

REPORT ON PROCEEDINGS BEFORE

JOINT STANDING COMMITTEE ON NET ZERO FUTURE

2024 ANNUAL REPORT OF THE NET ZERO COMMISSION

At Jubilee Room, Parliament House, Sydney, on Friday 14 March 2025

The Committee met at 9:15.

PRESENT

The Hon. Jeremy Buckingham (Chair)

Legislative Council

Ms Sue Higginson
The Hon. Jacqui Munro

Legislative Assembly

Ms Liza Butler (Deputy Chair)
Ms Jacqui Scruby

PRESENT VIA VIDEOCONFERENCE

The Hon. Dr Sarah Kaine
The Hon. Cameron Murphy
The Hon. Bob Nanva

Ms Trish Doyle

* Please note:

[inaudible] is used when audio words cannot be deciphered.

[audio malfunction] is used when words are lost due to a technical malfunction.

[disorder] is used when members or witnesses speak over one another.

The CHAIR: Welcome to the hearing of the inquiry of the Joint Standing Committee on Net Zero Future into the 2024 annual report of the Net Zero Commission. Firstly, I acknowledge the Gadigal people of the Eora nation, the traditional custodians of the lands on which we are meeting today. I pay my respects to Elders past and present, and celebrate the diversity of Aboriginal peoples and their ongoing cultures and connections to the lands and waters of New South Wales. I also acknowledge and pay my respects to any Aboriginal and Torres Strait Islander people joining us today. My name is Jeremy Buckingham. I am the Chair of the Committee.

I ask everyone in the room to please turn their mobile phones to silent. Parliamentary privilege applies to witnesses in relation to the evidence they give today. However, it does not apply to what witnesses say outside of the hearing. I urge witnesses to be careful about making comments to the media or to others after completing their evidence. In addition, the Legislative Council has adopted rules to provide procedural fairness for inquiry participants. I encourage Committee members and witnesses to be mindful of these procedures.

Dr GEORGINA WOODS, Head of Research and Investigations, Lock the Gate Alliance, affirmed and examined
Mr NIC CLYDE, New South Wales Coordinator, Lock the Gate Alliance, affirmed and examined
Mr HOWARD WITT, Director, Citizens' Climate Lobby Australia, affirmed and examined
Mr RICHARD WELLER, Member, Citizens' Climate Lobby Australia, affirmed and examined
Ms VIRGINIA YOUNG, Director, Wilderness Australia, before the Committee via teleconference, affirmed and examined

The CHAIR: To our witnesses, welcome and thank you for making the time to give evidence and make submissions. Do you wish to make opening statements?

GEORGINA WOODS: Yes, we do. Thank you very much, Chair, and thanks to the Committee for having us here today. I think it's fair to say that all of us last week watched as ex-Tropical Cyclone Alfred approached the northern New South Wales coast and communities in the north-east prepared to face again, for the third time in eight years, catastrophic impacts of extreme weather. And we know that events like that are predicted to become more frequent in New South Wales as cyclone conditions move poleward as a result of climate change.

It goes without saying, we think, that making sure that the Net Zero Commission is supported to fulfil its crucial role on emissions reductions and adaptation in New South Wales is a priority for every person in this State, especially those facing the escalating physical risks and costs of climate change, whether it's increased insurance premiums, rising food prices, or loss and damage to their homes and livelihoods. But we're here today—Lock the Gate—to talk mostly about coalmining because direct greenhouse gas emissions from coalmines are a really significant source in New South Wales. They occur through the operation of mining equipment, trucks and machinery, and also when coal seams are mined and directly release methane and other gases into the atmosphere from the coal seam. There's obviously also considerable downstream emissions as a result of coalmining when that coal is burnt in power stations here and overseas.

The first annual report from the Net Zero Commission spells out that greenhouse gas emissions from 22 proposed coalmine extensions and expansions pose a major challenge for the State's regulatory arrangements and that emissions associated with extending coalmines will require all other sectors in New South Wales to make greater emissions reductions. We do not believe that other sectors of the New South Wales economy should carry the can for big expansion plans of the coalmining industry that put New South Wales's emissions reduction targets at risk and everybody in New South Wales in the path of escalating climate change impacts.

Just to kind of set the scene, I guess, about the coalmining industry, of the 38 coalmines currently operating in New South Wales, 27 already have approvals to mine coal that extend to 2030 or beyond. Quite a few extend into the 2040s. We already have a lot of production approved and in the pipeline. Then most of the coal that we are mining in New South Wales is thermal coal and only about 15 per cent of it is used here in New South Wales; the vast majority of it is exported for use overseas, so it's not an issue for our own coal and electricity supply. Despite that, there are at least 19 coalmines now seeking to extend their approvals even longer, beyond their current end dates, and at least six of those are actually trying to get approval now to get extensions that don't even start until after 2030. We think what's happening is essentially that the coal industry is trying to exploit the current gap in the regulatory arrangements in New South Wales to bank approvals and essentially what that means for this State is locking in greenhouse gas emissions from the coalmining sector and putting this State's greenhouse gas emissions targets at risk, and obviously also putting the people of New South Wales at greater risk of the damage of climate change.

As the Net Zero Commission points out in its report, the direct emissions from those extensions represent a major threat to meeting the targets. Just six of them included in the modelling by the New South Wales Government would be about 1.8 million tonnes of emissions—just the extension projects in 2030—which is about 20 per cent of the modelled shortfall in that year. Downstream emissions are obviously extraordinary and huge—about 2 billion tonnes of greenhouse gas emissions in downstream emissions from those mine extensions—and I think it's worth the Committee's attention that the fugitive emissions sector, which is the gases that get released from the coal seam as part of the mining process—mostly methane—is the only sector in the New South Wales economy that's actually predicted to increase its greenhouse gas emissions between 2021 and 2030. All of the others in the modelling track down in that decade. But fugitive emissions, which is basically from coalmining, go up between now and 2030. That's because they have accounted for a number of these expansion projects—not all of them—in the emissions trajectories.

That is a huge problem because methane is a much more intense greenhouse gas than carbon dioxide. It has a very strong global warming impact over a short period of time. It has been responsible for about a third of

the global average warming that the world has experienced so far. That means there's also a great opportunity, because reducing methane in the short term actually buys time to achieve the Paris temperature goals, which are obviously also written in as purposes of the New South Wales net zero future Act. That's why the International Energy Agency has recommended reducing emissions of methane from fossil fuel sector by 75 per cent by 2030, by the end of this decade, which is not what New South Wales is planning to do.

New South Wales really can't afford to have a coalmining sector that's on a trajectory completely at odds with the rest of the State and with the interests of the people and businesses and the future of this State. I guess we would also just like to note that those expansions are not just a problem for emissions but also economic difficulties, because we're not really facing a situation where we need to create jobs in New South Wales. We've got a labour shortage and a tight materials pipeline. The NSW Productivity and Equality Commission recently highlighted that demand for skilled workers for major projects, like infrastructure and mining, would divert workers with relevant skills from housing and renewable energy developments. So we really are in a situation where we choose where we're putting our energy. Are we putting it into solving the housing crisis and building renewable energy or are we allowing the mining industry to continue dominating the labour market and using up those skilled workers? The Net Zero Commission made the same finding in their report, that a shortage of workforce capacity is a key risk for the delivery of the renewable energy targets.

I guess our overall recommendations to the Committee today are that you support the Net Zero Commission to use its functions under section 15 of the Climate Change (Net Zero Future) Act to produce a dedicated report on coalmining, and they have indicated that they would like to pay attention to this problem, the risks that coalmining expansions pose to the New South Wales climate targets and the purposes of the Act; to advise on a coal sector target and overall plan for the sector; to ask the New South Wales Government to pause any further approval of coalmining expansions in the interim—we already have enough coal approved to be mined and there's no need to progress these current applications while we are trying to understand the scale of this problem; to ask the New South Wales Government to urgently develop a regulation under the Climate Change (Net Zero Future) Act to place a clear duty on decision-makers to prevent climate harm in determining major projects and, in the process, scrap the outdated *Strategic Statement on Coal*, which is, we believe, an impediment to New South Wales achieving its goals.

NIC CLYDE: I'd just like to say that the NSW Productivity and Equality Commission's mission is to provide objective evidence-based advice to the Government of New South Wales. They recently produced their own net zero issues paper. They were very clear in that advice that "Unless action is accelerated ... we will fail to meet our nearer term targets." We all know in this room the Net Zero Commission have the same advice, "considerable upscaling and acceleration in activity will be required" to meet those targets. We urge this committee to heed the advice of these two institutions, the former set-up under the Coalition, the latter set-up by the Minns Labor Government. The Productivity Commission also said that many activities need policy change to reduce emissions, including "fugitive emissions from coalmining". Minister Sharpe acknowledged this last year, telling a budget estimates hearing in August:

Fugitive emissions are a big problem. They will impact on our ability to meet our targets. There is no doubt about that.

There's a lot more information in our submission, Mr Chair. We're very honoured and happy to be here to speak to our submission. I also have three visual aids that I'd like to table, one about just demonstrating the coal expansion pipeline in New South Wales, one from the Future Jobs and Investment Authorities paper, from Courtney Houssos, just demonstrating the closure timeline of coalmines. The final one is in reference to George's point about fugitive emissions from the coal sector being the only sector projected to increase their emissions. So I hope that assists the Committee.

The CHAIR: If we could get a copy of those, we'll have a look and then we'll consider tabling and publishing those. The Citizens' Climate Lobby, do you wish to make an opening statement?

HOWARD WITT: Yes, certainly.

RICHARD WELLER: I'll do that.

HOWARD WITT: I'll just start by introducing myself. We did provide some copies of our handouts to the secretariat. May I ask that they be circulated? We forwarded them earlier. I'm about to introduce myself, so just in case I say something wrong, it's written down. I have a degree in electrical engineering. I'm also a proud grandfather of four grandkids. I worked at ANSTO for about 30 years, and then I became a private consultant in risk and reliability. I'm a founding member of Citizens' Climate Lobby and very concerned about climate change.

I got interested in climate change reading Dr James Hansen's book *Storms of My Grandchildren*—certainly a great book. Called the father of climate change, he introduced the problem to the American Congress about 34 years ago. He's still advocating action today. My assessment is that part of the root cause of inability of

parliaments to act on this adequately is a lack of public awareness, and the part of the submission we made in writing, that Dr Angove made in writing, we'd like to emphasise at today's meeting is about the possibility of the Parliament of New South Wales and its public servants helping to improve public awareness, particularly through the regions. We believe the level of public awareness of this problem is absolutely atrocious, and until the people get aware of just how bad the future will be, politicians aren't in a position to act. Thank you.

RICHARD WELLER: I'm a retired structural engineer. For a couple of decades in my professional career I was involved with the Australian Standards, covering the design of structures for extreme events to achieve safety. These legislated standards allow engineers to safely apply the outcomes of scientific study to the real world. So I understand the science of extreme events, how we characterise them, how we measure them, what their impacts are and how our built structures are affected by them, and, of course, what is happening to them today as they're getting more intense. I've also been studying climate science for more than 20 years, and I have a thorough understanding of the physical risks that we face and that extremes pose to our community. We appreciate that political candidates need to differentiate themselves and extol their and their own parties' virtues for elections, but the need for rapid transition to low-emissions technology is far too important for it to become a political football.

We wish to acknowledge and appreciate that within the New South Wales context, bipartisanship on this issue has been more applicable than in a lot of other locations. We commend our submission, prepared by Dr Angove, to the Committee. Today we wish to emphasise the need for a far greater awareness to drive the transition. Public consultation is important but without a government-driven information campaign, especially to the regions, as Howard said, the view provided by citizens will only be a reflection of media commentary, a forum to express gripes, and an excuse for wishful thinking on impacts—and it is very wishful. Nobody wants to think that our children and grandchildren's futures are to become increasingly dire because of our generation's collective inaction. We are a fortunate community that likes to build on more of the same great progress. Who wants to be the wet blanket?

However, there is an onus on those in authority to exercise responsibility and make it quite clear to the citizens the consequences of humanity's procrastination in this issue. The implementation of carbon pricing, as is proposed by the Citizens' Climate Lobby, is vital to effectively driving the transition. This is not politically achievable without a greatly increased public awareness of the consequences of not having such a powerful economy-wide driver in place. The unique thing about the CCL proposal is that the money is not tax. The money is returned to every individual in the community, directly, without going through coffers of the Government. Please maintain and extend a multi-party-wide approach and implement creative approaches to improve public awareness of the consequences of delayed action. Improved public awareness is the driver for political imperatives, and thus effective government policies and programs flow from that awareness.

An effective approach would be for the New South Wales Government to combine the explanation of the range of likely climate impacts with the benefits of carbon pricing, and include direct adaptation training broadly across the State. New South Wales citizens need this support, as does the rest of Australia. New South Wales cannot solve the climate crisis alone, but any further dragging of our feet will be deadly. The world desperately needs more examples of successes in rapidly implementing a climate transition and impact abatement, so that others may follow.

VIRGINIA YOUNG: I realise that I've omitted in my description of what I do, that I'm actually a senior research fellow with Griffith University and it's through the university that I work in the international policy space on climate and biodiversity. The documents that I've referred to in that opening paragraph are documents that I've led in my role with Griffith University. The decisions that are also referred to in my submission by the UNFCCC—following the global stocktake at COP28 on nature, and the recent decision of the convention on biodiversity at COP16—are decisions that I and others have actively contributed to. I just thought I'd clarify that.

You'll see the focus of my submission is very much on what you term the land sector, which is where all the ecosystem-based carbon dynamics are currently considered by both the Federal and State governments. The reason that's so critically important is it's traditionally been a balancing item in national accounts, as the land sector has been relied on as a net sink, and to offset a significant proportion of our fossil fuel emissions. As your report wisely notes, this is a high-risk strategy for achieving the reductions in emissions that we need to achieve if we're going to have a liveable future.

My submission focuses very much on the importance of factors that are just starting to be considered in the international policy space. My hope is that the work program that's being opened up by the CBD, with the UNFCCC, will help things get a bit of a move along. What's very clear is that the integrity of ecosystems, including our most carbon-dense ecosystems—and in New South Wales's case, that's our native forests—is critically

important for assessing the risk to current and future carbon stores or reservoirs, as they're referred to in the climate convention, and retaining their ongoing ability to sequester and retain carbon over the long term.

The single most important point in my submission is that we need to understand the integrity of our carbon-dense ecosystems. That will require, in my view, an independent assessment of both the current carbon reservoirs and the potential of those carbon-dense ecosystems to recover their original carbon stocks—or what is their recovery potential, in fact—in the face of increasing threats from climate change. One of the most important things to understand is that climate change interacts with past damage to increase the severity of the impacts. And you see that with fire, where it's very clear that past logging exacerbates fire severity. These are complex, dynamic systems that require a move away from simply looking at whether or not an ecosystem is a net sink or a net source, or what's happening to the sink. The condition of ecosystems really matters, particularly our carbon-dense ecosystems, which store vast amounts of carbon.

The only time I've seen an independent assessment was the one done by ANU in 2009. It's referred to in the report where—and this is for the whole east coast zone of Australia, so from south-east Queensland down into Tasmania—there was some 25.5 billion tonnes of carbon estimated to be currently in the forests at that time, with the potential to recover 7.5 billion tonnes of carbon. No-one's done a recent analysis for New South Wales, and it would be helpful to do so to look at current carbon stocks and recovery potential in light of the integrity of the forests. You'll see a very big difference between the stability, resilience and risk to forest carbon stocks, depending on when it was they were last logged. Long-unlogged and old-growth forests are far more stable and resilient to climate impacts, and far more able to retain carbon and resist the pressures from climate change over at least the medium term. All bets are off if we don't rein in our fossil fuel emissions.

One of the things that is being increasingly talked about in the international arena is the need to separate out targets for emissions reduction and removals, and start looking at gross figures and where management actions can best be changed. So disaggregating gross emissions and removals in the land sector is another critical step that needs to be taken. The other important step that the report doesn't make much of, but it is in the introductory comments, is the need to place a cap on the use of offsets and establish a mitigation hierarchy for those wishing to take advantage of offsets, so that they clearly are only used as a last resort and as part of a very clear decarbonisation plan.

Most other countries have caps on the use of offsets, and Australia is in a ridiculous position of—it's arguable as to whether or not the Safeguard Mechanism provides any kind of valid cap, but it's nowhere near the kinds of caps that are required if we're going to decarbonise rapidly and not take the risky path that we're doing now of allowing short-term offsets—which is what most of the offsets in the land sector are—and fairly high-risk offsets to delay an exit from fossil fuels.

They're the main points in the submission. It does lead to the conclusion that one of the most effective ways of helping New South Wales meet at least its 2030 targets and 2035 targets would be to end native forest logging. Now, I know that the Government has gone down the pathway of looking at offsets as part of its, I suppose, climate solution, but that's a zero-sum game. All you're really doing is trading off the reductions in one sector against ongoing pollution in another, which seems to me a tragedy when these are publicly owned native forests that we have an obligation to understand what their best role for climate mitigation is, and where the more Mickey Mouse end of the spectrum is. That's all I wanted to say in my introductory comments, and I'm happy to take questions, including those on notice. I'm not even sure whether you received the final, fully referenced version of my submission, so there may well be questions about the science references, which I can provide.

The CHAIR: We certainly did. We've got that, and that that is available to all the Committee. Thank you all for your introductory statements.

The Hon. JACQUI MUNRO: Thank you all for coming and for your submissions. I wanted to start off with Dr Woods and Mr Clyde just on the methane element, because I'm also aware that the agricultural sector have massive methane emissions. I'm curious about the VAM abatement—ventilation, air, methane abatement—and if you think that is a reasonable tool that can be used to actually capture the obviously damaging methane emissions from different sectors?

NIC CLYDE: That's a great question. I think this is one of the big questions for this process, actually, in your advice to Government. I understand that there's a submission to this Committee from Peak Carbon Capital—a gentleman there who represents a company that has global expertise in ventilation air methane management. For those of you that aren't across that, that's the very dilute methane that's expelled in enormous quantities from our underground coalmines in New South Wales. It's the single biggest emissions problem in the New South Wales coal sector. None of our mines are implementing VAM abatement. The Peak Carbon Capital submission points out that technology is quite well established and is being implemented overseas.

It's a very, very important issue for this Committee. There's a new United Nations report that speaks to some of the concerns that have been raised in New South Wales around safety issues, cost, performance of that technology in the specific environment that we have in our coalmines in New South Wales. The evidence, I understand, from the sector and from this gentleman in particular, is that it is absolutely doable to implement VAM abatement at most of our underground coalmines. The New South Wales Government itself commissioned a consultancy, Palaris, to study this problem. They came back several years ago and said—they looked at eight of the gassiest underground coalmines in New South Wales.

Their advice was that VAM abatement is viable at seven of the eight mines that they looked at, and at a cost that was roughly one-third of the cost of an ACCU on the spot market right now. Average weighted cost of about \$13 a tonne of abatement. It'll cost triple that to buy an ACCU now. I do note that Minister Sharpe, when the Australian and State energy Ministers signed up to agree on a value of avoiding one tonne of carbon—this year, the cost of avoiding one tonne of carbon is valued by our energy Ministers and the Federal energy Minister at \$75 a tonne. That increases dramatically as we go forward. So the idea that our industry here, a \$45 billion industry, thinks that it cannot afford to abate these significant emissions at a cost that's one-third of the price of an ACCU, is absolutely absurd and should be called out by this Committee.

GEORGINA WOODS: To follow up from that, I believe the Peak Carbon submission basically indicated that that company has discussed this matter with the New South Wales industry, and the industry has basically indicated to them that they are disinclined to implement VAM abatement without additional regulatory or commercial incentives. So they need to be made to do it. That's our inference from that submission. But it is a really important point because, as I think it's worth elaborating, there's a very large fugitive emission coming from a small number of mines. Implementing VAM abatement at half-a-dozen coalmines out of the 38 operating mines in New South Wales would cut a huge amount of methane now, before 2030, and just make an enormous difference to the atmosphere.

The growing methane problem out to 2030 isn't just from the undergrounds, it's from the open-cuts as well because, even though they have a smaller per tonne emission of methane, they are so enormous and they are mining deeper seams that they are increasing their methane emission as well. The Hunter Valley Operations Continuation Project was mentioned by the commission in their report. Just astronomical volumes of greenhouse gases from that proposed project because they're going into deeper seams that tend to be gassier. Unfortunately for open-cuts, the opportunities to prevent the methane getting into the atmosphere once they've started mining the seam are gone. So the only option for open-cuts is to avoid mining gassy seams or to pre-drain prior to mining commencing, which has happened at the Bulga mine. So it's possible. The industry moans and complains about various geological impediments. You'd have to speak to them about that, but it's certainly doable.

The Hon. JACQUI MUNRO: Do you have any information about how much that abatement in those seven of eight mines would actually stop, in terms of a volume, by 2030? Or could you point us to some evidence on that?

NIC CLYDE: It's a great question. I will take that on notice. I will just say that there are two reports, and these are mentioned in DCCEEW's 2023 methods paper, which is a great thing that the DCCEEW does in the State of New South Wales—publish a paper that explains how they model emissions on the net zero dashboard. In that paper, they make reference to two consultancy reports paid for by the New South Wales Government—by the punters, the taxpayers in this State. One of them Lock the Gate obtained from DCCEEW, which we are grateful for. The other was commissioned by NSW Resources. They spent \$80,000 of public money on a report, and they denied our freedom of information request for that report. This is another utterly absurd situation. And when we have conversations with—

The CHAIR: Sorry, what was that report?

NIC CLYDE: It's a report on ventilation and methane abatement opportunities at New South Wales coalmines. So you've got that.

The Hon. JACQUI MUNRO: That's the title of the report?

NIC CLYDE: No, sorry, that's not the title; that's what it's about. I think I make reference to it in our submission, but I will take that on notice.

The CHAIR: Could you get back to us on that one?

The Hon. JACQUI MUNRO: That's helpful. I know this might not be exactly your wheelhouse, but do you know anything about how the agriculture sector might use this? Do they just suffer from the problem that, actually, they're so open air that they can't really capture?

GEORGINA WOODS: It's pretty challenging in agriculture, and I think that's why it's useful for the Government to focus on the industrial sectors, because agriculture is a very diffused source. So there are various strategies. The commission's report does talk about the opportunities in agriculture. I suppose our other perspective on this is that, as the commission says in their report, the agriculture sector and the land sector are kind of hand in glove, because a lot of the land sector sinks that Virginia was talking about are actually to do with private land holdings of agricultural enterprises, planting, blah, blah, blah. And so as far as we see the situation, the land sector has done a great deal of the work in meeting greenhouse emissions reduction commitments so far and, as Virginia pointed out, are going to become an increasingly uncertain, unreliable sink.

It's kind of like agriculture has done a lot of work, even though the agricultural sector itself hasn't achieved great emissions reduction, the land sector is contributing so much. And also, I think it's worth the Committee noting that, in terms of methane from agriculture, there is a thing called the natural carbon cycle, right? Vegetation dies, emits carbon dioxide, vegetation grows, absorbs carbon dioxide, animals eat it—it's all passing through the ocean and the sky and the living biosphere all the time. That's a system that can conceivably be brought into balance. Management of the beef industry can bring that into balance. Digging up sequestered carbon that is the dead remains of creatures that were alive millions of years ago is reintroducing into the system carbon that has been locked away for a long time. So, for us, it's just a fundamentally different equation, if that makes sense.

The Hon. JACQUI MUNRO: Yes.

The CHAIR: It certainly does.

Ms SUE HIGGINSON: It makes sense.

The Hon. JACQUI MUNRO: I'm curious about the role of the Independent Planning Commission in this, and if you've had any interaction with the commission, or how you see their role in the light of—obviously, you've got the planning department, you've got DCCEEW. Where does the Independent Planning Commission sit, and how should they be utilised better?

GEORGINA WOODS: I'll start, if I can. The Independent Planning Commission's role under the Environmental Planning and Assessment Act is triggered when there are certain thresholds met for applications for development consent—if there are more than 50 objections, if local government has objected or if there is a political donation. That never occurs for an application to modify a development consent these days. The rules were changed so that the IPC has no role in determining modifications. Some of these coalmine expansions are being treated by the department of planning as modifications of existing consents. For those that are treated as new projects, the IPC will be the consent authority if those thresholds are met. Our concern—which is the reason we recommend that the Committee address the need for regulation under the Climate Change (Net Zero Future) Act—is that the department of planning isn't sort of directly charged, at this point, under statute to achieve the goals of the Climate Change (Net Zero Future) Act.

They are making assessments—and, in some cases, decisions—that are material to New South Wales achieving not just its mitigation goals but its adaptation goals as well. So they need that legislative statutory hook through the regulation to say, "When you are executing your public responsibilities, you must be doing so in keeping with these goals." That's why we think the regulation is really one of the big missing pieces. The Independent Planning Commission has discretion to—they will consider the Climate Change (Net Zero Future) Act. That's been brought into the planning system by a ministerial directive. But it's just a little uncertain, to be honest. And the commission is on a very tight time frame generally to determine projects once they're referred to them. So we think that the whole system would benefit from a little more up-front certainty, particularly, as we said, where there are legacy policies that pre-date the net zero future Act that are in direct conflict with its goals, that are essentially pulling against the goals and purposes of the net zero future Act, like the Strategic Statement on Coal Exploration and Mining in NSW.

The CHAIR: On that, is your view that if there is a modification to a project and it meets a certain threshold in terms of scale then it should trigger the IPC again?

GEORGINA WOODS: Yes. It used to be that if modifications attracted a large number of objections from the community, they would be determined by the IPC. They put a stop to that. I can't remember how many years ago. So, yes. Some of these modifications are quite minor, but some of them are substantial and they have impacts not just greenhouse gas emissions, but water impacts or air quality. The communities—out in Maules Creek, for example—get very distressed about continuing modifications of the mines out there that they don't really see have the same checks and balances in the process.

The Hon. JACQUI MUNRO: I do have more questions, but I'm mindful that other people will as well.

The CHAIR: I'll just ask one. Not only are our fugitive emissions from coalmining predicted to increase, your submission outlines that there's a lot of doubt about whether or not we're actually reporting the true scope of fugitive emissions. Could you expand on that? You refer to the Open Methane project. Could you expand on that?

GEORGINA WOODS: Do you want to?

NIC CLYDE: Yes, I'm happy to speak to that. This is something that is becoming more and more accepted, I think—that there is a methane under-report from our coal sector. I'm going to a forum this afternoon as part of Climate Action Week Sydney to talk about this. It's also something that the New South Wales Government recognises. There was a submission last year from New South Wales DCCEEW to the Federal Government as part of their Safeguard Mechanism reform inquiry. I'll quote to you what New South Wales DCCEEW said to the Federal Government:

There is recent evidence that fugitive emissions from coal mining may be significantly higher than currently estimated by the industry.

So there is clear recognition here from the New South Wales department that's in charge of modelling these emissions. Thank you for raising it, too, because this is obviously an immensely significant issue for this Committee. The modelling that's on the Net Zero Emissions Dashboard now says we already have a 8½ million tonne shortfall in 2030 to meet that legislated target. There are 14 coal extensions that haven't even been included in the modelling that projects the 8.5 million tonne gap. When those projects are included, we expect that gap to grow.

On top of that, if it turns out that the open-cut methane emissions, in particular, are dramatically being under-reported at the moment—and the estimates are in our submission; it's probably by a factor of about two. So the boffins are saying that the actual emissions are probably double. This is a major problem and it's why, in our submission, we say that there needs to be a pause on the determination of these projects because we're simply not on top of what the mines are already emitting and how bad the emissions may be from future expansions. Why would you approve these emissions now for some projects that don't even start until 2035? Why are we feeling it's so urgent to approve these expansions now? Why don't we simply get on top of the problem, pause and request some specific advice from the Net Zero Commission. The commission themselves say they've reserved capacity to respond to requests from the Minister for Climate Change in this State for such advice.

The CHAIR: There's a footnote here from the Superpower Institute, which is very helpful for the Committee. I'm sure the secretariat could find it, but if you could provide that DCCEEW submission to the Safeguard Mechanism inquiry that would be very useful as well.

GEORGINA WOODS: Chair, I think there's a very important add-on to this, which is there is so much uncertainty in estimations of fugitive methane and there also is no time to wait until we understand and have accurate reporting before we start reducing those emissions. It is 2025. We have to reduce by 75 per cent fugitive emissions from fossil fuels in the next five years to give us a chance of keeping New South Wales's own statutory goals in line. We can't afford to wait until we've got accurate reports before we start acting. That's why we say take a precautionary approach. Stop doing the thing that you know is releasing methane into the atmosphere and make the plan.

RICHARD WELLER: Can I just say a couple of words? I know this is all important, for the Committee to consider these details, but the fact is that as early as 2016 and earlier, it was very clear that we had to leave fossil fuels in the ground. Global emissions go up every year. They should have turned around years ago and be going down now. The final temperatures that we're going to end up at depend on the total amount we've emitted. It's a budget, and we're running out of that budget for 1.5—in fact, many scientists believe we've already passed that budget, in a practical sense. We've pushed up towards two even in some scientists' views. To my mind, it is madness to even consider approving any new coal, gas or petrol facilities—oil facilities. That includes public transport. It includes the vehicle fleet of Australia. We should not be even approving new machines that burn this stuff.

Ms SUE HIGGINSON: I've just got a couple of questions to Mr Clyde and Dr Woods. I don't know if you've had a chance to read it, but the Minerals Council have made a submission to this inquiry. We'll be hearing from them later. But I am curious to know—at the moment, the gist I get from their submission is, "We have looked at most things in terms of the regulatory framework. We're looking at the 2050 target." The net zero 2050 target mostly is what I can gather from their submission. They say, "As an industry, we have reduced our emissions. From 2005, which is the legislative baseline we're starting from, there is room in the scheme for us to continue operating and to actually grow in the sector." That is what I get from their submission and, because of the Commonwealth scheme, the New South Wales scheme is perhaps not as important or—sorry, they're working to the Commonwealth Safeguard Mechanism, and New South Wales needs to adapt so the mining coal industry can operate, in its way, in accordance with the Commonwealth system.

I am just curious if your analysis, which, obviously, is a very detailed analysis—you've clearly looked at it mine by mine, emission projection by emission projection in the existing mines and proposed mines. What would you say to both those things? One, they say their emissions are okay; they're on track; there's room to grow. Sorry, one third thing on that is they say the New South Wales regulatory system and the planning system allows them to carry on. If you could comment on those three points, please.

GEORGINA WOODS: I can do the Commonwealth bit. Since 2005, the volume of fugitive emissions now is lower than it was reported in 2005, according to the official report which we've just been discussing. They are going up between now and 2030. The Net Zero Commission actually goes into this in their report and notes that that reduction since 2005 has come about because of the result of closure of gassy mines. It's certainly an option for New South Wales to reduce its fugitive emissions by simply closing mines. In fact, it has been the most effective means to abate greenhouse gas emissions from the coalmining sector: either to reduce production at the open-cuts, where the emissions basically come from the running of machinery, or to just close mines that are particularly gassy. That's certainly an option, and that's why that reduction has occurred to date. But at the moment, the trajectory in the emissions data from the Government is that between 2021 and 2030 that sector will increase emissions by 33 per cent. It's basically undoing the 34 per cent that's already happened.

With regard to the Safeguard Mechanism, it's a really important issue and I'm glad that you raised it. The Safeguard Mechanism does a particular job, but it certainly doesn't do the entirety of the job. The New South Wales EPA has made it clear in their climate change action plan that they see a very clear role for the New South Wales Government in complementing what the Commonwealth has done, partly because the safeguard doesn't cover any facility that emits less than 100,000 tonnes a year. In New South Wales, there are a bunch of mines that emit that much and are in the safeguard, but there's a large number between the 25,000-tonne limit that the EPA is looking at and 100—there's a big chunk of greenhouse emissions there that is not regulated by the safeguard. The Safeguard Mechanism, essentially, while it does impose a declining baseline on facilities, they can meet that baseline with—as Virginia Young pointed out—an unlimited number of purchased credits from the land sector, which introduces a huge amount of uncertainty and doesn't account for the differing importance of reducing methane versus drawing down carbon dioxide.

The safeguard is going to be reviewed in a couple of years for its effectiveness. We're yet to see the first year of data from the operation of it after it was reformed. There's a lot of question marks over whether it is actually delivering what the team said that it would under the reforms. As to the industry saying that they are allowed, yes, they are allowed. That is why we are saying that there is a regulatory gap in New South Wales that needs to be filled if New South Wales wants to achieve the objectives of the Climate Change (Net Zero Future) Act. Unfortunately—and I'm going to be candid here—the mining industry in New South Wales is not cooperating with the people of New South Wales and the Parliament of New South Wales in achieving New South Wales's climate change goals. They are resisting participating. There are other sectors that have real challenges as well. The mining industry is not the only sector that has challenges. What the commission's report indicates is that this is a job that requires all sectors and all government agencies to do their part, and the mining industry is not doing its part.

Yes, the system currently does allow them to expand. Some of the expansions that we have discussed this morning have been worked into the projections by the New South Wales team, the government team. That is why we see emissions of fugitives rising out to 2030, because they are accounting for some of the expansions that they are expecting the department of planning to approve. We are very clearly saying to the Committee that approving those mine expansions is contrary to the interests of the people of this State, and there is a regulatory gap that really needs to be filled before that mistake is made.

NIC CLYDE: Can I just add one comment? In terms of coming to this Committee process in good faith with a submission that tries to assist the New South Wales Government and your Committee to solve the problem that we're not on track to meet any of our targets, according to the best advice, the only thing I would like to say is that I was quite struck that a small grassroots charity like Lock the Gate can produce a submission with some analysis of the problem and interrogate what's going on in the sector; yet a \$45 billion industry appears to be incapable of presenting your Committee with any analysis of how is it going to reduce its electricity emissions. Nothing. How is it going to reduce their methane and fugitive emissions? Nothing. They don't even mention fugitive emissions in their submission—zero analysis of how their industry can electrify their mining fleet. It's basically just a complaint to government that the sector should have to do anything at all, because the Federal Government are requiring them to abide by the Safeguard Mechanism. Frankly, that's what struck me about the Minerals Council's submission.

The CHAIR: I don't think you are Robinson Crusoe. Thank you, Mr Clyde.

Ms LIZA BUTLER: The increase in coal and the expansion of coalmines—in your opinion, is that driven by our increasing need for electricity into homes and businesses? What are we doing with that coal?

GEORGINA WOODS: It's for the export market. It's worth a lot of money at the moment. The price of coal fluctuates a lot. At the moment, the price is historically quite high. As I said in our introductory comments, it does seem as if the industry is trying to capitalise on the current uncertainty. Everybody knows that the world has committed to achieving the Paris climate agreement goals. There's a great deal of uncertainty as to whether that will occur, and a great deal of hell to pay for the people of New South Wales if we don't achieve those goals. In this murky interim, the coalmining sector is like, "Let's get it out of the ground and sell it while we can." That is the tone, from our perspective.

Ms LIZA BUTLER: My other question is electricity decarbonisation—what benefits will that assist with reaching our targets?

GEORGINA WOODS: The electricity sector?

Ms LIZA BUTLER: Yes, the decarbonisation—not relying on coal anymore.

GEORGINA WOODS: It's in the commission's report. We don't really work on electricity. Mining is our expertise.

NIC CLYDE: I'm not quite sure what the question is. It's the biggest emitter, the electricity sector, so we do need to decarbonise that. Is your question about the relationship between coal and electricity decarbonisation?

Ms LIZA BUTLER: Yes. Would that assist in reducing emissions if we didn't have the reliability that we do on coal-powered stations to make that electricity?

NIC CLYDE: Thank you. Yes, I understand the question. If the coal sector itself decarbonises their own electricity use, it would make quite a big contribution. I think it's a couple of million tonnes of emissions per annum. That's the emissions from the electricity just to power the coalmines—the crushers, the conveyors. But the big problem is before you burn a single tonne of coal for any purpose anywhere in the world, including in New South Wales, just the mining of that coal produces an enormous volume of methane and requires a huge amount of diesel fuel to be burnt at the moment. Just the mining, before any of it is used, is a massive contributor to the greenhouse problem.

GEORGINA WOODS: Making electricity is New South Wales' biggest single source of emissions and, yes, our coal burning is mostly the reason why that's the case. About 15 per cent of the coal mined in New South Wales is used in the domestic electricity sector.

Ms LIZA BUTLER: Mr Weller, your submission actually talks about that. Would you like to add anything to that?

RICHARD WELLER: Yes, I could say that electricity production and transport are the two sectors that are the biggest in New South Wales emissions, accounting for more than 50 per cent, 55 per cent or so of our emissions totally. Forty per cent or so of our electricity is now renewable. That's an Australian-wide number, I think. It's increasing but, of course, it's still a lot of coal and some gas that is burned to make our electricity. Yes, there is a big advantage in replacing our electricity with renewables and having electric vehicles running on that renewable electricity.

Ms LIZA BUTLER: Your submission says this is not the case for point sources such as coal, nuclear and large gas energy power plants.

RICHARD WELLER: What is not the case?

Ms LIZA BUTLER: The advantage that you just spoke about of decentralised networks.

RICHARD WELLER: Decentralised networks, yes, that also assists. Decentralised networks and storage are part of the renewable system and storage is definitely a necessary part of renewables. Once that whole system is established, it makes it more difficult for large point sources to be effective in the market because they're often reliant on consistent demand, and so if they're taking that demand, that consistent slice out of the market, that demand out of the market, then there's less ability for the variables production, like batteries, solar and wind, to be effective in the marketplace. For instance, a nuclear power station is not really a complementary part of a renewable network.

The CHAIR: Ms Young, you said that the ANU was the last one to actually do a comprehensive assessment of basically our carbon stores in 2009. What should happen and who should lead a proper evaluation of our carbon banks, our biodiversity, as you've put in your submission?

VIRGINIA YOUNG: I understand the New South Wales Government has already had some discussions with Professor Brendan Mackey and Dr Heather Keith. The work that was done by ANU—I think it was published in 2009—was led by Dr Keith, who's an ex-CSIRO scientist and had worked with ANU and now works with Griffith University. She is a global leader in understanding particularly forest ecosystem carbon dynamics, so it would be good to see if she was available. There are clearly others in the field as well who have done some very good work, including through using destructive sampling in the forests of the Styx Valley in Tasmania, for instance, which was part of why we know that the eucalyptus regnans forest of Tasmania and the Central Highlands in Victoria are in fact the most carbon dense forests in the world.

There are quite a few sources of academic expertise on how to assess the current carbon stock in forest landscapes and the recovery potential, but that ultimately depends on having access to State forest history, logging history, fire history and the datasets, which I believe actually are still held by Dr Keith, on old growth forest that informed the recovery potential analysis that ANU did. The methodology that was used in that ANU report is peer-reviewed science and published in PNAS. That's a tier one journal. The methodology that's in operation there is publicly available, and that's the right methodology to use if you're trying to understand the current carbon stock and the recovery potential of the native forests in New South Wales. Various people have talked about doing it. It would probably take 12 months to do that properly—and a bit of money—but I'd start the conversation with Dr Keith and/or Professor Brendan Mackey as a logical place to start.

Ms JACQUI SCRUBY: I have one quick question. Mr Witt and Mr Weller, I know you're very supportive of the carbon fee and dividend method. In the jurisdictions that do have that method, how much money goes back to families, on average, in a fiscal year? That may be something you need to take on notice.

RICHARD WELLER: Yes, it probably is, but there is a model that was done for the Australian market and it's been published for everybody to read. It does set out how much money people would get and what the proportion of their—the average Australian household is estimated to be \$585 per annum better off at a carbon price of, I think, \$50 per metric tonne.

Ms JACQUI SCRUBY: And that can go directly into their bank account?

RICHARD WELLER: The idea is it goes directly into their bank account. The big advantage of that is it's not a political issue, right? It's not the Government giving you a tax break or not giving you a tax break, depending on what political persuasion they might be. It's separate and independent and it goes straight back in. It takes it out of the political sphere because this is not a political issue. This is a survival issue. This is an existential issue. As an expert on extreme events, I know that very well. The extreme events that we've been seeing lately right across the world are getting very serious and new types of events are occurring, broader scale types of events are occurring. They're talking about the destabilisation of the circumpolar vortex around the North Pole, which creates broad areas where you get an outbreak of cold polar air. This can be continental wide. That is a weather event that is caused by climate change that is bigger than a cyclone; it's bigger than a winter storm. It's a huge effect. Extreme events, in my view, are heading for worse and worse. There is no physical limit on how "worse" these can get; it's only a matter of how much we push them.

The CHAIR: Thank you all for your evidence, for your submissions and for the work that you do. We very much appreciate it. The secretariat will be in contact with those matters that were taken on notice. Was that report you were just referring to part of your submission, Mr Weller?

RICHARD WELLER: Yes, it was sent in.

The CHAIR: Yes, I thought it was.

RICHARD WELLER: I do have some handouts here.

The CHAIR: That's fine; we already have it. The secretariat will be in contact in due course for any matters that were taken on notice. Thank you very much for your attendance.

RICHARD WELLER: This is just a final statement. If there is no time for me to deliver it, I'd be happy just to hand them out.

The CHAIR: Thank you.

(The witnesses withdrew.)

(Short adjournment)

Ms KYLIE TURNER, System Lead, Sustainable Economies, Climateworks Centre, affirmed and examined

Mr GREGORY BOURNE, Councillor, Climate Council, affirmed and examined

Mr RODERICK CAMPBELL, Research Director, The Australia Institute, before the Committee via videoconference, affirmed and examined

The CHAIR: Thank you to our witnesses who are joining is for this session. Now is the time for some introductory remarks. So I'll turn to you, Ms Turner.

KYLIE TURNER: We welcome the opportunity to give evidence today and very much thank the Committee for their time. I would ordinarily be joining you from Whadjuk Noongar Boodja, but today, I'm very happy to be here on Gadigal land, and pay my respects to both of those lands and their people. Our focus at Climateworks is on mitigation and, for that reason, I'll keep my comments today to that part of the report as we address it. We also recognise the important role that adaptation plays in addressing climate change and the reflections on this in the Net Zero Commission's 2024 annual report. In 2023 we released what we call Decarbonisation Scenarios. These show how Australia can reduce emissions at least cost across the economy, in line with the Paris Agreement goals. Our evidence today uses that modelling as a basis unless stated otherwise. We work with CSIRO to contribute to AEMO's planning for the electricity sector as well.

In December last year, our team published a report on leading climate policies from across Australia's States and Territories, and we've drawn some of the information that's specific to New South Wales here. The establishment of the Net Zero Commission and the production of this report that you are looking at is an excellent starting point for transparent and accountable action on addressing the challenges of climate change. We recognise the tight time frame that the committee had in which to report and acknowledge the clear intent of the committee to build on this first report into future years, signposting areas for future analysis. The alignment to the Federal sector pathways and plans in the report are important. This is an efficiency that can support sectoral collaboration across all levels of government to drive the development of comprehensive policies that meet immediate climate goals and lay the groundwork for long-term sustainability. We also note that the New South Wales target for 2030 is stronger than the Federal one and that this will require greater effort in the short term, although the long-term target will be the same.

It's also true to say that all sectors of the economy need to play their part in meeting legislative targets, and there's an opportunity to consider sector-based targets to make this pathway and share of activity clear. We note the concern that the commission expresses on reaching the 2030 and 2035 target. The reflection of the commission that the target is out of reach is precisely why the target exists: to orient activity to the areas that are most needed in order to meet that target. This report clearly makes the case for a step up in progress in transport, buildings and resources, as well as other parts of the economy where the technology already exists to reduce emissions.

GREGORY BOURNE: Thank you for the opportunity to speak to you today. Also, again, I would say thanks to the Net Zero Commission for their report. New South Wales Parliament should be rightly concerned about not achieving its targets. And unless action is accelerated, New South Wales won't achieve any of its targets. Of great interest to me to note is that for the coal industry, and I'm going to talk about the coal industry most of this opening part, some of their greatest achievements are effectively seeing off the New South Wales Parliament: managing to get expansions, managing to get extensions, and just keep going on. What New South Wales needs to do is to decrease emissions. What the coal industry needs to survive is have increased emissions. It needs to have the export markets drag from New South Wales as much as it does today each and every year for the next 10 years or 20 years or 30 years.

The key thing for fossil fuel industries, and I've worked with the fossil fuel industry for a long time, is that this is an existential threat. When you have an existential threat, you fight. You fight like mad for the status quo. And that is what they have been doing for a long time. None of the other sectors actually have an existential threat. They are, of course, facing change. A lot of it can be done bit by bit, year by year, on a continuous basis. But to do that, many policies need to be augmented and, indeed, causing a deliberate acceleration. Two wildcards that New South Wales is aware of are the great uncertainties around fugitive methane emissions, past and present, and those ones that will remain in the future. The other one is the claimed emissions reductions from land use. Both of these are from 2005.

Those two uncertainties could very, very easily deliver you a big surprise of, "Oh, my God. We have to make good what has not actually really happened in the past and what is currently happening in the future." New South Wales has got no time to waste if we're truly to tackle climate change, and it must tackle the resources sector head-on, with a lot of backbone. The way I would put it is coal must be stewarded as they go into terminal decline, because they will go into terminal decline, and remediation must be paid whilst they are still going

concerns, not having remediation passed on to the taxpayer. Gas as well has got to be swiftly phased out. Royalty revenues, from resource extraction, will need to be replaced. And if the Treasury thinks that they will keep going, they are also banking on, effectively, global climate failure. Thank you.

RODERICK CAMPBELL: Thank you, Chair, and Committee, for the opportunity to appear by video today. The Net Zero Commission under the Climate Change (Net Zero Future) Act 2023 is tasked with monitoring emissions reduction and adaptation progress, reviewing government policies and providing clear science-based recommendations. The Act mandates that climate action be urgent, science driven, fiscally responsible and aligned with best practice. However, the annual report of the Net Zero authority raises serious concerns about whether the commission is meeting this obligation. The report fails to provide science-based recommendations on fossil fuels.

Climate scientists, the International Energy Agency, the IPCC are clear: no new coal, oil or gas projects should proceed if we're to stay within safe climate limits. While the annual report acknowledges the emissions impact of new coalmines in New South Wales—on page 45—it fails to provide clear recommendations to halt fossil fuel expansion. Instead, it frames coalmine emissions as "a challenge to manage"—on page 44—rather than an industry that must be phased out. There's a number of other problematic claims in the annual report section of the New South Wales resource sector that we might discuss later on, including the barest mention of the role of New South Wales coal exports in global climate change; the commission and the EPA's observation that emissions from new coalmines will transfer the burden of emissions reduction onto other sectors of the economy; whether coalmine emissions reduction opportunities are in fact realistic; and the waste of money that Coal Innovation NSW represents, and how it could be better used to fund future job and investment authorities.

The report treats adaptation and mitigation separately. On page 63 the annual report discusses rising adaptation costs and the emissions impact of fossil fuel approvals—on pages 44 to 46—yet it fails to connect these issues. Continued emissions growth will exacerbate extreme weather and increase the financial burden of adaptation, yet the report does not make this link explicit. The report is overly reliant on market mechanisms and avoids discussion of regulation. The commission appears to promote market-based solutions, particularly the Australian Carbon Credit Unit (ACCU) Scheme—on page 45—while avoiding regulatory measures such as emissions limits or fossil fuel phase-outs. Carbon offsets are not a credible or science-based policy tool when used as a substitute for actual emissions cuts, yet the report does not present a balanced view of their risks.

Additionally, the commission's frequent reference to opportunities in climate action lack concrete policy recommendations. For example, in the coal sector, it mentions things like ventilation methane opportunities but does not mandate them. In the built environment sector, it suggests limiting embodied carbon but with no enforcement—on page 51. In terms of climate adaptation, it discusses risk assessments but lacks strong action. By focusing on vague opportunities rather than enforceable policies, the commission is failing in its legislated responsibility to propose meaningful climate action. The report does acknowledge the uncertainty of the land sector. It's welcome that the commission recognises the uncertainty of land sector emissions and the need for separate reporting—on page 37.

However, while it highlights the issue, it does not propose solutions to ensure emissions accounting is accurate and does not serve as a loophole for increased fossil fuel emissions. Recommendations are weak. The annual report acknowledges the importance of adaptation, yet it fails to recommend stronger disaster planning, increased investment, despite New South Wales facing growing climate risks—discussed on pages 56 to 64. Unlike Victoria or the EU, New South Wales does not require regular adaptation updates. The report does not suggest rectifying this gap. The report doesn't adequately discuss the interaction with Federal policy. The commission avoids questioning Federal climate policies such as the Safeguard Mechanism and fossil fuel export expansion, despite scientific concerns over their effectiveness.

Further, the commission's chair, Dr Paul Grimes, also sits on the Federal Emissions Reduction Assurance Committee, or ERAC, which oversees the ACCU Scheme. While we make no allegation of impropriety, this does raise concerns about overlapping responsibilities, particularly given the report's seeming endorsement of carbon markets. In conclusion, we question whether the commission is fulfilling its mandate. The commission's role is to provide independent, science-based recommendations that align with the urgency of climate change. Yet the 2024 annual report avoids regulatory measures, fails to assess the risks of fossil fuel expansion and is overly reliant on markets instead of enforceable policies. That's the end of the opening statement.

The Hon. JACQUI MUNRO: Ms Turner, one of the alarming statements in the report is that, including 2023-24, only 17 per cent of the road map target capacity, which is approximately two gigawatts, has been commissioned. I'm wondering if there is—you need five years to deliver the remainder, an additional two gigawatts per year. Is that actually possible?

KYLIE TURNER: We would say that the foundational parts of that are in place with both Federal and State mechanisms. But the important thing to remember is that the job is not done, and I think that's what this

report, and the analysis undertaken in this report, very clearly makes the case for. It is always possible to solve for a problem. The question is, making sure that it's a priority for the Government to do so is of the highest level of importance.

The Hon. JACQUI MUNRO: So the technology exists. The thing that is missing is something around the regulatory framework that compels—we've already got legislation which ostensibly compels the Minister. Are there private investment encouragements that we can employ? What do you think that we need to actually get that extra capacity?

KYLIE TURNER: In the broadest terms, we would say that it's very clear coordination across all of the components of the economy that are trying to solve the problem. Setting a target and making sure that you've got the pieces in place—this report being one of those important pieces—flagging that it's currently a challenge and it needs to be addressed. But it is the way that things work together. It's a combination of making sure that legislative regulatory incentives and disincentives to act all work together to increase that flywheel of activity so that you can get to the ambition that's required.

The Hon. JACQUI MUNRO: Is there something in particular at the moment that is missing?

KYLIE TURNER: We would say it is in the realms of being able to evidence how you make the change. If you think about the changes that need to be made across the economy, they're not small, they're big. It's a system change that needs to happen, and it's complex, with multiple moving parts and multiple actors—not all of them acting in good faith, but most of them. If you've got the coordination, one of our hypotheses is that you can prove that you can make that change in a particular place. New South Wales has made some great steps in terms of renewable energy zones in evidencing that. That's one of the things that you can do, if you can do it at that level. I think you know the kind of complexities about renewable energy zones, but you can also extrapolate that out to a broader system change.

There is an element of making sure that the planning piece is done more holistically. But by planning I don't just mean where we put things. It also needs to include how we deal with social licence, environmental planning, land use, how you engage with First Nations communities. If there are ways to bring all of those parts of the challenge into one place and solve them holistically, that is something that we should try to do. I'm not sure that that solution is clear yet, but what we would say is that there are definite steps towards that being taken, with the evidence like renewable energy zones.

The Hon. JACQUI MUNRO: My understanding of that is basically that the technology exists, there is enough private investment and interest that is floating around. What is required is that coordinating role, but also that political leadership role. It actually requires a government to step up and make that statement, and then provide the appropriate incentives to achieve that. It can't happen without political leadership.

KYLIE TURNER: You can't achieve the scale that's required if any of the actors in the system aren't making a clear direction of travel and heading in that direction.

The Hon. JACQUI MUNRO: Mr Bourne, you mentioned fugitive emissions, which we've already spoken about a little. The NSW Minerals Council say that the difference in emissions by sector in 2035, between abatement as originally designed and abatement as currently tracking—and sorry, this is based on New South Wales modelling—that fugitive emissions are actually 0.0 per cent as an increase. Do you have a view on that as being accurate or inaccurate, from that New South Wales modelling?

GREGORY BOURNE: I have a strong view on this, and it comes back from my many days—years—with BP and also involved in LNG, and some of that. There was a time when we didn't talk about emissions. And then we started looking at emissions and then started measuring emissions. When you start doing that diligently, you begin to find out you need to do a bit more. Then satellites came in, and you still find that you are wanting. When it comes to coalmining, and you actually then look at the emissions there, you're baring the rocks and taking two or three points within a coal field, as it were, and then you're saying, "Well, this is the amount that's going on." Satellites are beginning to show that a lot more is coming on.

Until they are required to measure, not square metre by square metre, but a detailed grid across every mine, until they actually do that, we will not know. There's a lot of work that's being done by others, but the work that's being done by industry is basically to prove that we don't actually have to do anything. It needs to flip around the other way. It was almost to the point of New South Wales saying, "The emissions are way higher, prove that they're not. And you pay for that proof."

The Hon. JACQUI MUNRO: Reverse onus situation.

GREGORY BOURNE: Absolutely.

The Hon. JACQUI MUNRO: You also mentioned royalties. Are you aware of any modelling around how a reduction in royalties might affect the New South Wales budget?

GREGORY BOURNE: What I've looked at, at royalties, to be fair, is not very much. And I know it is not a huge amount, but everyone who is in Treasury obviously wants to hold on to everything that they've got. But the key thing here, to me, is that it's not actually that much, but it's always talked about as if it's a lot. But if Treasury are worried that this royalty is going to go, they need to know that it is going to go. This industry, ideally, is in terminal decline. So do you plan for something which is in terminal decline? You should. You certainly should. But perhaps more importantly for New South Wales is what are the other industries that you're going to try and stimulate, from which you can get revenue, which will more than make up for it?

RODERICK CAMPBELL: If I could just jump in there, as an economist—New South Wales coal royalties generally sit at around \$2 billion a year, which is around 2 per cent of the New South Wales State budget. In 2021 NSW Treasury did model a phase-out of the coal industry by 2041. I've got that study here. It's part of the 2021 Intergenerational Report—*The sensitivity of the NSW economic and fiscal outlook to global coal demand and the broader energy transition for the 2021 NSW Intergenerational Report*.

The CHAIR: If you could send a copy of that to the secretariat, that would be very helpful.

RODERICK CAMPBELL: Certainly. It says that the lower global coal demand scenario with the 2040 phase-out shows a fiscal difference of 0.12 percentage points. So it's a very small fiscal change for New South Wales.

The Hon. JACQUI MUNRO: Thank you, that's very helpful. Finally—this may be to everyone, but possibly Ms Turner—the Minerals Council says that the net zero model does not properly account for the net emissions reductions that New South Wales mining operations are required to achieve under the Safeguard Mechanism, that the New South Wales net zero modelling only reports and forecasts the industry's gross emissions and does not capture offsets or Safeguard Mechanism credits that are required by the industry. Do you have any comment on that? I'm happy to open it up to anyone.

RODERICK CAMPBELL: I've got lots of comment on that. This is the New South Wales coal industry basically not wanting to comply with New South Wales Government policy. This is them saying, "The people of New South Wales and the New South Wales Government have democratically decided to have a net zero target by 2050", and they don't want—

The Hon. JACQUI MUNRO: Just to interrupt—sorry, Mr Campbell. They're saying that this model actually does not properly account for net emissions and does not consider the methods that they're using to use offsets, to obviously offset their emissions.

RODERICK CAMPBELL: And that's because most of the offsets that they're talking about would be outside of New South Wales. And in the future, potentially outside of Australia. All of these offsets are deeply problematic in terms of whether or not they offer genuine abatement. And the whole concept of using particularly land sector emissions to offset increased fossil fuel expansion is really problematic. So I think this is really just the coal industry pushing its own barrow. And one concern that I've had for quite some time is that the New South Wales planning department, in its assessment of coalmines, and economic assessment of coalmines, ignores this very issue that new coalmines in New South Wales will impose costs on other parts of the economy and transfer that abatement task. The cost benefit analyses of coalmines that are accepted by planning ignore that reality. I'm happy to talk about that in detail if anyone's interested.

The Hon. JACQUI MUNRO: I'm mindful that other people want to ask questions. I would love to ask, but if anyone else wants to follow on that line of questioning, that would be good.

Ms JACQUI SCRUBY: Staying on coal for a moment, what do you see the role of—where are the immediate opportunities, like the updates to the strategic statement on coal? Where do you see the immediate opportunities to put a line in the sand about phasing out fossil fuels and then incentivising businesses for clean exports, or to replace that revenue for New South Wales?

GREGORY BOURNE: Let me put an idea into the room. One of my concerns with many of the coal industries and, indeed, other fossil fuels industries is that because they posit that everything is going to go forward, their accounts actually begin to show that. As you go for extensions and expansions, you can push the remediation dates further and further out, in which case they don't even come up as notes to the accounts. And yet, were they to begin to close down, they would actually have to remediate. So one of the things that could be required is we in New South Wales are going to hit this target in 2030—show in your accounts that you can pay for the ongoing remediation that occurs, without the revenue that obviously comes in. Show that you can do it in 2035. Show that

you can do it in 2050. Because I will almost guarantee you that many of the coalmining companies will walk away from their remediation responsibilities, and it will be picked up by the taxpayer.

So via the accounts, if you are to say by such and such a date, work on the basis that you have gone partially bust, how are you going to show things properly? But the account method is probably one of the key things. If you again look at extensions and expansions, one of the beauties about extensions and expansions, as agreed by yourselves, is that they're out in the future, and it allows me to put all of my remediation costs out into the future and discount them to nothing today. That's a real problem.

Ms SUE HIGGINSON: I wanted to go to something that you said, Mr Campbell, about your criticisms of the report, to the extent that there seems to be an absence in relation to a regulatory approach to some of the programs, policies, initiatives that the Net Zero Commission is taking. I have long been an advocate of good regulation is a public interest way of driving to strategic outcomes on behalf of all. What do you say in relation to these constant pushbacks that we see from industry, from others, about this kind of fear that governments seem to pick up about regulation? Do you have any kind of broad view on that, and how that applies here in the particular sectors that we're looking at in terms of achieving the legislative targets?

RODERICK CAMPBELL: Yes, absolutely. I think legislating things works. Legislating an end to new coalmines would work. Legislating compulsory use of ventilation and air methane technology in underground coalmines would work. But instead we're told—and we're told in the annual report—that perhaps carbon and nature markets will achieve similar outcomes. I don't see why an advisory body like the commission and its annual report is so timid in terms of recommending an approach that would work, as opposed to approaches that are so easily gamed by industry.

Ms SUE HIGGINSON: Thank you. I'm curious as well, Mr Bourne, whether you have a view, in relation to—given some of the comments you were saying, particularly about, if this is an existential crisis, you actually take the approach you need to take. I'm just curious about what you say about the role of more regulatory approaches.

GREGORY BOURNE: Legislation and regulation are going to be the only ways you'll move forward. I'll just read you a couple of things from the notes to accounts of one of your coalmines—I won't say which one. What are their key risks? "Legal, policy and regulatory risks. Approvals risks. Climate change risks." What is one of their key achievements? "The successful defending of Federal Court and full bench of the Federal Court challenges to the EPBC process." That's how you get your bonus of course—your achievements. The companies will not move. I'll give you one more example—again, from my own industry. In BP, during the time I was there and a little bit beyond, we had tried to move from being a petroleum and gas industry into an energy industry. The current CEO last week said:

Our optimism in 2020 for a fast transition was misplaced. We went too far, too fast with our plans. We've now fundamentally reset our strategy.

In other words, they're getting rid of all of the renewables world. They're basically going straight back into trying to expand into the exploration and production of oil and gas as quickly as they possibly can. Why? Because the share market punishes them so badly. The difference is the share market looks at one year or two years—at the moment it's every single day. It looks at returns over that short period of time. This change—and this is where legislation and regulation come in—is over a decade or two decades. It's not share market stuff. There's BP, a company that I was very proud to work for—I'm very not proud of what they have just done now, recanting and going backwards.

The CHAIR: Mr Campbell, there's been some criticism of relying on the ACCU system, relying on offsets. You've described them as problematic. Who's doing the work to assess the integrity of the ACCU regime? We heard earlier from a witness, Ms Virginia Young, that essentially there hasn't been a comprehensive assessment of basically how much carbon is in the Australian ecosystem to trade and whether or not it's going up or going down. How do we know that the market is problematic as it is at the moment? How do we know that there's not an opportunity going forward to abate at least some of the carbon through this ACCU system?

RODERICK CAMPBELL: We know it's problematic because the man who used to run it, Andrew Macintosh, the former chair of the Emissions Reduction Assurance Committee, tells us it's problematic. His estimate is that up to I think it's 80 per cent of offsets in the system are fraudulent—that's his word, not mine. And we kind of know that this is the case because most offsets are about estimating what is happening, what might happen in the future under two different futures, and how much carbon would be in this bit of soil in the future under condition A and condition B. These are inherently risky and unknowable things. And yet, when we trade this risky, unknowable carbon impact for digging up a tonne of coal, we're trading something risky and unknowable for something really certain.

When a tonne of coal is dug up and burnt, then a bit under three tonnes of emissions are created. When some area of Western New South Wales stops having as many goats grazing on it, the actual volumes of carbon that will be sequestered by that practice in the future is really difficult to know. Doubts around this are covered in the annual report that we're here to talk about—and it's good that that kind of scepticism is being shown—but a bit more scepticism needs to be shown regarding the entire system and the Federal policy that's based on it.

Ms TRISH DOYLE: Hello, everyone. Thank you for being with us today and speaking to your submissions and this important issue. I want to acknowledge I come to you from Dharug and Gundungurra land in the beautiful Blue Mountains. My couple of questions are to Ms Turner. Are you able to elaborate on some of the areas that you believe that New South Wales is doing well in with decarbonisation, and what might be some of the successful initiatives that you've seen in other jurisdictions in other States?

KYLIE TURNER: Yes. We would support what the report finds in terms of where more work needs to be done and where work is being done well. We have done some benchmarking of State and Territory policies against our decarbonisation scenarios, and we do find that New South Wales is doing better than other States—not to the high standard that we would like to see in terms of 1.5 alignment, but better than other States, particularly on energy and electricity. But there is in that area still more to be done. In terms of your question about things that are being done well in that sector, if we're to take that as an example—there are a series of programs, but probably the stand-out is the Renewable Energy Zone work and then the ability to expand that out into further renewable energy zones so that you can meet the capacity that's required for electricity going forward.

One of the things that we don't see necessarily in other states to the extent that you have it here is the value of the storage target and the steps taken already to meet that storage target. More broadly, there are a number of programs that seek to decrease demand because one of the important things to balance is that we can increase renewable energy, but it's also important to decrease demand on the system so that you can fold more renewable energy in and decrease the use of fossil fuels.

Ms TRISH DOYLE: Excellent, thank you.

Ms LIZA BUTLER: We heard earlier that the emissions failures at coalmines shift the burdens to other sectors. Ms Turner, you talked about sector-based targets. Could you just expand on that a little bit for us?

KYLIE TURNER: Yes. You've currently got a whole-of-economy target for emissions reduction. You could work to say what it is that each sector needs to do by setting a sector-based target. It's been one of our recommendations for the sector pathways and sector plans that are being done at a Federal level and which neatly are matched here in the Net Zero Commission's report. But by setting sector targets, you can give a sense of what each sector needs to do. It is the case that some sectors can do more heavy lifting early than others, so the targets would have to be nuanced in that way. But, by setting a sector target, you can give that clearer, more granular direction of travel, so that activity can coalesce around that.

Ms LIZA BUTLER: Thank you. Does anyone else have anything to add on that?

GREGORY BOURNE: I just had a couple of things. Some of the sectors are going to take a long time. Capital stock turnover of housing and housing stock, for example—20 to 30 years of cars, 20 years. It's one of those things where, for example, if EV charging rollout throughout New South Wales was accelerated by regulation, legislation, whatever, that begins to make an effect year by year. Some of the areas—transportation being one, obviously—can move incrementally every single year, which is great.

Big, chunky targets are really hard to do. Some of the industry sides of things, for example, smelting and so on, those sorts of things worked well with those particular industries, and might deliver big things. You can't just say everyone's going to have exactly the same target. You actually have a trend line, but that comes from analysis of what each particular sector is doing. The built environment has a lot of opportunities here. There are a lot of opportunities also with regard to dealing directly with people—how we can help you move this house from a one-star rating to a five-star rating. Those things are really important. Politically, they're probably very important as well.

The Hon. JACQUI MUNRO: Something that we haven't really spoken about all that much is the construction sector, but the report does call out that that is a place that hasn't really reduced its emissions at all. Do you have any comments about how we can ensure that that industry is not left behind in our estimations and that, actually, they have a pathway forward as well?

GREGORY BOURNE: Some of the very big construction companies, of course, have been going into building five-star buildings for quite a while, and they do an incredible job. They're looking also at the embodied carbon: if they have to change one building and then rebuild it, et cetera, how much embodied carbon—in terms of the overall construction industry, I don't know what the access point would be but, in the end, to me, it probably

comes down to every house sold, at every transition of a house being sold, you need to declare exactly what its energy ratings are: what its consumption is for electricity, what its consumption is for gas, whether it has solar panels on the roofs, et cetera. Requiring that, at the point of sale, becomes really important. It sends a signal into the market to every single buyer, every single seller and indeed, eventually then, into every single constructor.

The Hon. JACQUI MUNRO: That's good for existing property. Are there things around concrete, for example, or other parts of construction where there are examples around the world that have unlocked the reduction in emissions that we haven't been able to grasp?

GREGORY BOURNE: I would say, absolutely, there are there are some other construction materials right now which have less embodied carbon, without doubt, but that's building at the margin. To me, the only way you work this, is to work at the whole block. You work at the margin as well; absolutely, of course you do. It's at the turnover of every single house, you have an opportunity. At the turnover of every single car, you have an opportunity. But it takes 20 years to turn over all the cars, and roughly 20 years to turn over all the houses in terms of a remediation-type effect.

Ms JACQUI SCRUBY: Following on from the Hon. Jacqui Munro, would it be, with that new stock, that the basics requirement should be increased to net zero houses rather than where they currently are?

GREGORY BOURNE: Yes, very definitely. Again, it's one of those things which begins to send a signal into the market. Then that begins to ripple down at every single purchase that goes on. Some of those things are really important. If we talk about things like, joined-up writing—how does New South Wales as a government make sure that every single signal that it sends out is joined up in this effort so that it works the same in every single one of the sectors and every single opportunity? That joined-up effect really will drive things forward.

The CHAIR: That's an excellent note to conclude this section on. Thank you very much, Mr Bourne, for that answer, and for your evidence today. You too, Ms Turner and Mr Campbell. We very much appreciate it. Thank you very much for your evidence and the work you do. We appreciate it. It's going to be very instructive and important for the work of this Committee. Thank you again for taking the time to join us here today.

(The witnesses withdrew.)

Mr DAVID FRITH, Director, Policy, NSW Minerals Council, affirmed and examined

Dr HERMIONE PARSONS, Chief Executive Officer and Managing Director, Australian Logistics Council, before the Committee via videoconference, affirmed and examined

The CHAIR: Do either or both of you want to make an opening statement? I'll start with you, Mr Frith.

DAVID FRITH: Thank you, Chair, and thanks for the opportunity to appear today. The primary issue that we've highlighted in our submission, and we'd like to highlight today, is that the New South Wales Government's emissions forecasts don't provide a complete picture of the mining industry's contribution to the State's net emission reduction targets. Around 95 per cent of the New South Wales mining sector's emissions are covered by the Commonwealth Safeguard Mechanism. They have regulated requirements to reduce net zero to net zero emissions by 2050—that is, each mine needs to get to net zero by 2050. It is driving a lot of work across the sector on industry decarbonisation initiatives to build on the work that's already been done.

Only a small proportion of those regulated emission reduction requirements are currently captured in the New South Wales Government's forecast because the model doesn't have the capability to capture and report the component of emissions reductions that will be met through carbon offsets. The Government is only forecasting the industry's gross emissions, rather than the industry's net emissions. We think that before the Net Zero Commission can come to any conclusions about the coal sector's potential impacts on the State's net emission reduction targets, it's important to understand what the sector's net emissions are likely to be. We'd like this issue to be considered by the Committee and for it to be an area of focus in the Net Zero Commission's forward work plan. Thank you.

HERMIONE PARSONS: By way of introduction, the Australian Logistics Council represents 50 of the largest companies in end-to-end supply chain. We're working towards sustainability, resilience and productivity in Australia's supply chain. Awareness is a really important point of this, and a target of what we do strategically, because supply chains and freight logistics are not well understood in our governance, and not well understood in our community. It's an essential service—the COVID-19 crisis showed this—but it remains poorly understood. There are complex systems here—integrated logistics, integrated transport, land use—and there are huge opportunities in optimisation and modal shift that are not yet realised in terms of decarbonisation.

We have the largest companies involved with us working towards Australia's sustainability. Our companies understand, and are investing, but government is tending to lag behind. As an example, our members include NSW Ports, stevedores, the shipping companies, the rail operators, intermodal terminals like Moorebank, road operators, Linfox, Toll and TGE. Our customers include Woolworths, Coles, Amazon, Coca-Cola and BlueScope Steel, as well as air freight companies and companies like Australia Post. We also have the land and industrial land developers that are our members. This is a complex system, end to end, and the opportunities are huge. They are investing in five-star green rating in their sites and between businesses, working as an end-to-end supply chain system.

The annual report doesn't really consider freight—one or two paragraphs on page 28 and reference to the Transport for NSW freight paper. That department is proposing modelling and research and analysis, which is all good. But we need action. We need action and are prepared and always work really closely with government, including the New South Wales government departments. We see this as a huge opportunity that has not yet been realised. We are aware that the commission's only about six months reporting, but we believe that, if you start to decarbonise supply chain and freight logistics, you have a very good chance of decarbonising the country with 22 per cent with the freight task.

The Hon. JACQUI MUNRO: Thank you for appearing today and for your submissions. I'll start off with Mr Frith. We've heard evidence—have you been in for all—?

DAVID FRITH: Not all of it, no.

The Hon. JACQUI MUNRO: We've heard evidence that the suggestion is that the reason that net emissions from the mining sector aren't considered, as opposed to gross emissions, is because the offsets that the submission refers to are actually not realised within New South Wales, or perhaps in Australia. I just wondered if you had a response to that?

DAVID FRITH: The offsets are definitely located in Australia. Under the Safeguard Mechanism, the only offsets that are eligible are ACCUs—Australian carbon credit units. They are purchased from Australian operations and generated in Australia, so that's not an issue. There is an issue around the jurisdictional boundaries and how the carbon accounting works across Australia. That's something that we outlined in our submission, where if you're a New South Wales company and you purchase an offset from WA and retire that offset, it gets

credited to WA's inventory rather than New South Wales. This is an accounting issue that we've raised with the Government and the net zero modelling team and the EPA, and they've acknowledged it. The EPA, in its guide for large emitters, has highlighted that they're taking up this issue with other jurisdictions to see how they can address some of these issues.

The Hon. JACQUI MUNRO: Are you doing any work with your members to actually track the offsets and the locations that they're being accounted for?

DAVID FRITH: We've had some anecdotal kind of feedback around that.

The Hon. JACQUI MUNRO: But there's no data collection process?

DAVID FRITH: We haven't got any firm data. We have approached some consultancies around how we could get that kind of information, but we haven't got it at the moment.

The Hon. JACQUI MUNRO: But it is something that you think you should do?

DAVID FRITH: It's a potential—yes, it's an issue that needs to be investigated. I think governments are probably the best placed to do it because they have access to all the registries and data around the location of offsets and where they're generated. But it remains to be seen how much of a problem it is really because New South Wales does generate a lot of ACCUs, but we're also a big market. So the amount, whether a net offset provider or net offset importer, I think is just something that needs to be got on top of.

The Hon. JACQUI MUNRO: In terms of the net zero by 2050 goal, obviously that is a Federal target, but we in New South Wales have a legislated target to reduce by 70 per cent emissions by 2035. Is that something that you're committed to as the New South Wales branch of the Minerals Council?

DAVID FRITH: Yes, we support the Australian Government and the New South Wales Government setting targets. We support the Australian Government's participation in international agreements. They've set a 43 per cent reduction target by 2030. Obviously, the New South Wales target is slightly stronger.

The Hon. JACQUI MUNRO: It's quite a lot stronger.

DAVID FRITH: It's 50 per cent by 2030 compared to 43 per cent. The Safeguard Mechanism has been designed to deliver that 43 per cent reduction in emissions across safeguard covered facilities by 2030. There is potentially that little bit more that may need to be done and I know that that's what the EPA is targeting through a lot of its climate action plan.

The Hon. JACQUI MUNRO: Is that something that your members are committed to as well?

DAVID FRITH: Yes.

The Hon. JACQUI MUNRO: Not just the Federal target, but actually the New South Wales target, because actually 70 per cent by 2035 is part of the legislation.

DAVID FRITH: Yes, and I don't think the expectation is that every industry delivers on exactly 50 per cent reduction. I mean, there'll be plenty of industries that don't. The mining industry will be making a significant contribution. Emissions have already reduced by a substantial amount. I think, once the full impact of the Safeguard Mechanism is factored in, we could be getting very close to that 50 per cent reduction in emissions.

The Hon. JACQUI MUNRO: One of the things that we've heard about is the fugitive emissions that methane puts out into the atmosphere. There is a suggestion that there's significant under-reporting of methane emissions and I'm curious about what your members are doing to ensure that there is accurate reporting on methane emissions.

DAVID FRITH: There has been a lot of media around this issue. I'm not sure how much substance there is to it in the context of New South Wales coalmining. If we have a look at open-cut mining, for instance, which is probably where there's more estimation involved in the techniques because of the nature of open-cut mines and, you know, they cover a wide area, all the high-emitting open-cut mines in New South Wales are using that higher-order method under the NGERs framework.

The CHAIR: Could you say that again, just for the benefit of Hansard?

DAVID FRITH: They're using the higher-order method under the NGERs framework, the National Greenhouse and Energy Reporting Scheme framework. What that method involves is direct drilling of the coal resource across a representative area of the coal resource, obtaining coal and gas samples, having those samples analysed at laboratories, using that data by a qualified estimator to develop a gas reservoir model for the coal resource, and from that gas reservoir model detailed fugitive emissions estimations can be developed based on the mine plan. This is a process that has been developed in consultation with Australian government agencies, with

input from research organisations like the CSIRO. It's auditable, it's scientifically robust and we have confidence in the emissions estimations that it is generating.

The Hon. JACQUI MUNRO: What about the non-open-cut mines? What about the underground mines?

DAVID FRITH: Underground mines, I guess, are relatively easier to estimate emissions from because there's the ability to kind of directly measure methane that's coming through the gas drainage pipelines or through ventilation air as well.

The Hon. JACQUI MUNRO: Are you getting reports from your members about that data, like how much methane is being emitted, or are you getting any feedback from your members saying, "Look, we're not confident about the accuracy of this" or "We need help" or "We need to understand how we can better abate those emissions"?

DAVID FRITH: Definitely—I mean, the data is publicly available. They report data through NGERs and through the Safeguard Mechanism reporting requirements, and that data, I think, is going to be expanded. The nature of emissions, whether it's methane, carbon dioxide et cetera, will be reported through those frameworks. That data is widely available. As I said, we have confidence in those emissions estimation techniques, but I understand there is a review underway at the Commonwealth level of some of those techniques and we're happy to participate in those discussions.

The satellite data is something that seems to be quite regularly obtained by people now and new estimations, as they're called, are released. There's a lot of issues with the accuracy of satellite data. It's not a proven, scientifically robust way of estimating fugitive methane emissions from coalmines. The Clean Energy Regulator or the Climate Change Authority has said that it's not suitable or can't reliably estimate emissions from individual facilities, and we agree with that. It's a technology that we have a lot of interest in. We want to see how we can improve our monitoring techniques and augment the estimation techniques that are already undertaken. But I don't think that those technologies are at that point yet where we can have confidence in the estimations that are being made.

On the mitigation front, the Safeguard Mechanism is driving a huge level of effort in terms of identifying potential abatement opportunities and the mining industry, the coalmining industry, is already abating millions of tonnes of methane emissions, carbon dioxide equivalent methane emissions, each year through existing fugitive methane abatement initiatives. Methane is drained from the coal resource prior to mining and that can be used in gas-fired power generation or burned in flares to reduce the greenhouse warming impact. Those existing systems are being constantly refined and made more efficient so that they're capturing a greater proportion of those emissions. There's a mine in the Southern Coalfield that is abating more than half of its fugitive emissions already.

The Hon. JACQUI MUNRO: Do you have data from your members about how much methane they've abated, say, in the last five years?

DAVID FRITH: We have some data from public reporting, but we haven't got a complete set at this stage.

The Hon. JACQUI MUNRO: Do you track it?

DAVID FRITH: No.

The CHAIR: Can I just jump in there? What's your view, Mr Frith, on the contention that it's much cheaper to abate the fugitive methane from the gassy underground mines rather than offset?

DAVID FRITH: You mean the other way round? I think the assertion is that it's cheaper to use—

The Hon. JACQUI MUNRO: No, that it's cheaper to abate.

Ms SUE HIGGINSON: No, we heard evidence today that it's much cheaper.

The CHAIR: Yes, we heard the evidence today that it was cheaper to degas or to avoid the fugitive methane from underground coal than buy offsets in the ACCU market. What's your view on that?

DAVID FRITH: As I said, there's already measures in place to abate methane, and a lot of those measures do have an economic return. So, obviously, if it's being used for gas-fired power generation, then it does have an economic return. VAM abatement is the next kind of generation of technologies that the industry is looking at, and there is a huge amount of attention that is being put into that technology at the moment. We held a VAM abatement technology forum with our member companies last year, which had more than 50 attendees from across the underground coal sector, who were very interested in hearing from a range of companies, including Peak Carbon, about VAM abatement technology and the opportunities that it provides. There's different claims around

the costs of that technology, but there are certainly some companies who are looking at it very closely and are quite advanced in their plans for deploying that technology in the near future.

I think the key thing on that technology is it's not going to be suitable for every underground coalmine. There are some technical constraints around the level of methane in the ventilation air that limit its applicability to some coalmines. You need a methane content of at least around 0.25, 0.3 per cent to make it self-sustaining and operate efficiently. A lot of mines these days are operating below that level, which is a technical issue that needs to be overcome. Obviously, the safety side of things is also a really important factor that we're not going to take shortcuts on. I know that there's examples of this technology being deployed in the US and in China, but there's very different safety environments in those jurisdictions. And so there has been a lot of work done by the industry over the last decade to identify the types of risk assessments that need to be undertaken, the types of monitoring that needs to be in place, the types of mitigation technologies that need to be in place to protect workers who are operating these coalmines.

Ms LIZA BUTLER: Can I ask a question here, Chair, just to add on to that? I'll use it as my question. We've heard this morning that either legislation or regulation—and it was suggested that VAM technology be introduced. What would the Minerals Council say to that, and what would we have to do if we were to regulate that?

DAVID FRITH: Are you asking if we were to mandatorily require VAM abatement technology?

Ms LIZA BUTLER: Yes.

DAVID FRITH: Look, I just don't think that's practical. As I said, there's a lot of site-specific considerations that go into determining whether that technology is going to be feasible at a particular site around the characteristics and the composition of the ventilation air that's coming out of the mine, what the mine life is for the mine in question and how large the mine is. There's differences in the safety components that would be required depending on how large the mine is as well. So there's a wide range of factors that influence whether the technology will be suitable for a particular mine. My point would be that there is already regulation in place through the Safeguard Mechanism that is seriously driving companies to investigate this technology and pursue it very seriously, and I think we're seeing that.

I think Tahmoor Coal, for instance, is on the public record as saying that they're looking at this technology, with a view to hopefully deploying it by the end of this decade. Appin Mine, in the Southern Coalfield as well, has been very active in this space and has undertaken a range of demonstration trials with CSIRO over the last decade as well. They're now looking to install the first unit sometime in the near future, with a view to potentially expanding that if that individual unit is successful. In Queensland, Kestrel Coal has got funding from the Commonwealth Government to roll out this technology at their mine as well. So there is a large amount of momentum building behind these decarbonisation technologies in the industry. We're hopeful. We obviously need to step through the process to make sure it's done in a safe way, but we're very hopeful that we'll see these technologies be deployed to some extent at New South Wales coalmines.

Ms SUE HIGGINSON: I'm just curious, do you accept that under the current net zero emissions modelling for fugitive methane emissions, over the next five years your industry will be going up, not down?

DAVID FRITH: We can see the same data that you can see on the net zero model.

Ms SUE HIGGINSON: Yes. And it says we're going up; you guys are going up.

DAVID FRITH: I don't know what the assumptions are that underpin those assessments. So we've been discussing these forecasts with the net zero modelling team. I might just add, none of the stuff that we're saying here is any criticism of that team.

Ms SUE HIGGINSON: No. Sure.

DAVID FRITH: I think they have a really complicated job, and it's a very complicated task. But we don't have full transparency around what the assumptions are and what's the—

Ms SUE HIGGINSON: According to the energy, climate change and environment Minister right now, she herself says we're some of the best in the world at what we're doing, and I think she's probably right, and she says that the fugitive emissions are a real issue for us, in terms of getting to 2030. I'm just curious—I hear that you are suggesting that your sector is really, really committed to the Safeguard Mechanism and the Commonwealth program. But do you accept that you have, and New South Wales has, a New South Wales legal obligation to reduce by 50 per cent soon, 2030? In the Minerals Council submission, I just feel there's an underlying assumption that you don't think that matters to your industry so much.

DAVID FRITH: No, the point we're trying to make is that everyone seems to ignore the Safeguard Mechanism and the impact that it's having on the New South Wales mining sector. So there's not a lot of discussion around the Safeguard Mechanism and how it contributes to New South Wales targets.

Ms SUE HIGGINSON: Sorry, what gives you the basis to say that it's being ignored? It's addressed in the annual report. They talk about it. They say there's a kind of incoherence. We're working on making that work. But what's very clear in the Net Zero Commission's findings, in their report, is the obligation is here. You're mining coal in New South Wales. You're making emissions here in New South Wales. We've now got a regulatory framework that was introduced in New South Wales. There are these obligations. And I'm just curious as to why the Minerals Council submission—

DAVID FRITH: We accept that there's targets in New South Wales as well, and we acknowledge those, and we want to make a contribution to those as well. What we're saying is that our full contribution at the moment isn't being reflected, because the full extent of the Safeguard Mechanism requirements isn't captured in the emissions modelling.

Ms SUE HIGGINSON: And so, then, what do you say about the fact that your submission says that there's plenty of room for you guys to keep getting these new approvals, the ones in the pipeline? You even suggest somewhere in your submission, it's open for you guys to keep making new applications.

DAVID FRITH: Well, we think that there will be more applications that come forward for assessment. I think it's widely known that the net zero model isn't necessarily a complete assessment of what might happen in the future. I think that what we need to understand is what is the actual net emissions requirements of these companies that are coming forward, and of the coal sector overall, so that we can make that assessment of net emissions versus net emission reduction targets.

Ms SUE HIGGINSON: What part of the kind of clarion call is the industry not hearing? We're not going to meet it unless we go a lot harder and a lot faster and further on that initial target, and then the interim target is obviously something that has to be addressed too. Do you say that your sector gets some kind of "get out of jail free" card because you're looking at the net zero 2050 target and you're committed more to the Safeguard? I'm just struggling in terms of the—

DAVID FRITH: No, not at all. I think this idea that we're getting a free kick is not correct. If we have a look at the Tahmoor assessment for an application that they have under assessment at the moment, they've provided projections of what their emissions are likely to be to 2030 and beyond but also what their emissions reduction requirement is under the Safeguard Mechanism. And between now and 2030, they need to reduce their emissions by 50 per cent.

Ms SUE HIGGINSON: Sorry. I'm just misunderstanding this part. That's great. But there's now a New South Wales emissions reduction target, legislatively enshrined, and we've got a Net Zero Commission that's saying, "We're not going to meet them." Where is your adjustment now in terms of these very important policy legal findings of this State?

DAVID FRITH: As I've pointed out, we are making a substantial contribution through our efforts, largely driven by the Safeguard Mechanism, which we don't agree are being fully modelled—our contribution is being fully recognised in the emissions data that's available. We fully accept that coalmines need to be subject to stringent assessments and the industry needs to decarbonise. We are investing in these technologies. It's not going to happen in the next 12 months but, over the next few years, we're hopeful that these technologies will evolve and we'll be able to make substantial cuts in the direct emissions from mining operations.

Ms SUE HIGGINSON: You did touch on the VAM technology. Maybe this is something you need to take on notice, or maybe you're aware. The Appin mine is the one that you were referring to in terms of that technology. Why is nothing happening there? Why are we not seeing it? Why is it not up and running? Why is there no rapid development, or am I missing it? Nothing—is my understanding—has actually happened in real life, on the ground and capturing these emissions.

DAVID FRITH: There's been a hell of a lot of work happening at the Appin mine. As I said, these are complicated projects. There's been several iterations of that particular unit that is being planned down there at this point in time. There's a lot of factors that need to be taken into consideration, as I've explained, around the methane concentrations that there are.

Ms SUE HIGGINSON: Sorry to interrupt, but can I just put this one thing to you? Why did Tahmoor complain to the IPC that VAM tech was too expensive and it couldn't do it and it wasn't going—

DAVID FRITH: When did they do that?

Ms SUE HIGGINSON: That's what they said to the IPC, the Independent Planning Commission.

DAVID FRITH: In their most recent assessment, they've indicated that they're undertaking conceptual studies around VAM abatement technology and they're hopeful, if it's successful, to be rolling that out towards the end of this decade—

Ms SUE HIGGINSON: 2030.

DAVID FRITH: And that it could contribute to an 80 per cent reduction in fugitive emissions from the site.

Ms JACQUI SCRUBY: Recognising, I suppose, that the International Energy Agency says global demand for coal is peaking this year, or at least this decade, and the work that the Federal Government is doing on transitioning coal communities with the Net Zero Economy Authority, what role do you see the New South Wales Government playing in supporting coalmining communities to prepare for that transition?

DAVID FRITH: There's a lot of different pieces of the puzzle that are happening in this space. Obviously, the New South Wales Government has the Future Jobs and Investment Authorities that are being proposed, and I think they're considering what the make-up of that that might be. We've met with the Net Zero Economy Authority as well at the Commonwealth level. I think the nature of the support is going to depend on the nature of the particular mine or power station or whatever it might be that's closing down. It will depend on the timing of that closure and what the state of the industry is at the time. There might be opportunities to deploy into other types of mining operations. Depending on the demographics of the workforce, there might be people who want to take retirement or redundancies.

There might be retraining opportunities for other industries that are growing in the region. There might be opportunities in the critical minerals sector. There's a wide variety of potential opportunities for people who may be affected by these closures when they do happen. I think the Government's role will probably be best around coordinated planning to make sure that the initiatives that are being undertaken by individual companies—unions, other kinds of industries that may be developing or looking to develop in a particular region—there's a level of coordination around what those different activities are.

Ms JACQUI SCRUBY: And policy certainty as well, would you say?

DAVID FRITH: Yes.

Ms JACQUI SCRUBY: Maybe you could explain the opportunity with other critical minerals in terms of clean exports and how they contribute to other industry in New South Wales into the future—what those opportunities are?

DAVID FRITH: Critical minerals are a big opportunity. They're notoriously difficult, firstly, to get approval but also to get finance for, just because of some of the complexities around large capital investments and some of the complexities around the processing requirements for critical minerals and some of the immature markets that there are for some of these minerals as well. There's been quite a few discoveries of critical minerals in New South Wales. There's a couple of large critical minerals operations or mine proposals that have been approved but are still trying to seek finance. There are others that have run into issues in the planning system and others that are seeking approval. It does provide an opportunity, if the Government can support these projects through the planning system and do its bit to get them ready for investment, then, over time, I think those opportunities will be taken up by the industry.

The CHAIR: In your introductory remarks, Dr Parsons, you said that there were huge opportunities in the gigantic sector that you represent that we were not affording ourselves of. What are those? And then another question I'd be interested in your view on is that the commission has said that if the mining sector, in particular, does not cut their emissions sooner and faster, then a liability will fall upon other sectors of industry. Are you mindful of that and how do you react to that? So two questions, but I thought I'd bowl both up at the same time.

HERMIONE PARSONS: The second question, I might put that one on notice, but I'll give it a go. The first question, the opportunity in New South Wales is very significant through the investment that already has occurred. And I'll give an example of the freight logistics chain from NSW Ports Port Botany. Massive investment has gone into on-dock rail at Patrick Stevedore and at DP World. There is a direct freight rail line—dedicated freight rail line. This is like nirvana in our country that you have a dedicated freight line from Port Botany, the biggest container port, directly to an intermodal terminal called Moorebank, but also to other intermodal terminals at Enfield, at Chullora, at Saint Mary's, and there should be one at Mamre Road.

This dedicated rail line is underutilised, yet that dedicated freight line is not interfered with by passenger transport. So it's sitting there as fabulous infrastructure that goes from a port that has extremely efficient,

semi-automated stevedoring businesses with really good, modern systems to prevent emissions. The freight can be lifted straight off the ship onto the stevedore business, straight onto the rail and go in a dedicated rail line to an intermodal terminal called Moorebank Intermodal Terminal, which is a massive industrial land site that is occupied by businesses like Woolworths, with a five-star green-rating distribution centre, national and State, and a whole range of different logistics companies.

What this example shows is the freight could be moved between the port and the intermodal terminal in a shuffling system. By doing this, you cut out hundreds and hundreds of trucks per day. So what can happen with using rail correctly—and rail has 16 times less greenhouse gas emissions than road, as the report says—by doing this, it means that you can cut out the numbers of trucks, the fuel that's being used, the emissions, and very extensive modelling shows this to be the case. What this also means is you're cutting out transport legs. It moves from the stevedore to the rail, along the dedicated rail line to the intermodal terminal. Businesses are there to receive the containers, to organise the freight, getting it out of the containers so it can be distributed across to the destination as required. This type of a system connecting ports, road, rail and distribution centres is a marvellous opportunity to decarbonise a lot of the freight moving to and from the port in Sydney.

The CHAIR: If I could jump in there, Dr Parsons, why is it underutilised? What could we do more?

HERMIONE PARSONS: The notion of the charging system between road and rail is a regulatory issue that we are needing to review. This charging mechanism basically gives advantage to road transport. Our company is a road, rail—anything. We just want to use the tools that are the best tools. Modal shift is supported by all of our companies. Even the ones you think of as "road"—maybe a Linfox, a Toll, a TGE—but they are all investing in rail and are major users. So the reason why are regulatory issues. The infrastructure is there, the companies are committed. We need to make sure of the regulatory environment and incentive programs so that people do use businesses, do use rail to its absolute maximum. That's one of the examples. It's not about massive infrastructure investment by the New South Wales Government. It's about regulatory change. There is a huge opportunity in that example alone and I could continue giving many, many more.

The Hon. JACQUI MUNRO: Do you think that your best link to government should be through the industry Minister? Is that the most appropriate place for you to have this engagement, which I think you indicated in your opening remarks wasn't really forthcoming?

HERMIONE PARSONS: That's a very interesting question. One of the tricky things about supply chain is that we are cross-disciplinary, in terms of an academic sense, and we are cross-government departments. So we need the harmonisation of government departments and departments working together. It's a very, very good question, because freight logistics, freight transport, supply chain, are not about a truck. Yet the usual approach is that this is about a truck and truck transport. At the moment, freight and supply chain and freight logistics is housed within Transport for NSW. But this is a huge economic issue and a huge economic opportunity to reduce the cost of living, but also to reduce emissions. So that is a very interesting question. I believe Ministers and government departments need to be working for the harmonisation of approaches to these complex systems within a jurisdiction and across jurisdictions. So we're very happy to work across these areas.

The CHAIR: Just to be clear, the other issue that I raised with you, you'll take on notice?

HERMIONE PARSONS: I'd like to give it a go, actually, but if my answer is inadequate I can provide further information. I think it's a really interesting question, if I can reframe it. Yes, if mining isn't doing what is required, then yes, the decarbonisation of society still has to go ahead. Very often, governments—and New South Wales is included—look to, say, passenger transport as the way. It's not looking at the complex system that, say, freight logistics, supply chains can offer. We need to make sure that everyone's pulling our weight, and that wherever true investment is occurring, we look at that in terms of how we can really maximise the opportunity for decarbonisation. And in that way, focusing on supply chain as a key way to influence decarbonisation and reaching those targets, is very sensible. I don't know if that answers your question, but I hope it did, Chair.

The CHAIR: No, it was very good. Very much appreciated. Thank you.

Ms LIZA BUTLER: I want to thank you both for coming today and being generous with your time in answering questions. Mr Frith, would it be fair to say that the mining industry generally relies on offsets rather than addressing what they can do about the emissions?

DAVID FRITH: I think it will vary over time, and depending on the individual mine in question. Like a lot of hard to abate industries, a lot of the easy wins, if you like, have already been taken. I've already discussed some of the measures that mines are already taking around abating emissions, through their gas drainage networks and power generation, and flaring of methane. So a lot of those easier measures have been taken advantage of. There's an opportunity to incrementally improve some of those and maybe deploy them more broadly. Those measures will definitely be taken where they're viable. As I've explained, some of the next generation of

technologies—we've discussed about VAM. Some of the pre-drainage of open-cut methane, for instance, is something that the industry is also looking at closely, but is something that is technically challenging and costly. Obviously on the diesel side of things, moving to alternatives to diesel-fuelled equipment is also something that's not going to happen in the short-term.

I think the way the Safeguard Mechanism has been designed and other kind of mechanisms have been designed around the world, is that carbon offsets are a way of managing those—what can be a step change in emissions over time, where opportunities aren't available in the short-term but over time they will become available. There's opportunities to decarbonise, and you can kind of reset that balance between offsets and direct abatement. I think you'd find a similar kind of situation in many hard to abate sectors where there aren't those immediately available direct emissions abatement technologies that they can take advantage of now.

Ms LIZA BUTLER: You're saying that you think we will see change in that in the coming years, because the low-hanging fruit will be gone for you?

DAVID FRITH: I think it'll change over time. Obviously the baseline mechanism starts off with—well, it depends on which mine you're talking about, but generally a smaller abatement level, and that grows over time. There will be a bit of a shifting over time as different abatement technologies become available and are rolled out at a particular mine and then at a different mine. There'll just be a change between how much there is a reliance on offsets and how much is able to be achieved through direct abatement.

The CHAIR: I've just got one more for Dr Parsons, and that is the electrification of our logistics fleet. A huge amount of capital expenditure goes into shipping and air freight, and then our road freight. What opportunities are there for electrification? Are they being taken up? Could you just give us some information about how that is happening, if it's happening at all?

HERMIONE PARSONS: It certainly is happening, and I can give you some examples. TGE, Team Global Express introduced last year 60 new electric vehicles for the urban freight task in Sydney. Linfox has two of the latest prime movers that have entered the country. But the regulatory impost there is that Transurban won't allow the prime movers to go on bridges or in tunnels, so there's an issue there about the barrier to it being used. But if you consider what Woolworths is doing, it's not just reducing embodied carbon in its buildings, it's just created and opened a new national and State distribution centre at Moorebank. It's a 5 Star Green Star rating. The electrification is for the vehicles with six stations for heavy vehicles. One megawatt is its initial provision, but it's a five megawatt solar generation distribution centre, and the vehicles that will be servicing it—five prime movers coming from one of our other companies are being connected into this service.

We have electrification in distribution centres, with Woolworths as the great example, with all of the examples I gave you before. But then our companies like Linfox and Toll and TGE, the rail operators like Aurizon and Q are very, very seriously investing in this in terms of their embodied infrastructure for the cranes, and every part of what they do in their massive infrastructure task, but also in their vehicles. So this investment is real, and it's across the whole supply chain in electrification. What we have is an impost. One example—and this is the sort of thing that happens in our industry—the Federal Government invested in the Hydrogen Highway between Melbourne and Sydney. So the company, as this freight corridor—companies in these industries invested. These companies invested. Then the Federal Government reneged. Therefore, there were stranded assets, and the companies that had actually mostly involved themselves in that hydrogen use of freight left the country. So what we need is clear action plans to really support the investment that each of our companies is very seriously making towards the net zero targets.

The CHAIR: Thank you very much, Dr Parsons. That concludes the time allocated for your evidence. Again, we very much appreciate the work you do and you taking the time to give evidence and/or make a submission. Thank you very much for your work. It greatly assists our inquiry and the joint standing Committee.

(The witnesses withdrew.)

Ms ALISON SCOTLAND, Chief Executive Officer, Australian Sustainable Built Environment Council, affirmed and examined

Ms FRANCESCA MUSKOVIC, National Policy Director, Property Council of Australia, before the Committee via videoconference, affirmed and examined

Mr TENNANT REED, Director, Climate Change and Energy, Australian Industry Group, before the Committee via videoconference, affirmed and examined

The CHAIR: Good morning and welcome to you all. We'll start with opening statements, and we'll turn to you, Ms Scotland.

ALISON SCOTLAND: Firstly, thank you so much for the opportunity. We really appreciate it and also really think that the creation of New South Wales' Net Zero Commission is such a wonderful thing. From our perspective, the urgency with which we need to make change requires collaboration and coordination across a whole number of different government departments, so having that body with the ability to collaborate and coordinate is really important for New South Wales. I commend you and everybody on that.

From an ASBEC—the Australian Sustainable Built Environment Council—point of view, we're a body of organisations that are generally peak bodies, so industry and professional organisations. We also have not-for-profits. We also enjoy the membership of government observers and academia. We all get together to work out what we all agree on in relation to driving sustainable buildings policy for the built environment. So all of the subject matter contained within the annual report is very much of interest to us, primarily related to the built environment, of course. I'd like to draw out some of the really key aspects around the urgency of driving decarbonisation of our built environment, taking advantage of the rapidly reducing emissions of the electricity sector and the consequential electrification of the built environment, and the urgency to actually implement policies to drive electrification in buildings. I'm very happy to talk about other aspects related to the report, depending on the questions that you have.

FRANCESCA MUSKOVIC: I will start by quickly explaining who the Property Council is. We are the leading advocate for Australia's largest industry. Our industry represents 13 per cent of Australia's GDP and employs 1.4 million Australians. Our leading members are also world leaders in sustainability and consistently top global benchmarks on ESG. From our perspective, the challenge really remains to extend that leadership and work more broadly across the sector, and I think that's certainly highlighted in the Net Zero Commission's excellent report. I echo a lot of Alison's points just then on the importance of having such a commission.

From the Property Council's perspective, we would really like to see the New South Wales Government develop a sector-specific plan to decarbonise the built environment. Having more of an institutional framework around the need to decarbonise buildings is necessary. There is work on a similar train happening in the Commonwealth Government with their built environment sector plan. We'd like to see measurable emissions reduction targets over the medium term towards that longer objective of net zero.

I'd also just like to highlight a couple of key areas for the Committee that I think require the most focus from a New South Wales perspective, and show perhaps where New South Wales is lagging compared to other jurisdictions, specifically in buildings—I'll reserve my commentary to the built environment. One is the electrification of new and existing buildings. Every new building built today with fossil gas is one that's going to need to be electrified in future at a greater cost, and New South Wales really doesn't have any of the policy infrastructure in place to act with a response on that. That's really evident in the report that the commission produced as well. At a minimum, New South Wales should ban the connection of fossil gas to new homes [inaudible] policy and support for existing homes and commercial buildings to electrify, noting that, for larger, complex, existing commercial buildings, there are some technical and cost constraints involved and the support of government is necessary to get that work going.

Secondly, there is no consumer-facing information on the energy performance of existing homes. If you go to department stores, you buy fridges and washing machines with energy labels on them. There is no such infrastructure in place for homes—the biggest investment that people tend to make and a significant part of their expenditure in terms of rent. New South Wales should be an early adopter of a national push to roll out energy ratings for existing homes, and, once the implementation of that is worked through, disclosure of those ratings should be mandatory at the point of sale of dwellings.

Thirdly, I'd like to see the New South Wales Government fund the NABERS program. It's Australia's best energy efficiency program. It's an example of global leadership, and it's been responsible for \$1.7 billion in energy bill savings and over 11 million tonnes of avoided emissions in the 25 years that program has been running. New South Wales Government invested welcome funding a few years ago for neighbours to create an up-front

carbon rating to measure the embodied carbon of newly constructed buildings. There is significant extra work that is needed to be done to embed a focus on embodied carbon in the built environment and extend what is early leading work in the commercial sector to the residential sector and, more broadly, in the infrastructure space. Thank you. Happy to explore that and any other questions.

TENNANT REED: I represent the Australian Industry Group, a peak body representing thousands of businesses around Australia, many in New South Wales, of all sizes and many sectors, including, manufacturing, transport and logistics, energy, technology, defence and many more. I will comment particularly on the sections of the progress report that relate to electricity and to industry. Overall, the picture that the commission presents is a thoughtful and sensible take, despite being a first go and produced quite rapidly to meet the requirements of the legislation so soon after its establishment. The message is bracing, but it is reasonable. Action will have to accelerate to deliver the State's goals.

Progress in the electricity sector alone will certainly not be enough to deliver the medium-term and long-term goals, but electricity does have a role in supporting the transition of most other sectors. In the electricity space, the most important and urgent thing is deployment of a whole range of electricity assets and infrastructure needed to both support affordable and reliable access to energy, and the steep reduction of the State's emissions as its incumbent coal-fired power stations retire. It is critically important to manage that transition well. There is no substitute for building a lot of stuff in that process. We do need, at the same time, to focus on reducing the cost and the time needed to get major projects built.

In that context, the focus on building social licence for these projects is certainly important. The commitments made to communities in that process of building social licence need to be manageable in terms of their cost on energy users overall. We do need to emphasise the core value of energy infrastructure in providing energy to support the whole of the State, society and economy. Yes, additional benefits for regions that are particularly essential to the hosting of infrastructure are important. But everybody has a stake in success here, and everybody will pay higher bills and wear the consequences of higher emissions and lower reliability if we can't deploy the transmission, the generation, the storage that we need.

On the industry front, of course, what does industry need? One of the things it needs is clean electricity and lots of it at the most competitive price that we can deliver it. We also need a lot of focus on transitioning process heat. Heat is used in many different ways in industry. Some of that today comes from coal. Most of it comes from gas. These are very important fuels to the continuity of business. They are used in different ways, but we're going to need to adopt more and more different alternatives over the next couple of decades. Electrification is a very important element in this context, as well—beyond the building context that Ms Muscovic referred to—but not all industrial heat needs are likely to be best electrified. Certainly in low-grade heat many will. Biomethane and, potentially, clean hydrogen are likely to be relevant to higher grade heat requirements.

We are going to need to overcome challenges to the level of demand for clean products, and to the competitiveness of clean production, in order to make investable the upgrades that many industrial facilities will need over coming years. The national Government has a role there. The State can contribute as well, potentially through its procurement practices, potentially through State-based and preferably nationally consistent standards that help to drive demand for cleaner metals, cleaner building materials, a whole range of clean products where the problem is not just the up-front investment in a process, but ensuring that you can cover the production costs of operating those processes. I'll pause there. Thank you.

The CHAIR: Thank you all for your statements.

The Hon. JACQUI MUNRO: Thank you, everyone, for coming today. Very interesting parts of this conversation. On the built environment sector, the report is pretty damning about the emissions that are actually growing. Emissions are 91 per cent higher than in 2005. It also notes that the sector is currently not on a clear emissions reduction trajectory, yet most of the technologies needed to reduce and even eliminate emissions in this sector are already commercially available. I'm just wondering, I think both Ms Scotland and Ms Muscovic spoke about the need for more regulation. It seems like the sector requires that solid legal framework to act, and that people won't take that action without essentially legislative force. Am I understanding that correctly? There are obviously competing interests at the moment with housing, for example, where you want more housing and you want it to be affordable, yet you want it to adhere to these standards that get us to net zero. How do you balance that from a regulatory perspective so that your members can actually build homes for people?

ALISON SCOTLAND: Happy to jump in first, if you're happy. Then, Frankie, I can pass it to you. If you look at the statistics in that report, you can see that 53 per cent of the built environments emissions profile comes from gas. If you're actually avoiding all of the new buildings that are coming in from tapping into that gas network, you're not adding to the problem. Since we started measuring emissions, there's been tens of thousands of new homes added. If they actually didn't have that cost of connecting to the gas network, it's almost a win-win

situation. From a regulatory perspective, having mechanisms in place to not connect to the gas network in the first place is so important.

It actually was the first step in other States and Territories like the ACT and Victoria. They were the very first actions taken in their gas substitution road maps. I would advise the New South Wales Government to have a look. The New South Wales Government is a wonderful leader in many respects, but in the gas substitution pathway, it's not. The benefit is that ACT and Victoria are years ahead, and you can actually use the learnings from both of those processes to inform the New South Wales process. It is shocking the amount of emissions that the built environment has been using, but the mechanism around electrification and getting off gas is quite a compelling one. Ms Muscovic, I'll pass to you.

FRANCESCA MUSKOVIC: Thanks, Alison. I obviously support all of Alison's comments there. I think the way the data is cut for the purpose of this commission really highlights the issue with fossil gas use in buildings. Whilst there's not as much commentary in the report, I would put, obviously, a lot of that down to the population of New South Wales has been growing at a faster rate compared to other parts of the country, so you've seen [audio malfunction] over the course of that time. For the previous comments, much of that has involved unchecked expansion of the gas network.

Ms LIZA BUTLER: Mr Reed, do you have anything to add to that?

FRANCESCA MUSKOVIC: I believe it was even Government policy to encourage them because—can you hear me okay?

Ms LIZA BUTLER: No, sorry. We thought you were done. You're cutting out.

FRANCESCA MUSKOVIC: Okay. Is that any better?

Ms LIZA BUTLER: Talk a little bit and we'll tell you.

FRANCESCA MUSKOVIC: Sure, okay. I was going to just reiterate the point that there's been unchecked expansion of the gas distribution network in New South Wales. Without wanting to repeat Alison's points there, the New South Wales Government should really look at what the ACT and Victoria have done in the approach they've taken and look at how you most effectively start to phase out the use of fossil gas in buildings. Industry needs some certainty around that. I think it's a combination of regulatory measures but also incentives that are going to be required in the next little while. As you can appreciate, because there is no signal from the New South Wales Government or the Commonwealth Government at this stage that there ought be an end date to the use of fossil gas in buildings, that is not sending the right signal to that industry and, unless that's the case, you will continue to see connections to the gas network.

We advocate horses for courses measures. We think a broader national signal around the phase-out of fossil gas use in buildings is necessary. But there are things that the New South Wales Government can and should do to complement that, and that includes stopping the connection of new homes. Commercial buildings are a little bit more complex. We stray into some of the territory that Mr Reed and his members bump against because electrifying commercial buildings or industrial premises is a more complex challenge and in 2025, whilst there are technology solutions, some of it is very expensive and some of these buildings have technical constraints that need to be overcome in order to electrify. Even for the most ambitious building owners—members that I represent which have net zero targets before 2030 to meet—with some of the technical and cost constraints in electrifying their existing building, they're likely to have some residual gas use beyond meeting those targets.

The CHAIR: Mr Reed, you wanted to add something to that?

TENNANT REED: I'd be happy to. Gas is a complicated transition because it is used in such different ways with different contexts within different parts of industry, the power sector and the built environment. There will certainly be some significant residual use of a gas, whether that is a natural gas, fossil methane or biomethane produced from organic sources, or of hydrogen potentially, in parts of industry for a long time to come. While we are very properly focused on managing electrification of those uses that make sense to electrify, we are going to need to pay attention to managing the physical and the financial aspects of the decline of utilisation of the existing gas network. There are complexities that come, obviously, with managing a network where some physical parts of that network are no longer being used. When do you retire them? How many users disconnecting do you experience before it becomes unviable to sustain a portion of the network?

But, financially, these are regulated assets. They're on the current model of regulation. Whoever is left on the network will pay the full regulated costs of that network off. That is a very functional form of regulation for a network that is stable or growing. It can lead to a lot of injustice and inefficiency in the context of a network that is declining. That is not a rapid issue; it's a slow burn. It's one that we have time to fix. But we do need to start, both in the jurisdictions where this is most to the fore already, but really getting a nationally consistent approach

would be good to how those asset costs are going to be recovered; who's going to bear them. None of the answers will be very exciting, but the status quo is a recipe for a very painful death spiral.

The Hon. JACQUI MUNRO: Is the New South Wales Sustainable Buildings State Environmental Planning Policy the right place for something like this in terms of a transition away from gas or a gas ban for new connections?

ALISON SCOTLAND: I can start, and please jump in, Frankie and Tennant, if you need to. I would say it's a start. I think the ACT and Victoria have found that there are multiple different components that need to be considered in this journey, like Tennant mentioned. From a banning-new-connections point of view, that would actually just require considerations around the planning legislation. What I will say is that it also requires tools and incentives to encourage the transition away, and there are some really effective tools out there. I'll use an example that Frankie mentioned: NABERS with commercial buildings. There's already the function and the demonstration of amazing success that tools can have in changing behaviours. We know that the behaviours are different, depending on whether you're talking about heating hot water, heating air or cooking. They do require different processes. So, yes, I would suggest that I'm very happy to share the Integrated Energy Plan that ACT released at the end of last year on this process. They really did have a multifaceted approach, starting with planning to not allow any new gas connections, but the different levels of intervention change, depending on what you're looking at. I'll pass to Frankie and Tennant, if you want to add?

FRANCESCA MUSKOVIC: Thanks, Alison. The sustainable building SEPP would be a logical place to start with a requirement around new buildings. I would again just reiterate I think there's value in looking at the way Victoria, in particular, has approached this issue in terms of their initial announcement to ban new connections for lots of a certain size that don't require further planning assessment. They've taken a staged approach to this. I would maybe just observe the obvious, which is banning new connections and looking at planning instruments to do that as a no-regrets measure, but that's not going to address the emissions that are baked in, that have informed the figures that are in this report. There's going to need to be a concerted effort on how we deal with the phase-out of that fossil gas in the existing homes that we have, and that is obviously the much larger challenge, as you'd know. Of course, New South Wales has a lot of building activity. We have population growth. There's a lot of new housing going up on an annual basis. But those are only incremental increases and changes to the emissions profile. I think that the larger challenge, and one that's going to require a lot more nuance in the way it's dealt with, is the existing building stock.

TENNANT REED: I would simply add, on behalf of Ai Group, our members include businesses that supply home appliances. Some of them make gas appliances. Some of them make electric appliances. Some of them make both. What they all will want is a decent amount of time and awareness of what the rules are going to be, so that they can prepare to comply and not find themselves stuck with a large amount of product that can't legally be sold.

The CHAIR: Let me jump in and ask a question there. Energy use is incredibly important. There's the energy in terms of the operation of a building, but there's also the energy we use to construct buildings, and a huge source of emissions has been and will continue to be concrete. What are some of the alternatives, if I could start with you, Ms Scotland, that we could be looking at and that government could be supporting as alternatives to concrete? I know that there's a push to use fly ash, more fly ash, and to come up with alternatives for concrete in construction. Could you comment on that, and not just in terms of concrete? What are some of the ways that we can create more sustainable buildings in terms of greenfields or retrofits et cetera, or construction generally?

ALISON SCOTLAND: This is where I'm pleased to say New South Wales has been a leader. So in the Sustainable Buildings SEPP there is a requirement in there to measure the up-front embodied carbon, so what's in the creation of our products, the transport to site and then exactly what you mentioned, the construction processes. So understanding and measuring in a consistent way is really important. And again, NABERS has led that process with a consistent way of measuring and reporting on up-front embodied carbon, of a huge variety of materials. And we know there's some big ones. It's concrete. It's steel. It's aluminium.

I would be very welcome to share with the committee, ASBEC has been working on a report bringing industry on the journey. It's about the decarbonisation trajectories of all of the key materials. So I would point you to SmartCrete CRC, that has been working really diligently with the industry on how to find different types of cement, or cement supplements, different ways of building, different ways of using less concrete. Steel is much the same. They know what they need to do, or they're still trying to come to terms with not only the transition but what else they need to do to decarbonise. There's plenty of options out there and low-carbon alternatives of many building materials, but some of the trajectories are hard.

What I can say is part of the ASBEC process, when we had a look at this embodied-carbon report, we found that it's not just about the materials themselves decarbonising, and that is the industrial decarbonisation

sector. Some of these might have the benefit of electrifying. But, like Tennant said, there's a lot of the process-heat conversations that we still haven't solved. There's also better design, better procurement, better decisions before you even think about maybe building a road. So I really congratulate Infrastructure NSW on their decarbonising infrastructure delivery process, because they delve really heavily into almost the avoid mentality, so can you solve a problem in a different way that might require less infrastructure, less carbon?

From a buildings point of view, it might be, do we go into these new greenfield areas that require all of the infrastructure—roads, rail, energy, this, that and the other—or do we have better planning provisions around infill, urban infill? So it's all of those decisions that can have a really big impact on the potential use of carbon or the avoided use of carbon. So, from a buildings and an infrastructure point of view, we can reward and incentivise our supply chain to decarbonise, and that needs to happen. But we can also make better decisions about how we solve our challenges and our problems.

The CHAIR: Do any of our other witnesses want to comment on that?

FRANCESCA MUSKOVIC: Yes, without repeating anything that Alison said, I think there's an important role for governments. Alison mentioned Infrastructure NSW, but governments do procure a lot of infrastructure projects, and so where low-carbon alternatives are, there are ones to name in concrete. I would observe some of our larger members who are in the market and buying low-carbon concrete alternatives are starting to report that they're very close in some cases to cost parity with normal concrete. But to embed that more broadly, you really need to see the market weight of the larger producers. That includes government in all of the infrastructure that you procure and build [audio malfunction].

The CHAIR: Unfortunately, we've just had Frankie drop out. We'll see if we can find Frankie in the internet somewhere. But in the interim, Mr Reed, do you have anything to contribute?

TENNANT REED: Yes. I do, Chair. This is a really important issue for our members, because they are the ones who will be making the underlying materials and producing scope 1 emissions, that will become the scope 3 emissions, the embodied emissions, in the built environment. There are a range of exciting technologies and emerging innovations across many of these basic materials that will enable much lower embodied carbon. And I think Ms Scotland's points about design for efficiency are very important, but we are going to need cleaner, near zero, emissions primary production of these important construction materials over time. And we face some challenges there, including that, despite the benefits of innovation, it looks like for some of those materials, there will be an enduring cost premium over conventional high-emissions production.

The Hon. JACQUI MUNRO: What are those?

TENNANT REED: So, for example, steel is an important structural component for many buildings. The two near-zero emissions pathways for steel manufacture that are on the radar are, first, to use hydrogen to reduce iron ore to iron, just as we use coking coal to reduce iron ore to iron today. The second is what's called molten oxide electrolysis. It's using just electricity to split iron ore into iron and oxygen. Both of those processes currently look expensive compared to using coking coal. There will be innovation and improvement, there will be learning by doing, with deployment of these technologies. The most positive and optimistic assessments that we have seen still expect a 10 to 15 per cent cost premium before policy gets involved over the long term.

Now we may well be able to do better than that—we have been pleasantly surprised by the turnaround in the costs of renewable electricity generation over the past couple of decades—but the best current view is there will be this cost premium. How do we make that production investable and that product available in that environment? Voluntary demand has a part to play, government procurement has a part to play, standards may well have a part to play and price instruments also have a role. The Federal Government is considering a border adjustment for carbon, similar to, narrower than, the Carbon Border Adjustment Mechanism that the European Union is in the process of implementing. Those kind of instruments will tend to level the playing field over time between high carbon and cleaner production, wherever that production is located.

I'll just add one more thing, which is that the State of New South Wales did introduce a very important policy that may have flown under the radar for many people a couple of years ago, when it adjusted its own cost-benefit analysis approach to incorporate a value on carbon emissions, including in the built environment. That's a process that is not tremendously visible outside of government. We can't yet tell if that is making an affirmative difference to the approval of major projects. But having a value in those decisions is essential if lower carbon infrastructure and construction for government is actually to prevail in what are fiercely competitive bidding processes.

Ms TRISH DOYLE: Thank you all for being with us today. It's been a really interesting session, hearing of your expertise and suggestions. Coming to you from the beautiful Blue Mountains here. So there's been some suggestions about looking at other jurisdictions. There's been some talk of what's happening in the ACT and

Victoria. I'm just wondering what other policies could be put in place to help the built environment reduce energy use and emissions—you alluded to one, Mr Reed—but also support New South Wales to meet those legislated emissions reduction targets. You've probably got some great ideas. It's what you're thinking of all the time, I do imagine. If you were to, each of you, highlight two or three, I think that would be very helpful for the work of the Committee and recommendations coming out of this inquiry.

TENNANT REED: I'm happy to start us off. There is work already going on within the State Government to consider the modifications to its hydrogen target. The hydrogen target, as currently stated, is indifferent to where the hydrogen winds up being used—in what contexts—and consideration currently includes whether to expand that target to biomethane. Having a broad set of incentives for the clean alternatives to current process heat is a good idea. It is a challenging design question to have either one policy or a set of coordinated policies that are giving an equivalent leg-up to electrification and hydrogen and renewable gas, because they all have different contexts, different price points. So I think there's going to need to be attention particularly to whether electrification in industry is being suitably supported.

But expanding that current target policy to biomethane will be a useful thing for those businesses that don't currently think they have an alternative. There are complications with biomethane, including can we produce enough of it for all the uses that, in principle, it could be put to. And there is a cost premium there as well. So where electrification is practical, it may well be more cost effective. But this is an important tool in the armoury, and the current efforts—and the way that they will flow into the State's gas decarbonisation strategy, which will be developed over the next 18 months, I believe—will be quite important to industry.

Ms TRISH DOYLE: Ms Muscovic, I think you did hear my question about other policies, other initiatives that could be put in place and if you were to highlight a few?

FRANCESCA MUSKOVIC: I think much debate and focus has been in the last seven or eight years on the National Construction Code and uplifting minimum standards for new building. That needs to continue. I think the convention that we've adopted in the built environment is that by 2030 homes should effectively be net zero. New South Wales has an important part to play in supporting that work as part of a national effort. I will leave new buildings there. I do think the bigger, harder challenge is how we make all of our existing building stock more energy efficient, running on all-electric, running on renewable electricity. So I do want to really emphasise the point I made earlier about the fact that we don't have ratings for existing homes.

That is an essential foundational policy to put in place, because once you have the ability to understand and disclose what your energy performance is, I would strongly advocate the Government—alongside that measure or disclosure—start a large effort to renovate Australia's existing building stock with a particular focus on older, low-performing homes. We know that homes built prior to 2004 were not subject to any minimum performance standards for energy efficiency and they typically perform very poorly, as most people would know if you've lived in an older home in this country. We need to see these things working in concert with each other: having the benchmark, having the ability to make that transparent and available to consumers, but also the support available to them, always prioritising lower income and vulnerable households in the first instance, and a really strong push to upgrade those existing buildings.

Frankly, every jurisdiction needs to do work on that across the country. But New South Wales could really show some leadership in showing the way on that front. Very lastly, the NABERS program, as I mentioned, is world leading in what it does. It came from New South Wales. It should be a point of pride for this State, and we'd really like to see it properly resourced and expanded to cover more types of commercial buildings. Once we've got that in place, we can look at expanding the current disclosure regime that already exists nationally.

The CHAIR: Ms Scotland, do you have any concluding remarks?

ALISON SCOTLAND: Yes, to very much emphasise what Frankie mentioned in terms of existing homes. I do know that New South Wales are leading and they are hoping to pilot the NatHERS for existing homes—that's the national rating scheme—when it does become live mid-this year. So from an ASBEC point of view, we're leaning in really heavily with the department—NSW DCCEEW—to ensure that they are given all of the necessary information to make sure it's successful. Because if New South Wales is successful in terms of getting all of the systems right around mandatory disclosure of home energy performance, then the rest of the country will lead. So not only will you be tackling your own emissions, but you'll actually be giving the confidence across the country for them to embark on their own journey. So I think that's really important.

Part of that and part of the actions around, once you know the rating of your home, "What do I do then?"—continue all of the amazing schemes that New South Wales has for residents to tap into to improve their home. Lean heavily in. I know the national Social Housing Energy Performance Initiative got another boost of funding last year. They are directly targeting social and community housing for the people that really need them the most.

Absolutely lean in on that. Use the opportunity to really drive improvement in energy performance for those homes.

In a similar vein, I also ask—there's a lot of housing targets out there, and often there's such a focus on the number of houses to be delivered. Often that's at the sacrifice of quality. So, again, I really value the idea of having the Net Zero Commission to be able to ensure that those policies—around often energy and climate change—really feed into other directions and other departments that might be progressing with their strategies at the expense of understanding the impact that they're having. I'll leave it at that.

The CHAIR: Ms Munro, you had a question. Did you want to put it on notice?

The Hon. JACQUI MUNRO: Yes. I perhaps have to do them in supplementaries. I was curious about embedded networks and strata schemes but also if anybody had modelling on how much cost would be incurred by builders, and therefore buyers of houses that had a gas ban, if there was a gas ban in place.

The CHAIR: Maybe we'll put those into supplementaries, and—

Ms LIZA BUTLER: I thought we voted on the supplementaries this morning? There's no time.

The CHAIR: We voted we can't do supplementaries. So maybe we'll take those questions on notice.

The Hon. JACQUI MUNRO: If everyone can take that on notice, that would be very helpful.

The CHAIR: We've got a pretty short time frame.

Ms SUE HIGGINSON: Can I put one question on notice, in that sense? Sorry, I had to leave. It feels so rude, but you have conflicting hearings that you have to be in. I was curious about whether there's work being done in relation to resilience and the fact that we are investigating more and more through the adaptation framework about resilient building—we're retrofitting homes and doing all sorts of things—and whether the sectors are integrating all of that resilience education that we're coming up against now. But also what that means in terms of carbon. So whether there's any unintended consequences taking place at the moment from going "this is more resilient, this is more resilient", but we're not necessarily factoring in the goal of reducing emissions with that ambition.

Ms LIZA BUTLER: For example, a greenfield site, a new subdivision, whether there should be regulation around that that site has a community battery with solar on roofs to be resilient in that community, that would drive down emissions, but also with added threat of climate change, make people, especially in smaller regional communities, resilient.

The CHAIR: There are some big questions there. So a bit of homework there, if you don't mind for Mr Reed, Ms Muskovic and Ms Scotland. We very much appreciate you making submissions, the work you do, taking the time to come and talk to the Committee here. It's very informative and will certainly guide our report to the Parliament. Thank you very much. The secretariat will be in contact in due course with those questions. We will break for lunch and return at 1.45 p.m.

(The witnesses withdrew.)

(Luncheon adjournment)

Mr RAYMOND KELLY, Chairperson and Councillor for Sydney Newcastle Region, NSW Aboriginal Land Council, affirmed and examined

Mr STEPHEN HYND, Executive Director, NSW Aboriginal Land Council, affirmed and examined

The CHAIR: Good afternoon, everyone. Welcome back to the hearing for the inquiry into the 2024 Annual Report of the Net Zero Commission by the Joint Standing Committee on Net Zero Future. I welcome our next witnesses. Thank you so much for coming along. Do you have an introductory statement that you would like to make?

RAYMOND KELLY: I'm a proud Dhanggati and Gumbaynggirr man from Armidale. I now live in Newcastle on Awabakal country. The NSW Aboriginal Land Council is the peak democratically elected body for Aboriginal people in New South Wales. We represent the Aboriginal peoples in New South Wales and, specifically, the Aboriginal Land Rights Network, which encompasses 121 local Aboriginal land councils right across this State. Our membership is over 30,000 strong. Our councils and our lands are the primary vehicles for addressing the ongoing effects of dispossession through the delivery of tangible social, cultural and economic outcomes for our peoples. Our communities have sustainably lived on these lands for millennia, caring for and being sustained by Country. We plan on living sustainably on this Country and being sustained by Country for many more millennia to come.

We see and feel the effects of climate change, biodiversity and habitat loss. Caring for Country, we are culturally invested in maintaining a viable, stable climate and sustaining biodiversity and ecosystem services. We are invested in the success of net zero targets, as all of us on the planet should be, and are. We are ready to play our part in the solution, too. It is not our ways that have harmed the earth and our climate, but we have managed to regain legal ownership of over 250,000 hectares of land across New South Wales, and this presents an opportunity for caring for Country through climate mitigation and renewable energy projects, and through biodiversity and habitat stewardship.

We've been exploring and are increasingly undertaking carbon farming, biodiversity conservation management and our own renewable energy projects. The net zero clean energy transition presents a significant economic opportunity for our communities, particularly in regional and remote communities, which will be a core part of what we're communicating about here today. In these places, we have seen agriculture follow dispossession, and extractive industries follow agriculture, and yet we remain largely marginalised from these economies. It is a common saying in our communities that we have been regulated out of industry.

There are increasing job opportunities, and that we applaud, but we want to come in from the margins to be more significant participants in the economy. The lands that we have returned are significant in aggregate, and yet were still the lands that no-one else needed or wanted. Historically, they have tended to be more a liability than asset. Now those lands, so often adjacent to grid infrastructure, provide materially an excellent opportunity for the future. We have these significant opportunities to contribute to net zero and to create jobs, long-term revenue streams, and housing for our communities where they live on Country.

The sector and technology can accommodate new entrants, and we have significant public investment in the energy transition. We are hoping that the Government can see the opportunity we can to deliver a significant contribution to net zero while building an Aboriginal owned and operated renewable sector with Aboriginal-led projects on Aboriginal lands; a sector that brings a raft of ancillary social-economic benefits, not just to our communities, but also brings revenue streams as well as jobs into the local communities wherever they sit in these opportunities. There is currently no Aboriginal-owned equity in any renewable projects in this State. Nationally, we have just 1 per cent of the equity ownership. By contrast, First Nations equity in renewables in Canada is around 20 per cent.

We want to ensure that the significant public investment does not support only the big players in this sector and only focus on the renewable energy zones. To do so would squeeze us out of the opportunity—yet again regulated out of industry. We want to activate our lands, contribute to net zero, and participate in this economy where our communities live on Country. It is our responsibility to our people and to our Country. The evidence is mounting with the climate crisis. Previous sluggish responses mean that we need to do everything we can, everywhere, and sometimes all at once.

To make a couple of points. The Net Zero Commission annual report only mentions First Nations people subsequently three times. Two other mentions are in the acknowledgement of Country. These mentions go only to the future consultation and community engagement. We want to be participants and contributors to the net zero economy and the policy environment that drives it. We have lands and knowledge to contribute. Proper consultation and engagement only go so far. Participation and contribution are what we should be targeting. Just

to sidestep, if we're talking about Closing the Gap, then here is the real opportunity for us to do so. Give people engagement and give them an opportunity to expand from their own communities.

I need to make another point. We've had years of engagement with the renewable energy sector. We have seen the opportunities the transition presents, but even with the social licence commitments of the Commonwealth's Capacity Investment Scheme, we are still only seeing offers of best practice engagement, jobs and ground leases. For many communities, this is looking like the mining industry all over again. We are not going to let another industry pass us by again. It does not need just to be scale. We really need everything—everything all at once. That's why NSWALC has started its own programme of work, but we need support. We'll expand on that a little bit more.

We have a longlist of potential sites across the State that is now around 200. However, we have a targeted shortlist of sites of just below 50 around the REZs, and about the same for the end of the grid locations. The point I want to make about the grid stability and resilience is that it's also important for regional and remote communities—Aboriginal and non-Aboriginal people alike—as we saw in the recent catastrophic transmission failure at Broken Hill. Our grid and our communities are increasingly vulnerable in the climate crisis and the clean energy transition. Climate change impacts disproportionately on the vulnerable, including many of our communities. We have significant additional landholdings that provide opportunities for other natural positive contributions such as carbon farming and biodiversity conservation management. Even here in Sydney, we have the Gandangara Land Council running an Aboriginal Ranger Program at the moment to restore and protect over 1,100 hectares of Aboriginal-owned land at Heathcote Ridge near Menai.

A point around traditional ecological knowledges and caring for Country is that land management practice, including cultural burning, can significantly contribute to the policy and practical responses to mitigate climate change and climate change impacts. We have many communities undertaking cultural burns, which provide for healthy Country, mitigate fire risks which are increasing with climate change, and demonstrably reduce net carbon emissions. Most importantly, for me, is that we are re-energising our communities to be a part of our system, and it's about our communities. It's about actively taking a part in that. That's the prepared statement, Mr Chairman. We'll take any questions if they were forthcoming. I've brought Stephen along today to answer all those questions if they're too tricky for me.

The CHAIR: Thanks very much, Mr Kelly. We Very much appreciate your opening statement.

The Hon. JACQUI MUNRO: Thank you so much for coming, and for the statement. I was interested in whether NSWALC are involved with the Australian carbon credit scheme or biodiversity credits at all. Do you have a membership?

STEPHEN HYND: I can probably answer that. To date it's still an emerging space for us, to be honest. We're probably a bit more advanced in terms of renewables. When carbon markets first emerged, we participated with, effectively, ground leases providing land available for our operators. Around that same time, the biodiversity scheme was biobanking. It had some real complications for communities being an in perpetuity agreement, and market not being particularly mature at that time. Those things have changed now, so we're re-engaging with what's, for us, still an emerging market rather than—it moved a bit too soon at the time but, yes, we're more engaged with renewables at this point in time. There's a lot of opportunity there.

The Hon. JACQUI MUNRO: On that renewables front, Mr Kelly mentioned the transmission issues that have emerged as new transmission lines need to be put down. Do you have views about whether they should be underground or above ground, or how your communities are engaging with that debate? That seems to be a sticking point for quite a few regional communities. I just want to understand if that's something that comes up.

RAYMOND KELLY: I do understand that there are a couple of regions where there are some challenges. I would imagine that we would need to have clear negotiations with each of those regions and I think there probably could be solutions found for all of them. I think, for us, our key is the end of the line situation. What are we talking about in terms of the grid service? Are we talking about banking? For us, that's where the real opportunity is, and to provide people with the opportunity to have a communication, have some consultation and then to find solutions.

STEPHEN HYND: If I might just add, perhaps a bit sadly, we're still trying to ensure that, whether they're above ground or below ground, Aboriginal people are getting an appropriate engagement and even result from the transmission itself—not just the electricity, but obviously the siting of them goes over Country, goes over land under claim et cetera. We're still kind of a little bit trying to get: Is there a piece of the pie for Aboriginal people, frankly—put it that way.

The Hon. JACQUI MUNRO: Do you feel there has not been adequate engagement with a lot of the communities that are impacted?

STEPHEN HYND: A bit disjointed, to be honest.

RAYMOND KELLY: And I think probably the recognition of being one of the key stakeholders. These communities clearly will become key stakeholders and I think that presents a whole new approach, or should present a whole new approach, for those communities.

STEPHEN HYND: I might just add a little bit further to that. There's been a long-running engagement, particularly on the REZs and the development going on there. There's a lot of discussion about opportunity in a very general sense. But when it gets to specificity, that's where it gets problematic. It comes in dribs and drabs. Instead of taking a more strategic approach to it and what that opportunity could present to the community, the engagement becomes a point in time, compulsory acquisition type process, which is perhaps what we're trying to avoid, to be honest.

The Hon. JACQUI MUNRO: Is that primarily with EnergyCo?

STEPHEN HYND: Yes, primarily with EnergyCo, but we are trying to broaden that engagement.

The Hon. JACQUI MUNRO: To?

STEPHEN HYND: With a number of different government agencies. There's an opportunity. I know EnergyCo is in DCCEEW, but there's a big opportunity for biodiversity offset management and stewardship, so trying to join all of these threads is what we're really trying to do. We can see the opportunities there. We're hoping others can see them and want to work with us to join all the dots.

The Hon. JACQUI MUNRO: A big part of it is actually being able to have those meetings in an ongoing sense.

STEPHEN HYND: Coordination.

Ms SUE HIGGINSON: Just on that, has there been improvement? You might remember, when the renewable energy zones were introduced into Parliament, we were very specific about the Aboriginal benefit program. It was such an important part of the conditions that we passed that legislation through this Parliament. From May last year, when we saw the introduction of the new guidelines, did things start to improve from your perspective about the operation of that? I'm curious because is that the sort of sign that says things are getting better, or do we just need to be doing a lot more?

STEPHEN HYND: I think things are getting better, but there's a lack of practical experience in a lot of quarters, to be honest, to be very frank about things. We have a wealth of engagement experience—that's what we do every day of the week—and we're only sort of being engaged now. It's not a lack of goodwill or accountability frameworks. I think it's more a question of practicalities, frankly. Coordination is more about practicalities than accountability frameworks, be they legislation or otherwise.

The Hon. JACQUI MUNRO: Is that getting the right person to speak to, for example?

STEPHEN HYND: It can be the right person. It can even be making sure that people are having the right conversation. Community—sorry if I speak on behalf of the chair—

RAYMOND KELLY: Go ahead.

STEPHEN HYND: Ensuring that people are not just over-consulting to say, "Hey, there is an opportunity"—it's general, it's amorphous—but being more specific about it. It's about trying to join up the aspirations with the realities. It's not a blank cheque. We know that. But, to be honest, some of the engagement sounds like it is a blank cheque. It would be great if that's true, but I'm pretty sure it's not. It's more a question of practicalities.

RAYMOND KELLY: If I might give some insight into how I see that, that is that we do need a master plan, if you like—a State mapping exercise—to imagine what that could possibly be for all parts. Whilst at the moment we're communicating about the end of the line—sounds like a song—there are various other opportunities around the State. What we would hope to do is to be able to build a master plan or a clear site that everybody understands. For my part, I've been consulted by a couple of different groups at the moment. All I'm talking about is a stretch of territory and we're talking about the land councils connected to those groups. But that doesn't appear to me to have any real sense of purpose other than, okay, somebody's got a contract to work from this point to that point. What affects that for us in terms of the State land council is that some groups are working in isolation to others. For me, it's a practical thing, particularly if we're going to do some of that work internally, for us to have knowledge across the State. But if we have knowledge, then all the other players in the renewable energy area have to be informed about how we see things as well.

The Hon. JACQUI MUNRO: Are organisations going through you to find local groups or is there a specific engagement occurring with local groups first usually, or it just sort of depends?

RAYMOND KELLY: In the case that I'm talking about, a company in the renewable energy area came via their Aboriginal consultant and had a communication with me. That was probably okay in the short term. It's a new thing; it's a new operation; it's a new opportunity. But what we're talking about today here is about being in the industry, if you like, on a much bigger level to help bring some consistency and some cohesion across the State.

Ms SUE HIGGINSON: I just want to get any perspective you might have. We heard some evidence earlier from an expert that was talking about how important understanding our carbon stores is across New South Wales in terms of their capacity to draw down and hold and store carbon. The evidence was that across the landscape there are obviously different capacities and our forests are the deepest—I can't remember her words now, but something about being the deepest storers of carbon. The submission is that lots of work needs to be done across the forest in terms of repair and recovery, and from the submission base it was getting knowledge of practices on Country. Has there been any discussion with the land council about what that might look like up and down the whole of eastern New South Wales in relation to the forests and the carbon capacity, and particularly traditional knowledge about how to manage these incredible dense carbon forest ecosystems?

RAYMOND KELLY: I would just go to this reflection, and the reflection is that there are quite a number of land councils who are now heavily engaged in cultural burns. I think what comes with that is this deep knowledge is being re-energised and it's beginning to be shared amongst those communities, those land councils who are engaged in that area. To that end, it will be the mix and matching that has to happen. Obviously, we can't commit, or wouldn't ask our land councils to commit, every parcel of land they have to that renewable energy area, but where we can, we would probably try and assist, maybe help develop some of the replanting processes, the regeneration of forestry, if we could. But, again, this requires money and it requires a clear line of investment by governments. To that end, we've got land councils with land. We've got land councils with people who can work and, I believe, are ready for work. We just need the industry.

Ms SUE HIGGINSON: And that master plan, that you're saying, where it's really clear. Sorry, Mr Hynd.

STEPHEN HYND: Yes, if I can just add to that. I think everyone accepts now that landscapes were managed landscapes in Australia and have been for millennia. The notion of wilderness is a bit of a furphy. But, weirdly enough, under the land rights Act, we have had lots of very large tracts of land, that might have otherwise been described as wilderness, returned to Aboriginal communities. Access to them can be a challenge. Some of them are spectacular country, but very hard to get to, very hard to actively manage them, when everyone lives sometimes quite far away. So it really does take some investment, and again, that same thing, the strategic view, look to the whole of the landscape, and not just pocket by pocket by pocket. I guess the main driver there is the biodiversity regime as a whole, and that tends to be looked at from a regulatory sense. It's a project-by-project basis. Even the Biodiversity Conservation Trust has its strategic plans and its engagement is improving, to be very clear, but there needs to be some way to enliven that strategic plan and do so with the Aboriginal community, to actually join up all the parcels of land, from a conservation perspective, from a carbon perspective, from a managed Country perspective. It's good for Country; it's good for people.

Ms SUE HIGGINSON: And there needs to be better recognition and encouragement and financial support for the work that's already happening in managing those landscapes, and particularly the Aboriginal land landscapes.

STEPHEN HYND: Yes.

RAYMOND KELLY: Yes.

Ms JACQUI SCRUBY: In regards to specifics and going to maybe a management plan, what is best practice from other jurisdictions around Australia, or internationally, about co-benefits or minimum standards for developers for co-benefits or government programs? And they could be directly related to the transition or ancillary. Support for microgrids, I think, was one that an ARENA project recently was focused on.

STEPHEN HYND: Yes, I can answer that. I can tell you very clearly what's not the utmost ideal practice: a half-considered grants program that just is designed around a sugar hit that everyone has to respond in a very short period of time, an immediate funding opportunity without any longer term thoughts about what does that look like to benefit that community for a long period of time. In Canada, they've got a lot of financial incentives for First Nations participation. It varies a bit state by state, or territory by territory—provinces, I think they are. So some of those schemes are—I don't know if we've really got a strong view of what the financial mechanism is, but they are all mechanisms that provide some sort of support.

It could it be as simple as concessional debt. Everything takes money. In terms of the projects we're doing ourselves, a big threshold piece, obviously they've got to be viable, otherwise we wouldn't be pursuing them, but to get over a development consent and a grid connection, that's a pretty significant investment to that point. And so it's sort of support to there, and once you've got something approved that is viable, you can, frankly, even go and debt-fund it now. There's probably a myriad of ways that the support mechanism could be packaged, but it shouldn't be just a sugar-hit grant mechanism that is near on a tick-a-box engagement mechanism.

The Hon. JACQUI MUNRO: Are there examples that you can provide of that kind of thing in New South Wales?

STEPHEN HYND: We might take that on notice. Yes. And perhaps we can also follow up your question as well on notice as well.

Ms JACQUI SCRUBY: Yes. That would be great. Thank you.

STEPHEN HYND: But there are a myriad of mechanisms that could be, you know.

Ms LIZA BUTLER: You talked about cultural burns and that some land councils are doing it. Do you think that there needs to be clear guidelines on that? Because I know some areas, it can take up to three years before they're allowed to do it, because of all the hoops. Is that common or is that specific to just some areas that seem to have more trouble than others?

RAYMOND KELLY: What I what I would say is this, and I recognise that for many people, this is a new thing. Historically, cultural burns happened every season, perhaps, and this is a new thing, and what I think can happen in the future is people will become more comfortable with the fact that people are able to do cultural burns. So my vision for this is that it will be a fairly common thing for people to know that that there's a cultural burn happening, it's being done safely, it'll help regenerate, regrow, a whole range of things, clear out old rubbish and so on. But it's not just that that comes with it. What people are actually literally doing is removing rubbish, in the meantime. I've been on a cultural burn where people were actually picking up discarded pieces of cars and a whole range of things being cleaned out in a space. So you're not just dealing with leaf litter, you're actually dealing with refuse from other places. I'm not sure that I've given an answer to all of what you want, but I think as we move through this, people will become more comfortable with it.

Ms TRISH DOYLE: My deep thanks to Mr Kelly and Mr Hynd for being here today, and I just want to acknowledge that I'm in the Blue Mountains, in the country of the Dharug and Gundungurra people, and express my respect. You talked, Mr Hynd, about, rather than looking at parcels of land, looking more holistically at what we need to do and listening with respect to our First Nations people. And I know you've taken on notice this idea of providing some examples, but what particular opportunities are you looking for? You said you want to be involved, and not just as a tick-a-box exercise. What opportunities are you looking at for First Nations communities to lead on adaptation projects?

STEPHEN HYND: Well, obviously, we've sort of given an indication that we've got a strong push for renewable energy, in the first instance. We just really want to emphasise the economic component of caring for Country too. So we definitely want to be in a position to be able to provide people with jobs, revenue streams, housing, where they want to live, in their communities, on Country, and so we've got a whole host of issues to deal with in terms of those things. And I'm sure there's other parliamentary committees looking at housing, so I'll leave that one there. So renewables is a key push, because they're first in best dressed type opportunities, so we're trying to chase that opportunity and get ahead of that. As Chair Kelly said, before the agriculture and mining sort of waves pass everyone by, same too, we want to make sure that renewables don't pass everyone by.

Biodiversity is probably the next biggest thing in some respects, because it is a huge opportunity in terms of the land holdings that we have, and they're long-term sustainable jobs. We are pursuing these on individual case-by-case bases, but I think the key piece we're trying to emphasise is the opportunity to do this more strategically and at a whole-of-landscape level, because all of these things are interlinked. People, community, Country, it's all interlinked. And so we're very keen to see those opportunities joined up, again, at that strategic level, rather than project by project, place by place.

The CHAIR: Thank you, Mr Hynd. Thank you very much for that. Thank you for your attendance today. We very much appreciate it. It's incredibly valuable to the work of this Committee and to the work of ultimately the Government and the commission. So thank you very much. I think there might have been one or two things taken on notice. The secretariat will be in contact with you in due course. Thank you again for your attendance today.

(The witnesses withdrew.)

DR JASON CREAN, A/Group Director of Climate and Natural Resources, Agriculture and Biosecurity, Department of Primary Industries and Regional Development, before the Committee via videoconference, affirmed and examined

DR ANNETTE COWIE, Senior Principal Research Scientist, Climate, Department of Primary Industries and Regional Development, before the Committee via videoconference, sworn and examined

The CHAIR: Do either or both of you have any introductory remarks you'd like to make?

JASON CREAN: Yes, I wanted to highlight the Department of Primary Industries and Regional Development's role. Our role is around growing primary industries and supporting regional economic development to deliver long-term benefits for regional New South Wales and the broader State. We work with industry and community closely to implement policies and programs to protect, support and develop our primary industries and regional communities. DPIRD is a quite a large agency with a number of different divisions, including Local Land Services, NSW Resources, Fisheries and Forestry, Regional Development, and Agriculture and Biosecurity. Collectively, DPIRD has over 600 scientific and technical staff, along with 20 research stations located around the State covering major sectors and production zones. We are one of the largest rural research providers in Australia with strong regional presence and network and industry. Annette and myself are from the Agriculture and Biosecurity division of the Department of Primary Industries and Regional Development.

I'd like to point out very briefly the work that we do in climate change. One, in respect to emissions, the department takes a range of work, particularly in agriculture, around livestock methane emissions, finding solutions in terms of genetics, pastures, grazing management, feed additives. We also do work in soil carbon sequestration and management of nitrous oxide emissions, and we look at ways of trying to address barriers and constraints to addressing emissions in the ag sector. We're also involved in development of State, national and international policy. On the climate adaptation side, the department is also involved in undertaking research to provide more sustainable and productive practices—crop varieties and livestock breeds that are better suited to a warming and drying climate that we're facing in New South Wales. We also undertake risk assessments of climate change risk posed to primary industries. Annette and I are very happy to talk to the Committee around the areas particularly facing agricultural industries, from either a climate adaptation perspective or an emissions perspective.

The Hon. JACQUI MUNRO: There is a comment in the report that says priority should now be given to completing the statewide climate risk assessment, following the recent delivery of the NSW Climate Change Adaptation Action Plan 2025-2029 and the updated NSW and Australian Regional Climate Modelling. Is that something that you're engaged with?

JASON CREAN: Yes. The Department of Primary Industries and Regional Development have been engaged in that process. We actually have undertaken a fairly comprehensive study that was only finalised last year, looking at the risks posed—the risks of climate change to primary industries. We undertook an assessment across 28 different commodities, cutting across agriculture sectors, including livestock, cropping, horticulture, viticulture and then also looked at risk to fisheries and forestry, as well as an assessment of how climate change will impact on our biosecurity risk being faced by the State. We are involved in the climate risk and opportunity assessments, and we're really trying to leverage some of the work that we've done to date in this space.

The Hon. JACQUI MUNRO: Is that public?

JASON CREAN: Yes, it has been published. That's available on our website. It's from a project known as the Climate Vulnerability Assessment Project. There's a summary report on our website which goes through how climate suitability will change for each of our industries between now and 2050.

The Hon. JACQUI MUNRO: Are there timelines associated with some sort of mitigation measures that have been listed?

JASON CREAN: Yes. In terms of climate adaptation, really trying to address those physical climate risks, we've got the suite of research that DPIRD does in terms of cropping and livestock, I've mentioned. Of late, our main focus is looking at some of those higher risk industries, and particularly where climate risk posed problems for perennial horticulture, viticulture, forestry—any of those with permanent plantings where the consequences of climate change can be significant, and some of the adaptation options need a lot of investment. Farmers need to be reasonably certain around making some of those decisions.

The Hon. JACQUI MUNRO: What about mitigation? Are there actions and timelines that have to be reported, say, annually?

JASON CREAN: Yes. In New South Wales there is a Climate Change Adaptation Action Plan. Within that Climate Change Adaptation Action Plan, DPIRD is responsible for a number of the actions. Some of those actions are around further work on updating the assessment of climate risk for primary industries. Other ones are really assessing the effectiveness of adaptation strategies in primary industries, particularly in horticulture and viticulture and some of the sectors where potentially some of the consequences might be more significant.

The Hon. JACQUI MUNRO: Do you have plans around methane abatement?

JASON CREAN: In respect to emissions, there's a range of different programs that we have within the Department of Primary Industries and Regional Development. Our big focus is our work around livestock methane emissions. This is particularly looking at the potential role of genetics, selecting livestock that have got naturally lower occurring methane output. We do work in that genetic space and have over the last 15 years or so. We've got a rather large project looking at that in operation at the moment, called Southern Multi Breed. We also do work in low-methane pastures—pastures that have got lower methane. When they're consumed, they have lower methane outputs. There's work in that space. There's further work underway in terms of soil carbon sequestration, but also in terms of looking at ways of reducing nitrous oxide emissions. Does that work? I might turn to Annette, now because we've done a recent assessment of some of those opportunities in the context of an emissions reduction road map for primary industries.

ANNETTE COWIE: I've been completing or leading a piece of work over the last 12 months to develop an emissions reduction road map for the land and primary industries sector for New South Wales. In that project, we have looked across the range of abatement measures that could be applicable to reducing emissions and sequestering carbon in the primary industries sector and managing livestock methane and methane that's emitted both from the enteric fermentation processes in the rumen and of the livestock, and also from manure management, which is another important source of methane emissions from the livestock sector. These are important components that we looked into as they make a large contribution to the New South Wales agriculture sector emissions.

As Jason mentioned, we've identified a range of measures that can reduce emissions, including the use of the new feed additives, which you're probably familiar with—the seaweed and the 3-NOP—and another product called Agolin, which is an essential oil that can be used now in grazing livestock. It's available to be put in water troughs or in pellets. So those measures have been considered, plus looking into herd management and pasture management processes that are essentially good practice in agriculture but not necessarily widely applied and that can be enhanced. They are really about growing your animals well and keeping them healthy and ensuring that your pasture is productive so that you reduce the methane emissions over the life of the animal.

The Hon. JACQUI MUNRO: My final question is around the interaction between the private sector and industry and the department. Is there a willingness or are there examples of the private sector and agricultural industry players undertaking this kind of work as well so that they can proactively manage their emissions and, hopefully, reduce them? Or is it that the department's doing all this work and then the department either makes a recommendation to government to legislate or regulate certain standards, and then the private industry will come on for the ride?

JASON CREAN: I might make an initial response. Particularly with the Department of Primary Industries and Regional Development, we work quite closely with some of the major research and development corporations. For example, Meat and Livestock Australia have got their own carbon neutrality target and they have research programs aimed at actually avoiding emissions or reducing emissions. We partner with Meat and Livestock Australia in that space and also through the Zero Net Emissions Agriculture CRC—a very recent initiative—which is a very large partnership involving a lot of the major RDCs, all the State-based departments of primary industry and the Commonwealth Government. There's a range of programs within that umbrella of the CRC that are looking at tackling emissions, so we certainly do work in partnership. I think in the last few years that's probably really ramped up as it's becoming increasingly clear that in terms of our supply chains and with the ag sector being highly reliant on overseas markets, and with those overseas markets increasingly having net zero targets themselves, I think there's a well-recognised need there that we do need to address emissions embodied in products in Australia.

The Hon. JACQUI MUNRO: Okay, good to hear. CRCs are amazing. I have some more questions but I'm happy to pass over.

The CHAIR: I'd like to ask one. Thank you very much for joining us today. We very much appreciate it and the work you do on behalf of the people of New South Wales. The question I have is has there been an audit conducted of New South Wales to establish or assess how much carbon is stored in our ecosystems, be they agroecosystems or forestry? Is there a government department or a body that has actually gone out and said, "As

of this date, this is how much, to the best of our knowledge, carbon is sequestered in our vegetation in its various forms and soil"?

JASON CREAN: As an initial response—I might go to Annette—there is the National Greenhouse Gas Inventory that's undertaken at the Commonwealth level that New South Wales provides input into. We've also got our own in New South Wales through the Department of Climate Change, Energy, the Environment and Water. They also do an assessment of current emissions and projections of future emissions. I'll go to Annette to talk about the National Greenhouse Gas Inventory.

ANNETTE COWIE: The inventory has a range of tools that are used to estimate the changes in carbon stock, which determine the emissions and removals associated with our land use. For your specific question as to whether there's a number as to how much carbon is actually in the current soil and vegetation, the inventory doesn't attempt to quantify that; it's looking more at the changes. For different components of the inventory, sometimes that requires an estimate of the total so that you can determine the change; but for others, such as associated with forest management, we have models that are looking at the change in carbon stock, not trying to quantify the entire carbon stock. There certainly have been a range of other initiatives that have quantified the total carbon stock in soil in Australia, though—that I'm aware of—that were led by CSIRO.

The CHAIR: But it's in that National Greenhouse Gas Inventory where that's established and housed?

ANNETTE COWIE: The National Greenhouse Gas Inventory is where we have all the estimates of the emissions and removals associated with land use change, land management and all the other sectors and emissions sources and sinks that contribute to the inventory, both at a State and national level.

Ms JACQUI SCRUBY: I'm not sure if this is your wheelhouse, so apologies, but I am wondering about the intersect between climate risk assessments and the value to regional communities and landholders in regards to benefits from the rollout of renewable energy or taking action to mitigate the effects of climate change on their properties—particularly if it's production and so forth—and how that can be used to support the rollout, acknowledging that the commission has said that there is significant community opposition and that's one of the reasons that it is being delayed in New South Wales. An example I might give is the opportunity for a second revenue stream that's drought resistant, by embracing renewable technology.

JASON CREAN: I'll have an initial stab at that. There's a few issues tied up in that. In respect to renewables, particularly around large-scale solar and some of the conflicts there, you're probably aware that the New South Wales Government has recently appointed an ag commissioner to look at some of those conflicts around land use. There's obviously a range of different things that actually impact on land use. From agriculture, we want reliable, we want safe food, we want lower emissions, we want carbon sequestration, we want biodiversity and we want renewable energy, so there's a nexus between all those different demands.

We have historically looked at different bits of that separately, but there's a major work area in the future of really trying to consolidate that more and actually understand how these particular outcomes might trade off against each other, because sometimes what you might do to lower emissions actually might make you a little bit more vulnerable to some of the physical climate risks. Sometimes there are synergies and complementarities, like you mentioned, with renewable energy. Hosting that can provide a source of income, which can actually improve resilience. So there's all that complexity and trade-offs between all those different outcomes. It's early days in that the ag commission has only just become established in New South Wales, but I think certainly some of those issues are in her wheelhouse.

Ms JACQUI SCRUBY: Is it fair to say, given the acknowledgement that it is early days and also the acknowledgement that the commission's recognised that community opposition is an issue, that this may be an area of priority—and particularly communicating that to regional communities as well?

JASON CREAN: I'll probably leave that to the ag commissioner in terms of looking at all those different priorities. But it would seem, on balance, that there are certainly some issues there that we need to get right in terms of trying to really balance land use so we end up with land use that actually supports environmental outcomes, economic outcomes and improves the longer term resilience.

Ms SUE HIGGINSON: I'm just curious as to whether you are doing any work internally and modelling of what it would look like if in native forest logging we engaged in ecosystem restoration work. We received an excellent submission. I know the Net Zero Commission has discussed this in its report. I am just wondering whether DPI, particularly the climate research part, has looked at this, or is looking at this, or has a plan, or a scope of works to look at it?

JASON CREAN: Just in respect to the forestry component, that's outside our area of expertise so I'll take that question on notice. I'd be feeling that's outside my expertise if I attempted to answer that one.

Ms SUE HIGGINSON: Sure. In terms of across the landscape, private landholders, agricultural operators, are you seeing the trend towards the uptake of individual landholders in landscape restoration, revegetation, particularly the sheep and wheat belt in New South Wales? Are you seeing that in terms of a growth sector?

JASON CREAN: I think you can certainly see growth in interest in that area and I think you can see through the agendas of State-based departments but also in some of the major RDCs, the GRDCs and the MLAs there's more attention on that. There's some recent work that the Australian Farm Institute did with the support of the National Farmers' Federation for the Australian Agricultural Sustainability Framework. They were trying to address some of those societal demands and consumer demands to basically have systems that deliver those multiple outcomes that give us safe and reliable production but also contribute to resource management and environmental outcomes. You certainly see that. There's a whole range of private industry initiatives as well in that. You've had the Future Farming Initiative that's underway. I think there are good signs that people actually are addressing that. Annette might have some more or other thoughts or examples of that she could offer.

ANNETTE COWIE: There's a lot of interest in the potential for carbon-plus projects, in particular for projects that contribute both to climate change mitigation, the sequestration of carbon and biodiversity associated with either environmental plantings or restoration of existing native vegetation. Under the ACCU scheme, there's been a large uptake in western New South Wales, firstly of the avoided deforestation projects and then of the human-induced regeneration, which involves fencing out livestock and protecting the vegetation so that it regrows. When it comes to environmental plantings, we've identified a lot of opportunities and there's a lot of interest but they do cost more than the human-induced regeneration, so we're anticipating that the emerging market for biodiversity credits, when that is able to be added to the carbon credits, will overcome that financial barrier and allow more landholders in more the region you're talking about to get involved in those practices. Our parallel department in New South Wales, DCCEE, is certainly working on approaches at the moment to encourage landscape-scale restoration, which I'm sure they'd be happy to tell you about.

Ms SUE HIGGINSON: Is there work happening to measure increases or decreases in productivity—in terms of food security, fibre security—whilst those landscape enhancements are happening? Is that kind of work happening?

ANNETTE COWIE: There is a lot of work going into this through the CSIRO and the work that's being done with the LUTO model, the land use trade-offs model. There's also work that we were discussing with NSW Treasury this morning looking into different modelling approaches to look at the impacts on production, including various abatement measures that have impacts on land use into the mix of New South Wales land uses. There's a lot of work just starting, I suppose, at looking into that question. Jason, you might have more to say.

JASON CREAN: If I may just add quickly to that, there's also some work in the private sector with AASF and the Macdoch, some works supported by the Macdoch Foundation, on future farming that they've done. They have looked at natural capital, probability and productivity across different regions. There's certainly been a fair bit of interest in that and that's involved a number of the landholders. There'll probably need to be some more work along those lines to really tease out those synergies and any trade-offs.

The CHAIR: I'm just having a look at the National Greenhouse Gas Inventory. When it comes to the LULUCF, land use, land-use change and forestry part of that, it says that for September 2024, their latest update, the emissions from that sector were estimated to be minus 88 million tonnes of CO₂ equivalents—essentially, a minus 20 per cent of Australia's national inventory, which is a gargantuan amount of carbon that's being sequestered by land use. Yet it says that the last time it was probably assessed was 2021-22. Do you think that our reporting around this sector is as timely and robust and accurate as it could or should be?

JASON CREAN: I might go to Annette on that one in terms of the National Greenhouse Gas Inventory.

ANNETTE COWIE: They produce the National Greenhouse Gas Inventory every year. By the time it's published, it's sort of two years behind because that's how long it takes to process the data and do all the calculations and prepare the reports. I would say it's as up to date as it can be. We do apply a so-called tier 3 approach, which is the most comprehensive approach that you can take between the IPCC approaches for different countries apply to determining the emissions or removals associated with the land use, the land use change and forestry sector. This is the FullCAM Model that has been developed over the last 20 years, initially by the CRC greenhouse accounting, working with the Australian Greenhouse Office.

The CHAIR: Sorry, what was that last bit? Sorry, Dr Cowie, who was that by? You just went a bit fast there and you dropped out. The audio dropped out a bit. Can you just go through those models again? It's the CAM and who?

ANNETTE COWIE: It's FullCAM Model—Full Carbon Accounting Model—that was initiated by an interaction, a collaboration, between the CRC for greenhouse—what am I trying to say?—the Australian

Greenhouse Office, as we had at the time and the CRC that we had at the time for managing greenhouse gas emissions. We undertook in that CRC to develop components of the model and that was coordinated through the Australian Greenhouse Office. That was where FullCAM started. But what I really wanted to emphasise is that since we first wrote that in the early 2000s, it's been improved and updated many times with all the data that can be assembled to basically enhance the capacity of that model to accurately predict the growth of trees under different environments, different types of management, different species across Australia. It's a very comprehensive model and that's what we rely on for our inventory. It's certainly more advanced than many of the other approaches that are applied by other countries around the world.

The CHAIR: I'd love to talk about this for many more hours but, unfortunately, the time for questions has past. We've run a little bit over. We very much appreciate you taking the time to give evidence today, Dr Crean and Dr Cowie, and we very much appreciate the work you do on behalf of the people of New South Wales with DPI. Thank you very much. We deeply appreciate it. Your evidence will be of enormous value to the Committee and ultimately the commission and the people of New South Wales.

(The witnesses withdrew.)

(Short adjournment)

Dr WILL RAYWARD-SMITH, Executive Director, Net Zero Commission, affirmed and examined

Ms MEG McDONALD, Commissioner, Net Zero Commission, affirmed and examined

Ms KATERINA KIMMORLEY, Commissioner, Net Zero Commission, affirmed and examined

Professor ANDREW PITMAN, AO, Commissioner, Net Zero Commission, affirmed and examined

The CHAIR: I welcome our commissioners and executive director. Thank you very much for coming to today's hearing. Would any of you like to make an introductory statement in regard to your report?

MEG McDONALD: We would, Chair. In fact, all three of us would like to make a short statement. First of all, you have three commissioners here today. We have three others that are not able to be with us today. And we do not have our chair because Paul Grimes, who we were lucky enough to have as chair of the commission, has been called to take up a role with Austrade as their CEO. In the interim, there has not been a new chief commissioner yet appointed. We're here as the three independent commissioners, each from our different areas of speciality and expertise. We hope that you will bear with us in that process.

The CHAIR: We will bear with you, Ms McDonald. Why don't you kick off?

MEG McDONALD: First of all, as this is the first time that I've personally got to meet you in the Committee, I want to say how much we are looking forward to working with you as a Committee. It's a rare treat indeed to have such cross-party supervision of our work, and it's rare in my quite long career in climate change to see the focus that you bring to ensuring that we meet our legislated targets. Personally, I am looking forward to working with you to help make this a reality and to take the opportunity that we have in front of us to make real change in this State as we move towards a net zero economy and, importantly, to adapt to climate change.

The CHAIR: Thank you very much, Commissioner. That's a welcome and generous sentiment, and we very much appreciate it. The feeling is mutual.

MEG McDONALD: I'd also like to say that the legislation that enacts us is, again, a very unique piece of legislation in the breadth of its ambition but also its whole-of-society and whole-of-economy approach. That is really an opportunity for us to make sure that the action that is being taken is also addressing the other societal needs. That, too, adds to complexity, as we've heard this morning from the very wide range of views. But it also creates some very big opportunities for us. I think we, as a commission, all feel that very strongly.

KATERINA KIMMORLEY: I'll lead the interrogation of the report from your questions, but I just wanted to affirm what Commissioner McDonald has suggested. Even from our first meeting with you, the bipartisan and crossbench support for our work has already filtered through in terms of how much support we feel and the ambition that we intend to use to create a very powerful commission that can absolutely fulfil the responsibilities of the legislation. We're very grateful for that. Also, even today we haven't yet had a moment like this to hear from a number of the submission providers, and it has been excellent. I really hope that we can continue these types of engagements. It has been very useful for us already, and I'm sure it will be going forward as well.

ANDREW PITMAN: I don't really have a great deal to add to that. Those were great introductions. I would echo how positive we feel our relationship already is with the select Committee, and we are very much looking forward to an ongoing relationship where we can contribute significantly to the future of the State.

WILL RAYWARD-SMITH: Thank you, Chair, and thank you, Committee. Also thank you to all the witnesses and to those who have provided submissions. All are hugely valuable. The Net Zero Commission is a new, important legislated institution that builds on the successful models from other jurisdictions globally. I'm the Executive Director of the Net Zero Commission, and I've been in the position for just three weeks, following a competitive merits-based recruitment process. I wasn't involved in the prior annual progress report, but I will be deeply involved, of course, in future reports and our future work. There was an acting executive director prior to my appointment. The office of the commission is staffed by a team of highly experienced individuals who worked extremely hard with the commissioners to produce this first annual report under challenging time frames. Their expertise ranges from climate change policy, sciences, adaptation, economics, engineering, engagement and communications. They're a diverse and dedicated team who, together with the commissioners, are ready to provide independent, expert advice to ensure New South Wales is on a clear path to net zero and to achieving the adaptation objective. I look forward to working with the Committee to ensure a successful commission.

The Hon. JACQUI MUNRO: Firstly, picking up on something that Ms Kimmorley mentioned, do you feel like you are empowered as commissioners to engage with stakeholders directly or that you would need that power, or that other staff in the commission have that power or need it?

KATERINA KIMMORLEY: Do you mean personally or as a commission?

The Hon. JACQUI MUNRO: As a commission. You suggested that it was really good to hear from the groups that made submissions and to be able to be provided with some more depth about their feeling and experience. Is that something that you can pursue outside this kind of forum and feel comfortable doing?

KATERINA KIMMORLEY: Yes, absolutely it is. I would just make the caveat that, to date and in the process to produce our first annual report, we had very limited time frames—really only two working months. We've considered it as a two-month report rather than a true annual report. We didn't get to do the extensive stakeholder engagement that we will be doing this year. We absolutely have the capacity, ability and intent to do that this year.

The Hon. JACQUI MUNRO: Fabulous. One of the key lines is that the commission is concerned about the risks to the State's targets from increased emissions in the resources sector. Are you comfortable that the technology exists such that we are able to roll out the emissions reduction technology that's required to meet our net zero targets by 2030, 2035 and 2050 if there are still increased emissions in the resources sector? Are other sectors able to mitigate or reduce their emissions to the extent that the resources sector could keep increasing theirs? Anyone is welcome to make a comment.

MEG McDONALD: As I said, we're each here in our respective capacities. I would say that that's one of the areas that we identified in this first report. You've heard today from a number of stakeholders around differing views about the capability and the opportunity across different sectors. That, indeed, is one of the big questions for us, to go deeper into our analysis. This year we're working on putting together a priority work program—which I'm sure Dr Rayward-Smith will be happy to talk to you a little bit more about—in order to prioritise how we go about making these deep dives and doing this analysis. And also understanding some of the underlying data and the other data points that are out there in order to make that assessment and to pinpoint the areas that need to be worked upon with priority and where in government or where in the private sector that needs to happen so that we are confident in being able to make those judgements and recommendations. As Katerina pointed out, we did not have enough time in doing this first report to feel comfortable that we were able to take onboard all of those views and access all of that information to reach some of those more detailed judgements, but we made clear what we could see were the obvious trends and the obvious areas where we really thought that attention needed to be focused, both by us and by the Government.

The Hon. JACQUI MUNRO: Do you have much interaction or have you had, so far, interaction with the planning department, which is called out as really being part of the problem? Prolonged planning assessments, slow investment decisions by developers, difficulty securing workforce and equipment have been identified, evidently, as key factors. Obviously we get to the next report, and that takes another 10 to 12 months. But, in the meantime, are there going to be things that you will be recommending to different departments, like the planning department that have already identified problems?

MEG McDONALD: In fact, one of the operating bases that we're developing as a commission is the idea that we will be doing continuous engagement and working across government. There is the Climate Change Network of the heads of all of the relevant agencies. They will be a key partner for us to work with throughout the year in identifying and helping to find ways to solve some of these and to unblock some of these blockages. Some of them are areas where it's the private sector and not just government regulation, as well, so there are a range of measures in place across government, very focused on energy but also very much starting to focus on a number of the other sectors which are complementary and which we'll need to work with—in particular Transport and transport planning around rollout of some of the renewable energy zones, for instance—and really being able to work in that cross-agency way. Will might have more to add on that as well about some of the work that has gone on, in terms of working already across some of the government departments.

WILL RAYWARD-SMITH: We've done a huge amount of mapping of stakeholders, both internally within government but also externally, as part of the consultation processes that we see as being absolutely critical to the way that we inform our advice. That includes bodies such as the ones that you've identified.

The Hon. JACQUI MUNRO: Can I just clarify, how often does the Climate Change Network meet? Are you involved in every meeting of that group?

WILL RAYWARD-SMITH: The Climate Change Network meets on a relatively frequent basis. I'd have to take on notice in terms of confirming the exact frequency. As part of the Climate Change Network, there are also specific working groups that meet outside of that, really to drive things forward across the government.

The Hon. JACQUI MUNRO: Do you go to every one of those heads of department meetings?

WILL RAYWARD-SMITH: Yes.

The Hon. JACQUI MUNRO: Will you be making specific policy recommendations to heads of department or through those other working groups that relate to, for example, community battery rollout and legislative shifting there, or whatever it is?

WILL RAYWARD-SMITH: I suppose as part of our mandate we have the required function to identify and recommend action for government, so we would see that certainly being part of our annual progress report. But, outside of that, we will be looking to work with parts of government in the meantime, and also other stakeholders, in order to inform our recommendations.

The Hon. JACQUI MUNRO: Outside of the annual report, you're not looking to make specific policy recommendations in those forums? Is that right or have I misunderstood?

MEG McDONALD: I think I'd probably describe the process as a little more collaborative and informal than that, in the sense that it doesn't require a formal policy recommendation but really a more collaborative approach about where we have identified blockages and where engagement with stakeholders has revealed issues that need to be addressed. We'd be bringing them regularly through the Climate Change Network and through other meetings that we would be having, because we meet once a month and we actually have engagements with key players as part of those meetings. Part of the process that we envisage is being an active player and participant to both identify, help formulate some solutions and then bring them into the right forums within government to help push them along. I would add that the Chief Scientist and Engineer is also a member of the commission. He has a key role in a number of these other committees and forums as well. He is not shy about coming forward with ideas about how we can actually push this ahead.

The Hon. JACQUI MUNRO: I have no doubt about that. I'm just trying to understand how policy is suggested and formulated. I guess what I think needs to be avoided is that people don't feel like they have responsibility for implementing, or that they haven't been given specific advice and therefore don't need to listen to or respond to particular suggestions that come from a body like yours.

KATERINA KIMMORLEY: I believe Will has had some interesting meetings this week already with those departments, informing them that it is their role to take on some of these ideas as well. I also just want to affirm that the annual report is one tool and one of our obligations, but we will also be doing deep dives and other reports which will be coming out within the next short period about our program of work, where we will be focusing on different sectors, different parts of government, potentially, as you mentioned, planning and others that have significant work to do. So there will be iterative pieces coming out as well.

The Hon. JACQUI MUNRO: There's a New South Wales Draft Energy Policy Framework. I'm wondering, are you feeding into the final policy framework?

WILL RAYWARD-SMITH: I think as a commission we'll be working to feed into all sorts of similar policymaking, so I would have to take that on notice, in terms of our involvement with that specific.

The Hon. JACQUI MUNRO: I understand there was some Federal legislation that was supposed to be coming through and we were going to have some State legislation that might fall in underneath that, but that hasn't emerged yet, I don't think.

MEG McDONALD: It's a very busy agenda and environment across a lot of different sectors. To be honest with you, since we've been in operation in the last six months, a lot of focus was on getting ourselves together in the first place and really formulating our approach, pulling together that annual report in a very brief period of time and now developing our program of work following on from that, and also beginning this formulation of how we will go out to engage around some of the key priority issues and to really start that whole program of both public and private engagement around how to achieve the accelerations in these areas that we think need it.

The Hon. JACQUI MUNRO: In terms of prioritising the work—obviously there is an enormous amount to do and prioritisation is really, I think, one of the hardest tasks because there is so much to do—are you taking any advice from Government or from the Ministers about what those priorities should be?

MEG McDONALD: We're formulating this internally, but of course we will be consulting to make sure that we're on the right track and whether there are additional areas that people, including the Minister, feel that it would be beneficial for us to be looking at. One of the things that is driving how we see the priorities is where there are opportunities to be able to input into upcoming Government policies, strategies and plans as well, because we see that as a window of being able to provide advice and have that actually included within some of the strategies, rather than actually waiting until after the event and missing those windows. It is very much formulating from our own perspective about what needs to be done, but making sure that we're not missing anything along the way. I don't know whether you want to—

The Hon. JACQUI MUNRO: Obviously your professional advice in the priorities is key.

The CHAIR: I'm glad you've raised that with the commissioner, because one of the areas that I'm particularly interested in is land use. The land use sector chapter of your report is very, very interesting. It's often neglected in the conversation about the very positive role it's already playing in our work towards net zero. Your report does say there are some uncertainties in how these numbers we're relying on are reported. You've got a great graphic in there that shows an incredibly complex area of work of how the estimations of the contribution of land use to our efforts in terms of net zero have changed over time. Is that going to be one of the priority areas in your work plan?

ANDREW PITMAN: Yes, it's really a very complex area. Most of the information we get comes from the Commonwealth. There is very conflicting information about the degree to which land acts as a carbon sink. I'm sure you're aware that there are very different schools of thought, both around the scale of land acting as a carbon sink at the present and how that will look moving forward. There's a wide literature emerging from the science communities—literally on a weekly basis—that we're trying to synthesise. I would like that to have been a priority in our next 12 months, but it's too complex. What I think we're doing is working towards a clear understanding of the role of the land as a carbon sink through the next 12 months, with trying to come up with some specific recommendations in the following 12 months.

Ms TRISH DOYLE: Thank you, Commissioners. It's great to have you all here today, and Will. Thank you very much for your work. We've just been talking about priority areas, and it's good to drill down. We certainly don't have enough time today to drill down into how you are progressing all of those priority areas, but I wonder whether you might focus on a couple and talk to us a little on how you're intending to progress some, particularly in relation to other successful initiatives in other jurisdictions, so those priority areas called out in the report for 2025 and progressing them.

WILL RAYWARD-SMITH: The commission has been preparing a draft forward work program and we'll be releasing that for stakeholder information and feedback very shortly. That will also be done in conjunction with a call for input. That will be real initial endeavours for stakeholder consultation which we see, as Meg has highlighted, as a really ongoing foundational piece of the way the commission works. That draft forward work plan will give us the flexibility to be responsive to the priorities of the Government and to meet the needs of our different stakeholders, and will reflect the timing opportunities of policy developments and our opportunity to provide input into those. Within the annual report, as you've highlighted, we indicated various topics of interest, and those feature within the draft forward work plan. We have been internally applying a prioritisation framework to all of these issues, because there are quite a few, as you've pointed out. We're also going to be making due consideration of the submissions received to this inquiry. That is going to be extremely key for us to complete that prioritisation exercise.

Ms TRISH DOYLE: Is there anyone else who wants to focus on a couple of examples, particularly in relation to other successful initiatives that you might have seen in other jurisdictions that can help pave the way?

ANDREW PITMAN: I could touch on two. One is land, as I've already covered. The other is we actually have expectations on adaptation and what we should do. How we should prioritise areas to reduce risk and minimise vulnerability via adaptation is an area that is on our agenda. The more we deep dive into it, the more complex it seems to become. We would like to come up with measurable targets for adaptation. The degree to which we can do that within a few years is not clear to me at the moment, but it's something we are trying to work towards.

MEG McDONALD: I would also add that one of the programs of work that the commission staff had undertaken over the past six months was actually looking at best practice across all of the comparable institutions around the world, and to be thinking, then, how to build that into our own framework of operation. We've commenced an engagement with some of those bodies as well, to have a more interactive and, I think, quite a fruitful dialogue about what are the pathways to success and what are some of the areas for us as a commission to be taking the learnings that they've had for some of them that have been in existence for much longer. But it's quite clear that everybody is struggling with the energy sector, just as we are here in New South Wales. That's a big focus for all of the bodies, and looking at all of the different parts of the transition and how to make the transition go faster and go cheaper and also produce, while ensuring reliability and ensuring equity across different communities.

Andy has said the land sector. There is huge opportunity in thinking about what would be the best approach to dealing with some of the industry sectors where some areas are much harder to abate, but there are some other sections of industry and some other technologies where policies might be able to be adopted because technologies are actually available. That's another thing that we, like other jurisdictions, will no doubt be putting more focus on in the immediate future. Of course, there is electrification of the built environment, which we heard a lot of

very useful input on this morning. They are areas we flagged in the first report that we were interested in pursuing, and we were looking at how to prioritise our limited bandwidth to triage the work that we can do to maximise the impact that we can have, even within this next 12-month period.

KATERINA KIMMORLEY: Just one more thing. We don't want to front-run the draft work plan, which will be coming out very soon. You'll see more about those priority areas in that. But one thing that we have seen globally with equivalent institutions is the continued support, and particularly bipartisan support, of these institutions, and their integrity and independence has been critical to their success. Reflecting back to the work you guys are doing, it is critical, this continued collaboration, to the success of all of those sector pieces also being effective as well.

Ms LIZA BUTLER: Thank you all for coming today. Earlier we had Mr Kelly and Mr Hynd from the NSW Aboriginal Land Council attend this Committee. They mentioned that First Nations people are only mentioned three times within the report and in a very inconsequential way. They pointed out that they're quite large landholders, especially near the renewable zones. They feel that there is a real opportunity for mapping, master planning and working with them on those landholdings to create opportunities for First Nations peoples to be involved in the renewables and then maybe using that money to help in closing the gap. Have you considered that moving forward? Because it obviously wasn't considered in the report.

MEG McDONALD: If Commissioner Costello were here, he would very much—but he's actually located in the Northern Rivers, and I think he has more pressing matters at home at the moment. This is one of the areas where we have focused on, particularly since the annual report was released. The State Government has put out its own framework and guidelines, and the Federal Government has issued its guidelines, for Indigenous participation and involvement in renewable energy zones. We're taking both of those pieces of work as a basis for how we will now consider what we can add to that and how we can put that into accelerated practice here in New South Wales. That's certainly one of the areas that we've been thinking about for a focus on the energy sector for our current work program.

ANDREW PITMAN: I guess I'd add that there's very good evidence that Indigenous land practices help store carbon. Unfortunately, I think that evidence only comes from the Northern Territory. It would be fascinating to do a deep dive into the effectiveness of Indigenous land practices in New South Wales. Secondly, they have a deep understanding of resilience. Their input via members of the commission, in terms of further consultation on adaptation and how to build resilient communities, is going to be important, to say the least.

Ms LIZA BUTLER: Did anyone else want to add anything there before I move on? The other thing that we heard quite commonly today was that, in many ways, legislation and regulation is a key to achieving targets. Would you agree with that statement and, if so, are there any particular areas you would suggest that we focus on?

WILL RAYWARD-SMITH: I think we would agree with the sentiment that it has a key role to play. In terms of where we see the opportunities, clearly in our first annual report there wasn't the time frame to allow for a body of work to be undertaken to provide significant recommendations within that document. Certainly in our next annual progress report that is what we will be doing. We're undertaking analysis internally. We'll be doing consultation to inform those recommendations, and that will be across a suite of different levers. That will be the way that we shape that next report. As Commissioner McDonald has highlighted, it won't just occur as the annual report, but in the way that we collaborate and work with broader government in the shaping of those in the meantime.

MEG McDONALD: Can I just add that I think we felt that it would have been presumptuous of us to have put together some very detailed regulation recommendations, having only been in place for such a short period of time and without the benefit of input from across the stakeholder spectrum of the depth that we think is going to be necessary to get that momentum really moving. While it's disappointing that people felt that we didn't go far enough, we did really feel that it was not correct for us to just sit in our ivory towers and come up with a blueprint, as we saw it, for such a short time and without the validation of a lot of that input.

KATERINA KIMMORLEY: But we do see that we will be making recommendations about regulation and legislation, yes.

Ms LIZA BUTLER: Thank you. If we have time I'll come back, but I'm conscious of other people.

Ms SUE HIGGINSON: I don't know if it's too granular at this point, but I just wanted to draw to the comments about the concerns about the "risks to the State's targets from increased emissions in the resources sector". That is literally the sentence from the report. You're particularly concerned about the pipeline of coalmine extension projects, and it's clear that we don't even know what that is. There is a pipeline that we can see, but we heard evidence earlier, particularly from the Minerals Council, that we might see more. What do you think that

means in terms of other sectors and how we walk the path of getting to reduced emissions? I know we talk about how to abate sectors, but if we've got a sector that is actually looking at increasing parts of its emission outputs, how does the commission propose that New South Wales deals with that?

WILL RAYWARD-SMITH: At this stage we are really spending a lot of time internally, and working with the Government's net zero modelling team, to absolutely understand every assumption that is going into that modelling so we can properly understand how that projection is made and the underlying data sources around that piece of work. That will then enable us to build the evidence base robustly so we can really understand the issue here. I think that's critical for us to then be able to provide advice, alongside consulting with different stakeholders in this space, so that we can have a projection and that we can understand the magnitude of this issue.

Ms SUE HIGGINSON: Just on that then, do you—sorry, Commissioner?

MEG McDONALD: I was just going to say this requires not only looking at the resources sector itself, but actually looking at the pathways that each of the other sectors are on and the costs involved and really being able to lay this out in a whole-of-economy way and actually seeing what the trade-offs might be. That does require, as Will has described, a lot of evidence gathering so that we can be very clear, because there are different bases, different claims and different assessments. We just want to be able to come up with a clear idea ourselves and to be able to formulate ways of actually being able to have that evident for all stakeholders to see and to actually come up with some recommendations around what the implications of different pathways might be.

Ms SUE HIGGINSON: Can we get some indication in terms of your work—and obviously we can see things in the report. Questioning the data that we do have, the assumptions that are in the modelling and what we've got, we have been led to believe—I chaired the inquiry into the introduction of the legislation that we've got. There was quite a high degree of confidence around some of the data that we do have. There is this compounding fact about the suggestion that we're a long way off and that we're in a bit of a problem zone and undershooting for our 2030 objective and target.

If that's the case based on the data that we have got, should we not be—I suppose I'm trying to learn to what extent do you not have the confidence in the data that we are all relying on and working on? Because if we're not making particular decisions in waiting for better evidence, I am very concerned. I imagine everybody is very concerned, based on the lens we do have on who's doing the lifting and who's not doing the lifting and who is preparing their emissions reductions. I'm curious to try and understand that a little bit more if that's possible.

KATERINA KIMMORLEY: Getting complete clarity on the data and all of the assumptions that underpin the New South Wales data and the Federal data is, I would say, one of the number one priorities of the commission. It is very complex and we are only now really getting under the hood of that. That is why, in our first annual report, we did not rely heavily on the New South Wales data, because we didn't want to rely heavily on the data until we felt supremely confident in it and we could give that confidence to you. That will be a key focus of this year, and the data that is used in our next annual report will be too, but it won't stop us from continuing to do our work.

What we have already discovered in the sector that you mentioned, the resource sector, as you have seen from our report, is that it is one of the considerable sectors that is increasing its emissions, and that is, from what we understand so far, only considering current mines. It is a conservative estimate in itself. A lot more work is going to be needed to be done to get full confidence in both the current modelling but, critically—and this was the area that caused the most concern for the commissioners—the projections. The art of projections is very difficult, so before we put projections forward that we will stand behind, we're going to be doing considerable work.

Ms SUE HIGGINSON: I think this is one of the sectors that concerns a lot of people in a big way. You state in the report:

In line with the Commission's statutory responsibility under the Climate Change (Net Zero Future) Act 2023, the Commission intends to closely examine developments in the resources sector because of the impact the sector has on the NSW's primary emissions reduction targets ...

In keeping with that statement, would you consider the use of your powers under section 15 (3) of the Act to provide advice and recommendations to the Planning secretary or the Independent Planning Commission for all of these projects going forward? Do you see that there is a role for the commission at this point in utilising that power, particularly in this period where we just don't necessarily have great visibility on how we do this work in getting to the 2030 target?

KATERINA KIMMORLEY: We don't want to front-run our recommendations because they're recommendations that we'll be making as a collective commission. I think what we can confirm, as we have in the report—and in the submissions that we've received to this hearing—is that the resource sector is a very big concern

to us as well, and we will be doing considerable work to get under the hood of the data and the situation and provide recommendations this year.

Ms SUE HIGGINSON: To round that off, what do you see in terms of the timing? Obviously you've now lifted the hood; you've got an idea. I note you say it'll be this year. What do you suspect in terms of the real time when you might be able to say, "These are the assumptions that we can rely on. This is the data. This is the best we're going to get at this point in time"? When do you think we might be in that position? You can take it on notice. If there's more consideration, I'm happy for you to come back. The intention is not to be putting anybody on the spot. I accept that these answers are sometimes not black and white in the moment.

MEG McDONALD: We will take it on notice. I don't think there is a single date in mind, in the sense that we do intend to start an engagement process by actually putting out an issues paper, which will canvass some of these issues. I don't expect it will have the answer that we have, but we will be really starting to actually have full engagement and more transparency around what some of the numbers are, what the assumptions are, and what some of the implications are for other sectors as well. We're actually beginning that process. How long it will take us then to arrive at a set of recommendations around that—certainly by the end of the year. But whether there'll be something in between will depend on the nature of how those proceedings go and what we find.

KATERINA KIMMORLEY: I would say that this has already begun. I know meetings have been happening even this week on that very topic of getting underneath the data, particularly for resources. It has already begun and it will continue, but we don't have an exact date for you now. We can take that on notice.

Ms JACQUI SCRUBY: I also declare a non-pecuniary or potential interest. I'm friends with Commissioner Kimmorley as well. I thought I'd just mention that.

The CHAIR: You're allowed to be friends with people.

Ms SUE HIGGINSON: We're allowed to have friends.

Ms JACQUI SCRUBY: I'm just being squeaky clean.

Ms SUE HIGGINSON: Good on you.

The CHAIR: Good on you.

Ms JACQUI SCRUBY: Moving to adaptation for a moment, and recognising that the report highlights that some of the ambition is behind—with the date of 2023 and we're now in 2025. I appreciate the work plan and you not wanting to front-end recommendations, but in the context of this Government addressing the housing crisis and looking to build a lot of houses, what is the consultation or what are the opportunities to make homes more resilient and make homes net zero by improving building standards? I note this also crosses Federal jurisdiction, but improving building standards, improving resilience and hopefully mitigating the cost of climate change and high insurance costs.

ANDREW PITMAN: I think you already know the answer to that question. The answer to that question is very considerable. The building standards have been updated, but Commissioner Atkinson has explored that issue at length in previous roles. There is no doubt that you can build houses to higher standard to both make them more energy efficient and much more resilient. The cyclone that went through the Gold Coast last week—you won't get a cyclone as far south as Sydney, but you can get extremely severe storms, and we don't build our properties to the level of resilience that means that property owners or renters don't need to be concerned about those extreme events. I think there's a very considerable amount of work that could be done to enhance resilience. I don't actually think the argument that it's much more expensive to develop resilient properties is necessarily true, but I do think we need to get down into the details of some of that before we begin to formulate recommendations.

The CHAIR: It was raised today, you would have heard, that the Property Council and its annual report clearly says one of the policy levers that you could pull very quickly in this State is to end new connections of gas. Other jurisdictions have already done it. Is there a possibility that we could see some recommendations in that area coming forward this year?

KATERINA KIMMORLEY: We do see gas use as part of the resources sector, so in that regard, yes.

Ms JACQUI SCRUBY: When you look at how New South Wales compares with other jurisdictions in terms of adaptation planning, New South Wales hasn't legislated for adaptation cyclical reviews. Do you think that that's something that would be explored in the work plan—even though you're not giving away too much of your work plan—in legislating for adaptation and resilience?

ANDREW PITMAN: I don't know to what degree we'll go down that pathway, but we do know the climate is changing, we do know it's accelerating and we do know that there is decades worth of future climate

change already embedded in the system that will be expressed as extreme events. I think as we see those evolve, we will need to be updating a range of guidelines on how to build resilient settlements on an ongoing basis. Somebody has to provide that kind of advice. I don't know if it's the Net Zero Commission, but somebody needs to make sure that there's an ongoing update to those sorts of rules.

Ms JACQUI SCRUBY: Following from that as well, that the Government begins to adopt some of the same climate risk scenario analysis that companies are required to do under the mandatory disclosures?

ANDREW PITMAN: I think that's a very difficult question because it depends on the degree to which the current strategies around mandatory disclosure provide material advice that is of use. Some of us feel that it's probably five to 10 years ahead of what the climate science can or can't tell you, but it's definitely the right direction to be moving. The degree to which something like that structure would be useful for building or for guiding resilient settlements is very difficult to judge. I would not want to see the mandatory disclosure guidelines implemented for, say, planning, but something of that kind could be very useful.

The CHAIR: There's an unavoidable nexus between greenhouse gas emissions and population because it's humans that are causing our greenhouse gas emissions, yet we don't have a chapter on population. When I look at the IPCC AR6 report, there's less and less you can rely on in terms of population. I understand that we don't want to avoid our responsibilities for decarbonising, but how can we plan for the future and make assumptions about our greenhouse gas emissions if we aren't also factoring in population and population growth? If we are, whose data are we relying upon?

ANDREW PITMAN: Those are included in the climate projections. When you look at the various climate projections the Intergovernmental Panel on Climate Change use—or indeed are used by New South Wales Government for the NARClIM project—those include changes in population, changes in technology and so forth, so population is actually in there. The data are not the fault of climate scientists. They come from demographers and, in fact, from governments on their projected evolution of population numbers in time.

The CHAIR: That's the SSP. Who's feeding the population data into the NARClIM?

ANDREW PITMAN: I'd have to take on notice who actually provides the data that is incorporated into those emissions scenarios—probably national governments, but I'd have to check.

The CHAIR: I'd be interested in that.

ANDREW PITMAN: But I would just—the fundamental relationship between population and emissions, and indeed emissions and economic growth, have increasingly decoupled over the last decade or two. The correlation between your population and your emissions is not as clear as you'd think it would be. There are countries with large populations with relatively low emissions because they followed the sorts of strategies we're here to discuss in terms of decarbonising their economy.

The CHAIR: And there are countries with large populations that may develop and not head along the trajectory of China—or Nigeria, not along China. Anyway, I could talk about that for hours on end, but you've taken that on notice and I appreciate that, professor.

The Hon. JACQUI MUNRO: You note in the report that every year that Eraring continues operations beyond 2025 means the State's emissions will be significantly higher than with an earlier closure. Is there a pathway, and will you be recommending to Government that they take that pathway to close Eraring earlier than the 2027 that they have extended it to?

KATERINA KIMMORLEY: Again, I don't want to front-run our recommendations on that sector but in our report we did also indicate that the extension of Eraring was an evidence point, that that sector is not on track, and that we will be providing recommendations to get that sector back on track.

The Hon. JACQUI MUNRO: Part of that is related to the fact that only 17 per cent of the road map target capacity had been commissioned by 2023-24. Do you have an update, now that we're into 2025, about an increase in the commissioned target capacity fulfilment?

KATERINA KIMMORLEY: I think we'll have to take that on notice, unless you—

WILL RAYWARD-SMITH: Within an upcoming call for input, we do provide some of the latest information with regards to the developments in the electricity transition. That will be within that document.

The Hon. JACQUI MUNRO: When will that be released?

WILL RAYWARD-SMITH: That will be released very shortly.

The Hon. JACQUI MUNRO: In the coming weeks or coming months?

WILL RAYWARD-SMITH: Coming months.

The Hon. JACQUI MUNRO: Not that shortly, then, I would suggest.

WILL RAYWARD-SMITH: A month or two.

The Hon. JACQUI MUNRO: But you can't just give me a figure now, which you have?

WILL RAYWARD-SMITH: I'd have to take the exact number on notice.

The Hon. JACQUI MUNRO: Yes, that would be helpful. I think one of the really big problems is that, if we're not creating an investment environment for generation to come on board, that's a massive barrier.

KATERINA KIMMORLEY: I think that also raises another point: As well as the data around emissions reduction, we are looking—as Commissioner McDonald mentioned—to develop a suite of other leading and lagging indicators that demonstrate success in different sectors, one of which may be what you're talking about. We do see it being a much broader analysis of how we're progressing, not just on emissions.

The Hon. JACQUI MUNRO: Finally, I understand that one of the problems with energy price spikes is that the ageing coal-fired power stations unexpectedly go out of operation. That spikes the price more than lots of other factors. Are you tracking how often that happens? In the case of New South Wales coal-fired power stations, we've got Vales Point and Eraring and a couple of others. Is that something that enters into your consideration at all as a commission in terms of reporting or measuring the impact of extending these coal-fired power stations?

WILL RAYWARD-SMITH: As we've highlighted, the foundational piece of setting the commission up is to establish our monitoring framework. The key indicators within the electricity transition will be part of that monitoring framework. We'll be working with different data sources to pull that in and highlight.

The Hon. JACQUI MUNRO: So that will include price and the impact on consumers.

WILL RAYWARD-SMITH: I think the monitoring framework will certainly consider price as part of its considerations.

Ms LIZA BUTLER: Following on from Ms Munro's question, I would be interested in a study on a community battery, and a community that runs on a microgrid, to measure how the emissions have lowered, what the cost to industry was, and what the savings to community through power bills is. Is that something that you would be able to look at in scope of what you do?

WILL RAYWARD-SMITH: As part of our scope, we do have the mandate to promote and educate organisations, businesses and individuals with regards to climate action. I think highlighting particular case studies and making them well known will be part of our education strategy. This is something that we are actively thinking through and how do we best action that particular part of our remit. How can we be most impactful there? Those kinds of case studies may be a useful tool for us to do that.

MEG McDONALD: I think it also involves working with a range of other agencies, both State and Federal, around who is working in these areas and who, in many cases, would have a lot of rich data around the functioning of existing community batteries. I know ARENA is doing quite a lot of work in this area and is announcing different studies almost every day. I think being able to tap into those and use those as our information sources is one of the very powerful tools that I think we are looking to do in informing the type of recommendations that we'd be making.

Ms LIZA BUTLER: If that is something you're looking to do, I'd suggest reaching out to Endeavour Energy because they have done a very successful microgrid.

MEG McDONALD: Yes. I think that was done with ARENA, actually.

Ms LIZA BUTLER: No, it's Endeavour. I actually got it off the ground. It's my community.

MEG McDONALD: No, I understand that. But there was support from Arena, I think, to be doing the battery and actually doing some of this knowledge sharing around what the wider impacts are. That's really—but it's definitely—

Ms LIZA BUTLER: Yes, it'll be really great to know the data. I just know that we actually push out more power from our town back onto the main grid, so it'd be really great to be able to measure that.

MEG McDONALD: Yes.

Ms SUE HIGGINSON: Can I just bring us back to the resource sector? Sorry, I am—

The CHAIR: Obsessed.

Ms SUE HIGGINSON: I was going to say obsessed but it's not obsession; I'm just so concerned that I heard your concern in the annual report. I think it is so real, and I think it's the materials there. I have heard the Minerals Council's submission, and I've read their submission. I've also heard from interest groups, who I would say are obsessed, literally, with the data and analyse it, so much so—the tonnes of carbon and methane that are literally coming out of every single mine right now in New South Wales and what that means in terms of our carbon emissions statewide and nationally.

I'm just genuinely concerned about the unreliability that you say in terms of the capacity for you to make recommendations at this point, but we have got stern warnings and concerns now. The fact is that it's so clear the Minerals Council have said that there are all of these projects in the pipeline, that they are really high emitting and that they are going up. What do you need other than more evidence, or more certainty around the evidence, that is here in order to be able to do the thing that, I think, many people would like the mining sector to be doing—and that is more heavy lifting, or evidence of more heavy lifting, of reducing their emissions in relation to the 2030 target? Or do you say what I think they're saying, which is that they will rely on offsets and that we should all just forget about focusing on the highest emitting sector reducing their emissions? I'm looking for something—anything.

MEG McDONALD: I think you've encapsulated the state of play, in the sense that there are a lot of claims about the data. For us, that was one of the things that we wanted to actually prove for ourselves and to also understand the basis for the measurement of that data as well. This is not only the projections but even the current basis for measuring the extent of the fugitive emissions of methane emissions. That science, I think, is changing quite dramatically, even in the period of time over the last six months. So for us, remembering that we're just brand new and all coming into this, it's really looking to make our way through so that we are clear in our own minds about exactly what we believe is authoritative and that we've heard all of the different stakeholders and really understand their different points of view before we then measure that up against our task, which is what is this doing to our chances of making our targets and what else would need to happen in order that we could need to—because it's that looking at what is the counterfactual. If it happens, then what is the rest of the cost to the economy of doing so?

Ms SUE HIGGINSON: On that, then, do we think that—now I'm just going back to the planning system and the intersection there. There is a suggestion—we got evidence this morning that there should be no more approvals granted for new coal right now. It is such a logical proposition to put forward if we're saying—I mean, it's ultimately the precautionary principle in application. We've got uncertainty about a thing, but we shouldn't let that uncertainty be the reason to not take the action; we should be taking the action. Do you think that there should be some kind of approach where we say or the Net Zero Commission was in a position to say, "Hey, there should be a pause on this right now in terms of the mining sector"?

There is this concern about the pressure and the pressure to get these approvals through the system. Given everything in this report and everything we're saying and now a deeper understanding on the need to get a clearer, stronger evidence base, should there be some pause in the system? These planning approvals are very, very powerful and strong instruments in the system, in terms of the risk they pose to us finding out, "Whoa! This is a really big problem area we've got. You need to reduce your emissions, literally, here in New South Wales for us to meet the 2030 target. You're the only ones that can."

This notion that these bank of approvals—because once they're granted, you can't take them back. They're not reversible. Is there a sensible position that we in New South Wales, and perhaps the commission, need some assistance or we as an oversight committee can assist to say, "Yes, there should be a pause, and it's a reasonable thing to do, given the uncertainty of the data position, and that pause might be for 12 months or 18 months so that we can properly understand the State's position"? I think I'm putting it to you as well, in the context of all the other obligations and considerations of the commission—I won't go into those, but making us more resilient. All of those things, literally, as a population, making us—we're all very cognisant of what the implications are if we don't meet our emissions. So I'm just curious about these approvals.

KATERINA KIMMORLEY: Three things: First of all, we really hear you, and we really hear the submissions and these ideas. We are absolutely taking them on board. So we hear you, and we think that they are all valid. The second thing is—and this is in answer to your previous question—what we now need from you is time to assess and do the engagement that we need to make the appropriate and most informed recommendations that we can so that those recommendations will be adopted by our stakeholders, by the Government and beyond, because the last thing we want to do is shoot from the hip with any recommendations, which is why we didn't do that in our first report. We want them to be incredibly well informed, and we want the engagement to be detailed and thorough and correct. That would be the second thing. It's just we'd need more time to absorb these ideas and all of the engagement to provide those recommendations.

The third thing—and, again, it comes to what we've mentioned earlier today—is what we need from you, once we make those recommendations, is the bipartisan and crossbench support to help us initiate those recommendations, be it through government, through community groups, through stakeholder groups, whatever they may be. We need your support to back those through, but we're not going to make recommendations without doing that proper work first.

The Hon. JACQUI MUNRO: Can I just follow up on that? What happens if the Government doesn't take on your recommendations? What's your course of action at that point? Do you just keep making the same recommendations, or do you have a plan mapped out for that eventuality? I mean, you're doing a lot of preparation work, which is excellent and we totally respect that and understand that you're saying you need more time. But what happens if you put all this work together? Do you have a strategy for what happens if the Government says, "Yes, thanks for your time"?

MEG McDONALD: We have a role—you would have a much more, longer familiarity even than we do—which is to provide advice and recommendations to the Government. We're not enforcers, but our job is to make the case very, very clear against what the commitments are and against what the legislation commits the State to do and to look at the wider issues involved as well. We've got a set of guiding principles, and that is our job to actually define what needs to happen against these guiding principles as well. If we come up with a set of recommendations that—we're never going to be able to please everybody with our recommendations, and we don't apologise if the recommendations, which are very hard to actually achieve. If that is what it takes for us in order to say that this is what is necessary in order to meet the targets, then that is our job, and that's what we will do.

That's what we fully intend to do, on the basis that we think we're sure and confident that we've got the best available reason for doing so, and we've explored other alternatives and demonstrated how those other alternatives still can't be met. That's why we've arrived at the set of recommendations that we have. This transparency of our role and the wider debate, then, that would offer is one where I think, as Katerina has just said, we would be looking for support on the basis of that and that it would be clear that, then, if there are—other reasons would need to be shown why that wasn't the logical thing to do or somebody could think of a better way than we had actually recommended. I think the evidence of any sector that has made big transitions and made hard decisions like the ones in front of us is that the path is never straight and it's never smooth. But I think when we signed on for this role, that's the assumption that we had—that we would be doing our absolute best using all of our expertise and all the resources available but, ultimately, these are decisions by the Government and within the wider arena.

The CHAIR: At that point, I'd just like to put something on the record here as the Chair of this Committee. I hope this relationship is iterative. You're a statutory independent agency. You've got incredible amounts of work to do, and we wish you all the very best with it. We very much, as a Committee, want to hear whether or not you've got the resources you need to do the work. That's something that I think is important to put on the record here. We're asking you to do a lot for enormous public good, I believe, but that is going to depend upon, as it always does—it's very prosaic—resourcing. So I'd just like to put on the record that we are very happy to hear from you in terms of whether or not you have the resourcing you need to meet your work plans and the work that you need to do. I just wanted to put that on the record.

Ms SUE HIGGINSON: I've just got two more—and I'm sorry, I am stuck on the resource sector one. I may have missed this early on, but when you said about the next steps, in 1.7 of the report it states, "The commission intends on releasing its draft forward work program for stakeholder information no later than early March 2025." Can you update the Committee on what that might look like now?

WILL RAYWARD-SMITH: Those documents have been drafted. We were looking to have this inquiry to help inform the development of those documents.

Ms SUE HIGGINSON: I appreciate that. That's our fault. No, sorry, it's the Parliament's fault. Blame the Government. We couldn't sit. We couldn't have the inquiry.

The CHAIR: Don't blame the Government. It's too early for that.

WILL RAYWARD-SMITH: We're very much looking forward to releasing these documents.

KATERINA KIMMORLEY: We're waiting to have this process before releasing that, so we could be informed.

Ms SUE HIGGINSON: So what do you think now in terms of that timing? We've only had the hearing today. We'll wait for the end of this process before you release those?

WILL RAYWARD-SMITH: We have those documents drafted. We have our next commission meeting scheduled for the first Monday of April. I think we may need that to have all the commissioners together to then give the final seal of approval to release, unless we can obtain that sooner to release it.

Ms SUE HIGGINSON: The last one I wanted to ask was, again, in terms of the uncertainty of the data and where we're tracking. I am still concerned about this idea that you've got one sector that is seeking to increase, ultimately, its emissions output. Would you suggest now, though, that, in looking at approving new high-emitting projects, the Government too doesn't have a reliable dataset to properly understand what it's approving going forward in relation to new, high-emitting coal or fossil fuel projects? Do you have any comment around that?

MEG McDONALD: The one thing that I would say—and I think Will will have a more detailed comment—is we are unique within the system of having an overall remit, whereas other decision-makers across the system have the remit to be looking at things project by project. That is one of the differences, that our coming into being and looking at this issue and the implications for other sectors against the target is our legislated responsibility. I don't think anybody else actually has that so explicitly as us, and a requirement to actually make those recommendations against that legislative requirement.

Ms JACQUI SCRUBY: Just following on from that point—and I may be paraphrasing some of the things that you said—there's the broader context but then, I think it was mentioned earlier, section 15 (3) specifically gives powers for intervention with the Independent Planning Commission, which may lend itself to the opportunity to be involved in those individual expansion decisions. I suppose the first part of the question goes to whether that's something that the commission would be seeking to do in this, given that time is of the essence. The second part of the question, which I just wanted to note because I don't think it's been put to the commission, is evidence we heard earlier—and it's not in the report—about the gross under-reporting, particularly, of open-cut coalmines in the order of 50, 60 per cent being under-reported. There is one thing to note in that, and then the second thing is, I suppose, the functions of the commission to be actually potentially involved in each expansion decision.

KATERINA KIMMORLEY: On your first question, the commissioners haven't discussed partaking in the opportunities that 15 (3) provides for us directly, so we can't provide an answer to that at this point. But we do note that that is a possibility, and it will be something that we'll consider. On the second point, around the uncertainty around fugitive methane emissions, again, we have recognised—both today but also previously and in a number of our meetings—that is an area of extreme uncertainty and concern. It's one of the areas of data clarification that we will be working on. It is a particularly difficult area; I know Andy might also want to weigh in on this. It's something that a number of the commissioners have worked on previously, myself included. It's something that we definitely need to get clarity on. To the former point, we're not going to let that impede our ability to make recommendations. But it is a complex and difficult task, so we want to take the time to do that in the most comprehensive way possible before we give those recommendations.

ANDREW PITMAN: And I note the New South Wales Government, I think, has set up a task team to assess both the science and the measurement technologies around fugitive emissions, which obviously is welcome. I'm sure we'll be talking to them about what their program of work is and what they're finding.

Ms SUE HIGGINSON: Can I just check—I haven't got it in front of me. Do you have the power to set up advisory groups? You do, don't you?

WILL RAYWARD-SMITH: We do.

KATERINA KIMMORLEY: Yes.

Ms SUE HIGGINSON: Is that something that you have already given consideration to? As Jacqui said, time is of the essence—old lawyer talk. Is that something that you would consider as well in relation to this particular aspect of the concern that we have and have read, quite loudly, in the report.

MEG McDONALD: If you looked at the totality of the report, you would see that we spent most of the time in the report discussing this issue, to the extent that we could within the very short period of time available to us. As such, it remains at the centre of our priorities and at the urgency that we feel around working out what information we need and then what would be the best way to frame our recommendations for immediate action and beyond. Setting up something more specialist might be one of those things that we would do in order to keep this under review and to bring ourselves more resources—to your point, Chair.

There is this issue, but there are a bunch of other issues where progress is happening and decisions are being made that we also need to be paying attention to. Please rest assured, it's one of our main focuses, around being able to get out there and both do this groundwork but also make sure that we have had the sometimes hard discussions with the various stakeholders about ways that we can proceed in dealing with this. As Katerina said,

the most important thing that we are looking for is just to have that time to do that but, secondly, the confidence that, in bringing forward recommendations, they're going to be ones that we can take forward.

The CHAIR: It's clear that you're not operating in a vacuum, and some things are pressing. You're being pressed on some of the issues. One that is of enormous concern and is a public policy debate at the moment is planning. There's a lot of reform going on in the planning space and a lot of pressure coming to build more houses. One of the things that we're hearing loud and clear is that we need to make sure we build the right types of houses in the right places and that we optimise the infrastructure we've got, which avoids emissions in terms of building infrastructure and highways and all the rest—infill development, potentially—but also build houses and housing to a standard that avoids operational emissions and those types of things and that is rated well. Is that something that's a priority for you as well?

MEG McDONALD: If Commissioner Atkinson were here, I'm sure that she would say, "Absolutely." We heard some really valuable input this morning from some of the key players in this around some of the ideas and the ways in which we could proceed. They themselves admitted how complex it is in dealing with the new builds. I would add that it's not only the new builds in terms of the actual embedded emissions in those builds; it's also the operational emissions that we're building in by where we put this new housing and the accessibility in terms of transport and future transport as well. It's the whole dynamic, rather than just what we put in on the ground. It is an area of real focus. We're very lucky to have some very good, plugged-in expertise in the form of Maria, in being able to work this so that we can take advantage of the areas where—for instance, we heard about the acceleration to the National Construction Code and the value of that, but also what to do with the existing stock and what sort of programs would be of assistance, particularly in dealing with some of the equity issues that arise around dealing with that low-quality housing stock. It's a big agenda, and it's there competing for our time.

ANDREW PITMAN: It is one of the rare areas in this entire debate where there are clear, across-the-board wins. We just have to find those sweet spots to make some useful recommendations where we can find those wins. It's an extraordinarily complex space. We won't be able to deal with the entire planning ecosystem, I don't think, but there will be some recommendations I hope we can come to where it's a win-win. That would be very positive.

The CHAIR: I think that was clear today. I think we're all talked out.

Ms SUE HIGGINSON: I could keep going. I wasn't even going to talk about the resources sector. I was going to ask one thing about what the public sector system and government agencies and departments are doing in terms of their emissions reduction targets and what they're each doing. I can't remember seeing anything to that effect in the report. That said, I'm fairly sleep deprived. I'm just curious in terms of each agency and each department in New South Wales having their own emissions reduction targets and factors. Is that something you've come across? Is that something you've looked at?

WILL RAYWARD-SMITH: That is something that is being considered as part of the climate change network across government and how different parts of government need to play a role within their own operations and their spheres of influence.

Ms SUE HIGGINSON: Is that something that you're auditing or looking at? I'm trying to think whether each one has their own statement or their own commitment.

WILL RAYWARD-SMITH: As part of our work, we will be looking at that.

The CHAIR: Thank you very much, Dr Rayward-Smith and commissioners, for attending this hearing and providing your evidence, and also for this inaugural report. It's been a long journey for a lot of people to have the Net Zero Commission, to have some excellent commissioners and to have an annual report coming to this Committee, to the Minister and to the Parliament. It's going to be of incredible value on this journey to decarbonise our economy. Thank you very much for your evidence today, for the report and for the work you have done on it and generally in your careers. We very much appreciate it. We look forward to working with you over the coming years to bring all of the opportunities to fruition. I don't think there was anything taken on notice. If there was, the secretariat will be in contact with you. There was a question about population. How could I forget! Thank you.

(The witnesses withdrew.)

The Committee adjourned at 16:30.