instance, in the Sámi territories, in the Baltic and the Northern – my geography is going to pieces now –

A. Scandinavia.

Q. Scandinavia, thank you. There's suffering from the wish of their countries to extract these critical minerals, which is going to disturb the way of life that they followed for centuries and still follow, and this is a fear of indigenous people everywhere, I think, including New Zealand for Māori, and I think we'll – some of reply evidence from Ms Cole and Mr Hooker

refer to some of these issues. And I just wonder how much the minerals strategy that New Zealand has actually takes into account those issues of maintaining cultural and historical – cultural and historical life of indigenous, in particularly for us Māori.

A. That is a – that'll be an ongoing question. I think the mineral strategy was a very important document for the government and it's out and it's set out the different priorities including Te Tiriti in the strategy. But consultation generally with communities is going to be a big issue in the sector, I think it already is. It is a process that – on domestic policy – I probably shouldn't get to far from my lane, that is an MBIE lead, but they are continuing to manage active consultation around this. I mean, there is - as I said, nothing in framework side of things so far as it has changed the domestic process. The domestic process is very much around the established law and the established consultation process is around new projects and other things where iwi with interest in their rohe for example on around a new mind. I think as Paul explained would still be involved in consultation exactly as present with those. I think that issue is going to remain. It's a very locally important issue, of course, for everyone and clearly for indigenous interests in areas, it will be an important issue that continues to be picked up in those domestic discussions. And something that we'll continue to follow internationally as well. We will want to understand how these issues are developing internationally and continue to use those to inform our own understanding of how the industry is developing and how New Zealand interests within the industry are developing as well. One of the areas that has pointed to in the New Zealand strategy as being a potential source of advantages, both the engagement on sustainability provisions within our own mining industry, can be a difficult industry to regulate well. And so, the sustainability provisions and also the way in which New Zealand engages is going to be important for the industry **(inaudible 11:16:16)** and clearly as part of the minerals strategy that's – the government's made very clear that they are determined to do that well.

Q. And my last question is really about the – I know it's not really your area, but the United Nations Declaration on the Rights of Indigenous peoples,

and – pardon me – and how much that influences MFAT in terms of the advice it gives to ministers because we did hear from Ms Hallum that that declaration is not considered to be binding. We've got contrary evidence from Dr Charters about that. But, yes, I'm just wondering how much that particular declaration plays both legally, I suppose, in terms of being binding and also in terms of its moral importance and reputational importance in giving advice to ministers about critical minerals.

A. Yes. I think on the general point around under – I'll deferred to Victoria on her engagement and her testimony. And so I won't go into too much of that. I think in respect of critical minerals, what I'd say is that the important part for us has really been to ensure that we are undertaking and did undertake quickly the engagement with the key groups. We know that's not all of Maoridom by any stretch, but we also knew that we were then working with MBIE and working – we have our key areas ourselves where we have established processes which enable us to get some quick feedback. They do cover quite a range of different areas, but it's part of a broader longer process as well which is engaged with that domestic process that MBIE is very deeply engaged on and continues and so we would expect that that combination of engagement will continue for quite some time. So, in terms of the overlap between the two, I think our consultation is very much informed by our own direct experience and our understanding and our agreements ourselves, domestically, more than it is informed by a feeling that we have to go and report to the UN around the UNDRIP side and Victoria's evidence in respect of UNDRIP is the definite piece in this for me. But there is a real understanding that on something like minerals, where there is a very strong domestic regime that we, as a foreign ministry, are then working to try and make sure that we are making our contribution to ensuring domestic policy can be effectively conducted and when that domestic policy in this case has got a very clear line with Te Tiriti interests as well. And so we're trying always to work with MBIE to make sure that we've got a coherent link into that.

Q. Right. It's good to hear that there is going to be an ongoing process of engagement with Māori because I did sense a bit of discount for you in

terms of the short timeframe that was given for feedback on the input from Māori on the US request

A. Yes. There is referring – the ongoing consultation I'm referring to at the moment as the ongoing MBIE consultation that they're undertaking on critical minerals themselves. So, the follow-on, which includes updates on where the international processes at. I think they conducted – might be a little bit – have to be careful on details, but I think four hui on the week of the 11th, and I think they've got another four or so this month and then that's continuing. There's quite a long list of iwi and other interest groups which MBIE have got to continue following up which I guess reflects this as a continuing developing area.

Q. Thank you for that. I mean, the question of whether Māori think that's sufficient is of course for us to think about, but thank you, thank you for your evidence. I'll hand you back to your counsel to ask any questions by way of re-examination.

MR PREBBLE:

Thank you your Honour. I do have one question.

(11:21) MR PREBBLE TO GRAHAME MORTON: (RE-EXAMINATION)

Q. You were asked a question about how negotiation can be transparent when the confidentiality agreements in place with Ngā Toki Whakarururanga. In answering, that I noted you said that obviously it's the same for MFAT and there is a need for cabinet confidentiality pre-Cabinet decisions and I wondered if you understand there to be any other reason or reasons for that confidentiality with Ngā Toki Whakarururanga in particular and what that enables for the parties.

A. Well, in this case and certainly when the engagement happened in January on the basis of a very draft text and enabled free frank honest feedback to officials, which was enabled us to then inform Cabinet accurately on what an initial reaction from Ngā Toki Whakarururanga and the other groups we consulted at that time meant. That was undertaken under confidentiality. So, it enabled a frank read into the advice given to

ministers. It's not the same as broadcasting out what the proposed text is. And if there wasn't a confidentiality clause at that time, we could not have shared an early stage text in that way pre-Cabinet. So, we've got a – that's an important part of the good faith negotiations with partners as well. We've again used that confidentiality provisions to enable update of views and to inform Cabinet again in sense of the mandates. So, they're very important for us and how that confidentiality is used and that has enabled we think inaccurate sense of the views of the consultant parties. I think, acknowledging that that's not all of Māori in New Zealand but does give a good sense for some key groups of what the views may be around a particular framework agreement or arrangement as was proposed to us.

Q. Thank you. That's all of the questions from the Crown and I'd just like to thank you again for your evidence today.

MR PREBBLE:

That is the evidence for the Crown, complete.

JUDGE MILROY:

Thank you, Mr Prebble. And also if I can add my thanks to you, Mr Morton, for taking the time to come and give your evidence to us, it's been very helpful. Thank you.

GRAHAME MORTON:

Thank you, your Honour.

JUDGE MILROY:

You are allowed to leave. You don't have to sit here and wait for another break. So, Mr Vincent, you're there with our next witnesses and we have their brief of evidence in reply. So, I'll hand over to you. Sorry, I should explain to everyone. You advised the Registrar that questions by way of re-examination would be put in te reo and I think the arrangement is that you will ask any questions by way of re-examination in te reo Pākehā and then Mr Potaka will translate so that Mr Hooker can reply in te reo and then Mr Potaka will translate

for us again as we unfortunately did not organise for a translator to be present. So, I'll leave it with you now.

MR POTAKA:

Thank you, your Honour. Yes, that's –

(11:25) MS ANNETTE SYKES: (APPEARANCE)

I might excuse myself. I thought there was no translator here, but it sounds like it's been resolved. I was not aware that we had to notify the Tribunal when we wanted to speak te reo. Is that now a requirement? It's a requirement in the Māori Language Act for the purposes of the general court, but I thought we had a different practice and procedure now. Is that different?

JUDGE MILROY:

Well, because we're aware that Mr Prebble is not fully conversant in Te Reo and because we didn't know that there was going to be evidence in te reo, we did not provide the usual translation service. So, it's not now going to be a necessity to advise us that there is going to be –

MS SYKES:

My right and Mr Potaka's right to speak Māori. All of us have a right to speak te reo Māori in this forum. And it concerns me that because of administrative issues like this, our rights just like they were in 1977, seem to be deprioritised again.

JUDGE MILROY:

I acknowledge your comments there Ms Sykes. We should be able to provide the necessary services without the need for prior notification. It does assist us though if we do have prior notification. So, I accept what you say, but we have resolved the issue for today, so we will proceed. Mr Vincent.

(11:27) MR SAM VINCENT: (APPEARANCE)

Yes. Your Honour, just one other procedural thing. My learned friends pointed out to you, I think we haven't given our appearance yet this week, I think. So, I

just want to make sure that's done. So, of course I'm appearing on behalf of Sykes and Co. Thankfully, Ms Sykes actually is there in person now, but she will be on the livestream otherwise as and when she can. I've also arranged for Mr Potaka to be here and he's just here to question Mr Hooker today. In terms of this evidence, I think we'd like to start by allowing John to give a mihi to the Tribunal and they'd like to do a waiata. From there, we'd like to have the questions for Mr Hooker and then we do have Ms Cole's presentation.

JUDGE MILROY:
Ka pai.

MR VINCENT:
Thank you.

(11:28) JOHN HOOKER: (MIHI)
Heoi anō, korōria ki te Atua i runga rawa, maungārongo ki runga i te mata o te whenua, whakaaro pai ki te tangata, tihei mauri ora. Heoi anō, ka mihi ake tēnei ki a koutou rā, ngā mema o te Taraipiunara. Ka mihi ake hoki ki te uri o Ngātokimatawhaorua i taki ai te ruruku mō te tīmatatanga o tēnei hui. Nō reira, anei anō a Aotea waka, ngā uri o Rongorongo. Me ka whakaaro ake ki Kuramarotini, arā, anei anō te tuakana me te taina, ngā waka hourua, Ngātokimatawhaorua me Aotea. Ka whakawhiti atu hoki, koirā tō tātou nei Kaiwhakawā me tō tātou nei tuahine a Prue hoki, Te Arawa waka, e mihi kau ana hoki ki a kōrua rā. Ka hoki ngā mahara ki Tamatekapua, tētahi o ngā hoa rangatira, ko Wakaotirangi, te taina tēnā o Rongorongo. Anei anō ngā tamariki o Toto kei roto i tēnei whakaata nei. Te pāpā, a Morrison, me te pāpā hoki, a Williamson, e mihi kau ana ki a kōrua mō o kōrua pūkenga, nō reira tēnā kōrua. Te Arawa waka, ka mihi hoki tēnei mō te wehenga o tō tātou nei mātanga a Tākuta Ken Kennedy. Pukumahi ia, mahi tahi au ki tōna taha i roto a Aotearoa Kaunihera Māori me kei roto ngā nekeneketanga o te Iwi Leaders Forum. Nō reira, haere rā e te pāpā. Whakawhiti atu ki tō tātou nei taniwha a Tamati, i wehe tēnei wiki. Pukumahi hoki ia mō ngā kaupapa mō ngāi Māori. Nō reira te tokorua, haere kōrua, haere kōrua, haere i roto te rangimārie.

Heoi anō, ki a tātou nei, tēnā koutou, tēnā koutou, kia ora, huihui tātou katoa.

WAIATA TAUTOKO

JOHN HOOKER:

Heoi anō, e mihi kau ana tēnei ki a koutou rā, te Taraipiunara me ngā kaimahi katoa, kia ora, huihui tātou katoa.

(11:33) MR VINCENT TO JOHN HOOKER: (RE-EXAMINATION)

Q. [Mr Vincent] Now, John, I or either Jack, Mr Potaka, will ask you some questions about the Crown's engagement with Ōkahu-Inuāwai hapū regarding the development of wind energy in your rohe moana. Firstly, can you explain what an engagement means and what consultation means in Ngāruahine?

[Mr Potaka (Interpreter)] Tēnā koe Matua John. Kei te rongo pai koe ki tāku reo?

A. Āe.

[Alison Cole] Āe.

Q. Ka pai. Nō reira, tuatahi ake ka pātai atu au ki a koe mō ngā take tūhonohono, te engagement a te Karauna ki a koutou o Ōkahu-Inuāwai e pā ana ki te whakatūnga o ngā pūngao hau, te wind energy, i tō rohe moana. E taea ana e koe ki te whakamārama mai he aha te tikanga o te kupu tūhonohono, te engagement, ā, he aha hoki te tikanga o te kupu te whakawhitinga kōrero, te consultation i roto i a koutou o Ngāruahine?

A. [John Hooker] He pātai tino pai tēnā e te whanaunga. Nō reira ka mihi ake, ka mihi ake. Ki a mātou o Ngāruahine me kei roto ngā hapū i roto Ngāruahine, he ono ngā rōpū hapū kei roto tō tātou nei iwi o Ngāruahinerangi. **[Ka pai. So, I will speak as if I'm Mr Hooker, your Honour. He said:] To us in our iwi of Ngāruahine, we have six hapū and in those six hapū there are unique perspectives. [Hoki atu ki a koe, e pā.]** Ngā mihi. Ki a mātou nei, kei roto ngā rōpū hapū e ono. Tuatahi, tō mātou nei kaupapa tuatahi, kanohi-ki-te-kanohi. Kia rongo ai te haunga o tangata i roto te hongi, ka hongihia te kaupapa o te tangata. Nō reira… **And so, within those six hapū groups, one key objective**

that we have is that we practice the concept of kanohi-ki-te-kanohi so we can smell the aroma of our partners that we intend to engage with by pressing our noses together in a hongi and understanding who we are and who's in front of us. Āe, ngā mihi. Ka rua, ka hui tahi tātou te hapū me te kaitono ki runga tētahi o ngā marae o taua hapū rā. **Then secondly, we engage with them, or we meet with them on one of our respective hapū of the six hapū within Ngāruahine.** Āe rā, ka hui tahi kei roto i te takiwā o te hapū, ā, kei roto tā rātou ake marae. Kei roto o Ngāruahinerangi, tekau mā toru ngā marae, but e ono ngā rōpū hapū. Koinā tā mātou. **And so we'll meet within our respective region within our takiwā and of the six hapū there are 13 marae that are associated to our iwi.** Āe, ka pai. So, ki a mātou, mēnā kāre anō he kaitono kia tutuki taua tukanga, kīhai, ki a Ngāruahine hapū, kīhai rawa kua tīmata te consultation. **And so, to us if the applicant has not met that criteria of meeting with us face to face on our marae, it is our view that they have not met the sufficient standard to be able to claim that they have consulted or they have practiced consultation**. Āe, koinā, koinā. Ka nui te mihi mō tēnā. **[Ka pai. Pātai tuarua, Sam]**

Q. [Mr Vincent] All right. One of the things you've seen in your reply affidavit is that engagement and consultation requires sufficient timely information and responses to pātai from hapū representatives to enable free prior and informed consent to participate in engagement and consultation. Can you explain this in particular. **I mea mai koe i tō reply affidavit, i eke ai te tūhonohono me te whakawhitinga kōrero ki te taumata tika, sufficient information and responses to pātai from hapū representatives to enable free prior and informal consent to participate in engagement and consultation. E taea ana koe ki te whakawhānui ake i tēnei wāhanga o tō tuhinga, e pā?**

A. Āe. Ki a mātou, i roto i te kaupapa, wind farm, pūngao hau, i roto i tō mātou nei takiwā, kua pā ētehi māramatanga ā-pepa ki tō mātou nei PSGE a Te Korowai o Ngāruahine Trust. Kīhai ki a mātou, ehara te PSGE te iwi. Ko ngā hapū kē me ngā uri o te iwi, koinā te iwi, so koinā tā mātou. **So to us, when it comes to wind farms, we have become aware or enlightened into the fact that the PSGE, Te Korowai o**

Ngāruahine Trust, is not an iwi. The iwi is the make-up of the six hapū but the PSGE entity itself is not the iwi within in our takiwā. Okay, ka pai. Ki a mātou nei, ahakoa kua mōhio noa kua tū ngā hui kei roto Taranaki, kāre anō ngā taringa o ngā hapū, ngā karu o ngā hapū kia tūtaki ki ngā kaitono ō ngā pūngao hau i mua i Hune i tērā tau. **Within us and in Taranaki with the many hui that have taken place within Taranaki, the so-called eyes and ears i.e. the faces of our hapū have yet to meet the applicants with any matters pertaining to wind farming. That hasn't taken place since before June 2025, last year.**

Q. What was discussed at the hui with MBIE on 3 June 2025? And what were the outcomes of that hui? **He aha ngā kōrero i puta i te hui ki tō MBIE taha i te 3 o Hune 2025. He aha ngā hua i puta i taua hui rā, e pā?**

A. He pai te pātai. Taku hiahia kia hoki ki rua tau i mua i tērā tau ki te tau 2023, i roto i te marama o Ākuhata, te rā 24. I tū tētehi hui Zoom, online Zoom webinar. **[Ka pai matua. He just wants to – he said it was a great pātai but he just wanted to go back to years prior to the 2025 date we just alluded to, and go back to 2023 on August the 24th, there was a Zoom hui that took place. Hoki atu ki a koe, e pā.]** Hei taua hui, I reira tētehi o ngā Kaitohutohu Director, Peter Bartlett me Lauren McHale mai i MBIE. Koinā ngā rangatira kei taua webinar. **And then in that hui there were two representatives from MBIE there was Peter and Lauren. [Sorry, e pā, I missed their last names.]** Peter Bartlett, Director, me Lauren McHale. **[Ka pai]**. Kei roto taua webinar, i tīmata te tokorua ki te whakaatu ā rātou nei kaupapa, hei kaupapa pūngao hau, ki a mātou. **In that webinar, they began to show their wind farm – their wind energy project that they had in place.** I taua hui hoki, i noho māua ko taku whanau, Ali Cole. I tuku kōrero i roto te webinar, i ngā chat boxes. **And in that webinar, my relation, Ali Cole and I were only permitted to give comments inside the chat boxes of that webinar.** I taua wā i roto te whakaaturanga o iwi, tā rātou nei kī, kāre te Kāwana i mōhio ko wai ngā rangatira o te moana. Ki a au nei, he āhua gaslighting tēnā. **And in that webinar, the MBIE in their presentation they had said they did not know who the rangatira were**

over the moana, which was extremely alarming to Mr Hooker. Ki a au nei, i roto i te tau 2005, i tīmatahia te katoa o ngā iwi me ngā hapū te haere ki ngā kōti, ki te Waitangi Tribunal, kia mōhio ai te motu kei a wai te rangatiratanga o ia taone, ia wāhanga, ia rohe kei roto te moana. **He recalls back in the early 2000s and around 2005, when many iwi started to go to the Waitangi Tribunal to showcase who were the rangatira and who had mana over their respective rohe, their takiwā, the regions that they associated to.** Tae noa ki tēnei rangi, kei te kōkiri haere tonu ngā hapū kei roto i Ngāruahinerangi, ngā iwi o Taranaki maunga, tō mātou nei mana whakahaere o tō tātou nei mana Tangaroa i roto te MACA. **And right up until today, Ngāruahinerangi continued to advance their rights and interests over their lands and waters within the Tribunal and also within MACA proceedings.** Ā muri ake i roto i te webinar tonu, kīhai ngā rangatira e rua a Peter rāua ko Lauren i whakautu ki ngā pātai e pā ana ki te rangatiratanga o te moana, kīhai te tokorua i whakautu pātai ki ahau māua ko taku whanaunga a Ali. **Even at the end of that 2023 webinar, both Peter or Lauren did not respond to the questions that they'd raised in the comment box around who had rangatiratanga over those waterways or the ocean.** Ināianei, ka whakahoki mātou i tērā tau mō te taenga mai mō tō mātou nei hui hei te rā tuatoru o Hune kei Hāwera. **Now turning back to the original question of the 3rd of June meeting that occurred in 2025 over in Hāwera.** Hei taua hui, i tae mai ngā – ētehi o ngā taringa, ētehi o ngā hapū, i tae mai hoki tētehi o ngā rangatira mai MBIE, ko Rebecca Heerdegen and Laurie Boyce, koinā te tokorua i tae ā-tinana – tētahi ā-tinana, tētahi online, te ipurangi. **And in that hui only a small amount of faces and ears from the hapū attended that particular hui but there were two rangatira that were there, Reuben – Rebecca Heerdegen and Laurie Boyce were in attendance via AVL.** Āe. So, hei taua hui, tuatahi i taki ai te tukanga mō te wetewete ai ngā kōrero kei waenganui te kaitono me ngā taringa me ngā karu o te hapū. **In that hui they set the agenda or the process for which the hui would pan out between both the applicants and then also the many – or I should say the little amount of faces of the hapū representatives in**

the hui. I taua hui, i kōrerohia te tuatahi ehara tēnei hui he hui consultation. Koinā te tuatahi. And ka rua, i kōrero, mēnā ka tū he hui consultation, nekehia ki te marae, haere kanohi ki te kanohi te tuatahi. **What was first spoken in that particular meeting was that from the hapū perspective that was not consultation because in their view in order to be able to satisfy this concept of consultation you must engage with us face to face on our own marae**. Koinā. Ka mutu mai taua hui, i kōrerohia a Rebecca, ka mutu te hui ka uiui ai ia ki te minita mō ngā kōrero kia uru ai kei roto tā rātou nei draft regs. **And so after that meeting Rebecca had spoken with the minister and had highlighted the certain texts that should be included in to the draft regulations.** Hei te mutunga o taua hui i tukuna ngā miniti o taua hui ki a Rebecca kia mōhio ai ngā kupu kua horahia, and rua marama ā muri i whakaae ia mō te whiwhinga. **And after that we would send the minutes to Rebecca so that she knew what was said on the record of that hui and she didn't reply to us after eight weeks.** Hei te mutunga o taua hui, o taua wiki, i hui anō mātou, ētehi o ngā kanohi o ngā hapū, ki tokotoru o ngā kaitono pūngao hau. **And so after, at the end of that week of June the third, amongst ourselves, some of the representatives of the hapū had met together with three other applicants.** Aua applicants, tuatahi ko Park Winds me ā rātou nei rangatira i tuku kotahi ki a rātou kia whāriki ā rātou nei kaupapa. Ā muri ake, ko Taranaki Offshore Partnership, me ā rātou nei rangatira, whāriki ā rātou nei kaupapa. Hei te mutunga, ko Elemental me ā rātou nei rangatira, whāriki ai ā rātou nei kaupapa hei mua i te aroaro o ētehi o ngā karu me ngā taringa o ngā hapū. **[Ko wai te rōpū tuatoru, matua? Ko wai taua rōpū tuatoru? Ko Park Winds, ko Taranaki Offshore Partnership me…]** Taranaki Offshore Partnership me Elemental. **[Elemental] So following that hui at the end of that week, the hapū representatives had met with three different applicant groups and they were Park Winds, Taranaki Offshore Partnership and the third one, Ele –** Elemental. **Elemental. And each of them had the opportunity to be able to put in front of the hapū their thoughts in**

terms of their application and all of the kōrero in front of the eyes and ears of different hapū representatives.

MR VINCENT:

Your Honour, time's runaway, I think we are well overdue for a microbreak.

JUDGE MILROY:

Yes, thank you Mr Vincent. We will just take a very short microbreak because we've asked Professor Gillespie to come at two, so we do need to make sure we get through the evidence. So, we will come back in a couple of minutes.

HEARING ADJOURNS: 11.55 AM

HEARING RESUMES: 12.00 PM

JUDGE MILROY:

Kia ora anō. Kei te tīmata tātou anō.

(12:01) MR VINCENT TO JOHN HOOKER: (RE-EXAMINATION CONTINUES)

A. Heoi anō te Kaiwhakawā, haere tonu ahau. Hei te mutunga o taua hui, tokorua o ngā kaitono i mutu rātou ā rātou nei tono mō te pūngao hau. **At the end of that engagement or the hui that we'd had, two of the applicants had removed their application for a wind farm.** Te kaitono mutunga, ko Taranaki Partnerships – was it? Yes, Taranaki Offshore Partnership. I tuku ki a rātou ngā pātai mō te taiao, e ono ngā pātai i tuku ki a rātou. So, tata ki tekau mā tahi marama kua tatari mō te whakautu mō ēnā. **The only remaining applicant is Taranaki Offshore Partnership, and we had given them six critical environmental questions back in the 3rd of June meeting and we have still yet to have a reply from them to those six questions 11 months later.** Koinā. Now, I roto – tētehi o ngā kōrero o MBIE, kāre te hapori e mōhio ana ko wai ngā rangatira o te moana. Ka hoki aku mahara, rua tekau - tata ki rua tekau mā rima tau kua pahure. **Just going back to the point**

that I raised earlier, MBIE had claimed that they didn't know who the rangatira were over our waterways, over our moana, but I can recall over 20 years ago… I taua wā kei te kāwanatanga, 20 paihēneti o ngā shares kei roto te Kupe Oil Field. **And in that time the government had at the time 20% of shares in the Kupe Oil Field.** Ko te take, i haere ngā rangatira o te Treasury ki runga tō tātou nei marae o Waiokura, kei Manaia, kia kōrero kanohi ki te kanohi ki ngā hapū. **And the reason why was because the leaders of Treasury at the time went to Waiokura to meet with the hapū face to face**. Ināianei, kua pau katoa ngā gas kei roto taua gas field and kua oti taua kaupapa. **And now that the gas in that field has been emptied, that type of kaupapa of engaging with us has completely finished.** Koinā.

Q. I'll just ask a question of clarification, aroha mai, i te reo Pākehā.

A. Ka pai.

Q. You've talked about reaching out to the offshore wind companies, can you clarify just when that was in relation to the 3 June with MBIE.

A. Okay. I roto te Rāhoroi, tuawhitu o June, i tū ai taua hui kei Te Hāwera. **So, on the 7th of June, that hui had taken place in Hawera**.

Q. All right. I think at this stage we can go over to Ms Cole.

(12:05) ALISON COLE : ((#A116))

Ngā mihi nui ki te whare, ki te whenua, ki a koutou katoa. I have reviewed much of the Crown's filed evidence in this inquiry, including in particular the evidence of Paul Stocks from MBIE and this is my response to that evidence.

I want to start by saying that Aotearoa is so lucky that we have whānau, hapū, iwi, mana whenua, tangata whenua, living the mātauranga and kōrero tuku iho from our tūpuna about the unconditional, non-negotiable, central importance of kaitiakitanga. Kaitiakitanga is an invaluable for life. There can be no greater contribution to the Treaty partnership between Māori and the Crown than the ingredients for a liveable planet.

My overall reply is that the elements of kaitiakitanga appear to not yet be central to the Crown's current model, which currently looks like extractive capitalism

and neo-colonialism through cultural dominance and attempted violation of Māori through assimilation. But we want to work with the Crown under te Tiriti to reorientate back to kaitiakitanga.

My reply to the Crown's evidence is to point to our evidence regarding tikanga research and our work as kaitiaki which shows that we, as Māori, are the living and breathing demonstration that there is a way to build socioeconomic laws and policies which are good for the planet, good for Māori, good for the Crown, good for tangata Tiriti and indeed the only option under the proper construction of te Tiriti and the only option for the survival of the planet in the face of climate change. Because kaitiakitanga is unconditional, non-negotiable and the central organising principle under our tikanga and this is the overview of my central response to the Crown's evidence. Kaitiakitanga must become central again.

Sadly, what I've seen from the Crown's evidence is that they still aren't getting it. A continued and even intensified extraction of and reliance on fossil fuels is presented in Paul Stocks' evidence as essential for our wellbeing. But nothing could be further from the truth. The Crown is inventing – investing in various forms of other energy, apparently in response to climate change, but these are all red herrings. Carbon Capture, Utilisation and Storage, hydrogen, LNG, the so-called critical minerals for which we actually don't need continued mining if we utilise what we've already extracted, and we have quite a lot of scientific research practice to that effect, and offshore wind. Offshore wind would kill our moana and taonga to power Elon Musk's data centres instead of implementing recommendations by the Crown's own electricity regulating agencies to attain efficiencies first.

So, in reply, all of these policies from the Crown are red herrings and they are not the solution to the climate crisis.

So Paul Stocks in his briefs discussed various Crown related policies about our rohe which, as Matua has said, were not co-designed with us at all. Such is the case with the Crown's promotion of offshore wind in our rohe moana which we've already written in our reply affidavit. And just to reiterate what matua has

said, the Crown is not only misrepresenting but lying about the engagement with us. We reference specifically paragraph 8 of Paul Stock's supplementary brief and this corresponds to the Cabinet paper from Minister Simon Watts dated 24th of April 2026 which states, incorrectly that, "Taranaki iwi and hapū do not oppose the amendments to the Offshore Renewable Energy Bill."

But if it is not already plainly obviously, the point is that we need sufficient information for fully informed consent prior to making the decision whether or not to engage and to consult. And we are not even close to an engagement hui. We are still seeking information. Fully informed, prior consent is an international law obligation, so we cannot even get to the point of engagement. We can't even get to the point of engagement, we can't even to the point of conversations about co-design of the law and the policy which is required legally under te Tiriti.

However I still have hope that this inquiry can make findings to help us and the Crown, which I will illustrate with some additional key foundational aspects to reply to the Crown's evidence.

So, firstly the reason why I began my research report with Te Kore, through Te Pō, ngā pūrākau, the origins of universe, the origins of mātauranga with the three kete, was to invite the Crown witnesses to enter ao Māori, to read, absorb and respond as best they can within our Māori worldview.

Sadly, they did not yet take this up. I wanted to see Crown affidavits which literally stated their whakaaro on this kōrero, and I wanted to know whether they understand why these pūrākau are so important to us in this conversation regarding climate change. Does the Crown understand the significance of Tāne as opposed to Whiro in gaining the kete of mātauranga? What does the Crown think about how Whiro relates to climate change and what ngā atua represent within climate change as principles of quantum physics and universal natural law systems? What would the Crown's conclusions be if the Crown was living like we do under these natural laws of ao Māori?

I don't need to remind anyone what we as Māori know and live within our Karauna daily. So, we make that cultural move under te Tiriti to appreciate and live within ao Pākehā. We are attempting through our evidence and in reply, really emphasize that the invitation with pūrākau and ngā atua and ngā kete, was to bring the Crown and enter into ao Māori as manuhiri living under the laws of kaitiakitanga.

And indeed, we know that the Crown can do this. I think we are all familiar with pūrākau expressions. Like, we all know the sayings and the actual astrophysics facts that we are all stardust and that the earth is our mother. And there is a reason why, within pūrākau, we as Māori mean these literally, and I want the Crown representatives to imagine the earth as your mother. Imagine cutting out her organs, mining minerals and petroleum, trafficking these organs en masse for someone else to make trinkets out of, and for what? He aha? For a passing moment of gratification? This makes no sense. It is not necessary.

There is another way of living, and under te Tiriti the Crown is obliged to uphold it. To be explicit, my research on tikanga and kaitiakitanga shows that these concepts are not myopic. Kaitiakitanga is not a narrow-sighted concept that applies only when is convenient. The Māori worldview is not myopic. It is holistic and pervasive. We need to see this approach within climate policy under te Tiriti. In other words, we need to see ourselves as a Māori in climate policy. We need to see kaitiakitanga as central and pervasive, and at present, we are nowhere near seeing ourselves in climate policy, and Paul Stocks' briefs are self-evident in this regard.

So, my response to Paul Stocks and the Crown's evidence as a whole is that climate change is not just a problem of fossil fuels. It is a problem of the mindset that the Crown has inherited, the mindset of the colonial capitalist with extractive violent relationships with mother earth. It is a problem of the absence of kaitiakitanga, and its cure is enacting Māori and Crown Partnerships under Te Tiriti.

We don't solve the climate crisis by the same modality that caused it. It is not a solution to cut up and rape Papatūānuku more and more to get rare earth minerals to build solar panels and wind turbines and batteries exhaustively as if she isn't a finite living being who needs our care in attention under our mutual relationship of Kaitiakitanga.

We must remember that tikanga is both procedural and substantial and I provide a reference to that in my original report.

So, under Te Tiriti, our tikanga of course is central to our sovereignty, and under tikanga, we need the tika procedures. So we need that engagement in accordance with our tikanga, kanohi-ki-te-kanohi. We need tika substantively in outcomes that reflect the central foundational importance of Kaitiakitanga. **(inaudible 12:16:36)** kaitiakitanga, not myopic kaitiakitanga. Kaitiakitanga from start, in perpetuity, comprehensively across all mechanisms of law, policy and regulation. In the Crown's energy policies and policy making, we do not yet have that tika procedure, we do not yet have those tika outcomes.

Before I move into reaffirming examples of the solutions, which flow within my reply evidence, I realise that perhaps I should give a really brief overview of some basic examples of how the treaties of te Tiriti relate to climate change within my reply. I realised I had mistakenly assumed that this was pretty obvious, but Paul Stocks' evidence suggests maybe I should be clearer.

So, under Article 1 and 2, we need our sovereignty upheld and our taonga protected. Taonga includes nature, wai, moana, species, our health, our economy, centred on holistic, comprehensive, hauora. Climate change is antithetical to our tikanga. It is genocide. It is the gravest crime against humanity.

Our sovereignty rights have to reflect this top priority across all law, policy and regulations, implemented immediately under Māori-led co-design.

And under Article 3, we need equitable outcomes.

So, my reply to Paul Stocks' evidence is that our taonga must be protected under the non-negotiable **(inaudible 12:18:16)** of kaitiaki. This is seen particularly in the current urgency regarding the Offshore Renewable Energy Bill, which is meant to enter into law shortly.

There has been absolutely no support from the Crown to draft legislation with which centralises kaitiakitanga and mandates companies to prioritise early partnership and responsiveness to tangata whenua. Indeed, as Matua said, pre-engagement pātai was sent by our hapū and still have not been answered over a year and later. The Crown has ignored our pātai on public online zooms, which were not directly sent to us as invitations, but we've found through our own diligence. And we do have screenshots of those efforts to discuss in the Zoom chats with the Crown.

The results of trampling over our rights, is that we now face a serious threat to taonga and breaches of Te Tiriti within moana. If the Crown had upheld our kaitiakitanga under Te Tiriti, there is no way that offshore wind would proceed given the non-harm to our tūpuna tupua and taonga within the moana which has been documented through scientific research which we are familiar with.

So, we understand that these detailed concerns perhaps might fall outside the scope of this inquiry, but it is illustrative of the extent to which we need to solve climate change without the whakaaro that got us into this problem in the first place.

As a specific concrete illustration, the ātea in front of our wharenui that we are in right now is patterned with the image of our kaitiaki, the Whai, and she sees by magnetic forces of the earth. The wind turbines within the ocean will create electro-magnetic fields which would blind her, the same with our taniwha, our moko. Same with our piharau and tuna who migrate to Tonga to breed using the earth's magnetic fields.

The ocean mixing from the hundreds of turbines, combined with the recent changes in the Southern Meridional overturning circulation or SMOC, and the marine heat wave, all of these will absolutely destroy the horizontal water columns needed for all marine species and our taonga, not to mention our tohorā, blue well who live within our mana moana in South Taranaki.

But there is still time for the Crown act urgently to address this, to stop the Offshore Renewable Energy Bill and Regulations and to look at co-design engagement with fully informed consent through proper information provision and co-drafting, co-designing kaitiaki-centred laws and policies.

So finally, under Article 3 of Te Tiriti, the Crown has the obligation under the exercise of Kāwanatanga to ensure equitable outcomes. So, this very clearly mandates legislation that is far stronger than, for instance section 5MF of the Climate Change Response Act, which merely requires the Climate Change Commission to consider its work with respect to te ao Māori, the Crown-Māori relationship and effects on Māori. What we need is legislation that goes beyond manager consideration and to mandatory implementation, such that public servants, as agents of the Crown, across the board, are not afforded a scope of discretion that breaches Te Tiriti.

So again, kaitiakitanga is a central organising principle within our tikanga, would mean that the public service cannot operate in a manner where they only hire people to perform kāwanatanga on behalf of only one side of the Treaty Partnership. That is not equality and is certainly not equity and I would go further to say that this obligation under Te Tiriti also mandates that public sector teams must have dedicated Māori policy units. The singular or token Māori staff member is not only dangerous for the wellbeing of that kaimahi culturally isolated and at risk of structural violence and moral injury, but is also dangerous for the development of policy which risks non-compliance with Te Tiriti and, particularly for climate change issues, reflective of the non-negotiable necessity of kaitiakitanga.

It is well documented in the research across all minority and vulnerable groups that so-called mainstreaming by itself does not work. For example, those is well known in the gender policy field that mainstreaming gender issues simply gets them dissipated and stopped up by the majority in the patriarchy without a dedicated gender policy team backed up by top tier managers at the final decision-making table.

Similarly, indigenous policy fails without dedicated indigenous teams and top-tier managers. Mainstreaming without dedicated policy teams for indigenous and Māori rights is even more dangerous and violates Te Tiriti because generalised mainstreaming treat indigenous communities just as another demographic rather than as sovereign peoples with distinct rights and cultural worldviews.

Mainstreaming enforces a “one-size-fits-all” model, burying Māori needs under broader bureaucratic and systemic inequality. The Treaty mandates the resourcing of dedicated policy teams, senior leadership backup those policy teams, and transparency around final decision-making, rather than red-line editing over Māori policy or selective work streams that dilute the truth of kaitiakitanga.

Some may say I'm not being realistic, but look, realistically what should be happening is a one for one resourcing of a tangata whenua public servant for every tauiwi public servant. But I can recognise the importance to compromise in these interim stages as we embed honouring Te Tiriti throughout the public sector. So at a minimum, what we need to see is dedicated Māori policy teams and roles within the executive leadership.

So, to wrap up, the solutions I think are relatively clear and dear I say kind of simple:

- We need to value kaitiakitanga most highly as non-negotiable, pervasive and in perpetuity.

- We need to allocate more than sufficient resources to kaitiakitanga policy.
- We need to mainstream the creation of Māori policy units and senior management offices.
- We need to ensure early co-design of legislation through engagement under tikanga.
- We need to draft legislation, which is mandatory in implementation, not just consideration.
- We need to implement immediate policies to decrease electricity usage.
- We need to cease critical minerals extraction and utilise those resources already extracted which are and indeed sufficient.
- We need immediate cessation of fossil fuel extraction and use.
- Immediate policies which reduce consumption and enables circular economy; and
- We need to enable the economy of mana motuhake with food production, māra kai and community-based micro renewable energy networks.

And at the end of the day, it is never our role to curtail our vision of the right tika future for our moko. We need to decolonise our minds to the extent that we are aware of the internalised male patriarchal colonial gaze, the internalised patriarchal colonial capitalist voice which seeks to suppress the joyful expression of reclaiming power to live today in a world governed by kaitiakitanga where Papatūānuku is healing and ngā atua are realigning.

It is not our role to self-silence. Say what is right, what is tika, and lay down the wero for us all to live better. And may the record reflect, for history and for our moko, that we have tried our best to be heard. Thank you for listening.

JUDGE MILROY:

Thank you. Mr Vincent?

MR VINCENT:

Your Honour, that's everything.

JUDGE MILROY:

Thank you. Thank you to the witnesses. We do have a little bit of time before lunch, so Mr Prebble.

QUESTIONS FROM CROWN – NIL

JUDGE MILROY:

Thank you. I will just check whether the panel has any questions.

(12:30) KEVIN PRIME TO JOHN HOOKER AND ALISON COLE:

Q. Tēnā rā kourua. Tuatahi, ka mihi atu ki a koe e te rangatira e John, koia hoki tēnā me ō mihi whakatau ki a mātou me ō mihi ki te tēpu, i tēnei, nā reira tēnā rā koe. E mihi ana hoki ki ngā aituā maha kua pahemo, ko rātou ki a rātou, ko tātou te hunga ora ki a tātou anō. Yes, I do have a number questions but they relate mainly to your first brief of evidence which was #A116(b). My first question is really relating to paragraph 32 and you refer to, "we have particular legal interests", can you elaborate on what those legal interests are, please.

A. [John Hooker] Tēnā koe e te pāpā. Aua interests, i roto te Waitangi Tribunal mō te Petroleum claim, kei a Ngāruahine te Treaty right mō petroleum. **[Tēnā koe] The Waitangi Tribunal and the Petroleum Claim, they outlined they had Treaty rights within that claim.**

Q. Mārama ana tēnā, thank you. Just referring to paragraph 37, that was – since this evidence was written, about three weeks have passed, have you had contact with Mr Stocks since then?

A. [Alison Cole] Kāo, matua, kāo.

Q. Ka pai. I'll move on. Can I refer you to paragraph 42.

WITNESS REFERRED TO BRIEF OF EVIDENCE #A116, PARAGRAPH 42

I just wondered where you are discussing new technologies, what is your main objections to the hydrogen technology as a fuel?

A. [John Hooker] Ki a mātou, pai ki a mātou a hydrogen hei hinu mō ngā waka, but ko ētehi o ngā tukanga i mua i tēnā, te hiahia o Te Hiringa kia tuku ētehi o ngā pūngao, natural gas, kia hangaia urea. Kīhai tō mātou nei hapū e pīrangi tēnā nā te mea – sorry, sorry, hoki atu ki a koe, e Haki. **[This might be a bit above my pay grade e te Taraipiunara, Mr Potaka didn't study science past the fifth form, heoi anō…] To us in Ngāruahine, we believe that hydrogen is good for vehicles but the process that has been employed at this stage is… [Matua Hone, me āta whakamāramahia tērā wāhanga.]**

Ka pai, ka whakakī ināianei. Ko te take – te hiahia o Balance me Te Hiringa kia hangaia urea. Ko urea he fertiliser mō ngā kaipāmu. Ki a mātou – **[Ka pai.] And so, what Balance and – [ko wai tērā atu rōpū?]** Te Hiringa. **[What Balance and Te Hiringa want to do is they want to combine those two elements to create urea for the farmers]**

Āe. Kīhai a Ōkahu i whakaae ki tēnā. Ko te take, kua paehini tō mātou nei puna i runga te marae, mai i ngā nitrates, mai i ngā kaipāmu. **Our hapū did not agree to that and as a result of it the awa or the streams next to the marae have been polluted.** Āe rā. Poisoned, āe. **Poisoned.**

Q. Kua pai tērā, kua mārama. Kia ora. Taihoa. My other question –

A. [Alison Cole] Can I just say also.

Q. Sorry?

A. Aroha mai, may I reply also, Matua?

Q. Āe.

A. Just to note that we haven't, as yet, seen compelling evidence that the hydrogen models even as hinu mō te waka, even as fuel for vehicles is technologically sound and it certainly – well, we know for example that other jurisdictions are dropping that technological investment. There was a lot of early interest within Japan, for example, that has recently diminished **(inaudible 12:34:03)**… know that the efficiencies in order to utilize electricity in the creation of hydrogen in the first place, is itself, highly inefficient.

Q. Ka pai tēnā. Kua mārama. Just moving on to – I just say thank you for appendix A, which was your #A116(c), it was an interesting read, thank

you for that. Just move on to your second brief of evidence – It wasn't the second, it's second in my tabs, I think, but it was #A116, there's no letter after it, so I presume you know what it is. It relates to – no, I've realised that I had a question about what the target should be, but I found the responses further on in your evidence, so thank you for that. Yes, I saw the responses in 4.18. Those are all my questions. Thank you very much.

A. [John Hooker] Ngā mihi, Kia ora.

JUDGE MILROY:

Kia ora. It is now – I better just check – Yes, it is lunchtime. So, we will come back. We do have a few more questions from the Tribunal. So, we will come back after lunch for those. But I think we're in good time so we will see all at 1.30.

MR KUDDUS:

Sorry, Ma'am. It's Umar Kuddus. I have spoken to Professor Gillespie and he has indicated that he would be available before 2 PM as well depending on how many questions Tribunal has for the witness remaining. Just to indicate that, Ma'am.

JUDGE MILROY:

Thank you, that's very helpful, Mr Kuddus.

HEARING ADJOURNS: 12.36 PM

HEARING RESUMES: 1.30 PM

JUDGE MILROY:

Kia ora anō, welcome back. Now we're continuing with questions from the panel, and we have questions from Professor Williams.

(13:30) PROFESSOR DAVID WILLIAMS TO JOHN HOOKER AND ALISON COLE:

Q. Tēnā koe, tēnā kōrua. Kia kaha te reo rangatira o te motu, engari aroha mai ko tāku pātai ki a kōrua i te reo tuarua o te motu.

A. [Alison Cole] Kei te pai.

Q. My questions relate to the #A116 brief of evidence and at 4.4, "We disavow economic models which do not originate within whakaaro Māori such as de-growth terminology…", and I've asked a few questions about de-growth terminology in this inquiry. And so I see you want to disavow that even though Māori claimants have put it forward. And you go on at 5.3, you do not wish to be associated with schools of thought which do not originate within te ao Māori. So, just as a sort of a broad political question to you as claimants, clearly this Tribunal doesn't originate within te ao Māori, and I'm interested in your comments on the final paragraph 5.10 where you are arguing for independent Māori climate platforms within Crown Ministries and Crown entities. And so my focus is on the word 'within', you are wanting independent Māori climate platform, well-resourced, policy teams, within the climate related ministries and commissions, and I'm just wondering if that's consistent with your general kaupapa of not connecting at all with concepts that don't come from te ao Māori?

A. Tēnā koe e te rangatira, tino pai tō reo. Ngā mihi mō te mihi i roto i te reo Māori. Yes, this is a really awesome pātai. So, there are two concepts that I think are distinct, but I think can co-exist. On the one hand, the aspiration and the necessity of ao Māori thinking, to me, is fundamental within Te Tiriti and it needs to be central to the partnership with the Crown such that the Crown also makes an effort to work within and alongside ao Māori thinking. Now, if we had continued as our tūpuna at Parihaka had started for example, where they were operating as a nation with more advance and more dominate socioeconomic frameworks, comparative to the Pākehā settlers. If we had continued along that trajectory, I think we might've had settings wherein Māori and ao Māori frameworks were the dominate framework within which Pākehā operated. But as we know, because of the crimes, war crimes, holocausts, committed within

Taranaki since 1860s, we now work in the other framework, and this is what I am suggesting is the second conceptual framing that we can hold alongside the first. So, the first is, I'm saying, we need to stay true in tika to our ao Māori principles not only amongst ourselves as whānau, hapū and iwi, but also under the Treaty partnership such as Crown entities should also be integrating and operating with these considerations at the centre, especially kaitiakitanga. So, the second concept is, in the instance where the Māori nation is not the dominant hegemony, exactly to your pātai, how do we operate? So my argument is, since we as the Māori nation under the Treaty partnership, we don't have the right to raise revenue, take a cut of taxes. We effectively have the only option of operating within those Crown infrastructures. For that reason, we come to the Waitangi Tribunal. For that reason we demand that the dominant Pākehā powers who are profiting off their war crimes and in their holocausts by being the dominant structural infrastructure socio – in terms of socioeconomic dominance across the country. We are demanding that we are present within those functions of kāwanatanga because we don't have the infrastructure of the Māori nation in order to exist as we would rather be as per our tūpuna at Parihaka. So, the only option therefore as I'm suggesting, is we try to operate as tika as possible within the realities of the continued benefit that the Crown has from the harms and structural violence of colonisation in the holocaust, that we maintain our own independent Māori policy and advisory functions within those Crown roles. It's the only way that we can have co-governance under Article 1 of Te Tiriti recognising the factual realities of ventures just as effectively with the Crown dominance of their nation state over ours currently.

Q. Kia ora, thank you for your answer. It's one of several occasions in this inquiry where the work of the panel on constitutional kaupapa issues ties in with the work of this climate change priority hearing. So, thank you for your whakaaro.

A. Tika.

QUESTIONS FROM JUDGE MILROY – NIL

JUDGE MILROY:

Again, thank you for your evidence. I have no questions. So, I will just hand you back to your counsel in case there are any questions by way of re-examination.

QUESTIONS OF RE-EXAMINATION FROM MR VINCENT – NIL

MR VINCENT ADDRESSES JUDGE MILROY – MOVING TO LIVESTREAM (13:38:18)

JUDGE MILROY:

Thank you. Āku mihi nui ki a kōrua mō tō taunakitanga i te rā nei. Thank you for evidence today. Āku mihi ki a koe hoki Jack mō tō āwhina ki te Taraipiunara. Thank you very much for helping us today. So, we'll leave you there. At this point we are hoping that perhaps Professor Gillespie might be available.

MR KUDDUS ADDRESSES JUDGE MILROY – PREPARING NEXT WITNESS, MICRO BREAK (13:38:53)

HEARING ADJOURNS: 1.39 PM

HEARING RESUMES: 1.40 PM

JUDGE MILROY:

It's okay, Mr Kuddus, we're all still online, so I think we will begin if you're ready, Professor Gillespie.

(13:40) PROFESSOR ALEXANDER GILLESPIE: (#A161)

Good to see you. Sorry, the late arrival I've been transiting between cities and experiencing the joys of our motorway system.

Today, I'm presenting the second part of my evidence that continues on from last year. And the questions that I'm going to be primarily dealing with is the issue of future generations and heritage as reflected in international law.

My basic argument is that we are having a much greater impact on future generations than ever before, yet the voice for future generations does not yet exist in New Zealand Aotearoa. It should exist, and I'll argue why, but we have a gap.

My thinking in this area goes back over 30 years. I've worked in international law for the New Zealand Government for World Heritage, for Whaling. I'm involved in a number of debates. I have a PhD on Environmental Philosophy.

When I talk about future generations, what I'm talking about is not just the unborn, but also children, and effectively future generations are those who are excluded from political power, that they are the ones who are impacted on but don't have an influence with where it's going.

Now, this idea of future generations is a concept which is well known within indigenous and non-indigenous thinking. I am not the person to speak about future generations within indigenous thinking, but I can talk about indigenous – sorry. I can talk about future generations within Western lines of thought and it is very well entrenched and it's in a number of religious doctrines, it's in philosophies, it's in Greeks and Roman, and it continues through the Renaissance and the Enlightenment.

The importance of future generations is that we have a connection, not just with the past, but also with the future and it helps give us an identity and we inherit from the past, we maintain what we have, we pass on to the future. Within this thinking, heritage is a core consideration of what we pass on. And when we talk about heritage, I'm talking about tangible heritage and intangible heritage. Tangible being the stuff you can touch, intangible being our practices around it often.

There is a contrary view within some scholars that this generation owes more of that to the future. And this argument is that we are alienated, we are disconnected, we don't know about the future, we should focus on the present and be very short-term in our thinking. This is a minority view which has been

marginally dismissed in the scholarship and we have a number of famous scholars who have addressed this argument. And we can show through thought experiments that it makes sense to recognise future generations.

That even if we do not know where we sit in the temporal line, you would not make decisions that could be to the detriment of the future if in the future. A key part of this thinking is that as much as we have intergenerational value, we must have intragenerational value at the same time. And so a thought experiment, it's not just about valuing the future generations, it's also about valuing current generations. So, any thinking into the future should not be done to the detriment of those with less at the moment.

The importance of future generations in our thinking at the international level has grown as our ability to act in a way and have negative implications upon them has expanded and in this area we can see the problem of climate change as the foremost example. There are few examples that aren't as powerful as the decisions that this generation makes now for the choices that will be imposed on the future. The IPCC thinks in short-term and medium-term and long-term brackets. And we know from our projections that the choices we make now will impact on our children and our grandchildren.

This is the devil's own problem. Now, we also knowing that as much as climate change will have an impact on the physical basis, we know it will also have a negative impact on the heritage basis in terms of the loss of both tangible heritage and intangible heritage as well. Because of these problems, the international law, the Framework Convention on Climate Change, the Paris Agreement and the work around this with the International Court of Justice, all recognise the value of future generations.

This recognition of the value of future generations is not a surprise because the moral value them is the epicentre of the sustainable development. The moral value and the recognition of future generations is the core of environmental thinking.

The quote coming from 1987 with the Bruntland report, which is that the present generation's needs can be met without compromising the ability of the future to meet theirs. We reference future generations throughout International Environmental Law, we reference it throughout Human Rights Law. It is common within UNESCO, we mention it even in the foundational document of the United Nations Charter, to make sure that the scourge of war does not go from one generation to another generation.

We recognise the value of heritage in both tangible heritage with the World Heritage Convention and intangible heritage. New Zealand is a signatory to the World Heritage Convention. We are not the signatory to the Intangible Heritage Convention.

As all of this is occurring, we can see that there is a strong bias in civil litigation trying to get greater responsibility upon those who do the polluting and this, unfortunately, has been in the media recently in our country as the government has tried to stop some avenues. But the trend you can see with civil litigation, which is to be commended, is that it's the young people who are getting their voice and that's great. It's great that the young people are getting a voice, but what is still absent is future generations. There's no voice for future generations in this area.

The anomaly that I became aware of when I was doing the work for this opinion, was that we are leading the way in Aotearoa right now with the recognition of three areas that have exemplary cultural value, the Ureweras, the Whanganui River and the Taranaki Mountain. And in these areas, we have created legal personhood and through giving intrinsic rights, which we recognise, and a body to represent those rights, three exemplary parts of nature have a voice. Yet even though we have a voice now, and I think this is the evolution of law at its best, but even though we have a voice for three parts of nature, we don't have a voice for future generations. And so, this strikes me as an anomaly.

In our foundation documents aside the Treaty, if you're looking at – we have no formal constitution like other countries that mention future generations. In our Bill of Rights we don't mention future generations. We exist, as we know, in this kind of legal uncertainty about our constitutional status, but within our documents, our legislation, we reference future generations in the Environment Act, in the RMA, in the Conservation Act and the Heritage New Zealand Acts, Climate Laws, and even in the Public Finance Act, we started to require wellbeing. So, we keep talking about future generations and there's no shortage of people saying we should take this into account but there's no voice.

And so, my argument is we need to look at other countries that have given a voice to future generations, that we can lock and potentially learn from. In this area we have to go to Wales, because the Welsh have a commissioner for future generations, and the way it works is that each public authority must set wellbeing goals and the wellbeing goals, they are assessed and measured with regards to the present, the future and the immediate situation – sorry, the immediate situation and the future. And the commissioner will come along and assess whether they're living up to these statutory obligations of considering how the future should be looked after in these areas.

My argument comes down to a very simple point and that is we should have someone speak for future generations in our country, and we already have a number of high level representatives and commissions that we could pull together to start work in this space. These are the Parliamentary Commissioner for the Environment, the Children's Commission, the Climate Commission, Heritage New Zealand and representatives from the three areas of legal personhood that have recently been approved. We've got the people. We've got the areas of scholarship, we know what the future looks like. And I sincerely believe that until we have a voice to future generations, there will be a significant gap in the way that we think of how we should deal with this problem of climate change. Thank you.

JUDGE MILROY:

Thank you.

(13:51) MR KUDDUS: (CONFIRMS)

PROFESSOR ALEXANDER MATTHEW GILLESPIE (AFFIRMED)

Q. Thank you, Professor Gillespie. Perhaps, I'll just run through the formalities which I should have done prior to you launching to your evidence, which I'm very thankful for. But can I please just get you to confirm, as a matter of formality your full name for the Tribunal, please.

A. Sorry, I got a head of myself. Alexander Matthew Gillespie.

Q. Thank you very much sir. You filed, in preparation for this hearing week, your brief of evidence, which is Appellation #A161 and your speaking notes, which is appellation #A161(a). Yes?

A. That is correct and that is where I jumped the gun I just talked about.

Q. Thank you very much sir.

MR KUDDUS:

With that Ma'am, if it pleases the Tribunal, I'll hand over Mr Gillespie for questions from the Crown and then subsequently questions from the Tribunal.

JUDGE MILROY:

Thank you. Thank you, Professor Gillespie. There's no need to apologise for getting into your evidence straight away. We do enjoy that here. So, I will just ask the Crown if they have any questions for you.

MR PREBBLE:

Yes, we do.

(13:53) MR PREBBLE TO PROFESSOR ALEXANDER GILLESPIE:

Q. Tēnā koe, Professor Gillespie. Ko Jeremy Prebble tōku ingoa. Kei konei ahau mō te Karauna. Thank you again for your evidence and your second instalment in this inquiry. It's very interesting evidence and I just had some questions really, as I went through it, that relate to, perhaps, the more climate change focused side of it. So, really picking up on this core

aspect in there are around the focus on future generations, and I understand in your brief, so for example, from paragraph 8 onwards, your focus is on the impacts on future generations and your overriding concern that decision-makers or one of your concerns that decision-makers are only focused on the short term and therefore not the future generations. That's a fair summary of one of the key concerns that you're putting forward, isn't it?

A. I think it's a very accurate way of putting it. Part of the problem at the moment is that the demarcation cycle in our current Ethos of politics has become very short term.

Q. Yes.

A. And promises are made which are very in the immediate and we are not looking towards the future, yet the irony is, we talk about the future, but we don't actually do it.

Q. Yes. Yes-no, I'm picking up on that and I think you're really saying that your concern is that we're too focused, as you say, on election cycles, but short-term rather than sufficiently far out. So, for example, at least a focus in the next 20 to 30 years being a better time period. Is that fair?

A. I think we need longer than 20 to 30 years. I think the IPC guidance of having brackets that go between now, the middle point and 100 years, makes good sense, and I think that because we know the decisions we make now, and they're modelling this, will have impacts in 10 decades' time. Although in some regards, as I was doing this, I was struck by the fact that a young – like the IPCC models come to the end of 2100, that a child born today in 2026, there's a very good chance that they will be alive at that point. And so when we talk about the future, it could still be within the lifespan of a number of people that are currently being born.

Q. Yes, and I think you'd accept that while I hear what you're saying in terms of that longer period of time being necessary to focus on, there's certainly a key period within which there needs to be some fairly drastic change, I think you would agree with that, right, which is where really what I was going with the 20 to 30 years. So, we're thinking about in terms of climate change and carbon removal. The next period in that frame is quite critical, is it not?

A. Absolutely and it's not about making decisions which are putting everything about the future to the forefront. It's about recognising that you've got to deal with problems at the moment, especially the intrageneration **(inaudible 13:56:11)**. But there still needs to be a voice for the long-term because at the moment that's where there is no voice, and we talk about it but we don't do it.

Q. Yes, and I guess this is where I just wanted to come back to the domestic or the frameworks that we do have and just to ask, I guess, firstly, how you are with the Climate Change Response Act frameworks or the machinery of that legislation?

A. Not greatly, my work is primarily international.

Q. Are you familiar with the legislation providing at least a pathway for us out to 2050 in terms of its end target for the reduction of greenhouse gas emissions?

A. With the zero carbon, yes, I am familiar with that goal.

Q. And do you accept, therefore, that the, if you call it the statutory infrastructure, if you like, under that is to put us on a pathway to reduce emissions and to adapt to climate change?

A. I think that's a noble goal. I think that there's questionable evidence going towards actually reaching it. And I think if there was a voice for future generations, that would add to the questioning.

Q. So, are you aware under that regime that – I think you are in terms of your evidence, but just checking that the Climate Change Commission in performing all of its statutory functions must consider the distributional impacts of climate change, including the risks between generations?

A. Yes, that's right but that recognition for climate change if consideration of future generations is also with other legislation as well, like the Environments Act, the Conservation Act, the RMA, everyone talks about it, but what I'm arguing is that we need to have someone represent it.

Q. Right. Just staying on the regime for a moment, are you also aware that the minister in making – so the Minister for Climate Change under that, the Climate Change Response Act must consider the impacts across generations as well in terms of decision-making. Are you aware of that?

A. Yes, yes.

Q. And so, for example with the emissions budgets which are our legislative stepping stones to reaching our emissions target, that consideration would arise for the minister, so on the way to meeting the 2050 target. Are you aware of that?

A. I am aware that's what the legislation says, but I can't hear the voice of future generations.

Q. Right. So, your core concern I guess is that with the legislation, the consideration is there for future generations but you're suggesting that there needs to be something in addition to the Climate Change Response Act, is that right?

A. Yes, that's completely correct.

Q. Do you have a view about what that –

A. And my argument – sorry.

Q. No, you go, that's fine.

A. My argument is, is that we're – There's international trends in this area and you can work out what they are. The Welsh look good, but to me the work that we've done around legal personhood for three natural areas teaches us that if you can represent items of nature you should be able to represent the future as well. And I think we've got the bodies that you could take people from and put them together and hopefully voice of what that may look like.

Q. I guess I would say at least you would accept though that the legislation is calibrated in a way to ensure that the consideration of future generations is there in terms of moving towards the 2050 target?

A. Yes. I would agree that it's in the legislation, but I wouldn't say it's got much consideration because there's no voice for future generations. I would argue that you need to have somebody represent that voice and then to have standing in court to help the challenges as much as you've got young people now **(inaudible 14:00:14)**. But we've got a gap. We talk about these people or this thing that's coming before us, but we've got nothing to actually defend it and that's the voice I'd like to have heard. I'm not saying it should be a trumpeting voice, but it's a voice I'd like to have in the room when decisions are made.

Q. No, it's very interesting. I'll come back to that. Just before I do, though, just on the regimes and obviously your expertise, I think you accept you're more familiar with the international perspective than our domestic settings, but I think from your evidence you're accepting or suggesting that the consideration of future generations is certainly something that is embedded in and in the climate change space in particular, the UNFCCC. Is that fair?

A. Yes, that's fair. Everyone talks about it and we've been talking about it increasingly since the 1970s. But you can see that on the international level as opposed to domestic, UNESCO's leading work and the Secretary General is going to be doing more advanced work in the space in terms of someone to represent future generations, I would imagine, by 2028. So to me, there is a trend that I think we could get ahead of if we work in this area.

Q. Right, thank you. Just staying on the, I guess, the key international documents, I think you'd accept that the Paris Agreement too recognises intergenerational equity. Is that fair?

A. Yes, that's fair.

Q. And are you aware that both of those agreements are also attached to our domestic Climate Change Response Act?

A. Yes. And then you may add as well, that the ICJ, when it was looking at the climate response, also talked about future generations. And so everyone talks about it. But you are correct that these are – that they are part of our thinking, they are well recorded but there's still no voice.

Q. Yes, I think we're on the same page, if you like, in understanding that – and I think you are agreeing with me, that the international agreements which embed this concept there attached to and I think you'd accept they are provided for in the purpose and implementation of our domestic settings as well which is the Climate Change Response Act, correct?.

A. I would say they're reflected, I wouldn't say they're necessarily provided for.

Q. And I think you accept therefore that our domestic settings also ensure consideration of this concept where I think you would go further as that

you consider a specialist body or something extra is required for the voice of future generations. Is that right?

A. I say that's perfect.

Q. Thank you. And I guess, just on that, so coming back to this concept of what we do have and providing a voice for the future. I think – so, obviously we've talked about the Climate Change Response Act, and you've also referred to the fact that we don't have a written constitution and you refer to the fact that it's not captured sufficiently in our Bill of Rights legislation. Is that right?

A. Yes, I would, and I would add that we are not only – this is a different discussion, but not only as that we – an anomaly with our lack of written constitution, but the trend, since the 1980s for other countries which have developed constitution, is to recognise future generations. And so, the other countries are more cognisant of this than we are, but at the highest level, we are missing that wording. Even though some people say you could infer it, but to me, I prefer the explicit wording.

Q. I would say, I assume that you would accept that it's certainly not recognised in our Bill of Rights Act, in fact you may be familiar there are cases that deal with the rights of unborn children and it's – I think you'd accept that it's a very contentious area on that particular note, is it not?

A. The debate about future generations does become contentious with unborn children and the way that's - most of the philosophy in this area has moved towards not focusing on individuals but on streams of people. As opposed to recognizable individuals.

Q. And when you do focus it in that level, it does become very complicated as to how to give such a multifaceted aspect of society of voice, is it not?

A. Yes. You are completely correct, it is complicated. But we – even though it's complicated, we can see that there is certain things that the future would want. That they would want continuity, they would want their heritage, they would want their option to open, that they would want to make sure that there is protection of life on earth in a biodiversity sense. But these words I'm giving you aren't from me, they are from the UNESCO document from 1997. We certainly don't know what kind of technology they want, but we do know that they want similar things that we have now,

a liveable planet and the options and choices and their heritage protected, we can be pretty sure that they'll want that.

Q. And so this, I'd say the scope of the right is also incredibly important too when you're thinking about the rights for unborn children, for example.

A. I don't know if you notice but I cautiously avoided the word right and what I'm talking about – because I think once you put rights of future generation, rights are contentious ways of thinking about things. I'm talking about the interests of future generations and the representation of those interests. Because you're right, there would be a degree of specificity which I would be reluctant to get involved in. I can see that this generation is doing things to the discrimination of future generations and that impact should have a voice.

Q. No, thank you, that's a helpful distinction and in some ways I think it brings it closer, does it not, to what is actually already in the Climate Change Response Act?

A. There's still no voice.

Q. Thank you. And just lastly, the point you made about it's not just future generations, it's also – I think I was understanding you correctly to say, the interests of current generations, as I understand what you were saying in your oral presentation, you are really indicating that it's important that in moving forward we don't create or exacerbate existing inequities. Is that right?

A. That's 100 percent correct. That the protection of the future can't be at the price of the restriction on those without a vantage now – those with disadvantage now. There was a point when some scholars came out and they were saying we need to focus on the future and it was to the exclusion of the present, when there's a lot of terrible things happening to present generations. But the trend is now, especially at the international level, is you must protect the present generation and the future generation. And that means that choices can be made that can use the commons, but not to the point of the detriment of the future. You must keep their options open. So, it's not to like some kind of puritanical kind of view that everything's about the future, it's also about predicting the present and that means making choices that will involve climate gases

and development for those who are impoverished right now. But you can't hold them, one above the other, they have to be pursued at the same time.

Q. Yes, thank you. That's helpful. I think you'd therefore accept that in any decisions, key decisions moving forward, it's important to understand the impacts of those decisions before they are made.

A. As much as you can. And I think you can understand those impacts better if you had a body representing those voices for the future.

Q. Yes, and it's not – I think we've heard, obviously, a lot of evidence throughout this inquiry, but there's different ways in which we can move towards reduction of emissions, and I think what you are saying makes sense in that before decisions are made it's important to understand, while it might be something that severely reduces emissions, it could also have exacerbating effects on inequality. So, I think you would accept, therefore, that those are relevant considerations in making decisions going forward. Is that right?

A. The equity issues in climate change are fundamental within the current generation, irrespective of the future, I would completely accept that. But at the same time, I would not have the future **(inaudible 14:09:33)** in these discussions and I would still like a voice for them. As much as we can have a voice for children or we can have a voice for the Parliamentary Commissioner of the Environment, I'd like someone to represent what we think the future would look like. I'm not – to be honest, I'm not completely sure what that mechanism would look like. But I can just see right now that we are innovative in some of our thinking and I can see that we're making decisions which impact on the future, but we have a silence around that area and I believe we could move forward.

Q. Thank you. Those are my questions. It's very interesting. Thank you very much Professor, for your evidence.

JUDGE MILROY:

Thank you. We will pass on now to questions from the Tribunal. So, first of all from Matua Kevin.

(14:10) KEVIN PRIME TO PROFESSOR ALEXANDER GILLESPIE:

Q. Good afternoon, Professor. Okay, my first question relates to the example you gave in Wales, that was in 1998, 28 years ago. Can you just tell us how it's evolved in that 28 years, you know, what benefits have evolved from it?

A. Thank you. The legislation was innovative when it was created, and some people assumed it would give teeth to legal debate so that you could **(inaudible 14:11:27)** to sort of like stop development. But what they've found out is that the legislation and the commissioner is about a cultural change, where it's not so much about making a hard and fast legal determination that this project can go ahead or can't go ahead. But to have the consideration of future within their thinking. And so, what's kind of apparent is that if you think about the future, it's not about using it as a tool to constrain, directly constrain this generation, but have a cultural shift in the way that it becomes visible in our thinking. And so, for the Welsh, they had to set wellbeing goals that each public authority had to measure against and in that measurement consider how the future was impacted on. And so, the Welsh example was about changing the way that they worked so that the future became visible, not so much as changing the way that they worked that there was a tool that you could stop developments.

Q. Okay. Thank you. In paragraph 59 you refer to a case *Smith v Fonterra*, where's that case at now?

A. Well, I've spoken about this in media so it's no surprise that I am going to say, that that case is being, I would argue, wrongfully made impossible with what the Crown has done by stopping that legal avenue directly. I have strong views that irrespective of the debate about climate change, I think government should be very reticent about interfering with the common law and the justice that may come from it. Otherwise you still have snails in Ginger beer bottles. And so, the decision to block off an entire range of tort law because they were scared of the repercussions I think was wrong not just for Mr Smith's case, but also for the precedent value of other countries. But to answer your question, sir, that that case

now I think is defunct and that's unfortunate because this was an excellent case in my opinion. Just using traditional forms of law.

Q. Okay, thank you. My other questions have been answered or been asked, thank you. No other questions.

(14:14) PROFFESOR DAVID WILLIAMS TO PROFESSOR ALEXANDER GILLESPIE:

Q. Tēnā koe Professor Gillespie. Just, you made a reference to a snail in the ginger beer bottle, just as a matter of historical fact it was never ever proved in evidence that there was a snail in that particular ginger beer bottle. So, I've just got two questions. You use the word we quite often and I'm mindful of sporting friends of mine who follow New Zealand representative sporting teams and they always say how well we did when they win and how badly the players played when they lose. And so, in paragraph 6 of your evidence you say that: "Aotearoa, New Zealand should be at the forefront of bridging the gap. We have more to offer than most in that we can see the world differently to others." And I'm wondering who the we is, Aotearoa, New Zealand. Is it all successive governments have this different approach? Is it all the international law professors? Is it all the people of New Zealand, we all have exactly the same views on future generations?

A. Good afternoon, Professor. It's good to see you. We shall continue this debate about Ginger Beer and snails at the later date. When I say the innovative approach of New Zealand, I'm referring specifically to the three examples of legal personhood and to me that this is excellent law where we managed to create a legal regime where three natural entities now have a voice. And my thinking is, if we can represent three exemplary parts of nature, we should be able to represent future generations as well.

Q. Right. That's a good answer and it reminds me of the fact that I was unable to ride my bicycle across a river over the Whanganui River, Te Awa Tupua. There's this notice that said the bridge is not open yet because a neighbour has not been consulted. The neighbour that hadn't been consulted for before the bridge was completed was Te Awa Tupua and the river's voice had not yet been heard. So, that's an excellent

example of a voice. Paragraph 24 concerns me a little bit though. You're talking about moral considerations of future generations in the environmental context. And you instance in paragraph 24 the thinking of the First Chief Forest of the United States, Gifford Pincho or Pincho –

A. Yes.

Q. And you refer to that 1916 Act, which is usually cited as the National Parks Service Organic Act, for some reason, but you would know I think, Professor, that the origin of National Parks in the United States, was the Yellowstone National Park and this 1916 legislation consolidated a whole lot of legislation to do with national parks. In your paragraph 24, you're talking about conserving the scenery and wildlife in such manner and by such means as will leave them unimpaired for the employment of future generations. In the Act that set up the Yellowstone National Park in 1872, two million acres were set aside, prohibited from settlement occupancy or sale and as a result, the indigenous people that have been using those two million acres, including for customary and spiritual purposes, were excluded from that national park. So, it was an instance where thinking of future generations in terms of scenery and wildlife was at the expense of indigenous people continuing to carry out their customary traditions. So, just put it to you that the National Parks Legislation in the United States is not actually a good precedent for future generation thinking?

A. I agree that a lot of conservation, not just in America, but also in other parts of the world for the first parts of the 20th century, up until the 1970s, sometimes even further was done to the detriment of indigenous populations. That is a stain which is not just with regards to future generations thinking, but also conservation thinking that we talk about. I will add, however, that when I was Rapporteur for the World Heritage Convention, I was the person who made sure that communities were added to the primary considerations of conservation for world heritage because I never want that to ever happen again. My example from the Chief Forester was not about the method that – I do accept what happened with Yellowstone, I don't know about the Chief Forester, but to show – my example is trying to show that the

language is old, not necessarily the context around it, because the context for our future generations has changed considerably from beginning of the 20th century to the 21st century, and that was partly what I was trying to say. It's not just about intergenerational but also intragenerational. But I underline your point. The conservation efforts in general for the first part of the 21st century were often to the detriment of local population which indigenous people were at forefront, I do concede that.

Q. Good, good. Thank you for your overall evidence and your widespread thinking and quotation of rules and distributive justice and such things that are important and will no doubt be considered by us. So, thank you very much indeed.

A. You're welcome.

(14:20) JUDGE MILROY TO PROFESSOR ALEXANDER GILLESPIE:

Q. Kia ora anō. I just have a couple of questions. The first is just how you see this stream of thought which has been developing over a long period of time, in terms of taking into account future generations, because if you start back with – where was it – Jefferson, of course, in his day people thought that the resources of the world were infinite and the population was so much smaller that they just simply couldn't imagine that the population would be of such a huge size and the energy needs and so on and so on would be so great that there would be a finite term to what the earth could provide for us in the way of resources. So, there's been a lot of development of thinking because of the changing circumstances. But I'm just wondering how you see that development as compared to say traditional libertarian thinking which basically is that everyone's created equal and therefore because future generations are, well, they're not born and they're not here now – that they don't come within the usual rubric of human rights or considerations. So, do you think that we've just, you know, that's just something from the 18th century and it's really just been left behind now?

A. I can only speak for the Western and not the indigenous scholars. But the tradition up until the 18th century was more about looking to the past

and to the future for **(inaudible 14:22:46)** generations, and a feeling that a legacy was being passed on that they had to carry forward. For the change that occurred, I think, in the middle of the 20th century, the first point that the future generations becomes really noticeable is language, is with the formation of the UN Charter, and the significance of that was the end of the Second World War when atomic bombs were used. And I think people could see that we had a consequent – we could do things that would have an exceptionally negative consequence for the future. And that fear of a negative consequence grew as the environmental problems became more pronounced. We could see that the impacts of what one generation was doing were multigenerational and the awareness of that impact grew exponentially by the end of the 20th century because the environmental problems we were creating we could – and we had these scientists who were saying, like, if you do this now, this will be the impact in 30 years or 40 years or 50 years. And so I think for us as a species, we've been able to see that we've got a greater chance of negative impact. But to answer your other question of the libertarian thinking, I would like to say that everyone values future generations but it's not true. There are certain people who are very alienated and atomistic in the way that they work and they don't value the idea of the future and this argument would go that if you exist at all in the future, you should be grateful for whatever you get and that type of short term thinking, it's not the dominant type of thinking. I don't think it's philosophically robust, but that voice is there. And because in many ways to accept the argument about future generations, goes to a debate about identity and linkage between the past, the present and the future and I think some people understand it better than others and I think people are often alienated or don't feel part of the community, often don't identify with the argument.

Q. Thank you for that. My other question was, and given that you've already said that you're not sure what – that the voice of future generations would look like. I was wondering if – and you've also said that you're not equipped to talk about how Māori or indigenous people might be involved in representing the future generations. But had you thought that it might

be like – or you tell me how you thought it might be like, because I think it's a matter of different ideas coming together in terms of moving forward.

A. So my thinking is, as I was doing to work for this opinion, I was aware that the need to consider future generations exists for the Parliamentary Commissioner for the Environment, they exist for the Children's Commissioner, they exist for the children's - the Children's Commissioner, the Climate Commission, Heritage New Zealand and then I was also aware that with the three areas of legal personhood, it's implicit, and at least – well I would argue it's implicit in all of them but explicitly in one of them. And so if it was up to me, I would bring the experts from the bodies which already exist, which already require consideration of future generations into a room and let them start to work it out. Because these people are responsible legally to consider future generations. They're probably already doing it, but they don't know how to put that into words. And so, I wouldn't try to create something new per say, I would work on what's already there. The Children's Commissioner, the Climate Commissioner, the Parliamentary Commissioner, representatives from the three areas of legal personhood, and let them start to grapple with this problem. And because each one of them, I think they're seeing a different size of the equation, a different side of the equation. But collectively, I think you could get a voice. And then that voice when you had a submission. So, like in my dream world, you would have a commissioner for future generations speaking to you like I'm speaking. And they would do their best to try to understand what that voice would be for the future.

Q. And lastly, you mentioned that what happened in Wales was a cultural change and I am just wondering whether that sort of was something that came from the bottom up, that people were looking, ordinary people were looking at climate change or whether it came from leadership, you know, top down sort of leadership?

A. I think it was a combination of both and it was linked to the devolution of Wales within the British power structure and as they were given more autonomy for their own government, they were looking for a new way of doing business and as part of this they put sustainable development at

the core of the thinking of what they wanted their country to look like, or their province to look like, and to make sustainable development part of it. They said, well let's create the tools to measure that, and the commissioner was part of that thinking. And so, it was right from the outset, from 1998. There has been some disappointment with it, if I'm fair, because some people thought that this was a tool that the commissioner would be able to sort of say, well, you can't do that development, or your client policy must look like this, or it must look like that. But it was never intended to be like that. It was always intended to just get the conversation started and people to have an awareness that you should consider the future and not make it invisible at the moment. And so, each public authority would have to have wellbeing markers, and there were seven wellbeing markers and this included things like inclusivity or language or environments and you had to measure against each wellbeing marker with regard to the present and the future. And if people start to think about the future it changes, we hope, the decisions that they make now.

Q. Yes, I couldn't help thinking about the wellbeing framework that Treasury had and now no longer has. So, it's not that these are necessarily all new but they need to be brought together, is that what you're saying?

A. Right. And speaking freely, the loss of the Wellbeing Framework for Treasury I think – that was – if anyone's got a chance, that report is spectacular and even though it wasn't built – I do think somewhere along the line, somewhere in Wellington, someone worked out the wellbeing goals from Wales and applied them to our budget thinking, and that's commendable. But we're already working in this area, but our advance is in the recognition of legal personhood for three areas and if we can give a voice to three natural areas, we can give a voice to future generations of humans.

Q. Well, thank you very much Professor Gillespie, those are my questions and I'll now hand you back to your counsel in case they have any questions by way of re-examination.

QUESTIONS OF RE-EXAMINATION FROM PHOENIX LAW – MS BOATWRIGHT – NIL

MS BOATWRIGHT:

Ngā mihi nui ki a koe e te rangatira mō tō kōrero i tēnei ahiahi. Tēnā koe, Ma'am.

JUDGE MILROY:

And can I add my thanks to you again, Professor Gillespie, for your evidence and also for being so willing to change the time at which you're making your appearance before us. So, thank you again for the time you've given the Tribunal.

PROFESSOR ALEXANDER GILLESPIE:

Your welcome.

TIMETABLING – MICROBREAK (14:31:25 – 14:31:55)

HEARING ADJOURNS: 2.32 PM

HEARING RESUMES: 2.36 PM

JUDGE MILROY:

Just before we begin again, Mr. Prebble, I understand the Crown's not cross-examining Ms – Thank you. Welcome back. We're all ready to go now so I'll hand over to you, Ms Cherrington, to introduce Ms Stratford again.

(14:37) MS CHERRINGTON: (CALLS)

Tēnā koe e te Kaiwhakawā otirā koutou o te Taraipiunara. As we know, our next witness is Ms Kelly Stratford whose evidence is provided on behalf of her hapū Te Kapotai and their claim is at Wai 1464, 1546. Te Kapotai presented their evidence in hearing week three and Ms Stratford presented her first brief of evidence at that time. That evidence is at appellation #A085 and it gave an insight into her role as the Deputy Mayor of the Far North District Council, by

providing a governance perspective on the impacts of climate change on rural Northland.

The evidence Ms Stratford is presenting today is her second brief of evidence and that evidence is dated 9th of March 2026 and is at appellation #A085(b). So, it's my privilege to welcome Ms Stratford back to the inquiry today. Ms Stratford, hopefully you can hear me okay. I'll ask – I'll now pass the time to you to present your evidence, but if I can ask you to start please by reintroducing yourself to the Tribunal.

(14:38) KELLY STRATFORD: (#A085(b))

Tēnā koutou katoa, ko Kapowai te maunga, ko Waikare te awa, ko Māhuhu-ki-te-rangi te waka, ko Te Kapotai te hapū, ko Ngā Puhi te iwi. Ko Kelly Stratford tōku ingoa. And I'm giving this evidence as a member of Te Kapotai and the community and an elected member. I'm not the Deputy Mayor but I am still a counsellor on Far North District Council, I was previously deputy. And I don't remember presenting last time because I had the flu really bad, and it was all a blur. So I'll get into it.

I am Chair of the Joint Committee for Climate Adaptation in Te Tai Tokerau and the Deputy Chair of our Emergency Management Joint Committee in Te Tai Tokerau. So, my evidence that I go through in pages one and two or paragraph two to 10 really is not theoretical, it's as a member of the Waikare Civil Defence Response Group. It's something that I am assisting them through experiencing regularly in Waikare, flooding, road washouts and isolation and this evidence speaks to the January 2026 storm event which was – there was an emergency declaration made in our region for the Whangārei District. However, unfortunately there wasn't data, like rain gauge data and river flows reported or recorded because we don't have those, we don't have that infrastructure in Waikare, to show that there was a need for the declaration to expand into Waikare and another part of our district, Whangaroa.

I am jumping all over the place here sorry. Just make sure I do things in order. So, the classification of that weather event not happening meant that our rural

communities weren't able to access support through MSB or housing, and yes, it's not a one off thing. I think Waikare's had the road wash out since that January storm event three more times and when that road, at a low lying point, washes out people with four-wheel drives may be able to get in and out, but most don't have those, and they're isolated for three days.

So, I mentioned that one of the biggest issues is not having those monitoring systems. The other issue of not having those monitoring systems, like the rain gauge and the river flow data is we're repeatedly told as community that there's no investment available because there's insufficient data to support flood mitigation investment and without the investment and that data we can't get build a business case. So, there's a cycle of vulnerable rural communities remaining under recognised and not being able to access funding when it becomes available.

In about paragraph 8, I mentioned that we have a lack of resourcing for marae as active responders. We have a very active group, and I always say that a council's response is only as good as volunteers. Unfortunately this January event we only had one volunteer available because everybody was out of the district or in hospital or ill, so we're only as good as the people that are on the ground able to respond and there's a limit to how much volunteer capacity we can draw on. So, we need stronger structural support.

In about paragraph 10, I talked to a climate change hui that we had in Waikare, and they reiterated the need for funding and so I went over some of the Climate Adaptation funding resources that we have linked in the tool box. So, it's not necessarily council funding, it's a resource where we've compiled all the avenues that hapū and communities can apply for funding. But yes, they reiterated the concerns of feeling overlooked and that was with my council hat on.

As council, we had an opportunity to meet with the minister and I raised the issues with him and he reiterated that councils need to make those declarations to enable the supports, but a lot of people councils see doing a declaration as

an impact on economic wellbeing for their district. So, that's an issue that they have to weigh up when they're doing the declaration.

I'm just going to – I think that's all there, but so my – right in the back of the Crown evidence, Jenna Rogers and Dwain Hindriksen, about page 54, you'll see my name in there because I was on the Ministerial Advisory Committee, which was established by Minister Kiri Allen and in March 2021 and we were bound by confidentiality so I can't - I did not provide any evidence around the map, but because they've mentioned in there, in paragraph 197 the purpose of the map was to provide advice to the Minister for Emergency Management, to ensure Māori perspectives were included in the drafting of the Emergency Management Bill and we had a bit of a two – yes, our advice was offered to the incoming government through to their select committee and it was declined.

In conversations in drafting the current Emergency Management Bill, before the Crown or whatever stage it's at, we were given assurances as elected members of council that they would be ensuring that resources, correct – appropriate levels of governance within the Emergency Management System for iwi and hapū would be recognised, but I am not confident that Māori voices will be considered and the fact that they are subject to changing government's political whim, is just not right.

Yes, things at a policy level – hang on, I have some really good words that I wrote here. The emergency management system in Aotearoa is always described as being locally led and centrally supported, but in my experience, from my perspective, we're let down by policy and legislation, not upholding what the policy makers actually intended. Communities are – and iwi and hapū want to be part of the change, but there's no seat for them at these tables.

In my previous evidence, I did bring up the fact that our CDM, Civil Defence Manager Management Joint Committee, has a space for the operation level for iwi representation and the grace of the committee members we could have iwi sit a joint committee, but through legislation they're not there and I strongly feel

that they should be with voting rights. I don't know if I finished, Majka, I think that's enough.

MS CHERRING:

Ka pai. I just have a few questions that I'd like to ask you, if I can, just to draw out some bits of your evidence **(inaudible 14:48:18) –**

KELLY STRATFORD:

Yes, that I missed, yes. Cool.

(14:48) MS CHERRINGTON TO KELLY STRATFORD:

Q. One of the things that you talk about in your evidence is the difference that making a declaration of the weather event has on the ability of communities like Waikare to access support in emergency situations. Can you just speak to the importance of that declaration and how that varies or impact the ability of communities like Waikare to access support.

A. I guess what actually happened, so the declaration was made for a part of Whangarei District Council and Waikare, although severely impacted and Rāwhiti and Whangaroa were impacted, houses, flooded, cars damaged and in these communities that do not already have flood insurance because they are repeatedly flood, there's no flood insurance. They rely heavily on whatever grant or assistance there is through MSD and the process was over, you know, the course three weeks, “Yes, because you guys have been impacted, you can.” “No, FNDC, you do not have to have a declaration as well.” Because they've been impacted, they can apply. They go through the process of applying and then a couple of days later, “No, the data says you were not impacted.” There's no data. So, how can people say that they're not impacted. They were. I saw they were impacted. And it took the whole three weeks before people that it were impacted by the flooding were able to get any assistance from MSD.

Q. Ka pai. And you – The evidence that you're responding to, the Crown evidence that you're responding to talks about local authorities, the role of local authorities and civil emergency management. I'm just running

your perspective. Obviously, your reference in that evidence as being part of the committee and that was in 2021, now we're talking about this. storm that happened in 2026 and the subsequent events that you've just mentioned that I suppose highlights how that works in action, on the ground. Do you have any comments on that for the Tribunal?

A. I think just what I was trying to say before. We, as local government and communities, can do all we can to respond, but often our response is limited by national policy settings, you know, within all the government agencies and their legislative frameworks and the funding decisions that they have in place. Those funding decisions are felt most strongly by our rural isolated communities on the ground.

Q. In the Crown's evidence that you respond to, I think it's paragraph 307 for the record, the Crown witnesses say: "We recognise that within the context of civil defence emergency management, Māori participation, partnering with Māori and protecting Māori interests a critical for effective emergency management across the four Rs of risk reduction, readiness, response and recovery." Do you have any views on that statement and perhaps what is needed and what can be done to achieve perhaps the aspiration in that?

A. Yes, I love that line 'In the Crown evidence', but it's only as strong – like, you can only do that at the moment by the good spirit of the people that are elected at those tables. If you have a council or a regional council that have strong opinions about Māori participation and partnership, you won't have them at your CEG level, which is the operational level of Civil Defence Emergency Management and you won't have them at your joint committee, you won't have them coming in to assist you in your Ops centre, I forget the name of them, it's so late in the day – in your ops centre when you're in a response event, because if your elected governance leadership is not open to Māori participation and partnering with Māori, protecting Māori interests, they won't have them there and I'm extremely lucky to not be a council – on a council like that, yes.

Q. So, in your experience then, is –

A. We do have them at the CEG level and we do have iwi and hapū working with us in an operational capacity in our response in the Far North District

Council area, and we have marae response plans and Waikare does have one of those, but again we're limited by the amount of funding that we get from rates. Yes, we have a 38 thousand rateable base here, that's the population of the rateable base here.

Q. So, just a final sort of wrapping it up type questions. And the event that's a situation on the ground, what do you think can be done at a higher level to bring – to make those connections? I think you mentioned that when you're evident at paragraph 15.

A. Okay.

Q. You refer to those there. Some of things you think can be done to improve the situation

A. Oh definitely, yes. For climate change action and emergency management, we need better local monitoring data and stronger support for marae based responses. But this shouldn't just be funded by councils. We need resourcing from central government to enable this to be uplifted to the capacity that is required, so it’s equitable.

Q. Do you have any final comments, Ms Stratford –

A. No.

Q. – before I had you to the Tribunal for some questions?

JUDGE MILROY:

Thank you Ms Stratford. I'll just check whether the panel members have any questions.

(14:55) BASIL MORRISON TO KELLY STRATFORD:

Q. Kia ora, Ms Stratford. Basil Morrison.

A. Kia ora.

Q. Just having had a little bit of experience in the industry. Can I ask you The Northland Regional Council has to have a Civil Defence Regional Plan, do they have that?

A. Of course, yes, we have an Emergency Management Plan for the region, yes.

Q. Okay and I understand you a counsellor on the Far North District Council.

A. Yes, and I'm Deputy Chair on the Emergency Management Joint Committee for the region.

Q. So, you sit on the Regional Civil Defence Committee.

A. That's right.

Q. Okay. Do you have input through the role of the mayor and obviously the council, on local government New Zealand's Māori Committee?

A. Te Maruata?

Q. Yes. Sorry, I couldn't think of it quick enough.

A. Yes, I am a member of Te Maruata.

Q. Okay, are you managing to get the message through to them of the importance of iwi Māori and rural and provincial areas where isolation is a major issue and monitoring recovery, all of those things. Are those messages getting through to the national council of Local Government New Zealand, to go into the ministerial informant.

A. Yes, and the previous draft of the emergency management legislation that LGNZ was involved with, yes, they were very open to iwi Māori being better resourced, better represented in that legislation.

Q. Okay, I am very pleased to hear that. The second thing is –

A. Sorry. I can't say that's what the current legislation looks like though because I don't know what it looks like.

Q. Okay, right, the next thing is, I absolutely agree with you, an early decoration is very, very important. Even if you look at the sky and look in the river, you have some indication that things are coming and a declaration, even if there is no need and you and you revoke, it triggers the state and all the agencies to be in the game. Okay, so totally agree with that.

A. That's right.

Q. And I did note or have noted that current mayor of Wairoa was criticised because he did not declare an emergency against the other three entities in the Hawke's Bay in a recent emergency, which was one of the many that they've had recently. So, I do commend you on that and you're chasing that along because that's hugely important because it triggers all of those things. It then makes available for marae, hosting iwi Māori issues, to be addressed both physically and financially, in

accommodation and we saw that and we've seen that recently in this calendar year, in the eastern Bay of Plenty, down into Gisborne, Tai Rāwhiti. So look, absolutely agree, I would suggest – sorry, I don't suggest, I'm not allowed to suggest. Can I say, I'm pleased that you're taking that up to Local Government New Zealand because that has a strong advocacy role on the drafting, writing, whatever of any new legislation. But currently, the **(inaudible 14:59:20 RIE)** have a very senior role in a declared civil defence emergency, early or otherwise, for resources. So, I thank you most sincerely for your evidence.

A. Kia ora, ngā mihi.

(14:59) JUDGE MILROY TO KELLY STRATFORD:

Q. Kia ora Mr Stratford. I just have one question in a comment saying that Waikare seems to be in one of those terrible catch 22 situations, where you need the data to get the funding and the support, but you can't the funding and support to get the data and around and around you go. It seems pretty difficult situation to be in. I just – the one thing I couldn't quite understand was that you mentioned that some councillors may be reticent about making a declaration of a state of emergency because they fear it might have an impact on the economic wellbeing for the district. Can you – I'm just not quite understanding how that –

A. I could park back to the event where I first became interested in what climate was doing and a cyclone turned into a tornado and took the roof off my own house in July 2014, which was not far from Waikare actually. There was a road a state highway – washed out, communities were cut off for three days and the elected body then, which I wasn't on, I rung and rung and said you guys needed to do a declaration so that we can access some support, you know, get more resources up here and they didn't want to because there was a big event coming that weekend. They didn't want to ruin the event. The commercial nature of a big event that was happening in our district. That kind of attitude doesn't happen these days and in hindsight, you know, I think – our mayor was away and if he had have been here, he probably would've declared. But we didn't have the data, like I knew that Waikare was being impacted and I was like, 'We

should be doing a declaration', but they were like, 'no, no, we don't need to because it's only one road and we're getting in there to fix it and they will have access to the agencies', and what we learnt from that is no, they won't have access to the agencies so just declare next time. Yes, but I hope that helps with the economic side of things.

Q. Yes, thank you that helped a lot, to understand what the thinking was.

A. Yes.

Q. Those are all my questions, so I'll just hand you back into your counsel in case she has any questions by way of re-examining.

(15:02) MS CHERRINGTON TO KELLY STRATFORD:

Q. I just had one question of re-examination, Ms Stratford, and it really just follows along the questions from the Tribunal, which really relates to the importance of declarations, but as her Honour said, you've got the catch 22 situation of not having the data to inform those declarations and I just want to – we talked about the Crown actions and inactions in this inquiry. What is the length there? Where are missing? You know, what is needed to be able to provide councils, the local councils with the ability to make declarations, with the ability to those things for communities like Waikare.

A. Yes. Resource the – even, you know, we have heaps of river catchments that aren't equipped with the infrastructure, so we prioritise where we're putting rain gauges and river gauges. You know, resource hapū to put them in themselves and then they'd digital so they would link up with our tech anyway, that would help us immensely and being able to know where we should be doing our next climate adaptation planning, work, do we need to reprioritise where we're going to do that mahi, where we are going to send out civil defence response or civil defence planning because these people are in a severely impacted area continually. Without the data, it's like they're crying out for help, they're telling us time and time again, I'm seeing it with my own eyes what's happening, but they're not the only community in our district that it's happening to. So, you know, we have to spend ratepayers' money and it's hard, we don't have enough to go around. So yes, resource.

Q. And just to wrap that all up. In saying that, local government is inhibited –

A. Yes.

Q. – by those restraints and being able to make those declarations.

A. Absolutely, yes, yes.

Q. Well, thank you Ms Stratford, those are all my questions and it's just for me today to thank you again for making yourself available, for doing the work to get this evidence again. And also, because I've been hassling her all day with these messages with the changing timetable. So again, to thank you for making yourself available earlier for the Tribunal, really appreciate it, tēnā koe.

A. Kia ora. Tēnā koutou katoa. Ka kite.

JUDGE MILROY:

Tēnā koe. And can I add my thanks to you too, Ms Stratford, for being willing to change the time of your appearance and for your evidence.

KELLY STRATFORD:

No worries. That's absolutely fine. Ka kite.

JUDGE MILROY:

Ka kite. That brings us to the end of the evidence for today. We did try to see if Dr Charters would be available but unfortunately she cannot be available today. So, I will just ask our kaumātua to close for us.

KARAKIA WHAKAMUTUNGA (KEVIN PRIME)

HEARING ADJOURNS: 3.06 PM

HEARING RESUMES ON WEDNESDAY 27 MAY 2026 AT 9.01 AM

JUDGE MILROY:
Ata mārie, welcome back everybody. So this morning we have evidence from Dr Charters and she's here but yes, we'll start with our karakia as usual.

KARAKIA TĪMATANGA (KEVIN PRIME)

JUDGE MILROY:
So yes, we have Dr Charters I can see online. Tēnā koe. So I'll hand you over to your counsel to introduce you and begin reply evidence.

(09:03) MS TE WHENUA: (CALLS)
Tēnā koe, Ma'am, otirā tēnā tātou. Tēnā anō hoki koe Matua Kevin i korowaitia tātou i ngā manaakitanga o Te Runga Rawa i tēnei ata.

Kua riro i ahau te hōnore nui ki te whakatau i waenga i a tātou tō tātou kaikōrero a Ahorangi Claire Charters kua whai wā ki a tātou i tēnei ata te whakahoki anō ki te kōrero mō tēnei kaupapa nui ki a tātou katoa mō te kerēme o Te Arawa, ana he uri o Te Arawa tō tātou kaikōrero. Nā reira ka mihi ki a koe, Ahorangi Charters.

Ma'am, i tēnei ata, ko tā Ahorangi Charters he whakarāpopoto i tana whakautu ki te taunakitanga o te Karauna, ā, ka whakawātea anō ki a koutou kia patapatai atu ki a ia.

So it's a pleasure to welcome back to the Tribunal our witness Professor Charters this morning who is witness on behalf of the Te Arawa claim of which she is also a proud descendant.

Her brief of evidence is the reply evidence Crown evidence dated 26 February 2026, that's #A081(i), and her appendices to that brief are #A081(j) and A081(k).

Professor Charters' approach this morning will be to summarise her reply evidence and then of course open it up to questions. I'll hand it over to you, Professor Charters.

(09:05) PROFESSOR CLAIRE CHARTERS: (#A081(i)-(k))

Tēnā koe. E ngā iwi, e ngā mana, e rau rangatira mā, tēnā koutou, tēnā koutou, tēnā koutou katoa. Can you hear me okay? Perfect, okay.

So I want to introduce myself because this is the second time that I've been appearing. But as pointed out, I will be covering very briefly my evidence in reply in response to Ms Hallum particularly, but also to summarise the points, some of the points that we couldn't canvass in the first time that I gave evidence.

I do want to pass on my apologies for not being able to shift times to present this evidence. I understand that there were other opportunities but it's with regret that I could not do that earlier, so apologies. Aroha mai for that.

Look, I think basically the question that we've been looking at and particularly with response to Ms Hallum is this question as to what extent are indigenous peoples' rights under international law binding?

As I pointed out in my original evidence, I don't think that that is the only question. I think there are many other ways in which international law and the rights of indigenous peoples is incorporated into domestic law be it politically or legally through the work of the courts, the decisions of the courts and so on. But focusing in on that more formal legal question about whether it's binding or not or these rights in the Declaration are binding will be my focus here.

The other thing I would say is that we're focusing really on the extent to which declaration rights are reflected in binding international human rights agreements, remembering that declarations in and of themselves are not binding. But the point being in the first instance that these rights are reflected in very much so binding obligations under human rights treaties.

To that extent, I would like to point you to, I think, in paragraph 10. Unfortunately, I'm toggling between different screens on an iPad I don't really know how to use. But I understand it's in paragraph 10 in my evidence and response, the reference to the work of Dr Luis Rodriguez-Pinero.

MS TE WHENUA:
Aroha mai to interrupt you, Professor Charters, and Ma'am, if you like, I can share my screen with the relevant paragraphs?

JUDGE MILROY:
Thank Ms Te Whenua but we do have the, that is that the panel has the evidence of Dr Charters in front of us so we're not in the same position as Dr Charters in trying to work with our screens.

PROFESSOR CLAIRE CHARTERS: (CONTINUES)
(inaudible 09:08:22) evidence. Aroha mai. Okay.

I mean, in this case, I'm not sure it's terribly important to have the text in front of you other than to see that reference to the work of Dr Luis Rodriguez-Pinero. Now Dr Luis Rodriguez-Pinero has written the most authoritative book on the International Labour Organisation's Conventions on Indigenous Peoples' Rights and is a very high level UN official who's worked and advocated for indigenous peoples' rights also for many decades now. Is considered a globally leading authority on the rights of indigenous peoples.

You'll see there the reference to a particular article that he's written in a book that I edited with Rudolfo Stavenhagen, Dr and Professor Rudolfo Stavenhagen, where he, and now I'm going to try and toggle without losing you, where he outlines a number of the overlaps between declaration rights and rights and human rights treaties.

So they include, and I can ask that that particular table was sent to you, they include, for example, under the Convention on Elimination of Racial Discrimination, the prohibition on racial discrimination, which correlates to

Articles and the Declaration of 5, 18, 19, 32, subparagraph (2), 38, paragraphs 11-13, 34, 32(1).

So with respect to the International Covenant on Civil and Political Rights, he refers to the Article 1 of the ICCPR, as we call it, Civil and Political Rights Treaty, and its correlation then in Article 3 and 4 of the Declaration of Rights to Self-Determination, Autonomy and Self-Government.

And indeed on self-determination, the language in the Declaration word for word is the same as that in the Human Rights – in the International Covenant on Human Rights.

Similarly, I could go down for many more examples. He refers to overlaps between also the International Covenant on Economic, Social and Cultural Rights. He refers to overlaps and consistent, you know, rights in the Declaration overlap with rights in the Convention on the Rights of Children, on the Convention Against Torture, on the Convention Against the Elimination of Discrimination Against Women and so on.

So suffice to say that there is considerable overlap between the Declaration rights and rights in binding international treaties which New Zealand has ratified.

Now I want to also just highlight, while not binding on Aotearoa New Zealand, that there has been a lot of jurisprudence from the Inter-American Court on Human Rights which is applying its own American Convention on Human Rights. Now, in applying the American Convention on Human Rights, the court which is binding on a number of states, most states in fact in the Americas, **(inaudible 09:11:39)** interpreted that American Convention to robustly protect, as one example, Aotea – sorry – rights to lands, territories and resources for indigenous peoples. And it is done so by interpreting the rights to property, culture and equality.

Now the relevance of that here I think is that international – internationally

binding human rights treaties have been authoritatively interpreted to robustly protect indigenous peoples' rights that are in the Declaration.

So yes, my point is being that most if not all of the rights in the Declaration overlap with rights in binding international human rights treaties, and via that correlation therefore become binding on New Zealand when we have ratified those particular treaties, in which we have done in almost every case of the main UN Human Rights Treaties.

Moving to the question of customary international law, because I think this is potentially where we have the most disagreement, and I suffice to say that I agree with much of what Ms Hallum has presented and hold her in the highest of regard as well but I think there are some finer points which where we do have a slightly different opinion and which are very relevant to this particular inquiry.

So one of the first points I'd like to pick up is in Ms Hallum's evidence is that she refers to New Zealand's statement that it gave at the moment in 2010 when it expressed its support for the Declaration in the UN General Assembly. One of the points which I would like to make, firstly, is that in principle, New Zealand expressed overall and in general significant support for the Declaration as you might expect when it's expressing its support in the General Assembly. To the extent that the New Zealand Government said that some of those rights are aspirational and/or that New Zealand's, I guess, domestic constitutional legal framework would I guess determine its extent of its legal engagement with the Declaration.

I would say two things: One, a statement by a state on expressing its support for a declaration in and of itself is not legally binding in any way. It does not protect itself. It's doesn't work like a reservation to a human rights treaty. So in and of itself, while important, I think has no legal basis on which New Zealand can now say that its domestic constitutional framework would determine its engagement with the Declaration.

The second point that I would make, and I stress this one is potentially more

important, is that domestic law cannot obviate the obligations that New Zealand will undertake or any state will undertake or agree to under international law. Those obligations exist under international law irrespective of the domestic legal situation. So whether or not New Zealand incorporates automatically or not international law or wants to say that its domestic constitutional structure dictates how it will engage with international law, that is of no consequence if there is an international legal obligation under international law on the state. And of course that must be right because otherwise countries potentially like Aotearoa or any other state could say, well, we sign up in international law but in fact our domestic law regulates that, and any state could then shamelessly breach human rights and not being accountable in international law, so that's just putting it in a negative way.

Moving on to then whether or not declaration rights or indigenous peoples' rights under international law constitute customary international law.

One thing I would like to highlight and explain with respect to my evidence in response is that what you will see under the International Court of Justice Statute that under Article 38, subparagraph (1)(d), it talks about as a subsidiary evidence of international law the teachings of the most highly qualified publicists of various nations. Now that means that those teachings have some international legal status when they come from the most highly qualified publicists in the various nations. So that is in some sense a quasi-source of international law alongside treaties, customary international law and general principles of law.

And that is exactly the reason why I've highlighted especially the work of Professor James Anaya and that of the International Labour Association which state that many indigenous peoples' rights are in fact customary international law because their opinions are of such weight under international law in and of themselves as an expression of what is or is not international law.

I imagine many of you are very familiar with Professor James Anaya. He was a former Special Rapporteur. But I think most people would agree that he's the

foremost international lawyer with respect to international human rights. He's written many textbooks and, yes, as I say, I think in my opinion the most highly respected and qualified of publicists in the area of indigenous peoples' rights under international law. And he points out that much of the Declaration rights are in fact customary international law, in his view really counts, as does that of the International Law Association's Committee on Indigenous Peoples' Rights, which included many of the other most highly regarded publicists globally with respect to indigenous peoples' rights.

I would add that many, including Professor James Anaya, are respected as international lawyers globally in their own rights, not just in the context of indigenous peoples' rights. So there's no doubt that their views are highly significant. And I would say that's why I would defer to their opinions as being the most authoritative as to what constitutes or not customary international law.

And then on top of that one, I think another point that where I think we might have slightly different views is the value of these statements, work, policies, jurisprudence is what I've called it of entities like human rights treaty bodies that apply the human rights treaties, also of the Expert Mechanism on the Rights of Indigenous Peoples, also the UN Permanent Forum on Indigenous Issues, also the jurisprudence of Special Rapporteurs with respect to indigenous peoples but also with respect to other rights.

Now, Ms Hallum I think correctly picks up the, in and of themselves, those statements do not constitute, are not a source of international law. However, in my view, they are highly authoritative as to what constitutes international law, much like the work of the most globally recognised international publicists. In many cases, including those of the treaty bodies, they are comprised of not only international lawyers but certainly some of the most globally recognised – I feel like I'm becoming repetitive – experts on human rights generally is true, of the Expert Mechanism on the Rights of Indigenous Peoples.

And so what they say is highly authoritative also, even if the committee's findings and/or interpretations are not in and of themselves constitute

international law, and that is why or one of the reasons why Professor James Anaya draws on them to constitute evidence of customary international law.

Now secondly, and this is a point I think Ms Hallum speaks less to in her evidence and also oral evidence before the Tribunal, which I've had the fortune of being fortunate to be able to listen to. Like many states globally, New Zealand when it is before international tribunals, before the Expert Mechanism on the Rights of Indigenous Peoples and the Permanent Forum express very positively their own commitment to indigenous peoples' rights.

Now, those statements at the UN Fora do go to reflect opinio juris, that idea of a legal binding obligation. There are very few instances when New Zealand has come up and said, look, these are not important to us, we try to comply to te Tiriti o Waitangi. It's a very important founding constitutional document and so on and so forth. Now, those statements by states are very important when we're trying to work out what constitutes under state practice and opinio juris **(inaudible 09:22:02)** test for customary international law. And even in instances recently when New Zealand has come up for quite serious criticism with respect to various recently enacted laws has expressed and presented itself as finding indigenous peoples' rights is very important to it. So those statements, repetitive statements are significant.

Not only that, I would like to highlight the World Conference on Indigenous Peoples' Outcome Document of 2014. Now, that was the most high-level, including heads of state, et cetera, conference to come up with I guess a resolution of the highest order in the General Assembly with respect to the rights of indigenous peoples. Now that urges states to achieve the ends of the Declaration. So that is very influential and important when we're considering what is customary international law.

Secondly, annually the General Assembly passes resolutions with respect to indigenous peoples' rights, which are passed with consensus, including New Zealand's vote in support, which again supports and states quite clearly states – urges states again to achieve the ends of the Declaration. So again,

that's very strong evidence of states' acceptance that indigenous peoples' rights have this, you know, international customary law quality to them.

Now, I've been through and I won't repeat some of those special particular rights that constitute customary international law. But suffice to say and again to the extent that I summarise, they include the right to self-determination, which again is that text on right to self-determination in the Declaration is verbatim, that and the International Covenant on Civil and Political Rights in Article 1 of that binding treaty and the binding treaty on which our Bill of Rights Act is based. So there's a strong incorporation of that treaty, albeit not self-determination in domestic law.

So, and I understand that Ms Hallum has not gone into examples of state practice, remembering again that that's one of the two limbs to establish customary international law, but has not gone into state practice, consistent state practice that we see globally, particularly in western liberal states of recognition of the right to self-determination. So they include, as you can see Canada's treaty process, which I'm sure that you are very familiar with, particularly in British Columbia, where those treaties set out and tried to give effect to indigenous peoples' self-determination through jurisdiction over their territories, through jurisdiction over matters such as culture, education and so on. Also the environment which obviously is very important in this case given that it is with respect to climate change responses and New Zealand's duties.

The U.S similarly, their inherent sovereignty, you have almost 600 indigenous Indian nations that exercise pretty strong self-determination. Their inherent sovereignty has been always recognised under the U.S Constitution and in some very important cases in the last five years upheld by the U.S Court. And Mexico, for example, we have just seen very strong constitutional reform that, for a long time they've had the right to self-determination but to recognise indigenous nations as another alongside the federal government and individual state governments the status as formerly as I think they call them subjects or public subjects, legal public subjects – excuse me if I've not got that quite right, but as a form of government which receive taxpayer money in order to

self-regulate. Greenland is a very important example and so on. I can name more if need be.

So with respect to again, and I just add this as an end note, New Zealand's opinio juris to the extent that is reflected, the Declaration rights are in fact in the minds if you like, if there is such a thing, of states, customary international law, I would like to point out again the numerous references to the Declaration in case law, particularly coming from the Supreme Court, that it has been cited indeed many times by the Waitangi Tribunal. It has been cited in Parliament and there are examples that we can read in Hansard.

Now that in and of itself does not make it – opinion might not reach that level of New Zealand's understanding of opinio juris, but we are looking globally when we're talking about opinio juris, and certainly those references in courts, Waitangi Tribunal, Parliament, as state voices to some extent are evidence of developing opinio juris.

So I will leave my response there with respect to the binding nature, which I think is the point that I'll pick up in response to Ms Hallum's evidence. And as I say, I agree with much as what she said as to what constitutes customary international law and so on, but for the reasons that I've outlined would argue that most of the Declaration, if not all of it, is binding via international human rights treaties on New Zealand and/or via customary international law. Tēnā koutou katoa.

MS TE WHENUA:

Tēnā koe. Aroha mai, kei a koe, Ma'am.

JUDGE MILROY:

Thank you very much, Dr Charters, for that evidence to us. The Crown has no questions for you, so we're at the time for questions from the panel. Firstly, from Ms Kapua.

(09:29) PRUE KAPUA TO PROFESSOR CLAIR CHARTERS:

Q. Kia ora Professor Charters. Ngā mihi ki a koe for your evidence.

A. Tēnā koe. Ngā mihi.

Q. And I just wanted to confirm that that table you referred to you will send through for us too, to do comparative –

A. Sure, it is in a – yes sure.

Q. Thank you. Just in terms of the evidence, I just, and it may be kind of slightly out of left field, but I just thought I would ask while we have you here what your thoughts were about the Victorian response to treaty, to how you incorporate treaty or indigenous rights?

A. So we're thinking about the Victoria, Australia?

Q. Āe.

A. So look, I have had – I'm very interested in the new Victorian Treaty, but I do not know its con – I have read its contents but I don't feel like I'm authority on it. I followed quite closely the process. But just to, suffice to say that I don't think I'm an expert on it. But I would say this that I think the Victorian Treaty goes towards recognition of self-determination because it's a post facto attempt to, I guess, establish a partnership between indigenous peoples and the state there in recognition to some extent that the claim to sovereignty was never – was always somewhat precarious. So in its attempt to, in recognition of that, to again, to engage with indigenous peoples at that very fundamental level. I think that the arrangements in there which relate especially to participation of Aboriginal nations and individuals based in Victoria, I think that that level of participation goes to very strongly the right to self-determination. It's the key idea or certainly one of the most fundamental falling out of that treaty. Now, of course, when you apply those understandings of requirements of participation in state lawmaking, state policy making, and so on, that is a reflection or one element of the right to self-determination. So you would see it, I would at least see it even though it's not a federal government and Aboriginal nations treaty, it's a state and indigenous people's treaty, that it is important in understanding that participation in governance lawmaking, policy making and so on at all the different levels is, you know, it goes to practice, state practice to some extent and also

opinio juris in my view where it's consistent with other nations. Evidence of state practice and opinio juris and preponderance of states.

Q. So from that, that international context that perhaps –

A. Yes.

Q. – precipitates a treaty or treaty legislation at this time would be a factor that you would see that's **(inaudible 09:32:54)** relevant?

A. Absolutely – aroha mai if I spoke over you –

Q. No, no.

A. So absolutely and I would say this about the Australian context is that the Declaration on the Rights of Indigenous Peoples has resonated strongly, more strongly in my view in Australia than it has here. It has become the, for many indigenous peoples but also to some extent within government but with indigenous people's sort of rally and cry or there's a reliance on it in a way that we don't see here, and I think that's because in Aotearoa when we're talking about Māori rights at large we often put those Māori rights and understand them in the context of Te Tiriti o Waitangi, whereas in Australia I think there is a very strong engagement with the Declaration maybe because there isn't something like a treaty, so they've used it as a rallying cry towards greater respect for indigenous peoples' rights there. And you will see, for example, well, in successful, that in the Voice to Parliament movement that was then put to referendum, the Declaration exists very much in there. Now again, I'm on a slightly shaky ground but I would also point you to the Queensland Human Rights, relatively recent Human Rights legislation which also, as I understand it, again, forgive me if I haven't got this quite right, but certainly in the preamble refers to Aboriginal nations' self-determination in there in its Human Rights instrument, which is then binding to some extent, you know, it's law, constitutes law in Queensland, and that falls out to some extent also from the Declaration. So in the Australian Government for example, which New Zealand despite many requests does not do, provides funding for many, in some cases many tens, historically many tens of indigenous advocates to participate in UN meetings. So there is very much this engagement with the Declaration at the federal level also. That's not to say that Australia doesn't breach those rights but those factors do go

towards customary international law and I think it puts New Zealand to some extent in poor light comparatively. Again, it's not to say that Australia is a great upholder of indigenous peoples' rights, but legally and as a matter of public governance, it's very much in the consciousness of people working in this area in a way that I don't think it is in general here in Aotearoa.

Q. Thank you. And just in terms of customary international law, what's your view about a state's ability to diminish, remove, whatever, customary internation law by domestic legislation?

A. Look, New Zealand could try and do that, but at the international level, if there's a propon – if you establish customary international law, what one state does if you've got a multiplicity of states who are giving effect to establish state practice opinio juris, what New Zealand does then constitutes breach – sorry, I'm just repeating myself putting it in slightly different language. So I guess what New Zealand could do is pass legislation to say that customary international law does not apply here. They could do that, like, no examples where it's done so, because of course customary internation law becomes automatically common law. So I guess that obligation on a domestic level could be overridden, but I don't know of any legislation that does that. I only know of legislation that I think is in breach of that and which there's been many recommendations and findings of the Tribunal to that effect of late. it's not acting consistently with that customary international law is breaching customary international law. So it doesn't diminish or remove, and hopefully I was making that point also earlier, the international legal obligation. So there's your obligations under international law. What domestic says or not is if you've signed up to the treaty or something, a right constitutes international law, customary international law. What the state does is irrelevant if it signed up, et cetera **(inaudible 09:38:09)** constitute, what it does is irrelevant, in fact becomes a breach to the duty that the state owes at the international level. And of course that's especially important in human rights because you can't or shouldn't be able to get out of your obligations to abide by human rights by passing law that's contrary to human rights. Now that is fundamental, right? Otherwise, you get – that's

what states that are, in fact, summarizing have been or are or continue to be egregious human rights breaches, you can't claim or state sovereignty protects us because the international obligation is always there. It makes a nonsense of international human rights if you can egregiously breach because you pass domestic law, the international legal obligation is separate that you owe to the international community, which is exactly why special rapporteurs, other international entities can and should be jumping in and assessing whether a state is in compliance or not with its international legal obligations, and which happens very regularly when New Zealand presents almost annually to at least one or other of the Human Rights Treaty bodies and there will always be comments about what is potentially positive but also where it's got concerns with New Zealand's compliance or not with human rights.

Q. Kia ora, thank you for that.

A. Tēnā koe.

PROFESSOR DAVID WILLIAMS:

Just first, Judge, I need to declare that the witness is a friend of mine, but that we haven't – and a former colleague, but that we haven't engaged in research together on international lawmakers, so I don't think I need to recuse myself and I think, unless counsel put up their hands, I will ask just a couple of questions. (no audible response)

JUDGE MILROY:

Kei te pai.

(09:40) PROFESSOR DAVID WILLIAMS TO PROFESSOR CLAIRE CHARTERS:

Q. All right. Tēnā koe, Professor Charters.

A. Tēnā koe.

Q. Can I just follow up on the question you've just got from Ms Kapua because I attended a talk on Monday night from one of the co-leaders of the Victoria State-wide Treaty process. Very inspiring it was. Just the word 'state practice in international law' refers to nation states I think.

A. Mhm.

Q. And in your answer to Ms Kapua you suggested that perhaps what happened in Victoria might be influential in national law terms. Does that mean what Alberta says that's different from what the federal government says or what Saskatchewan says or what Arizona says, California, subnational states, does their practice become part of state practice in internation law terms?

A. Mhm, at the federal level, mhm. I think that's a very – it's a contentious issue about which as much, as much is written, and again I wouldn't put myself forward as an expert on the question of which particular substate governing entities, where they say something that's different from maybe the federal government and its representations at an international level. But just suffice to say that there is a lot of thinking on that. But yes is the answer to that question. To some extent you have to look at, you know, these are state governance entities which usually have some, you know, the recognition of states is usually constitution matter **(inaudible 09:42:23)** constitution usually inside many constitutions as it is in the case of the Australian Federal Constitution. So yes they are influential but in assessing what constitutes state practice and/or – sorry, I'm not sure if that came up – in assessing what is customary international law you would want to look at the state as a whole, including obviously what the federal government says or does not say with respect to indigenous peoples' rights, so you would want to look holistically. But yes for sure what happens in governance entity and states is also relevant to that assessment and I would point to, amongst other examples, the British Columbia's incorporation of the Declaration and its legislation with respect to the Declaration that is relevant. In that case there are very strong overlaps with the Federal Government's legislation to implement and incorporate the Declaration into Canadian law so there's not so much potentially the tension there. But you know, Australia, when it's – I mean, this waxes and wanes according to the government policy and which party is also in power, but of late Australia has been very strong in stating the importance of indigenous peoples' rights in many international for a. It has led a particular movement for enhanced participation of indigenous

peoples and international bodies, was one of the most important states in getting some of those policies through in the Human Rights Council. So Australia is showing at least at the international level some significant leadership with respect to indigenous peoples' rights. So I think that is important, what it says and what it's doing at the international level also.

Q. I'm still a little bit worried. So for example, in Victoria, the treaty process has come to a successful conclusion thus far with the legislation passed in December 2025. But I understand the Victorian government – the Queensland Government has reneged on the proposal that you quoted from. So does that influence state practice when a subnational state says no, we're not going to go along with this, is that also influential?

A. Absolutely. I think, again, I think, I mean, there are in those I guess states where – I mean here, not in the… I'm going to provinces just because when you're talking at the international level, the state under internal law and states within a state, so I'm just going to use provinces. I know that's the wrong word but just to try and be clear. But when a particular, say, in Canada, province, well, there's discordance or differences in their laws with respect to indigenous peoples' rights, I think you have to look holistically and particularly at what the federal government is doing and saying that it's probably the most important. But yes, I think that those individual states' progress is relevant and you would have to holistically look at movements in Queensland and movements in Victoria, legal movements I'm talking about in public policy as making some assessment. It's a bit like, well I'm not sure if it's a good analogy but for example what states say, what the Waitangi Tribunal indeed says, are relevant to an assessment of whether New Zealand as a state is – whether that opinio juris exists or not. So even if the New Zealand government is saying no we don't think that these are binding at the international level, which actually, as I was saying, conflicts a little bit with what it is actually saying when it's before these international bodies, but if it was loudly pronouncing that you would want to have a holistic assessment as of what the courts are doing, of what the Waitangi Tribunal is doing because you're also part of the state. So yes you can have – it's a bit messy I guess but they are important to make a holistic assessment

of whether a state has expressed opinio juris and/or has state practice to that effect.

Q. Thank you.

A. And these things are going to change according to political priorities of course, and they do regularly change, but it's – yes, I'll leave it there.

Q. Thank you. So can I just ask one more question? My understanding is that international law obligations, if customary law is crystalised in the way in which you suggest in relation to the UN Declaration –

A. Yes.

Q. The entity that's bound by international law is the executive branch of government, of the Crown in New Zealand. That was my understanding, but in paragraph 19 of your brief of evidence and in your oral response to Ms Kapua just now you said that New Zealand is bound by customary internation law which is crystalised, automatically becomes common law. Now I query about your use of the word common law. Do you mean common law as in the law made by judges?

A. Yes.

Q. So judges are bound to implement international law, New Zealand judges?

A. Becomes common law in the same way that there is any other common law rule. So that's the relevance I guess here. So the point about the executive being bound, so effectively the, I mean, through all sorts of ways which, you know, you would understand much better than I do, the obligation is on the state. The executive is New Zealand state representative, but it's not the executive, it's the large estate of Aotearoa or New Zealand or any other state that then has these international legal obligations. And I'm thinking, for example, of, again I feel in shaky ground because I haven't looked at this specifically but I'm thinking of Justice Cooke – President Cooke's decision in the *Tavita* case I'm pretty sure it was back in the 80s where he refers to the courts, the Court of Appeal at that point, should not take a decision that would put New Zealand in breach of its human rights obligations. That it has to be aware that if it does so, that New Zealand would come under criticism of human rights treaty bodies at the international level, and that was an

element in his decision-making in that case. Again, I feel in shaky ground because I have not read that case a very long time, but I do remember and have taught that case to that effect. So it's the state that holds the binding. And there's many different arms of states, a state, and they might say different things, but that is important to your assessment of whether there is opinio juris. And of course, it's not just what the executive thinks, although the executive is our representative.

Q. Okay. Well your evidence says automatically becomes common law and we between us **(inaudible 09:50:59)** to decide the matter, counsel for the Crown and for the parties will no doubt address us on that and we'll leave it there.

A. Yes.

Q. Thank you very much Professor Charters for your evidence.

A. Thank you. I would say the – you know, in terms of the so-called bindingness of the human rights, sorry, of the Declaration rights and indigenous peoples' rights generally, I would say that customary international law is always quite messy because of these pulling in different directions. So in my evidence, I have stated relying on, under ICJ International Court of Justice Statute 38(1)(d), the conclusions of the most highly regarded publicists which also do their opinions count as to what constitutes customary international law? But I don't want us to get too sidetracked. I would argue that many of those rights are customary international law for the reasons that I've given. But I don't want to get too sidetracked from the point that New Zealand is bound under treaties, human rights treaties that it has ratified. Now that you might say is where the primary obligation comes with respect to international rights, human rights and indigenous peoples' rights because they fall in under and should be, international human rights treaties should be interpreted consistently with the Declaration and also those rights are in some cases word for word in the Declaration, are the same as in those internation binding treaties. So if you're looking for, I guess, the primary way in which declaration rights are enforce, or I would say is via those international human rights treaties that New Zealand is bound by and is ratified. But I would argue also under customary international law and the relevance,

especially of customary international law is exactly that point that you raised that it does become under common law.

Q. Kia ora anō. Thank you.

A. Tēnā koe.

(09:53) JUDGE MILROY TO PROFESSOR CLAIRE CHARTERS:

Q. Kia ora anō Professor Charters. Thank you for mentioning *Tavita*. It's a long time since I taught or looked at that case.

A. **(inaudible 09:53:22)** shaky ground. So that could be explored by counsel perhaps.

Q. But yes, it certainly used to be one of those cases that you had to know about if you were going to be a law lecturer.

A. Yes.

Q. My question is really in terms of, and I suppose it's always been the question about international law and the sanctions for failing to comply with international law, and we can be criticised, New Zealand that is to say, can be criticised in various UN for a, but for the bulk of New Zealanders I'd have to say that those criticisms would be pretty opaque or in fact possibly non-existent to them, and perhaps the elements of our legislature as well. So that leads me on to the question of whether aspects of the New Zealand Climate Change legislation and policy as it applies to indigenous – to Māori would be a matter that could be taken to the International Court of Justice? Because I think people would know about that.

Q. The matter if it – there are two ways in which a matter can come before the International Court of Justice and that is an action from another state, firstly, and secondly if particular arms of the United Nations bring and ask for an advisory opinion on what is the legal obligation or not. So I don't think, unless another state would bring a case against Aotearoa, that would be potentially one way in which it could become before the ICJ but that state would have to show that as a breach of its rights with respect to it is my understanding. But and we've just seen recently the International Court of Justice Advisory Opinion with respect to climate change and references also to I think there is a – sorry again please I

need to check this – I think there is a reference in a footnote to the Declaration but again please that's something that would have to be, I would have to check that. That is a way in which it's stating authoritatively the, you know, global judicial authority, the World Court as it's often referred to is telling state what their obligations are and of course just very recently we had the General Assembly effectively endorse that decision, effectively saying the General Assembly saying that that decision was correct and legal obligations exist on states. So going back to that question, the sanctions that apply to a state, whether or not there are sanctions or not doesn't mean that a state, New Zealand let's say in this case, is not in breach of its international legal obligations and there can be many findings to that effect. And whether or not a citizenry, nation, New Zealand, New Zealanders, Parliament, Parliamentarians, agree with that or not is by the by as an international legal obligation. That's not to say that it's unimportant what a citizenry thinks with respect to enforcement or not. If a population in general finds that human rights are important, which I would argue that we should, then I think the influence of a finding that there are human rights breaches should as a matter of the state's legitimacy impact on what a state does. It doesn't mean that they do or not but I think it should as a normative matter, and normatively we would still be in breach of our international legal obligations.

You know, the power and force of internation law is as much a matter of politics as it is law in the sense of practical enforceability, and again going back to that point, if there is a preponderance of people who care about human rights maybe they will be concerned and vote accordingly about that. And we should be concerned when New Zealand is found to be in breach of international law. Now, I think there's a special place in that when you think about Aotearoa and Western legal, particularly Western liberal democracies who have been historically, including New Zealand very much so, involved and in advocates for, some of the strongest advocates for human rights in the **(inaudible 09:59:33)** Human Rights Standards at the international level. And I would say that, and still hold themselves out in that regard. So New Zealand, for example, is very active on women's rights at the UN level. And at least for some time

potentially still runs the resolution on women with respect to women's rights. So I think there's a serious hypocrisy when a state then picks and chooses which human rights it might potentially follow or lead on. When New Zealand says, look we don't agree with indigenous people's rights, which it doesn't because it wouldn't want to be seen to be doing that, not in international for a, you do hear those comments and there are examples more recently as well, but it certainly undermines New Zealand's moral ground with respect to all human rights, and that embarrassment factor we don't see, it's not as visible at home in Aotearoa, but certainly I have seen what I would say is state embarrassment where it is being pulled up on its human rights record and will sometimes respond to that criticism by defending its human rights record. And when I'm talking about human rights, I'm also thinking about New Zealand's involvement in the development of the UN Charter and the inclusion of Human Rights in there, which is the constitution of this international legal level. So why there not might be might not be sanctions in cases like Aotearoa that criticism, the hypocrisy, the losing of our international high ground, particularly for a western liberal states, a state where human rights are part of our understanding of ourselves that we are human rights abiding. So those sanctions are – you can't divorce international law from politics in that sense I don't think.

You know, I think when human rights gets so bad in international law then states will and do come in. And, you know, in this case while again there would be nuances to it, in this case genocide would constitute is an international crime as we've seen also again more recently declared in the UN General Assembly. So then at some point potentially the use of force is warranted. Now, the use of force is its own law, highly debatable, debated, contested, particularly currently given the wars that are underway currently be they in Ukraine and Iran is two examples that we are probably familiar with, especially in Aotearoa New Zealand. There are a lot of questions and contestations about whether that is consistent with international law or not, and use of force is a contested area ironically of law. But there has been examples where this concept of humanitarian intervention and the intervention of Kosovo, one example, arguably also

Iraq, arguably also Iran to the extent that you've heard justification based **(inaudible 10:03:06)** the human rights regime is so poor and the government is so oppressive, which gives some legitimacy even if not even perhaps not legal authority, but legitimacy in entering. You hear that as part of the dialogue right from those states that support. So at the end of the day sanctions can be pretty strong.

Q. Yes, I asked about it because New Zealand certainly says and is reliant on a rules based order globally as well as –

A. Exactly, yes, exactly.

Q. And so, a criticism that we might be in breach of international law is clearly not consistent with our statement **(inaudible 10:03:57)** statements, New Zealand statements about the need for a rules based order. Well, those are my questions and can I again thank you very much for your evidence and I'll just hand you back to your counsel in case there are any questions by way of re-examination.

MS TE WHENUA:

Tēnā koe, Ma'am, tēnā koe Professor Charters. I have no questions of re-examination but just really wish to strongly reaffirm the thanks given by our judge to you. Anō nei, kua whai wā, kua whai whakaaro mō tō tātou kaupapa nei. Tēnā koe.

JUDGE MILROY:

Yes, thank you again, Professor Charters and we'll let you go now.

PROFESSOR CLAIRE CHARTERS:

Tēnā koe, tēnā koutou katoa.

JUDGE MILROY ADDRESSES MR SHARP (10:05:25)

(10:05) MR MICHAEL SHARP: (OPENS)

Just some introductory comments, your Honour.

Professor Naish's evidence has been filed through Wai 2607 which is Mataatua District Māori Council, and Professor Naish has filed a PowerPoint presentation which has the purpose of updating the Tribunal on the state of play in climate change science since Professor Naish gave his evidence about six months ago.

So given the rapidly changing situation with climate change, although Professor Naish's evidence is not reply evidence as such, we just sought leave to call his evidence to update the Tribunal on what is happening. So if there's no objection to that, your Honour, that's how I propose for Professor Naish to provide his evidence?

JUDGE MILROY:

Yes, thank you, Mr Sharp. Any update is helpful, thank you.

MR SHARP:

And you'd also see, and apologies for there, when we filed the evidence we didn't his supporting documentation, so that has only been filed yesterday so I don't expect the Tribunal to have – well, there's no need for them to have come up to play with that, that's just really for reference for the Tribunal in delving further into the issues that Professor Naish has raised.

One of the documents that has been filed, and your Honour did request this at the start of the week, that's the latest Climate Change Commission Report on the state of claims by **(inaudible 10:07:30)** which Professor Naish, as you will see from his presentation he'll be speaking to.

So with that, your Honour, I see Professor Naish has come onto the Zoom.

(10:07) MR SHARP: (CALLS)

PROFESSOR TIMOTHY NAISH

Q. Tēnā koe, Professor Naish. Can you hear me?

A. Tēnā koe, your Honour. Tēnā koe, Michael. Can you hear me?

Q. Yes we can, thank you.

A. That's great.

Q. I'll just leave you to it. So I will just introduce your paper, Professor. So you've filed a PowerPoint presentation, Updates on the latest Climate Science. Now I should just mention to the Tribunal that I don't seem to have a document reference number for this, probably because it's only just recently been filed.

WITNESS REFERRED TO JUDGE MILROY TO MR SHARP – DOCUMENT #A025(e)

Q. #A25(e). Thank you, your Honour. Yes, that's right. So your document which you filed has a reference #A025(e), you have got that in front of you, Professor, but what I invite you to do now is just speak to the matters raised in your PowerPoint presentation which is an update on the situation with Climate Science and any other related matters, so I will hand it over to you now, Professor.

A. Ngā mihi, Michael. Would you like me to share my presentation or do the Tribunal members have that in front of them?

JUDGE MILROY:

The Tribunal does have it in front of us but I have conscious that we're livestreaming and it may be of benefit to those watching on the livestream to have that shared. So you should have sharing ability.

HOUSEKEEPING – SETTING UP PRESENTATION (10:10:14)

(10:10) PROFESSOR TIMOTHY NAISH: (#A025(e))

Kia ora koutou katoa. Ko Tim Naish taku ingoa. He Ahorangi ahau i te Whare Wānanga o Te Herenga Waka, Victoria University. Ngā mihi nui ki a koutou katoa.

Yes. You all know my name, but just to build on Michael's introduction, just to reiterate some of my expertise. I'm a Professor at Te Herenga Waka, Victoria University of Wellington. And I hold an additional role as Chair of the World Climate Research Programme.

JUDGE MILROY ADDRESSES PROFESSOR NAISH – PRESENTATION (10:11:49)

PROFESSOR TIM NAISH: (CONTINUES)

Okay. Thank you. Let's jump into it. As Michael said, a lot has been going on and this is a rapidly changing and fast moving space not only because of the acceleration in global warming that continues but also because there we're approaching some fairly dangerous limits thresholds with the climate system and, you know, there's a lot of reports and there's a lot of recognition that we're a bit behind on action. So I just wanted to draw your attention to some of those reports that I think are relevant to these proceedings.

So starting at the international level. These two from the United Nations Environmental Programme, these are annual reports on the gap between our emissions and what we're doing about it, so that's the Emissions Gap Report. And then in terms of Adaptation, you know, how are we going with adaptation.

So there's some pretty alarming and striking things in these reports and maybe a small element of good news, but it's 10 years now since the Paris Agreement. And the action we've seen to date, although not enough, has bent the curve down a little. We're at the point where we believe we don't have to account for the worst case, the so-called worst case scenario in the climate projections which was known as SSP 58.5. But I would put a lot of caveats around that. By the same, the flip side to that comment is we also recognise the 1.5 scenario of achieving the 1.5 degree target is now out of reach without some technological miracle. So the possible futures are narrowing for the world we're heading into. But the reading and the news based on the science is still not good. And in terms of our action around emissions mitigation and genuine implementation we're still falling very short.

Some of the metrics. We know greenhouse gas emissions continue to rise, in fact at a concerning rate, and we're now at an all-time high and the numbers are there. Greenhouse gas emissions between 23 and 24 rose alarmingly by 2.3%. This was a very big jump, four times higher than the previous year, and

there's no question that global warming is not just continuing, but it is accelerating.

The reason for that jump appears to be an increase in deforestation and degradation of forests in South America, but mainly our inaction on our Paris pledges, particularly in the G20 countries whose emissions were responsible for about 80% of that big jump we saw. So we're not curbing our emissions. And to add to that, of course we know that at the recent COP, 40 countries did not update their NDCs, and under current policies will miss the two degree target by a whopping 20 gigatonnes of carbon dioxide equivalent. So that's the news on emissions.

In terms of adaptation, refer to the UNEP Adaptation Gap Report.

Adaptation and building long-term resilience is inadequate. Yes, that's an understatement. This is an area I'm particularly interested in terms of Aotearoa New Zealand and the recent climate change risk assessment from the Climate Commission which Michael referred to which came out just a few weeks ago makes that very clear that we are well behind in adaptation and I'll come back to that report in a minute.

Globally, no matter what we do now, the committed climate change, the heat that's built into the system will affect more than 3 billion people by the end of the century. So protecting those people, building resilience to those changes is a number one priority for all nations. And it's not easy because of the inequities, particularly in developing nations, and adaptation finance is regarded as inadequate. Developing countries need 12 times more than they're currently being given, and a number of 1.3 trillion was identified post-Baku and leading to the Belem meeting.

And a really important part of sustainable development and building resilience is putting in place adaptation options early, feasible, equitable options that are effective today, and if we don't do that then we are exposed more significantly to global warming.

So I guess the message out of this is get going on adaptation but in tandem with aggressive ambition and real action on emissions, and this is because, as I said before, the science is showing us we've left this so long we're now – we haven't got much time and we're close to some of those critical thresholds such as tipping points in the climate system. That once they start can't be stopped. So things we do right now on emissions reduction and adaptation will payback manyfold into the future. So we'll just go to the next slide if I can.

Another document that I think we need to be aware of, this comes out every year so this is an update. I didn't have the 25 Report available when I gave evidence last year.

You can see the temperature curve there and you can see what a record 2024 was and how that abrupt warming between essentially 2022 and 2024. So we broke 1.5 degrees last year but we didn't break it this year and there are reasons we understand for that, internal climate variability, El Niño versus La Niña conditions globally. But regardless, it's 1.43 degrees of global warming is still very high and the past 11 years have been the 11 warmest years, so that trend continues.

Of concern and something perhaps we've underestimated is the amount of heat that's actually going into the ocean. You might think, oh, well, the ocean's our friend, because it sucks up all that heat and carbon dioxide from global warming, but that heat of the ocean has long term consequences and new term ones, and we're feeling that particularly with the emergence of these marine heat waves, particularly in Aotearoa New Zealand which is getting this increased influence of war motions out of the tropics affecting our climate and some of the extreme events we've seen in the last few months but certainly in the last few years.

Global sea-level again remains high but it was sort of the same in terms of rate as last year and that's due to the fact that this year was a little bit cooler, the oceans were a little bit cooler.

I think the most alarming measurement we scientists make that is really concerning our community is what we call the Earth Energy Imbalance. And I've tried to illustrate that using these diagrams. In a stable climate the earth ultimately should – its energy should balance. So the incoming radiation from the sun should be balanced by the outgoing radiation and we have a nice equitable consistent climate. But because of the greenhouse gases in the atmosphere and the fact we keep making that greenhouse gas blanket thicker, the earth has got more and more out of balance and the heat that's building up is accelerating, and so now we say that global warming is accelerating.

Where has that heat gone? Just to illustrate, the ocean has sucked up an awful lot of it, 91%. The land, the ice on the planet. And the atmosphere which is giving us the global warming we've seen, the 1.5 degrees of global warming, is only 1% of the actual heat imbalance. So you can imagine if you didn't have the ocean how hot we would be. So, you know, I guess it's interesting scientifically, but the take-home point is we're not slowing the train down. If anything, it's accelerating.

Just come back to New Zealand, some recent events, and I wanted to just build on some of the evidence I gave before and you may have heard from the Crown witness Sam Dean, and this is around the, and we hear it in the media all the time, we experience it, is the increase in extreme events but particularly those events driven by precipitation. And so during – just, you know, these are facts you can put together using information, say on the Earth Sciences New Zealand website, but during the 20th Century we had three large weather related disasters that caused damage or death in the millions of dollars. And we know Bola, we know Giselle which was the Wahine Disaster, but they were sort of few and far between.

So far this century we've had 10 – sorry, 16 such events have occurred this century and 10 of them in the last four years. So we're really seeing that there's no question that on the background of global warming we're seeing an increase in the frequency and intensity of those events. And of course in 2023 we had

a big year as we know with Gabrielle and the Auckland Anniversary floods. But this year, even though the La Niña weather pattern we had was weaker than the one in 2023, we still saw an extraordinary number of weather-related states of emergency. And I think we're all very much on notice that there's a new normal now. The extreme hazards from weather we used to worry about only several times a year are almost weekly, and that was said in the Climate Change Commission's report. And this is because of the physics behind the system. It's pretty simple. You hear a scientist say this all the time, the more you heat up the atmosphere the more moisture it can contain and therefore, and the atmosphere becomes more energetic so when you get a storm you get a lot more precipitation, you get a lot more energy.

And for us, the new normal that we have to think about in terms of protecting our people is these ex-tropical cyclones and the atmospheric rivers that are happening several times a year. It's looking like from the science there's a very clear pattern that when we have a La Niña year as we did in 2023 and we had one this year, that brings the tropics closer to us. That brings those extreme precipitation drivers closer to us. And that's when every summer in particular, and winter of course, but every year we should expect these extreme events when we have a La Niña situation. We're heading into an El Niño, possibly a very large El Niño over the next 12 months potentially, the size of it yet to be confirmed. And that brings other impacts to New Zealand, but generally keeps those tropical influences at bay a little bit.

Okay, I don't want to ramble on for too long, but I do want to get to the Climate Change Risk Assessment.

So this is filed as evidence but you can get it easily and I'm sure many of you have seen it and it had a bit of media around it but it had some concerning headline statements, particularly the risk we are at from climate change and committed climate change. We can no longer avoid. We're in a cycle as I've just explained of disasters and we're barely able to prepare for and deal with those disasters and recover before the next one comes along. And so, this report really does emphasise the need to be thinking and building a plan for

long-term resilience so we break the disaster cycle and we avoid the impacts from these disasters in the future. And this requires, as the report says, systems-wide thinking, institutions, governments, councils, communities all working together, putting away the electoral cycle and saying what's the best thing for New Zealand and how can we finance it and afford it and build it over the next few years instead of kicking the can down the road or worse even reversing legislation that tries to get us that way? Get us, you know, that way, yes.

So key risks: Water infrastructure, our roads, our rail, community wellbeing and our ability to even deal with the emergency management challenges we have right now, and of course identifies the balance and disproportional impacts on Māori, particularly land marginalisation with less options and less room to move. And again, I've mentioned that cycle. We've got to get out of that disaster response cycle, and the only way to do that is to increase our focus on changing the system and putting investment into it. So the Climate Commissioner and the Chief Executive of the Commission said very clearly that we're currently spending 90% of our money, our budget, on responding to disasters and only 3% on preventing them long-term and building resilience.

So I don't think I need to reiterate those points, I think I've made them. There's a need for science in this area. New Zealand is inadequately supported to provide the sort of decision-ready scientific information for good decision-making for that long-term planning.

Also, this area is moving very quickly and it's relevant to the ICJ opinion that has already been talked about, particularly the opinion with respect to climate change, and I suspect that's opened a door. I was at a conference in Auckland around the legal aspects of climate change and this was much debated about does this open a door for a bit more accountability to polluters whether at the state country scale or individual polluters, and the science has moved along enough that I think there is enough good science to be able to do those sort of attributions of the contribution of a polluter to a certain impact or a level of damage and loss.

And I just put that graph up at the country scale to show over the last 30 years the damage and loss from those greenhouse gas emissions. When you unpick the contributors to those, the big contributors to those greenhouse gas emissions you can see proportionately how they have contributed to that damage and loss and the cost of that.

There's also a really interesting case closer to home off Australia, a liquid natural gas project. Currently expected to start in 2026 and would go for 31 years and would produce 876 million tonnes of carbon dioxide. So some research has been done around, you know, if this is approved, if it goes ahead, what will be the consequences of the additional warming. And it's an interesting way to show it in terms of impacts we're already really concerned about. So if you put the CO2 into the atmosphere it's equivalent to 516,000 additional people exposed to unprecedented heat. And of course heat stress may be not so much here in Aotearoa but globally is the silent killer, is the biggest killer associated with climate change, and the ability for many parts of the world for people to function and to do their jobs and the impacts on the labour force are huge.356,000 would be left outside that safe human climate niche and an extra 484 heat-related deaths in Europe.

So I don't have any – this could be done for New Zealand of course, but I just think it’s very interesting how the science is evolving and how it could be potentially useful in the accountability side of the pollution. Now, I think that’s all. It's a bit of a **(inaudible 10:32:28)** of recent developments, but I'm happy to take questions on this or Michael will direct me to next steps and any other climate related questions that are within my wheelhouse. So, ngā mihi nui, ā, tēnā koe.

JUDGE MILROY:

Thank you, Professor Naish.

JUDGE MILROY ADDRESSES MR SHARP – MORNING TEA (10:32:57)

HEARING ADJOURNS: 10.33 AM

HEARING RESUMES: 11.00 AM

JUDGE MILROY:

Welcome back. We are now resuming, and the point where questions – unless, Mr Sharpe, you have got any prior questions that you wish to ask Professor Naish.

MR SHARP:

Thank you, your Honour. I just had one question that just arose from the evidence yesterday.

JUDGE MILROY:

Yes.

MR SHARP:

So if I could just put that question to Professor Naish.

JUDGE MILROY:

Okay.

(11:00) MR SHARP TO PROFESSOR TIMOTHY NAISH:

Q. Professor Naish, yesterday the Tribunal heard evidence from Professor Al Gillespie about the need in dealing with climate change to take into account and protect the interests of future generations. I just wonder if you can, from a scientific perspective – to discuss what particular matters could or should be addressed to protect future generations from climate change, the impacts of climate change.

A. Yes, tēnā koe, thanks, Michael. Yes, I had some thoughts around that. I did touch on this in my original evidence six months ago, but it's a really important issue, particularly as the science shows us we're getting very close, or we've already passed the point at which we can't avoid long-term

impacts of climate change. Our challenge is to limit those impacts and the impacts on future generations.

So, there's two key areas, I think, from a scientific perspective. One is that committed climate change. You know, it's, as I said in my – before coffee break, we now have about 3 billion people exposed, vulnerable to the committed impacts we can no longer avoid, and that's one billion people on the coasts, so that affects us in Aotearoa, and then there's another two billion who are reliant on the high mountain regions where there's glaciers retreating, for their water, for their energy, for their food supply, that are going to be impacted.

So this is not something that will finish soon. It's a multi-generational commitment, because what we're talking about the slow-responding elements of the earth system, the ice sheets – once you put the brake on, even, you know, if we stop global warming tomorrow, which would be a lovely thought, we would still have those impacts built in, affecting people for generations to come.

So, "What can we do?" is the question. And I think the more we can do right now on emissions reductions is really the only lever we have to pull, and I say that because we're approaching some points that are referred to broadly as "tipping points". That can sound quite alarming. But they're thresholds we cross in which the system changes, but changes irreversibly, and some of those have already started to play out.

So, when you think about ecosystems and species, you can think about the coral reefs, and those ecosystems are now considered to have tipped, and you know, once you kill a species or make something extinct or part of an ecosystem extinct, so – well, unfunctional – you can't bring that back. They're gone. You can't recreate the – what evolution has taken millions of years to do.

And so, you know, some of those have been crossed. For the West Antarctic ice sheet, and a lot of sea-level rise there's still – the jury's sort of out, but we're messing with the threshold; we're very close to it. So the more we can do to get close to 1.5 and stay below 2, the better it is for avoiding those long-term intergenerational consequences.

Now, for the things we can't avoid, there's only one solution. That lever is adaptation, and that will require climate financing at a very, very large scale, as I have said in my presentation, to ensure, particularly, the most poor states and the most vulnerable states are protected, and that can be done. We have the technology. We have the science. It involves huge technological and social revolution, really; transformation. You know, moving people out of harm's way – that's easier said than done. But if you take a long-term approach that's fair and equitable and is – which is the point of the climate change research assessment's main findings, you can put in place effective protection, build resilience and put in place adaptation that may not be ideal but saves lives in the long term and looks after the wellbeing of communities in a more sustainable way.

You know, I hope that addresses some of those points.

Q. Thank you. And if I may, just one point of clarification, you talk about one part of the ecosystem going, gone forever, so I wonder if you could just comment on the impacts that can have on wider ecosystems, you know, because we live in an integrated ecosystem environment, or people rely on an integrated environment.

A. I have to declare, you know, I'm not an ecologist or an ecosystem expert, but from my colleagues and what I've read, particularly from the IPBS report, which is the equivalent to the IPCC report, but for biodiversity and ecosystems rather than humans being impacted by climate change, you know, there's a tremendous loss in biodiversity for various reasons, but climate change is a huge one.

And, you know, if you take the coral reefs, for an example, we say that – we say species will die and potentially become extinct. But that niche will be reoccupied by something else, so there will be an ecosystem in its place, but it may not be as diverse and as useful in terms of a service to us for a food source or for other things that ecosystems – for other ecosystems services, so you – there may be two or three coral species that are tolerant to the bleaching and the high ocean temperatures, but that won't make a very thriving, biodiverse coral reef.

So that's an example of – you know, you can look at other fisheries, or not so much fisheries but marine ecosystems, that have been overfished,

and yes, something replaces the ecological niche. It might be jellyfish, rather than what was living there before. So, you know, that really has huge impacts, and we might not lose a whole ecosystem, but it will certainly become a lot less diverse. Is that –

Q. Yes, thank you. That clarifies that point, yes. Can you just answer any questions that the lawyers for the Crown may have for you, Professor?

MR LYALL:

Your Honour, it's Lyall here. I wonder if I might be permitted to ask one question before my friends for the Crown have their turn.

MR SHARP:

I am sorry, Mr Lyall. I should have asked claimant counsel first.

MR LYALL:

I haven't sought leave, your Honour, but it has arisen during the evidence that has been presented, and I can either put it in writing if time demands it, or I would hope I can just quickly ask it.

JUDGE MILROY:

If you could quickly ask it, and if necessary, we can also ask you to put it in writing, if Professor Naish needs more time and consideration to give a full answer.

(11:09) MR LYALL TO PROFESSOR TIMOTHY NAISH:

Q. Thank you, your Honour. Tēnā koe, Professor Naish. My question arises from some of the evidence of Dr Murray from the Crown, who gave some economic evidence in the last hearing week, and his view was that no policy implemented by the New Zealand government would make a perceptible change to the climate as it would impact Māori. I'm struck by the evidence that you've given about attribution science, which seems to be rapidly developing, and wondered whether you would have a comment on whether it's possible to make any meaningful findings about particular policy responses that the government might make and whether attribution

science is at a point where we could in fact be showing that a particular mining decision, say, would have an impact on Māori or particular parts of the population, or if we are not there yet.

A. Yes, thanks for the question. Yes, two things, I guess, caveats, first. I probably would need more time to at least think about – to think about it, or at least consult with colleagues, but it's certainly something I've – you know, in the context of this inquiry, I've started thinking about, and, you know, the example I showed you, and we equated that to heat stress and that impact, you know, from the Australian liquid natural gas project, you know.

I wonder if, you know, the – and I'm not an expert in the attribution science, but there are experts in New Zealand, and some of them were at that law conference I was talking about, earlier in the year. And you know, those questions were being asked, and whether there is a way we could attribute a certain emitter's contribution to an impact that directly affect Māori. I'd have to think about what they were, and – yes.

So, sorry for not being able to give you something on the spot, but it's a really interesting avenue. I didn't quite hear what – I think it was a Dr Murray – said, or – I mean, I wasn't there when – I didn't hear his evidence, so I'm not quite aware.

Q. Yes, I think I've ambushed you somewhat, so perhaps if I do put it in writing, it might be the best time and most time-efficient way to respond, if I could have leave to do that, your Honour.

JUDGE MILROY:

Yes, thank you, Mr Lyall. You do have that leave. So I will now I hand over to the Crown for questions.

MR PREBBLE:

Mr Fong will ask questions, your Honour.

JUDGE MILROY:

Over to you, Mr Fong.

HOUSEKEEPING – TECHNICAL (11:12:58)

MR FONG:

Your Honour, can I just mention quickly, to the extent Professor Naish replies in writing to Mr Lyall's question, can the Crown reserve the right to put further questions arising out of that, just out of fairness?

JUDGE MILROY:

Yes, certainly.

MR FONG:

Thank you.

(11:14) MR FONG TO PROFESSOR TIMOTHY NAISH:

Q. Tēnā koe, Professor Naish. Thank you for your evidence. I have only got a few questions by way of clarification. Can I make sure you still have your PowerPoint slides before you?

WITNESS REFERRED TO #AO25(e)

A. Yes, I do.

Q. Great. So if we could just turn to slide 1 of your PowerPoint, you talk about the emissions gap report there.

A. Yes.

Q. So just in terms of bullet point 3, you say, “Greenhouse gas emissions rose by 2.3% above 2023 levels in 2024 – 4 times higher than the previous year.” Now, I have only had a chance to read that report in terms of the executive summary, but my understanding is that the increase in 2023 was 1.6%, so – compared to the rise to 2.3%, so that's – by my maths, that’s 1.4 times higher than the previous year, not 4 times that. Would that be – would that align with your understanding?

A. No. I mean, it’s black and white. It’s in the report.

Q. Okay. So, perhaps if I could just sort of – **(inaudible 11:15:50)** agree with me or you saying you defer to – or are you saying you’ve just copy and pasted that from the report?

A. I haven't copied and pasted it, but I've read the report, and that was the one of the key headlines of the report. I didn't contribute to the report.

Q. Okay. So forgive me, it might be my misunderstanding, so can I ask my colleague, Ms Downey to bring up the report, just so I could either be corrected or you could sort of help me clarify my understanding? Yes, so this is the report I'm looking at, the executive summary, and Ms Downey, if you could scroll it down, just there, so, it says the 2.3% increase in emissions from 2023 was high compared to the previous year of 1.6. I think it goes on to say it's four times higher than the annual average growth rate in the 2010s, rather than saying the increase has been four times compared to the previous year. Would my understanding be correct?

A. Yes, but I think we're saying the same thing, aren't we? I mean, the rate in the previous year was probably – I mean, I'd have to look. I'd have to dig back into the details, but the rate of the previous year was probably similar to the – what year were you talking about? Baseline of 2010?

Q. Yes, so just looking at the highlighted extract there, so if we are just comparing the levels of 2024 to 2023, we are comparing 2.3 against 1.6, and so that's 1.4 times more, rather than four times, but if we are looking at a comparison between 2024 against the annual average growth rate in the 2010s, that is four times.

A. Okay. Accept that.

Q. Thank you.

A. I don't – yes.

Q. Can I now turn to the – slide of your PowerPoint, when you talk about the State of the Global Climate Report. Bullet point three. So, you talk about ocean heat content reaching its highest level and it's doubled over the last 20 years, and it might sound pedantic, and you might have meant it as a shorthand, but again, just sort of reading from that report, my understanding is that it is the rate of ocean warming, rather than ocean heat itself, that has doubled. Is that correct?

A. Yes, that's correct.

Q. Thank you. I am just asking these questions to clarify the record, rather than seeking to undermine what, you know, your evidence, which was largely drawn from these reports.

The last question I have is on slide 4, which is the slide with the – next slide, sorry, Ms Downey, on climate impact attribution. Yes, that's the slide, and bullet point 2, you talk about "the science can now attribute the cost of to global and regional climate impacts to individual fossil fuel projects", and you cited a number of the articles in support at the bottom of that slide, including the Burke article from the *Nature* journal. Can I just bring that up and sort of ask you one quick question about that article? So, my understanding that this article, it is quite a ground-breaking article, and – so, it talks about attribution, but just in terms of the highlighted passage, the author says, you know, "having done those calculations, attribution, however, we emphasise that consistent with Article 8 of the Paris Agreement, these damage estimates do not necessarily equal what is owed by one entity to another, as that is a moral and legal question beyond the scope of this analysis", and I guess, just to – interested in your view in terms of whether, I guess, the way you read that is that the authors acknowledge that attribution is not the same as legal responsibility or liability. Is that how you have read and understood it, the intent behind that passage?

A. Yes, I think I agree with you on that. I think the point of those two examples on the slide were just to show that we're at the very early stages of this, but there are approaches within the attribution community – science community – that may be useful in a legal context, but you know, that's as far as I'd be prepared to go with that. I'm no expert on the legal side of things.

Q. Thank you, Professor. I have no further questions for you. Thank you.

A. Thank you.

JUDGE MILROY:

Thank you, Mr Fong. We are now up to Tribunal questions, so…

(11:22) KEVIN PRIME TO PROFESSOR TIMOTHY NAISH:

Q. Yes, good morning, Professor. You have painted a very gloomy picture, and I guess we all should be really worried. I wouldn't like to keep you here all day, but I had a question here that would make me very interested in your written responses to Mr Lyall, but I will give you my question first, and then you can respond. Well, it is not one question, it's a number of questions, and that is: What actions would government need to take, would regional councils need to take, district councils need to take, and individuals need to take, to contribute best towards reducing greenhouse gas emissions? You can be as brief or – as you can.

A. Again, I feel like I should address these questions as – from a science perspective, rather than, perhaps, from a policy perspective, but the science, in terms of – I think the question was on mitigation, what can we do to – the science simply shows that we need to reduce global emissions. Global emissions are what matters, and so, as individuals, there are a range of things we can do that aren't necessarily that onerous but could have a good impact, and there are many, many documents, things that have been written for a New Zealand audience that provide that information, and I can make those – a list of some of those available if that would be helpful.

Q. Yes.

A. And really, all emitters, whether – on the emissions front, whether they're – or all stakeholders, whether they're communities, infrastructure providers, business sector, iwi, regional councils – need to have a plan to reduce their emissions, and at the government level, of course we have the Emissions Reductions Plan. You could argue it's not really very ambitious and wouldn't make much of a dent in global emissions, and even if we were to think of New Zealand as doing their part, being five and a half, six million people, now, I think it is – six million people, as part of the global community, we should proportionately be doing our bit to achieve the Paris Agreement. And as you know, our policies and the approaches in the Emissions Reductions Plan are basically to plant forests to – so, offsets, and – I'm forgetting the words – and also use the

international markets to – to buy our way out, rather than doing more transformational things that would have co-benefits for New Zealand.

So, what can we do? You know, it would be great to have more leadership at the government level. We certainly need it. But individuals have power. We still have the power to stop this, and a good colleague of mine, James Renwick, well-known New Zealand climate scientist, says this all the time, when the question is, "Give us some hope. What can we do?". Well, it's up to us. If we all did things like reduce our international travel, for those who do that; reduce our transport emissions; use public transport; you know, think about our diet; think about – there are a whole range of things that would have really big impacts on our household footprint, if we chose to do them.

So yes, I mean, there's no easy answer to that question, and I hope that we are capable of a species – as a civilisation – of being able to do this at a large scale, otherwise we need to just be prepared for what's coming.

Q. Yes. Okay. Well, I look forward to your responses and the references you've – in your written responses, so thank you very much. I really appreciated your evidence. Kia ora.

(11:28) PROFESSOR DAVID WILLIAMS TO PROFESSOR TIMOTHY NAISH:

Q. Tēnā koe, Professor Nash. The last slide that you used this morning, there's the rate per country and cost of emissions, damage and loss for the last 30 years. I'm guessing that the China figure should be 19, rather than 9? It looks like in the graph terms.

WITNESS REFERRED TO #AO25(e)

A. Hold on, let me go back to that. I'd have to check the paper, and I know the – our colleague from the Crown has that paper. I –

Q. It just – 9 is less than 10, so –

A. Yes, but I think, and I have to – look, it's ages since I read the paper, but I think one of the points that the paper is – even, although China's emissions have been the – yes, I'd have to check that, but I – there may not be a –

Q. It would be quite interesting **(inaudible 11:29:10)** –

A. There may not be a – yes, a linear relationship between temperature and the cost.

Q. Because they could have done a good deal more in the renewables that therefore – change things. Well, can you give me an answer on that, please, in writing?

A. I absolutely will, yes.

Q. Thank you. And secondly, once there's so many noughts after a figure, one is never quite sure what we are talking about, so the T is for "trillion", I take it?

A. Yes.

Q. And the French, being keen on metrics, used to say that one billion was one million million, but the Americans say it's one thousand million, and so I'm assuming that a trillion is one thousand million, rather than – we're not doing a metric leap, are we? Can you just confirm that a trillion is a thousand thousand million?

A. I will confirm. I was – yes –

Q. Well, those are big figures.

A. I was wondering that myself the other day. You know, what trillion are we talking about, an American trillion or a different trillion? But regardless, it's a very big number.

Q. It's a very big number, but it would be an incredibly big number if it was – if one billion was a million million, and then a trillion would be a million million million. Well, that's big numbers. Whatever it is, I would like clarification, please, just to get the facts right. Thank you.

A. Yes.

Q. Okay. That's all. Thank you for evidence.

JUDGE MILROY:

Thank you, Professor Naish. My question was actually asked by Mr Lyall, so we are getting the answer in writing, so that's good. So I can just thank you very much for the time and your effort in presenting to us this morning, but I will hand you back to your counsel in case there are any other questions by way of re-examination.

PROFESSOR TIMOTHY NAISH:

Tēnā koe. Thank you, your Honour.

QUESTIONS ARISING MR SHARP – NIL

MR SHARP:

No, there aren't, your Honour, so it just leaves me to thank you, Professor Naish, for coming back to update us on the state of climate change, and we will organise you to provide those answers to those questions in writing. Ngā mihi.

PROFESSOR TIMOTHY NAISH:

Ngā mihi.

JUDGE MILROY:

Thank you.

MR SHARP:

So, your Honour, next we have Dr Bertram.

JUDGE MILROY:

Indeed.

MR SHARP:

So, Dr Bertram, thank you for joining us online.

So, Dr Bertram has recently filed some speaking notes. Once again, I don't have the reference number, but the speaking notes **(inaudible 11:32:05)** –

JUDGE MILROY:

It is #A005(e).

MR SHARP:

You have got it?

JUDGE MILROY:

Yes.

MR SHARP:

Sorry, your Honour, the reference was what?

JUDGE MILROY:

#A005(e).

MR SHARP:

#A005(e). Thank you, your Honour.

So, Dr Bertram, you have those speaking notes in front of you?

DR IVO GEOFFREY BERTRAM:

I do.

MR SHARP:

So, Dr Bertram, can I just ask you just to reintroduce yourself to the Tribunal and speak to those speaking notes which do summarise some of the reply evidence and further evidence that you had filed earlier in the year? Thank you.

(11:32) DR IVO GEOFFREY BERTRAM: (#A005(f))

Well, you know, the speaking notes I have provide replies to four of the witnesses who have appeared previously before the Tribunal, and so I just go through them in order. In particular, the responses I am giving to Helen Plume involve a bit of diving into the fine detail of the numbers, and I am anxious not to bog the Tribunal down in too much numerical detail. On the other hand, I do want to make sure that insofar as it's useful to the Tribunal that we do get a look at those numbers, so I am happy to take guidance on just exactly how far into the weeds we do go on the numbers.

And a difference has arisen between myself and Helen Plume regarding the issue of how much latitude the parties to the Kyoto Agreement possessed in

setting their targets and reporting their compliance, and in my speaking notes in November 2026 – and I say it in here, I quote myself, “gross-net accounting was not mandatory under the Kyoto Protocol for countries that did not adopt a gross-net target for…” the first commitment period, “…and New Zealand would have been free to adopt a gross-gross or net-net target for…” the commitment period, “as many other countries did”, and Helen Plume quite correctly pulled me up on this, and I am grateful to her for doing so. I was writing that particular passage probably too hastily, and I think it's important to see in what respects I might have caused some confusion, and I apologise to the Tribunal if any confusion has arisen from that.

So, in her summary of evidence, Ms Plume responds to me that, quote, “for New Zealand and most Kyoto Parties that had targets under that agreement, gross-net accounting was mandatory and that there was no freedom to adopt a gross-gross or a net-net target”. And later on in her evidence, she provides an extensive description of the reporting requirements that were required by the Protocol, emphasising that the commitments in Annex B were absolute commitments and that the mandatory reporting requirements included reporting on land use, land use change and forestry – that’s LULUCF – under Article 3.3, 3.4 and 3.7.

In actual fact, the mandatory reporting requirement actually applies – well, applied – only to applied only to Article 3.3. 3.4 and 3.7 were voluntary reporting opportunities, rather than mandatory requirements.

Ms Plume’s central point, which I willingly concede, is that with those articles of the Protocol taken into account, all of the Annex B countries reporting their emissions during the first commitment period had to include information not only on their gross emissions – that is, excluding LULUCF – but also on changes in their land use, land-use changes and forestry, either from a zero base at 1990 – that's Articles 3.3 and 3.4 – or from an amplified net base, which is what Article 3.7 was about.

And this, she says, amounted to mandatory gross-net accounting, and on the basis of this formal reporting requirement, she argues that all countries' targets should be characterised as gross-net, with no room for gross-gross or net-net, because they had to be reported under this formula.

Now I accept, with some quite strong reservations, but I am happy to go along with Ms Plume's characterisation of the reporting requirements as gross-net, in the sense that they included, obviously, information on gross emissions and LULUCF and on the balance when those two were taken into account. But I stand by my statement that in my terms, gross-net target setting was not mandatory under the Protocol.

Now, the issue here is how we understand those words, gross-gross, gross-net and net-net, because those words do not appear in the Kyoto Protocol. They emerged in subsequent climate change discourse, in which I, among others, was involved, as a way of distinguishing the various target-setting and reporting strategies that were adopted by different parties under the Protocol. And when I say that countries were under no obligation to adopt gross-net commitments for the first commitment period, and many did not, I am focusing on the practical substance of those commitments, and Ms Plume's recital of technical detail about the formal reporting is strictly accurate, but it doesn't clarify the big difference among the targets that individual countries adopted, nor how their compliance with those commitments was achieved, or not achieved, as the case may be.

And so I thought probably the best way to clarify the issues is actually to just take a look at the numbers, and I appreciate that Appendix 1 of my evidence, which is there, is a fairly intimidating table. I'm just wondering if I might share the screen, so that I put that up and speak to the appendix. Would that be okay?

JUDGE MILROY:
Yes.

HOUSEKEEPING – TECHNICAL (11:38:41)

(11:38) DR GEOFF BERTRAM: (#A005) (CONTINUES)

So here is – this is the table that appears in Appendix 1, and I emphasize that these numbers were assembled by academics. They are from a published peer-reviewed paper on climate policy in 2016, where the authors were seeking to understand what had happened during the first commitment period and how various countries had complied with their commitments.

So, if you look at this table, the first two columns of it show you what were the 1990 gross emissions, which is the base year from which all Kyoto Protocol performance was measured. That's in column 1.

And in column 2 is the Kyoto Protocol target adopted by the country in terms of how much they undertook to reduce their base-year emissions, so those are in terms of percentage reductions in the base-year emissions.

The table then sets out in columns 3 to 7 the actual emissions – the gross emissions every year during the first commitment period from 2008 to 2012, and in column 8, the annual average of those, which is what matters for compliance, is set out. Simply – that's just an average of the preceding five columns.

Then, if you look across to column 13, you get the strict gross-gross change, and it's the change versus the base year, if you read the heading, it's delta versus BY, which reads, "This is the change against the base year when we take no account of land use, land-use change and forestry"; in other words, that's the gross calculation.

And next door to that is column 14, which is the gross-net calculation, that is, the change against the base year, with account taken of land use, land-use change and forestry.

Then, in column 15, the paper calculates the – whether that change was enough on its own to meet the target. In other words, did the changes in emissions achieved by the party during the commitment period – or in the commitment period – suffice to satisfy the commitment it had made under Annex B? And whether you see a blue shading on the numbers, the blue shading says, "Yes, they've made it, no problem", and where you see a pink shading, that says the change in emissions during – achieved by the party was not sufficient on its own to meet the commitment. And so in that case, the necessary thing that the party had to do was to step onto the second part of the Kyoto Protocol process, which is called the flexibility mechanisms, in which they – countries traded among themselves to exchange emission units in order that at the end of the day, when it came to time to settle up, each of the countries would be able to offer sufficient emissions units for surrender to cover its commitment.

Now, at the right-hand side of the – the very right-hand side of the table, in Column 16, you can see how much importance went on the land use, land-use change and forestry component of all this reporting in the – in meeting countries' obligations, or commitments, at least. And as a general rule, here's where I, as an outsider, working on trying to interpret what's going on here, this is how I read the targets and the performance of various countries.

As a general rule, I treat those countries which did not rely on land use, land-use changes and forestry to meet their commitments as having effectively pursued a gross-gross path, as these are countries which achieved enough reduction in their gross emissions between 1990 and the first commitment period, 2008 to 2012, to meet their commitments without further ado. Then there are other countries which relied upon land use, land-use change and forestry, and those are countries where the gross-net calculation was crucial to meeting their commitment, and those countries I treat as having pursued a gross-net path.

And then finally there were the countries in pink here, which even after the gross-net accounting were still short and had to engage in the trading

mechanism that I refer to a little later in this evidence at about paragraph 2.20 on.

So the – it's worth, I think, comparing New Zealand with one of the other parties, and so what I've done here is to extract from that very detailed and rather intimidating table in Appendix 1 just the numbers for the EU 15 – that's the original 15 **(inaudible 11:44:10)** members of the European Union – and New Zealand. And if you run your eye across there, you can get a sense of why I say the EU set a gross-gross target and achieved its target by gross-gross means, whereas New Zealand set a gross-net target and achieved that target by gross-net means. And this is just to try to give some sense of the way in which these words translate into, for me, economically meaningful analytical categories.

So, if you look at the EU 15 for a start, lying across – going across there, in row 1, you got 4,269.7 megatons of emissions in 1990.

The next column shows the target to reduce that by 8%.

The next target [*sic*] shows what they actually achieved, and this is column 8. You'll notice I have suppressed columns 3 to 7. That's all the annual detail. Just go straight to what they manage to achieve on their gross emissions over the first commitment period. And you can see, just looking at those two numbers, that they have achieved quite a major reduction in their gross emissions. And indeed, if you flick your eye across to column 13, you'll see that there was an 11.7% reduction in gross emissions, which is more than enough to meet that 8% commitment that the EU 15 had made, and that I consider to be a gross-gross target setting and compliance exercise.

If you now move down to New Zealand, you can see that New Zealand started out in 1990 with 61.9 megatons of emissions. It set itself a target of just – of no change. That's the 0.0%, or if you're looking at the Annex B, that translates to putting a number of 100 into our commitment, whereas the 8% reduction the EU 15 had made appears in Annex B as a figure of 92. That's an 8% drop.

New Zealand, if you look at the column 8 number, increased its gross emissions from 61.9 megatons to 74.6 megatons by the first commitment period, and if you flick your eye across to column 13, you'll see that that meant that we increased our gross emissions by 20.4%. You'll also see, however, if we go back to column 9, that New Zealand had 14.3 megatons of carbon absorption by forestry, which is what we relied upon to meet our target, and the result of that is that if you carry across to column 14, where the gross-net change is calculated, New Zealand ended up with a reduction of 2.7%. In other words, we met the target.

Now, the way to check that we were doing gross-net, whereas the EU was doing gross-gross, is just to look at how important the land use, land-use change and forestry component of our performance was. For New Zealand, it was fundamental. For the EU, it was trivial and marginal.

So, when New Zealand – and I'm now on paragraph 2.14 of my notes – when New Zealand set its Annex B commitment at 100 in 1997, when we were – in '98, when we were negotiating the Kyoto Protocol, the officials and the government who were involved in those negotiations were well aware of the possibility or the probability that large-scale expansion of our Kyoto forests would be included in the calculation for the first commitment period, and they knew that because we were eight years on from 1990 and we already had a very large volume of newly planted forest growing, and so a lot of that forestry credit was already in the bank.

So one translation of New Zealand's commitment under the Kyoto Protocol would be: New Zealand promises to increase its gross emissions as fast as it can grow forests. Another way of reading it is: New Zealand promises to grow forests as fast as its gross emissions rise.

There's nothing in that commitment that indicates any intent to reduce gross emissions below their business-as-usual path, and that, in my view, amounted to zero ambition. New Zealand deliberately chose a first commitment period target that officials knew would, under the Article 3.3 reporting rules, enable

New Zealand to comply without doing anything to stop the increase in its gross emissions, because there was no limit placed on the use of forestry credits to avoid reducing gross emissions.

Other countries, notably Australia, adopted targets that were a variety of net-net – a rather strange variety, I have to say, under Article 3.7, and Ms Plume refers to that in her paragraph 26. We can discuss the Australian case if you like, but it's a pretty special case. And the – a third set of countries chose targets that hinged on reducing their gross emissions with only the most marginal significance attaching to the impact of land use, land-use change and forestry.

Now, I probably at this point should stop sharing, I guess.

HOUSEKEEPING – TECHNICAL (11:49:50)

So, when I describe some countries as having adopted gross-gross targets, I have admittedly exposed myself to Ms Plume's semantic critique, because those parties, when they reported their compliance, did indeed have to include their emissions numbers under Article 3.3. As I mentioned before, 3.4 and 3.7 were in fact voluntary reporting, but 3.3 was mandatory. And they had to report that even when the numbers were trivial and didn't matter for the meeting of their commitments. And so, in using the term gross-gross for those cases, I was focusing on the substance of their commitments, as distinct from the terminological precision about the detail of reporting that Ms Plume has, I guess, quite rightly emphasised.

So when she says in her paragraph 32 that, quote, “New Zealand met its CP1 target through a combination of domestic emissions reductions, carbon removal by forests and international emissions trading”, in my view, that's not a fully accurate account. What Appendix 1 shows is that New Zealand met its targets simply by forestry, not by any reduction in gross emissions. And as I noticed in my affidavit dated 26 August 2024, the global financial crisis actually tore gross emissions down in most countries around the world, including New Zealand, so there is clear evidence that the global financial crisis reduced our gross

emissions below business as usual, but I don't believe there is any clear evidence that any policy adopted by the New Zealand government at that time significantly reduced our gross emissions below business as usual.

Now, I know that's likely a controversial statement, but I'm happy to make it here, and you know, there is, I guess, a bit of debate about "What did I mean by 'significantly'?". The analyses that I've seen range from pretty well nothing to very, very small changes, nothing that I would recognise as a substantial exercise of ambition to bring gross emissions down.

To summarize, I treat a country as taking the gross-gross commitment when its absolute commitment, in Helen Plume's terms, rested on the expectation that the target would be met by gross emission reductions, not by land use, land-use change and forestry, and it's the substantive difference between those cases in New Zealand that I am concerned with when I describe them as gross-gross and New Zealand as gross-net.

And it's worth noting that New Zealand could have taken on a – what I call a substantively gross-gross target, by pitching its number in Annex B of the Protocol below 100. By entering a number of 100, New Zealand said, "We will hold our absolute emissions unchanged for the first commitment period."

If you take the numbers of Appendix 1, if New Zealand had entered a number of 77 in its Annex B commitment, that would have involved holding gross emissions constant while allowing our forests to grow. In other words, it would have been a modest level of ambition, compared to what the EU 15 went for, but it would certainly have been eye-catching. I mean, it would have been dramatically different from the numbers other parties were putting into Annex B, and it would indeed have represented at least some serious ambition.

Now, one final point about the accounting. The accounting that the parties made for the Kyoto first period was never done in terms of the sort of numbers that are in Appendix 1, and that's why that table was taken from an academic paper and not from any published UNFCC table. And the reason is that parties

reporting compliance with the Kyoto Protocol simply had to surrender emission units at the end of the period, in what's called the true-up process. And the number of units that each party had in its retirement account and which it could then surrender to cover all its emissions during the first commitment period was the number that – or the set of numbers that was actually reported. And what I've done in paragraph 2.20 is to reproduce the New Zealand retirement account, which was the way in which we reported and declared our compliance with our commitment.

Now, the numbers – I'm not sure whether it's worth going through these numbers in detail. I guess if the Tribunal wants to pursue them, we can come back in questions.

The issue simply is that under Kyoto, there was a great deal of trading, internationally, in emissions units, and New Zealand companies, under the New Zealand Emissions Trading Scheme, were permitted to import units from offshore if they could get them more cheaply than they could get them locally, and they were then able to surrender them to the New Zealand government to comply with the New Zealand Emissions Trading Scheme requirements, and the New Zealand government could then use those emissions units to put into its retirement account and to cover its Kyoto obligation, and as a result of that the New Zealand government, to meet the total of 372 megatons of emissions – that's the right-hand column in the table 1, in my paragraph 2.20 – was able to present a whole array of EIUs and RMUs and CERs, which were units that had been purchased offshore under the flexibility mechanisms by New Zealand companies, surrendered to the New Zealand government to meet those companies' obligations, and then used by the New Zealand government to cover its first commitment period emissions. And as a result of that the New Zealand government saved itself a bundle of AAUs, assigned amount units, which it carried over to commitment period 2 and subsequently, so you'll find, if you go on to look at the way that New Zealand made commitments and complied with them in the second commitment period of the Kyoto Protocol, that hinged critically on the carry-over of units that were saved by this emissions trading process during commitment period 1.

I come, now, to the evidence of Kieran Murray.

In his reply brief, he argues that because there's no market currently operating in which New Zealand foresters can get a better price for their carbon absorption than they can get under the Emissions Trading Scheme, my idea that we should clear the way for New Zealand foresters to be able to sell their services on the international market has no merit. And Mr Murray quite rightly lays stress on the current impasse in the development of international trading under the Paris Accord. The Paris compliance market is still bogged down, years later, in complex negotiations. But the point is that Mr Murray is just avoiding addressing my central point – and sorry, I'll just – yes – that if indeed the price under the New Zealand Emissions Trading Scheme falls to $50 per tonne, which is what the second emissions reduction plan foreshadows, it's probable that global prices will be greater than that, and that New Zealand forest owners will then have the opportunity to sell their carbon services offshore, rather than into the New Zealand Emissions Trading Scheme, if the New Zealand government clears the way for that to happen. Mr Murray is correct to say that overseas governments would have to be consenting parties to the emergence of those markets, but he's wrong to suggest the New Zealand government has no role, and there is a place for New Zealand policy to open the way, at least, to that mechanism.

International markets for carbon units have had a very patchy history to date, and I think that's absolutely true. Under the Kyoto Protocol, international trading flourished for a while during the first commitment period, and New Zealand businesses with large greenhouse gas emissions engaged, with the government's acquiescence, in very large offshore purchases of units, and at the same time as that happened, during commitment period 1, government policy barred forest owners from receiving the internationally tradable removal units that were being issued under the Kyoto Protocol, and which those forests' absorption – which those foresters had earned for this country under the Protocol – instead, what the government did was to appropriate those internationally tradable units, the RMUs, and issue New Zealand Units instead

to New Zealand foresters, which effectively meant that foresters were not able to offer their absorption services on the international market.

Now, the second emission reduction plan, as I read it, envisages an equivalent policy stance, that would mean that forest owners get NZUs, New Zealand Units, for their efforts, but are denied the chance to earn internationally tradable credits under a Paris Accord compliance market, if and when that market emerges, and at the same time, the second emissions reduction plan foreshadows large-scale offshore purchases of carbon credits by the New Zealand government itself, and those credits would have to be sourced from some international market in traded and verified carbon credits, which is precisely the market that Mr Murray's evidence seems to deny.

So his argument that because the official market is not currently up and running, New Zealand should do nothing to prepare for it, is just making the case, I think, for abandoning the commitment to moving the global consensus forward in what is a very difficult area.

I cannot promise market access or high prices for forestry carbon credit exports tomorrow. But I do suggest that New Zealand should be opening the way for it to happen, rather than leaving the New Zealand Emissions Trading Scheme as a semi-closed system which allows imports but blocks exports of emission credit.

I turn now to the evidence of Rebecca Jane Prebble, just briefly summarizing what I said in my affidavit, #A005(d).

Ms Prebble has described recent legislated and proposed policy changes around target setting, changes in the role of the Climate Change Commission, and breaking the link between the Emissions Trading Scheme and the Nationally Determined Contribution under the Paris Agreement, and I interpret the overall thrust of those changes as a substantial reduction in the New Zealand government’s already-low level of ambition on climate action.

Of the fourteen specific policy changes that are listed in paragraph 6 of Ms Prebble's evidence, the first seven involve clear, substantive steps to lower the ambition of the New Zealand government's effort to reduce greenhouse gas emissions.

The other seven paragraphs (sub-paragraphs 6.8-6.14), which are dealt with by Ms Prebble under the heading "Other amendments to climate policy", are either unrelated to emission reduction (for example, the requirement on local government to produce adaptation plans) or they involve administrative changes, many of them aimed primarily to reduce costs for the government and for key business interests.

As Ms Prebble makes clear at several points, a central justification for the administrative changes that have been put through is to reduce costs to government and business – not to ensure compliance with the emissions goals that are set out in the Nationally Determined Contribution. In fact, the general direction of travel is away from the NDC and away from the Paris Agreement's aim of limiting global temperature rise to 1.5°.

And so I have listed there in paragraph ~~4.5~~ policy changes which I identify as reducing the level of ambition, relaxing the methane target, delinking the Emissions Trading Scheme from the NDC, increasing emphasis on food production as a reason for reducing agricultural mitigation effort, extending the agricultural exemption from the EFS trading scheme, failure to respond to the requests from the International Maritime Organization and the International Civil Aviation Organization for New Zealand to set targets for international shipping and aviation, and removal of reference to the 1.5° target from the zero carbon framework.

In my opinion, the policy changes described by Ms Prebble involve a conscious retreat by New Zealand from the Paris Agreement. Neither science nor advice from the officials referred to by Ms Prebble, nor the recommendations of the Climate Change Commission, support the decisions taken by the current government. Those decisions represent political choices made in response to

intensive lobbying from powerful vested interests within the New Zealand economy, and they involve, in my view, clear steps in the direction of defecting from the Paris Agreement, and will be seen as such by other parties to that agreement.

I am going to come to John Ballingall's evidence, and I was able to watch his oral evidence on 28th of November 2025, and it struck me, as another economist, that his comments deserved at least some response.

Mr Ballingall put forward as an economic case against ambitious action by New Zealand to reduce its emissions, and his argument was, as I interpreted it, that the UNFCCC and the Paris Agreement are a simple nullity. We can somehow set them aside and form our policy purely on the basis that reducing emissions is expensive and we should not incur that expense – in other words, New Zealand is free to walk away and should do so on the basis of its economic self-interest, and that's a familiar case, for New Zealand to free ride, to do as little as possible while other countries carry the burden of addressing global climate emissions.

And my response is that nations enter into treaties to restrain one another's conduct, and the rules-based international order does rely heavily on those treaties being honoured, even in cases where the text is loose enough to leave loopholes for opportunistic defection, and there is a large body of economic literature on the subject of post-contractual opportunism, which is situations where one party to a contract pursues its own self-interest at the expense of the others despite the terms of the contract, and where neither litigation nor enforcement are available to remedy the breach of trust. The voluntary nature of the Paris Agreement was from the outset vulnerable to opportunistic defection by countries such as New Zealand, which had previously, in the Kyoto Protocol, been identified as having special responsibility to lead, not follow, within the world community of nations.

So I disagree with Mr Ballingall's proposition that the economic cost of reducing New Zealand's emissions provides the justification for stepping away from commitments made under the Paris Agreement.

And that's what I have in my written evidence. I'm happy to take questions.

JUDGE MILROY:

Thank you, Dr Bertram.

QUESTIONS FROM THE CROWN – NIL

(12:08) PROFESSOR DAVID WILLIAMS TO DR GEOFF BERTRAM:

Q. Tēnā koe, Dr Bertram. Thank you for that paper, and especially for the part where you tease out the differences between yourself and Ms Plume. That was very helpful.

We had some comments from the previous witness about what individuals can do to make a difference, and in paragraph 4.3 of your evidence, you talk about the fact that "a case is often made for reducing the proportion of the world's food supply provided from livestock pastoralism because of its high carbon-intensity relative to crops. Substitution of crops for pastoral production does not, however, seem to be the intended thrust of the new requirement to 'consider' food production". So, food supply is something that's mentioned in the ERP2. But what – could – have you any – do economists do estimates of what difference would it make if a certain proportion of the meat-eaters amongst the world stopped being meat-eaters and began being vegetarians, like some of my family insist that I should do?

A. Well, yes, there is work done on that. The way to think about it in relation to New Zealand agriculture, I think, is to imagine a world in which the case for eating less red meat had been taken seriously across a wide part of the population, and therefore the market demand for foodstuffs had changed its structure away from animal protein towards more vegetable protein and so on, and New Zealand would then, as a major producer of red meats, face a different market situation, which could lead to a

reallocation of land within New Zealand away from pastoral towards arable production.

Now, there's quite a lot of the New Zealand land area that's not particularly suitable for arable production, obviously. We would be talking here about those parts of the pastoral estate that are suitable for transfer from pastoral production to arable production. But potentially, that could be the outcome of a big shift in global preferences.

I don't think that comes under the heading of what we can do, however. I mean, we all have members of our families, I suspect, who've gone vegetarian over recent years, and I don't think they've shifted the global market balance more than very small amount. We'd have to be talking about quite a large-scale change in dietary preference. But there certainly is the case being made for such a switch in global dietary patterns, and that would obviously have economic implications.

Q. Thank you. Thank you, and in posing that question, you've induced my colleague to desire to – want to ask you another question.

(11:00) BASIL MORRISON TO DR GEOFF BERTRAM:

Q. Thank you most sincerely for that – for your submission and those comments. I just wonder where, for instance, where you have a dairy cow who produces milk, and of course as you know from the milk, it's not only milk per se, or cheese, or some of the obvious things, but pharmaceuticals even the caseinates that are used to make the button on your shirt, to a whole number of foods that are very important and very nutritional, so that's very important. So what do we do with the cow – because as you know a dairy herd is about 25% turnover each calendar year, for a variety of reasons – what do you do with those cows if you don't eat them?

A. Well, the issue doesn't arise for the next few years, I think. We're talking a much longer time horizon.

If, indeed, the world moves away from consumption of red meat and towards consumption of a more vegetable diet, in the first instance, that would put pressure as much on the beef and lamb sector of New Zealand pastoralism as it would on dairying. I mean, I imagine dairying does have

that issue of disposal of cows once they've served their time. They go on into the red meat supply chain. And I'm not envisaging that New Zealand is about to have any wholesale overturning of its agricultural production mix.

I do know, however that one of the things that continually arises in debates in New Zealand over reducing our emissions is that methane from dairy herds and nitrous oxide from dairy herds are the big-ticket items in our total emissions profile, and it does seem extraordinarily difficult to bring those massively down without reducing the dairy herd, and I do anticipate that if and when major international pressure comes on us to get our methane emissions down – and I think there's quite a lot of urgency about methane beginning to appear, simply because we're looking for quick fixes now as we get into emergency country with the global ambitions pattern – if we have real pressure on us to reduce our methane emissions before we get all the technological fixes that have been promised, reducing the dairy herd is a likely outcome of that, and that obviously would feed through to a reduction in the number of cows going through into the meat supply chain.

Q. Okay, I guess that would –

A. **(inaudible 12:14:01)**

Q. I guess it would apply to the sheep as well, after we've taken the wool off and made that into carpet and clothing, and of course, you'll be well aware, in the dairy industry, the tremendous amount of research, some of it turning out very, very good results, into new grass cultivars, the boluses, the fact of maize silage, feeding it in the morning, reducing the methane later on in the morning when they regurgitate and create that methane, cattle breeding, all of those things that are taking place at the moment. You'd be well aware of that, of course.

A. Yes, and looking out to 2050, which is where – which is sort of our planning horizon, I don't see New Zealand pastoral production disappearing altogether by any means. I think, you know, the simple economics of comparative advantage means we're going to be still there in the supply chain for those products.

Q. Thank you. That means I can sleep tonight. Thank you very much.

JUDGE MILROY:

Thank you, Dr Bertram. I have no questions. I just wanted to thank you for your Appendix 1 with the GHG emission data, and your explanation of how that table works for us. That was very enlightening. So thank you for that. So I will just hand you back to your council, in case there are any questions by way of re-examination.

MR SHARP:

Yes, Ma'am, given we have got a little bit of time before lunchtime, there was one follow-up question for the Tribunal's questions.

(12:15) MR SHARP TO DR GEOFF BERTRAM:

Q. Just in general, Dr Bertram, if we look at the issue of sacrificing our immediate economic interests, for example, dairy cows or sheep production, for the interests of future generations in reducing emissions, have you got any comment on how economists would generally approach that problem?

A. Yes, sure. There is a lot of economic literature about this, and I did hear Professor Gillespie yesterday's evidence on future generations, and that was cast very much in philosophical and legal terms of providing voice for future generations.

Economists think about future generations in a rather more abstract way, by projecting forward the costs associated with climate change through what is called the damage function, and the damage function is a function which says, if you have 1° of climate warming, what damage does that do to the economy? If we have 2°, what damage is done? If we have 3°, what damage is done? And by framing up the quantum of actual impacts on the physical setup of the world economy and then monetising that to estimate how you can think about that as a total cost of the damages imposed by climate change, you can come up with a number. In fact, you can come up with numbers year by year, out into the future about what the burden of climate change will be economically on the world population, and that, effectively, is an accounting of the damages to future generations.

Now, once you've estimated the damages – and I have to emphasise, this is not a non-controversial area – there are very widely differing estimates of what the damages are going to be, and that critically depends on the science, I'm afraid – we either face catastrophic tipping points, at which point the costs become exponentially larger very quickly, or we face a smooth sort of transition, where the global economy manages to adjust and even at 4° of warming, we still have a functioning civilization. There are legitimate grounds for people to disagree about which of those outcomes seems more likely.

But once you've chosen a course of damages into the future, you then have the job of discounting it to the present, because when you're sitting in the present, looking at the future, you need to think, "How important are my grandchildren, my great-grandchildren, and so on? To what extent do I focus on the here and now and discount the future, because it's a bit uncertain, it's further away, and so on?"

And discounting is an area of intense debate in climate change economics, and the reason is – if you think about it, it's quite simple. Suppose we put a discount rate of zero on the future and we agree that there is quite a lot of damage coming from climate change. Then, the costs to future generations simply overwhelm the interests of the present generation. At a discount rate of zero, we have centuries of damage all being loaded into the balance against this year's interests of the current generation. So a discount rate of zero, it produces a massive focus upon future generations.

On the other hand, a discount rate at commercial levels, maybe 8 to 10%, say, even ten years out, the things have almost disappeared from the net present value calculation, and so, using a higher discount rate means that we effectively write off future generations for the purposes of our policy thinking and calculating the costs and benefits of policy changes.

And in between those two, there is a whole range of possible discount rates that you could use, and at some point, there is a sort of tipping point, if you like, where the interests of future generations suddenly dominate over the interests of the present generation, and with high interest [*sic*]

rates, the present is prioritised. At low discount rates, the future is prioritised.

Now – though there is an enormous literature on this. It's mostly highly technical and it's full of the sort of numbers that economists swim in but most of the population really probably don't want to go to. But the fundamental ideas are pretty clear. In your damages function, everything hinges on whether you think future damage will be catastrophic or manageable, which means just how big you think the damage is going to be, and then your discounting practices; you have to decide what discount rate is appropriate for the present generation to take account of future events that they will not themselves be part of.

I hope that's of some assistance. I mean, I'm happy to expand on that if you like.

Q. No, that's fine. So, just to summarise, the controversy is the discount rate. And amongst the various literature, from what you are saying, there is no real consensus on that from an environmental damage point of view?

A. No, there isn't. There are two reasons for that that I can immediately think of. One of them is that we genuinely don't know quite a lot about where the future will go. We don't know how successful the world community will be in limiting its emissions, we don't know what – exactly where the tipping points will turn out to lie, and so on.

And so, within the literature, there's a very strong contrast between – for example, take two economists who've worked on this, Martin Weitzman has argued very strongly the importance of taking catastrophe into account. In other words, he has a very strong focus on the very real risk that we will get turning points which will effectively wipe out civilisation as we know it. On the other hand, Bill Nordhaus, who's built a model called DICE, D-I-C-E, to model the future, has a much more sanguine approach to future damage. He assumes that the market economy will find all sorts of ways to survive rising temperatures, and at the end of the day, the damage will be limited. So there's a huge range of disagreement there.

And the other part of the issue is that the amount of damage is what we call endogenous, if you like. How much damage do you think is coming?

It depends critically on what the world community does now to limit its emissions. If the Paris Agreement actually works out and we get all the countries of the world massively cutting their emissions, then the future will be less catastrophic than if everybody just sits back and lets the climate change roll along. And so, in thinking about the future damages function, you have to make some assumption about how strong the policy response is going to be, and we do have a whole range of possible outcomes there from quite benign to quite disastrous, and when you're thinking about this with an economic model, the assumption that you put in about what the policy response is going to be is quite fundamental to the numbers that come out the other end.

Q. Thank you, Dr Bertram. I wonder if you could just arrange, through us, just to file those two academic articles that you were talking about. But that is all the follow-up questions I have, Dr Bertram. Thank you for your evidence.

JUDGE MILROY:

Yes, and can I thank you again, Dr Bertram, for providing the evidence. I did give an incorrect number for the speaking notes of Dr Bertram. It needs to be refiled, but the number will be #A005(f), not (e). The #A005(e) is for the actual reply evidence. All right.

Thank you again, Dr Bertram. Your evidence is always very illuminating and helpful to us. Thank you.

DR IVO GEOFFREY BERTRAM:

Kia ora.

HOUSEKEEPING – TIMETABLING (12:25:28)

HEARING ADJOURNS: 12.26 PM

HEARING RESUMES: 1.29 PM

JUDGE MILROY:

Welcome back. We're now resuming with evidence from Dr Meade, and I can see you there, Dr Meade, so welcome to the Tribunal for this inquiry. I will pass you over to your counsel to just introduce you and then we can look at having your evidence.

(13:30) MR MAHUIKA: (CALLS)

DR RICHARD MEADE (SWORN)

Q. Tēnā koe, Dr Meade. Can you see and hear me? Probably more importantly hear me than see me. I'll be a dot in the screen somewhere I imagine.

A. I can certainly hear you, Matanuku.

Q. Very good.

A. And I see you.

Q. Yes. I'll wave my arms around and then you can pick me up. Look, thank you for making time. I know that you have a busy schedule and some other things happening, so we're very grateful to you both for your evidence and for making yourself available today. You filed a brief of evidence, the evidence is on the Tribunal record as document #A151, and you've also prepared a presentation which summarises your evidence which you are going to talk to now, I understand, Dr Meade?

A. Indeed, that's right, thank you.

Q. Beyond that, Ma'am, Dr Meade can introduce himself and introduce his evidence. I'd propose just to pass it over to Dr Meade to go through his presentation. There is some limit as to time so we've exchanged emails about what to focus on. So I'll leave that to you Dr Meade and if I do intervene it will just be because of that.

A. Thank you.

Q. Thank you, Dr Meade. Over to you.

(13:31) DR RICHARD MEADE: (#A151)

Kia ora koutou. Thank you very much. So kia ora koutou, your Honour and fellow Tribunal members. A pleasure to be back before the Tribunal and delighted to have the opportunity to present my evidence this afternoon.

Just to clarify, I believe I can present until about 3pm, does that sound right?

JUDGE MILROY:
Yes, that's correct.

DR RICHARD MEADE: (CONTINUES)
Okay, very good, thank you. And if it assists the Tribunal, Ma'am, of course I'm happy to take any questions of clarification or discussion along the way. So let me know what works best. Of course I'll take any questions following the conclusion of my presentation.

If I may, I will try and screenshare my slideshow.

HOUSEKEEPING – DR MEADES SETTING UP PRESENTATION

DR RICHARD MEADE: (CONTINUES)
Are my slides visible to everyone? Yes, thank you. Sorry, everyone. Very good. Okay, I'll forge on.

If I could please start with just a correction I'd like to note, it's just really a typo rather than a substantive matter. One paragraph of my affidavit was meant to read exactly the same as another paragraph of my affidavit, but it didn't. So if we could please understand that para 104(a) should be read with the highlighted text that I've got in this slide which is as that paragraph appears in para 111(a) as well. So my apologies for that. This is just changing my explanation in the affidavit, it doesn't change my calculations or my conclusions or anything else substantive in my brief.

Just to move on, just my overview, and I won't belabour the point.

Effectively, I'll cover the same sort of headings in my affidavit, so I'll talk about the scope and I'll summarise my evidence.

I'll talk about the Crown's development in implementation of its policy in the climate change space, provide some high level evaluations of the impacts on Tairāwhiti Māori and some specific aspects of the policy, and I'll talk about socio-economic and cultural impacts on Tairāwhiti Māori of certain climate change policy issues. I'll talk about climate change and related other policy approaches to better support socio-economic and cultural aspirations of Tairāwhiti Māori and briefly conclude.

So just to get straight into things. Scope of evidence.

1. I was asked to provide evidence for Te Taumata Māori Landowners Collective. And so, I've been asked to provide this general/high-level critique of the Crown's development and implementation of climate change policy, with a focus on forestry especially.
2. Provide some high-level and illustrative evaluations of the cost to Tairāwhiti Māori of certain aspects of climate change policy and in particular the Emissions Trading Scheme or ETS.
3. Provide a case study of how climate change and other policies have affected Tairāwhiti Māori.
4. Describe climate change related policy approaches that would better support the aspirations of Tairāwhiti Māori.

So those are effectively the topics I was asked to address when I prepared my evidence.

Just to summarise very briefly:

1. Climate change policy settings have been highly uncertain (what I'm calling time inconsistent) instead of credible and committed. And I will unpack what I mean by credible and committed later in the presentation.
2. This has undermined the achievement of climate change policy objectives themselves. But it also has presented investors or landowners with volatile and suppressed emissions price signals. That means they've deferred or in some cases forever deferred land use

change decisions and investments, for example, in forestry, such as converting land into forestry investments.

3. If landowners/investors had been presented with sustainably higher and less volatile emissions prices, they would've enjoyed significantly higher returns from forestry-based carbon sequestration.
    a. I provide some indicative assessments of just how much higher for whenua Māori landowners in Tairāwhiti.
4. I also assess the co-benefits of Tairāwhiti forestry and I focus in particular on erosion control and biodiversity enhancement, and of course other things that could've been focused on but these are two sort of high profiled areas.
    a. I explain why time-inconsistent climate change policies have reduced these co-benefits.
5. I Indicatively assess the additional carbon sequestration value that could have been realised by Tairāwhiti whenua Māori landowners from more credible and committed climate change policy to be roughly $500 million per annum, and I'll come back to some other figures later in the presentation:
    a. So, from just carbon sequestration alone, if we had more credible and committed climate change policy, that's, you know, half a billion dollars' worth of extra value in a year for Tairāwhiti Māori landowners. And this could have supported in addition over $3 billion per annum in regional erosion control benefits, and roughly $25 million per annum in regional biodiversity benefits.
6. The Crown has relied heavily on emissions removals by forestry, including from Māori landowners:
    a. But due to these time inconsistency problems, climate change policy has undermined the ability of Māori landowners to do so, especially in Tairāwhiti.
7. This has effectively denied Tairāwhiti whenua Māori landowners significant extra and more reliable resources:
    a. In turn this that frustrates the realisation of long-term socio-economic and cultural aspirations.

8. A key means of improving the time-consistency of climate change policies would be to establish an independent and properly constituted climate change commission, with features beyond what we have with the existing Climate Change Commission.:
    a. In particular, having delegated powers to determine climate change policy settings, free from influence by political cycles.
9. Complementary policy settings (for example, regarding erosion control) could be designed, that further assist Tairāwhiti Māori in achieving their socio-economic and cultural aspirations.

So that was just by way of introduction really. Now I will move into a high-level critique of the Crown's development of climate change policy. I'm assuming the Tribunal's largely familiar with a lot of these details anyway so I won't necessary dwell very much on this. But just in terms of high-level overview:

- I've relied on multiple histories and reviews of the ETS and associated climate change policies. In paragraph 14 of my affidavit I list those sources.
- Just very briefly, as we know, the ETS was introduced in 2008. The intention was covering all sectors and all gases:
    - This places a "Price" on emissions by requiring emitters to surrender a New Zealand Unit for every tonne of CO2 equivalent of emissions;
    - New Zealand Units supplied were supplied via free allocations, or for removals (like forestry removals in relation to post-1989 forestry);
    - The ETS was notable for not capping emissions, and not capping NZUs issued for removals. I'll mention a couple of the notable features shortly.
- Agriculture (which is roughly half of our emissions) was intended to be included, but is still isn't – and that's despite policy waxing/waning. So sometimes it looks like agriculture will be introduced, sometimes it looks like it won't.

In terms of forestry specifics, this was the first sector included when the ETS was introduced and this was effective from 1 January 2008. Just some key distinctions:

- For non-indigenous forests first planted before 1990 – Converting them into non-forestry use, what we call deforestation, gives rise to a deemed emissions liability, and hence the need to surrender NZUs.
- For post-1989 Forests – These are forests first planted after 1989, and they can be indigenous or exotics. They are eligible to earn New Zealand Units as forests sequester carbon, but units must be surrendered for deemed emissions on harvest and in other events as well; and
- For Pre-1990 Indigenous Forests – These are exempt from the ETS, on the basis the carbon sequestration is effectively in a steady state, so it's neither rising or falling. We'll return to this a bit later on.

Some unusual features of the ETS:

- Initially, overseas units could be surrendered in lieu of NZUs without cap:
    - We were unusual in not capping this.
      So one of the sources I cite in my affidavit starts off with a quote just saying how unusual New Zealand was in not capping its international unit surrenders.
    - This was ultimately reversed, this was after the NZU prices ended up being suppressed, access to these overseas units, and it created a stockpile or "overhang" of cheap units – sorry, I should have said of NZUs, I beg your pardon – which suppresses future prices.
- There's also a feature of the ETS where there's a fixed price option which it caps NZU prices at $25 per tonne.
- There one also, for a while at lease, a "One-for-two" rule that was introduced in response to economic circumstances which halved the

effective surrender price, with an effective cap therefore of half that $25 value, just $12.50 per tonne.

- And an enduring unusual feature of ETS – New Zealand is unusual in that our largest omitting sector is agriculture. Using in other countries it's your energy sector, particularly electricity for example. It's unusual to have our highest emitting sector not being included in the ETS, because other countries when they do have ETS' tend to put in their largest emitting sectors, and agriculture's never been covered by the ETS in New Zealand.

Now, in terms of innovations, in our climate change policy, a milestone of course was the Paris Agreement then signed in 2015, committing countries globally to reduce their emissions. This was via so-called nationally determined contributions. It was signed up to and New Zealand signed up to its own NDC.

- Following that, the previous Labour Government introduced the Zero Carbon Act, and this was to:
    - Provide a framework for developing and implementing clear and stable climate change policies;
    - To establish an independent but advisory only Climate Change Commission to advise and monitor the government;
    - To establish the 2050 emissions reduction target. This is where our "net-zero by 2050" objective for non-agricultural emissions comes in; and
    - To generally signal more serious commitment to setting and achieving emissions reductions goals in line with international commitments under the Paris Agreement.
- Policy continues to evolve – for example, late last year the Government announced a delinking of ETS settings from New Zealand's NDC, and then one morning the ETS price fell by 20%, later recovered in the same day but this is obviously one of those sort of policy announcements that had a very, very serious price impact.

Some key issues of policy not being credible or consistent.

- The Parliamentary Commissioner for the Environment has advised that six years after the Zero Carbon Act (and longer now of course), ETS is an important but unreliable means of achieving our emissions reduction goals:
    - Forestry planting rates varied significantly and the PCE says this is "largely due to tinkering with ETS settings affecting the carbon price signal";
    - This changes the way the ETS functions and the PCE considers this will have a disproportionate impact on Māori. This will be something that comes through in my analysis later on.
- Other commentators also note the high uncertainty in the ETS settings, often changing in response to changing political imperatives:
    - In other words, climate change policies have been what I call "time-inconsistent", rather than "credible and committed".

In terms of time inconsistency:

- Sir Geoffrey Palmer (former Prime Minister of course) has also commented on climate change matters.
    - The chief legislation, the Climate Change Response Act, he describes it being massively amended, several times, it's lost its coherence, it's been weakened, obligations deferred to the benefit of emitters, undue ministerial influence. These are all criticisms that Sir Geoffrey has made of the legislation;
    - And he concludes that we've got a weak price signal and that has had a negative impact on the forestry sector in particular.
    - He has described "Regulatory lurches on the issue, following changes in government," and pines that this is not helpful for New Zealand but is something that's been a feature.
- In a survey of ETS market participants:

- Over 80% of the respondents disagreed or strongly agreed that the Government has provided sufficient regulatory certainty about the NZ ETS;
- And in this article from the parties that made the survey, they conclude that the ETS is still strongly influenced by politics, and this is causing much of the uncertainty and the lack of ambition surrounding the policy.

- Other researchers have also emphasised the importance of climate change policy certainty. So this is a study I cited in my affidavit and they note that:
  - Stability is essential for investors and producers. The NZ ETS reforms and changes create uncertainty, and this is harmful to low emissions investment to some extent. And these changes have been abrupt and unrelated instead of reflecting political unity. Which is I guess part of the enduring problem with our climate change settings.
  - Political alternation induced changes in climate policy and the implementation of carbon pricing.
  - Climate change is a very long-term issue, and it is crucial to maintain a constant political orientation to tackle the problem.

So effectively, you know, thinking about what these other commentators have said which I'm quoting with agreement basically:

- ETS has been plagued by uncertainty driven by political cycles:
  - And this has exposed forestry investors and landowners in particular to policy reversals, flip-flops, failures to deliver, or fundamental changes in policy settings – instead of the sort of long-term policy certainty that is needed to make long-term investments.

In terms of the issues for investors and landowners:

- New Zealand Productivity Commission has highlighted a certain number of issues:

- Long-term nature of climate change (this spans generations) and deep uncertainty associated with the future, means there's a credible commitment problem when you formulate a long-term policy response.
- It emphasises, really well-designed laws and institutions to provide a strong signal about future policy intentions and to act as a commitment device to help drive the development and implementation of a long-term policy response. And *in this way , laws and institutions provide policy stability and credibility.* So in other words, if we get our institutions right we'll get stability and credibility, but if we don't then we won't and that's going to be a problem.
- The Productivity Commission noted that New Zealand has a climate change regulatory framework, but it is not underpinned by a credible commitment to a domestic low emissions transition. This was back in 2018 I should note when the Productivity Commission was saying this. And the current systems architecture lacks long-term stability and predictability.
- And it concluded that New Zealand needs a reformed statutory framework with long term thinking that promotes policy stability.

So what do I mean by credible and committed policy?

- The critical issue identified by Productivity Commission is the need for climate change policy to be "credible":
  - I.e. non-government decision-makers have to believe that the policy is sending a reliable long-term signal about how emissions will be priced, and therefore about the costs or benefits of emissions/reductions (e.g. removals by post-1989 forestry);
  - To "credible", I add "committed" (as does the Productivity Commission as it happens) – we need the ETS settings being based on clearly understood long-term objectives (and so, net-zero by 2050 in some way or another). We want a very clear and committed statement of what we're trying to achieve.

- I'm referring to "credible and committed" climate change policy as the sort of policy we want to have:
    - This is to be contrasted with time-inconsistent policy – which provides inconsistent pricing signals to decision-makers that are making long-term investment or land use change decisions.

So, what sort of issues is this time-inconsistency creating for Investors/Landowners?

- This uncertainty is causing decision-makers like investors or landowners to defer making long-term decisions, especially when they irreversible in some sense (cost is reversed):
    - E.g. causing post-1989 forestry investors to wait until more credible and committed signals arrive showing the NZU prices are going to be sustainably higher before they decide to change out of the existing land uses or otherwise making their investments;
    - If the policy uncertainty is too pronounced, then this can even defer these sorts of investments or land use changes indefinitely – so there's a problem that if the policy is just too unreliable then it's not that we just delay these things, we just stop them from happening.
- This obviously frustrates the achievement of climate change policy objectives, at the same time it denies ETS participants benefits they might derive from more credible and committed policy. In a sense, a kind of "lose-lose", right. We face greater cost in achieving our climate change goals and we miss out on some opportunities for parties to benefit from more credible and committed policy.

Okay. Some high-level evaluations of the impacts on Tairāwhiti Māori of specific aspects of climate change policy. I should mention for completeness in this section, I've got quite a few slides that cover methodological issues but I appreciate they might be somewhat dry for many who are viewing, so I'll

probably dance through some of these a bit – might dance through some of the methodological points rather than linger on then. I'm more than happy to go back to them obviously so if it helps, if it assists the Tribunal to go through any particular methodological points by all means and I'm certainly happy to loop back so just let me know, but otherwise I'll try not to burden people with too much methodology.

So just my overview:

- I'm going to provide some high-level monetised evaluations of how more credible and committed climate change policy since 2008 could have affected forestry-related values attaching to Tairāwhiti whenua Māori:
    - These are illustrative and general, but not intended to inform specific investment decisions. (I kind of felt the need to include that disclaimer because I'm not giving investment advice if you like, so I don't want the Financial Markets Authority to get cross with me.)
- A key step in my analysis is I develop what I call "counterfactual" NZU prices under the ETS, this is both historically (so since 2008 until now) and also into the future, and then these can be compared with "actual" NZU prices. In other words, the prices that have actually happened or the prices that we might expect to happen under current policy settings in the future:
    - Actual NZU prices, they've actually arisen historically, so these are the ETS prices we can dial up on the internet and observe. But of course we can't see the future ETS prices but we can form a view about how NZU prices will evolve in the future under current policy settings, and so I haven't attempted that.
    - And then counterfactual NZU prices – these are prices you don't observe, except in my affidavit. These are prices which might have arisen historically, and which can be expected to arise in the future, under more committed and credible policy. I stress more, I'm not trying to imagine perfect climate change policy, I think

that's too great a stretch. I'm simply assuming that we have better policy in the future, more credible, more committed.

And so, what would prices be in that sort of world, and then we compare the two. So, what is the difference between what we achieve with the counterfactual prices under more committed and credible policy versus what could be achieved in the status-quo under actual policy.

- The difference in returns generated by the counterfactual and factual NZU prices provides measure of loss to Tairāwhiti whenua Māori landowners from time-inconsistent policy, for example:
    - From the greater returns they might've achieved by converting land use from low-returning marginal sheep and beef farming for example, to potentially more remunerative carbon sequestration through afforestation – and that's whether we're talking about rapid-growing pinus radiata, or a slower growing species such as natives; or
    - Perhaps even reversion to mānuka/kānuka, which is something I talk about. So that's the reversion option.
- I also talk about the co-benefits of afforestation – notably erosion control because we know that's a particular issue in Tai Rāwhiti, and also biodiversity enhancement:
    - This shows how there are interactions between climate change policy and other policies.
- So the landowner context, as you're probably aware, Tairāwhiti is heavily erosion-prone – it's exposed to some very heavy rainfall events.
    - This is worsened by accumulations of water-borne wood waste (the "slash" problem that we're familiar with); and
    - There are infrastructure deficits and climate vulnerability in Tairāwhiti that in turn limit investments and employment.
- The economy is relatively under-developed:
    - Relatively low population, low GDP per capita and housing income;

- Much higher Māori population share, and higher rates of socio economic deprivation than other parts of the country.

Just in terms of the land types in Tairāwhiti:

This chart is showing land use classifications where a lower land use classification means more versatile land and a higher number means less versatile land. What we see is for both Māori and non-Māori where blue represents whenua Māori and orange means non-whenua Māori in Tairāwhiti, for both Māori and non-Māori we've got a very high preponderance of land use classes 6 and 7, and for Māori especially your disproportionate share of the least versatile land use class 8. So we're thinking about very steep land or gullies and erosion and so forth not suitable for any types of land use.

In terms of what the Land Cover is in Tairāwhiti, we have a lot of indigenous forest cover, we have a lot of low producing grassland. We've got a certain amount of high producing grassland and a certain amount of forestry either post-89 or pre-90. But obviously it's a lot of indigenous forestry and a lot of low producing grassland.

In terms of most suitable land uses:

- Most remunerative land cover types based on this would be things like:
  - High-producing grassland;
  - Commercial forestry – whether that's pre-1990 timber/fibre, or post-1989 timber/fibre and/or carbon sequestration.
- I couldn't separate out in the data arable, horticultural or viticultural land uses – they'll be smaller areas but much more valuable per hectare in terms of financial returns.
- I'm interpreting grassland with woody biomass is being most likely scrub, so limited financial returns, but maybe things like honey production. But if we can get carbon sequestration underway with higher returns then this land could have some higher valued use as well.

Turning to Historical NZU Prices. This is a chart that should be familiar. These are "actual" historical NZU prices since 2010 when we start getting a reliable series. I'll talk about some different areas briefly just in passing. But obviously one of the notable features is from around about late 2020-early 2021 there was a big ramp up in prices and it's been particularly volatile ever since with a bit of a downward trend as it happens, but of course the other notable feature is we had a big slump very early in the ETS' history, and we'll come back to this in a moment.

There's some policy reasons for this:

- The slump in early 2011 was because it became cheaper for emitters to surrender low-cost emissions units from overseas than to use more expensive NZUs. This has been well documented in a study by one of my colleagues at **(inaudible 13:57:47)** University as it happens, Diaz-Rainey.
- The steady price growth in early to late 2010s. Another study has explored this quite extensively:
    - There was the 2015 Paris Agreement;
    - De-linking of the ETS from international markets – i.e. end to the use of "hot air" units. So that was something that caused prices to bounce back quite strongly;
    - This also led to a reduction in the "banking" (or stockpiling) of NZUs that arose while international units could be surrendered in lieu of NZUs, and also because of the price-capping and fixed-price option to meet obligations; and
    - Also when we phased out of one-for-two transitional measure in 2016, this of course also **(inaudible 13:58:32)** an extra price in pressure and hence **(inaudible 13:58:35)** prices in ETS.
- We have had a steep rise in prices mid-2021. This is actually consistent with:
    - Ending of the FPO transitional measure;

- The passage of the Zero Carbon Act late 2019 and stiffening the general emissions reduction institutions in New Zealand; and
- Then there was the intention to finally include agricultural emissions that was announced at the time as well. So there was generally a bunch of reasons why we'd expect prices to be rising over that period because of policy changes.

- But there was a declining trend since peaks in mid-2021 through to early 2022 partly attributable I would suggest to the ultimate 2023 change in government:
  - One **(inaudible 13:59:19)**, we had decision where the agricultural emissions would not be likely to be included. So this is a reversal if you like of the previous measures announced around the time of the Zero Carbon Act; and
  - Some specific policy announcements that have happened since then as well – for example, delinking the ETS from New Zealand's NDC in late 2025. As I mentioned before, there was almost a 20% price fall in just one morning's trading from that one announcement alone.

So, I won't spend too much time on the next sort of bit expect to note we ended up with what I'm calling an overhang of NZUs. Because we were able to use quite a few cheap overseas units, and so this is a graph showing over time, so that's 2011 through to 2021. These orange bars for example are showing us how we were able to access cheaper overseas units and use them to meet New Zealand ETS obligations, and so that freed up NZUs that were being allocated or earned over that time to be stockpiled, and a consequence of the stockpile is we have annual emissions that are, you know, the height of these sorts of orange bars, but we have stored total NZUs of these blue bars, which are of course many, many times larger, so it means we have a number of years' worth of NZUs stockpiled to cover any given year's emissions units and emissions obligations.

Now, this is where things get a bit more technical, and I don't want to burden the Tribunal with methodological issues, but I'll just in passing mention some of

the key details, and we can always look back to more precise details if that's going to be of assistance, but a key step, as I said before, in figuring out: “What has been the impact of time-inconsistent climate change policies on Tairāwhiti Māori landowners?”. To get there, I need to develop what I call these counterfactual NZU prices.

If we think about it, in the conversation we just had, talking about specific past policy changes, sometimes we can point to specific policy changes that lead to changes in NZU prices, but it's really hard to do that on a consistent basis and to do so with precision, given some of these price changes might have longer-lasting effects than others, and in fact, not all these policy changes were surprises, so to extent they weren’t surprises, we would have expected them to have been impounded in prices over time, rather than seeing big-step jumps on announcement dates.

So I’ve used a different approach, and what I do is I use NZU price changes themselves to help me distinguish what you might call normal changes in NZU prices, or you might think of these as what are sometimes called fundamentals-based changes, so in other words, they’re price changes that happen for, you know, proper sort of reasons, reflecting the arrival of market information. And then you could also think about price shocks, and I'm going to distinguish normal changes from price shocks. The price shocks are basically unexpectedly large changes in NZU prices, for which the daily changes are less likely to be just due to usual emergence of price-relevant information. So this is where I can attribute really, really severe price shocks to policy changes, as such.

And I'm going to use a method that’s used quite a lot in finance. I'm using an approximate version of it, just to keep it simple and replicable, but this is very common when trying to figure out how to characterise asset returns in financial markets, for example. Oftentimes, the distributions of returns have what called “fat tails”, in other words, very extreme positive returns or very extreme negative returns occur with greater frequency than you would expect if returns were following some sort of normal distribution, and – you know, “normal” in the

sense of normal that we usually use it, but also “normal” in the sense of the bell-shaped curve, that common sort of statistical distribution – and so oftentimes, we model asset returns as being a mixture of distributions. They follow the normal distribution some of the time, but every now and again, they kind of jump to this kind of shocks distribution, which has a higher average and a higher variation, and that is often a very helpful way to characterise the sort of volatility that we observe in market prices.

So, I don't want to actually labour too much more on the approach. I'll just say in general terms I'm going to do two things to develop my counterfactual prices. One is, I'm going to de-shock the prices, so I’ve used this approximate mixture of distributions approach, where basically, I say if we had a price jump on any given day in ETS prices – NZU prices – that’s more than **(inaudible 14:03:46)** some very, very high level, I'm going to call that a policy shock, effectively, and I'm going to filter it out. And so by filtering out that policy shock, I end up with a de-shocked price series, so I can reconstitute the historical NZU price series by filtering out the most extreme jumps. And that's whether the jump’s in a positive direction or a negative direction. I'm not trying to bias us one way or the other. I just say if we get a really, really big jump, whether it's a really big positive jump or a really big negative jump, I'm just going to filter that out, okay? And I do it in a way that is effectively mimicking what a mixture of distributions approach would do.

So I won't go into these details because I’ve basically described that. There's one exception to this. When we had the big run-up in prices over the period May ’21 to October 2022, I’m interpreting this as actually being consistent with the advent of more credible and committed policies. This is when the Zero Carbon Act was coming in and following the Paris Agreement being entered into, et cetera. And so, I'm treating that price rise over that particular period as being actually a price rise you'd expect in the counterfactual world, as well as in the actual world, so I don't filter out those particular changes. And again, whether they're big positive or big negatives, I don't bias it one way or the other. I just say: for this particular period, I'm going to turn off, if you like, my de-shocking approach. Okay?

But then, the other part of developing my counterfactual NZU price series – so, I'm going to deshock them, apart from that one exception that I just described. I'm also going to try and adjust for the overhang, because we know that we ended up with a big overhang as a consequence of allowing uncapped surrenders of overseas units to meet New Zealand obligations for a period of time. It was effectively abandoned after a while, but during the window in which this was possible, we ended up effectively being able to stockpile a great many NZ units, because we were substituting these cheap overseas ones instead. And so, I'm going to further adjust my deshock prices to remove this overhang adjustment.

And I won't go into the details too much, because, again, it's quite technical, but I'm happy to go back to the details. But this graph illustrates the point, so what we see here, you know, between May ’11 and April ’16, we had this very, very big run-up in the stockpile of NZUs that had been allocated, okay? And then once we had that massive run-up and we closed the door on these overseas units being used, we ended up with a much more stable level of cumulative NZU allocations, but much higher than if this run-up that had happened over May ’11 to April ’16 had not occurred. And so, effectively, this graph – and it’s from my affidavit, and I won’t dwell on it – this is what the overhang looks like if we remove that May ’11 to April ’16 surge, and ultimately, I conclude that a more normal or a counterfactual overhang is maybe one year’s worth of units, but not the sort of – over here – I didn’t calculate the years, but we have many years of units, when we take into account the fact that we had all these cheap overseas units brought into the system, and if we removed all of those cheap units and reduced the stockpile down to a more normal level, we've got maybe one year's worth of stockpile, rather than multiple years’.

Now, after all that sort of discussion, here is that graph I showed you before with the NZU prices, and this blue line is, if you like, historical NZU prices. The orange line shows you what happens to the prices when I deshock them, and the green line shows you what happens when I deshock them and account for overhang. So, as you see, in the earlier periods, we end up with slightly higher

prices. In later periods we end up with materially higher prices, compared to where we ended up. So there's the actual prices in the blue line here, but in the green line, we would have ended up with materially higher daily prices, having deshocked them and adjusted for overhang.

And I consider these historical counterfactual prices to be pretty reasonable, and probably conservative, because I've not actually attempted to factor in any inclusion of agriculture. So if we had thought about what happens if we included agriculture in the ETS over this period, I would have expected there to be greater pricing pressure on NZUs, and so the counterfactual price series, not just deshocking, not just accounting for overhang, but also accounting for agricultural inclusion, we probably would have had higher prices still, so, higher than that green line. So, I think my analysis based on these counterfactual prices is probably conservative.

Now, those were historical counterfactual prices. We need to also think about counterfactual future NZU prices. I won't go into the detail of how I'd gotten there, because it's – again, it's reasonably technical, and I'm happy to go back to details if that's going to be of assistance. And the same is true for actual future NZU prices. Of course, we don't know what the actual future prices are, because we haven't seen them yet, so when I refer to the future NZU prices, not in the counterfactual case, I call them base future prices, if you like. So, we've got actual NZU prices in the past – so, those are actual prices that have already occurred. Then we have base future NZU prices – so, these are the future NZU prices we could expect to occur under current sort of policy settings. And then we've got my counterfactual NZU prices, which are either historical or future prices in a world where we imagine we have more committed and credible climate change policy.

So, again, I won't go through the details. I'll just mention this. All of my analysis for the graph that's about to come up next is in real dollars – in other words, I'm using 2025 dollars – but most of my modelling is done in dollars-of-the-day terms, so I have to adjust them for inflation. So the first graph I show you will show you where I get to for future prices, where I'm expressing them in 2025

dollars, and then the subsequent graph is showing you what happens when I convert my historical prices and my future prices all into dollars of the day.

Okay? So we've got too many lines to focus on here. Just think about the two dashed lines. The upper dashed line is my expected price – NZU price series, from 2026 through to 2075, so I'm allowing for a ramp-up to about 2050, because we did have some prices from the New Zealand Productivity Commission to tell us where our prices need to be for New Zealand to achieve its net-zero goals, and I've benchmarked where I get to in 2025 off that, but I allow for subsequent growth. And this lower green dashed line, this is my assumed price path for future NZU prices under current policy settings, and so they're coming out substantially lower.

So, again, that's in real dollar terms, in other words, 2025 dollars. We have to allow for inflation, because that means that all these numbers will go bigger as we project out into the future. Remember, we're projecting 50 years into the future, so we shouldn't be surprised that once we allow for 50 years' worth of inflation, these lines are going to change markedly, and that's precisely what this graph does.

So, in this graph, these two little left bars – two lines at the lower left, the lower line is my actual NZU prices. The orange line is my counterfactual NZU prices historically. And then this dark green line going forward is what I'm projecting actual or base NZU prices to be going forward to 2075, after allowing for inflation. So, inflation makes these prices go up. And then, because I've got higher prices in my counterfactual, this upper blue line is rising more steeply. It's – you know, I'm just adjusting for inflation, so that's the only difference between the previous graph and this one – or, so, the previous two graphs, in the sense that I've added the historical prices as well.

So these are the price series that I'm using to make my financial assessments.

Okay. I modelled quite a few scenarios, and I'm not going to go into any great depth in any of those scenarios in particular, but I just want to briefly summarise

what my overall scenarios were and what they're – how they're relevant to my assessment of the impact of not having committed and credible climate change policy.

So, as I mentioned before, the way I'm doing this is I'm figuring out: what returns do you guess in the actual sort of world, with the existing climate policies? And then: what sort of returns do you get in the counterfactual world when you apply the counterfactual prices? And it's the difference between these two that I'm using to measure the impact of not having committed and credible ETS settings. And though section 3.4 in particular is where I'm using these price series, and I'm starting off at – a later section I should mention, so, section 3.4 to 3.9, I think it is, to show how using more credible and committed climate change policies would have changed likely returns occurring to Tairāwhiti whenua Māori landowners in particular, and I'm starting off by thinking about extra carbon sequestration value, and I'm also thinking about erosion control and biodiversity enhancement values.

In terms of the scenarios modelled, I've got five full scenarios and one partial scenario, though one of my full scenarios drops out as it happens. So I'm assessing the extra values that arise from things like, in the first instance, existing post-1989 forests. So, in Tairāwhiti, we have a certain number of forests like this. They, under the current policy settings, can be expected to generate certain carbon sequestration values, and under the counterfactual NZU prices they can be expected to generate higher carbon sequestration values, and as I mentioned before, it's the difference between these two that matter for how I'm measuring impacts.

For the sake of conservatism, I'm assuming there's no timber production. I'm just assuming sequestration. And this means that in fact, I'm slightly overstating – sorry, slightly understating the net benefits. Now, I want to stress this for this. For this scenario, I'm calculating net benefits. In other words, I'm calculating changes in revenues. But because costs don't change between the factual and counterfactual scenarios here, effectively, revenues minus costs amount to the change in revenues only. So the fact that I've only calculated changes in

revenues doesn't change the fact that this is effectively a cost-benefit analysis where I'm calculating the change in revenues minus the change in costs to get to the net benefits. It's just that my change in cost equals zero, so I only need to focus on the change in revenues.

And I'm stressing this particular scenario, but these are also minimum net benefits, the reason being this. I'm assuming no change in costs, when in fact, if we move from a plantation forestry regime, where you're producing timber for harvest and production, it has a higher cost structure than simply allowing the forest to keep sequestering carbon, so you don't have pruning and thinning regimes to the same extent you do. So, in this sense, I'm not only calculating net benefits in the scenario, but I'm probably understating the net benefits, because I haven't allowed for the fact that costs can go down if we just assume sequestration only.

The next scenarios – there are two of them, though the second one does actually drop out. Either converting low-producing pasture to carbon sequestration, and by "converting", I mean to plantation forestry or at least exotics, or I'm reverting that land from low-producing pasture to carbon sequestration, and by "reverting", I mean allowing natural reversion of mānuka and kānuka.

Okay, it turns out that natural reversion is not profitable enough to beat existing even marginal farming returns. So that's why the B scenario drops out. But certainly the A scenario, converting to *Pinus radiata* for carbon sequestration, definitely outstrips sheep and beef farming returns after a while and becomes a far more profitable land use. Now, in this case I haven't allowed for the costs of converting the pasture to a *Pinus radiata* forest, and that means that my change in revenues in this case is not net benefits per se, it's maximum benefits, in this case, because we have to allow for the costs of planting the forest. But it gives us a sense of order of magnitude, for sure.

In the B scenario, I was calculating net benefits, but it turns out those net benefits are too low to justify reversion from marginal sheep and beef.

And another scenario is I revert currently unproductive land into mānuka and kānuka. Once again, I've only presented the change in revenues, but because the nature of the scenario is such that we don't get a change in costs – if it's just natural regeneration, effectively they don't get a change in costs – if it's just natural regeneration, effectively, we don't have any major costs to worry about – and so, again, in this scenario, I'm presenting net benefits, so it is a form of cost-benefit analysis with net benefits.

And another scenario is better management of pre-'90 indigenous forests, and again, I haven't allowed for the cost of that better management. This is things like pest and fire control. And so, the change in revenues in this scenario is maximum benefits, giving you a sense of order of magnitude.

And then, finally, I've got a partial scenario. This is to do with pre-'90 plantation forests. Effectively, I'm assuming there's no extra sequestration value to be realised beyond what we're already realising. But there is a potential – well, these forests will provide erosion control and biodiversity benefits, but because we're talking about existing forests, again, the costs don't change between my counterfactual and factual scenarios. Therefore, we are doing a cost-benefit analysis. For this scenario, it's net benefits that we're calculating.

Now, I just want to mention, therefore, out of my six scenarios, one of them goes away, so we have five scenarios, and of those five scenarios, three of them are net benefits, one of them understated net benefits and two of them maximum benefits. Okay.

This is where I waltz through the assumptions, because I think I'll bore you senseless if I go into the detail, but again, if you wish to go through the detail, I am more than happy to go back to this.

So anyways, I take values from a variety of sources to do my modelling, and as I say, I won't go into the detail, but I'm happy to come back to it. I will mention, though, because it's come up in Mr Murray's evidence in reply, I've calculated

present values when I'm generating values over multiple years, and of course, if we're projecting changes in revenues out to 2025, that's a long time in the future, and it's generally accepted in economics that a dollar received in the future is worth less than a dollar received now, and it's not just because of changes in price levels, you know, CPI inflation, but because people are generally impatient to consume. If you had a choice between having a million dollars now and a million dollars in 20 years' time, most people would probably say, "I'll take the million dollars now, thanks, because I could use it between now and 20 years' time, whereas if you make me wait, I miss out on that opportunity."

So, it's generally accepted in economics, when you present financial amounts over different timeframes, you convert them into a consistent basis by calculating what's called their present value, and that means you need to discount them by something called a discount rate, okay? And a discount rate is important for determining the level of the present value. I'm applying Treasury's social discount rates when I do my calculations, and I do that on the basis that whenua Māori landowners are essentially intergenerational social enterprises. It's just the nature of what they do. I also do it this way because carbon sequestration itself is a social benefit, it's not just a private benefit, and also because erosion control and biodiversity enhancement benefits are inherently social benefits. So discounting these things at a social discount rate is an appropriate way to do things.

If you apply different discount rates, for example, a commercial discount rate for sequestration, it shouldn't actually substantially change my results, and I stress this because it's a consequence of how I'm assessing my impacts. The reason is, I calculate present values in both the actual and the counterfactual cases using the same discount rate, so I'm calculating two present values, and each of those present values is calculated using the same discount rate. And then take the difference between them. I subtract one number from the other. So, to the extent that my discount rate is making these numbers go up or down, is making both sets of numbers go up or down in a commensurate sort of way, and therefore I'm largely going to be netting out the impact of discount rate

changes through my analysis, this is quite important. If I was just calculating one set of numbers, for example, actual numbers or counterfactual numbers only, your choice of discount rate is very, very important. It always is anyways, but if I – but because I'm calculating the difference between two sets of present values, the choice of discount rate becomes much less important.

Okay. And these are even more details that are probably not so important. And to summarise modelling results – and again, I'll stress, these are indicative order of magnitude assessments, right? And they are effectively social cost-benefit analysis, so we are calculating revenues less cost, or changes in revenues less changes in costs, except for those two scenarios that I mentioned earlier. So indicatively, my model scenarios are indicating an annual benefit in three of five cases, a net benefit in two of five cases, a maximum benefit to Tairāwhiti whenua Māori landowners from more credible and consistent climate change policy to be something like five hundred million dollars per annum of additional carbon sequestration value. So remember, this is for Tairāwhiti whenua Māori landowners only, and this is per annum. So, this is five hundred million dollars extra per annum, just from additional carbon sequestration value, if we had more credible and consistent climate change policies, meaning we had the higher sort of NZU price series that I modelled earlier, rather than the lower NZU price series that I showed before.

In addition, if you have additional forestry due to that sort of more committed and credible policy, then that would have supported the realisation of up to just over three billion dollars per annum in regional erosion control benefits. These are not specifically to Tairāwhiti whenua Māori landowners. These are values to the region, per se, including such landowners, obviously. And interestingly enough, this dwarfs the – the extra carbon sequestration value. It just means that if you had more forestry, you would have been able to avoid a lot more erosion, and if you avoided a lot more erosion, you would have avoided a whole lot of **(inaudible 14:22:51)**.

And in addition, I summarise them in my affidavit in table 6.1. I'll flash that up in a moment, but we won't go to the detail, because there's a lot in it, but

obviously, if you go through section 3 of my report, I have multiple subsections where I go through each of these scenarios, I present tables for each of these scenarios, and table 6.1 is, if you like, a convenient summary of all of those tables, just pulling out some key figures.

So, as I've mentioned, here's table 6.1, but I just wanted to highlight – hopefully you can see my mouse moving around – that "506" at the bottom of the table under the column "Regional Annual", so, that's the five hundred million dollars per year of regional extra sequestration value to Tairāwhiti whenua Māori landowners, and over here, I mentioned that it's just over three billion dollars' worth of regional annual erosion control benefits. That's what that "3,272" number refers to. And I said that's around about twenty-five million dollars' worth of biodiversity value, and that's what this bottom right figure of "23" is telling us.

And in this table, I also add present values, so these numbers, as I mentioned, are annual figures, so if you convert these into present values, allowing for the fact that these figures happen on an annual basis, ongoing, there's roughly eleven and a half billion dollars' worth of extra sequestration value that could be captured by Tairāwhiti whenua Māori landowners. There's roughly seventy-four billion dollars' worth of extra erosion control benefits that could be captured by Tairāwhiti as a region, including those landowners, and there's roughly half a billion dollars' more worth of biodiversity value that might be generated. So, again, illustrative; order of magnitude; in some senses, conservative, in other senses, maximum figures; but giving us broadly the sense that we're talking about hundreds of millions or billions of dollars a year in total for sequestration, erosion control alone, and in present-value terms, we're talking billions of dollars.

Now, just to change gear. So, that's, if you like, my assessment of the impacts of not having committed and credible climate change policy on these particular metrics. Just turning, now, to the role of forestry in assisting the government in achieving its climate change objectives, here's a graph taken from the 2018 Productivity Commission report that I was citing earlier, and what it shows us is

over 1990-2016, we had an increase in emissions from agriculture, roughly 49.2 per cent up. We had increase in emissions from energy, the lion's share from transport, roughly 40 per cent up. We had some smaller contributions to rising emissions in industrial processes, in product use and in waste. And the last bit – this is the particularly interesting one – we had a minus 29 per cent, call it minus 30 per cent, reduction in overall emissions, due to land use, land-use change and forestry, which is effectively dominated by carbon sequestration and post-1989 forests.

So the sort of bad-news story for New Zealand is that we're actually increasing our emissions, or we have been increasing our emissions, for the non-forestry sector, when really we'd like to be starting to reduce those in gross terms, and what's been helping New Zealand the most to get back to where it needs to be is the fact that post-89 forestry has been sequestering carbon. If it weren't for that fact, our emissions profile overall would be looking much less – well, worse than it is, kind of thing.

Now, I won't dwell on these, but effectively, even the Ministry for the Environment has acknowledged the importance of Māori forestry in helping to achieve these sorts of climate change goals, particularly because of the importance of post-'89 forestry, though this doesn't apply uniformly, because much Māori land is actually pre-'90 or indigenous forestry, so there are constraints on how that land can be used. And the PCE has criticised the reliance on forestry removals to achieve our climate change aims but has acknowledged that forestry removals by Māori are more likely to be much more justified. So in other words, if you're going to constrain removals from forestry, probably you should do less so for Māori, mainly because of the given – the particular issues that are faced by whenua Māori landowners and development challenges for marginal, remote and/or landlocked lands, institutional arrangements, governance issues, et cetera, et cetera.

So, while ETS and other restrictions on **(inaudible 14:27:14)** much whenua Māori, Māori forestry interests are either – have already made significant contributions to reducing New Zealand's overall emissions and could be playing

a very substantial role in helping the Crown achieve its net zero commitments in the future, and so, for example, Tairāwhiti Māori could be doing a lot of heavy lifting if we had more committed and credible climate change policy, and if we had higher counterfactual NZU prices, then we'd have much more conversion of marginal farmland into carbon sequestration, including continuous-cover carbon sequestration, which of course is going to really help with reducing erosion issues in the area.

Now, given a lot of these issues arose when the land was deforested for settler farming – it used to be covered in forests and it was burnt off so that farming could be undertaken, and this has resulted in a whole of highly erodible marginal farmland, so in a sense, if we had more committed and credible NZU pricing, then we could imagine a reversion of much of this land into forest cover.

Okay, socioeconomic and cultural impacts on Tairāwhiti Māori of some climate change policy issues.

So, I've shown in section 3 that having time-inconsistent policies has depressed returns to Tairāwhiti Māori landowners, reducing returns to, a, post-'89 forestry, but also opportunities to convert other lands into higher-value uses, and so if we had more consistent and credible policy, that would have increased returns on existing forestry investments, would have also meant higher returns on other land types where you have higher and less volatile NZU prices supporting higher alternative land uses, so, things like conversion from farming into forestry.

And of course, what I just said – if you had greater continuous-cover forestry, we would have greater erosion control and biodiversity benefits. So this is an important indirect benefit of having more credible and consistent climate change policy. It's not that having higher NZU prices means we get better erosion control directly or better biodiversity directly. It's rather, by having more committed and credible climate change policy, we get more afforestation, and as a consequence of that, we get these other values. And I should mention, by the way, you know, if we are concerned about biodiversity from things like

Pinus radiata, of course, we need to be comparing with what the land use is before the change to *Pinus radiata*. When it's pasture, then having a plantation forest is more biodiverse than having just low-producing farmland.

Okay. There are some flow-on effects from time-inconsistent policy beyond the erosion control issues. So you have less forestry, you have sustained marginal unproductive land use, with the associated erosion vulnerabilities. And they both contribute to ongoing and even worsening regional erosion, flooding and slash. And I say “worsening”, because of course we're getting more regular and more extreme weather events in Tairāwhiti, so having more exposed land, highly erosion prone, having slash issues, et cetera, et cetera, they’re likely to get worse over time unless we do something to change this. And of course, one of the beauties of incentivising continuous-cover forestry is that if you're not harvesting trees, you get much less slash. That – you could, you know, kill off more birds with one stone, which I’ll come back to.

And, you know, if you have these, you know, ongoing and worsening regional erosion, flooding, slash, that creates associated financial, social, cultural disruptions. It creates infrastructure damage, which of course, constrains economic development in the region, and it leads to more uncertain future development opportunities. You know, these are all interrelated, effectively.

And the resulting reduction in resources means that local Māori will have a smaller economic buffer to respond to increasing weather events and other shocks, so if we had counterfactual NZU prices and we were able to convert land into higher-value uses, then the financial buffer that Tairāwhiti Māori landowners would have would be greater, and that means they are more able to deal with things like increasing weather events and so forth.

And so, you know, if we don't have these resources, if we don't have this economic buffer, then we have the problem that marginal lands become more marginal through ongoing erosion and slash, and we have worsened economic resilience, so that means we end up with worsened social and cultural resilience as well, and **(inaudible 14:31:44)**.

So, climate and other policies, they incentivise sequestration using fast-growing monotypes, so, of course, *Pinus radiata*, over more balanced outcomes. So, for example, there's maybe some desirability of encouraging indigenous plant and regeneration. However, even monotypes is enhancing diversity, for the reason I just said, relative to pasture, and it does create its own biodiversity benefits, and also pine can be used as a nursery species for achieving longer-term indigenous regeneration, so chances are these aren't either-or, they are complimentary, but, however, incentivising monotypes is doing little to assist Tairāwhiti Māori to achieve more balanced aspirations. So, for example, if there are cultural benefits associated with indigenous ecosystems, things like access to rongoā, cultural practices in forests, et cetera, et cetera, these things, if you like, being suppressed, somewhat because of the over-incentivisation via the ETS on monotypes.

So this means that other policies are also needed, over and above credible and consistent climate change policies, and it's also critical that any policy changes, for example, limits on converting farmland to forestry, aren't limiting Tairāwhiti Māori development options. Apologies for my typo in “Tairāwhiti”. Given the particular land types, given the vulnerability due to lack of forest cover, given the relatively less development that's already occurred, there are reasons to think that Tairāwhiti Māori should be able to do more development into forestry than you might do in other parts of the country.

Okay, so what might be climate change or related other policy approaches to better support Tairāwhiti Māori aspirations?

So, there are some direct approaches. So, the main issue in thinking about the time-inconsistency of climate change policy is that we have short electoral cycles, and we have political preferences for favoured constituencies, which means that we tend to get policy swings and short planning horizons through our climate change policy.

The Productivity Commission in 2018 recommended the formation of an independent climate change commission with features broadly similar to what we've actually got in our actual climate change commission that was set up subsequently, but notably without delegated decision rights. My argument is that the independent central banking model that we have in New Zealand – and New Zealand was a very earlier adopter and pioneer of independent central banking – it provides a precedent for why having an independent climate change commission – should in fact have at least some delegated decision rights. In other words, they don't have to just make recommendations and monitor governments' tracking against targets, et cetera. They could actually have a bit more hands-on role in setting our climate change policy settings.

If you have clear policy targets with independence to choose policy settings, this makes the policies more credible. This is why we set up independent central banks decades ago, because we realised if we wanted to fight inflation in a credible way, we needed to take monetary policy out of the hands of politicians, because politicians would always play with monetary policy to suit them, depending on the electoral cycle, and that meant no one believed it when central banks tried to fight inflation. So by creating independent central banks and giving them arm's length from politicians to implement monetary policy to chase the goals that have been given by Parliament – in this case, inflation targeting, in particular, for the Reserve Bank – then we get more credible policy, and this reduces incentives for politicisation.

And it as it happens, it lowers the overall cost of achieving the policy goal. This is one of the reasons I argue why Parliaments around the world actually chose to give up some of their political discretion and set up independent central banks, even though, you know, the official cash rate is one of the most important prices in the New Zealand economy and politicians should want to be able to play with at will, and of course, President Trump at the moment is pressuring the US Federal Reserve to lower its interest rates precisely because he wants to stimulate the economy. If politicians had that ability, it actually raises the cost of reducing inflation, because central banks end up with less effective tools for fighting inflation, because people don't believe them when they use those tools,

so having an independent central bank actually lowers the cost of fighting inflation.

And it also actually provides a – it relieves the politicians of what I call a prisoner's dilemma that effectively – if one political party decides to play with monetary policy settings, then other political parties feel like they should too, but if everyone basically puts fighting inflation at arm's length from politics, then we end up with less inflation, that's better for everyone, and it turns out that that's actually a more sustainable solution, and I'm arguing that that's – for precisely the same reasons, we should be contemplating a much more independent climate change commission, with an ability to set at least some policy settings for our climate change policy, to make it credible, to make it lower cost.

The problem is, we've had successive governments that have retained flexibility to respond to changing circumstances and respond to changing political imperatives, and this lies at the very heart of the time-inconsistency problem, okay? And it raises the costs of achieving our climate change goals.

It also forces your non-agricultural emitters in New Zealand to carry a heavier burden, since agriculture's not included. We're trying to reduce our overall emissions, but half our emissions aren't included in the ETS, which means that if we want to achieve our emissions reductions, there's greater pressure on both non-agricultural emitters and also on the forestry sector, the post-'89 forestry sector, to do the heavy lifting. So, you know, by leaving half our emissions off the table, we make the rest of the economy have to work harder to meet its climate change – meet New Zealand's climate change goals.

If we propose better climate change policies, but we don't address the sort of fundamental time-inconsistency problem, I argue that effectively, these better climate change policies would be in vain. They won't be better after all, because we're back to square one. We have the same problem that the next government that comes along might decide to reverse those better climate change policies and put in worse ones, and then the government after that might decide to

reverse it again, so this is the problem, right? That if you had more – it would be more effective to constitute an independent and empowered climate change commission, though I'd stress it would have several principles for how climate change goals should be achieved, and among those, I would include for example, ensuring equity, and that's not just for Māori but obviously for Māori, and also recognising the particular circumstances of Māori, just as you'd have to recognise any other particular constraints in the economy as well.

Though there are some specific recommendations I do make in my affidavit, even so, I'm saying that really, you know, recommending particular policy changes doesn't matter so much if you've got time-inconsistency still plaguing the whole system.

A couple of policies that I did recommend: One is negotiating changes to international rules to recognise carbon stored in wood products. The problem is under international rules, we deem all the carbon in a tree to be released pretty much when the tree is chopped down, where if the land use is changed out of forestry into some other use for pre-'90 forestry,
the reality is that not all of that carbon gets released straight away. If we create wood products, for example, out of the timber that's been harvested, then that could be stored, potentially, for centuries, and we don't have an ability to recognise that now. So, you know, if we could make progress there, that would be great for the pre-'90 non-indigenous forestry in particular, and of course this is where a lot of Māori forestry interests are in New Zealand, including in Tairāwhiti, so the cost of deforesting that land would be lower if it could be recognised that some of the deforestation is not actually a carbon liability – a carbon emission, as such.

And if we allow also for sequestration and biodiversity values from better managing pre-'90 indigenous forests, this is something that could not only mean we get more value out of our indigenous forests, but it would actually, you know, create some financing to better manage our indigenous forests. So we have this perennial problem of paying for possum control, for example. Imagine if you could earn so much money out of incremental carbon sequestration by

better managing your indigenous forest that it pays for the pest control itself, where you'd solve two birds with one stone – two problems with one solution.

Okay. In terms of complementary policy approaches – so, I was talking about direct policy approaches, now I'm thinking about complementary ones – this could have the consequence of improving both climate change policy and improving the financial returns and resources available to Māori, including Tairāwhiti Māori. In section 3, I also talked about how land-use change into forestry affected carbon removals and also other forestry ecosystem services like erosion control and biodiversity enhancement. There's no guarantee, however, that our policies in these different areas work in a complimentary way. They can actually work against each other, which is why we need our policies to line up a bit better to complement each other, and so, for example, we need climate change and other policies like erosion control and biodiversity policies to recognise and provide for the interactions with each other, so we don't think of these things in isolation.

And so, for example, ecosystem services payments to help balance ETS incentives for monotypes and also to incentivise maintaining ground cover. If we had policies like this that are complementary, it makes forests more valuable alive than dead, and as I said before, if you have permanent forestry cover, that's going to reduce slash, it's going to be reducing erosion, et cetera, et cetera.

And also, I'd point out, if we allowed small woodlots to enter the ETS, that could effectively kill three birds with one stone. It rewards gully stabilisation plantings, and we know that in Tairāwhiti it's highly erodible gullies that are some of the main problem areas that you want to control, and so having stabilisation plantings in gullies is going to be good for erosion control. But that would also be sequestering carbon, and that, in turn, would be improving farming returns. So there are multiple ways you could help solve multiple problems in one go, just with policies that lined up.

So, just to conclude, our climate change policy has been highly uncertain and time-inconsistent. This has undermined the achievement of climate change policy objectives, but it's also caused landowners and investors to defer land-use changes, and that means they've generated lower returns as a consequence. If we had more credible and committed climate change policies, then Tairāwhiti whenua Māori landowners would have been able to realise significantly higher returns from forestry-based carbon sequestration – that's historically and can be expected to do so looking into the future, and in turn, that would have unlocked sizeable erosion control benefits and biodiversity benefits. That's especially if we supported these with complementary policies. And it will also have provided greater economic resilience and improved social and cultural outcomes. So there have been some missed opportunities due to not having credible and committed climate change policies. There are direct and indirect approaches that we can use to make our climate change and related policies more credible and committed. So, that's me. Thank you.

MR MAHUIKA:

Ma'am, I just had a couple of matters. It was really just to – I think there are a couple of things that Dr Meade mentioned where there might be corrections. I was just wanting to deal with them for the record, if you don't mind, Ma'am.

(14:43) MR MAHUIKA TO DR RICHARD MEADE:

Q. The first one is slide 12, Dr Meade.

A. You'd like me to go back up?

Q. It's the one where you said, ultimately, you're talking about the surrender – about overseas units being surrendered in lieu of NZUs, and it said, "Ultimately reversed, but after historical NZU prices suppressed, and stockpile/'overhang' of cheap units created". And I think when you said, "cheap units", you meant NZUs. Is that right?

A. Correct. So I'm just trying to – I'm on that slide now. I did mean NZUs. My later graphs talked about the stockpile of NZUs.

Q. Yes.

A. And so that's what I was – I had intended to refer to in slide 12. Thank you.

Q. Yes. And then at paragraph 35, so you have the two – sorry, slide 35.

A. Slide 35. **(inaudible 14:44:25)**

Q. Sorry, we're both trying to find it together. So you were doing a bit of a comparison between slide 35 and 36.

A. Yes.

Q. And in 35, I think you – is the X-Y, the left-hand axis, is – I take it that's years, but you weren't sure how many years –

A. No, so – no, no. This one is actually what it says, cumulative NZU allocations.

Q. Yes.

A. The next graph is telling you effectively how many years of stockpile you have compared to your annual surrender obligations in a world where we've removed the surge that happened over May '11 to April '16.

Q. Yes.

A. And so what I had tried to do when I jumped between this slide and the previous one is – I thought I might have expressed this slide in years of overhang, but I hadn't, I'd expressed it in cumulative NZU allocations, so I wasn't able to make that comparison based on those two graphs.

Q. Okay. Is that a comparison that's either possible or useful, with you sitting there?

A. I could, but I think the key point is this graph, and the general story is the same, and that is, because we accumulated so many NZUs over the period where we had this access to cheap overseas units, we ended up with a stockpile that's many times the annual surrenders required, and this has been a persistent feature since we had this period of allowing the overseas units uncapped to come in.

Q. Right.

MR MAHUIKA:

Ma'am, those were the only questions I had of clarification in relation to Dr Meade's evidence.

JUDGE MILROY:

Thank you, Mr Mahuika, and thank you, Dr Meade. You finished early, you didn't go to the full 3 o'clock, so we do have time before afternoon tea to begin the cross examination by the Crown, so is that...?

UNIDENTIFIED SPEAKER: (14:46:29)

Mr Fong.

JUDGE MILROY:

Mr Fong.

(14:46) MR FONG TO DR RICHARD MEADE:

Q. Tēnā koe, Dr Meade. Can you hear me?

A. I can. Thank you.

Q. It's nice to see you again.

A. Ka pai.

Q. So, just for the benefit of the Tribunal and counsel, my cross-examination is largely going to be focused on two topics. The first is just your estimates, and then secondly, your sort of direct policy recommendation about the independence of the Climate Change Commission.

So just starting with the estimates, so, my understanding of your estimate of the impact that you were trying to measure can be sort of grouped into roughly three categories, so, the annual returns to Māori landowners in Tairāwhiti region **(inaudible 14:47:26)** erosion control benefits and the regional biodiversity value, so those are the three important categories that you measure, at least?

A. Correct, yes.

Q. So I'm just going to focus on the first component first, about the annual returns, so, if I could go through the contents page of your brief of evidence, if you've got a copy with you.

A. I have, yes.

Q. I'll just make sure understanding your evidence correctly. So, I'm just looking at the contents page, from sort of 3.4 to 3.8. So, you modelled several scenarios. So, for example, 3.4, you sort of measure the changes

based on the existing forests, but sort of you go on to say, I think my understanding is you also estimate additional revenue under, say, section 3.5, from converting or reverting low-producing passages to carbon sequestration. So under this scenario, my understanding is, at least in terms of the conversion path, this would involve planting new forests, correct?

A. In the conversion part, that's right.

Q. Yes. And so this is also the part that you say, while you're measuring maximum benefits – maximum net-net benefit –

A. Maximum benefits, yes. So because I –

Q. **(inaudible 14:49:10)**

A. – I haven't allowed for the cost of planting those forests, I'm just counting the change in revenues, that gives an up or down –

Q. Yes.

A. – on what the change of value is for that particular scenario.

Q. So – but you would accept planting new forest would, for example, involve buying tree stocks, for example?

A. Yes, of course. I did acknowledge this point in my briefing evidence, right? I say, look, there are cost of planting these forests. I haven't in this particular scenario allowed for those. If I had more time then I could have dug around and dug up some numbers and calculated the net change, if you like, but I did gross change or the maximum change only for that particular scenario.

Q. Okay. So you do accept that there would be significant costs involved in at least the scenario under 3.5 that you're measuring?

A. Yes. I'd also stress, though, if we're thinking of planting exotic forests, chances are we're thinking about permanent cover forests, rather than production forestry, where you prune and thin and so forth, so the cost structure would have been different to conventional production forestry. There's still a cost, so there's actually a cost that would be incurred to convert farmland into exotic forestry, but I would just stress that it's probably a lower cost than if we're – it's a lower cost if we're doing permanent cover forestry versus plantation forestry for production, where you harvest ultimately.

Q. And so if we sort of look down the contents page, so, looking at 3.7…

A. Yes.

Q. Sort of possible incremental carbon sequestration, erosion control, biodiversity enhancement value from pre-1990 indigenous forests, my understanding from your presentation is this doesn't – this isn't about creating new forests, but about implementing better management of forests, like improving pest controls and fire controls. Is that correct?

A. Correct. Yes, indeed.

Q. And this scenario would also involve costs, because it takes money to improve management of these forests, correct?

A. Yes, indeed. As I mentioned my presentation, you could imagine a world with this starts to pay for itself in the sense that it doesn't necessarily make a lot more money, but it pays for the costs of the pest control and the fire control, and so we end up with improved forests, improved carbon sequestration. It's – you know, there are benefits attached to that, rather than direct financial returns, per se. But either way, in these two scenarios, I'm presenting the maximum benefits, if you like, from the value of carbon sequestration.

Q. And so if I could just look at your summary table at page 71 of your evidence…

A. Yes.

Q. So, if anyone needs a larger version of that, that's on slide 48 of Dr Meade's slides, but I'm just working through your table on page 71 of your brief of evidence, so, just focusing on the sort of column on the left, the heading "Extra Carbon Sequestration Revenue", so that's the additional revenue, and if we look at the second row, so that's "Converting Low-Producing Grassland", so that's – the additional value coming from that conversion would be 204 million.

A. On a – yes, that's right, per annum.

A. Yes. And that, I think you've confirmed – that's a figure that doesn't net off the costs. That's the maximum benefit figure.

A. Yes, that's the maximum, that's right, for that particular row. You know, the one above it's not, that one's a net figure, and probably a conservative net figure, but that one is a maximum figure.

Q. Yes. And the other maximum benefit is – if we looked at sort of three rows from the bottom, “Better Management”, so that's the figure of 109 million.

A. Yes.

Q. That's also a maximum benefit figure.

A. Yes.

Q. So if we add those two figures up, so that sort of comes to, I think, 303 million, roughly.

A. 313, yes.

Q. Fair enough, sorry. 313 million. So 313 million out of the 506 million, so that portion of the additional revenue, that does not net off the relevant costs. I think you would agree with that?

A. Indeed. So these are maximums. I'd say they're also not zero. So in my affidavit, regarding the – converting low producing grassland to plantation, so that's the 204 figure, I mentioned that there's a separate study that identifies a great amount of land in Tairāwhiti where that conversion is profitable, so even though I don't know what the costs are, we know from this other study that it's still a profitable conversion that can happen. And so we know that's a more than zero number. So the 204 is – 204 is the biggest it's going to be, but zero is not going to be the smallest it is. Some positive number in between is where we would reasonably expect the number to fall, once we account for the costs of planting the forests and tending them.

Q. Sure. And I appreciate you were operating under constraints of time, but yes, your evidence, as what it is, is what we've got at the moment –

A. **(inaudible 14:55:06)**

Q. – and so agree with me that, all things being equal, by not factoring in the costs, the revenue that you've presented, so, the raw number of 506 and particularly the 313 figure that I mentioned earlier, that is likely to overstate the benefit, the revenue, the monetary benefit flowing out –

A. If we go – yes, sorry to interrupt.

Q. Would you agree with that?

A. If we go through those numbers, the 177 is a lower bound, and that’s a net figure. The 204 is an upper bound, so we'd expect it to be lower than

that but bigger than zero. And when we get down to the 16 figure for reverting unproductive land, it's neither here nor there in the overall scheme of things. For better management of pre-'90 indigenous forests, somewhere between 0 and 109 that's going to be realized. So, you know, some share of that 506, a very significant share – you know, call it half, for argument's sake, so call it $250 million a year, not $500 million a year – that's still $250 million a year for Tairāwhiti Māori – whenua Māori landowners.

Q. I understand the point, but my question is, do you agree that by not including the costs, all things being equal, it overstates the revenue – the benefit calculation **(inaudible 14:56:32)**?

A. Yes, so – of course, yes, it does.

Q. Thank you.

A. Subject to that conservatism that I mentioned for the first line, is what I'm saying. There are unders and overs. So where do we end up when we allow for the unders and the overs? It's hard for me to say, you know, because I hadn't done the calculations, but we've got unders and overs.

Q. Thank you.

HOUSEKEEPING – TIMETABLING (14:56:56)

HEARING ADJOURNS: 2.57 PM

HEARING RESUMES: 3.30 PM

MISSING AUDIO (15:30:00 – 15:33:31)

(15:33) MR FONG TO DR RICHARD MEADE:

Q. **(Audio resumes 15:33:32)**… get to about 261 or something?

A. Just with the CPI, up to 2025, that's right. So, otherwise these are in 2025 dollar prices so they're real prices.

Q. Okay. But the short point is, it's based on the Productivity Commission's **(inaudible 15:33:47)**, correct, in terms of the anchor price?

A. Yes, that's right.

Q. Yes. And so if the anchor shifts, you know, say if it's high then the curve itself will shift up. Would that be fair?

A. Up or down, that's right, yes, depending on **(inaudible 15:34:09)**.

Q. So **(inaudible 15:34:08)**, it goes down, then it goes down, right, okay. So my understanding from the Productivity Commission's report is their modelling is premise, among other things, of, so including both agriculture and forestry in the ETS. Is that your understanding?

A. I'll take your word for that on that.

Q. Okay. So I won't trouble you with that budget, just to give everyone a reference from the Productivity Commission's report which is in Dr Meade's bundle, page 122 at footnote 58. Perhaps – we've got it on the screen, so I've highlighted the footnote there. It says: "Commission's own modelling included agriculture and forestry in that ETS." And then it sort of talks about the numbers that we've been talking about. So I guess my question is by the Commission itself by including agriculture in the ETS, that would result in a higher income**(inaudible 15:35:24)** price than the alternative of not including agriculture, would that be correct?

A. **(inaudible 15:35:32)** I'd expect that to be the case, yes.

Q. Yes. And so, on that assumption, if we don't assume the inclusion of agriculture in the ETS, that would bring – you know, if we were to redo your modelling on the basis of not assuming every country is included in the ETS, that would bring the curve down, correct? The price **(inaudible 15:36:03)**.

A. It will bring down the range of prices that the Productivity Commission would be attributing – saying we need to get to net zero. Whether or not I'd bring down my price is another matter because broadly speaking there are a number of forecasts of what sort of price might be realisable and the ranges are often quite wide, which is why I just simply split the difference for the range that the Productivity Commissioner produced. Would we necessarily end up with a price range that is different to the price I've assumed that's another question.

Q. So just to be clear, you don't accept that it would necessarily lower the curve if that anchor price comes down?

A. Look, mechanistically, absolutely, of course. In terms of if I was building my model with a different set of assumptions would I necessarily end up with a different price or would I end up with a price that falls outside of the range that arises when you allow for agriculture not being included, that would remain to be seen. As I say, there are a range of forecasts for what prices are needed to hit our 2050 target and of course these are big calls to make and that's why I took an agnostic approach of taking the midpoint of the Productivity Commission's range.

Q. And you would agree, would you not, that, you know, you've mentioned about credible and committed policies. You would agree that there is more than one way to reduce agriculture emissions other than through the ETS, would you accept that?

A. Remains to be seen. We haven't figured out what they are yet obviously.

Q. Can you **(inaudible 15:37:44)** that possibility?

A. Of course, I think it would be the holy grail if we could find some magic way to reduce our agricultural emissions. Then great for us, you know, that would be wonderful. But we've been trying this for decades and we still haven't got there.

Q. So, Ms Collins, the Deputy Director General of MPI gave evidence about the government's technological led approach to reduce emissions in this particular sector and she was quite positive about the development, and you're not in a position to disagree with her evidence?

A. No, no, and frankly, I'm a technology optimist as well. I'd like to think over the next decades we'll find a way to do this, but we obviously haven't yet and so that's the problem.

Q. Okay. And just to sort of – getting **(inaudible 15:38:35)** confirm a very tried point is just because **(inaudible 15:38:37)** we've got records and stuff like that. So your evidence when you're **(inaudible 15:38:42)** in the counterfactual, you then consider the alternative where agriculture is not included in the ETS?

A. So, I didn't **(inaudible 15:38:56)** assume it was but I accepted the Productivity Commission's chosen price did. I think we might be at slightly cross purposes though because of course one of the reasons why we have an ETS is we put a price on emissions and that induces innovation

because it makes it expensive not to innovate. If you can find a cheaper way to reduce your emissions than paying the ETS price then you would. That's part of the reason we have ETS', right. So we try to induce innovation so that people who can mitigate without emitting, that they find a way to do so and then they free up NZUs that can be then bought by other parties. So I think we're at slightly cross-purposes. I accept the point that if we had technology fix this **(inaudible 15:39:37)** agriculture, then that means we've got a way to reduce agricultural emissions. It doesn't mean it's outside of ETS per say, and rather I would argue we would get to those innovations much quicker if agriculture wasn't included in the ETS concisely because that creates the price for the agricultural innovators to try and beat.

Q. Maybe I'll just leave the point there. I think we're clear in terms of what you're relying on and what the Commission's modelling is premised on. So if I could now turn to the topic of discount rates. So you use a discount rate of 2%, correct?

A. It's a declining schedule but it starts off at 2% real, that's right.

Q. And that's based on the Treasury circular relating to the social rate of time preference, is that right?

A. Yes.

Q. And so, in that circular, I think Treasury sort of basically puts forward two rates. One is based on – one is for proposals that have mainly commercial benefits and costs and then the other one which is the one that you've used is based on proposals that are mainly involved non-commercial benefits and costs. So depends on the nature of the relevant benefits and cost.

A. Well, I'm actually arguing in my affidavit it also turns on the nature of the parties undertaking the relevant activity but carry on.

Q. Okay. So Dr Bertram, who is one of the economists called by another set of claimants, he gave evidence just before you before lunch. Did you manage to catch his evidence?

A. Sorry I didn't, no.

Q. So he talked about the nature of this discount rates and I found this information quite interesting. I just want to put it to you and see sort of

whether you agree with the way he described it. So we talked about the nature of the asset and the people, you know, who is undertaking the **(inaudible 15:41:51)** as you mentioned, but Dr Bertram also made the point that sort of underlying the choice of discount rate is this idea of the present versus future generation. And so, he explained that if we, for example, pick the very low rate, you know, so for argument purposes say 0%, then we are kind of letting the interest of future generation overwhelm the interest of the present generation. But conversely, if we adopt a very high commercial rate like say 10%, we are effectively **(inaudible 15:42:32)** off the interest of future generations. Would agree with that characterisation in terms of the functioning of discount rates. **(inaudible 15:42:42)** choice about the weighing between future and present generation?

A. I wouldn't put it quite so broadly. Basically, any discount rate has the effect of differently weighting future interests. These are the current interests. That's how discount rates work. If you for some reason decided to choose arbitrarily a very high discount rate, you would definitely be sacrificing the interest of future generations compared to current generations. If you chose an arbitrarily low discount rate it would be the reverse. So in that mechanistic sense, yes, but as I say, any discount rate is trying to make a trade-off between future values and current values, and if we're looking at a long enough timeframe, then we are looking at cross generations when we make that assessment.

Q. And he also said that the choice of discount rate is subject to an intense debate in climate change economics. Would you agree or disagree with that comment?

A. I'm aware of the debate and one of my former professors **(inaudible 15:43:44)** to lose is one of the main proponents of the declining discount rate schedule of the sort that Treasury uses. And in long term climate change policy there are reasons for why you might adopt a declining discount rate schedule.

Q. And I think he mentioned somebody by the name of William Northouse –

A. Northouse, yes, Northouse, he runs the **(inaudible 15:44:05)** that we should be using commercial discount rates even for long-term climate change policy discounting.

Q. And so, **(inaudible 15:44:14)** –

A. **(inaudible 15:44:13)** I should say, not commercial.

Q. And so, am I right in thinking just in terms of the current debate, there is no universal or **(inaudible 15:44:22)** choice of what this **(inaudible 15:44:24)** use in relation to climate change policies?

A. Sure, which is obviously slightly different to what I'm doing here because I'm calculating values under factual prices and values under counterfactual prices and I'm taking the difference which is a slightly different sort of application of discount rates where if we're simply valuing a single stream of payoffs, the choice of discount rate is singularly critical for long-term calculations. Absolutely that is true, but I'm looking at the difference between two sets of present value calculations. So that starts to net out the impacts of the discount rate choice.

Q. And is that just for the sequestration value or does that also apply to the ecological benefits as well?

A. For both because in my factual scenario, I have less afforestation, therefore I have less erosion control and biodiversity values as well as having lower sequestration values. In my counterfactual world, I have higher NZU prices, which means I have higher carbon sequestration, more afforestation. And then as an indirect consequence of that, we end up with higher erosion control benefits and biodiversity values.

Q. And so your evidence, and I think this is a new point from your PowerPoint, is that because you're just looking at the difference as the choice of what discount rate doesn't really matter because they **(inaudible 15:45:54)** off each other. Is that right?

A. It should matter less, that's right, because I'm not doing an absolute calculation, I'm doing a relative calculation where if I'm using too low a discount rate or too high a discount rate in either scenario, either way I'm biasing the values if you like, through my choice of discount race in the same direction, and that should serve to net out. I wouldn't say perfectly

but it would minimise – reduce, sorry, the difference between the – it would reduce the impacts of discount rate choices.

Q. And are we – sorry if that's an unfair question to put you on the spot. Do you know in terms of the magnitude of the difference? Are we talking about thousands of dollars or are we talking about tens of thousands or something like a million?

A. Depends on the unit of analysis. I couldn't say off the top of my head, I'm sorry, I'd have to actually rerun the models. It could do that. But like I say, in my evidence, the erosion control benefits and the biodiversity values, these are social values. So having – applying a social discount rate is obviously the thing to do in that case. If there's any debate about what discount rate to use, should we use a commercial rate or a social rate for the sequestration values. I've argued that for two reasons the social rate is justified. One is that carbon sequestration is actually a social value as much as a private value because, you know, society benefits by having greater carbon sequestration and less climate change. And the other reason is that the sort of enterprises we're talking about here are intergenerational social enterprises. We're talking about Māori incorporations and land trusts and so forth that exist to benefit future generations and this is usually one of the sort of louder sort of hints that we should be thinking about using a discount rate that places greater weight on the benefits of – on the welfare sorry, of future generations than we might otherwise. And so, that does incline us towards using social discount rate rather than a commercial discount rate of its own.

Q. When you were undertaking the modelling, did you consider using a mix rate or sort of a rate between 2% and 8% just to reflect that the proposal has both commercial and non-commercial elements?

A. Not explicitly and partly for the reason I just said. For the erosion control benefits and the biodiversity values, they are inherently social values. So using a social discount rate is the obvious way to discount those. If we were to be concerned about the discount rate choice, it's for the sequestration values. And for those – as I said, there are two rationales already for why social rates could be used. Could we use a higher rate? I don't think a purely commercial rate would have necessarily been the

right answer because I'm looking at intergenerational social enterprises that exist to try and enhance the social welfare of their base. And this is very much like cooperatives. I've done a lot of research on cooperatives over the years, organisations that are either owned by their suppliers or the customers. These organisations don't exist to maximise commercial returns. So applying commercial discount rates isn't obviously the way they should be thinking about their investments. They exist to benefit their members in other ways and they could even sacrifice commercial returns precisely so they can generate those extra benefits for their members. A lot of my modelling, for example, of cooperative customer owned organisations is that they will effectively break-even only. They won't make a profit precisely because they want to maximise the consumer welfare benefits of their activities for their customer owners. So for a social enterprise like a Māori land corporation or lands trust with an intergenerational focus, it's not that they don't want to make money because obviously they've got to be viable, but at the same time they don't exist to maximise their commercial returns. They exist to maximise the overall wellbeing benefits that they can generate for their people. If that involves some commercial sacrifice to get there, they can do that.

Q. And just still sort of last question on this particular topic. Just looking at the Treasury circular, so even for proposals that are sort of largely involving non-commercial benefits, it also recommends doing a sensitivity analysis of testing, applying a different rate just to test the assumption, and I suppose you don't have time to undertake analysis. Is that correct?

A. It's not so much that. Look, I started my life as an investment banker. Valuing stuff was my day job. Discount rates, small changes lead to big changes in values. If you're calculating differences between values and using the same discount rate, then that importance of a discount rate becomes smaller, as I've kind of said in my evidence. But look, if you're doing a sensitivity analysis on a discount rate, as a former investment banker and a cost of capital specialist, it was pistols at dawn over single decimal places in discount rates, okay. People would die in a ditch for a 0.1% change in a discount rate. So if you're doing a sensitivity analysis on a discount rate, if your base case discount rate is 2% broadly and

declining, then you'd want to do some sort of sensitivity analysis around the 2% figure and it would be a small range because otherwise you're saying you've got no idea what the real number is. This is where I actually find Treasury's guidance somewhat puzzling. Look, if it's a social project there's no sense in which applying a commercial discount rate makes sense. If it's a commercial project, it doesn't make sense to apply, except for the cases where I'm talking about where you have social enterprises and so forth, a non-commercial rate. And so, to say that we think the real number is broadly 2% but for a sensitivity let's multiply that by four, that's just not meaningful. So if I was to do a sensitivity analysis on my discount rate choice, it would be small changes around 2%. It wouldn't be jumping from 2% to 8%. That's just a nonsense.

Q. Okay. But the upshot is at the moment we've only got your evidence which is at 8% and declining, is that –

A. 2% and inclining, yes.

Q. 2%, inclining. The Tribunal's **(inaudible 15:52:22)** other information **(inaudible 15:52:23)**.

A. No, no, I had the soft copies of my models. If you wish to change the discount rate assumption you could have done so.

Q. If I could go to the next topic which is about your comparison of commission with the Central Bank. Can I bring up the Climate Change Commission's advice to the government on their first emission budget and the nationally determined contribution? I will get my colleague to bring that up. It's in the big bundle, potential documents for – yes. So the Commission was asked to sort of make a recommendation not only on the budgets but also on the NDC which is the Nationally Determined Contribution. Now, it was sort of specifically requested by the Minister to make a recommendation, but just in the highlighted **(inaudible 15:53:32)** Commission, declined to make a recommendation and said this is a political and ethical issue which will require elected representatives to make decisions on the importance of factors that contribute to the 1.5 degree goal. Factors include the cost of Aotearoa is willing to bear social and economic impacts **(inaudible 15:53:53)** expectations and reputation, relative comfort with climate risk and be **(inaudible 15:53:59)** how much

we do at home versus how much we do internationally. So I guess just reading this passage, would you agree the Commissioner is saying it didn't consider it would be appropriate for it to recommend an NDC because it saw this as a political and ethical issue. So in other words, it saw a limit to a particular role?

A. Definitely that's what that passage is saying, yes. So that's not to say that they couldn't weigh in with options or provide the Government with options and the Government chooses an option based on those, but obviously in this instance the Commissioner itself said we don't want to go there.

Q. Right and that's because of all the factors that it listed and **(inaudible 15:54:45)** that that's better left for the elected representative to make these calls?

A. **(inaudible 15:54:53)** independent commission that has a certain remit and that independent commission with that remit decided to make that judgement.

MR FONG ADDRESSES JUDGE MILROY – CONTINUE QUESTIONS (15:55:06)

MR FONG TO DR RICHARD MEADE: (CONTINUES)

Q. Now, in your own evidence, your brief of evidence, paragraph 145, you refer to the report by the Productivity Commission on this particular subject. I wonder if I could get my colleague to bring up that report at page 231 of that report.

WITNESS REFERRED TO BOE OF DR RICHARD MEADE, PAGE 231, PARA 145

Q. So, the Commission itself decided it was not appropriate for Climate Change Commission to have decision-making powers for a number of reasons, not dissimilar to the comment that was made by the Climate Change Commission. But I'm just looking at the last bit in blue, Boston, and I think it's Professor John Boston.

A. **(inaudible 15:56:50)**.

Q. He identified no government has so far been willing to transfer decision rights on climate change mitigation masses and **(inaudible 15:56:57)** body. I'm just wondering in the course of your research, have you found any other Climate Change Commission bodies in other jurisdictions that have those delegated decision-making rights?

A. I think it's a question of degree. So these bodies are typically advisory right. So in terms of making – they're not like independent central banks of the sort that I'm recommending. So we are not there yet. In the same way that 30-odd years ago we had no independent central banks either, right?

Q. So the answer is no, you haven't found **(inaudible 15:57:34)**?

A. **(inaudible 15:57:35)**, yes.

Q. So now, are you aware that the comparison between climate change commission and a central bank type of body has been considered by the UK government when it was discussing the establishment of the UK equivalent of the Climate Change Commission?

A. Yes.

Q. Right. And their considered decision was to decline giving decision-making rights to climate change commission in the UK, correct?

A. That's my understanding.

Q. So I suppose your evidence, so your recommendation that the Climate Change Commission should be given delegated decision-making rights with – I guess it would be contrary to not only the Climate Change Commission's overview, the Productivity Commission's assessment, nor – and it would be contrary to the practice of all other jurisdictions in which they have a Climate Change Commission body. Would that be a fair description?

A. Yes, I would take my earlier point. If we're having a conversation about independent central banks 30 years ago, there would've been no examples, no one doing them, and yet it turned out to be the right way to go.

Q. So you would disagree with the Productivity Commission's assessment here in pink, the decisions about reduction targets, budgets and policies

are highly political **(inaudible 15:59:36)** government strategy and priorities?

A. Honestly, we could change the words here and say the official cash rate is a highly political variable and politicians would love to be able to choose it for their development strategies. But this is precisely the problem with time inconsistency. When politicians choose key variables, it really messes up the ability for parties to make long-term investments based on those variables, which is why we created the independent central banks. So what that pink text does is it describes the very problem we're trying to fix, which is: how do you resolve time-inconsistency in climate change policy? And to say that politicians should hold onto choosing these variables is only to say we want to perpetuate the problem rather than solve it.

Q. Can I just bring up the last document that I want to bring up, which is the UK Environmental Audit Committee report that was presented to the House of Commons? Paragraph 60 of that report. The UK environmental audit report. Yes, that's the one. So, just looking at the – the first two sentences are sort of, you know, sort of largely consistent with your evidence that there is some advantages to be gained by giving some key responsibilities to a commission, but I think the key bit that I want to draw to your attention is somewhere in the middle, starting with the words "at the same time, these issues involved in climate change policies are bigger and more complex than those devolved to the MPC", the Monetary Policy Committee, and on that basis they recommended not giving delegated decision rights to the committee.

So I guess my question to you is: do you agree that climate change policy decisions are much bigger and more complex than monetary policies like setting the OCR?

A. Yes and no. I mean, there are some obviously key variables that affect our economy at large. One is the official cash rate that just – it's the price of money, it's what you earn on your investments, it has distributional effects between people who are savers and people are borrowers, it has intergenerational effects between renters and owners, so, effectively, even the official cash rate by itself is an extraordinarily important variable

for our entire economy. Other key variables, of course, are things like the oil price, which we've all found now to our great disconcertment, it's also, the, you know, electricity price, for example, for industry, so there are a bunch of key variables that actually have very profound impacts across the entire economy.

Climate change is similarly the same. And I think my real point of departure with this comment, "at the same time, issues involving climate change policy are bigger and more complex..." The interest rate can drive the economy up or down. Simple as that. The OCR. So the Reserve Bank's choice of OCR can either flatline our economy or put it on steroids. So I wouldn't agree that there's a point of difference in that regard between climate change policy and monetary policy.

Is it more complex? This comes down to the scope of what you delegate to the relevant body. So, for example, if we suppose that governments chose what NDCs were and which sectors were to be covered, and then they delegated to an empowered climate change commission to work out what policies are needed in an ETS sense, at the very least, to achieve those policies, that, to my mind, is actually not as complex as has been portrayed. If we think that the climate change commission, with being empowered to operationalise policies, looks at the full suite of policies, then perhaps that is getting into a more complex domain. So I think there is a question of degree about what scope of responsibility you might hand to an independent body, but still the essential point being by having an independent body then implementing the policy to achieve the goals that it has been provided, it's actually, in principle, no different to successive governments telling the Reserve Bank what it should be doing. So is just inflation? Is it inflation and employment? What range of inflation? Et cetera. We've had changes in these with political cycles already, yet we still have an independent central bank that then goes out and implements the remit it's being given.

And in the same way, if we were to turbocharge in some sense the Climate Change Commission by saying, "Look, you are now responsible for all the ETS settings. We'll tell you which sectors are in or out, and we will determine what our NDC is. You go and do the rest", that, to my mind,

is actually doable, it's manageable, and it would add to the credibility, if not solving all of the credibility issues we've had with our climate change policy so far.

Q. Thank you, Dr Meade. I think my time is up, so I don't have further questions for you.

MR FONG:

Your Honour, I do seek leave potentially to put in one further written question to Dr Meade, just arising on some new material from his PowerPoint, and I need the assistance of Mr Murray before I can put that question to Dr Meade.

JUDGE MILROY:

Yes, Mr. Fong, I grant that leave.

MR FONG:

Thank you.

QUESTIONS FROM CLAIMANT COUNSEL – NIL

JUDGE MILROY:

We now have questions from the panel, and I have canvassed the panel and we have a question from Professor Williams.

(16:05) PROFESSOR DAVID WILLIAMS TO DR RICHARD MEADE:

Q. Yes, tēnā koe, Dr Meade. Two questions.

Firstly, from paragraphs 98 and 99 of your #A151 brief of evidence, pages 43 and 44 of your evidence, you are talking about carbon sequestration, and benefits, and how long it will take to be financially useful for the owners of land currently in sheep and beef production, and paragraph 98, you say that carbon sequestration does not overtake sheep and beef revenues for 13 years but does so thereafter on a 50-year horizon, but for – in paragraph 99, with respect to revenues from native reversion, they "do not outstrip sheep and beef returns at any time" – that's over the 50-year period, I assume.

And so we've – quite a number of claimants have put forward native reversion as a policy that should be incentivised. You, I gather, think that that is not on, at least for the sort of sheep and beef country that you're talking about in Tairāwhiti, but for that statement in paragraph 99, to what extent is that account of the erosion control benefits, given that that country is very erosion-prone? Does it take that into account at all?

A. No, Professor. So, effectively, I'm just focusing on the carbon sequestration revenue changes between either converting or reverting, relative to sheep and beef, and of course, this is under my counterfactual price series versus my actual price series, and I'm saying even with my counterfactual price series, I don't find that the sequestration returns outstrip the sheep and beef returns. And, you know, I did emphasise before that there's a possible conservatism to my current sequestration series because I hadn't modelled the historical prices in the counterfactual including agriculture, so potentially, I could add a higher historical series, which would have led to a higher future series of counterfactual prices, in which case, that might have led to some scenarios, at least, where conversion – sorry, reverting from sheep and beef might be self-sustaining just on sequestration revenues, but this is not to discount the erosion control benefits of reverting that sheep and beef land to kānuka or mānuka, for example, because I do mention in my affidavit that there is good strong – there is evidence that effectively, kānuka and mānuka is good for erosion control. So we do get some benefits by having that.

If we had a separate payment stream, so that we were able to separately reward ecosystem services like erosion control or biodiversity enhancement, that might help to change the balance, and so that it might become profitable for reversion to be better than ongoing sheep and beef farming, if we can monetise these extra ecosystem services, but unless we do, then the private returns to landowners are constrained as a consequence, so if we had this extra payment mechanism, then that could perhaps change the calculus.

Q. Āe. No, that's helpful. Thank you.

So, my other question relates to this dreadful word “counterfactual”, which you use 77 times in your brief, and I say “dreadful word” because, you know, I'm an historian who's been criticised by other eminent historians for being counterfactual. So for me, it's a swear word, but for you it's a positive word, and –

A. It's an essential word, sir.

Q. It’s an essential word. Well, as to whether the counterfactual is ever likely to be factual, is what I'm going to ask you a question about, so are you aware of the very recent April 2026 Climate Change Commission advice on ETS settings?

A. I know it’s come out, but I haven’t had a chance to review it.

Q. Right. Well, it’s been put on the record. I don't know whether it's got a record appellation as yet, but for the transcript, it’s at pages 21 to 23 of that report. Is there an appellation for it? No. It’s page 21 to 23. If I could just summarise it and ask your views. The advice from the Climate Change Commission seems to be that at the moment, there's a risk of undersupply of New Zealand units from as early as 2028 and there's a high likelihood of price instability from then onwards and even before then. So they make some recommendations about the ETS auction volumes through to 2030. So the present view of the Climate Change Commission is that we are in price instability territory rather than your desired counterfactual territory. Any comments on that?

A. Well **(inaudible 16:11:52)**. I think obviously part of the issue is I’m trying to compare what the world we think could be – what better world we could be in, so that's the counterfactual world, and we compare it with the world we are in, which is the world that in some sense has got some good features, obviously – we have an ETS, but it has some problems, too, because we don't have a time-consistent, committed and credible ETS, and so, effectively, what the Climate Change Commission is describing, part of the challenge with the world that we are actually in. And I guess they’ve actually challenged us to think about: couldn't we be in a better world and what would it take to get there, if we're trying to get to our climate change goals, you know, in a timely way, in an efficient way, in a

cost-effective way, et cetera, and in a way that also maximizes the opportunities to New Zealand by reducing its emissions?

Q. Right. Yes. Yes. I guess my concern is that the Climate Change Commission is suggesting some serious problems with the ETS settings from as early a date as 2028, which I think would be a worry for your type of hope.

A. Well, so, I think, Professor, it's pointing to the need to do something better.

Q. **(inaudible 16:13:05)**

A. So I say that we've had this ETS since its inception, so that's part of the problem, right? We've had a time-inconsistent ETS. We've had massive doldrums in the ETS price. We've had rises when it looked like we were getting serious about our national commitments, et cetera, and then we've had lots of volatility and declining prices and policy reversals, et cetera. These are precisely the problem, and what the Climate Change Commission is describing is, if you like, just further features of the problem, and so the question is then begged, can we do something better to fix these problems? You know, we've had historical problems. Can we avoid them in the future? And we've got these impending problems that the climate change is pointing to. Can we do something to, you know, improve on that? Either way, we're moving towards my counterfactual world if we do that.

Q. Right. All right. Good. So, thank you. I mean, a very, very good set of evidence, thank you, and some people like tables and figures and some people like the written text. I'm a written text man myself, but you provided both, so thank you very much for your evidence.

A. **(inaudible 16:14:09)**.

(16:14) JUDGE MILROY TO DR RICHARD MEADE:

Q. Well, Professor Williams has stolen my questions. But I do have one request – well, two requests, if you're willing, and that is, it struck me as you were discussing with Mr. Fong the issue of what you might delegate to an independent climate change commission with decision-making powers, and you referred to the scope of what you would delegate to that body, and just as we don't delegate the fiscal policy to the central bank,

there's obviously all sorts of things that we might not delegate to this, you know, idealised climate change commission. I'm just wondering, if you were able – not necessarily now, but perhaps in writing, just to give us further detail about what you think could be a useful – what the useful scope of such a climate change commission could be, what things we could delegate and what would need to be kept by central government and so on.

A. Certainly I'd be delighted to offer some thoughts, your Honour, but I have to say this is obviously not a trivial matter.

Q. No.

A. And so I could perhaps offer some high-level considerations, but people could spend a lot of time trying to figure out how to do this properly. So I'd be happy to offer some, if you like, high level considerations, but I'd offer them on the basis that I'd hate to suggest these are the final word based on a very quick piece of analysis, because these are, as I say, fairly important questions.

But I think the essential point is it doesn't have to be 100 per cent that gets delegated to an independent body to make all the decisions, and also there is this question of who sets the ultimate targets, so it's not that we're saying that the reserve bank should choose what the inflation target is. We accept that, you know, politicians get to choose what the overall target is. There is a question about what a proper scope of that is, and – as an economist, we don't get invited to parties much, because we're called dismal scientists, because we talk about degrees of imperfection, so chances are, there's not a stark black and white dividing line. Effectively there are, if you like, grey zones where we say, look, if we were to move in this direction, we're moving towards more credible and consistent policy, which is all I was trying to get at in my evidence, anyway, so I'm not trying to say I know what perfect looks like and if we jump to perfect, this is what we get to. And so I think that there are degrees of sliding scale in terms of how much the politicians do get to choose about the overall parameters, there's a sliding scale in terms of the scope of what's delegated to an independent body, and as I say, not sharp boundaries in either case, but if we were to shift the balance in

these sort of grey zones in a certain direction, then we should expect to be moving towards more consistent and credible climate change policy, which would be an improvement, if you like, if not getting us to a nirvana state, as Mr Murray might say.

Q. Thank you. Actually, there was just one question that I had which follows on from the one that Professor Williams has asked in relation to your paragraph 99, which was that the returns from native reforestation do not outstrip sheep and beef at any stage, and then you discuss the benefits from erosion control and other sorts of biodiversity benefits, and I just was thinking, as you were talking about reversion to mānuka and kānuka, does the same thing apply to a more mature forest with greater diversity of species and so on?

A. I suspect, your Honour, and I haven't done the calculations, but one of the main sort of constraints on moving towards more indigenous sequestration is that it can be quite costly and slow – it's costly to set it up in the first place and then it's slow to get the returns, because we have slower-growing trees, even though longer term, it might be better, and this is where your choice of discount rate becomes highly critical.

If we are patient, then we might be more than happy to wait for indigenous sequestration to occur over time. If we're impatient – and most commercial investors, of course, will be; they'll be saying, "Look I want fast returns", which is why they go for *Pinus radiata* – you'd go in the other direction. There is this middle ground that I pointed to where you can use *Pinus radiata* as a nursery species, and I think, again, we're probably thinking about organisations that take an intergenerational view on these, so either they're, like, environmental groups or they're iwi groups, et cetera, who might be saying, "We are prepared to be very patient here. We do want to get the extra benefits of indigenous biodiversity long term as well as the sequestration benefits. We might be able to, in some circumstances, find that viable."

But would that be more viable than kānuka and mānuka? Obviously, the costs are lower. Mānuka, kānuka get to maturity faster, but the problem is they don't sequester nearly as much carbon, for example. Yet they do provide very significant erosion control benefits.

So this is where there are massive trade-offs here, and depending on the relative prices of sequestration and erosion control, if we had payment mechanisms – and you'll remember, Judge, in the Mangatū inquiry, we talked about a forest that was established with government money plus regional money going into planting conservation forests at the head of the Waipoua – the Waipoua headwaters to stabilise the erosion-prone lands there. This was a precisely a situation where you had downstream beneficiaries, the people who were planting orchards that had high values being affected by frequent flooding and so forth, you had a regional council that was having to spend lots of money on digging out river beds and paying for stopbanks, and between them, it was worth them coming up with a scheme to subsidise, effectively, a forestry plantation scheme, and at the time there was some expectation of commercial value, but fundamentally, this was conceived to try and stop erosion in the downstream parts of the Waipoua, and there was a payment mechanism through the rates system, for example, that meant that you could come up with a way to cover the cost of the plantings that were going to generate these environmental benefits as well as commercial benefits.

And it's like we've somehow forgotten these lessons, because this was done in the 50s and the 60s. There's nothing to stop us doing this now. We could come up with a scheme that says if there are great regional benefits – if, for example, you know, Waka Kotahi, if it's spending $100 million a year – I'm picking a number, obviously – fixing bridges and roads due to frequent flooding, they might be more than happy to spend $50 million a year rewarding farmers to revert lands to mānuka and kānuka if that ends up saving their bridges and roads, if it stops the erosion and the slash and all those sorts of problems that are causing these incredible costs to Waka Kotahi, it could be cheaper for them to actually not fix roads and not fix bridges and rather, subsidise plantings and other sorts of measures that reduce the damage to their infrastructure in the first place.

Q. Yes. We heard from one of the Crown witnesses – Mr Smith, I think it was – that there was a consideration of introducing a – I've forgotten what it was called – a unit to recognise, as a premium unit, to recognise

indigenous forestry if that was what people were going to go into, so that people could, if they wanted to, go into replanting native, but it didn't happen, and it was interesting to me to see that the same sort of thought was in your evidence as well, that there might be something – some sort of payment that could be made for those other kinds of benefits.

A. Indeed, Ma'am. In a separate project, I've been assisting the Māori Forestry Association with thinking about how you monetise the various ecosystem services arising from forestry, so things like biodiversity credit schemes, which I think Mr Smith might have been referring to, if you can monetise enough of the value streams out of a forest – so, erosion control, biodiversity enhancement, water filtration, et cetera, et cetera – this is all in addition to timber value or even carbon sequestration value – effectively, one forest can generate multiple value streams, and that can make the forest more valuable alive than dead, so in other words, you don't want to harvest the forest, you just want to keep it growing so that it can keep generating carbon sequestration, biodiversity enhancement, erosion control, et cetera, et cetera.

If you come up with payment mechanisms for each of these ecosystem services, all of a sudden, foresters change the way they think about forestry, and they change about what they want to plant.

And so, for example, if you have biodiversity credits, then chances are you'll get greater investment in things like indigenous afforestation, simply because it generates a different value stream to planting *Pinus radiata*.

Q. And a sufficiently mature permanent forest renews itself, so your costs go down.

A. Sure.

Q. Well, thank you very much, Dr Meade. As always, your evidence is very well researched and very interesting. I will hand you back to your counsel in case there are any questions by way of re-examination.

(16:23) MR MAHUIKA TO DR RICHARD MEADE:

Q. I just had one topic. Thank you, Ma'am. Dr Meade, you had quite a long discussion – I don't know if you could maybe get it in front of you. This is the graph at slide 40.

So, this is the counterfactual and base future real prices. Do you remember that you had quite a lengthy discussion with my friend Mr Fong –

A. Yes.

Q. – about that, and as I understood the discussion, it was about the fact that you had used pricing from the Climate Change Commission, and the Climate Change Commission's pricing had taken into account agriculture being within the emissions trading scheme, was the issue.

A. Yes, Productivity Commission.

Q. Productivity Commission, yes, sorry. I beg your pardon.

A. Yes, that's right.

Q. So my – there was a lot of discussion, and there was just one point that I was wanting to capture. So when you took us to that diagram during the presentation, my recollection is that you told us to look at the two dashes.

A. Yes.

Q. So –

A. So, the upper dashed line and this lower dashed line here.

Q. Yes, so the lower dash line, as I understand it, is the – that's the base mean price?

A. Correct.

Q. And then the upper line is what would be the mean price based on your counterfactual.

A. Correct.

Q. And so am I correct in assuming, then, that the thing that that graph is illustrating is the difference between the two scenarios?

A. Indeed. So when I do my evaluations, I'm saying, what values do we get with that upper line? What values do get with the lower line? Then I take the difference between them to measure my impacts.

Q. And so if you were to take into account a scenario where agriculture is not included within the ETS, would that gap reduce to zero?

A. I wouldn't say it reduces to zero. You'd expect the upper line to come down, but then the lower line would come down as well. Which one comes down more or less, I guess, remains to the seen.

Q. So would you still expect there to be a difference between those two?

A. I would, yes.

Q. And would you still expect that difference to be significant, or insignificant?

A. Significant. I mean, if we don't have agriculture in the counterfactual, then as I mentioned in my presentation, other sectors have to carry a heavier load, which would actually point towards having a higher ETS price.

Q. Thank you, Dr Meade. I don’t have any further questions.

JUDGE MILROY:

Well, can I thank you again, Dr Meade, for the time you've given us today? Yes, thank you very much for your evidence.

HOUSEKEEPING – SCHEDULING (16:27:13)

MR KUDDUS ADDRESSES THE COURT – SEEKS LEAVE TO BE EXCUSED FROM JUDICIAL CONFERENCE – GRANTED (16:28:50)

KARAKIA WHAKAMUTUNGA (KEVIN PRIME)

HEARING ADJOURNS: 4.30 PM

HEARING RESUMES ON THURSDAY 28 MAY 2026 AT 9.00 AM

KARAKIA TĪMATANGA (KEVIN PRIME)

JUDGE MILROY:

Welcome to our fourth day of this hearing week eight. Just before we turned to taking evidence from Dr Cole, who I see is with us this morning, thank you and good morning to everybody.

HOUSEKEEPING – TIMETABLE, JC (09:01:52)

I have no other preliminary matters to deal with so I'll turn to the evidence that is being presented by Dr Cole and I think it's Mr Sharp, or is it Ms Dorn?

(09:03) MS DORN: (CALLS)

Your Honour, thank you your Honour, it'll be me leading Dr Cole. So Dr Anthony Cole has already given evidence in this inquiry, appeared in hearing five in November last year. So he's here today to speak to his reply evidence, which was filed in March and can be found at appellation #A084(e) and he has also prepared speaking notes for today which can be found at appellation #A084(f). And I'll just check, Anthony, that you can hear and see myself and the Tribunal okay?

DR ANTHONY OWEN COLE:

Yes, I can.

MS DORN:

Thank you. I'll hand over to you now to present your evidence.

(09:03) DR ANTHONY COLE: (#A084-(e),(f))

Thank you. Tēnā koutou katoa. E kore au e ngaro, he kākano i ruia mai i Rangiātea. E te Kaiwhakawā, tēnā koe. Ko Anthony Owen Cole tōku ingoa.

READS SPEAKING NOTES #A084(f)

I currently reside in Waipawa, Central Hawke's Bay/Te Matau-a-Māui and I am the founding director of Te Toi Ōhanga: the New Zealand Institute of Māori Economic Development and Innovation.

I have prepared this brief of evidence for the New Zealand Māori Council and Te Taumata o Pūtiki Wharanui in a way that builds on the submissions documented in the brief of evidence I submitted to the Tribunal on the 6th of May 2025 with speaking notes that were orally presented to the Tribunal in hearing week 5.

I begin this review of Crown evidence by outlining the rationale that I have used in assessing relevant Crown briefs of evidence.

My review of Crown evidence involves the use of four different assessment goals.

First, I focus on Crown evidence in ways that seeks clearer understanding about the concerns outlined in the five submissions of my brief of evidence that was presented to the Tribunal last year. For the convenience of the Tribunal in reading this review, a summary of my submissions is provided in Appendix Table A1. And you should be able to find that at the back of the speaking notes.

Submissions 1-5 of Table A1 assume that the climate change response needs of Māori communities and Māori businesses will be met if they are provided access to tino rangatiratanga rights, and the partnership, protection and redress principles guaranteed in the Treaty/Te Tiriti. I also assume that one of the most influential ways that the Crown can provide Māori access to tino rangatiratanga and Treaty/Te Tiriti principles is through the use of interest-responsive Crown-Māori engagement processes of the kind visually depicted in Appendix Figure C1.

A **second** assessment goal focuses on better understanding how various Government ministries have *engaged* with the Māori Treaty/Te Tiriti partner.

And the relationship between Crown-Māori engagement and desired engagement outcomes (and acknowledgements) that give effect to Treaty/Te Tiriti terms and principles is clearly articulated in the published work of Te Arawhiti as visually depicted in Appendix Table B1.

Third, my review of Crown evidence also seeks to clarify the extent to which Crown engagement activities demonstrate an operational implementation of the interest-responsive engagement modalities depicted in the Te Arawhiti Crown-Māori engagement framework of Appendix Figure C1.

I should explain that my reason for the use of a somewhat procedural Crown-Māori engagement framework was to provide a clearly defined set of reference points that could be used to review Crown evidence and assess how the Crown was doing in terms of its Treaty/Te Tiriti engagement obligations and, if possible, use a Crown engagement framework so that I was assessing the performance of the Crown against its own stated goals and aspirations. There is a sense in which this approach is limiting because a procedural engagement framework created by the Crown will not necessarily include the place-based engagement protocols of Māori communities, but I think this is a helpful start.

Finally, some Crown evidence has been written in a way that speaks directly to my earlier evidence brief. Where appropriate and necessary I have replied. For the convenience of the Tribunal, I have organised my review findings by section, with familiar sub-section headings that assist in documenting review findings in relation to: *(i) Submissions 1-5 of my earlier brief of evidence that is summarised in Table A1, (ii) Crown Māori engagement as visually depicted in Table B1, (iii) Crown-Māori power sharing arrangements, and (iv) and finally, Response to my brief of evidence where relevant.*

The findings of my review of Crown evidence are documented in sections 3-12 of my most recent evidence brief, document #A084(f). For the convenience of the Tribunal, I will now provide a summary of key findings.

The brief of evidence I have reviewed focus much attention on efforts being made by lead Crown agencies to coordinate a 'whole-of-government' response to climate change. The evidence I have read describes an enormous amount of work that has ebbed and flowed in response to changes in the ambitions, priorities and ideology of New Zealand's coalition governments. **Could we have done better, and if so how?** There are a number of key insights that emerge from this inquiry into Crown evidence that documents what we have, and have not, achieved over the last 35 years. Before focusing on these insights, it is helpful to begin by acknowledging that our national climate change journey is sensitive to change in political context.

Political context - a goal-oriented, national climate change response (such as, net zero emissions (that so far excludes biogenic methane) by 2050) requires political ideological constancy, something that we have not successfully sustained over the last 29 years, since the introduction of MMP. Our national climate change response has advanced, to the extent that it has, amid ongoing change in the ambitions, priorities and ideology of New Zealand's coalition governments. It is helpful to acknowledge that this is a determinant of our national climate change response over which public servants have no control. It is very likely that we will continue to make irregular progress going forward, as long as an incoming government has the power to de-prioritise a climate change response. The only way to remove variability of this kind is to elevate a national climate change response to the level of our constitution and the New Zealand Māori Council would be in favour of a change of this kind.

Having begun with this acknowledgement, I will now summarise key findings. For the convenience of the Tribunal, I have organised my review findings into separate issues of concern.

First, **strategic planning** – overall, our national climate change response reflects a failure of long-term, strategic planning, Crown-Māori co-design, capability and capacity building, research/innovation and funding prioritisation. The Climate Change Response (Zero Carbon) Amendment Act 2019 could be described as an attempt to move New Zealand towards a more strategic,

planned approach to climate change. In reading about the work of MFE, it was helpful to better understand the tensions that MFE staff grapple with in operationalising Crown Māori engagement activities that support a strategic planned approach. For example, from the brief of evidence of Hemi Smiler, I quote:

> ... when planning engagement, we always start as wide as possible upfront, in order to meet Treaty settlement obligations, Ministerial direction and policy requirements. The final approach taken is a result of managing both internal and external constraints, like resourcing and Ministerial deadlines.

It is troubling to Learn that *resourcing and Ministerial deadlines* are viewed as acceptable reasons for changing the scope of Crown-Māori engagement activities. These are factors *over which the Crown has control* and for this reason, should not be used to explain why a Māori Treaty/Te Tiriti partner response to climate change was not possible. A climate change response requires us to engage inclusively, think strategically, plan collectively and work cooperatively.

Engagement modality and outcomes - it is a well-established fact in western science that experimental method and outcomes are inextricably connected. This same causal relationship forms a central focus of inquiry for researchers wanting to understand the influence of *engagement method* on community engagement outcomes. Crown-Māori engagement is no exception to this rule. The modality of engagement employed is causally related to engagement outcomes in ways that can limit power sharing, prioritisation of issues and decision-making. This interrelationship between engagement modality, desired outcomes, and acknowledgements is an essential part of the Te Arawhiti engagement framework. My review of Crown evidence suggests that overall (and there are exceptions), Crown adoption of the Te Arawhiti engagement ecosystem, as visually depicted in Table B1 and Figure C1, is ‘poor’ and I would suggest that this fact goes a long way towards explaining the concerns I have

documented relating to a Crown-led climate change response in Submissions 1-5 of Table A1.

Power sharing - a national climate change response requires a high level of commitment to Treaty/Te Tiriti partnership. Comments made in Crown evidence and discomfort with power sharing engagement modalities (such as, empower, co design, collaborate) suggests that interest-responsive engagement with Māori is perceived as difficult. This perception is disempowering for at least 4 reasons:

(i) It excludes options and possibilities for transformational shifts that could be accomplished through collaboration, co-design and empowering partnership arrangements.

(ii) It manifests in risk avoidance rather than willing acceptance of Treaty/Te Tiriti relationship duties, obligations and responsibilities.

(iii) It supports the concentration of decision-making power on the Crown side of the Te Arawhiti bridge.

(iv) It is misaligned with the desired engagement acknowledgements of the Te Arawhiti framework recorded in row 10 of Table B1. For the convenience of the Tribunal, I think it's helpful for me to read these:

a. *An acknowledgement of their rangatiratanga and status as Treaty partners,*
b. *an acknowledgement that mātauranga Māori makes an important contribution to solving policy and practical problems,*
c. *an acknowledgement that Māori have the resources and capability to contribute; and*
d. *an acknowledgement that some issues affect Māori disproportionately and they are therefore better placed to develop the solutions.*

Engagement arrangements stemming from a perception that engagement with Māori is difficult, complex, costly and problematic, require a philosophical reorientation away from 'risk-avoidance' towards Treaty/Te Tiriti relationship based duties, obligations and responsibilities. Such a shift on the part of the

Crown would go a long way towards what Justice Williams has described a 'bringing Māori culture right into the centre of the way we do things'.

Reliance on consultation - it is difficult for Māori to contribute to a national climate change response when the engagement modality employed (that is consultation) effectively moves the rangatiratanga axis of the Te Tautuhi o Rongo framework that is visually depicted in Appendix Figure D1 to the Crown's end of the partnership axis. This is not to suggest that consultation is inherently wrong, but it is not an engagement mode that empowers, and provides space for, the expression of tino rangatiratanga. Consultation disproportionately supports the expression of kāwanatanga; however, it has its place and must build on adequate sharing of information.

Māori interests - inquiry into, and analysis of, Māori interests in climate change is crucial in locating space on the Crown-Māori partnership axis of Figure B1 with engagement modes that support Treaty/Te Tiriti 'rights' to power sharing. In my review of Crown evidence, I have struggled to find tangible examples that the Crown fully understands, acknowledges and supports Māori interests in ways that engender movement towards the Māori side of the Te Arawhiti bridge.

The need for inclusion - with very few exceptions, this review of Crown evidence has identified a clearly observable Crown-Māori engagement pattern based principally on the use of 'information sharing' and 'consultation' modalities (that I have depicted in Figure C1). This observable pattern exists in isolation from adequate explanation by the Crown relating to how 'information sharing' and 'consultation' can satisfactorily be used to, and I quote:

> … make decisions together in a way that balance[s] kāwanatanga (the Government's right to govern) with rangatiratanga (the Māori right to make decisions for Māori).

This comment by K. Wilson raises two further concerns:

(i) The power sharing implications of over-dependence on Crown Māori engagement based on information sharing and consultation suggests to me that now is not the time for a conversation that aims to: … *make decisions together in a way that balance[s] kāwanatanga (the Government's right to govern) with rangatiratanga (the Māori right to make decisions for Māori).* In reality, we are still a few steps back from the problems of 'balancing' and making 'joint decisions'. In reality, we are still working on the problem of **inclusion**, still coming to terms with the need to create a space for the expression of tino rangatiratanga.

(ii) After carefully reading Crown evidence, I am concerned that this 'inclusion problem' is a reflection of the Crown's **discomfort** with 'collaboration', 'co-design' and 'empowering' engagement modalities. This **discomfort** exists despite the fact that the expression of tino rangatiratanga is a defined 'term' and 'principle' of the Treaty/Te Tiriti, and a Crown 'promise' made to our Tīpuna more than 180-years ago.

A further inclusion concern - the 'inclusion problem' described in paragraph 20 is further reflected in the statement of K. Wilson that … *Mātauranga Māori (indigenous knowledge) and an indigenous worldview will provide a valuable lens for planning and considering solutions.* It is troubling to think that 185 years after the signing of the Treaty/Te Tiriti, the inclusion of *Mātauranga Māori (indigenous knowledge) and an indigenous worldview* are still being referred to by the Crown in a future tense (i.e., will provide).

An unresolved tension - successive left and right-leaning coalition governments address the question of power sharing with the Māori Treaty/Te Tiriti partner with reference to their own ideological frameworks (e.g., the tino rangatiratanga model, the overlapping spheres model, the levers model, the Te Arawhiti bridge model, the Treaty principles model, the sovereignty model). A model of kāwanatanga based on assumptions of absolute sovereignty is inconsistent with the model of shared power envisaged in recommendations from the Waitangi Tribunal. This tension is manifest in our national climate change response in the preferencing of Crown-Māori engagement modalities like information sharing and consultation. Inclusion of

the identity and aspirations of Māori in a national climate change response is thus highly sensitive to this unresolved tension.

Capability and capacity building - New Zealand needs climate change responsive leadership of a type that our democratic approach to government has so far failed to deliver. This is partly a consequence of the highly opportunistic nature of MMP, but more deeply, this is a reflection of our education system. We need leaders who are conversant with our national origin narrative, and have demonstrated a track record in translating our nation's founding Treaty/Te Tiriti into practice. We urgently need leaders who are able to demonstrate that the Treaty/Te Tiriti duties, obligations and responsibilities of the Crown can find expression in a way that supports the transformational (climate) change that our Māori communities urgently need. Yet with few exceptions, the evidence I have reviewed pays surprisingly little attention to organisational and individual capability and capacity building (the first two rows of the Te Arawhiti ecosystem depicted in Table B1).

Levels of engagement - the *Te Tautuhi ō Rongo framework* of Te Puni Kōkiri can be used to guide a more nuanced Crown-Māori engagement that expands each Te Arawhiti engagement modality of Figure A1 into a vertical axis that visually depicts *levels of engagement organisational scale (e.g., from iwi and hapū, all the way up to tangata whenua)*. The need to 'determine engagement level' is also acknowledged in item (vi) of row 5 of the Te Arawhiti engagement ecosystem shown in Table B1. I draw attention to these two independent, but complimentary frameworks to make the point that this aspect of Crown-Māori engagement best practice is well-established. A need exists to 'determine engagement level' to ensure that Crown-Māori engagement activities are appropriately mandated, representative, culturally safe and provide access to problem-relevant Māori knowing. This best practice expectation contrasts with two Crown engagement patterns that are evident in the brief of evidence I have reviewed, with a few exceptions:

(i) There is a tendency for government agencies to limit engagement level to organisations like the Iwi Leader's Forum, Federation of Māori

Authorities, PSGEs and Te Tai Kaha. Engagement activities of this kind are not wrong; however, they need to be part of a carefully thought out, and well-informed 'engagement strategy' that adequately addresses questions of mandate, representation, cultural safety and access to problem-relevant Māori knowing. Evidence of strategic engagement planning of this kind is currently missing from the Crown evidence I have reviewed.

> *Concern about an over reliance on Crown engagement with the Iwi Leaders Forum has been raised in other inquiries. For example, since I wrote this evidence brief, legal counsel drew my attention to a statement made by Prof. Margaret Mutu in a brief of evidence she prepared for the Wai 3565 – Treaty Principles Reform Urgent Inquiry and I quote from BOE A31, pages 6-7 and paragraph 21: …*
>
> > *There was simply no chance the views of Māori could have been formulated, canvased and articulated within the timeframe provided by the Crown. In any case, although National Iwi Chairs Forum is a national-level representative body and should continue to be engaged, it does not represent all Māori and has never claimed to do so. Engagement must be far wider and inclusive of all hapū, all iwi and all Māori.*
>
> *At this point I need to pause and offer a further word of explanation in relation to this part of my evidence brief. After completing my review of Crown evidence earlier this year, I was asked by the New Zealand Māori Council if I would consider representing the New Zealand Māori Council executive as a technician on Te Tai Kaha.*
>
> *In response to this offer, I explained that I was concerned that it would be inconsistent for me to step into such a position … given*

the concerns that I had addressed to the Tribunal about the need for improved Crown-Māori engagement.

What was explained to me in response was that the work of Te Tai Kaha was not strongly aligned with aspirations of this kind. It was much rather an attempt to 'hold-the-line' (if I can use that expression) and where ever possible, contribute to positive outcomes for Māori. Based on the merits of this reply I agreed to help.

As part of taking up duties with Te Tai Kaha, I was asked to sign a confidentiality agreement, and then later a non-disclosure agreement that updated some of the provisions of the earlier confidentiality agreement. As I understand it, these legal agreements make it easier for the Crown to maintain control over how they choose to release information about public policy developments. But signing these agreements also raised questions for me because I could see that this would isolate me from Māori community, mandate, representation and cultural safety. This is because we are not allowed to disclose information about the work we are doing to anyone, unless they have signed an NDA, and this clearly has implications for my role in representing Māori community interests.

There is a representation dimension in Te Tai Kaha that I need to acknowledge–in my case to the executive of the New Zealand Māori Council. But I don't have a mandate to represent New Zealand Māori Council–Māori committees, or marae, or hapū, or iwi. That's just not possible because of the confidentiality agreement and Non-disclosure Agreement.

Over the last 3 months, involvement in Te Tai Kaha has provided a helpful insight into MFE's policy development processes and engagement activities. Since I started, I have been able to

contribute to two papers prepared by Te Tai Kaha technicians that focus on climate change policy. For the record, both of these policies have been publicly announced over the last few weeks so it is now ok for me to acknowledge them. As I understand it, the legal agreements we have signed stay in place until the government makes the information we have been working on public. But even then, we would not be able to release documents publicly, or any information about the policy development process.

I can see how this engagement arrangement provides for the operational needs of the Crown, however, it is more difficult for me to see how this Crown-Māori engagement arrangement aligns with the interests and rights of the Māori Treaty/Te Tiriti partner. As Te Tai Kaha technicians we can offer advice to MFE staff, but we are not allowed to ask for guidance from Māori communities, or Māori committees, iwi, marae, hapū or even kaumātua. My concern is that this is culturally isolating and culturally unsafe.

Returning to my Crown evidence review summary, point number 2 …

(ii) There has been a failure to engage with marae and hapū communities (i.e., the lowest organisational level of the vertical 'rangatiratanga' axis depicted in Figure D1 of the Te Tautuhi ō Rongo framework). This engagement gap goes a long way towards explaining the absence of a Māori cultural philosophy on climate change in our national climate change response (a concern I expressed in submission 2 of my earlier brief of evidence, a summary of which can be found in Table A1).

An inclusive definition of hapū - In regards to levels of organisational scale, an additional concern expressed by the New Zealand Māori Council is that while engagement with marae and hapū is essential, a contemporary definition of hapū needs to be inclusive. In this respect, it is helpful to acknowledge the

position of the New Zealand Māori Council that: where Māori are disconnected from their whakapapa links **Māori committees** can also serve the function of hapū.

Place-based knowing – the brief of evidence I have reviewed are silent in regards to a Māori cultural philosophy on climate change and the intergenerational duties, obligations and responsibilities associated with rebalancing our climate system. As I have noted in this brief of evidence, the origin narrative outlined in my own brief of evidence that was written in a way that draws on the published findings of Ko Aotearoa Tēnei. This was done because the Waitangi Tribunal are already deeply acquainted with the findings of the Wai 262 inquiry. That said, it would not be correct, or appropriate to assume that the knowing I have presented on a Māori cultural philosophy on climate change is the final word on this matter. Māori community knowing is **place-based**, and shaped by whakapapa. Access to knowing of this kind is only achieved by engaging with marae and hapū, and in terms of the evidence I have reviewed, engagement at this level of scale has received surprisingly little attention.

Ngā mihi nui ki a koutou. Thank you. This concludes my presentation. I'm now hoping to answer any questions.

JUDGE MILROY:

Thank you, Dr Cole for that careful analysis and presentation this morning. I understand the Crown does not have any questions for Dr Cole?

MS SEELEY:

Yes, your Honour, that's correct, but some of the information that was provided orally now was new to the Crown in respect of the non-disclosure agreements and we wonder if that could be provided in writing and for the Crown to have the opportunity to ask any questions that may arise from that in writing following?

JUDGE MILROY:

Yes, thank you. Dr Cole's nodded as you'll probably have seen, so yes. If you could provide that Dr Cole and then the Crown may have questions for you in writing. I haven't been advised of any claimant counsel who wish to ask questions of Dr Cole so we are at the point of asking Tribunal questions.

(09:34) KEVIN PRIME TO DR ANTHONY COLE:

Q. Yes, thank you Dr Cole for your information, for your evidence. I have no questions but I just want to thank you for your presentation. To me, it was very clear, unambiguous and I could understand fully where you're coming from. Hoinō, kia kaha rā, kia ora.

A. Ngā mihi.

(09:35) PROFESSOR DAVID WILLIAMS TO DR ANTHONY COLE:

Q. Yes, thank you Dr, for your evidence, and I can concur with Matua Kevin's comments. Thank you. Very clear and concise and I appreciate that. Thank you.

(09:35) JUDGE MILROY TO DR ANTHONY COLE:

Q. I'm just checking, Dr Cole, if I have any questions that I wish to ask but I think the clarity of your presentation and your evidence is made obvious by the fact that people don't have many questions. The one thing perhaps that I'd like to explore a bit more with you is the – we were hearing from Dr Mead yesterday about the economic benefits of a more stable climate change policy and in particular in relation to the NZ ETS, and one of the matters that he mentioned was that because Māori are long-term, you know, the leaders now are always considering and Māori people are always considering not just themselves but their future generations and past generations and the responsibilities of whakapapa, that it made for a more – the ability for a more coherent approach to climate change and to the necessary adaptations that might need to be made and so on. I wondered if you had any comments to make about that?

Q. Yes, I think that's a very crucial point. One of the pieces of work that I'm doing at the moment is focusing on a distinctive Māori cultural approach,

Māori community approach to risk assessment and management and this issue that you've raised really surfaces in that area. One of the reasons is because Māori think about risk using a different encoding of time, it's an intergenerational encoding of time, which means that a risk event for Māori communities is not just associated with something that happens in the now. That event that happens in the now has the potential to damage the ancestral identity connected with cultural landscape in the past and to foreclose opportunities for future generations to engage with Māori community identity in the future. So this is important because what has tended to happen in assessment of risk is that assessment of risk focuses – these are the textbook sort of equations used for the assessment of risk on hazard by exposure and vulnerability. But what's left out of that assessment of risk is the Māori community connection with place. And when you add that dimension into the risk assessment then what you begin to realise is that we're presently under-estimating climate risk and we're under-estimating it because we're not taking into consideration our risk assessment, the impact of risk on Māori community identity, and that goes all the way through to Māori cultural survival and questions of Māori cultural survival.

Now, there is a second thought I think that develops in connection with this point and it is that standard risk equations which focus on, again for example, hazard by exposure and vulnerability and you could bring the cultural connection to place into those equations as well. Also problematic from another perspective in that this focuses the assessment of climate risk on what you could describe as a deficit narrative. In other words, for Māori communities that's focusing on what can go wrong and why things go wrong. And again, that construction of risk fails to take into consideration the enormous capacity of Māori communities. And there has been some work done in the international literature on trying to understand how equations, risk assessment, can be undertaken in a way that weights the assessment of risk with capacity, and that's important because that all of a sudden then shifts the risk assessment equation from a deficit narrative actually into a positive narrative that focuses attention on the strengths of Māori communities. To me, the work that

Richard presented yesterday was really speaking into this whole area firstly, and secondly I think he really nicely demonstrated – this is going back to the earlier conversation with Dr Keiran Murray – who really demonstrated that it is possible from an economic analysis perspective to really bring some creativity into how we're thinking about climate change, how we're measuring this and what the what alternative ranges of possibilities are that are not being considered by the Crown at the moment as far as I can see, and from that perspective I think the work that was presented by Richard yesterday was timely, I think it was poignant. He really hit the point and for me it had quite a profound dimension to it so I really appreciated that presentation. I hope that answers your question. Sorry, that was a bit of a long reply.

Q. Thank you. Yes, I think it wasn't so much a question as obtaining your views about seeing how a proper appreciation of what might be possible with working with Māori communities rather than just the sort of drop in consultation and then go back to central government to develop policy, or the drop in consultation probably happens after the development of policy in a lot of cases, and of course that policy on a three-year electoral cycle as opposed to the long-term cycles that Māori work with –

A. Yes, cycle – yes.

Q. – normally. So the other point that I wanted to just discuss with you was your view that there's not actually a strategy of engagement between government or kāwanatanga and rangatiratanga and that really the engagement now is really sort of… you know, these particular groups, it's easy to consult with them because we know who they are and how to contact them and so forth, and that's what is done. Have you got views about what a more comprehensive strategy would look like? Because part of the problem is that we're told that consulting with or engaging with or involving Māori communities down at the flax roots level is time consuming and so on and so on. But from your evidence, there's a suggestion I think that if there was a proper strategy involved it wouldn't be so time consuming. People would be engaged with the whole time, they would be working together and so there would just be a continuous flow of ideas, information, policy making, decision-making and so forth?

A. Yes, I think you're correct and this was one of the points that surfaced for me in the briefs of evidence that I read by the representatives of the Crown, have submitted to the inquiry. You know, there are comments across all of those briefs of evidence about the work of different ministries involved in engagement activities, but they generally don't go beyond that to provide any insight, firstly, into the quality of that engagement and, secondly, how that contribution to engagement sits into the border strategy of engagement. So I think it would be helpful for the Crown to consider documenting in some way their thinking in this area and just what that looks like, just from a transparency and accountability perspective so that in writing a brief of evidence of this kind they could cite the relevant document that provides detail of this kind. Now why would that be necessary? I think that is necessary, again going back to the Crown's own engagement aspirations, this is the Te Arawhiti Crown-Māori Engagement framework, that's a very, very detailed procedural framework, and actually if you go through the published work that supports that framework and look at everything that is recommended in there, that provides a very comprehensive step by step procedure for the Crown to follow in terms of thinking about engagement, building capability and capacity for engagement, doing the background reading that supports understanding the Treaty Settlement Act context into which they're engaging, et cetera, et cetera. If the Crown has gone through and undertaken due diligence on that framework, then I think the concerns that I've expressed in my review would not exist. I think that's a good framework and a good start. And there is perhaps another point associated with this which comes back to if a strategy was more carefully thought out and put into and implemented, it's also then possible to see more clearly I think where the gaps are in that engagement, and that's also a concern that I had in the briefs of evidence that I've reviewed. And it is just simply that when we're engaged in something day-to-day and we're focusing our attention on the task at hand, as important as that may be, that issue that we're focusing on may not be an adequate contribution towards a more complete approach to that particular issue. And so, by stepping back and more intentionally thinking about and trying to

understand, well, what is the full range of engagement that's required here? How does this bit fit into here? And then you can also start to think about timelines and resources for engagement as well.

So I think that would be the best recommendation that I could certainly make at the moment for a more procedural approach. Documenting this, that would I think avoid the potential for unbalancing the engagement approach but would also mean that from the Crown's perspective the work that they're doing in the area of Crown-Māori engagement would be more transparent as well in terms of accountability, and that to me is missing in the briefs of evidence that I've read at the moment.

Q. I must say when I read your full brief of evidence it did remind me of the many comments and analyses by Dr Moana Jackson about a Eurocentric monocultural approach to ideas of Te Tiriti partnership and so forth. And I think we're still in that mode that he described with some advances from times and then are sort of drawing back at times. So again I just want to thank you for your very clear evidence and very helpful evidence, Dr Cole. I will hand you back to your counsel in case she has any questions by way of re-examination.

MS DORN:

Thank you, Ma'am. I have no questions by way of re-examination, but just wish to think Dr Cole again for his time today and the work that's gone in before that and yes for your insightful evidence. Thank you, Dr Cole.

JUDGE MILROY:

So we're running a little early interestingly. Our next witness is David Tong, so I am just wondering if he is available – he is.

MR LYALL:

Yes, your Honour, and then I'll be leading him this morning.

MR LYALL ADDRESSES JUDGE MILROY – MICRO BREAK, #A117-(a) (09:50:35)

HEARING ADJOURNS: 9.51 AM

HEARING RESUMES: 9.58 AM

JUDGE MILROY:

Welcome back and we will resume now so I will hand over to you, Mr Lyall.

(09:58) MR LYALL: (CALLS)

DAVID ALARIC JOHN TONG (SWORN)

Q. Thank you, your Honour, mōrena, and mōrena, Mr Tong. Thank you for being able to join us at what I think is a touch earlier hour than is here in Aotearoa. You have prepared affidavit for this Tribunal in the capacity as an expert witness dated the 1st of September 2025 and at document bundle #A117 and #A117(a). First could I ask that you please confirm your full name for the Tribunal?

A. Kia ora. My full name is David Alaric John Tong.

Q. And thinking to the affidavit that you prepared the 1st of September and that bundle, can you confirm for the Tribunal that that remains true and correct as of today's date to the best of your knowledge?

A. The contents of my affidavit remain true and correct to the best of my knowledge. There have been some subsequent publications, but nothing that undercuts the evidence.

Q. I think given your background and the nature of this brief I'll take a fairly hands-off approach to leading you through. But if I could ask you to introduce yourself to the Tribunal and address your qualifications and background, and then there is quite a bit to unpack in this evidence so if you could work through that with the Tribunal and I may butt in with some questions from time to time. Once you've finished there may be some questions from claimant counsel, the Crown or the Tribunal for you to answer but if I could pass to you now and allow you to work through your evidence, please.

A. Absolutely, thank you.

(10:00) DAVID TONG: (#A117-(a))

To introduce myself, I lead one of the programme teams at Oil Change International. I am a New Zealander now living in Melbourne, Australia, in Naarm. And the Oil Change International is a research and advocacy organisation headquartered in Washington, D.C. but with a globally spread staff of around 44 people. We work on this supply side of oil and gas with a reference to accelerating the transition to clean renewable energy in line with the targets of the Paris Agreement.

Before I joined Oil Change International, and this is summarised on page 2 of my affidavit, I led the climate change program for WWF New Zealand. I was based in Te Whanganui-a-Tara, Wellington. We worked on the Xero Carbon Act and the – including businesses and the science-based targets initiative.

Outside my direct salaried work, I am the Deputy Chair of Greenpeace International. I was the chair from 2023 to 2024 before that. And at paragraph 9 I note there is one typo: I was a board member from 2015 to 2022 of Greenpeace Aotearoa, not 2025 to 2022. I have a Master of Laws with First Class Honours, specialising in international climate law. The thesis on the negotiations towards the Paris Agreement handed in about six months before Paris. I practiced law, though, have not had a practising certificate since early 2020 when I left WWF, New Zealand, where I was in-house counsel alongside climate program manager.

At paragraph 11 I talk about my background in the UN climate change negotiations. I have been to 10 of the last 13 rounds of negotiations and the last three rounds of the mid-year intersessional in Bonn.

I note I have seen the evidence of Kate Harrison and others and I note there appears to be an issue, some issue in discussion around the participation of Māori in those negotiations and I'm happy to discuss that if there are any questions. I will add to what I said at paragraph 11 that in 2018 and 2019 I was the civil society representative on the New Zealand delegation with a party

overflow batch in the same capacity as the Iwi Chairs representative who at that time also held a party overflow batch.

I am not – and I provide the limitations in my scope of evidence. I'm providing evidence largely at an international level. I'm not an expert, particularly an expert on the impacts of climate change on Māori, though I understand that there is widespread recognition in academia and otherwise that the climate crisis has disproportionate impacts on indigenous peoples and that there has been evidence presented by many others in this inquiry as to the particular impacts of climate change on Māori.

The key points of my evidence are summarised from paragraph 16 at the bottom of page 3 of my affidavit.

In short, any new oil and gas extraction or infrastructure development is inconsistent with the objectives of the Paris Agreement. This is found by the International Energy Agency, the IPCC, Peer Reviewed Journal Articles and indeed all countries agreed in 2023 at COP28 to transitioning away from fossil fuels in the energy systems.

This has been also noted by the International Court of Justice, Advisory Opinion, which was of course recognised by the UN General Assembly last week. That last year, the ICJ concluded that granting fossil fuel production licenses may constitute an internationally wrongful act.

Consequently, it is my view that the Crown's decision to reopen offshore oil and gas exploration, to withdraw from the Beyond Oil and Gas Alliance, and more recently to pursue the construction of an LNG import terminal is inconsistent with limiting warming to 1.5 or two degree, and in doing so is likely to have disproportionate impacts on Māori. In addition to potentially breaching our membership of a number of coalitions such as the Coalition on Phasing Out Fossil Fuel Subsidies or COFFIS, and potentially our free trade agreements with the European Union and the United Kingdom.

I note that while my evidence is global in scope, New Zealand is a wealthy developed nation. I cannot provide, like, the direct trajectory for what a country like New Zealand should do to phase out fossil fuels. However, under the principle of common but differentiated responsibilities in the United Nations Framework Convention on Climate Change, the Kyoto Protocol and the Paris Agreement, all of which the New Zealand government has signed, countries with a greater respective capability to cut emissions and a greater historical responsibility for climate pollution are legally obliged under international law to cut the climate pollution faster than other countries. It is simply not legal under international law, as recognised by the ICJ, for all countries to cut their emissions at the same speed. And practically it's not credible or practical to expect that Kiribati or Tuvalu or the Cook Islands or Tonga or Samoa or even China or India could cut their emissions at the same pace as a country like New Zealand, Australia or the United Kingdom.

In my evidence and this is summarised at page 4 from paragraph 18, I assume that the Crown intends to meet our temperature targets. I make no aspersions as to the Crown's intentions in this regard. I note that the New Zealand Government did endorse the 1.5 target in Paris, and what I wish to highlight as stated at paragraph 19 of my evidence that it was leadership from our Pacific neighbours, particularly the then minister Tony de Brum of the Marshall Islands, who brokered and created the “High Ambition Coalition” of nations that led to 1.5 being included in the Paris Agreement.

New Zealand learned of the High Ambition Coalition from an article in The Guardian as far as I'm aware from being on the ground in Paris at that time. This was truly Pacific leadership.

I summarize further domestic law at Paragraph 21, highlight the ICJ finding that 1.5 has become the science based consensus target under the Paris Agreement at the top of page 6.

From paragraph 24 on page 6 I go into the detail of why Oil Change International and why I consider there is no room for new oil and gas expansion for 1.5.

This finding dates back to a 2016 report published by OCI one year after the Paris Agreement called *The Sky's Limit,* where we compared the then emissions budget – or I say we, my predecessors at OCI, Greg Muttitt and others – compared the emissions budget as it was then for the Paris Agreement targets to the cumulative emissions from the Rystad UCube Energy database of all then developed operating oil, gas and coal fields and mines.

In 2016, we found that, as said at paragraph 25, burning just the oil, gas and coal in developed operating fields would warm the world beyond 1.5.

Now, we updated numbers, as said at 25, this would warm the world beyond two degrees, the upper target of the Paris Agreement's twin targets. This would have disproportionate impacts on our Pacific neighbours and I understand on indigenous peoples including Māori.

It is no longer just Civil Society organisations like OCI that have come to this finding. Paragraph 26 summarises the International Energy Agency's findings in 2021 with its Net Zero Emissions scenario. The IEA first found there was no room. Simply, mathematically, there was no room for new oil and gas in its, beyond existing fields, in its scenario for a 1.5 aligned trajectory, then Net Zero Emissions scenario. This scenario was established after pressure from Civil Society from climate experts, including the former Executive Secretary of the UNCCC Christiana Figueres and a request from the COP26 presidency, the UK government.

It updated that scenario in 2023, and in doing so, the IEA said the world had waited too long to avoid hard choices. I quote, a number of projects are closed before they reach the end of their technical lifetimes. It's no longer enough just to stop burning new oil and gas. We need to close some fields early.

The IEA also found that some LNG export projects under construction are unnecessary for a 1.5 pathway and would need to close early, scale back rapidly after 2030.

In that context, it's also inconsistent just as export projects are inconsistent, it's inconsistent to 1.5 to build a new import project.

The IPCC made a similar finding as to infrastructure, as said at 26(d). So, this builds on research from researcher Dan Tong, no relation to myself, who published papers showing that all the emissions from existing fossil fuel infrastructure like LNG import terminals would take us outside the Paris Agreement targets. That was then endorsed by the IPCC.

OCI's *Sky's Limit* analysis has been published in 2022 as a peer reviewed paper, and then in 2023 we did an update of the data, which is summarised – which is shown at page 8.

The black line is the emissions from burning the coal and developed operating mines. The brown and blue middle lines are from burning oil and gas line. The grey line is the cumulative of all of them, and then on the right you can see our emissions budget for 1.5, 1.7 and 2 degrees, as updated at 2023. Of course, since we last updated this analysis, our emissions budgets for any of these targets have only gotten smaller.

As at the end, 60% of oil gas and coal and developed operating fields and mines would have to stay in the ground to meet the Paris Agreement target of limiting warming to 1.5.

MR LYALL:

I'll just get you to pause there, Mr Tong. Your Honour, wondering if it might be helpful if I bring up some of the figures that Mr Tong will speak to as we move through if I could be given the ability to share my screen?

JUDGE MILROY:

Yes, thank you Mr Lyall. You should have that now.

MR LYALL:

If you can continue please, Mr Tong, and as you reach the figures, I'll endeavour to bring them up if you can speak to them or if you'd like to refer to them in more details so that those watching can see them.

DAVID TONG:

Of course. Would it be helpful to just look back at the figure 1 which I just spoke to given that it wasn't shared when I spoke to it?

JUDGE MILROY:

Actually Mr Lyall, that would be helpful for the benefit of people who are live streaming this.

DAVID TONG: (CONTINUES)

Thank you. This is Figure 1 of my affidavit. It is the most recent version of OCI's *Sky's Limit* graph which is a graph summarising the cumulative climate pollution, the cumulative emissions from oil, gas and coal, and our emissions budgets for three given temperature targets.

The black line is on the left is the accumulative emissions from burning the coal and developed operating mines. The middle brown and blue are the emissions from burning the oil and gas and developed operating fields. That is then summed up in the right grey column for all fossil fuels, and then down the right there is the emissions budgets from the start of 2023 for limiting warming to 2 degrees with an 83% chance, 1.7 degrees with a 67% chance, and 1.5 degrees with a 50% chance. Those numbers are taken from the IPCC as at 2021. They are now out of date but the emissions budgets have only gotten tighter while the cumulative emissions from oil, gas and coal production have only gotten greater.

If we can skip then please quickly to the bottom of page 12, Mr Lyall. I wanted to highlight when I've said – sorry, page 11 in the pagination. This is Figure 3. As I've spoken about developed operating reserves, I wanted to highlight what I mean by that. This is an Oil Change International diagram showing the different categories of oil and gas reserves, resources and occurrences. There are two axis, one is whether something is economic through to developed and then the other is the geological confidence from undiscovered to discuss.

So in the oil and gas industry, as we understand it, there is a parlance that resources are those oil and gas resources in the ground that are either not yet discovered or that are discovered but are not yet economic to extract. There are also low grade occurrences which are those discovered or not that are just completely uneconomic to extract at this point. But that then, only what is both discovered and currently economic with existing technology and oil and gas prices and so on to extract are termed reserves.

Then there is a further subset of that. Developed reserves. These are the reserves where the oil wells are already built. The mine is already built. The final investment decision has been made and extraction is commencing.

When I say therefore that 60% of developed reserves must stay in the ground to limit warming to 1.5 degrees, I am referring to 60% of that orange corner of this diagram. You will see other analysis, for example there was a Bill McKibben article in the mid-2010s that said that 80% of oil and gas then would have to stay in the ground. That is of oil and gas reserves overall, not developed reserves. When I talk about developed reserves and all the research from the IEA, IPCC and OCI that I spoke about is only with reference to developed reserves.

If we can then skip back to page 9, this is a meter analysis by the International Institute for Sustainable Development (IISD) published in a science article by Greg Muttitt, OCI's former research director who wrote the original *Sky's Limit* paper, and others. This analysis shows a range of trajectories for limiting warming to 1.5 degrees. As at 2023, aligned with the decline rate of oil and gas

production, extraction and coal generation – gas generation, without new final investments.

The key point to highlight in these is that the decline rates at that point relatively closely match a trajectory for 1.5 if there is no new oil and gas.

In short, building a new gas power plant or opening a new gas field or opening a new input terminal is betting that somebody else won't dig up and burn the oil, gas and coal that they already have built the infrastructure to extract. That doesn't seem like a super realistic bet. It's a gamble that you can emit more because somebody else will emit less.

This reality was recognised in 2023, speaking at the bottom of page 9, and Mr Lyall this is I think the last graph that I refer to if that's helpful but we can also continue scrolling through if that's useful to have what I'm speaking to on my screen. All nations in 2023 at the first global stocktake under the Paris Agreement agreed to paragraph 28(d). The bold text on page 10 transitioning away from fossil fuels and energy systems in a just, orderly and equitable manner.

COP26 in Glasgow in 2021 was the first time in the history of the UN climate negotiations that fossil fuels were mentioned in a draft decision. Two years later in 2023 all countries agreed to transition away from the **(inaudible 10:19:51)**. This is very significant because the Paris Agreement is built under a five year pledge and review cycle. So they're called a global stocktake. All countries make promises as you've heard from other witnesses and then they come to review them. Review the cumulative impact of their NDCs, their Nationally Determined Contributions.

The decision in Dubai was the completion of that first five-year review cycle. So what it says here in paragraph 28(d) should guide all countries in the development of their future Nationally Determined Contributions.

Turning then to page 11 at paragraph 33, I note the ICJ's finding last year that failure to take appropriate action, including potentially allowing new licences or providing new subsidies, may be an internationally wrongful act.

On page 12, I talk to the Crown's withdrawal from the Beyond Oil and Gas Alliance and its proposed – now it's completed amendments to the Crown Minerals Act.

OCI catalysed the creation of the scoping group for a diplomatic alliance of countries in 2020, which then was launched in 2021 as the Beyond Oil and Gas Alliance. We have engaged with the Beyond Oil and Gas Alliance since. Last year, New Zealand withdrew from the alliance after being advised that its decision to reopen new offshore oil and gas would be inconsistent with its commitments as a member of the Alliance and that if it did not leave it would be ejected.

The Crown also in doing that and then since has announced two new fossil fuel subsidies. I refer to the first at paragraph 42, $200 million in funding in the 2025 Crown budget to support new fossil gas drilling. Though that, to my knowledge, has not been taken up in any meaningful way.

The Crown as I note at 43 said that this was a deliberate policy to enable and expand gas exploration and development.

More recently, the Crown has announced that it will tax all New Zealanders electricity purchases to pay for a new LNG input terminal. To be blunt, that's like taxing fruit and vegetables to pay for cigarettes. It's simply a new fossil fuel subsidy, nothing else.

This is arguably inconsistent with New Zealand's membership of the Coalition on Phasing Out Fossil Fuel Subsidies. It may compromise our future participation in High Ambition Coalition meetings.

I note New Zealand did not participate in HAC hack at the most recent two UN Climate Conferences in Baku and Belem. I note that legal advice from those much more expert than in international trade law has found that these fossil fuel subsidies and these decisions may be inconsistent with our Free Trade agreements with the European Union and the United Kingdom.

So in summary, as I say, at paragraph 49, burning just the oil and gas reserves now developed would warm the world beyond 1.5, even if coal use ended today. Burning fossil fuels and developed fields would take it beyond two degrees. Issuing licenses to search for new, as yet undiscovered oil, gas and coal is inconsistent with the Paris Agreement. No New Zealand government has adopted a policy of ending all new extraction. No New Zealand government has adopted a policy with regards to fossil fuel extraction that is consistent with achieving the Paris Agreement of limiting warming to 1.5. I consider that by enabling new extraction the Crown is likely to be contributing to the climate crisis in a way that would disproportionately impact indigenous people and so Māori.

Mr Lyall, that's the summary of my evidence. I am happy to take any questions.

MR LYALL:
Thank you, Mr Tong. I don't have any further questions for evidence in chief for you.

MR LYALL ADDRESSES JUDGE MILROY – BREAK (10:24:24)

HEARING ADJOURNS: 10.24 AM

HEARING RESUMES: 10.58 AM

JUDGE MILROY:
We're resuming at the point of Crown questions to Mr Tong.

(10:58) MR PREBBLE TO DAVID TONG:

Q. Tēnā koe Dr Tong. Ko Jeremy Prebble tōku ingoa. Kei konei ahau mō te Karauna.

A. Kia ora.

Q. Kia ora, thank you for your evidence today. I understand from your evidence that you're really providing a viewpoint from a legal policy expert as you take forward the views in your brief on climate change, is that fair?

A. I have tried to not provide legal submissions, but analysis primarily of the empirical data as to emissions budgets. As I just want to note, thank you for the promotion, but I do not have a doctorate.

Q. For some reason I have Dr David Tong at the top of you affidavit so clearly I have that wrong so my apologies. But you're providing therefore a viewpoint based on your understanding of the science, not holding yourself out as having any scientific expertise, is that right as well?

A. That is correct. I am a researcher and policy analyst. I am not a climate scientist.

Q. Thank you. Just on one of the attachments and I'm aware that your evidence has an international focus and I did want to come to a slightly more domestic focus for a moment but I note as an attachment you've got an appendix which is labelled DT-1, the Net Zero by 2050, a Roadmap for global energy sector, and I wasn't proposing to go there but just to note that it outlined lined in the foreword that we need a total transformation of the energy sector underpinning economies. I assume you're aware of that sentiment and that report given its attached to your evidence?

A. I am and also aware of the preambles and findings for the 2023 report and each addition of the World Energy Outlook.

Q. Thank you. And so, I was just going to take you, bring you to New Zealand for a moment because obviously we have had evidence from Paul Stocks who gave evidence from MBIE in this inquiry. Have you had the opportunity to hear or see any of that evidence?

A. I have seen a very small portion of it. I have not read all of it or seen all of his evidence. If there is a particular document you want to refer me to, please do. Happy to look at it.

Q. I don't believe I'll need to. I just want to put some of the propositions to you that he has noted in his summary from his speaking notes, which I can say for the record are #A122(c). We'll see how we go, I'm happy to go there, but he outlined in his speaking notes that our electricity system is over 85% renewable. Are you aware of that figure?

A. It is correct that New Zealand's electricity system is over 80% renewable. That said, our total energy system including industrial process heat and transport is around 30 to 40% renewable any given year.

Q. Thank you. And I guess just in terms of focusing on the electricity system for a moment, he talked about New Zealand transitioning away from coal and into a greater use of renewable energy and the expectation he had at least is that we will have a highly renewable system of 95 to 98% renewables in the future. Are you aware of that?

A. That aligns, for example, with the baseline scenario from the former Interim Climate Change Committee's advice on the electricity sector that under a business as usual scenario we would reach well over 90% renewable electricity, though that is only a subset of course of the total energy mix.

Q. Yes, thank you, understood. He also outlined that coal or gas has traditionally at least played a firming role providing dispatchable supply during extended periods of low renewable energy output. Are you aware of that?

A. Traditionally, it has done so.

Q. And in his view at least he noted that natural gas is critical for delivering a secure and affordable energy supply for New Zealand and the amount of gas produced is currently in decline. Are you aware of that?

A. I am aware that the amount of gas in production is in decline. I would not agree with the opinion that gas is required for a secure and affordable energy system.

Q. Yes, okay, thank you. He also noted that that had downstream impacts for energy security and economic activity. And so he noted that without a reliable source of natural gas at least at the present moment, more carbon-intensive fuel sources such as coal are needed. I assume you don't agree with that conclusion, but putting it to you.

A. There are a number of components of that conclusion. One is the statement that coal is more carbon-intensive than fossil gas. The burning of coal itself in isolation is more carbon-intensive than the burning of gas. However, there are several analyses that suggest that across a life cycle or across the whole distribution network of gas because of the so-called leakage, the emissions of gas from pipelines from facilities, the overall climate impact of gas could in fact be higher than coal and that that is particularly the case when you've got international exports where there is leakage at regassification plants, at LNG terminals, in transit et cetera. And so, it is not necessarily true first that coal is always worse than gas from a climate perspective. That depends on the gas supply chain for the gas being used. Second, there is the question of what is needed for electricity security. There are a range of options. These were considered by the Interim Climate Change Committee under the previous government. One scenario included additional gas peaker plants through to the 2030s. That was with their enhanced electrification scenario where they accelerated electrification of industrial process heat and transport. No such efforts appear to be underway really to accelerate electrification of those sectors currently. The previous government investment in decarbonising industry fund for example has been scrapped. And even in that scenario the Committee noted, so this is the independent committee that predated the Climate Change Commission in advising the government on the electricity sector, noted that alternatives to secure firming such as a large scale pumped hydro scheme, such as transitioning Huntly to burning biofuels were not within scope, had not been considered. The previous government commenced work to investigate those alternatives, particularly with respect to a **(inaudible 11:07:12)** hydro scheme at Lake Onslow. Those investigations were scrapped by the new government. In the advice the new government received regarding the proposed LNG import terminal, alternatives were considered including the transition of Huntly to biofuels as an alternate solution to the dry year problem and firming. Those were discounted for political reasons in my opinion. I am not the best expert speak to that. Someone like Dr Christina Hood has done much more analysis on that

analysis – on that than I have and will be able to identify the political decisions here made against expert advice. All I can note is that the Independent Committee tasked by the – in the Zero Carbon Act process with providing advice on the electricity system did identify that there were alternative avenues for firming and solving the dry-year problem that were under investigation but now are not under investigation by government.

Q. Thank you for those answers. I wanted to move on to the focus of your evidence which as I've read para 14 is primarily at least internationally focused, is that fair?

A. My evidence is primarily internationally focused, yes.

Q. And you state there that your evidence does not provide specific findings in relation to New Zealand's obligations, is that right?

A. Not specific quantified findings. All I have said, as I say at paragraph 14, is that the Treaty obligations New Zealand has undertaken require us to decarbonise more rapidly than the average country as we are a wealthy developed nation and have agreed in the convention, the protocol and the Paris Agreement to the principle of common but different responsibilities and prospective capabilities.

Q. Yes, thank you and you made that point in your oral outline as well. So I do understand from what you're saying that you're not expressing a view therefore on how we are giving effect to our international obligations under the CCRA, is that right?

A. I consider that we need to cut with both sides of the scissors and address fossil fuel demand and fossil fuel supply. Under the Climate Change Response Act now there is nothing to address fossil fuel production and supply. I'm giving that opinion in my evidence. I have in previous public statements and in previous submissions to government also submitted that the Nationally Determined Contribution is not sufficient to meet our obligations under the principle of CBDR, but that is not the focus of my evidence. I would note that, as I understand it, the current Emissions Reduction Plan leaves a significant shortfall when it comes to achieving our emissions budgets under the CCRA or indeed our Paris NDCs.

Q. And that again, just to capture that, sounds to me like you're putting forward a legal viewpoint on whether or not what we are putting forward as to our Emissions Reduction Plan is compliant with our both domestic and international obligations. Is that a fair characterisation of what you're saying and your view is that it's not?

A. My view is that – my view legally is that it is not. I am not giving evidence as to the law though. I provided the Treaty basis for this so that it is in before the Tribunal. I have given from paragraph 16 evidence as to the factual findings from the IEA, the IPCC, and so on. The legal question then is whether it is acceptable to continue pursuing new oil and gas when doing so, or building new oil and gas infrastructure when doing so will inevitably contribute to warming above the Paris Agreement targets. That it will contribute to warming above 1.5 or two degrees is a factual, not legal principle. The legal question then is whether that is a breach of our Treaty obligations.

Q. Thank you for your answers and thank you very much for your evidence. I have no further questions.

JUDGE MILROY:

Thank you. I'll now just see if we have any questions from the Tribunal.

(11:12) PROFESSOR DAVID WILLIAMS TO DAVID TONG:

Q. Tēnā koe, Mr Tong. David Williams asking you a couple of questions. So first, paragraph 14 which has just been referred to and you've just mentioned it again, common but differentiated responsibilities. The argument for that is that the crisis we're in with greenhouse emissions goes back to the industrial revolution and West European nations and North American nations in particular industrialised flat out used enormous amounts of coal and stuffed up the atmosphere and so therefore they should contribute more to the solution than the poorest countries in the world who haven't yet even had a chance to start on that pathway. But just a question, I mean, New Zealand in United Nations fora is almost always lugged in with those countries and I think we're usually called Western Europe, although we're quite a long way from Western Europe

and we haven't really industrialised, but we are affluent. So can you just – have there ever been discussions as to why a non-industrialised country like New Zealand is always put in this category?

A. That's somewhat strange that we're in the Western Europe and others group, I agree, and this I think reflects back to the Cold War origins of these UN country groups. New Zealand is not as industrialised as some, but does have significantly more industrialisation historically and more historical emissions than a number of other nations. There are trackers for those historical emissions like the Climate Equity Reference Calculator. I don't have the numbers to hand, but from my recollection is that New Zealand does have higher than sort of median per capita historical emissions. I would agree with your analysis of the argument for common but differentiated responsibilities, but I would also add that there is a second argument for it. And New Zealand and other umbrella group, so umbrella group is not the UN grouping, it is the diplomatic grouping that New Zealand is part of, along with the United States, Canada, Norway, Japan, et cetera. That grouping has historically opposed historical responsibility as a basis for CBDR. You may make inferences as to why group countries like the US or the UK with higher historic responsibility may oppose it being the basis for CBDR, but the second reason is the respective capabilities of countries. New Zealand is a member of the OECD. We have a relatively high per capita GDP compared to the global norm. We have much greater capacity than a country like China or India or our Pacific neighbours to cut our emissions. And so that is why we have been included in annex 1 in the Convention and are generally considered a – annex 1 and annex 2 in fact, and why we are generally considered a developed country for the developed/developing binary in the Paris Agreement.

Q. Yes. I'm not doubting the capability argument, but I just thought, given you're an expert in some aspects of this area that it would be worth asking you the question so thank you for your answer. Were you at the Dubai COP28?

A. I was, yes.

Q. You were. So your paragraph 32 lists the Conference of Parties, paragraph 28, and in particular (d) which you've referred to transitioning away from fossil fuels. If I remember correctly, there was an **(inaudible 11:16:24)** from the UAE that was chairing this conference having some struggles with other oil producing countries such as Saudi Arabia around this wording and even whether there should be any reference to it. And because you then go on and make a connection to the International Court of Justice Advisory Opinion that an international wrongful act is attributable to a state, so if we're not transitioning away from fossil fuels, that would be an international wrongful act. But I would have the understanding that that paragraph (d) was not viewed as an obligation, it was just a wording that we've got to say something about moving away from oil, for heaven's sake, you know, we can't just be doing nothing about that. But the countries that allowed it to go in at the end of the day, I think it was very near the end of the day, after midnight or whatever, would they think it as just an aspiration rather than obligation?

A. This is contained really in the wording of the chapeau, the top of paragraph 28 where it says calls on parties to contribute to the following global efforts in a nationally determined manner. So what is listed from (a) downwards is a menu. It is not an obligation on all countries per the Dubai COP decision to do all of these things. And I imagine that some of those countries that had opposed references to phasing out fossil fuels, well, we know from the General Assembly vote last week that they are very uncomfortable with the ICJ's finding that what was part of the menu in 28(d) is something where a failure to do so could be a wrongful act per the ICJ's decision under **(inaudible 11:18:41)** International law, even if not under paragraph 28(d) on its own.

Q. All right. Thank you. So look, Vanuatu of course was the initiating nation state for that advisory opinion and I knew there were some negotiations going on about what the General Assembly resolution would look like and what the voting would be but I actually haven't seen the news report. Do you have the information as to what the outcome of that UN vote was? I'm assuming that some of those countries either abstained or voted against.

A. The **(inaudible 11:19:22)** General Assembly –

Q. If you don't have it – sorry?

A. Apologies. Go ahead.

Q. No, if you don't have it, I can ask for it to be put in writing. But if you do have access to it...

A. The resolution was adopted with eight votes against from Yemen, the USA, Saudi Arabia, the Russian Federation, Liberia, Iran, Israel and Belarus. There were 28 abstentions and 141 votes in favour. New Zealand voted in favour.

Q. Thanks because they were – Vanuatu was hoping to get more than 120, which I think had been a previous level of support, it got up to 140, which is a pretty compelling international consensus on these matters, I think you'll agree. Yes. Those are my questions. Thank you very much for your evidence and it's been helpful for me anyway so thank you.

No, hang on. Sorry, I did have another one. Paragraph 47. So, New Zealand has not been kicked out of the High Ambition Coalition, but just hasn't attended. Is that what it is? What is the situation right now? Are you up to date on that?

A. The High Ambition Coalition was, we had a formal list in Paris. But as far as – it's a bit hard to track, they don't have a list of members. And since Paris, rather than being a coalition with a list of members that they have a loose grouping of countries some of whom signed onto statements, some of whom don't. New Zealand has not attended, as I understand it, a number of recent High Ambition Coalition meetings, which would imply that we may not have been invited. But I do not know. There simply isn't a published list of members and it appears to be less of a formal coalition with members, but an informal grouping that coalesces around statements and meetings in the UNFCCC each year. So I can't say whether we're kicked out, but I don't know if there's a list of members from which we could be kicked out.

Q. I see. Okay. So thank you. That's helpful if not all together enlightening. Thank you.

(11:21) JUDGE MILROY TO DAVID TONG:

Q. Thank you, Mr Tong. I just had one question of I think perhaps minor detail and you may not be able to tell me, but I think we heard from Professor Nash yesterday that South Australia or Australia was engaged in a project for developing a natural gas field and I'm just wondering if that was included in your picture of the developed reserves or the developing reserves that are economic or…?

A. I have to check our source data. This would depend on the timing of the final investment decision for that field. I'm not sure but there are many gas fields in Australia. And so, if the final investment decision was made before 2023, it would be included in our list of developed operating fields and in the cumulative emissions, therefore. If it was a new final investment decision made after 2023 then it would not have been developed, considered developed and operating at that time.

Q. Thank you for that answer. It is a question of minor details so I won't bother you to find out exactly the situation. Again, thank you very much for your evidence, it's very interesting and enlightening. So I will hand you back to your counsel din case there are any questions by way of re-examination.

RE-EXAMINATION FROM MR LYALL – NIL

MR LYALL:

Just remains for me to thank you Mr Tong for being able to; attend early in the morning with us.

DAVID TONG:

Thank you, I'm glad to assist.

JUDGE MILROY:

And can I again add my thanks to that. The time difference is difficult so very grateful that you were able to help us this morning. So we will now take a break prior to the judicial conference which will be at 12 o'clock and we will see you all again then.

MR MAHUIKA ADDRESSES JUDGE MILROY – LEAVE (11:24:25)

HEARING ADJOURNS: 11.24 AM

HEARING RESUMES: 1.30 PM

JUDGE MILROY:

Welcome back everybody. This afternoon we're hearing from firstly Professor Noy, and welcome Professor, it's nice to meet you in person, and then Professor McMillan. So I will just hand over to your counsel who will introduce you and take you through your evidence and then there will be questions from the Crown.

(13:31) MR BENNION: (CALLS)

Thank you, Professor Noy for agreeing or finding the time to come here today because I know you're rushing between some teaching this morning and a graduation this afternoon. You've got a PhD student graduating I understand so congratulations. Just to note while you're there that when you're answering questions you'll need to click the microphone button in front of you. But your Honour, so #A078 is Professor Noy's main evidence which was delivered back or May 2025 was filed, and this #A078(c) is a short reply evidence to Kieran Murray's evidence for the Crown. So I'm just going to have – Professor Noy's just going to take you briefly through it, address it, and I've got two or three questions before he then answers questions from the Crown and yourselves. So, Professor Noy.

(13:32) PROFESSOR ILAN NOY: (#A078(c))

Kia ora. Thank you very much for having me again. Just briefly what my main sort of disagreement with Mr Murray, he seems in my view to conflate caution with inaction. I think the best analogy for me is you stand in the middle of the road and you see a car driving towards you, you're not exactly sure whether it will stop or will swerve or will turn but you think I don't want to move out of the road before I'm sure that the car is going to run me over. That seems to me to be what Mr Murray's suggesting here.

It seems to me that we have enough information to know that the risk is significant. We also know that we are not abiding by the obligations that we have signed off – signed on to in the Paris Agreement, so I don't see how a call for more investigation and more information justifies not doing more about this issue.

Beyond the general argument that we need to do more because we're not doing enough and there's plenty of evidence for that, I also mentioned the precautionary principle. The precautionary principle is basically the idea that there is a – even if there is a small likelihood of something really bad happening, you would want to make sure that you try to prevent it, so you are not designing your policy based on the most likely outcome necessarily, but sometimes you design your policy about the more less likely but worse outcomes that is possible, and I think this is clearly one of those cases.

In its extreme, it leads to what is called the dismal theorem. So the dismal theorem is the idea that if you are facing a risk that is potentially existential, then you would need to spend a lot of resources potentially to prevent that existential risk because the outcome, if that risk materialises, is catastrophic.

Now, I'm not suggesting that climate change is posing a catastrophic existential risk to Aotearoa New Zealand because of what is going to happen to the climate here in Aotearoa New Zealand but there is significant risk that without significant mitigation and without significant – averting the more, the worst case scenarios, it will result in existential risks coming from internationally. So if conflicts arise around resources because, for example, most of the bread baskets in the world are experiencing unusual heat and much less wheat is available, that can lead to significant pressures, that can lead to conflict and potentially, for example, conflict in South Asia where that does pose existential risks.

So in this case, I think the precautionary principle and to its extreme the dismal theorem suggests that we need to be very cognisant of these unlikely but terrible risks and we need to spend significant amount of resources to try and

prevent them. So I think this was missing from Mr Murray's analysis. We are not worried about the sort of the middle of the road scenario for climate change, but we're worried about these more extreme scenarios and that is what should guide our policy and not that middle of the road.

If we speak about the RCP scenarios that I'm sure would've been discussed here, what worries me and should worry all of us is these more extreme scenarios that can result in potential global conflict and potentially existential risks. I think that was my main point and I'm happy to answer other questions.

(13:36) MR BENNION TO PROFESSOR ILAN NOY:

Q. All right. I understand that you've just come back from some IPCC meetings and you just talked there about extreme scenarios. Are you able to briefly kind of update us on where things are at or what process we're at with the IPCC and extreme scenarios at the moment?

A. Yes, so I'm part of the IPCC. There's about I think seven or eight New Zealanders who are part of this IPCC new assessment report. So the assessment report we are working on will be published in 2028-2029. I'm working on Working Group 2 which is impacts and adaptation to climate change. I'm an economist. I'm not a climate scientist. And I'm working on a chapter called Responses to Losses and Damages. So specifically, and this is a, it's a new concept relatively in sort of the United Nations' Framework Convention on Climate Change, so the idea that there are going to be and there already are losses and damages and we should think more carefully about how we are responding to them. That's the topic I'm part of the team that's writing that and we're now – I can't disclose much about the actual substance of our discussion because this is confidential because it was not yet approved by Government. So once we have a report that is approved by governments then we can discuss it, about it, externally. But clearly there's an increasing awareness in the global community that climate change is not a future problem, it's a current problem because it's already causing losses and damages in many locations, of course also in the case of Aotearoa New Zealand. I should point out that part of the reason I'm on

that chapter is I've done some work on this topic specifically in the New Zealand context showing that our extreme weather events, part of the damages from those extreme weather events is already happening because of climate change.

Yes, I think there was also a question that's been in the media recently around the worst case scenarios, the RCP 8.5, and whether that's still a valid scenario. I think given my previous comments about the precautionary principle, we still need to think about these worst case scenarios, even if they are becoming less likely. The world is not sitting on its hands and doing nothing. It's doing something, not enough, but it is doing something. So the worst case scenario is that we've thought about 10 years ago where we're doing nothing, businesses as usual, it's not happening, but we still need to consider those because of these possibilities that we will first of all revert back, and we've seen some reversion back to previous inaction globally to some extent also in this country, so I think that issue is still very much alive and will continue to be alive even if officially the worst case scenario will be retired as a middle of the road scenario from IPCC considerations.

Q. Just a couple of other things. Paragraph 10, you say Mr Murray hasn't identified any credible report showing countries implementing trade barriers and you answer that by referring to the EU. I was just wondering, do you have any comment on the current proposal to change the law in New Zealand so that people can't be sued in tort for, or a nuisance and things, for pollution? I mean, can you assess that or too late – too soon sorry?

A. Not much I can say about the proposal in tort law, but the CBAM issue is a very much live issue. So the EU like in, generally speaking, climate policy in the last several decades the EU has been always the first mover. That's, for example, true for the ETS. So we were the second movers, but the EU was the first one who established – first entity that established an ETS and then we established one here. In the case of CBAM, they are the ones that are starting with a carbon adjustment mechanism to trade. So if you are exporting a good to the EU which is not subject to an ETS but their goods – their equivalent competitive – the substitute goods

that is produced in the EU is subject to an ETS, then they're going to impose tariffs on you when you're exporting to them. They start that with a small number of goods but their plans for the next few years is going to extend it to progressively more and more goods and services. So that is going to hit us if we don't do much – if we don't take our ETS system more seriously than we currently do. The EU is the first mover on this, but this is going to be a global approach to climate change by all countries that are willing to do something about the problem. The US is obviously an exception right now, but that, I don't think that is going to continue. So a new administration in the US that will be more favourable to climate action will also implement something like this, the CBAM, and our other trading partners will do the same. So increasingly, if we don't do a more aggressive ETS policy, we will be facing tariffs for our exports.

Q. Just two more things. One is at paragraph 13, you've got a comment about responding to Mr Murray's talk and Mr Murray's comment about low income Māori households. Can you just expand or make clear what you mean in 13? You say as such arguing that these factors matter is tantamount to saying that Māori are more exposed to these climate risks and is most definitely not a refutation of the claim is Mr Murray seems to think. Can you just clarify that, what you're saying there?

A. So Mr Murray was saying that the issue is that coastal communities are more exposed to climate change risks and disadvantaged communities, lower wealth, lower income communities are more exposed. And given the fact that Māori are over-represented in both of these dimensions, that means that in practice Māori are more exposed to the risk of climate change. There's a large literature that shows this. And now I refer you to the previous IPCC report working group to the chapter on Australasia which has a section on how much Māori are more exposed to these risks.

Q. Okay, and so how should we balance those risks versus taking actions that might affect Māori income levels if they're lower, you know, like higher ETS prices affecting petrol and things like that? Because that often comes up in the literature.

A. Yes, so any climate action will always have groups that will benefit and groups that will lose because of it, and sometimes those groups that lose

because of it may overlap with lower income communities or coastal communities or Māori communities, and that's not an argument not to the action, that's an argument to make sure that those communities are protected from those consequences of those actions. So an economist will tell you, any economist that cares about the climate will tell you we need much higher petrol prices, but we should accompany much higher petrol prices with protection for groups who will be disproportionately adversely affected by those higher prices. So that's the solution. The solution is not to make sure that petrol prices remain low, but increase them and protect communities. For example, people who rely on – who have no access to public transportation because of where they live and need to rely on car transport and petrol-based transport.

Q. Okay, and just lastly, Richard Mead, Professor Mead, was here yesterday and presented a 61-slide show about various matters. You're familiar with Mr Mead?

A. No.

Q. But one of the slides, and I sent you a screenshot of this, was his discussion of the idea of the Climate Change Commission being independent in a similar way to the independent central banking models that we have, and there was some discussion about that and I thought it would be useful for the Tribunal if you had any thoughts on the idea of, it would be, I think, the discussion was the ETS mechanism being operated through a sort of independent, some independence within the Climate Change Commission as opposed to the current settings which are – very much change with government policy.

A. So these are two separate questions, the independence of the Climate Change Commission and the independence of the governance of the ETS. I would argue that we probably are better off with both being independent. The Climate Change Commission is to a large extent already somewhat independent. But it's not a policy setting but it just makes recommendations, right, and the government can choose to ignore those recommendations. The ETS is actually an interesting example of why – or an example of an entity that might wear an independent body that controls **(inaudible 13:47:56)** might work like with

the Reserve Bank. Mr Murray when he gave his testimony a couple of days ago said that these are largely political issues and therefore we should leave those decisions to political processes and to our governments, which is probably true, I agree with him that this is generally true about climate change policy, but specifically the ETS is a very specific mechanism which is specifically tied to how much emissions we make, we produce here, which is tied to our obligations in the Paris Agreement of how many emissions we should be emitting. So since we have already made the obligation of what we should be doing about emissions, I think it makes perfect sense to have an independent technical body that just changes the levers in the ETS to make sure that we abide by our political decision to get to net zero by 2050 and the rate in which we will do that. At this point we don't have that and because of that we are not going to be getting to net zero by 2050, even though we have committed to doing that in the Paris, UNFCCC process.

Q. Thank you for that. So there'll be questions from potentially the Crown and the Tribunal.

MR VINCENT:

If I may, your Honour, sorry, Mr Vincent here. Could I please have leave just to ask one question of Professor Noy?

JUDGE MILROY:

If it's one question and then we'll pass to the Crown.

(13:49) MR VINCENT TO PROFESSOR ILAN NOY:

Q. Okay, thank you. Professor Noy, this is Mr Vincent here. I hope you can see me. I'm acting for some of the other claims. I want to ask you how are extreme and compound climate events and cascading events being factored into the current economic models the Government's relying on and to what extent should they be?

A. I'm not familiar with an economic model that the Government is relying to be honest, so I'm not sure where the question is. There is not much attempt by Government to quantify the impacts of climate change. The

one example that I'm aware of is a Treasury report from maybe two years ago which had very little quantifications in it, almost nothing. Most of it was actually what quantifications produced by my research group. I don't think the Government has models to look into the consequences, the economic costs of climate change, and definitely those models don't, if they have anything, they do not include assessment of compounding or cascading events. These are very difficult to model and clearly they're not being modelled in this case.

Q. All right, thank you.

(13:51) MR FONG TO PROFESSOR ILAN NOY:

Q. Tēnā koe, Professor. Can you hear me now?

A. Yes.

Q. Professor, I'm going to focus first on the CBAM issue, which you address at paragraph 10 of your reply evidence. And just to remind the people in the room about the context of that comment, so in Mr Murray's first brief of evidence he said in paragraph 35 that his research hasn't identified any other country's implementing trade barriers against New Zealand exports because of the climate change – of the climate emission policies adopted by New Zealand, and you disagree with that in your reply paragraph in saying the EU's CBAM is exactly to implement trade barriers. So I'm just going to start by asking you some factual questions about CBAM just to confirm my understanding of how it works. So my understanding is CBAM works by charging a carbon levy for certain imported goods to the EU, correct?

A. Yes.

Q. And the levy reflects the carbon price in the EU which is set by equivalent ETS in the EU, correct?

A. Yes.

Q. And the levy that is payable will subtract any carbon price that has already been paid in the exporting countries, so for **(inaudible 13:53:19)** some of it's coming from New Zealand so it would take away the NZU price and the levy, is that right?

A. Yes.

Q. So just for my simple brain, so say not realistic but say the EU ETS price is $3 and the NZU is $1, then the levy payable would be $2?

A. Yes and that's roughly the ratio right now in terms of the ETS prices. So I think ETS, last time I looked, ETS price in the EU is about two and a half times higher than ours.

Q. And the levy is payable by the importer, so the person EU, not by the exporter. Is that right?

A. Yes.

Q. At least the legal obligation is on the **(inaudible 13:54:14)** –

A. Yes, yes. **(inaudible 13:54:15)**.

Q. But part of the **(inaudible 13:54:17)** is that the – sorry, our connection just cut out there, I didn't hear what you said.

A. So, who is being actually charged is probably not that relevant, right. The point is that that transaction is being charged.

Q. Sure. I'm just trying to make sure I'm working on the same page. But part of the idea is that some of the cost will be shifted to the exporter?

A. Yes.

Q. Now, my understanding is at the moment CBAM only applies to imports of certain emissions intensive goods, being **(inaudible 13:54:58)**, aluminium, fertilisers, electricity, hydrogen, iron and steel products, is that right?

A. Yes.

Q. And so, for example, it doesn't currently apply to agricultural products.

A. Right. It will eventually, but right now it's not. Yes.

Q. Yes. But part of the reason at the moment is because agriculture is not part of EU's ETS, is that right?

A. Right, mhm.

Q. Right. And so my last technical question is, I think at the moment the CBAM would only apply to an importer if the importer imports more than 50 tonnes of the relative goods annually. Is that your understanding as well?

A. I don't know the number to be honest, but yes, I'm sure there will be some threshold so that it doesn't fall on very small ones because the transaction

costs and administrative costs would be too high to impose that on small importers.

Q. Okay. So am I right in saying the purpose of CBAM is just to really level the paying **(inaudible 13:56:17)**. So instead of preventing carbon leakage, making sure we're not importing goods that are paying a low emissions price. Basically making sure EU producers are dealt with fairly in the process. **(inaudible 13:56:32)**.

A. That's one objective of the CBAM, right. Another objective is to push other countries to impose more aggressive emission reduction policy.

Q. Right. But Mr Murray is right, isn't he, CBAM doesn't penalise New Zealand for example for its domestic climate policies generally. Its primary focus is to level the playing field. Would you agree with that?

A. It will. Right now it's not that relevant for New Zealand, but it will eventually penalise the export sector. Not – anything we do domestically for domestic consumption or exported to any other place that is not subject to a CBAM-like mechanism is not going to be affected, but any – our export sector that is going to – that exports to places where CBAM or its equivalent are implemented will be affected by that. And quite, and to put it, maybe one more issue here, if we have a higher ETS, then it's our government that gets the revenue from that ETS. But if instead we have a lower ETS then the EU collects the CBAM levy then they're getting this money rather than us. So we are sort of shooting ourselves in the foot twice by having a lower ETS price.

Q. Sure. So CBAM is about sort of the level playing field between the two ETS systems but it doesn't operate simply based on the more general climate policies New Zealand adopt, is that – I think that was Mr Murray's point and that's where…

A. Yes, ETS or other types of emission reduction systems like maybe carbon taxes or things like that.

Q. So it's focussed on that only, correct?

A. Yes.

Q. CBAM?

A. Yes.

Q. Can I now turn to the precautionary principle. I know there's a lot of back and forth between you and Mr Murray and I don't want to exhaust the Tribunal by revisiting a lot of the debates but just looking at paragraph 6 of your reply brief if you've got that with you, you've quoted Martin Weitzman, you know, who is the proponent of the dismal theorem, and just sort of three lines into that paragraph you refer to a comment made about how, "even minutely low likelihood still justifies very aggressive action to mitigate the risk." Just sort of hearing your summary, can I just check whether you subscribe to this particular view or are you just highlighting what somebody said? I just want to check.

A. The dismal theorem is so-called dismal because the conclusion from the mathematical model that Martin Weitzman introduced, the conclusion is he should be spending everything to prevent this very low likelihood existential risk. Even Martin Weitzman didn't subscribe to that extreme dismal conclusion from his work, but he interpreted that to mean that when we think about low likelihood but catastrophic risks we need to spend than a standard economic model would suggest, and yes I do subscribe to that, yes.

Q. Right, okay. So I can take it that this is the proposition you are putting forward in your evidence recommending the Tribunal to adopt, the sentence that I've read to you? I just want to make sure I understand you correct. So you agree with that particular proposition, even minutely low likelihood would justify very aggressive action to mitigate the risk?

A. No, that's the way the dismal theorem is presented. I don't agree to the full extent of the dismal theorem. But my proposition is low likelihood risks deserve aggressive action. If I may, the mathematics of the dismal theorem is fairly simple. If we're talking about a catastrophic existential risk whose utility is, if I can say that, negative infinity, so even a very small probability, multiplied by infinity is still infinity, which means that we need to spend a lot of resources to avert that. So the dismal theorem, for the dismal theorem, even minutely low likelihood, so we're talking about, you know, 0.000001% likelihood still deserve very aggressive action. I subscribe to the more moderate version of that which is what

Professor Weitzman's position was as well that low likelihood risk deserves our attention.

Q. Okay, that's helpful. It's not a trap question, I just wanted to understand. I don't want to misconstrue your evidence. So if I take out the word minutely and maybe take out the word very, that would capture your position?

A. Yes, yes.

Q. Low likelihood would justify…

A. Yes, yes.

Q. Okay. So, just to ask you a further question on that, and the chair might forgive me for sort of just borrowing her question that was put to Mr Murray about a month ago and I found it really helpful. This question has a long introduction, so Professor if you could bear with me. And so, the last hearing the chair put an analogy to Mr Murray and she said, well, you know, kids back in the old days used to walk to school. But these days, parents would drive kids school, and that's because there is a perceived sort of risk of bad things happening to children as they go to school. Now, the risk might be low, but there is danger. And so, I guess, to use the words as unlikely but terrible consequences might result and so parents would take a precaution, incur the cost and inconvenience to drive them to school instead, and so the chair put this analogy to Mr Murray and said, well, isn't that what sort of Professor Noy is talking about? So I just want to take that analogy further and ask you some questions about it. So I suppose the precaution that a parent could take, could take several forms, you know. So you could incur the inconvenience of walking them to school, you could incur the petrol and drive them to school, you could incur the cost of moving to a more expensive neighbourhood for example, or you could in more extreme cases employ bodyguards for them, or you could just stop your kids going to school all together. And I guess I'm interested in your view in terms of the precautionary principle that if there is, you know, how do you decide between these options if the operating principle is low probability of risk would justify aggressive action, you know, do I jump straight to not letting my kids go to school or do I go

straight to moving house or… you know, like, on your principle, like how does one make a decision between these different choices?

A. With all these choices there are costs involved and benefits involved and we need to evaluate those. We need to somehow get the kids to school because there's mandatory schooling. We do evaluation of the various possibilities and for each individual or family those benefits and costs might be different, right, so that's why different families decide on different strategies, including potentially letting the kids walk by themselves to school in some cases because the costs of not doing it, of doing something else are too high for the family to bear. So I'm not sure why, to be honest, I'm not sure where we get more insight from this story.

Q. Yes. So I guess you'd agree in this story, and it might lead to no, but you would agree in this story it's important to assess the probability of the risk of something happening per child and the cost of whatever measure you decide to take? Just based on the answer that you've just given to me.

A. Yes but we need to make a decision. So we live in a world in which we don't have perfect information and the kid needs to go to school, so we need to take a decision, although we don't exactly know the probabilities of something bad happening to them and we don't know potentially of, you know, a lot of the other parameters in that decision scenario, but we need to take a decision on what to do and any decision is a decision, including deciding not to do anything is a decision. That that was my point to Mr Murray.

Q. Isn't Mr Murray's point being, well, in order to decide on which option you have to carefully assess these things including probability, costs, comparing the different scenarios? I mean, you don't disagree with that, do you?

A. No, no, I don't disagree with that at all. You need to take whatever information you have and make a decision. But if you don't have all the information you would like to have, that's not an argument for not making a decision because that decision needs to be made and even if the decision is not to do anything, that's a decision, it's still a decision. So my argument is not you shouldn't evaluate all the available information, but we never have full information on any decision. So we need to just accept

that and make those decisions with the available information we have. I would maybe add that it's a –

Q. **(inaudible 14:08:26)** –

A. Can I also add one more point?

Q. Of course.

A. The government has, at least the current government, has cut funding for climate research very aggressively, so it's a bit ironic to say we don't know enough and therefore we can't make a decision when we are deliberately trying not to know enough.

Q. Okay. I guess, just my last point is I think Mr Murray clarifies in his evidence he's not suggesting that we should do nothing, but whether we should do something more. You agree with his explanation in terms of – I mean, do you disagree with how he has characterised his evidence?

A. As far as I understood Mr Murray, he seems to have a preference for not changing the current policy settings, that the only justification to change the current policy setting can only be obtained once we have much more information, and I fundamentally disagree with that premise because deciding not to change the current policy is a decision in and of itself and it should be informed as any other choice should be informed by the available information, and to me the available, the already available information including our commitments to the Paris Agreement suggest that we are not – that the current policy is inadequate. So I don't think we need more information to conclude that the current policy is inadequate.

Q. Thank you for your answers Professor Noy. I've got no further questions for you.

(14:10) BASIL MORRISON TO PROFESSOR ILAN NOY:

Q. Thank you, Professor, for your evidence and comments. I find it very interesting. Do I understand you to say that in recognising what could happen, we should take account of first of all recognising it, I understand that, and then how do we work towards any mitigation when say for instance Rangitoto in Auckland is projected to a volcanic eruption in 40,000 years or whatever, whatever. First of all, we recognise that, and secondly, how do we address that? Because we're not saying we shift

Auckland next week, or and/or Wellington with earthquake faults and the rest of the country's fraught as you are aware. I'm just wondering how in identifying, very important, and I think a lot of that's done, secondly, immediate mitigation of some of those risk, I think that's been touched on, bits and pieces. But the long-term stuff, how would you see that mitigation taking place? For instance, Auckland. I just use Rangitoto, I don't want to frighten everybody out of this otherwise the mayor of Auckland would be after me again.

A. So first of all I'm not a volcanologist. So this example, or a Wellington fault line erupting – Wellington fault line moving or something like that is not an existential risk, right. So it doesn't sort of trigger the kind of evaluation that I was talking about in the case of dismal theorem or the precautionary principle. It is a significant risk and then we have plenty of other significant risks, tsunami on the East Coast from the Hikurangi subduction zone and so on, and we need to plan for them and we are planning for them. In the case of Auckland, there are, there is a whole evacuation plan of what to do if that happens and all of these things are perfectly justified. My contention here is that this is somewhat different because there are these more extreme scenarios where this poses an existential risk which we can prevent. So we do have an existential risk, volcanic one, and that is if Taupō goes up, which means that basically New Zealand is gone. We can't do anything about that so there's no, in my view, no point in thinking about policy. But in the case of those examples, they don't quite equivalent to the climate change risk because the climate change risk has more extreme scenarios which have much bigger implications for us.

Q. Look, thank you for that and I now appreciate separation. It's just that where I live, I live – my house is on the Kerepehi fault and I was wondering whether to ring my wife and say, look, shift, we're doomed. But in all seriousness, thank you for that separation, I appreciate that and that rings a bell with me. Thank you for evidence.

(14:14) PROFESSOR DAVID WILLIAMS TO PROFESSOR ILAN NOY:

Q. Professor, he's stolen my question. So I'll just report that I'm a member of the Auckland Museum Trust Board and the exhibit that children love to go to in our museum is the volcanic room where a volcano erupts somewhere between the Sky Tower and Rangitoto and the whole room shakes while you watch it. But thank you. Not an exact existential risk clarifies for me what you mean by rational choice, so that's useful thank you because I find some of the plain words, they don't always come through plainly to me, but **(inaudible 14:14:53)**.

(14:15) JUDGE MILROY TO PROFESSOR ILAN NOY:

Q. Thank you, yes. That explanation has clarified my question as well. But if I can also just ask you, because when I was questioning Mr Murray I referred to the fact that we had Cyclone Gabrielle and a whole lot of flooding events that are occurring one after the other and that was my understanding of what a catastrophic event was, but you're talking about something more than that?

A. Much bigger than that, yes.

Q. Could you just explain that a little bit more then what the catastrophic events that you're referring to?

A. The catastrophic, the biggest risks that we have in this country from climate change is going to come from abroad, not from what happens here. So it's not what's going to happen to our forests or to our, you know, droughts in our dairy sector and all of these. These are significant risks and we need to manage them in the same way that we manage the risks from potential volcanic eruption in Auckland or a fault line in Wellington. But there are catastrophic risks that could emanate from abroad, so, massive migration flows which lead to civil conflicts and things like that. So we've seen, you know, there's a sort of a small version of that after the extensive decadal drought in the Middle East region where I come from where that generated a lot of dislocation of farmers who moved to the cities, were unemployed, a lot of young people, that led to the Arab Spring and eventually to the Civil War in Syria, which led to massive migration flows to Europe and Brexit and a whole lot of sort of populist

rise in Europe, anti-immigrant tensions within the EU. All these cascades that started with basically a climate change **(inaudible 14:17:17)** a few years before that. So those are the kind of cascades that I'm worried about that will affect us.

Also, imagine the Monsoon season in South Asia being disrupted because of climate change. We have about half a billion people who depend on the monsoon for their livelihoods. And, you know, two or three years of no regular monsoon, that means that half a billion people will be starving. That will generate for sure conflict in South Asia. These are nuclear powers and that could lead to catastrophic outcomes. So that's the kind of things I'm thinking about when I'm talking about the catastrophic risk associated with climate change.

Q. Thank you, that clarifies that aspect of things as well. So I have no further questions, so I'll just hand you back to your counsel in case there are some questions for re-examination.

(14:18) MR LYALL TO PROFESSOR ILAN NOY:

Q. Yes, there was just one, just following up just to explain something that you said I had brief note of when you talk about CBAM. You said because of the difference in the ETS price versus the EU price, we were shooting ourselves in the foot twice currently. Can you just expand slightly on what you mean by that?

A. Yes. So it will first of all harm our export sector, that's the one foot being shot. The second, it will ultimately lead to the same outcome as if we had the higher ETS price because our exports will be paying that levy. But instead of paying it to the New Zealand Government, they will be paying it to the EU. So that's the second foot being shot. So not only is our export sector being harmed, we are also giving this money, instead of collecting it here for the benefit of the taxpayers of New Zealand, we'll be giving it to the EU.

Q. Thank you, that's all, and thanks for your evidence.

JUDGE MILROY:

Yes. Can I, again, thank you very much Professor for making the time to come, especially in person when we know that you are busy and have other things to do, so thank you for your evidence.

PROFESSOR ILAN NOY:

Thank you very much for having me.

MR LYALL:

Kia ora, your Honour. We now move to the evidence from Professor Macmillan and I'll be leading her in her evidence today.

(14:19) MR LYALL: (CALLS)

PROFESSOR ALEXANDRA MACMILLAN (SWORN)

Q. Tēnā koe, Professor Macmillan. I'm checking that you can see and hear me and see the panel at least?

A. Tēnā koutou katoa. Tēnā koutou ngā rangatira mā. Yes, I can hear and see.

Q. Thank you. Professor, you've appeared before the Tribunal in this inquiry already, so I figure the best approach today is for me to just confirm that you've filed a reply affidavit and attached documents on the 10th of March which on the record is #A76(d) and (e), and just ask that you can confirm that those remain true and correct as of today's date?

A. They do remain true and correct. I want to note that my brief of oral evidence, reply evidence, specifically to the evidence of Dr Andrew Old from the Ministry of Health was submitted prior to him giving his oral evidence, and he has responded to some of my reply evidence. So as I go along, what I might do is just try and note where he has partially responded to some of my statements.

Q. Thank you. And you have prepared a PowerPoint or some slides to speak today to help with your presentation. Are you planning on speaking to those first and then doing that reply or are you going to do it all in one?

A. I'm going to try and do the magical thing of bringing it all together. See how we go, yes.

Q. Ka pai. Now, would you like to bring those slides up from your end or would you like me to take care of that?

A. Actually, if you wouldn't mind, I think it would be helpful if you wouldn't mind bringing them up. Would that be okay? Thank you. That's really helpful. Thanks very much.

Q. Hopefully that showing up now and I think I'll pass the time to you and I might butt in with some questions now and then but please if you could take the Tribunal through what you'd like to say today.

A. Thank you so much.

(14:22) PROFESSOR ALEX MACMILLAN: (#A076(d)-(e))

As a Public Health Physician and Professor of Public Health, my written brief and oral evidence have centred on the Crown's Tiriti obligations to protect and promote Hauora Māori and eliminate Māori Health inequities.

Because my brief evidence covers matters much wider than just the health sector, I'm also going to make some more general comments in reply to the overall Crown evidence.

On the whole, I want to say that the Crown's evidence in the round has reinforced the statements that I've made in my evidence to date. I specifically want to counter Kieran Murray's evidence that New Zealand's emissions don't matter.

In my brief of evidence, I made the case that they matter very much for health, especially through equitable collective action with other countries. Our reductions in emissions directly contribute to avoiding fractions of degrees of warming, and every fraction of a degree of warming averted saves lives and hospitalisations and illness, especially because of the non-linear nature of climate impacts. Every fraction of global emissions reduction adds up to the required net zero endpoint for carbon dioxide and reduction goals for other greenhouse gas emissions is vital for protecting health now and in the future. And the Paris Agreement mechanism rests on the reality that all countries have an important and differentiated role to play. And as a high per capita emitter

with high capability, New Zealand has additional responsibility that, when not acted upon, undermines our ability to expect protection through collective global action.

A lot is made of the idea of emissions leakage in these discussions. In other words, when we reduce emissions by changing our sector processes or policies that those emissions somehow get displaced to other countries. But I would argue that in a similar way on the other side there's also progress, leadership and transition leakage. In other words, countries, cities, industries, business and organisations looking to and learning from best practice leadership, experiencing the tangible co-benefits to health and wellbeing and strengthening their progress accordingly.

For all these reasons, New Zealand emissions reductions matter very much for hauora Māori and Māori health equity.

I would've expected, secondly, across Crown evidence a more convincing argument than has been made that climate change mitigation and adaptation have been adequate to protect hauora Māori and avoid widening Māori health inequities, and I haven't heard that evidence. And the recent barrage of law changes weakening mitigation and adaptation responses, weakening the ability for communities to do long-term planning and explicitly encouraging further fossil fuel exploration and extraction reinforce the insufficiency of Crown mitigation and adaptation actions for protecting hauora Māori, avoiding and avoiding exacerbating Māori health inequities.

And that these poorly designed mitigation efforts are coursing harm and missing opportunities for Hauora Māori co-benefits through their poor design.

And fourthly, that Crown evidence in the round reflects an assumption that economic growth is the only pathway to health and wellbeing, ignoring that health rests on well-functioning ecosystems and that more holistic models of health that explicitly talk about the way that health rests on well-functioning ecosystems show up in the number of Māori models of health especially.

For example, in the evidence of Paul Stocks on the Mineral Strategy, clause 37 of his brief of evidence lays out that to realise a mineral sector that delivers for New Zealand now and in the future is really aimed at supporting a productive and resilient economy. It has a goal to double mineral exports by $3 billion by 2035 and is focused very much on productivity economic value and resilience of supply chains and includes explicit subsidies and policy settings to encourage further exploration, exploitation of fossil fuels like coal, oil and gas. When to protect health and wellbeing, these need to be left in the ground. Still not up to that slide yet. Thank you.

I want to now turn to the evidence of Dr Andrew Old and specifically to start with his evidence around mitigation. I want to firstly acknowledge my public health colleagues, both Māori and non-Māori, working within Kāwanatanga over successive governments to address hauora Māori inequities, often against adverse systems and institutions and policies.

I note that, and now I'm turning to my written brief of oral evidence. I note that Dr Old's evidence places a strong emphasis on the Health National Adaptation Plan as the main conduit for health sector action on climate change. That Health National Adaptation Plan, which I'll hereon refer to as the HNAP, covers adaptation only and is not a strategy to meet Tiriti obligations to Māori health equity through climate change mitigation actions.

Paragraph 7 of Dr Old's evidence mentions that the Ministry of Health and Health New Zealand collaborate with other sectors to inform their decision-making but it doesn't provide an adequate account of how over time this collaboration has been undertaken.

I would be expecting specific examples relating to my initial brief of evidence or where health is **(inaudible 14:29:26)** effectively partnering with other sectors, for example, transport, housing and urban development, the energy sector, to put health equity and Māori health equity at the heart of their decision-making as well as evidence about the effectiveness of that input and that input has

flowed through into decision-making by those other sectors. Next slide, please. Thank you.

In paragraph 6 of his evidence, Dr Old points to the specific mention of climate change in the Principles of the Pae Ora (Healthy Futures) Act 2022. The Healthy Futures (Pae Ora) Amendment Bill is **(inaudible 14:30:32)** the committee of the whole House. And this clause that was quoted by Dr Old in his written brief of evidence that talks about collaborating with agencies and organisations in undertaking promotional and preventative measures to address the wider determinants of health, including climate change, is repealed in that Bill.

In addition to that, all of the health principles in section 7 of the Pae Ora Act, including ensuring Māori achieve equitable health outcomes will also be repealed, and their substantial weakening of the obligations to te Tiriti by repealing many of section 6 Tiriti obligations in that Healthy Futures (Pae Ora) Amendment Bill which is expected to pass really soon.

These legislative requirements underpin the strategies and statements of confidence upon which much of Dr Old's written and oral evidence rests. Paragraph 34 of Dr Old's written brief of evidence – yes, next slide please.

I want to turn to paragraph 13 of Dr Old's evidence that states that the Public Health Agency's role in Māori health equities is reducing inequities. Are we able to go to the next slide?

I seem to have, be able to have control of it myself, is that right? Can you scroll up please to the slide about the definition of health equity in Crown evidence please. That's the one, great.

Paragraph 13 of Dr Old's evidence states that the Public Health Agency's role in Māori health equity is reducing inequities. This is out of keeping with a Public Health definition of Māori health equity. For example, I've put here a couple of definitions. Firstly, the World Health Organisation definition is a major

international evidence-based benchmark. You can see by reading this definition that it talks about both – it names both the specific groups who are affected by dimensions of inequalities that lead to health inequities, it talks about a right to health, and it also names a clear goal that requires the elimination of inequities to reach, attain the full potential for health and wellbeing.

If I then turn to the Ministry of Health's own definition of health equity, it neither mentions te Tiriti rights, nor articulates a goal of identifying and eliminating structural and unjust and avoidable differences, which it would need to do to be in keeping with that widely accepted international definition based on evidence.

Then thirdly, Dr Old's evidence for the Crown further weakens that Ministry of Health definition of equity by not naming an elimination goal just to reduce, reducing an equitable outcomes goal.

These definitions of health equity are really critical for underpinning how the Crown goes about addressing climate change in health in ways that aim to either reduce or eliminate Māori health inequities, and in keeping with the international definitions of health equity I would expect them to be aiming to eliminate Māori health inequities rather than just reducing them.

We can stay there for the moment. Thank you, Bryce.

Paragraph 34 of his evidence begins a discussion on the Government Policy Statement on Health, the GPS Health, which doesn't identify climate change as a major threat to health or the health system, rather it prioritises timely access to healthcare services, emphasising this will drive the biggest improvements in health outcomes. In doing so, it fails to recognise climate change is a threat to access, and there are no specific actions to address climate change related Māori health inequities, and nor does the GPS Health recognise that climate change is and will continue to worsen those inequities.

Paragraph 37 talks about a Climate Resilience Plan that will be developed but doesn't talk about by whom and with what resources, and Dr Old's oral evidence did not cover this as far as I could tell either.

Paragraph 38 of his evidence seems to be implying a clear and coordinated directional climate change, yet the strategies that he has discussed do not provide this. My view on this is that while the strategies might provide general coordinated health direction, they do not do so about climate change specifically.

From then on, Dr Old's evidence focuses on the Health National Adaptation Plan, the HNAP. He hasn't provided a justification for why the ministry had such a substantial delay of two and a half years to respond to its required responsibility to develop an HNAP. And nor does it explain in detail what resourcing has been allocated to achieve the actions.

In the next two sections of my oral brief of evidence I make the case that the single Ministry of Health kaimahi who was dedicated to climate change in health work was no longer at the Ministry. And in Dr Old's oral evidence he provided an indication that there remains some partial FTE within the Ministry but that's now shared across several people who are expected to try and fit climate change in health into increasingly busy workloads. As well as, he noted, a single dedicated position within Te Whatu Ora whose role is actually to focus on health sector sustainability and health sector risk and resilience. So very much on the health sector itself rather than wider community HNAP actions.

This I think means that I stand by my statement around evidence of further specific resourcing for HNAP actions and specific climate change roles within the Ministry of Health being lacking.

I want to turn to the next slide please on the Health National Adaptation Plan actions itself. And in my reply evidence, I note that it's unclear what the status of this HSR2 action is around supporting local government as part of

Civil Defence engagement to help deliver, to put Public Health at the heart of regional and district health emergency plans for extreme climate related events.

Evidence of specific examples of where and how this action was being undertaken seemed particularly important for building a level of confidence in Dr Old's statements about the implementation of the HNAP. In particular, in the light of accelerating and more severe weather events seen in this year alone, I would be expecting specific examples to support confidence in Dr Old's evidence about the implementation of this particular action, including examples in Māori communities hardest hit by these severe weather events that demonstrate public health iwi and hapū and Civil Defence Emergency Management partnership to improve responses.

In addition and also highly relevant to this inquiry, I'd be looking for specific examples to demonstrate confidence in implementing actions in the community and whānau leadership focus area. The CWL1 to 3 actions that I've listed there on the slide. And I would've wanted to see specific examples in the rohe of iwi claimants to this inquiry.

Lastly, I want to note that section 6.1 and 6.2 of the Health National Adaptation Plan talk about both a work programme and a monitoring plan. Given Crown's evidence was provided about halfway through the life of the Health National Adaptation Plan which is meant to be a three year plan ending in 2027, copies of the work programme and monitoring plan are the kinds of specific evidence I would have expected to see submitted as part of the Crown's evidence to support its statements.

Therefore, while the HNAP itself represents a step towards a Tiriti Health System response to climate change adaptation, the Crown's evidence has not provided confidence that the actions required are being implemented. And the systemic undermining of public health capacity over the last few years suggest it cannot be implemented in the current structural and political context.

I want to turn to some summing conclusions now if you won't mind going to the next slide thanks.

In summary over my oral and written evidence, I want to re-emphasise that the effects of climate change on health, on hauora Māori are complex and dynamic and that Crown responses to those complex dynamic health effects need to be people-centred and understand the complexity that these health impacts intersect with existing structural injustices and established Tiriti breaches, including for hauora Māori.

I've also described that adequate and well-designed mitigation with hauora Māori and health equity at the centre are a real opportunity for contributing to the elimination of Māori health inequities and improving hauora Māori. And that these are tied to, tied closely as I've made the case, to our national global mitigation and adaptation performance measures.

The Crown mitigation and adaptation have been – continue to be inadequate to protect hauora Māori, address inequities and meet indigenous climate justice criteria both in process and outcomes. And that there has been and continues to be worsening inadequate investment in climate change and health research to understand both the complex and dynamic effects as well as to understand the most effective and equitable policies.

I also emphasised in my written brief of evidence that commercial vested interest in the status quo are influential in undermining Tiriti compliant action by the Crown. And that changes to democracy, governance and economic models are needed to meet Tiriti obligations in climate change in Health.

MR LYALL:

Ngā mihi. I'll just ask you to pause unless you have anything further to add before you respond to questions?

PROFESSOR ALEX MACMILLAN:

No, I have nothing further to add. Thank you.

MR LYALL:

Ka pai. So the Crown may have some questions for you as may the Tribunal and I'll pass to them to ask those now.

(14:44) MR PREBBLE TO PROFESSOR ALEX MACMILLAN:

Q. Thank you. Tēnā koe Professor MacMillan. Ko Jeremy Prebble tōku ingoa. Kei konei ahau mō te Karauna.

A. Tēnā koe.

Q. Tēnā koe. Thank you very much for your evidence, your reply evidence.

A. I can't see you. Should I be able to see you?

Q. You should –

A. Yes, there you are, great, thank you.

Q. Great. So I guess just starting with that point which I took from your reply and your oral outline just now, a central point of concern that you have is that you say the HNAP as we're calling it is not focussed on mitigation, it's focussed on adaptation. Is that right?

A. That's right.

Q. And just in terms of the mitigation aspect, I guess, if we just focus on that first, some pretty obvious comments or questions I put to you is that I assume in that sphere, if we are mitigating emissions, so reducing emissions, we are correspondingly having a positive effect not just on health but on a number of potential impacts, so environmentally as well obviously, among others. Is that right?

A. I think those positive effects on health and other environmental outcomes don't come automatically through emissions reduction. They need to be designed in, and in fact, if they're not carefully designed in mitigation actions can have harmful impacts on health and health equity, including for hauora Māori.

Q. Do you have an example like a practical example of that so it can I guess make more sense to us?

A. So some really good examples I think come from the Transport sector. A single kind of focus policy that was only aiming to reduce emissions and not co-contribute to health and health equity would be to encourage the uptake of electric vehicles. These are really expensive and most whānau

wouldn't be able to afford one. The benefits including cost savings for fuel flow to the people who can afford to buy them and other co-harms of the Transport sector are not addressed, including things like inequities in road traffic injury, inequities in physical inactivity through designing physical activity out of our daily lives, inequities in affordable access to the building blocks of health including health services and education jobs and other health promoting goods. So a policy that is focused solely on the electrification of the current vehicle fleet may well worsen health inequities. On the other hand, if we put health equity and climate mitigation at the heart of transport policy design, then we come to very different policy outcomes including equitable investment in active and public transport, affordable public transport, electrification of public transport, and that these things have been demonstrated through international and national evidence to improve health outcomes and reduce health inequities, including for Māori.

Q. Thank you, that's very helpful. And I take from those answers that very much the equity part of that is incredibly important in your view when thinking about mitigation so that we're not just simply mitigating our emissions, we're mitigating our emissions in a way that does it focussed on the likely impacts to different sectors of community?

A. Absolutely, and if we were going to turn that into a just transition then that would be not just about the outcomes but about the processes by which those outcomes are achieved.

Q. Thank you, and you did note, in fairness to Dr Old, he does address mitigation but I think your concern was that there wasn't sufficient detail in his evidence as to how the Ministry works with other agencies. Is that a fair characterisation of the concern that you raised just now?

A. That's right. In his written and oral belief of evidence, he notes that much mitigation policy happens outside the health sector. There is some mitigation policy within the health sector, the health sector is a contributor to climate change, about 5 to 10%, we think, of total national emissions, but much of it lies outside the health sector's direct remit. And he talked about partnership and advocacy with those sectors but I would have expected to see some specific examples of how that had in the past or

was currently unfolding and what the effects of that partnership and influence had been.

Q. Yes, thank you.

A. For example, some evidence that health equity had made its way into that policy design.

Q. It may well have been a question put to him. I do not recall that question being put to him, but obviously I think the criticism you make is that his evidence doesn't provide sufficient detail as to what he is asserting is occurring is a fair way of saying what you're putting forward?

A. That's right, yes.

Q. And I recall that we had a brief discussion about this last time I questioned you, but in terms of the, I guess, the infrastructure in place in New Zealand, we have the Climate Change Response Act, and I understood from last time that you are aware that is our key legislative framework that comprehensively provides for mitigation and adaptation. Do you remember and agree with that?

A. Yes.

Q. And I understood too, but you can correct me if not, that you're also aware it requires the Climate Change Commission to consider health as well as – so health impacts as well as the Minister in making decisions on the budgets and the Emissions Reduction Plans for adaptation?

A. Yes.

Q. And so, for example, under section 3A(a)(d) that it requires the Minister to prepare and publish an Emissions Reduction Plan, the minister must include in that Emissions Reduction Plan a strategy to recognise and mitigate the impacts on iwi and Māori of reducing emissions. So you're aware of those provisions that exist in our legislation?

A. Yes.

Q. And similarly for the adaptation plan, the Minister must take into account the economic, social, health, environmental, ecological and cultural effects of climate change on iwi and Māori, so in the adaptation space you'd be aware of those as well? Just need, for the record –

A. Yes.

Q. Thank you. And so, while you're putting forward the criticism of Dr Old's evidence, at least in terms of the framework we have, so our core framework responding to climate change, there is provision there to provide for Māori health outcomes in terms of mitigation and adaptation, would you agree with that?

A. Certainly I'm acknowledging that health is mentioned in the legislation. It's clear though from the policies resulting, the recommendations and the policies resulting that the institutional structures and the tools being used and the recommendations being made and the responses to those recommendations by the Crown do not adequately respond to those parts of the legislation.

Q. So if I was to characterise what you're saying, you're not taking issue necessarily with the legislation, you're saying in the way that the Crown responds to it through its policies is where you have your key concern, is that fair?

A. I focus my evidence on the actual policies and actions of the Crown rather than, rather than the climate change legislation itself. My familiarity is much more closely with the health legislation. But as I understand it, the Tiriti requirements across all legislation are being weakened currently, which will undermine further the ability of the Crown to meet its Tiriti obligations to protecting health and hauora Māori through climate policy.

Q. Okay, thank you for that for that clarification. So I think just moving to the health equity side of your evidence and at paragraph 8 you state that the definition of Māori health equity used in Dr Old's evidence is out of keeping with the Public Health definition of Māori health equity, and you make therefore the submission that it's out of keeping with Article 3 of Te Tiriti o Waitangi, and I just want to, if possible, bring up the Health National Adaptation Plan because as I understand it, his evidence was aligning itself with that definition and I just want to confirm whether you had considered the definition in the HNAP and whether you would also take issue with that? And so, hopefully that is now on your screen too but there's, as a guiding principle in the development of the HNAP you'll see equity there which, as I understand it, broadly aligns with how Dr Old has defined it. Does that accord with your understanding too?

A. The definition of equity here in the HNAP aligns with the Ministry of Health definition of equity that I showed on the screen, which neither identifies the specific groups who are experiencing the inequities nor has a goal of eliminating those inequities, which is out of keeping with that WHO definition that's widely used that I also showed on the slide.

Q. So your two criticisms, just to clarify I guess where you would divert is, or at least how you see the Crown's response is not a sufficient definition of the groups and – identified as being potentially impacted, and because it's reducing rather than eliminating equity is the concerns that you have with that, is that fair?

A. That's right.

Q. And in terms of just your next, I guess, point you make about consistency with Article 3 of Te Tiriti o Waitangi, that obviously is ultimately a matter you'd agree with for this Tribunal to determine, is that fair?

A. Absolutely.

Q. When you gave evidence last time, I did ask you about the HNAP and I understood from your answers that you did agree in principle with its provisions, rather your key concern was around funding and implementation of it. Is that still a fair characterisation of your position?

A. I think aside from this issue with the definition of equity that I raised, the HNAP contains actions that if implemented I think would be – would certainly help to address health equity and Māori health equity in adaptation planning.

Q. And to be fair to Dr Old and the position I guess of the Crown in filing evidence, it's still part way through giving effect to this. Is that a fair summary? I mean, you'd agree with that right? It's not until next year where they're going to report on ultimately how they go with the plan?

A. Yes, I mean, it's clearly sort of halfway through-ish – halfway through its three-year plan, and I stand by my statement that I would have expected the submission of a work plan and a monitoring programme by halfway through the process.

Q. Yes, understood. You also make the comments about the departure of an employee and that at least, and maybe this is where it's just worth clarifying because you acknowledged your reply came before Dr Old then

gave evidence, so I just want to check really where you're sitting on some of these points but you said there's no, at paragraph 13-15, there's no evidence of further resourcing for the HNAP actions nor any specific climate change role within the Ministry of Health as of October 2025, and I guess the first question I had is did you hear or have the option to hear Dr Old give evidence?

A. That's right. I have, I did listen to his oral evidence and read his speaking notes and acknowledge that he described some FTE within the Ministry of Health that was shared amongst existing staff but that there was no specific role, climate change in health role within the Ministry is my understanding from his oral evidence and his speaking notes.

Q. Yes, so my understanding of his evidence was he put forward the view that the current funding arrangements were sufficient to deliver the actions scheduled for completion within the timeframe for the first HNAP, and I guess putting it to you that you've heard that and you've seen his evidence, but you still take the position that you just don't agree. Is that right?

A. I haven't – I would have expected specific examples and evidence that the front line, Te Whatu Ora and Public Health Agency staff were demonstrating their capacity to implement the actions of that HNAP through specific examples of how that was happening at regional and iwi and hapū level.

Q. Thank you.

MR PREBBLE ADDRESSES JUDGE MILROY – TIMETABLE (15:01:19)

HEARING ADJOURNS: 3.01 PM

HEARING RESUMES: 3.28 PM

JUDGE MILROY:

Welcome back to this last segment of our hearing today. Dr MacMillan, you've still got questions from the Crown coming and then it'll be from the panel.

PROFESSOR ALEX MACMILLAN:

Madam Chair, would it be okay if I continue to answer the last question before we went on break?

JUDGE MILROY:

Yes, certainly.

PROFESSOR ALEX MACMILLAN:

Thank you. The Crown lawyer's questioning was really about the HNAP and there are three parts to the HNAP. There is the process by which it was developed, and there's the content of the HNAP itself, and then there's its implementation.

In terms of the process, my initial brief of evidence and my reply to the Crown's – Dr Old's Crown evidence, written evidence, I didn't touch on the process because the process was opaque to me and I wasn't part of the process as well. And then in Dr Old's speaking notes, his oral evidence, he touched on that process and said that the plan was informed by engagement with a number of iwi, hapū, Hauora Māori partners, researchers, community organisations and local and central government, and that Te Aka Whai Ora, the Māori Health Authority, was also a key member of the governance and engagement teams alongside the Ministry of Health and Health New Zealand.

It's not my place to comment on the quality of that input, but I would have liked to have seen some evidence about how the HNAP was informed by that process and how those iwi, hapū, hauora Māori partners and Te Aka Whai Ora saw the quality of that process.

Now, I'd like to come to the content, and as I said in my written reply to Dr Old's evidence in clause 19, while the HNAP itself represents a step forward towards a Tiriti-centred – the content of the HNAP towards a Tiriti-centred health system response to climate change adaptation, my comments are largely about its implementability.

And I want to again emphasise that its legislative and strategic mandate are now lacking and that I would've really wanted to see evidence that the recent cuts to the National Public Health Service had not eroded the institutional capability and resourcing to implement the actions required by them in the HNAP, including the ones that are listed on the slide HSR2 and those community leadership and partnership actions.

I would've liked to have seen that there was adequate resourcing, skills, development and enablement within frontline National Public Health Services whose staff would need to carry out many of the actions in the HNAP, including those ones that I listed. Thanks.

(15:32) MR PREBBLE TO PROFESSOR ALEX MACMILLAN: (CONTINUES)

Q. Thank you for those further points. Certainly it's apparent that you're making the comments now that there isn't sufficient evidence before the Tribunal from Dr Old in terms of the detail as to what he's saying. So if I am correct in characterising what we've just heard, you are not, at least in your evidence, you are not taking issue with the process nor really the content but you are suggesting that there's a lack of detail around how the plan is being implemented. That's a fair summary of what you're suggesting?

A. I think rather than not taking issue with the process, I'm not able to comment on the process because it's opaque and because inadequate evidence is being provided about the engagement and its outcomes, especially the engagement with iwi, hapū, Hauora Māori partners and Te Aka Whai Ora.

Q. Thank you for that. Obviously Dr Old has now given evidence. I don't recall these points being put to him. It may be unfair of me to say that and certainly I don't see them in written questions that were put to him but I hear the criticism that you've made and certainly as the Crown we can consider that. I guess the one thing I would say in response is that his evidence as I think you accept was made at a time when the HNAP is still very much being implemented, and so as I heard you to agree you would

expect to see the ability to test whether or not that plan has in fact been given effect to after that period in 2027, that's fair, right?

A. I think it would – I think it would've been reasonable to expect specific evidence to support the Crown's confidence in its implementability through examples.

Q. Okay, thank you.

A. Of those actions being implemented currently.

Q. Yes, thank you. No, that's clear and your criticism is clear. I just come back to your – I just have a series of questions and that's the Crown's questions of you. So if we come back to question, sorry, paragraph 16, you talk there about the lack of clarity with action HSR2 of the HNAP and you go on to state medical offices of health need national sign-off for much of their advice to local government and have limited local or regional intelligence and data. And when you are referring there to medical offices of health, just a point of clarification, you are referring to those presumably employed within Health New Zealand not the Ministry of Health, is that right?

A. That's right. Within the National Public Health Service, within Te Whatu Ora.

Q. Yes. And do you agree that local public health services including staff such as medical officers of the health have a long-standing role in working with local government and Civil Defence partners on emergency preparedness and response including in relation to climate-related risks?

A. I would agree that medical officers of health have a long standing role in working with local government on Civil Defence and emergency management.

Q. Yes.

A. Yes.

Q. And I am informed at least that this work continues as it has previously done, but is that not your understanding or experience?

A. I think that, yes, they are continuing to carry out their required Civil Defence Emergency Management roles.

Q. And so, can you explain your concern here just for the record?

A. The HSR2 requires Public Health frontline staff to support local government to develop regional or district health emergency plans for extreme climate-related events, including flood, storms, wildfires, heatwaves and drinking water contamination. I would have liked to have seen evidence from specific examples of these regional and district health emergency plans being developed.

Q. Okay. Thank you. No, that's helpful just as a point of clarity, it's helpful to understand the concern. If I move to paragraph 18 of your evidence, you refer there to: "Further mention is made of the commissioning of a national climate change and health vulnerability assessment from Principal Economics." And you say: "It is unclear whether any public health expertise has been involved in that assessment." And I've checked with the Ministry of Health and my understanding is that I am informed that an evaluation panel of senior Public Health Agency officials and a Health New Zealand principal advisor recommended Principal Economics Limited as the preferred vendor based on their relevant experience and strong collaboration with leading experts in climate and health. Do you have any knowledge of that or views as to the accuracy of that work?

MR LYALL:

Your Honour, just before the witness asks, I do have some issues with the way that that question is put. Putting a lot of evidence into the question as framed. If the witness feels as though she can answer it then she is an expert and can of course have a go, but I have a concern we don't have **(inaudible 15:39:34)** evidence of any of that.

MR PREBBLE:

I am happy to – see, part of the problem we have is I don't believe these points were put to Dr Old or in written questions Dr Old, so it's in a slightly different – difficult space. So perhaps one way through this is for us to obtain something from the Ministry that captures at least on this paragraph their responses to those points because it came after obviously Dr Old give evidence.

JUDGE MILROY:

Professor MacMillan, would you be happy to respond once the – what the Crown is proposing is that they provide you with some of this information that you would then be able to respond to. Are you happy to do that? It would be in writing, obviously.

PROFESSOR MACMILLAN:

I'd be happy to do that, Madam. I'd just also like to clarify that my written reply evidence in terms of timing came between Dr Old's written brief of evidence and his oral presentation of evidence and indeed in his oral presentation of evidence he made it clear that he had read my written brief of reply evidence and specifically responded to some elements of it. So I'm clear that he had an opportunity to respond to my written reply evidence in his oral presentation of evidence.

JUDGE MILROY:

Thank you, Professor MacMillan. If you're happy to respond, it could be useful information for the Tribunal so that would be helpful. Thank you.

MR PREBBLE:

Thank you, your Honour, and on that basis I will seek a response on that particular point and file that with the Tribunal and those other questions. Thank you again for your evidence today.

JUDGE MILROY:

So Professor MacMillan, we're now at the stage of panel questions and I'll just check once more.

(15:41) JUDGE MILROY TO PROFESSOR ALEX MACMILLAN:

Q. I do have a question and it's relating to the HNAP and we'll just bring up the slide that the Crown used earlier, and you'll see there, there are various principles set out and the first one is whanaungatanga and it says the aim, part way through that description of what it means is that the aim of the HNAP is to develop strong partnerships across sectors and levels

and especially to ensure that iwi, hapū and hapori Māori can exercise decision-making authority over how to adapt to climate change. Then we have the equity one where as you mention there's no reference to Māori, iwi, hapū or hapori Māori. The next one is Kaitiakitanga and again it says the Ministry of Health has an obligation as steward, da da da da da, understanding and supporting the close relationship that people especially Māori have with the land. And then, so there are those two, then we have flexibility, and again there's no mention of Māori there or decision-making or anything like that. Do you have any comments that you'd like to make about why the equity principle which relates directly to Article 3 of Te Tiriti doesn't have any reference to Māori when we do have others that do, other principles that do in the HNAP?

A. Well, as I – looking at that equity principle, what I can see is that it aligns closely with the Ministry of Health's definition of equity that I showed on my slide, and I am afraid I can't talk to the reasons behind why the developers of the HNAP have chosen to articulate equity in that way apart from consistency with the Ministry's own definition.

Q. All right. Thank you for that. That's understandable that you wouldn't wish to comment. Thank you. That was my question. I will just check in case I have got any others, but I think your oral presentation answered all my questions as well. So, I will just hand you back to your counsel Mr Lyall in case there are questions.

MR LYALL:

Kia ora, your Honour. I don't have any questions of re-examination. I would like to... I didn't object to the time but would like to just record that I do have some concerns that learned friend may have been rehearsing closing submissions somewhat, for instance, if asking questions about this CCRA of this witness in detail, where had the witness given evidence on exactly that it's likely that fault may have been found for essentially providing legal submissions through evidence in an improper way. I'm going to address this in my legal submissions but did want to flag it as an issue that will be raised.

JUDGE MILROY:

Thank you Mr Lyall. I think I probably ought to give Mr Preble an opportunity to respond orally and no doubt he will respond in writing, in legal submissions as well.

MR PREBBLE:

Your honour, I think, I would say that the questions are appropriate ones to just ensure that the witness has an opportunity to point out whether they have concerns around the deficiencies with how New Zealander is responding to dealing with health in its mitigation and adaptation, which as I understood the frame of this evidence and very much we have both a legislative framework in place to deal with those as well as policies underneath that, so it was really getting clarity as to where the concerns lay from this particular witness, but happy to respond and will respond if that comes up in closing submissions. Wasn't a rehearsing of any particular closing submission but there you go.

JUDGE MILROY:

Thank you, Mr Prebble. Well, can I just thank you very much, Professor MacMillan, for your evidence today and for the time you've taken and obviously the careful consideration you've given of the various pieces of relevant evidence in this area, so thank you very much.

Now, this is our last matter for today. Just before we close I will just check that there's nothing else. We've just got McKinnis-Ng tomorrow morning and we'll be finishing early which will be good. Is there anything anyone wishes to raise before I ask our kaumātua to close for us?

KARAKIA WHAKAMUTUNGA (KEVIN PRIME)

HEARING ADJOURNS: 3.48 PM

HEARING RESUMES ON FRIDAY 29 MAY 2026 AT 9.00 AM

KARAKIA TĪMATANGA (KEVIN PRIME)

(09:01) JUDGE MILROY: (MIHI)

Ata mārie, nau mai, haere mai ki tēnei wāhanga whakamutunga i tēnei wiki. Aku mihi ki taku manuhiri mai i Kānata, e Rawiri Makitanara. Welcome Professor MacDonald from Canada, the University of Guelph. Nau mai ki tēnei nohoanga o te Rōpū Whakamana i Te Tiriti. Welcome to this Waitangi Tribunal sitting. Ko te tūmanako ka whiwhi koe te kai hei whakaaro i ā mātou kōrero. So I hope you find our discussions interesting, so welcome.

So, this morning we have just the one witness for today. So, we have Dr Macinnis-Ng with us, and is it you Mr Vincent who will be leading her?

MR VINCENT:

Yes, it is.

JUDGE MILROY:

All right. I will just hand over to you without further ado.

(09:02) MR VINCENT: (INTRODUCING NEXT WITNESS)

Thank you, your Honour. Tēnā koutou anō ngā mema o te Rōpū Whakamana i Te Tiriti o Waitangi. We have, of course, Professor Macinnis-Ng here with us today. She is a plant ecophysiologist and an ecohydrologist who measures and models carbon and water cycling in forests. In terms of appellation numbers, her original affidavit is #A069. Her reply affidavit is #A069(d). Her speaking notes for today, #A069(f) and her PowerPoint presentation is a #A069(g). As part of her preparations for today, she's reviewed the Climate Change Commission's 2026 National Climate Change Risk Assessment and the report of the Parliamentary Commissioner of the Environment, Alt-F Reset: Examining the drivers of forestry in New Zealand. I don't know if we have an appellation number yet for the 2026 National Climate Change Risk Assessment but for the Alt-F Reset report, that's #A043(c).

Towards the end of her 20 minute presentation she would like to add a few comments on those reports drawing on her expertise, if she may.

JUDGE MILROY:
Yes, thank you, that would be helpful.

MR VINCENT: (CONTINUES)
Thank you. So, there are two additional slides based on what she's prepared and I'll file that as soon as I can after she gives evidence.

JUDGE MILROY:
And Mr Vincent, just so that we have the appellation number, it's #A165 for that risk assessment.

(10:04) MR VINCENT: (CALLS)
(09:04) PROFESSOR CATRIONA MACINNIS-NG: (#A069-(d), (f), (g))
Tēnā koutou ngā mema o te Rōpū Whakamana i Te Tiriti o Waitangi. Thank you for the opportunity to respond to the Crown evidence today. I will just go ahead and share my screen because I've a few slides to share. So, hopefully that is presenting okay.

I will be responding to the written and oral evidence of Robyn Julie Collins and Samuel Keenan of MPI, and Kirstie Knowles and Catherine Wilson of DOC. So, my overarching reflection on the Crown evidence is that there are a number of opportunities that remain to better address climate change and related issues for flourishing biodiversity ecosystems and communities. So I've framed my response information around what these opportunities are because I think it's good to move forward with positive actions.

So starting with the Crown's policies on maximizing forest carbon, including the Maximizing Forest Carbon Programme, I have four main points to bring up. So, the first relates to the datasets of region-specific information on carbon uptake and storage in native trees species. So, Tāne's Tree Trust has been working for decades now to collect data that provides more details on the carbon uptake

and storage by native tree species across the motu. But it still remains a very scarce dataset in comparison to the information we have available for exotic tree species.

Now this is a known knowledge gap which has existed since well before I moved to Aotearoa 16 years ago and the lack of data in this space means that we don't really know enough about how native species perform in different parts of the country and this really influences land-holder decisions. So, when land-holders are making decisions they want clear evidence and information to help them make informed decisions, and without enough information on native species then it really pushes the decision-making in favour of the exotic species, particularly *radiata pine*. So, addressing this long-standing knowledge gap will really help to inform decision-making processes.

The second item relates to pest control to enhance carbon storage in native forests, and in my written affidavit's response I've included detailed information on the impacts that herbivores, invasive herbivores have on forest carbon storage. But briefly here just to explain, browsing by goats, deer, possums, wallabies and other invasive herbivores removes plant by biomass, and this reduces the carbon stored in a forest system. And it's in fact more complicated than that too, because it's often the leaves that are consumed and the leaves are really important for future carbon, not just current carbon, because leaves are the factories for photosynthesis of plants. And so when leaves are removed, this reduces the potential future carbon uptake, and it also reduces growth of plants.

So browsers again really affect the carbon storage and also uptake processes and then they also change the composition of the forest, in particular they reduce recruitment of species in future cohorts because the small seedlings and saplings are what they are consuming and this means that into the future there aren't the sort of the young teenage plants, I guess, coming through the system to take over when the gaps occur. We also see preferential browsing by herbivores, so they particularly like certain species over others and this

means that over time we have a reduction in the biodiversity in the forest because the unpalatable species are really favoured.

Now, we know ecologically that biodiverse forests store more carbon, and we also know that forests with higher biodiversity are better able to buffer the impacts of drought and fire and other extreme events. So, not only do we have a big story around carbon and the biodiversity of the forest, but there's also potential in future climates for these forests to be more vulnerable to extreme events in particular.

So, while we can say that the current course tools that we have available for measuring carbon don't really pick up the carbon storage impacts of the herbivores, it's certain that into the future these will be detectable and so we do need to be focusing on enhancing the control of invasive herbivores in our forests.

The third item involves the issues with pines. So, in my original affidavit in paragraphs 14 to 20 and also my reply affidavit in paragraphs 29 to 36, I didn't want a lot of details around the issues to do with *radiata pine* plantations. So, briefly here just to list those, they include fire risks, vulnerability to windthrow, allergenic pollen production, destruction caused by the harvesting processes of clear felling which lead to erosion and also issues with slash being carried downstream, the wilding pine problem, high water needs of *pinus radiata* compared to native species which use much less water, we have reduced biodiversity values and then finally vulnerability to disease and pest attacks. So, there is a long list of issues with pines. So transitioning away from pines is really important for future resilience of our landscapes and ecosystems. This will require careful management to avoid poor outcomes in the short term, but we already have some solutions which are available. So, for instance, *radiata pine* can be an effective nursery species for a range of native plants and passive restoration has been successful in some regions.

By allowing pine plantations to die off naturally as the trees reach old age, we can allow native vegetation to replace the pines where there is suitable nearby

forest for seed dispersal by wind and birds and other mechanisms. So, while there's still more research to be done in this area, making sure that transitioning away from pines is happening is a really important opportunity to be addressed.

The fourth option here or the fourth opportunity, I should say, is the One Billion Trees program and the potential that that has. So, this was discussed in the MPI evidence by Ms Collins and Mr Keenan and is a programme that has successfully supported afforestation or reforestation I should say, with native species and improved techniques for production of seedlings of native species. So, there's been improvement in processes for reforestation with native species and some expansion in the area of native reforestation happening.

So, given the agreed success of this programme, it's a fantastic opportunity to continue some really good work. And so I would really recommend that this programme be extended beyond the original 2018 to 2028 timeframe to keep doing that good work, and further there is potential to expand the program to make it also include the transitioning away from pine strategy and also to add some monitoring components to look at what processes are being – sorry, what existing activities are being successful. And so that's an opportunity to improve learnings and improve the outcomes of the programme even more.

I think this is a really easy win for the Crown potentially because it's an opportunity for climate mitigation, habitat building, and solidification of unstable lands and so I really think that is an important one to consider.

So, moving on then to the opportunities in the conservation space. These are relevant to the evidence provided by the Department of Conservation. I have three main points here. The first is the conservation under spend, the second is the limited inclusion of Māori in decision-making about how the conservation funding is spent, and the third is expansion of the conservation program beyond just threatened species management and into more landscape scale approaches.

So first, thinking about the spend on conservation. Department of Conservation is tasked with addressing the combined global crises of biodiversity decline and climate change. It is a massive problem globally but by their own calculations the Department of Conservation has been hugely under resourced by the Crown. So, their calculations is that they only get 15 percent of the budget that they need to adequately undertake conservation. And this is for here and now. We can be sure that in future climates conservation spend will need to be increased even further if we aren't putting good processes in place to prepare for those future climates. So, this is a really important point to make is that the cost for conservation is only going to increase under changing climate. And so there's a real importance that this has made more of a priority in the Crown's spending activities.

The second item has to do with how that limited availability of funds is prioritised. So, the careful prioritisation is really important when there's so little money available, but it's really unclear how Māori goals and aspirations for biodiversity and conservation are considered, incorporated and elevated in the prioritisation process.

So, in the evidence from the Department of Conservation, they talked about the bio-invest tool, and I've just got in a diagram here from the website that explains that. The DOC website says it enables us to make informed decisions about the work we choose to do because we can't afford to do everything.

So, there are 33 programmes that contribute to information that goes into the tool and this is divided up into six groups, which is shown in that diagram, ecosystems, species, threats, obligations, knowledge gaps and support. So, there's a lot of information that goes in there and the website provides some more detail on that. But in terms of looking into how Māori and Te Tiriti are included in this tool, it's not particularly clear from just looking at the website and some other information. Identified two programmes that would be relevant. Program 13 is managing statutory and non-statutory obligations, and this seems relevant to Māori, but it doesn't seem to explicitly mention Māori on the website. And then program 10 is managing taongas species, which does seem

to have inclusion of Māori, but I imagine there's potential for more to be done there.

So, just to explain that, of the 33 programmes that are part of this decision-making tool, there are only two that seemed that they could be sort of relevant to Māori and none of them are really highlighting it really well on the website. And so, that lack of really clear inclusion of Māori is consistent with the climate change response document that DOC is working with as well. So, it's one of these sort of high level documents or ways of working that is not clearly bringing it through right to the top. I'm also a bit worried about do we just consult with Māori or do we actually give Māori opportunities to be part of the decision-making, because those are different things.

So, there's a real opportunity there to improve how those processes are being done. And I will say there are some good examples of collaboration between Māori communities and DOC, but those good relationships are not consistent across the motu.

Then the third point relating to conservation has to do with the potential for expansion of landscape scale conservation efforts. So, currently there are 279 threatened species funded and this is from the evidence from DOC, but there are 542 nationally critical species in total. So, to be able to fund all of these 542 species, DOC would need an extra $55 million, and to cover the needs for all endangered species they would need a further $144 million. These are – the endangered species that are sort of not included are the ones that are at threat but not the highest risk kind of ones.

So, this is just further evidence of the massive funding shortfall that is a problem for the Department of Conservation. And this is, like, this is all focusing on individual species and while that is something that's important to do particularly for taonga species, there is potential to do more landscape scale conservation that will actually look after the ecosystem themselves to get sort of better outcomes.

So, some examples of projects that are happening in this space include the wilding pine management, Predator Free 2050, and Ngā Awa which is an iwi-led river restoration program.

So, while the Department of Conservation does have some landscape scale efforts, that needs to be expanded further because if all of the effort or some of the effort, I should say, is going into just the threatened species themselves and those species are living in diminished ecosystems then the Conservation effort in the long run is not necessarily being so great if we're putting out these endangered species into places that are not particularly healthy.

So, in summary, I would say there are some examples of good management of climate change threats by individuals and agencies on behalf of the Crown, but these actions are patchy in focus and don't address the complexities of climate change impacts on biodiversity, including the impacts of compound events, the range of indirect impacts and the fact that many impacts are difficult to detect and therefore remain unknown. So I provided a lot of detail on these kinds of impacts in my original affidavit. And so I maintain that the Crown still has a lot of opportunities to do more work there.

So, just to summarise my specific recommendations:

1. We need to expand knowledge about native tree carbon storage in different regions and climates.
2. We need to control invasive browsers in forests to maximise carbon capture and storage now and into the future.
3. We need to extend the One Billion Tree programme for climate mitigation, native habitat creation, solidification of unstable lands and enhancement of biodiversity; and also
4. Transition away from pine plantations to remove threats and the vulnerabilities of *radiata pine*.

So those are the four recommendations relating to the carbon aspects and then the conservation related recommendations are:

1. to increase the conservation spend to cover more than the minimal 15 % of the required budget.
2. To go beyond consultation and to centre the wellbeing and aspirations of Māori communities in conservation decision-making; and
3. To further expand conservation beyond the management of threatened species and really enhance the opportunities for landscape and seascape conservation actions.

Now, as Mr Vincent mentioned, I had a couple of other reflections on these other documents. So, this is some screenshots from the Priorities for Action, 2026 National Climate Change Risk Assessment which came out just last month and this particular report included the 10 most significant climate related risks that were assessed across Aotearoa, and you can see ecosystems and biodiversity forestry were two of those, and then risks in the Māori world were another one there. So three of the top 10 risks are really relating to the biodiversity and Māori situation. So, that's just really showing how – what a concern we have in this area.

And then I also have some reflections on the – sorry, excuse me – the Parliamentary Commissioner for the Environment's report, Alt-F Reset, which was examining drivers of forestry in New Zealand. And this was released in April last year. So, the Information on here is very expansive and very useful. I imagine the Tribunal will find it very helpful. And it's generally consistent with the evidence that I have provided, and also my recommendations. But I just have two reflections that I wanted to share.

The first is that I think the biodiversity values of *radiata pine* are overstated in this report and I mention that because I think it's really important that we don't think of *radiator pine* as providing suitable habitat for native species.

So, one particular example in this report, they mention Kiwi living in *radiata pine*, but we know that Kiwi are really vulnerable in drought situations as they feed by sticking their beaks into the soil to extract food and during dry conditions when the soil dries out the soil really hardens and because Kiwi are not able to

get into the soil to get their food they become malnourished and it's really not a healthy situation for them to be in.

Now, because *radiata pine* use more water than native forest species, the pine plantations will dry out faster. The soil and the pine plantations will dry out faster, which means during a drought situation Kiwi become vulnerable faster in the *radiata pine* than they would be in the native forest. And so it's just one example of the pine potentially being used by a species, but it's not a healthy situation for that species to be in. So, the biodiversity values of *radiata pine* are not good.

And then the other point I wanted to say is that I really agree with the focus on the restoration and management of existing forests. So, in the response of evidence that I've provided, I've really talked about the transition away from radiata pine and other issues associated with that. But I do want to just highlight the real importance of managing existing forests. This is really essential for future climates and there's real value in carbon and biodiversity add-ons there.

One programme that's been really successful, it was really successful, I should say, is the Ngā Rākau Taketake, and this was the three-year surge funding programme that was provided by MPI, that covered both Kauri Dieback and Murtle Rust, and it funded some really great programs including Kauri Ora, which was a great collaboration between the Crown and iwi Māori to manage Kauri Dieback. There was opportunity for capacity building and for research and monitoring and all sorts of great activities to look after Kauri forest.

Now, Kauri are really important in the forest and they are amongst the most carbon dense forests in the world because Kauri wood is really dense and then Kauri trees can grow really big. So, Kauri Dieback is in fact a big threat to carbon storage in the forests in the northern parts of New Zealand. So, this is just one example of how effective programmes can be so successful, but this funding ended in March 2024. So, it's been a real challenge for those groups to continue that work without proper resourcing.

So finally, I just want to say that meaningful partnerships with mana whenua to address climate change will benefit all New Zealanders through enhanced well-being of te taiao and tāngata, nature and people. That concludes my presentation today. Thank you.

JUDGE MILROY:

Thank you very much, Professor Macinnis-Ng. Mr Vincent, before we go to Crown questions, do you have any further questions by way of examination in chief?

FURTHER QUESTIONS OF EXAMINATION IN CHIEF FROM MR VINCENT – NIL

JUDGE MILROY:

Thank you. We'll hand over to the Crown then.

(09:26) MS SEELEY TO PROFESSOR CATRIONA MACINNIS-NG:

Q. Tēnā anō, Professor Macinnis-Ng. Can you hear and see me?

A. I can, yes, thank you.

Q. Kia ora. Ko Grace Seeley tōku ingoa, he rōia o te Karauna ahau. Just have a few questions for you today about the Maximising Forest Carbon programme and the Department of Conservation's Climate Change Adaptation Action Plan – Action Adaptation plan, sorry. So, the first on the Maximising Forest Carbon programme. At paragraph 11 of your reply affidavit, you refer there to the known direct and indirect effects of herbivore on carbon stocks.

A. Yes.

Q. And so I understand that one aspect is the Maximising Forest Carbon programme is research to understand how forest management activities can alter forest carbon stocks, and I understand that that research is ongoing. Are you aware of that?

A. Yes, I'm aware that there's some research ongoing, yes.

Q. And so, would you agree that there is still research to be done to understand the impacts of forest management activities including, for example, pest control on carbon stocks?

A. Yes, I think it's true that there is still more research to be done, but we could have started that research earlier. So, there's always potential to – I mean it's not – the things that are happening, we've known about them for a long time, so it's good to see some research, but there's more that could be done in different parts of the country, different forest systems. So, I would say that the research that's happening is perhaps a baseline minimum and there's potential for a lot more to be done too.

Q. Yes, I understand, thank you. But to get to a point of sufficient certainty to inform, for example, possible changes to the ETS, there needs to be integrity in that research.

A. Yes, I think that's true that research needs to be done well to inform the decision-making. I think there's a few aspects to it though, and I know there's a number of groups kind of working on it. I think there is potential to sort of do it better to make sure that the best things are happening. But I would also say that even though the research is still being done, it's still clear that there will be carbon gains by making sure we're controlling pests. It's just how those come out in the accounting, which is a different thing. So I think you're sort of, I'm understanding, focusing on how we detect the carbon and how we account for it, which is part of the story. But then there's also, we know it's going to have an effect, let's make sure we're doing the control now as well because it might take decades for that to come out in the wash.

Q. Yes, I understand. Just in respect of the Maximising Forest Carbon programme though, that is the intended outcome to understand the carbon accounting, isn't it?

A. Yes, yes, but I think we can still do things in the meantime while we're figuring out how to do the accounting.

Q. Sure, thank you. I'll turn now to the Climate Change Action Adaptation Plan. So, that's from paragraph 16 of your reply brief. You say there that the plan provides a solid framework as a high level document. Correct?

A. Yes.

Q. But you note two areas for improvement, and I just wanted to speak to you about the latter of those, and that is that the content on biodiversity in that plan does not capture the complexity of potential biodiversity impacts. So, firstly as a high level document and just noting it's only 21-pages long, would you agree that the plan's purpose is to support DOC to prepare for the effects of climate change rather than assessing and capturing all of the potential impacts?

A. Yes, I think that's a fair reflection.

Q. And I just propose to bring one page of the plan up if my colleague Ms Downey could do that. And if we could just go to page 12, perhaps zoom out so Professor Macinnis-Ng can see the full page, and if you could just scroll up to the top. Thank you.

WITNESS REFERRED TO PAGE 12 ON SCREEN

So, this is one of the themes in the plan and under the theme Prepare, action one is – if you could just zoom in slightly please, on green blocks. Yes, thank you. So, action one is to acquire data, and that action intends to ensure that DOC has the data needed for risk assessments at both a species level and a landscape level. And the plan there refers to the acquisition of biodiversity data and the development of a plan to acquire missing data there in the highlighted text.

A. Right.

Q. So, you refer to the need to understand potential biodiversity impacts in your reply affidavit. Would you accept that this action is a necessary step to understand those potential biodiversity impacts?

A. You're asking me if the need to do the gap analysis is a part of the step or…

Q. Yes. Does that respond to the concerns you've raised in your affidavit about the plan not addressing the potential biodiversity impacts that may arise as a result of climate change.

A. I mean, I think the need to acquire more data is definitely – I agree with that, but we do already have some information. So, I think a document like this should have some acknowledgement of what we already know and some acknowledgement of what those gaps are. I know it's a high level document, but there is more detail that's available in terms of the

fact that there are some direct impacts on certain species, there are indirect impacts. I think doing this sort of gap analysis is not taking into account what we already know and not taking into account what we already know that we don't know, if that makes sense. So, we talk about no unknowns, and I think there's potential here to do this in a more nuanced and carefully thought out way. So, in terms of my concerns around the document not addressing the complexities of climate change impacts, I still hold that concern because this material that you're showing me here from the document, it doesn't really capture that, it doesn't provide a clear path forward. So, if this is meant to be a guiding document, I'm not convinced that people who are sort of applying this document would really know what they need to do or what information they need to know to figure out what to do, if that makes sense.

Q. It does, thank you. We can take the document down now, please. So, my final question is just to confirm you're an expert plant eco-physiologist and ecohydrologist and giving evidence in that capacity?

A. Yes, but I also have expertise in impacts of climate change on biodiversity and I'm a current lead author for the IPCC assessment round seven. So, I have broader expertise around climate change and biodiversity but also other impacts of climate change and also assessing vulnerabilities and looking at adaptation options.

Q. Yes, thank you. So, in respect of the issues you've identified in terms of engagement with Māori and provision for Māori in the various policy documents issued by the Department of Conservation, you aren't putting yourself out as an expert in those matters?

A. Well, I think it's important that I don't speak for Māori, I'm not Māori, but I am a researcher who works with Māori. I collaborate with Māori, I supervise Māori students, so I'm well aware of the fact that I'm not somebody who can undertake kaupapa Māori research, but I'm definitely somebody who would, as I say, collaborate with researchers who are doing those kinds of things. And so, in this space, in 2018 and 2019, I was the president of the New Zealand Ecological Society and during that time there was a special issue of the journal, of New Zealand Journal Ecology which concentrated on mātauranga Māori and science in the

ecology space and while it didn't author any of those papers I was involved behind the scenes in securing funding and working with the team to think about how this could be done in an ethical way. I also do have a paper published with Dan Hikuroa and Tara McAllister, Māori colleagues, on looking at how science and mātauranga can work together. So, definitely won't speak on behalf of Māori in this space, but I will say that as an ecologist who collaborates with Māori, I'm comfortable saying that there's opportunity to do better collaborative work.

Q. Thank you, but just to confirm is the answer no, that you are not an expert in those matters?

A. Which – can you define what you mean by those matters?

Q. You have identified issues in respect of engagement with Māori and provision for Māori in the various policy documents, for example the CCAAP, so in respect of those matters, would you consider yourself to be an expert and are you giving evidence in that capacity?

A. I definitely have lived experience of working with Māori and helping make decisions around conservation with Māori, so if lived experience counts as expertise, and I've published a paper on that kind of space, then I'm comfortable saying that I feel capable to comment on this matter.

Q. Okay, thank you. So, your answer is yes to that question.

A. I think it is, yes.

Q. Okay. Thank you very much for your helpful evidence today and in the last hearing week, Professor Macinnis-Ng. Ka nui te mihi ki a koe.

A. Kia ora.

JUDGE MILROY:

Thank you. We haven't had any indications that other claimant counsel wished to put questions, so we now have time for the Tribunal panel to ask questions, so I'll hand over to Matua Kevin.

(09:37) KEVIN PRIME TO PROFESSOR CATRIONA MACINNIS-NG:

Q. Tēnā koe. In paragraph 16 of your brief, you seem to be highly critical of the fact that DOC's kaupapa is only looking after 4% of the species, the endangered species. If you were in charge, what would you do?

A. Well, I mean, that's a really great question because it's easy to kind of diagnose the problem, but actually coming up with the solution is a different challenge, so thank you for that question. I think when we're focusing just on species, then the ecosystem health can be left aside. I mean, there just needs to be more money put into it so that we can be undertaking or addressing the issues on a much broader scale. So, I guess, my main kind of criticism is, or suggestion is that if the Crown want to put more money into it, then there would be the potential to do much better work. So, it's about priorities, what are the things that the Crown wants to fund versus not fund, and so maybe one thing I would do is be, I would definitely be advocating for more funding to go into conservation work, particularly in a changing climate. But in terms of the specifics of on the ground projects, I think I'd like to see a lot more collaboration with Māori because I see so many Māori communities are engaged and wanting to do, to do work. So, is that a resource that DOC is missing out on if they're not collaborating well? And I think it's really important, from my perspective, that I've seen different Māori communities are prioritising different things, so making sure that those actions are happening within the rōpū of each iwi or hapū, to make sure that they are specific to the ecosystems that are there, the priorities of Māori, you know, there's lots of opportunity there. I mean, I know matua, you work a lot in the collaborative space so I'm sure you'd have some good suggestions too. And so, the kind of reason I'm highlighting the importance of collaborating with Māori is because of the real opportunities that I think exists in that space.

Q. That's fine, thank you. I just went and moved to your presentation that you gave on slide six, you talk about these threatened species and critical species, et cetera. What's the distinction – I'm not very good at English that well. Can you just distinguish the difference between threatened and critical?

A. Yes, very nice question, thank you. I should've explained it further. There are different levels of threat. And so, if species are healthy and functioning well, then they are at the lowest threat level, they are of no concern, and so we don't need to worry about them. Those are the

common species that are doing well. And then there's the next level up from that, which are ones that have got a bit of threat happening, but they're doing mostly okay. And then there's the critical ones –

Q. Sorry, can I interrupt you, sorry. Can you give an example of a threatened species.

A. I'm not really great on what the levels of – like, for particular species, but if we think of say, Kauri, as being a threatened species. So, globally that's been identified as one of the third most threatened conifer species in the world. So, from a global assessment by an overseas group, that was found to be of all the global conifers, it was the third most threatened because of logging and also Kauri Dieback. And so, that's a species that's been identified globally as being threatened. And then here in Aotearoa we also have our own kind of categorization of the different species. And so, I'm concerned that if I start naming species I'll get them wrong. I'm not really familiar with **(inaudible 09:42:04)** threat levels.

Q. No, you've given one, that's enough. What about critical species? What's an example of that?

A. So, the critical ones are the ones with the lowest numbers, and so that might be Kākāpō, is an example, so there's been lots of intensive work going into Kākāpō and lots of success there too with the increase in the population size of Kākāpō through the really careful management of that as a species. So, that is an example of a species that's had a lot of work done on it, it's very critical and they've had good outcomes. And then there are the lower level species that are not getting as much attention, they're not being funded. And often we see lots of attention given to birds species and those are the iconic species, but far less attention given to plant species. And so there's a real imbalance as to where that budget goes to in terms of looking after the rare and threatened species.

Q. So, it's birds like the Fairy tern, the Black Robin, those sort of species.

A. Yes, I'm not sure which ones are being managed by DOC, I didn't read up on that. But I'd be happy to take a further question in writing if that would help.

Q. No, it's fine. I just want to move to your recommendations on slides seven, the first recommendation. You're mindful that part of the reason

for pine was because the native trees are more slow growing, you are aware of that, aren't you?

A. Yes, absolutely.

Q. And the third, when you talk about the One Billion Tree programme, do you know how much is left in that kaupapa or how many trees have already been planted and how much is left?

A. Well, I understand all of the funding has been allocated and then MPI has a – they did have a counter on their website that sort of showed how many they were up to. I think there was some evidence from Ms Collins or Mr Keenan on that, but I can get back to you –

Q. I do recall that. Okay. That's all my questions. Thank you very much, been very helpful. Thank you.

A. Kia ora.

QUESTIONS FROM PRUE KAPUA – NIL

JUDGE MILROY:

All right. I'll hand over to Professor Williams.

(09:44) PROFESSOR DAVID WILLIAMS TO PROFESSOR CATRIONA MACINNIS-NG:

Q. Ata mārie, Professor. So, there's your plea in paragraph 40 of the #A069(a) document, "Crown needs to invest in more research monitoring and actions to address the combined crises of biodiversity and climate change", but you're also aware that for the last two and a half years at least, successful research funding grants are going to depend on showing that one of the pillars is economic growth. So, researchers for decades seeking contestable funding have always got to find ways of trying to meet the criteria that are current. And you'd be familiar with that over the years. University Researchers, CRI, they've changed their name, what was Crown Research Institute, and independent researchers all have to meet whatever the criteria is. So, I'm wondering how you can frame research which will tick the economic growth box and at the same time meet the objectives you are talking about. So, that slide that matua has just

referred to, recommendation 2 is control invasive browsers in forests, maximise carbon capture and storage now and in the future. And I'm – well, for a start, I'm very grateful for the term, the pejorative term invasive herbivores, because I have a distinct dislike of all of those creatures out in the wild, deer, goats and possums and I see far too many of them close to my lovely caravan in the bush in the Hokianga. And so I've now got a pejorative term, collective term for them, they are invasive herbivores. So, do you think you can – that researchers like yourself and others can – instead of just complain about the government changing the rules, say, "well, look, they want to meet a frame as economic growth," is maximising carbon capture and storage now and in the future, something that might tick that box?

A. Yes, that's a really good question and always a struggle for people working in kind of conservation biology. And it's just getting harder, as you mentioned. I think it helps to sort of zoom out a bit. So, last week I was in the Bahamas at the lead author meeting for Working Group 2 for the IPCC assessment, round seven and this was our second lead author meeting. So we're moving into the first order draft for this report, which will be due in 2028. And so, this report stretches across all areas of impacts, vulnerability, and adaptation that are happening globally with over 20 chapters dealing into all of the material. And I think one of the things that's really coming out to my mind and to others is just the absolute importance of healthy ecosystems to underpin our responses to the changing climate. And so, it's really challenging to you know, be thinking on kind of three-year funding cycles or three year political cycles in terms of needing to look at these things long term and in the bigger picture. But if we want to address climate change and if we want to use the options that are available in terms of avoiding the worst of the climate impacts through mitigation but also through adapting, then looking after our ecosystems has to be part of that. They are just so important for underpinning what's going. So, the nature based solutions is something that's kind of been in the literature for a while now and it's really about using nature to kind of fuel the climate kind of thing and that's had varying levels of success. There's some critique of that, but I think there's real

benefits in terms of I guess showing the economic importance of healthy ecosystems and how that feeds through to all the other kinds of health that we want. So economic health relies on biodiversity, health of humans relies on biodiversity. Everything comes back to the health of ecosystems and the biodiversity that underpins those. So I think we're working on different ways to articulate that. We can be kind of sceptical or cynical I should say is the word around saying, oh well, you know, we can do some rough calculations and justify our research. So, I think we're going to see more cynical proposals coming through people saying things like, oh, well, this is really going to solve climate change when perhaps it's not or things are a long way down the track. I think the current funding climate is not going to bring about the best research because it is focusing on areas – or it is heavily directing funds towards areas that are still emerging and might not be successful. Whereas in the conservation space, nothing that I have suggested is kind of new or novel or controversial. I think it's all pretty much a no-brainer to me. So I think that is a problem though, like you're identifying in that if it's not seen as being cutting edge or impactful in the next year kind of thing, it needs to be long-term investment. But I think to some extent, that's why approaches used by Māori are seen as being appealing because they are such long term approaches. I see climate change plans from iwi which are looking 100 to 200 or more years into the future and that's how we need to be thinking and so that's why I think DOC collaborating with Māori is so important because Māori are taking these long term views and plans. So, I'm not sure if that quite answered that question but that's what comes to mind.

Q. Well, we'll see whether the questions are answered by looking at your next research applications and see how you manage it. So, clearly you're not very much of a fan of the other invasive species *pinus radiata* and at least, you may have noticed that the Minister of Finance agrees with you on wilding pines, or something in the budget yesterday I believe. But I want to ask you a question about your criticisms of the Parliamentary Commissioner for the Environment, Alt-F Reset report which you included in your presentation this morning. You talked about the Kiwi having difficulty with hard-baked earth. My understanding of the

Parliamentary Commissioner for the Environment's report is not particularly in favour of pine as such in terms of plantation pine, but that permanent forest pine does the immediate erosion control in vulnerable areas and does the carbon sequestration quickly and eventually leads to a native reversion where Kiwi will get on perfectly fine if they're still around. So, have I got the Parliamentary Commissioner's view correctly paraphrased there? –

A. Yes, I think that's consistent with my reading of it –

Q. – And do you really think that we should not use any pine at all even in permanent forestry?

A. Well, I think that the part – I wanted to raise the biodiversity issue because I think there's been – I was concerned that that could be taken on its own and misread. So misinterpreted. So, that's why I wanted to kind of just point out that that's – it's slightly simplistic, the information on the biodiversity values of the pines. But coming back to your broader question around the sort of suggested approach from that report, I do have a similar understanding, but I think what's missing from it from my reading and from my knowledge is the thinking about the extreme events and those impacts that can have. So, if we have fire ripping through the forest that's meant to be a permanent forest, it takes – all the carbon goes back to the atmosphere. You know, it losses the carbon value that it was supposed to have. So, I would prefer we didn't plant pines because we know that they are more flammable than native species. So, we might be prioritising the pines for the carbon in the short term, but in fact it's a false decision-making process because when the fires happen they will just take out the carbon, and even though it's been taken up faster than the native forest, you know, it will be removed straight away anyway. So, we're not thinking about that fire aspect to it much at all and I didn't see much at all about the fire component, and the fire weather is getting worse here in Aotearoa and it's only a matter of time before we have those massive fires like we see in Australia and North America and even in Europe and all over the world. So, that's why we need to move away from the pine. It's the fire but it's also the windthrow and all the aspects, all the issues with pine are going to be worse under climate change.

Q. Good. Thank you. So, is there any – I don't suppose you can have research data on the fire risk because we haven't changed the climate badly enough yet to increase it to North American standards, so to speak? Is that right?

A. There has been some analysis on fire risk, yes, and it's going to increase in New Zealand. There are some researchers who work on that. I could come back with some written information if that will be helpful.

Q. Yes, fire risk is something that would be important. There has been some examples in Hawke's Bay recently and so on. If you can treat that as a written question from me, as a question from me to be answered in writing by you on the fire risk research –

A. Yes.

Q. That will be useful.

A. So, there's been some analysis from the climate perspective, which is part of it. So, that the climate component is things like the dry weather, yes, the dry weather, the wind and the warming temperatures and then that interacts with the plants and that's the, you know, when they're drying out and then they become more flammable. So, there's interaction between the weather itself, which is what the climatologists measure, and then what happens in the forest system, which is more what I kind of measure in terms of the flammability of the plants, but also how that changes under particular conditions. So you can imagine when a drought occurs, the plants dry out and then they just burn more easily, and the fire is more fierce. So, are you interested in more details on those aspects?

Q. Yes, just a bit of research data on that would be very good, yes, thank you.

A. Okay.

Q. So, those are my questions thank you, thank you very much for your evidence.

A. Kia ora.

(09:56) JUDGE MILROY TO PROFESSOR CATRIONA MACINNIS-NG:

Q. Thank you, Professor Macinnis-Ng. Everyone seems to have picked the same questions to ask. I've just got one more, I think one more, and that

is in relation to – you mentioned in – I'm not sure which page of your PowerPoint presentation it is, but it's got the heading Opportunities for Conservation and you've mentioned some landscape scale successes including iwi-led Ngā Awa have the opportunity for expansion, and I wondered if you could tell us a little bit more about that because we have been hearing a lot of bad news stories here, so it would be good to hear something good to end our week on.

A. So, Ngā Awa was actually mentioned by Ms Knowles in her evidence as an example of the Crown activities. So, it's not a project that I'm deeply aware of, but there is – I did a Google and kind of found it and it looks like a really promising, you know, a great collaboration on a particular area because it's locally based, it's about a particular issue. It's focused on working together and collaborating. It's just a beautiful example of how the Department of Conservation can work together with iwi in some places around the motu and shows that there's further opportunity to do that a lot more with good relationships with all the iwi across the motu, then that's I think a nice example of how things can work in a positive way.

Q. All right, thank you, thank you for that. I'm just checking my notes to see – I've got a note here now which I'm not really understanding myself and it was when you were talking about the transition away from pine and I've got the words passive restoration and a question mark. Can you explain a little bit more about that?

A. Yes, sure. In restoration approaches, they can be really intensive where there's lots of human intervention. And so, when we go out and plant trees, that's an active approach. Where, the seeds are collected and then the plants are grown up in a nursery and then they're taking out into the field and planted. That's really labour intensive and quite expensive. Passive approaches are where we kind of almost let the land heal itself and here in Aotearoa often that involves just fencing it off from cows and sheep and letting it return, or also undertaking sort of pest control can be part of that as well. And through those passive processes where there is a nice nearby patch of native forest then the seeds will disperse by wind and also by birds and other processes and they'll just come in and start

growing in the area. So, passive restoration is much cheaper. It can take longer, and it does really require there to be a nice kind of forest nearby to provide the source of the plants. But there's lots of opportunity to be doing passive restoration as a process for recovery of pine areas.

Q. Yes, I do recall there was a programme called Ngā Whenua Rāhui where money was given to Māori land trusts to fence off areas of native forest and to conserve and preserve them. I'm not sure what's happened to that programme, but it was a way of – you know, if it could have been expanded in the way that you're suggesting in terms of passive restoration because it was often done in areas where the opportunities for economic farming were minimal. It would be nice. It could've even expanded. But I'm not sure what's happened to that programme.

A. Yes, it's not one I'm familiar with, but it's a good one.

Q. Yes. Yes. Well, thank you very much for your evidence, Professor. I'll hand you back to your counsel in case there are any questions by way of re-examination.

QUESTIONS OR RE-EXAMINATION FROM MR VINCENT – NIL

JUDGE MILROY:

Yes, so thank you again. We've enjoyed your evidence very much. Thank you, especially that you've given recommendations which helps us with our considerations as well.

So, that ends the evidential part of our hearings. We have closing submissions to come. There are a few matters that I can give you some information on during the judicial conference – this is for counsel. During the judicial conference, I mentioned the issue in regard to the availability of the transcripts. I can say that the hearing week four transcript is not too far off as they're just finishing day 5 of that hearing week. In terms of hearing week five, that has been completed, so it should be sent out very soon. In terms of hearing week six, the National Transcription Service is about to get started. on that one, and we've got no word in relation to hearing weeks seven. And there will be

changes to those settings if there are more urgencies to transcribe and so on. So, that's just giving a timeframe for those transcripts.

Now, I mentioned at the beginning of Professor Macinnis-Ng's Evidence that the Full Risk Assessment Report is #A165, and I can also give the number for the Priorities for Action Risk Assessment Report which is #A025(f) at Pages 74 to 210 of Professor Naish's bundle. So, those are just some admin things to finish off the week.

Can I just thank counsel for helping us to manage this week. In terms of the evidence, we've had wonderful evidence from very high quality witnesses so I'm very appreciative of that, as is the panel. So we have a lot of very interesting and thought-provoking evidence to consider, and no doubt you will – counsel will be able to help us with that in terms of the closing submissions when we finally get to them. So, can I thank everybody for bringing that evidence before the Tribunal. Also can I, before I forget, can I thank Alan, our technical person, our technical magician, and also our staff for the really titanic efforts that they have to go through to keep us on the road. So, with those thanks I'll just hand over to our kaumātua to close for us.

KARAKIA WHAKAKAPI (KEVIN PRIME)

HEARING CONCLUDES: 10.06 AM

MINISTRY OF JUSTICE
Tāhū o te Ture

Notes of Evidence Legend

National Transcription Service

Indicator	Explanation
Long dash –	Indicates interruption: Q. I think you were – (*Interrupted by A.*) A. I was – (*Interrupted by Q.*) Q. – just saying that – (*First dash indicates continuation of counsel's question.*) A. – about to say (*First dash indicates continuation of witness' answer.*) This format could also indicate talking over by one or both parties.
Long dash (within text)	Long dash within text indicates a change of direction, either in Q or A: Q. Did you use the same tools – well first, did you see him in the car? A. I saw him through – I went over to the window and noticed him.
Long dash (part spoken word)	Long dash can indicate a part spoken word by witness: A. Yes I definitely saw a blu – red car go past.
Ellipses … (in evidence)	Indicates speaker has trailed off: A. I suppose I was just… *(Generally witness has trailed off during the sentence and does not finish.)* Q. Okay well let's go back to the 11th.
Ellipses … (in reading of briefs)	Indicates the witness has been asked to pause in the reading of the brief: A. "…went back home." The resumption of reading is noted by the next three words, with the ellipses repeated to signify reading continues until the end of the brief when the last three words are noted. A. "At the time…called me over."
Bold text (in evidence)	If an interpreter is present and answering for a witness, text in bold refers on all occasions to the interpreter speaking: Q. How many were in the car? A. **There were six.** Q. So six altogether? A. **Yes six** – no only five – **sorry, only five.** *(**Interpreter speaking** – witness speaking – **interpreter speaking**.)*
Bold text in square brackets (in evidence)	If an interpreter is present and answering for a witness, to distinguish between the interpreter's translation and the interpreter's "aside" comments, bold text is contained within square brackets: Q. So you say you were having an argument? A. Not argue, I think it is negotiation, ah, re – sorry. **Negotiation, bartering. [I think that's what he meant]** Yeah not argue.