



COMMONWEALTH OF AUSTRALIA

Official Committee Hansard

SENATE

ENVIRONMENT AND COMMUNICATIONS LEGISLATION
COMMITTEE

Estimates

Public

MONDAY, 23 OCTOBER 2023

CANBERRA

BY AUTHORITY OF THE SENATE

ENVIRONMENT AND COMMUNICATIONS LEGISLATION COMMITTEE

Monday, 23 October 2023

Members in attendance: Senators Bilyk, Cadell, Cox, Davey, Duniam, Grogan, Hanson-Young, Hughes, McDonald, McKim, Payman, Barbara Pocock, David Pocock, Rennick, Rice, Roberts, Shoebridge, Van, Waters and Wish-Wilson

CLIMATE CHANGE, ENERGY, THE ENVIRONMENT AND WATER PORTFOLIO**In Attendance**

Senator Carol Brown, Assistant Minister for Infrastructure and Transport

Senator McAllister, Assistant Minister for Climate Change and Energy

Executive

Mr David Fredericks PSM, Secretary

Ms Jo Evans PSM, Deputy Secretary

Mr Simon Duggan, Deputy Secretary

Ms Rachel Parry, Acting Deputy Secretary

Mr Dean Knudson, Deputy Secretary

Mr Sean Sullivan, Deputy Secretary and Director of National Parks

Ms Lyn O'Connell PSM, Deputy Secretary

Ms Luise McCulloch, Deputy Secretary

Corporate**Finance Division**

Mr Robert Hanlon, Chief Finance Officer

Information and Communications Technology Division

Mr Tim Spackman, Chief Information Officer

Mr Grant Rebikoff, Branch Head

Legal (Chief Counsel)

Ms Kate Lalor, Chief Counsel

People Division

Ms Linda Ward, Chief People Officer

Mr Nathan Hannigan, Branch Head, People Safety and Remote People Services Branch

Portfolio Strategy Division

Ms Michelle Croker, Division Head

Ms Dana Sutton, Branch Head, Ministerial Liaison and Governance Branch

Ms Melina Saunders, Branch Head, First Nations Branch

Ms Miranda Lello, Branch Head, Portfolio Strategy and Integration Branch

Ms Anita Agett, Branch Head, Communications and Media Branch

Mr Will Kimber, Acting Branch Head, National Security and International Branch

Outcome 1**Climate Change Policy, Adaptation and Risk Division**

Ms Cathryn Geiger, Acting Division Head

Dr Nicole Mitchell, Branch Head, Climate Change Policy Branch

Mr Chris Johnston, Branch Head, Climate Risks and Impacts and Climate Active Branch

Ms Kathryn Smith, Branch Head, National Adaptation Policy Office Branch

Electricity Division

Ms Kirsty Gowans, Division Head

Ms Melissa Pang, Branch Head

Mr James White, Branch Head

Mr Paul Johnson, Branch Head

Mr Salim Mazouz, Branch Head

Ms Luana Cormac, Branch Head

Emissions Reduction Division

Ms Kath Rowley, Division Head

Mr Matthew Ryan, Branch Head, Land and Transport Branch

Ms Melanie Ford, Branch Head, National Inventory Systems and International Reporting Branch

Ms Kate Lea-Perry, Acting Branch Head, Carbon Crediting Branch

Mr Andrew Hutchinson, Branch Head, Target and Net Zero Plan Taskforce

Energy Performance and Security Division

Ms Clare McLaughlin, Division Head

Mr Martin Squire, Branch Head, Energy Security, Crisis Response and GEMS Branch

Dr Peta Derham, Branch Head, Energy Performance Strategy Branch

Ms Penelope Sirault, Branch Head, Home Ratings and Disclosure Branch

Dr David Atkins, Branch Head, Industrial and Buildings Energy Performance Branch

Mr Chris Golding, Acting Branch Head, Community Engagement Review Branch

Gas and Liquid Fuels Division

Ms Paula Svarcas, Division Head

Mr Chris Videroni, Branch Head, Gas Security Branch

Mr Cris Cano, Acting Branch Head, Liquid Fuels Branch

Mr Hew Atkin, Branch Head, Gas Markets Branch

International Climate and Energy Division

Ms Kushla Munro, Division Head

Dr Sally Box, Branch Head, Climate Negotiations and Engagement Branch

Ms Gaia Puleston, Branch Head, Strategic Partnerships Branch

Mr Sam Lowe, Branch Head, Renewable Superpower Taskforce Branch

National Energy Transformation Division

Mr Matthew Brine, Division Head

Mr Adam McKissack, Branch Head, Energy, Economics, Data and Analytics Branch

Ms Nicole Thomas, Acting Branch Head, National Climate and Energy Partnerships Branch

Ms Leonie Horrocks, Branch Head, Energy Market Body and Agency Engagement Branch

Ms Kimberley Collins, Director, Energy, Economics, Data and Analytics Branch

Mr Geoff Whelan, Branch Head, Energy System Reform Branch

Net Zero Industries Division

Mr Shane Gaddes, Division Head

Ms Catherine Zerger, Branch Head, Hydrogen Strategy Branch

Ms Bronwyn Ray, Branch Head, Decarbonisation Initiatives Branch

Ms Edwina Johnson, Branch Head, Safeguard and CBAM Review Branch

Mr Paul Murphy, Branch Head, Offshore Renewables Branch

Outcome 2

Biodiversity Division

Ms Cassandra Kennedy, Division Head

Dr Ilse Kiessling, Branch Head, Protected Species and Ecological Communities Branch

Dr Fiona Fraser, Threatened Species Commissioner

Mr Shane Eccleston, Branch Head, Biodiversity Programs Branch

Circular Economy Division

Ms Kate Lynch, Division Head

Mr Cameron Hutchison, Branch Head

Ms Chloe Bird, Branch Head

Ms Jackie Raynor, Branch Head

Environment Information Australia

Ms Jane Coram, Division Head

Ms Juanita Pettit, Branch Head, Environmental Data and Analysis Branch

Ms Lisa Nitschke, Branch Head, Environmental Economics, Science and Reporting Branch

Environmental Permitting and Compliance Division

Mr Andrew McNee, Division Head

Mr Graeme Grosse, Branch Head, Compliance and Enforcement Branch

Ms Kate Elliott, Branch Head, Wildlife, Waste and Environmental Permits Branch

Environmental Water and Aquatic Ecosystems (Commonwealth Environmental Water Holder)

Dr Simon Banks, Division Head and Commonwealth Environmental Water Holder

Ms Liz Rodway, Acting Branch Head, Policy, Aquatic Ecosystems and Northern Basin Branch

Mr Hilary Johnson, Branch Head, Engagement, Monitoring and Southern Basin Branch

Heritage Division

Ms Michelle Dumazel, Division Head

Mr Wayne Beswick, Branch Head, Heritage Policy Branch

Mr James Barker, Branch Head, World and National Heritage Branch

Ms Karen Najjar, Branch Head, First Nations Heritage Protection

International Environment, Reef and Ocean Division

Ms Katrina Maguire, Division Head

Mr John Foster, Branch Head, Great Barrier Reef Branch

Ms Belinda Jago, Branch Head, Oceans and Wildlife Branch

Ms Suzi Heaton, Branch Head, International Environment Branch

Nature Finance and Market Division

Mr Anthony Bennie, Acting Division Head

Ms Laura Higgins, Branch Head, Biodiversity Markets Branch

Ms Louise Perez, Branch Head, Global Nature Positive Summit Branch

Nature Positive Integration Division

Mr Greg Manning, Division Head

Ms Tia Stevens, Branch Head, Environmental Policy Integration Branch

Mr Glenn Block, Branch Head, Natural Heritage Trust Branch

Dr Alison McMorro, Branch Head, Regional Planning and Landscapes Branch

Nature Positive Regulation Division

Mr Bruce Edwards, Division Head

Ms Kylie Calhoun, Branch Head

Ms Tharanie Vithanage, Branch Head

Ms Kate Gowland, Branch Head

Mr Declan O'Connor-Cox, Branch Head

Mr Mark Say, Acting Branch Head

Ms Rachel Short, Branch Head

Nature Positive Taskforce

Mr James Tregurtha, Head of Taskforce

Ms Mahani Taylor, Branch Head

Outcome 3

Australian Antarctic Division

Ms Emma Campbell, Division Head
Professor Nicole Webster, Chief Scientist, Science Branch

Agencies and Statutory Authorities

Australian Energy Infrastructure Commissioner

Mr Andrew Dyer, Australian Energy Infrastructure Commissioner

Australian Energy Regulator

Ms Clare Savage, Chair
Mr Jim Cox, Deputy Chair
Ms Anthea Harris, Chief Executive Officer
Ms Stephanie Jolly, Executive General Manager, Consumers, Policy and Market

Australian Renewable Energy Agency

Mr Darren Miller, Chief Executive Officer
Mr Ian Kay, Chief Financial Officer
Mr Chris Faris, Chief Operating Officer

Bureau of Meteorology

Dr Andrew Johnson, Chief Executive Officer and Director of Meteorology
Dr Peter Stone, Group Executive, Business Solutions
Ms Paula Goodwin, Chief Operating Officer and Group Executive, Enterprise Services
Ms Joanna Stone, Chief Financial Officer

Climate Change Authority

Mr Brad Archer, Chief Executive Officer
Ms Eliza Murray, General Manager, Strategy Branch
Dr Matt Searson, Acting General Manager, Analysis Branch
Ms Samantha MacCready, General Manager, Corporate Branch

Clean Energy Finance Corporation

Mr Ian Learmonth, Chief Executive Officer
Mr Andrew Powell, Chief Finance Officer
Mr Simon Every, Head of Government and Stakeholder Relations

Clean Energy Regulator

Mr David Parker AM, Chair
Mr Mark Williamson, Executive General Manager
Ms Michelle Crosbie, Acting Executive General Manager
Ms Bronwen Shelley, General Counsel
Ms Rebecca Longford, Acting Chief Operations Officer

Director of National Parks

Mr Sean Sullivan, Director of National Parks
Mr Jason Mundy, Division Head
Mr Alan Davidson, Branch Head, Major Projects Branch
Mr Ranga Parimala, Branch Head, Parks Support Services Branch
Dr Barbara Musso, Branch Head, Marine and Island Parks Branch

Great Barrier Reef Marine Park Authority

Mr Joshua Thomas, Chief Executive Officer
Dr Roger Beeden, Acting Chief Scientist
Ms Margaret Johnson, General Manager, Strategic Policy

Snowy Hydro Ltd

Mr Dennis Barnes, Chief Executive Officer

Mr Roger Whitby, Chief Operating Officer

Supervising Scientist

Mr Keith Tayler

Threatened Species Scientific Committee

Professor Helene Marsh, Chair

Committee met at 09:00

CHAIR (Senator Grogan): Good morning, everybody. I declare open this hearing of the Environment and Communications Legislation Committee into the 2023-24 supplementary budget estimates. I begin by acknowledging the traditional owners of the land on which we meet and pay our respects to their elders, past, present and emerging. The committee has fixed Friday 15 December 2023 as the date for the return of answers to questions taken on notice. The committee's proceedings today will begin with corporate matters and general questions of the Climate Change, Energy, the Environment and Water portfolio. I note that the committee has agreed to postpone its Murray-Darling Basin Plan cross-portfolio hearing, originally scheduled for Friday 27 October, to a future date.

Under standing order 26, the committee must take all evidence in public session. This includes answers to questions on notice. I remind all witnesses that, in giving evidence to the committee, they are protected by parliamentary privilege. It is unlawful for anyone to threaten or disadvantage a witness on account of evidence given to a committee, and such action may be treated by the Senate as a contempt. It is also a contempt to give false or misleading evidence. The Senate has endorsed the following test of relevance for questions at estimates hearings: any questions going to the operations or financial positions of departments and agencies which are seeking funds in estimates are relevant questions for the purpose of estimate hearings. I remind officers that the Senate has resolved that there are no areas in connection with the expenditure of public funds where any person has a discretion to withhold details or explanations from the parliament or its committees, unless the parliament has expressly provided otherwise. The Senate has resolved also that an officer of a department of the Commonwealth should not be asked to give opinions on matters of policy and shall be given reasonable opportunity to refer questions asked of the officer to superior officers or to a minister. This resolution does not preclude questions asking for explanations of policies or factual questions about when and how policies were adopted. Witnesses are reminded of the Senate order specifying the process by which a claim of public interest immunity should be raised, and I incorporate the public interest immunity statement into the *Hansard*.

The extract read as follows—

Public interest immunity claims

That the Senate—

(a) notes that ministers and officers have continued to refuse to provide information to Senate committees without properly raising claims of public interest immunity as required by past resolutions of the Senate;

(b) reaffirms the principles of past resolutions of the Senate by this order, to provide ministers and officers with guidance as to the proper process for raising public interest immunity claims and to consolidate those past resolutions of the Senate;

(c) orders that the following operate as an order of continuing effect:

(1) If:

(a) a Senate committee, or a senator in the course of proceedings of a committee, requests information or a document from a Commonwealth department or agency; and

(b) an officer of the department or agency to whom the request is directed believes that it may not be in the public interest to disclose the information or document to the committee, the officer shall state to the committee the ground on which the officer believes that it may not be in the public interest to disclose the information or document to the committee, and specify the harm to the public interest that could result from the disclosure of the information or document.

(2) If, after receiving the officer's statement under paragraph (1), the committee or the senator requests the officer to refer the question of the disclosure of the information or document to a responsible minister, the officer shall refer that question to the minister.

(3) If a minister, on a reference by an officer under paragraph (2), concludes that it would not be in the public interest to disclose the information or document to the committee, the minister shall provide to the committee a statement of the ground for that conclusion, specifying the harm to the public interest that could result from the disclosure of the information or document.

(4) A minister, in a statement under paragraph (3), shall indicate whether the harm to the public interest that could result from the disclosure of the information or document to the committee could result only from the publication of the information

or document by the committee, or could result, equally or in part, from the disclosure of the information or document to the committee as in camera evidence.

(5) If, after considering a statement by a minister provided under paragraph (3), the committee concludes that the statement does not sufficiently justify the withholding of the information or document from the committee, the committee shall report the matter to the Senate.

(6) A decision by a committee not to report a matter to the Senate under paragraph (5) does not prevent a senator from raising the matter in the Senate in accordance with other procedures of the Senate.

(7) A statement that information or a document is not published, or is confidential, or consists of advice to, or internal deliberations of, government, in the absence of specification of the harm to the public interest that could result from the disclosure of the information or document, is not a statement that meets the requirements of paragraph (1) or (4).

(8) If a minister concludes that a statement under paragraph (3) should more appropriately be made by the head of an agency, by reason of the independence of that agency from ministerial direction or control, the minister shall inform the committee of that conclusion and the reason for that conclusion, and shall refer the matter to the head of the agency, who shall then be required to provide a statement in accordance with paragraph (3).

(d) requires the Procedure Committee to review the operation of this order and report to the Senate by 20 August 2009.

(13 May 2009 J.1941)

(Extract, Senate Standing Orders)

CHAIR: I would like to remind all senators that, as we continue our work implementing the *Set the standard* report, as chair I will ensure that proceedings are conducted in an orderly, respectful and courteous way.

Department of Climate Change, Energy, the Environment and Water

[09:03]

CHAIR: I now welcome Senator the Hon. Jenny McAllister, Assistant Minister for Climate Change and Energy, representing the Minister for Climate Change and Energy and the Minister for the Environment and Water. Minister, do you wish to make an opening statement?

Senator McAllister: No, I don't; thank you, Chair.

CHAIR: I welcome Mr Fredericks, Secretary of the Department of Climate Change, Energy, the Environment and Water. Do you wish to make an opening statement?

Mr Fredericks: I don't; thank you, Chair.

CHAIR: Before we commence with corporate matters and general questions, I remind senators that this part of the program relates to matters concerning central departmental administration such as building services, ICT, staffing levels and media procurement. Questions relating to individual policies and programs should be addressed to officials when the specific programs are considered. Senator Hughes.

Senator HUGHES: Good morning, everyone. We obviously have significant cost-of-living pressures at the moment. How much more are Australians now paying on their power bills than they were 12 months ago?

Mr Fredericks: Chair, I'll bow to your judgement on this, but I think that's a question for 9.30, when we have energy estimates.

CHAIR: I would agree.

Senator HUGHES: Can we talk about the one-off \$500 cash payment, or are we going to keep that till 9.30?

Mr Fredericks: I think that's 9.30, too.

CHAIR: Again, that's policy.

Senator HUGHES: I'll keep a series of them till 9.30 and just hope that we don't then discover that they should be in corporate. With regard to the *GenCost* modelling—

Mr Fredericks: That's in energy estimates, too.

Senator HUGHES: I might throw to Senator Cadell since we're definitely in EDO. These questions are all topics that have been in corporate before, but if you want to do them at 9.30, we'll do them at 9.30.

CHAIR: Excellent. Senator Cadell.

Senator CADELL: Is the department and/or the government aware of how much money the EDO is spending on Raelene Cooper's case against Woodside's planned seismic testing work on the Scarborough project?

Mr Fredericks: I'm certainly not.

Mr Hanlon: I'm not aware of what they're spending.

Senator CADELL: Not a problem. Is the department or the government aware of how much EDO is spending on the legal defence on Emil Davey, who is being charged with multiple criminal offences over environmental protests?

Mr Hanlon: No.

Senator CADELL: Has Woodside given you any indication of what the cost has been to them of any actions mounted by Ms Cooper and the various processes in which Mr Davey has been involved, either directly or indirectly?

Mr Hanlon: I have not spoken to Woodside at all on this matter.

Senator CADELL: No-one in the department has?

Mr Hanlon: Not that I'm aware of.

Senator CADELL: There's a strong link between Mr Davey and the activist that went to the home of the Woodside CEO, Meg O'Neill, in Perth on 1 August 2023. How many occasions and on what dates has DCCEEW management specifically spoken to the management of EDO to comprehend any link between the EDO actions and support for Mr Davey?

Mr Hanlon: I might clarify for you, Senator, our interest in corporate is the grant for EDO. We don't have any other contact with EDO.

Senator CADELL: Can I just confirm there has been no DCCEEW comment?

Mr Hanlon: There certainly hasn't from corporate. We could check with our environment colleagues later on this afternoon, but certainly—

Mr Fredericks: Given the substance of the issues that you're raising, probably the best people to answer these questions are going to be here at four o'clock for environment estimates. For the sake of convenience, I will take that question on notice because that's not something we're going to be able to answer on the spot, and it's a detailed question. So I'll take the DCCEEW contacts on notice for you.

Senator CADELL: When it comes to the grant, would there be any likely revisiting of the size of the grant, looking at the amount we're giving to the EDO, based on them overstepping the mark in supporting these actions that are deemed illegal? Is that something you would review in future, or is there just a budget line item in assessing how much goes off?

Mr Hanlon: The grant guidelines include specific milestones that EDO need to establish. I can read those out if you like.

Senator CADELL: Yes, please.

Mr Hanlon: Establishing the onboarding of project staff and recruitment; recruitment program for staff of First Nations country and cultural heritage program; transparent guidelines for the threatened species project; online gateway assessment and overhaul; linkage of online gateway and consensus class reporting system; development of program outreach schedule and plan for First Nations country and cultural heritage program; program delivery and review; and evaluation of the program, including engagement with stakeholders. They're the milestones that the funding is for.

Senator CADELL: So those last two could?

Mr Hanlon: I wouldn't have thought so. The first reporting period is at the end of October, but in general I'd say no, because that's not what we'd be looking at. Maybe next estimates I could come back and have a look at that, once we've had the first report.

Senator CADELL: Okay. I'm happy to come back at 4.30 again for this: how many legal cases involving Environmental Justice Australia and at least one government agency are underway? Would that be something for 4.30?

Mr Hanlon: I'm not sure.

Mr Fredericks: I think that's us, actually. I think we'd have to take that on notice.

Senator CADELL: Okay. How many coal and gas projects approved under the EPBC Act have been legally challenged or taken to court by environmental groups?

Mr Fredericks: I think we'd better take that on notice, too.

Senator CADELL: I have many questions of this specific nature, which will probably need to be taken on notice, but I'll keep going. The next question is virtually exactly the same: how many legal cases involving the EDO and at least one government agency are currently underway?

Mr Fredericks: Yes—on notice.

Senator CADELL: Chair, I'm happy to put the rest of these on notice. They're very specific.

CHAIR: Okay. Thank you. Senator Davey, do you have any in corporate?

Senator DAVEY: I have a couple of questions in corporate. Specifically, have any programs or projects been cancelled since last estimates?

Mr Fredericks: Across the whole of the portfolio?

Senator DAVEY: Yes.

Mr Fredericks: That really is something that I'm going to have to take on notice. Senator, so that I can give you the best possible answer on notice, are you interested in programs or projects at any level?

Senator DAVEY: Obviously we're looking across the budget and the forwards at projects that have been cancelled or reprofiled. It's so that when we're comparing budgets we can actually follow the bouncing ball.

Mr Fredericks: Okay.

Senator DAVEY: Often projects get reprofiled and the line item comes out of the budget, but we don't know where the money has gone.

Mr Fredericks: Okay. We will take that on notice and come back to you on that.

Senator DAVEY: Alright. I will leave that.

Senator HUGHES: I have one question—

CHAIR: Okay. We'll go to Senator Hughes.

Senator HUGHES: Depending on your answer, I may have follow-up questions. Did anyone from the department attend the Garma festival?

Mr Fredericks: Yes, they did.

Senator HUGHES: Could you give us an update of how many?

Mr Fredericks: Just bear with us.

Senator HUGHES: While you're having a look at that, are there other details you can provide over who they were, what APS classification and how long they attended?

Mr Hanlon: I don't have that with me, but I can get that fairly quickly. From memory—

Mr Fredericks: I think we should come back to you on that.

Senator HUGHES: I'm interested in how long they went for, how many, what their classification was, what their role was at the festival and the cost to the department. If you want to jump around and see we get that before the end of corporate—

Mr Hanlon: I'm not sure if we can get that before the end of corporate, but I will definitely have it for you this morning.

Senator HUGHES: Lovely, thank you.

CHAIR: Senator Cadell?

Senator CADELL: What amount of funding has the EDO to date directly received through the Environmental Defenders Office and Environmental Justice Australia Program?

Mr Hanlon: So \$2 million was paid to the EDO on 23 January this year. No funding has been paid to EJA. EJA declined the grant opportunity.

Senator CADELL: Declined?

Mr Hanlon: That's correct.

Senator CADELL: Is EDO still scheduled to receive \$8.3 million in total over the total life of the program, or has that now changed?

Mr Hanlon: That's correct. It hasn't changed.

Senator CADELL: What is the current breakdown over the forward estimates? Obviously that \$2 million—

Mr Hanlon: So last financial year, which was 2022-23, it was \$2 million, which was paid, as I stated. There's another \$2 million this financial year. It's \$2.123 million in the following financial year. The last year—over the forward estimates this is—2025-26, is \$2.164 million.

Senator CADELL: Have either EDO or EJA received any other funding from the government from any other source other than through that?

Mr Hanlon: Not that I'm aware of, but I only deal with what we as a department deal with.

Senator CADELL: Okay. You read out the criteria before for the money. Have there been any other specific variations or is that it?

Mr Hanlon: That is it.

Senator CADELL: Those are my EDO questions.

CHAIR: Senator Hughes.

Senator HUGHES: Minister, on the same track, did any staff from the portfolio—so your office or Mr Bowen's office—attend the Garma festival?

Senator McAllister: I can speak for my office. No-one from my office, including me, attended the Garma festival.

Senator HUGHES: Could you get some clarity from Minister Bowen as to whether any of his staff attended the Garma festival, as well as at what level they were at—so adviser or senior adviser—and the purpose of their trip to Garma?

Senator McAllister: I will take that on notice.

Senator HUGHES: Thank you.

CHAIR: Alright. It's all on notice. Senator Cadell.

Senator CADELL: I want to go to staffing levels and stuff like that. Answer to question on notice SQ23-000851 says that the number of staff in the environment and water function was projected to rise by 331 during 2023-24. Is that figure still accurate?

Mr Hanlon: Yes, that's approximately correct.

Senator CADELL: What was the change in the number of environment and water staff during 2022-23?

Mr Hanlon: I've got it broken down by division. I don't have it necessarily as environment and water.

Senator CADELL: I'll test the old maths. Let's go.

Mr Hanlon: Okay. In terms of environment protection, that grew from 181 in September 2022—this is when the department first reported it—to 223 as our indicative budget for this year. One of the issues I've got—just for clarity while I'm working this out—is that we restructured the department earlier this year, so it's not exactly like for like between September and March, but I'll do my best.

Ms McCulloch: Senator, can I just ask you to clarify, because we've got a number of environment and water functions. Is there a specific—

Senator CADELL: No, across the total. It was all in reference to the SQ23-000851 question on notice—that growth number and applying it to whatever you applied it to.

CHAIR: So therefore the restructure won't impact that, because there's just one total number for the entirety of the department.

Ms McCulloch: That's right. I'm just checking—

Mr Hanlon: Okay. Maybe I'll answer it in a different way for you now that I understand the question. Maybe I can do it at group level. That might help.

Senator CADELL: Yes, that might be better.

Mr Hanlon: Environment—so that's Deputy Secretary Knudson—in September 2022 had 277 staff. This is by headcount. As at August 2023, it was 416.

Senator CADELL: Do you have them by FTE or—

Mr Hanlon: I'll check. I'll give you the one for Deputy Secretary Parry and then I'll come back to that if I can. In September 2022, it was 634 by headcount. At 31 August 2023, it was 878 by headcount.

Ms McCulloch: They're our two environment groups, and then there's a water group.

Senator CADELL: Do you want water while we're here?

Senator DAVEY: Yes, I do.

Mr Hanlon: Water was 236 at 30 September 2022 and 459 as at 31 August 2023, by headcount.

Senator CADELL: Pretty close on the target. Thank you for that. And wage cost over those periods?

Ms McCulloch: For those groups?

Senator CADELL: For those groups. That'd be fine.

Mr Hanlon: I'll probably have to take that on notice, because I don't know that I have that.

Ms McCulloch: Senator, if you want the budgets of those groups—

Senator CADELL: That would be fine.

Ms McCulloch: we would need it split. If you want employee cost, we have totals which would include supplier costs et cetera.

Senator CADELL: No, if we can split it out, I'm happy for you to take it on notice.

Ms McCulloch: On notice, okay.

Senator CADELL: There are tightening labour markets. How is it generally going? Are we hiring well? Are we getting experience, or are there increased costs on having to train staff up? How is our hiring going in filling these spots?

Mr Hanlon: That's a combination of a few things. One is that we've been recruiting nationally, with our national footprint, so we've been able to tap into all the states and territories across the nation. That would be the first thing. That has meant that we've got broad experience across the department. I think there's a combination then of recruiting experienced staff and increasing our graduate program. We've taken on a school leavers program as well. So I think in general you'd say we've got a mix across the board, from graduates all the way to experienced officers.

Senator CADELL: Okay. The increase just across those three areas, including water, is a bit over 500.

Mr Hanlon: Correct.

Senator CADELL: That's a big increase. How is the onboarding of that going? What's the process for bringing that many staff into an organisation?

Mr Hanlon: The onboarding process was quite difficult early on, as you'd imagine, because we'd grown quite significantly. But that's petered out now, so we're slowing down our recruitment to what would be normal for any department, and that process is quite smooth now.

Senator CADELL: Once again, these might be questions on notice. I'm happy if they are. How many ASL in the previous department were working on environmental approvals at the time this government came into office?

Mr Hanlon: I'd have to take that on notice.

Senator CADELL: Okay. And then and now?

Mr Hanlon: Yes, I can do that.

Senator CADELL: How many state offices is DCCEEW opening?

Mr Hanlon: We have offices in every capital city. We also have smaller offices in regional areas, and I can give you the exact ones if you want, or I can give you the ones I can think of off the top of my head.

Senator CADELL: Yes, please do that.

Mr Hanlon: I'll do that while we're going through: Albury, Dubbo, Toowoomba—you're testing me now.

Senator CADELL: I thought you were going alphabetical after A and D and now I'm just thinking—

Mr Hanlon: I'm just doing it from memory. It's Albury, Dubbo, Eaton—that's the airport in Northern Territory—Toowoomba, Goondiwindi, Townsville, Loxton in South Australia and Mildura. They're all the ones that have commercial properties outside of the capital cities.

Senator CADELL: I've just come from the 'metaverse' while I've been asking that question. Is there any way that we track the productivity of all the new staff you've onboarded? We've brought in these 500 new staff. Is there an internal way of measuring productivity of staff members?

Mr Hanlon: I wouldn't say there is at the organisational level. It would be at the manager level that that would be monitored.

Senator CADELL: The productivity of new staff versus the people who have been onboard and know what they're doing—it just seems like a lot of new staff being brought onboard in a short time.

Mr Fredericks: Maybe I can help on that one. I understand the question. To be fair, we don't have the sort of capacity to measure that. It is a fair point. Part of the onboarding process, as you know, Senator, involves initial training to bring people up to speed with the policies, guidelines and way the department operates. As Mr Hanlon candidly said, in the early days that was difficult, as we were establishing a new department and bringing those

sorts of numbers on, but we have settled down now, so there is a considered effort to bring new starters up to speed wherever they are.

It is probably also a nice opportunity for me—you and I have had this discussion before, and I have had it with some of your colleagues, about the desire I certainly have that DCCEEW have the strongest possible national footprint. We need to be a national department, and that means not just capital cities. It's why we're making a concerted effort to get out into the regions.

Senator CADELL: We're on board.

Mr Fredericks: Just to be fair, there are a couple of reasons for that. One is it does allow us to draw a better employment pool. We want to employ people in the Hunter Valley. It's important for us to hear those voices and to give people an opportunity. It does cost. We lose some economies of scale by doing that, but I think it's worth it. There's a bit of a balance there between cost, capability and opportunity. We're probably balancing capability and opportunity, but I suspect you would appreciate that that's a good thing to do.

Senator McAllister: I have a follow-up response for Senator Hughes, if now's an okay time to provide it before we move into a different area. I'm advised that no staff from Minister Plibersek's office attended Garma, and no staff from Minister Bowen's office attended Garma.

Senator DAVEY: I've got some questions that are relevant to the restructure and staffing as well. In that restructure, has the department established a specific First Nations branch?

Mr Fredericks: We've done a few things on that. We have established a First Nations branch, whose principal function is to coordinate us, across the breadth of the department, in our engagement with First Nations groups, which is something I think First Nations groups and the community more generally are certainly interested in us being able to do better. They're also responsible for uplifting our capability in engaging with First Nations groups in our consultations. That applies across the portfolio as well. In a sense, that's a group that we've established in order to lift our capability and to coordinate us better, which we certainly think is something that the community in general wants us to do better and First Nations certainly need us to do better. Someone can correct me if I'm wrong, but in different groups we've established a focus for First Nations as well. There's First Nations water—of interest to you, Senator. We can discuss this more in estimates, in the water task force.

Senator DAVEY: Except it's been postponed, so you may as well go for it now!

Mr Fredericks: When it inevitably comes back, we have a clean energy First Nations task force. We've long had it, but we are growing our First Nations heritage branch as well.

Senator DAVEY: When was this branch created and at whose instigation?

Mr Fredericks: It was created at my instigation, but that was on advice. We may have discussed this before, but the restructure was done following an independent review by Daryl Quinlivan. He did an independent review. One of his findings was that in a big department like ours, particularly with the necessity for us to engage across the breadth of it with First Nations groups in a lot of what we do—including in the Murray-Darling Basin, as an example—we needed a central branch to coordinate us, to lift our capability. Interestingly for you, Senator, in the Murray-Darling Basin, as you know—including under the previous government—there has always been strong engagement with First Nations groups. I know it's something that group has always been very proud of. We've got to try and pick up that expertise and capability and apply it more generally across the department. That was Mr Quinlivan's view, and I hold that view very dearly. You're testing me on the date that the branch came into existence, though. I'd better hand over to my colleagues who know facts better than me.

Ms McCulloch: The restructure took effect in May this year.

Ms Croker: I can confirm that the branch was established in May this year.

Senator DAVEY: How many ASL are currently employed in the branch?

Ms Croker: There are currently 18 ASL employed in the branch, of which 10 identify as Aboriginal or Torres Strait Islander.

Senator DAVEY: Employment within the branch is not limited to only Aboriginal or Torres Strait Islander people; it's Public Service employment?

Ms Croker: That's correct.

Senator DAVEY: In the work program for the branch, what are the most immediate priorities?

Ms Croker: Building on what the secretary has outlined, the branch delivers on providing that whole-of-departmental view on First Nations issues across the breadth of work that we do in our organisation. That also includes our contribution to the government's Closing the Gap work. We are also supporting the departmental

engagement across our enterprise on First Nations issues. We have responsibility for providing secretariat services to the Indigenous Advisory Committee which provides advice to the Minister for the Environment and Water on EPBC Act issues. The branch also supports the cultural capability for the department in relation to First Nations issues.

Senator DAVEY: Will this branch be working on the Albanese government's promised standalone Indigenous cultural heritage legislation, or will that work be done by the broader department seeking advice?

Mr Fredericks: There's a branch that is in Ms Parry's group, the Indigenous Cultural Heritage Branch, which is the branch that will take lead responsibility for that work.

Senator DAVEY: So we've got a First Nations Branch and an Indigenous Cultural Heritage Branch as well as the many advisory bodies that the department seeks advice from?

Mr Fredericks: I think the way to think about it is that the issue of Indigenous cultural heritage, which obviously has been an issue for a long time, and that branch that exists has, as one of its principal responsibilities, to work on policy development around Indigenous cultural heritage protection—that branch has long existed and so really there's a continuum there which we want to seize and utilise that knowledge. I think the new thing, which is quite separate, is the work of the First Nations Branch, which, as I said, is more about a focus on the department—our capability and our coordination—whereas, the Indigenous Heritage Branch focus is on, as you put it, policy and program development.

Senator DAVEY: How many staff are there in the Indigenous Cultural Heritage Branch?

Mr Fredericks: We might take that on notice, but we can answer that question at four o'clock, when they're here for—

Senator DAVEY: So I can ask more questions about it?

Mr Fredericks: Absolutely. In fact, that's the time. If you're interested in questions on Indigenous cultural heritage reform, that's the four o'clock session.

Senator DAVEY: Great. I will park them until then.

CHAIR: Thank you, Senator Davey. That concludes the examination of corporate matters from the Department of Climate Change, Energy, the Environment and Water.

[09:29]

CHAIR: I now call officers from the department in relation to outcome 1, program 1.1, Reducing Australia's greenhouse gas emissions. We will kick off the questions with Senator Hughes.

Senator HUGHES: I assume the department is keeping track of what Australians are paying with regard to their power bills each month. How much more are Australians paying today than they were 12 months ago?

Mr Duggan: I'll go to the default market offer, which is released annually by the Australian Energy Regulator. The standing offer prices differ between jurisdictions, so, depending on which state or territory you live in, the answer is a little bit different. If I were to take New South Wales, the 2023-24 regulated standing offer on an annual basis is \$2,106 and that—

Senator HUGHES: Sorry, Mr Duggan—for people that are listening at home to this, we want to talk about how much consumers are paying.

Mr Duggan: Sure. That is how much the average household is paying, and the default market offer.

Senator HUGHES: I want to get an idea of how much more they're paying than 12 months ago.

Mr Duggan: The increase from 12 months ago in the standing offer, just in New South Wales, is \$366. That's prior to any rebate from the government. In New South Wales, you'd also be in receipt of a \$500 rebate, if you qualify for the rebates.

Senator HUGHES: I'll jump ahead to the next question, because you've mentioned the \$500 cash payment. I want to get an understanding of this. We keep hearing, even through the Senate, in response to questions, that there were cost-of-living pressures and power price relief given to Australians through a \$500 cash payment for energy bill relief. We did ask for some tables, and we got those in response to questions on notice last time. I appreciate you providing that, but the tables suggest that the Commonwealth is contributing \$250 to roughly five million households. Would that be correct?

Mr Duggan: Yes. It's a Treasury administered program, but it is done in consultation and in partnership with the states and territories. The Commonwealth's contribution is \$1.5 billion, matched by the states and territories, so \$3 billion of bill relief in total.

Senator HUGHES: Just so we've got it clear: it was \$250 from the federal government, from the Commonwealth, once off, to about a fifth of Australians?

Mr Duggan: It's intended to go to low income and vulnerable households, so, yes, the bill relief there is to a subset of households; that's correct.

Senator HUGHES: We hear constantly that there has been this bill relief given to households, but it's not bill relief. It's a one-off payment to a small number of households—four-fifths of Australians didn't benefit from this—and it doesn't match the increase that they've seen over the past 12 months. This is a one-off bill payment. It's fundamentally a sugar hit. It's not doing anything to bring down power bills. It doesn't mitigate the cost of living, and we know people are experiencing cost-of-living pressures across the board. What was the outcome that this one-off payment was meant to achieve?

Mr Duggan: The outcome is: in New South Wales the increase that you saw in your power bill prior to the bill relief was \$366. If you were in receipt of a \$500 rebate, you would actually be \$134 better off after the bill rebate.

Senator HUGHES: If you received it.

Mr Duggan: That's correct.

Senator HUGHES: I think we'd like to have a look at some of the power companies and how much they're actually increasing their bills by. I keep hearing that power bills have gone up by 12 to 18 per cent. You speak to families and you see what people post online when their bills come through, and their bills are up 49 per cent in New South Wales. I'm not quite sure that one-off sugar hit really did anything other than cause further inflation.

Senator McAllister: Senator Hughes, I wonder if Mr Duggan might talk you through the relationship between the default market offer and the retail offering that people—

Senator HUGHES: That is okay. I am familiar with how it works. I am interested in understanding—

Senator McAllister: Do I have the call?

CHAIR: You do indeed.

Senator HUGHES: You are just answering a question that I didn't ask.

CHAIR: Senator Hughes, if can we take turns in speaking and not speak over each other.

Senator HUGHES: We are short on time, so I don't need a lecture on something I am not asking about.

CHAIR: Let's not waste it arguing about this. Let's respectfully speak one at a time.

Senator McAllister: Senator Hughes is providing information about some of her observations about consumers' experience in the retail market. I know that Mr Duggan would be able to provide information to senators about the DMO and what it practically means for consumers. Recently, a number of the market bodies have provided advice to people that they ought to shop around because the DMO actually does shape the nature of the retail market.

Mr Duggan: The default market offer introduced in 2019 is basically the maximum price an electricity retailer can charge a customer on a standing offer. What you see is that most customers in the market will pay a market offer. Those market offers are offered competitively by retailers and they tend to be below the standing offer, so that is where the competition in the electricity retail market comes in. Basically, the purposes of that standing offer, or default market offer, is to ensure that consumers that perhaps aren't as connected to understanding how their electricity bill works are protected from unreasonably high prices.

Senator HUGHES: What I am trying to understand though is how did \$250 from the Commonwealth to one-fifth of Australians do anything to lower power prices, particularly to all those Australians who weren't given the benefit of that sugar hit relief budget measure?

Mr Duggan: It has gone to five million households out of 10.2 million households in total, so it actually reached almost 50 per cent of households. We worked with Treasury on the design of the rebate. The way it impacts is, after you receive your bill, you get your bill adjusted downwards. Treasury's assessment was that it was deflationary, not a sugar hit that would add to inflation.

Senator HUGHES: But they got a payment off their bill. How has it brought power prices down overall? What has it done to bring power prices down for those people who didn't qualify for it?

Mr Duggan: For the 50 per cent of households that did receive it—

Senator HUGHES: The ones that didn't?

Mr Duggan: Those that didn't receive it benefited from the government's other interventions through the energy price relief plan, which included getting to the source of the wholesale price increases that we saw last year due to Russia's invasion in Ukraine, which saw—

Senator HUGHES: Have we seen those come down?

Mr Duggan: Yes, we have seen wholesale prices come down significantly due to the coal price caps that the government put in place and the gas price caps. Those prices are now 71 per cent lower at the wholesale level than they were 12 months ago.

Senator HUGHES: Is that flowing through to consumers?

Mr Duggan: Yes, it is. The AER—

Senator HUGHES: But consumers should be saying their bills have gone down. So I can understand this, would consumers tell you today their bills are lower than they were 12 months ago?

Mr Duggan: No—

Senator McAllister: Chair, I wonder if Mr Duggan might be allowed to answer Senator Hughes' question before the senator moves onto the next question.

Senator HUGHES: Senator McAllister, thank you for your intervention.

CHAIR: Senator Hughes, please.

Senator McAllister: They are important questions to be answered. I appreciate you asking them on behalf of people but it is not reasonable to prevent the witness from answering before moving onto the next question.

CHAIR: I will take a moment here. We have media in the room. I assume nobody has a problem with questions?

Senator HUGHES: No.

CHAIR: Mr Duggan, would you like to complete your answer.

Mr Duggan: As I was explaining, the circumstances in which the government introduced the energy price relief plan, of which the bill relief is one element, was a circumstance where we saw significant international price pressures due to Russia's invasion of Ukraine. They were feeding through into the input costs for electricity generation, so coal prices and gas prices. Two parts of government's intervention were to get directly at the cause of the price increases through a coal price cap of \$125 a tonne and a gas price cap of \$12 per gigajoule. The Australian Energy Regulator estimates that, in the absence of that intervention, consumers would have faced a 40 to 50 per cent increase in their standing offer price. Depending on the jurisdiction, before the bill relief, they saw a range of two per cent in the Northern Territory to 25 per cent in Victoria, so it was a very significant decrease in the increase in prices.

Senator HUGHES: So it went up—

Mr Duggan: Prices still rose, but they rose—

Senator HUGHES: but by less than was expected.

Mr Duggan: by a lot less than would have done otherwise. Treasury's estimate is electricity prices this year would have gone up 36 per cent nationwide in the absence of that intervention.

Senator HUGHES: But, again, that's modelling.

Mr Duggan: What we've seen is that Treasury's subsequent estimate, inclusive of the interventions, was that we would see a 20 per cent increase, but, when you take into account the bill relief, it's in the order of a 10 per cent increase nationwide.

Senator HUGHES: The very crux of this issue is that Australians are not getting their power bills every month and thinking, 'Wow! I got a reduction in my power bill.' Their cost-of-living pressures are being significantly felt, and, certainly, what I know we are hearing everywhere we go is that increases in power bills are causing considerable hardship to a lot of Australian families. Listening to all of that, are we able to say: 'Your power bills went up, but they would've gone up more, based on modelling'? You just said that wholesale prices are lower, so Australians should be seeing lower power bills. Can you tell me what we should be saying to Australians when they say their power bills have gone up? Should we say, 'No, they really haven't,' or, 'No, they haven't gone up by as much as they could've gone up'?

Mr Duggan: It is really important here to distinguish between what they would observe in their bill prior to the bill relief and what they would observe—

Senator HUGHES: That's a one-off payment.

Mr Duggan: after the bill relief.

CHAIR: Senator Hughes, please let Mr Duggan answer the question.

Mr Duggan: Prior to the bill relief, households would observe an increase in their electricity prices. After the bill relief, 50 per cent of households that receive the bill relief would actually observe a reduction in their power bill for this financial year once the rebate is taken into consideration.

Senator HUGHES: A one-off payment.

Mr Duggan: That's the increase that's occurred with respect to this financial year.

Senator HUGHES: I find it extraordinary. Was it \$366 per year that you think people's power bills have gone up in New South Wales? I'm not sure who you're talking to. It's certainly not the people we're talking to out on street. Their power bills are going up a hell of a lot more than 90 bucks a quarter.

CHAIR: We'll rotate and then come back to you.

Senator HUGHES: Alright. I'll move on.

Senator SHOEBRIDGE: Thanks for your attendance today, everyone. In November, the Energy and Climate Change Ministerial Council will discuss how to implement recommendation 9.8 from the Northern Territory's fracking inquiry that there be no increase in life cycle emissions. Whose responsibility is this?

Ms Evans: We are working with the Northern Territory and we'll be reporting back to the ECMC on the approach to recommendation 9.8 in the Pepper inquiry. It's important to note that, through the implementation of the Safeguard Mechanism, we've already dealt with the scope 1 emissions associated with the Beetaloo development, when it occurs. It's the question of the downstream use of the gas within Australia that we need to continue to have a look at—to put options to the government about how they will approach that, in collaboration with the Northern Territory. The Energy and Climate Change Ministerial Council has agreed that we should continue that work with the Northern Territory and report back to them.

Senator SHOEBRIDGE: Why, then, don't we just have a look at one example. It's moving to this life cycle emissions discussion, is that right?

Ms Rowley: Recommendation 9.8 of the Pepper inquiry specifically was about seeking to ensure no net increase in life cycle greenhouse gas emissions emitted in Australia from any onshore shale gas produced in the NT. So, yes, it is a life cycle concept.

Senator SHOEBRIDGE: Let's look at Tamboran's plans, which are to frack the Beetaloo and send that gas up to their export terminal in Middle Arm. If this all ends up as they hope, and personally I oppose, then do emissions from the pipeline transportation and the energy used to liquify that gas have to be completely offset?

Ms Rowley: The Safeguard Mechanism reforms relate to the scope 1 emissions from the production of the gas. The subsequent distribution and downstream processing would be dealt with by other facilities, so that would be in different facilities' baselines under the safeguard. However, alongside the safeguard reforms at the Commonwealth level, the Northern Territory also established a large emitters policy, which requires projects—and this applies to all gas developments in the Northern Territory—with emissions over 100 kilotonnes a year to develop and implement a greenhouse gas abatement plan demonstrating how their emissions will be managed to achieve net zero by 2050. And that covers scope 1 and scope 2 of any gas producers.

Senator SHOEBRIDGE: So the Commonwealth's view is that the transportation down the pipeline and the energy required to liquify it—essential elements for the Beetaloo project—are not being included in the Beetaloo's offset requirements. Are you saying that's to be dealt with under that grossly inadequate Northern Territory leg?

Ms Rowley: I wouldn't comment on the Northern Territory legislation. I would need to double-check with my colleagues who are responsible for the safeguard mechanism, but my understanding is that the net zero scope 1 emissions from commencement applies to production rather than to downstream processing.

Senator SHOEBRIDGE: So you're saying—

Ms Rowley: And the baseline from those other facilities would be determined in accordance with the rules applicable to them.

Senator SHOEBRIDGE: So the Commonwealth safeguard mechanism, in relation to Beetaloo, is completely ignorant of the fact that the gas needs to be piped and liquified? That's the so-called safeguard mechanism?

Ms Rowley: No; the emissions from those activities are covered by the safeguard mechanism where they're conducted by facilities that are above the 100,000-tonne threshold for safeguard coverage. Each of those facilities

would have baselines determined in accordance with the rules of the safeguard mechanism, so they would also be required to be reducing their net emissions over time.

Senator SHOEBRIDGE: But the offset requirement for onshore projects like Beetaloo, you're saying, will not apply to those essential elements of the project, being the pipeline and liquification—is that right?

Ms Evans: I don't think that's what Ms Rowley is saying, but you raise a good point. Under the safeguard mechanism, the direct scope 1 emissions from the facility itself are definitely dealt with. Then we have a broader set of issues that are being considered through the Energy and Climate Change Ministerial Council and in the work that the Northern Territory and Commonwealth are doing together about how to deal with the scope 2 emissions, of which there are very few because they mostly produce their energy on site at the facilities, so it's already counted in scope 1. Sorry if I'm getting technical, but the scope 3 elements—

Senator SHOEBRIDGE: Liquification is incredibly energy intensive.

CHAIR: Senator Shoebridge, please let the witness reply.

Ms Evans: I used the example earlier of the downstream combustion of those emissions if they are used in Australia, but we would need to look at the scope 3 emissions, which would be those pipeline, fugitive and other things that are associated with export emissions where they are occurring in Australia. The commitment under 9.8 of the Pepper inquiry is for there to be no net increase in the emissions associated with the Beetaloo in Australia. We will look at all of the sources of emissions from the Beetaloo that are in Australia as we come up with the way that the government will approach that. The answer Ms Rowley was giving you was trying to explain exactly how the safeguard mechanism will play a part in that. Certainly, for the scope 1 emissions, that's definitely dealt with, and, for the emissions that you are describing, there is some potential that they are already covered because they are going to facilities that are also covered by the safeguard mechanism. But these are the kinds of details that we actually need to work through to get to the point where we fully understand it and then we can put options to the government. It's certainly not the case that we are ignoring them.

Senator SHOEBRIDGE: We have seen the minister start using APPEA language, such as 'economy-wide emissions', in relation to this project. Can you assure us that, when it comes to assessing the life cycle increase from fracking in Beetaloo, the department isn't going to be counting the culling of cows or the buying of EVs as part of the response to Beetaloo?

Ms Rowley: The department's currently considering different approaches that the government can take, and the key objective of that work is to contribute to reducing Australia's emissions. We're looking at those possible approaches in terms of their consequences also for Australia's gas supplies. In terms of the work we're doing, the task of understanding no net increase in life cycle emissions in Australia is not straightforward, and the Pepper inquiry itself, in its 2018 report, canvassed a broad range of policy options on how that could be given effect. In the Pepper inquiry 2018 report, it envisaged that it could be done through things like the early retirement of coal-fired power stations, looking at other activity within the energy sector. It envisaged increased deployment of renewable energy, another way to reduce emissions in the energy sector not specific to a Beetaloo project. It also looked at things like changes in vehicle emission standards as well as carbon credit offsets. The government's taking action on all of those fronts already, in terms of coal, renewables, emissions standards and improving the performance of the carbon crediting scheme, as part of its plan to reduce Australia's emissions to 43 per cent below 2005 levels by 2030. The Pepper report, it's important to keep in mind, did not require that life-cycle emissions be offset at the project level.

In our work, we are looking at the range of approaches—at the national, or the sectoral or the project level—as different ways that you could give effect to Pepper 9.8, and, in working those through, we are thinking through their practical implications. It's important to do that because, for example—and this is just to illustrate; no decisions have been taken on this matter yet—if a new measure imposed a restriction only on Beetaloo gas, then you could imagine that consumers might substitute to an alternative source of gas to meet their current energy needs, even as the energy system transitions to renewables. If you have that effect, there's no net emissions benefit, so you're not delivering any improvement to or increase or reduction in Australia's net greenhouse gas emissions. Similarly, if a restriction on Beetaloo gas means that the gas is exported rather than supplied to the domestic market, again, you might get no emissions benefit but you might see constrained supply to domestic consumers.

They're the sorts of issues that we're trying to work through. The work that's already been done, particularly under the safeguard reforms to address those scope 1 emissions from production, mean that the Beetaloo gas, if development proceeded—and I would note that there are no current proposals under consideration for approvals—then that gas supplied to any downstream user, whether it's pipelines or LNG or domestic, would have

at least an equal and possibly a lower emissions footprint than any other gas used in Australia. They're the things we are working through.

Senator SHOEBRIDGE: I asked about two specific things: counting cows and EVs. It would be close to obscene if we had a policy position where, when somebody purchased an EV as a way of reducing their emissions, that was somehow used to give a credit to Beetaloo to allow the NT to be fracked. Why won't you take that kind of thing off the table? It seems an almost obscene policy position.

Ms Rowley: If we go back to the recommendation of the Pepper inquiry, which is what the government has committed to working with the Northern Territory to give effect to, the focus is on net emissions in Australia and ensuring that there is no net increase in emissions in Australia from Beetaloo production. As I said, we're working through different approaches with a view to ensuring that whatever is done contributes to either no net increase or a reduction in Australia's emissions.

CHAIR: Senator Shoebridge, we're going to rotate the call. Do you have a final question? We can come back to you.

Senator SHOEBRIDGE: I think we'll come back to Beetaloo.

Senator DAVEY: I have a question regarding the standing offer notice SON3921317, which was published on the AusTender website on 10 October, with the contract notice view CN4008637. This was the awarding of a contract of \$1.7 million to CSIRO—I know they're coming up later—for securing water for an emerging Australian hydrogen industry. I'm trying to understand what areas that contract is focused on. When they say 'securing water', is that surface water or desalination plants?

Mr Fredericks: I've just been advised that that's a contract in our water group. That's for water estimates, in program 1.4. Can we take that on notice so we're reading to answer that when we come back?

Senator DAVEY: Okay. So I can't ask any of those questions today?

Mr Fredericks: You can ask, you just won't get answers.

Senator DAVEY: Can I also put some of them to the CSIRO when they appear?

Mr Fredericks: I would have thought so.

Senator DAVEY: Okay, I won't push my luck and waste time; I'll come back on water day, whenever that is.

Senator CADELL: At the end of last estimates we got to the point that reaching 82 per cent by 2030 would require not only the opening of enough alternative generation but also the closing of some existing generation. On that point, given the New South Wales government and others are talking to coal generators about extending the lives of their plants, has the department done any modelling on what that could do to the 82 per cent target?

Mr Duggan: The latest public modelling that the department did was in the context of the 2022 emissions projections. In that modelling there were two sets of scenarios. One was effectively a baseline scenario, based on the existing policies at that time. At that point, the renewables share of electricity generation was estimated to get to 68 per cent nationally and 76 per cent in the national energy market by 2030. It also had an additional measures scenario, including the government's national renewable energy target of 82 per cent—that would have seen Australia achieve emissions reduction of around 40 per cent on 2005 levels by 2030, which is within striking distance of the government's target. We haven't released any modelling since then which goes to your question of 'What if we had earlier or later coal closure?' AEMO, in its integrated system plan and its step-change scenario, which is consistent with emissions reduction targets of Commonwealth, state and territory governments, projects an 83 per cent renewable energy share in the NEM by 2030. It has about a 60 per cent decline in coal generation capacity over that time in order to achieve that outcome.

Senator CADELL: Very clear in that answer was 'public release'; has the department got anyone looking at the 'what ifs'?

Mr Duggan: We are constantly advising the government on its energy policies and emissions reduction policies. We're constantly analysing, modelling and making sure that we are up to date on the impact of policies and broad external factors on the pathway to 82 per cent by 2030, and emissions reduction generally. There's always a modelling exercise that is generally under way.

Senator CADELL: In that modelling exercise that is always under way, have you provided government with any modelling about what happens if coal is extended to any extent from the announced dates of closures?

Mr Duggan: No, we haven't provided information specifically on the extension from an announced closure date going forward, in terms of the impact on either renewable penetration or emissions.

Senator CADELL: If you haven't provided it, does it exist? Have you done the modelling?

Mr Duggan: No, we haven't completed modelling on that question.

Senator CADELL: Putting the cart before the horse, because we'll get to the timetable of the rollout of things later, according to your latest-released model that we're talking about, are new generation projects coming on at the rate you thought it would?

Mr Duggan: If we look back over the past two to three years, I'd say we've seen an enormous increase and acceleration in renewable energy coming online. In fact, we've had a lot more connect to the grid over the past year than we've had in any other period. What we have seen, though, is a slower pace of projects reaching final investment decision over the past six to 12 months, and the Clean Energy Regulator regularly puts out quarterly statistics on that. We have seen a slowdown over the past six months or so in that regard.

Senator CADELL: Is it the department's position still that the projects being built are not yet at FID and that the closure rates will see 82 per cent by 2030?

Mr Duggan: Yes. Certainly, we can still see a pathway to 82 per cent. I think in my previous evidence I made the point that the government has intentionally set a target that is intended to galvanise, basically, action by all levels of government. We work, of course, with the states and territories, who largely run the electricity grid. We work very closely with them about how we can partner on this, but we also work with the private sector in sending really clear signals about what the government's policy stance about getting renewables into the system is. That target of 82 per cent renewables is what is needed to get to the legislated 43 per cent emissions reduction. Our sense is that it is achievable, but it will require a significant acceleration from where we are today.

Senator CADELL: The language there—I can see a pathway to achieve—is my concern if we aren't giving modelling forward. I can see a pathway to my achieving winning the lotto on the weekend. I think it's extremely unlikely; I think yours is more likely than mine. But where is the information to government about what we will do if we're not going to get to this 82 per cent? We've said that we haven't given them modelling about what happens with the what-ifs. What information can the government use to make decisions about new policy positions if we aren't giving them modelling, saying, 'This is difficult'? When you say, 'There's a pathway to achieve, but we have to accelerate,' it seems to me that it is not the likely outcome.

Mr Duggan: This is a large-scale transition. It's operating at pace. We are constantly providing advice to government on where we're at today, where we need to be and the sorts of policies that will support that. I'll just make two observations. One is that the government has put in place a number of policies that will contribute towards this objective which are only now starting to have an impact. One is those is the Rewiring the Nation policy—\$20 billion worth of concessional financial support for transmission. Deals have been done with the states and territories, but the transmission infrastructure is only now starting to be rolled out. Similarly, there is the Capacity Investment Scheme—\$10 billion worth of support for firmed generation and storage. We've run one pilot auction; we've got another pilot auction coming. The national rollout of that will be from next year. That's six gigawatts worth of dispatchable generation and storage. Those things we would expect to see contribute to that acceleration that I described.

Senator CADELL: So we're not saying 82 per cent by 2030 is dead?

Mr Duggan: No.

Senator CADELL: When will it be?

Mr Duggan: We will continue to provide advice to the government to secure the pathway to 82 per cent.

Senator CADELL: You talked about the transmission line and the rollouts. The CEOs of Origin Energy, AGL and EnergyAustralia are saying that delays in building new transmission lines will threaten renewable energy. They're all on record saying that. To what extent are those CEOs accurate?

Mr Duggan: Sorry, Senator, I missed the quote in question.

Senator CADELL: They're saying that the slow rollout of transmission lines is a key threat to putting renewables into the grid by 2030.

Mr Duggan: Right. Certainly, in order to take advantage of the geographic diversity that is important with connecting renewable energy in a firmed way into the grid, transmission infrastructure is very important, so I certainly would agree with the proposition that the timely build of that infrastructure investment is very important to achieving 82 per cent by 2030. I absolutely agree with that.

Senator CADELL: When we see timely build, we're seeing residents given 28 days to respond to EISs on 900-page documents of transmission lines going through west Orana out through Dunedoo—all these sorts of regions. Are we moving too fast and not considering the rest of the environment in giving such short notice on turnaround and pushing this stuff through?

Mr Duggan: Each of these projects, of course, is led by the project proponent. They have to go through quite an extensive set of regulatory hurdles in order for those projects to be delivered. Some of those regulatory hurdles relate to requirements around community engagement, others relate to planning and approvals processes, and others relate to connection to the grid. They all have to pass through those hurdles to ensure that they deliver for the communities.

Senator CADELL: I was out at Dunedoo community hall probably a fortnight ago. I think there's some good community consultation going on. I think there are some hands that are tied. When the Energy Regulator comes, I'm going to talk about some of those hands that are tied. A person with a pacemaker was on the proposed original line within a few kilometres of two 330-KVA lines. To go around that person so there was no electrical interference with the pacemaker, it's costing \$20 million to avoid this person. To what extent are those costs being budgeted when we budget these projects? That is a significant blow-out. That is tripling the cost of that four-kilometre run.

Mr Duggan: I can't talk to that specific example, so I'm not able to—

Senator CADELL: No, but generally, are we getting the right numbers in?

Mr Duggan: I am not able to talk to whether or not those sorts of costs were built into the cost base when that project was put forward. But my colleague Ms Gowans might be able to add to that.

Ms Gowans: AEMO does have a transmission cost calculator that it uses to look at the cost of different transmission. It includes all of the regulatory approvals and all the things required, including customer costs. If there is a cost of \$20 million—I can't confirm that, but assuming that what you are saying is correct—that cost would be counted as part of the cost-benefit assessment.

Senator CADELL: Going on that CBR number, if these two 330-KVA lines cost \$3 million per kilometre to build when they are straight and unrestrained by anything that's going on and just over \$7 million when they are bendy—so let's avoid things and let's just do things—that is more than double. The allowances I have seen are not double; they are small variances of 15 per cent to 20 per cent. These are the things that can happen. Bear in mind that, when we talk to the GenCost numbers, it's always said this is why renewables are cheaper. None of these are put in, are they? All the infrastructure costs up to 2030 are deemed to be sunk costs when we talk about the cost of electricity delivery, aren't they?

Mr Duggan: The question that GenCost is seeking to answer is: what is the cost in 2030 of the next generation investment? At that point the decision that the investor faces is one about forward-looking costs, not one about the costs that have already been incurred, so those sunk costs. That is the question GenCost is seeking to answer. The total bill cost is something that AEMO takes into consideration when it determines what the optimal pathway is for consumers through the integrated system plan. That is one that at the moment solves for the 83 per cent renewables in the system by 2030.

Senator CADELL: Have we done a total system cost for any of these systems, networks, transmission lines, and is it available?

Mr Duggan: I refer you to AEMO's work on the integrated system plan which does a costing of the build-out through to 2030.

Senator CADELL: Do we have a total system cost of electricity?

Mr Duggan: We do, and I refer you to that document.

CHAIR: Senator Rennick.

Senator RENNICK: I would like to quote an expert group, the Net Zero Australia group, which is led by Robin Batterham, Australia's former chief scientist and a leading professor of engineering. He seems to think it will cost \$1.5 trillion by the end of the decade to meet Australia's 2050 green targets. He goes on to say that only 50 gigawatts have been planned and an estimated 230 gigawatts are needed. Is the Albanese Labor government on track to meet its 82 per cent of renewables by 2030 and net zero by 2050? If so, what is the estimated cost to do that?

Mr Duggan: In response to an earlier question I said that we are advising the government on options for securing the pathway to 82 per cent renewable energy, which, as you point out, is critical to achieving the 43 per cent legislated emissions reduction target.

Senator RENNICK: Are you on track? Are you going to get there—yes or no?

Mr Duggan: We would expect to see an acceleration towards that target in the second half of the decade for a variety of reasons. One I mentioned earlier is we are only now starting to see some of the significant policies the government put in place starting to now hit on the ground and have an impact on investment. The second reason

is that, as we get more renewables into the system, we will see costs being driven down, and we are also seeing our coal-fired power generators getting close to the end of their productive life. As the older assets naturally retire from the system, you would expect to see mathematically and economically an uplift in the renewable penetration, so we certainly think that there is a pathway to 82 per cent.

Senator RENNICK: Do you agree with the statement that you only have 50 gigawatts planned and that you need to get up to 230 gigawatts to reach your targets?

Mr Duggan: I might defer to my colleague.

Senator RENNICK: Let me ask a more specific question: what percentage of energy developments have you actually got planned and confirmed out of the 100 per cent that you need to get to 82 per cent by 2030 and net zero by 2050?

Mr Duggan: The best source of information on this is AEMO's Integrated System Plan and their step change scenario. When it looks at NEM generation capacity, by 2030-31 total renewable capacity—and this is in gigawatts—it estimates to be 111 gigawatts, with the total capacity being 129, and the difference there being a non-renewable capacity of 18. That includes remaining black and brown coal but also some gas remaining in the system at that point.

Senator RENNICK: So you're saying that you've got 100 planned of the 123 already lock and loaded?

Mr Duggan: That is the Integrated System Plan. That is the best least-cost pathway effectively to 2030-31 according to AEMO.

Senator RENNICK: Could you provide on notice a list of all those projects so I can look at them?

Mr Duggan: We can certainly provide you with a link through to the AEMO Integrated System Plan, which details all of the projects.

Senator RENNICK: With regard to community batteries, a lower house MP has questioned the absence of relevant records held by the Minister for Climate Change and Energy's department as to costing and how it was decided which electorates these batteries would go in. Would it be possible—now or on notice—to have a look at the costings and the decision-making process behind where you decided to put these community batteries? I note that, at our last conversation, a lot of the batteries were going into inner city areas, where they're not really needed because there's already a lot of energy being provided there, as opposed to remote areas that could have done with community batteries because they're at the end of the grid. Can we get those details and costings and the cost-benefit analysis on those locations for batteries, please?

Mr Duggan: My colleague Mr White might be able to help you. James, do you have anything?

Mr White: The locations of the batteries—I think we've discussed this in estimates before and provided a response on notice already—were determined by the government when the government was in opposition before the last election.

Senator RENNICK: That's fair enough. That's beside the point. The point is: how did you come to the decision-making process? It seems very odd that you'd put the batteries in inner city areas and not in outer regional areas, where they're much more remote and on the edge of the grid? All I'm asking for are the government's workings as to how it came to those decisions. I'm sure, if you've got the records, there's nothing to hide. If you don't have the records, then you can say you don't have the records. This isn't a big issue.

Mr Fredericks: We'll take it on notice. To reaffirm, the locations were identified by the then opposition. That's a really important point to make. I know you understand that. We've had this discussion before. I'll just restate that the considerations that the then opposition undertook to identify those locations are not known to us. What we can do is take on notice what we, as a department, have done since the government was elected in relation to that implementation of that election commitment.

Senator RENNICK: Sure. That's all we want to know—whether or not there are politics involved. I know we've been held to account on that in the past. I've asked a question about bisphenol A in wind turbines. Is there epoxy resin in wind turbines blades—yes or no?

Mr Fredericks: I'm pretty sure there's no-one at this table that can answer that question. I have a sneaking suspicion we will probably need to take that on notice.

Senator RENNICK: Okay. I was told in a former answer that it wasn't used, but my understanding of it is that bisphenol A is used in the epoxy resin that goes on wind turbines. It's an essential ingredient of the resins that is used on wind turbines. If that breaks down, which it does over time, and if that gets into the water, especially for offshore wind turbines, that can damage our marine life, which wouldn't be good, would it?

Mr Fredericks: Fair enough. That's an important question. I want to answer that well for you, so we'll take that on notice.

Senator RENNICK: I know that you've said that you're working on your total cost. Have you done an environmental impact on the impact of transmission lines and turbines on our wildlife, our native fauna and flora—in particular, koalas and eaglehawks et cetera? How many koalas are going to have to be relocated? Have we done environmental impact on the impact of actually implementing renewables across our beautiful country?

Mr Fredericks: I think I can answer that in the generality. As you know, because you are across these issues, those environmental impacts assessments will happen on a case-by-case basis rather than in the aggregate sense that you're describing. The law compels us and the system to make decisions about environmental projects and the impacts on the environment as and when those projects are presented to government. As you know, sometimes it's the state government that is the environmental regulator. Where the Commonwealth EPBC Act is engaged, it becomes the Commonwealth. I think the answer to that question is: at that whole-of-system, aggregate level, that would be an immensely difficult task and not one that's required by law. What's required by law as the regulator is an assessment of environmental impact on a case-by-case basis.

Senator RENNICK: As a senator for Queensland but also representing the Australian parliament, we need a big-picture view here. We need to know how many koalas, how many eaglehawks and how many hairy-nosed wombats are going to be impacted by this? We always talk about how carbon dioxide is going to raise the ocean levels. It seems to me that you can look at one side of the picture when it comes to fearmongering but, when it actually comes to the other side and protecting our environment, you want to do it bit by bit. I'll compare to superannuation, which was two per cent in 1992, and now it's 12 per cent, which is a massive chunk out of people's salaries. We need to know the total impact on all of our flora and fauna across the country that are going to face the enormous impact of tens of thousands of kilometres of transmission lines, the massive lithium mining and rare earth mining that has to take place and the offshore wind farms. I think we need a system review to be transparent to the Australian people as to whether or not they want another 100 parts per million of carbon dioxide in the atmosphere or large chunks of their flora and fauna wiped out. Don't you think that's a reasonable assessment to make?

Senator McAllister: I'm not sure we accept the dichotomy that you propose. We're in possession, of course, of significant scientific information about the impacts of a change in climate on flora and fauna, so one of the many reasons that the government is committed to net zero by 2050 is in response to the impacts that we know that a change in climate will have on all those plants and animals.

CHAIR: Last question. I'm going to rotate the call.

Senator RENNICK: Yes, this is the last little point.

Senator McAllister: I actually haven't finished my answer.

Senator RENNICK: If you've got the impacts of climate change, you should have the impacts of renewables—

CHAIR: Senator Rennick, we're trying to have a very respectful session where we're not talking over each other. Just let the minister continue.

Senator RENNICK: Sure. I have a great deal of respect for Minister McAllister.

Senator McAllister: Thank you. I won't take up too much time, because I think that's what's troubling you. I just wanted to make the point that I don't think the dichotomy is as you suggest. I also make the point that we would accept, on these kinds of impacts of these proposals and any other proposal with a significant impact on the Australian landscape, that of course it should be assessed properly through environment laws. Later in the program today, the environment part of the department will be able to talk about some of the ways that we propose to improve Australia's environmental laws.

I also make the point that, on the specific issue of how impacts of either renewables projects or transmission projects are assessed, most of the states and territories—certainly in the National Electricity Market—are now actively engaged in thinking about how to bring about a more consolidated way of thinking about some of these issues. But not all of this is within the Commonwealth's control. There are state and territory environment agencies and planning agencies that play a role in assessing the kinds of impacts that you're thinking about.

Senator RENNICK: Yes. I just think we need to look at the risks and benefits of climate change versus the risks and benefits of renewables so that the Australian people can get a proper risk-reward analysis. That's all. Thanks very much for your time.

CHAIR: Senator Waters.

Senator WATERS: Thanks for joining us. I've got a number of questions. I want to start off with the safeguard mechanism credits. I understand that a rule issued in the safeguard mechanism treats open-cut coalmines and underground coalmines as one group with the same baseline despite them having different emissions profile. That, I infer, means that a certain number of open-cut coalmines will be given a baseline that their emissions are already below, so they would get safeguard mechanism credits without actually having to change their activities. Is that a correct analysis? Did you try various other ways of structuring the rule? Was there any consideration of degrouping open-cut from underground coalmines to factor that difference in?

Ms E Johnson: As we worked through the production variable review, we did look at the incentives associated with what you've described as previously a production variable for coalmine waste gas and one for run-of-mine coal. The conclusion was that the best emissions reduction incentives were achieved by combining those into that single run-of-mine coal. When we thought through the issuance of safeguard mechanism credits, as you're aware, we did consult carefully on the question of whether baselines should be set at an industry average emissions intensity level or a site-specific one. That was something that we thought very carefully about during the course of the reforms. That was where we developed the hybrid to best move over the long term to the lowest-emissions incentives, which is the industry average, to really look to achieve that transition. As we got through the particular run-of-mine coal production variable—you will be aware that the transition to industry average is over a longer term. It's a fifty-fifty per cent split in 2030, and that really slows the effect of the parameters that you've just been discussing. So we did think very carefully about how to best incentivise the lowest-emissions-intensive production throughout that reform process.

Senator WATERS: Thank you. I'm pleased and I accept that you thought that all through in the process of designing the policy. Notwithstanding the fifty-fifty split that you've just referenced, could I get on record how many coalmines are already below their allocated baseline?

Ms E Johnson: I would have to take that on notice. It's true to say that emissions intensity is the most diverse in the coal sector. There is the broadest split, but I'd have to take on notice the actual number.

Senator WATERS: Thank you for doing so. Do you have to hand the expected quantum of safeguard mechanism credits that would be given to open-cut coalmines even if they're taking no action to reduce?

Ms E Johnson: No. That will depend on each specific facility's emissions-intensity determination. That's set through a process under the rule whereby facilities need to apply under the new production variables by 30 April next year. The exact emissions-intensity determinations will be published by the Clean Energy Regulator after that point.

Senator WATERS: Could the minister issue a rule that prevents safeguard mechanism credits from being generated when no activity has created them? Is work being done to consider that?

Ms E Johnson: Really, we have thought this through very carefully and so are not actively pursuing any further development of policy on that front.

Senator WATERS: Okay, but it's theoretically possible that the minister could issue such a rule? There is no barrier to that?

Ms E Johnson: I'd have to take that on notice. We have set it up so that safeguard mechanism credits are issued under the current arrangements.

Senator WATERS: Thanks for taking that on notice.

I will move now to state based emissions. When the department compiles its annual emissions projections report in December, I understand, you look closely at what the states are doing. Do you collect detailed information about states' emissions profiles?

Ms Ford: You asked a question about state emissions. Is that correct?

Senator WATERS: Yes—and whether or not you seek detailed emissions profiles when you're doing your annual emissions projections report.

Ms Ford: The annual emissions projections report draws heavily on information collected through the *National inventory report* and the quarterly update inventories. Those reports are compiled on a range of data sources, including information collected through the National Greenhouse and Energy Reporting Scheme, which has facility-level information, which is located in different states and territories. To answer your question, in the *National inventory report* we collect information on state based emissions, and that information forms the basis—the starting point, I guess—for the emissions projections.

Senator WATERS: I understand that WA's net zero targets apply for 2050 but they don't have a 2030 target. I'm interested in what you're assuming WA's emissions are going to be in 2030 for the purposes of compiling your reports.

Ms Ford: The emissions projections don't provide information on state based emissions projections. The emissions projections provide information at a range of categories, including national emissions and emissions by sector.

Senator WATERS: Sorry; I thought you said yes to my earlier question, but actually it was a no?

Ms Ford: What I was saying is that the *National inventory report* publishes information at the state level, but the emissions projections report, which draws on the inventory as a starting point for the projections, doesn't do it by state.

Senator WATERS: So is there any body of work that you are required to do that will necessitate you making an assumption about WA's emissions in 2030? If so, what is your assessment of what that will be in 2030 for WA?

Ms Ford: As I said, the emissions projections do not publish information on state level emissions, so we don't have a projection for 2030 emissions from Western Australia that is published in the emissions projections.

Ms Evans: Just to add to Ms Ford's answer: through the Energy and Climate Ministerial Council, there is a piece of work for each year to look at the progress of all the states and territories and the Commonwealth against their various targets. That's happening for the first time this year. Once we have gone through that process, there may be something that comes from that that will give some insight along the lines of what you're looking for.

Senator WATERS: We'll keep an eye out for that. The reason I'm asking is that, in AEMO's *WA Gas statement of opportunities* report, it's projected that WA is going to more than double domestic gas use by 2030 and, in some strange parallel universe, the WA government is going to rely on that to replace its coal plants. My area of interest is: what are the expected net emissions savings between lower coal emissions and higher gas emissions? It seems like a bit of a false economy to me. Is that anything that the federal department will have a view on or eyes on or any responsibility to analyse the implications of?

Ms Rowley: All of the electricity generation and LNG production and gas production in WA forms part of the emissions accounting that we do, including for the inventory and for the projections. As Ms Ford explained, they're not published by the individual state level, but it's certainly all included in our aggregate picture. The Commonwealth, in its international obligations for emissions projections, isn't required to give that subnational split, and so we don't, at this time, have plans to be publishing an assessment of the emissions outlook at the state level. However, all of that detail will be absolutely part of the national assessment. I think it's fair to say, to explain the emissions savings, that obviously for any given level of electricity generation, with a shift from coal—if you have coal exiting, as I understand is the case in WA, and gas coming into replace that—there is a significant reduction in the emissions intensity of that electricity generation, and that would be the emissions saving, presumably, that they're referring to.

Senator WATERS: Could you quantify for me, perhaps on notice if you need to, what you mean by 'a significant amount'? I'm trying to get at what we're expecting WA will actually achieve by simply replacing coal with gas.

Ms Rowley: The emissions intensity of coal it depends on the source of coal and the age of the generator. Similarly, the emissions intensity of gas fired generation depends on whether it's an open-cycle or a combined-cycle generator. But ballpark figures are, from memory, that it's about a tonne per megawatt hour—or is it a megatonne per megawatt hour. Sorry, I will take that on notice and I won't get my tonnes and megatonnes mixed up.

Senator WATERS: Thank you. For clarity, I'm also interested in the full lifecycle, not just the burning of the gas, because, obviously the fugitive emissions are a massive problem, and that's where the emissions profile gets a lot closer to coal. That's why I'm asking the question. I don't want to look at just the last bit; I want to look at the full bit.

Ms Rowley: We'll take it on notice and see what we can provide.

Senator WATERS: Lovely. Thanks very much.

Senator HUGHES: We discussed this last go and, hopefully, the department has come prepared this time. Do we have any idea of how many wind farms and solar panels have been installed to date by the government?

Mr Duggan: The answer to that question is actually very straightforward. It is that the government doesn't install wind farms.

Senator HUGHES: No, but Minister Bowen said we need 22,000 solar panels per day and 14 wind turbines per month to support the renewable target. So I would assume the government has some sort of monitoring system—or you would hope so—to enable it to say: 'Well, this is where we are on that target to date.'

Mr Duggan: I can tell you that in 2022-2023 we had 8.4 gigawatts worth of utility-scale solar. In terms of AEMO's estimate of where we would need to be to meet an 83 per cent renewable penetration in the NEM, they estimate that we'd need to get from that 8.4 gigawatts to 13.6 gigawatts. So the average annual rate of increase for solar would need to be 0.7 gigawatts, and we've achieved that every year since 2018.

Senator HUGHES: So the 22,000 solar panels per day is being achieved as a target?

Mr Duggan: Yes. In fact, we're overachieving against solar at this stage in terms of—

Senator HUGHES: So, from last estimates, where you acknowledged we were considerably behind target, we're now ahead of target.

Mr Duggan: Where it's a little bit more of a challenge is with respect to wind. With wind, we have 10.3 gigawatts worth of capacity at the moment. AEMO suggests we need to get to 34.4 gigawatts of capacity. That's a build rate of about three gigawatts a year. We are yet to reach that level of additional wind capacity. Basically, that's both onshore and offshore, and, of course, the government is working to help establish that offshore wind industry at the moment.

Senator HUGHES: What was it last year?

Mr Duggan: Last year, for wind it was in the order of almost one gigawatt having been installed—0.8 gigawatts of wind was installed last year.

Senator HUGHES: With regard to the offshore, are there any limits on the size of a declared area for offshore renewable projects?

Mr Duggan: This is a different part of the group, so we'll ask Mr Gaddes to come up and help.

Mr Gaddes: Could you repeat the question?

Senator HUGHES: Are there any limits on the size of a declared area for an offshore renewable project?

Mr Gaddes: Of a declared area—not to start with. Maybe I could take you back to the process the government is following to design the offshore wind zones.

Senator HUGHES: Gas and oil offshore have a limit of around 70 to 85 kilometres, depending on where they are, and I'm trying to understand what the comparative size is for offshore wind.

Mr Gaddes: Mr Murphy will answer that one for you, Senator.

Senator McAllister: Senator, I think it's worth observing that the process we're presently stepping through is the process that was established in the Offshore Electricity Infrastructure Act, which was passed in 2021. Officials can talk you through how that's proceeding.

Mr Murphy: The process we're going through is similar to zoning. It's called a declaration of an area under the Offshore Electricity Infrastructure Act. There have been two declarations so far: one for Gippsland in Victoria and one for the Hunter area in New South Wales. For the Hunter area, one of the concerns raised was on the military training activity in the area. That resulted in a condition being put on the declared zone to limit the height of the offshore wind. From memory, 260 metre is the limit of height for—

Senator HUGHES: Is that the one that has also moved to 30 kilometres out rather than 10?

Mr Murphy: Yes, that's right. The initial proposal went to consultation. We have had some areas of the coast as close as 10 kilometres. That has now moved to the closest area being, I think, 20 kilometres.

Senator HUGHES: With regard to environmental protections or considerations, what's taken into account when looking at offshore wind projects, particularly with regard to marine life?

Mr Murphy: At this declaration stage, it is about looking at existing marine uses. The next stage of the process after declaration is moving to feasibility, which allows developers to test the ideas of their projects. All those projects will be subject to the EPBC Act approvals regime. So impacts on marine life, including marine mammals, are taken into account as part of that assessment process.

Senator McAllister: A quite important feature of the regime that's laid out is that it creates a series of steps for community engagement about the proposed approach. We are right at the beginning of that in terms of considering declared areas, but when it comes to specific projects there are whole range of other considerations and processes that those proponents will need to walk through.

Senator HUGHES: I am just concerned because we are hearing from Mr Duggan that there needs to be an increase in wind and there needs to be more input from wind, but we have also heard that due to financial investment decisions there are fewer of them being made now. So how are those two things going to line up with each other? I would imagine there are additional costs involved now in moving from 10 kilometres to a minimum of 20 kilometre. So there's the viability of the projects being able to continue. I am not quite sure how this is all lining up.

Mr Murphy: As the minister said, we are at the start of a long process. Offshore wind is a lot larger infrastructure with bigger scale projects than onshore wind. So it will take many years to get there. Certainly the transmission costs increase as you move further offshore, but we are seeing that the emerging industry has a really strong interest. For example, the Victorian government has set various targets for the amount of offshore wind they want. It is nine gigawatts by 2040. I think the first two gigawatts is by 2032. It looks very much like the interest that is shown in the Gippsland declaration process would exceed those targets.

Senator HUGHES: Before 2030?

Mr Murphy: Two gigawatts by 2032 is one of the targets. The end target is nine gigawatts by 2040. At the moment, the applications are being assessed for feasibility licences. There are 37 applications. Each of those projects—and not all of them will go ahead—are around the two-gigawatt size. So they are quite substantial.

Senator HUGHES: I am trying to understand this. We are talking about a 2030 target. If you saying there are two coming on in 2032, is it time to review that target and say, 'We are not going to get there with wind'?

Senator McAllister: I think it's worth noting that the target Mr Murphy is referring to is a Victorian government target.

Mr Murphy: The integrated system plan that Mr Duggan was speaking about before is not heavily reliant on offshore wind before 2030. Most of the benefits from offshore wind will come after 2030.

Senator HUGHES: So it's predominantly solar we are going to be relying on until 2030?

Mr Murphy: Or onshore wind.

Senator HUGHES: Okay. With regard to offshore exploration and mining, there is crossover between Commonwealth and state legislation. We know that the New South Wales government does not support offshore mineral, coal or petroleum exploration or mining for commercial purposes in or adjacent to New South Wales coastal waters. Minister, you might be able to answer this. Does the Commonwealth government endorse that position? Obviously there would be crossover of the two jurisdictions.

Senator McAllister: Senator Hughes, are you asking me the Commonwealth's view about mining?

Senator HUGHES: Offshore exploration and mining.

Senator McAllister: I think you'll need to ask that in the resources part of the portfolio. That's not an area for which this portfolio has responsibility.

Senator HUGHES: This crisscrosses over all the different parts, whether we have resources to create energy.

Mr Gaddes: That sits within the Department of Industry, Science and Resources.

Senator HUGHES: I'll be with them later this week. They'll look forward to that.

Senator PAYMAN: Can you please explain the legislative scheme that governs the process of declaring an area suitable for offshore wind?

Mr Murphy: The Offshore Electricity Infrastructure Act sets out the process that needs to be taken before declaring an area. It includes a 60-day public consultation process. Before we go to that consultation process the department consult with, I think, around 10 other Commonwealth departments about existing marine uses, and then we also consult with the state government to understand what the impacts of an area might be. To try and identify the area we're looking at the wind resource, where that is, how easy it is to connect to the grid from that area and whether there's any industry interest in that area, and front of mind are the sorts of mental impacts and things that are really significant. Can we avoid commercial fishing grounds? What are the options? All departments input into that process, and we come up with a proposed area that goes out to public consultation. The department goes out, and we're now at a point in our processes where we advertise strongly. We do letterbox drops. We try and let as many people know about what we propose as possible.

Then we take those public submissions, summarise them, go through all the submissions and provide advice to the minister. The minister considers those submissions. He can also take into account other matters. One of the other matters we've been looking at strongly is the impact on First Nations people. We've done extra consultation with First Nations groups. The minister then would come together and decide on a proposed area. He's required to

write to the minister for transport and the Minister for Defence to ask, 'This is my proposed area; are there any views, Ministers?' We also hold an interdepartmental committee with the 10 different departments on that proposed area that would go to the minister. The minister can then consider whether or not to declare the area.

Senator PAYMAN: Can you remind me what legislation governs that?

Mr Murphy: It's the Offshore Electricity Infrastructure Act.

Senator PAYMAN: Minister, which minister introduced this legislation and when?

Senator McAllister: You're quite right, Senator Payman. This was introduced by the previous government. It was Mr Taylor. He actually made quite an interesting speech, and he indicated he thought:

Enabling the development of an offshore electricity sector will deliver significant local benefits to all Australians.

... ..

International experience shows that offshore electricity sectors coexist with other offshore sectors and activities, such as fishing and shipping industries.

He said at the time:

This bill protects these maritime stakeholders by requiring developers to take into account the impacts that potential projects may have on existing users of the offshore area.

He went on to say:

Importantly, under the bill, areas will not be available for offshore electricity infrastructure projects if their impacts cannot be appropriately managed ...

He really set out the purpose of the bill, which was to balance some of the issues senators have been alluding to. We're quite conscious we do need a strong community engagement process to do that, and this is some of the work Mr Murphy has been describing.

Senator PAYMAN: Do we have a date when Mr Taylor introduced this legislation?

Mr Murphy: It's a bill that passed in 2021, I believe, and commenced in 2022.

Senator RICE: I have a general question. I heard some of the discussion earlier about how on track we are to meet our emissions reduction targets. In brief, how on track are we to meet the 43 per cent reduction target by 2030?

Ms Evans: The most recent publication of our projections in relation to those targets, which were out towards the end of last year—and you'd be aware that we present new ones towards the end of every year as part of the annual statement on climate change—said that under the baseline scenario we were projecting to achieve 32 per cent reduction on 2005 levels. Once you take into account the additional measures that weren't included in the baseline at that stage, including the Safeguard Mechanism which is now in place and also the achieving of the 82 per cent renewable energy target, we projected we would already be at 40 per cent below 2005 compared to 43. Our sense is that as more of the measures that still aren't in the projections are included, we would anticipate being close or on target. So, our sense is that it's legitimate for the government to consider that it is on track for the 43 per cent.

Senator RICE: You said that presumed you were going to make the 82 per cent renewable energy target.

Ms Evans: It did assume that.

Senator RICE: Rystad Energy have said we're only going to make 64 per cent renewables. Do you agree with the analysis they undertook on it?

Ms Evans: I'm not familiar with that piece of analysis but we have, for the moment, assumed we would be reaching the 82 per cent renewable energy target. As Mr Duggan explained earlier, the various work that is still in train is ensuring that the government has options available to make sure that's the case.

Senator RICE: You're saying 40 per cent, but you're hoping that other things are going to kick in. We've got that analysis—which you say you haven't seen—that says it looks like we're only going to meet 64 per cent rather than 82 per cent renewables. Is the department doing work to look at other sectors that might be able to contribute a bit more to help us meet 43 per cent given that the renewables target is looking challenging?

Senator McAllister: Two things on that last point. The renewables target is challenging, and Minister Bowen consistently describes it as 'ambitious but achievable'. There's a lot of work to do to catch up after a long period where very little was done to meet our targets.

Senator RICE: Understood.

Senator McAllister: Regarding the work in other sectors, the government has announced its intention to develop a series of sector plans to examine what the pathway to net zero will look like in other sectors. I can ask officials to talk through the details of some of those. At the very least, you might be interested in understanding the list and then there may be particular sectors you wish to dive into in more detail.

Senator RICE: If you can briefly go through the list naming what the sectors are, that would be good.

Senator McAllister: I think Senator Rice is saying don't take too long.

Senator RICE: Yes, exactly, given we have a break in two minutes.

Senator McAllister: We can accommodate that.

Ms Rowley: The sectoral plans which will sit underneath the net zero plan will relate to electricity and energy, transport, industry and waste, agriculture and land, resources and built environment. So, that's six sectoral plans.

Senator RICE: I'm particularly interested in the agriculture and land sector. How far advanced are those sectoral plans at the moment?

Ms Rowley: It's fair to say we're in the early stages of work on all the sectoral plans. The agriculture and land sector plan is being led by our colleagues in the Department of Agriculture, Fisheries and Forestry, with support from our department, given our interest in the land sector particularly. The intention is that we'll go out for some early consultation with stakeholders to canvass the opportunities and challenges in reducing emissions from agriculture and land sector sources, as well as to enhance sequestration; and off the back of that consultation, progress the development of the plan itself for consideration by government. In parallel, the Climate Change Authority is also providing advice to government on the sectoral pathways, including for this one.

Senator McAllister: It may be worth just adding that the states and territories are also engaged, and through the ministerial council we've sought to involve them and seek their advice in developing the plans. There are policy settings in states and territories that are relevant to these transitions, in addition to what we may do as the Commonwealth.

Senator RICE: Absolutely.

CHAIR: We will now suspend for morning tea. I will note—we've had these conversations before—outcome 1.1 and 1.2 do tend to blend together quite a lot, and we have ranged between both of them this morning. We will continue to range between both of them after the tea break.

Proceedings suspended from 10:50 to 11:06

CHAIR: We will return to program 1.1 and 1.2. Senator Rice, your other five minutes.

Senator RICE: I want to home in on the land management sectors and the evidence about the carbon value of ending native forest logging to help meet our carbon targets. In the emissions projections work, has there been any analysis done of the benefits of ending native forest logging in Victoria and Western Australia in reducing our carbon emissions?

Ms Ford: In the emissions projections we did include the announced policies of Western Australia and Victoria, who have made a commitment to end native forest harvesting. We did show that there were reductions in native forest harvesting, which will increase the net sink over time in the projections.

Senator RICE: Could you repeat that.

Ms Ford: The 2022 emissions projections did show reductions in native forest harvesting consistent with the WA and Victorian government policy commitments at that time to end native timber harvesting and there was an increase in the net sink that was projected.

Senator RICE: Sorry, there was an increase in the—?

Ms Ford: Net sink—the amount of carbon sequestered.

Senator RICE: So the department does now acknowledge that ending native forest logging results in a net benefit to the climate from that reduction in carbon emissions and avoided carbon emissions?

Ms Ford: As we have discussed before, the cessation of native forest harvesting results in reduced emissions that would have occurred had the harvesting continued. Of course, the forests continue to grow, increasing the amount of carbon stored in them until they reach maturity.

Senator RICE: Is that level of detail of emissions projection available publicly?

Ms Ford: I will just have to check. In the projections we include emissions by the following subsectors in the land use, land use change and forestry sector. The forests, agriculture and other land and forests converted to agriculture and other land—

Senator RICE: But what I want to know is, is that detail you just told me available in the public emissions projections work?

Ms Rowley: The aggregate effect for the land sector—

Senator RICE: That is not my question. I want to know what is publicly available of the specifics of what Ms Ford has just acknowledged. Basically, if it is not publicly available, could you please take on notice providing that to the Senate.

Ms Ford: On page 63 of the emissions projections, we do acknowledge that to 2035 the sink increases are mainly due to the sustained impact of the cessation of native timber harvesting driven by state policy.

Senator RICE: Could you take on notice providing the analysis that lies below that statement?

Ms Ford: That is something we will have to take on notice.

Senator RICE: The New South Wales Liberals, it was revealed in documents obtained under FOI by the Nature Conservation Council, wrote to ministers Plibersek and Bowen seeking to generate new carbon credits under the emissions reductions from ceasing logging in New South Wales. Documents reveal that neither Minister Plibersek nor Minister Bowen responded. I am interested in why that is the case.

Ms Rowley: I cannot speak to the specific cause for the nonresponse to the letter but I could speak to the issue of the request or interest in new methods, if that is of interest.

Senator RICE: No, I don't want to go specifically to the methods and the ERF methodologies but, given that neither minister responded, maybe you could take on notice if you cannot go to that now. Is it that there is too much work in progress given that you are now acknowledging that ending native forest logging is good for the climate?

Mr Fredericks: We will take it on notice and check.

Senator RICE: They just acknowledged it. Senator Duniam, they just acknowledged it.

Senator DUNIAM: [inaudible]

Senator CADELL: Are you saying in DQ that no-one has taken the GenCost numbers and ISP numbers and combined them into a single source of cost of delivery of power, of system cost revenue?

Mr Duggan: They are doing two different things. The integrated system plan works in the period to 2030 to work out the optimal pathway for consumers consistent with emissions reductions target, the transition in energy to 2030. The GenCost report asks the question: In 2030, what is the relative cost of different generation technology from that point? So they are answering different questions.

Senator CADELL: Let me ask that same question in a different way. Has no-one in the department of energy worked out the cost of different forms of generation and transmission to get to a consumer from generation point?

Mr Duggan: Sorry?

Senator CADELL: Has no-one in the department of energy worked out the cost of different methods of generation, transmission, storage and firming to get from point A to point B?

Mr Duggan: Again, I refer to my earlier response, which was the integrated system plan by AEMO provides exactly that in the period to 2030.

Senator CADELL: Is that only for transmission?

Mr Duggan: It does that also for generation capacity.

Senator CADELL: Is that on all of that? What about the storage costs? It does loss during transmission but it says it does not generate loss by storage due to different forms of storage that may be used.

Mr Duggan: It aggregates all elements of the electricity system that would exist in 2030, does the cost analysis of that and that includes storage.

Senator CADELL: But that goes back to the point that we are always using the 2030 number. Everything not built now but may be built then isn't costed. It comes in as a sunk cost, doesn't it?

Mr Duggan: No. This is the distinction between the ISP and AEMO. AEMO does do the full cost of the buildout to 2030. GenCost does not include sunk cost because it is answering a different question, which is: At 2030, what is the cost of investment?

Senator CADELL: But on a file we have here, 'capital expenditure electricity transmission networks versus projected'—and I will seek the source document to table this, Chair, and distribute it later—in the AER numbers, from 2025, the projection of cost in transmission almost does not exist. It falls to nothing.

Mr Duggan: I am at bit of a disadvantage not having that publication.

Senator CADELL: Referring to questions about projections on what-ifs earlier, does DQ have a projection, or a what-if, should Bayswater does not close by 2030?

Mr Duggan: I think I mentioned in response to the previous question that we are constantly doing modelling and analysis of different scenarios around electricity, different generation coming online and going offline at different points in time, so, yes, we have done scenarios around different—

Senator CADELL: Would you be able to table that?

Mr Duggan: No. That work is, in a sense, an ongoing source of work. It's not really in a final form that lends itself to tabling. In a sense, it's just continuous modelling and analysis. That would be the way I would describe it.

Senator CADELL: But, if Bayswater generates two gigawatts rounded down, a number like that going past 2030 blows 82 per cent out of the water, doesn't it?

Mr Duggan: It depends on what's happened for that—

Senator CADELL: You said we have a pathway. A change as massive as two gigawatts can't make that easier.

Mr Duggan: Let me get the figure for you, just to put that in context. By that stage, we are talking about going from where we are today at 18.7 gigawatts to approximately 48 gigawatts of variable renewable energy.

Senator CADELL: That's still—

Mr Duggan: In that context, there's a lot of new generation we'd anticipate coming online in that stage. Yes, two gigawatts are material. But, in order to answer your question, you'd have to understand what else is happening in the market to know what impact it was having.

Senator CADELL: But that's the modelling you're doing, ongoing, that you can't table.

Mr Duggan: Yes.

Senator McAllister: Senator Cadell, these questions suggest some of the limitations about trying to understand the future state of the energy market by considering just one variable. The variable you're asking the official to contemplate is: what if the timing of Bayswater's closure changes from the presently notified time? The reason that AEMO has a quite complex model and goes through a very consultative process in developing their ISP is because this is a multivariate system, and the commercial viability of any particular asset is dependent on the other assets that are in the pool. That is one of the things that this AEMO process goes through. That's one of the dimensions of the system that the modelling exercise at AEMO is able to contemplate.

Senator CADELL: I guess that's why I was after the modelling—to run a Monte Carlo simulation or something over the different variables to see what sort of percentages we're talking about at the end of it. I was trying to rationalise a single percentage-of-success chart out of it, which you guys haven't done.

Mr Duggan: Again, we're constantly doing modelling and analysis. But, as I think the minister just mentioned, there are so many different permutations for how things could be in 2030. Have we done that precise exercise that you just mentioned and then worked through what the system effects are and what else is happening at that time to generate that outcome? I can't tell you off the top of my head whether that particular scenario has been run.

Senator CADELL: Going to windfarms themselves now and some regulation around that, is it still the standard two-kilometre radius from a residence to a wind tower? Is that right?

Mr Fredericks: We just need some new personnel for that question.

Mr Duggan: I think, Senator, that you may be about to broach into what is otherwise state and territory planning [inaudible], so that's not something we'll have direct expertise on, but we might be able to help if you've got some more general questions around that.

Ms Gowans: That's right. That's state planning, so there might be different rules in different states. If you could let us know what you were after, we could take it on notice.

Senator CADELL: I'll give you the full context—this is me trying to be helpful. My concern, and the concern of a lot of residents, is that when windfarms started being generated at a certain height, there was a general planning guideline to be put, and I believe in New South Wales, where I'm from, it was two kilometres from a windfarm. At that stage, wind towers were approximately 84 metres in height. In Oberon, now we've got windfarms where we're talking about 275 or 285 metres in height, and the same rules apply. I'm just looking at what the process would be. You guys generally wouldn't be looking at that in planning? It wouldn't be triggered under the EPBC Act or anything like that?

Mr Duggan: It sounds to me like a planning approval issue. To the extent it's an EPBC Act issue, I think it's one more for our environment colleagues.

Senator CADELL: Okay.

Mr Fredericks: I think we're in the world of state regulation—

Senator CADELL: I'm happy to do that.

Mr Fredericks: with one exception which we've discussed before, just to be clear. On a case-by-case basis, if a particular development engaged the Commonwealth environmental protection act, then we would become a regulator. But I can't answer that on that specific instance.

Senator CADELL: Okay, then. Would the national strategic transmission projects framework fit more under you, or would it be under state planning?

Mr Duggan: Yes.

Senator CADELL: On that, we've seen the EIS for the HumeLink be extended. Residents feel they're being rushed. I understand the time-sensitive nature to get to these numbers and out there. Is the frustration they feel that they're putting into words—and in the break I got invited to go back Dunedoo after they heard this Monday night, which I'll be doing. They don't feel confident. Have we got room to make that easier, better, safer and still meet these guidelines going forth?

Mr Duggan: I'll start and my colleague will add. I chair the energy senior officials with my state and territory colleagues. We were tasked by ministers with developing a framework for nationally significant projects, so we're in the process of developing that framework now. We think there is opportunity to make gain without trading off, effectively, the interests of the community and interests of the environment. We think there are opportunities for regulatory efficiencies that could see these projects come together quicker but in a way that doesn't compromise those broader sets of objectives.

Senator CADELL: Given the rush is what they're worried about, how do we—

Mr Duggan: What we wouldn't compromise on would be things like the requirement to consult with community and give community the opportunity to have a voice in things like the route. But we think that within, for example, the time frames that the regulators have for assessing projects there may be opportunity there for us to be able to expedite some of that process. I think from the point of view of the community, they wouldn't see any negative impact from a project being declared nationally significant.

Senator CADELL: How far does DQ look down into these transmission projects? It may be too far. When we're talking about stage 1 or 2 is up to 8,000 to 10,000 kilometres of transmission line, the numbers I'm getting told is the average run across property is 2.9 to three kilometres. Do you look down into how many individual landholders would be affected by this?

Mr Duggan: Kirsty, do you want to go in on that?

Ms Gowans: Yes. I think the answer is in terms of how people look and what types of impacts are on landholders. Transmission plan is a multi-stage, multi-year process with a fairly wide range of different planning processes and environmental processes that take place. The role of the Commonwealth in relation to transmission planning in some ways is a role of influencing and coordinating rather than as a decision-maker. But the Commonwealth's social licence rule change request, for example, which deals with transmission planning, is intended to set some guidance about what transmission companies themselves can do to ensure that the impact on individual landholders is as small and appropriate as possible, and there are a wide range of things that those transmission network service providers can do—and state governments and local governments also. So, in terms of if anyone looks at the number of individual landholders who are impacted, the answer is yes. Is that a Commonwealth role? The answer is no.

CHAIR: Senator Van.

Senator VAN: Staying with transmission—so I assume that's you, Mr Duggan—what is the time frame for rolling out VNI West and HumeLink?

Mr Duggan: I'll defer to the expert.

Mr P Johnson: The time frame for delivery of HumeLink is late 2026, and for VNI West it is 2028.

Senator VAN: How come then Transgrid say in one of their media releases they're not expecting to finish VNI West until 2031?

Mr P Johnson: 2031 is the time that Transgrid and AEMO were working to originally and is in the AEMO ISP. However, 2028 is the deadline that the Australian government and the Victorian government are working to

deliver VNI West. To that end, we have supported early works on VNI West in New South Wales through underwriting Transgrid expenditure there. We've also supported the upgrading of the line between Dinawan and Wagga Wagga, which is being built as part of Project EnergyConnect, to serve as the single line. Through the Rewiring the Nation initiative Transgrid will be eligible to apply for funding for the New South Wales section. Also through the agreement with the Victorian government, whoever builds the VNI West section in Victoria will be eligible to receive funding from Rewiring the Nation.

Senator VAN: So that's part of the \$20 billion that's in the budget?

Mr P Johnson: That is, yes.

Senator VAN: Is that the whole \$20 billion just for those two?

Mr P Johnson: No.

Senator VAN: What would be the total cost of those two builds?

Mr P Johnson: The CEO of Transgrid recently said that HumeLink was approximately \$4.8 billion or \$4.9 billion. That was his latest estimate for that project. I think the project cost for VNI West is \$3.5 billion. That's the latest estimate.

Senator VAN: So about \$8 billion for the two of them roughly?

Mr P Johnson: Yes, roughly.

Senator VAN: And who will pay for that \$8 billion?

Mr P Johnson: Transmission costs are recovered from consumers over the life of the project. The project has an economic life of probably 40 or 50 years. Those costs are recovered slowly over time from consumers.

Senator VAN: Has anyone in your department modelled what the supply charge on a consumer's bill will be for both a commercial consumer and a residential consumer?

Mr P Johnson: AEMO have said that the cost for VNI West would lead to I think an approximate 25 per cent increase in transmission costs for consumers in Victoria.

Senator VAN: Twenty-five per cent?

Mr P Johnson: Twenty-five per cent of the transmission component, and the transmission component of a residential bill is about five to 10 per cent, so it is about one per cent or two per cent of the bill. That, however, is the initial cost impact. Against that is the reduction in wholesale costs that will come from being able to access renewable energy resources and alternative storage supplies from interstate.

Senator VAN: Are those reductions in usage charges locked in? Can you model those for us and show us how that will offset the transmission costs?

Mr P Johnson: AEMO has done that through the PACR analysis in effect.

Senator VAN: Which analysis, sorry?

Mr P Johnson: Sorry, the project assessment conclusions report analysis, which looks at the net market benefits of the project. That shows that the project produces a net market benefit, so overall system costs will be lower through the investment in the project than otherwise. To put it another way: the alternative would be to supply consumers with electricity from a more expensive combination of generation and storage.

Senator VAN: Good point. The ISP calls for the trebling of storage by 2050 I believe. Is any of the \$20 billion in Rewiring the Nation enabling storage?

Mr P Johnson: Through the letter of intent with the Tasmanian government, the government has committed to make Rewiring the Nation funds available for Battery of the Nation projects in Tasmania.

Senator VAN: So is that going to underwrite Marinus Link as well?

Mr P Johnson: No, that's separate.

Senator VAN: So which pool of money is Battery of the Nation coming out of then?

Mr P Johnson: The \$20 billion.

Senator VAN: That's what I just asked, and you said, no, it's separate.

Mr P Johnson: It's separate to the funds for Marinus.

Senator VAN: Thanks for the clarification.

Ms Gowans: Under the Rewiring the Nation plan, which is for grid-firming projects, options to firm the grid include new transmission but can also include batteries and other forms of storage, including pumped-hydro storage in the case Mr Johnson was referring to.

Senator VAN: We'll come to pumped hydro, but I don't understand how transmission alone is going to solve firming.

Ms Gowans: You are correct.

Senator VAN: Yes, you might have an interconnector, but some wild assumptions would be built in there if you're saying that interconnection alone is going to solve system security and supply security.

Ms Gowans: We would agree with you that transmission is part of the solution. It is necessary but not sufficient, and there are other forms of firming that are required. We have programs that are directed at that—for example, the Capacity Investment Scheme, which is directed towards the funding of dispatchable renewable energy in large part firming to support the grid. Rewiring the Nation is complemented by other policies including the Capacity Investment Scheme, the community batteries program and other programs. Within the Rewiring the Nation program there is also the option for the CEFC to fund appropriate combinations of grid firming technologies, including storage if that is the best and most appropriate use of the funds.

Senator VAN: What amount in the budget has been set aside for firming?

Ms Gowans: The Clean Energy Finance Corporation is responsible for the assessment of individual projects under the Rewiring the Nation program. I would be surprised if they have set aside a specific amount. They will be assessing the projects as the best-value-for-money projects as they come through the door, with a view to achieving the overall targets and the program requirements.

Senator VAN: Does the department have milestones for what firming capacity you'll have in the system over coming years and decades?

Mr Duggan: We'd refer back to the optimal pathway outlined in AEMO's Integrated System Plan as providing, in a sense, a consistent pathway with the government's renewable energy target of 82 per cent in the NEM, reaching 83 per cent under the step-change scenario. That unpacks what the new generation build is, what the storage build is, what the transmission build is.

Senator VAN: I've got it open in front of me. Can you show me where it steps that out?

Mr Duggan: I don't have it in front of me. I'm happy to take that on notice and refer you to the specific page number.

Senator VAN: Thank you.

CHAIR: Can I ask one question while we're on this topic. With Rewiring the Nation, can you confirm that the program is supporting the HumeLink and VNI West?

Ms Gowans: Yes.

Mr Duggan: Yes, we can. In the New South Wales context that was part of an overall \$4.7 billion commitment through the CEFC, supporting those two projects amongst a range of others. To add to the evidence that Mr Johnson gave as well: he talked about the increase in transmission costs being a 20 to 25 per cent increase, that being about five to 10 per cent of a consumer's electricity bill, translating to about one to two per cent in terms of the increase. Through concessional finance, Rewiring the Nation has actually reduced that part of the bill. In addition to enabling more variable renewable energy into the system, which will drive down the wholesale cost component, which is about 30 or 40 per cent of the consumer bill, it's also decreased the transmission pass-on cost to consumers as well. In a sense, it operates on both sides to bring down the cost to consumers and there is a requirement that, when we support Ausgrid to build transmission projects, the benefit of the concessionality through Rewiring the Nation is passed through to consumers.

CHAIR: So Rewiring the Nation contributing to these projects will actually bring down what's passed on to consumers and will have a meaningful impact?

Mr Duggan: That's correct.

CHAIR: Thank you very much.

Senator DAVID POCOCK: Thank you for your time here today. It's now been over a year since the US passed the Inflation Reduction Act, and I'm interested to find out if the department has modelled the impact of an Inflation Reduction Act response here in Australia.

Ms Evans: We haven't done our own modelling of it, but there's been quite a lot of analysis done by other parties that we've had a look at, and we are continuing to work to look at which sectors and so on may be most significantly affected in Australia and whether or not we need to respond. You saw already in the budget the Hydrogen Headstart program, which is, in part, a response to the Inflation Reduction Act, but I wouldn't want to put it down entirely to that because Australia has its own ambitions to become, and the government has stated it

has its own ambitions to become, a renewable energy superpower. Some of these things made good sense with or without the Inflation Reduction Act, but certainly the need for those kinds of policies has become sharper, and we're very aware of that. We're looking at other pieces of analysis that are available to us as we keep working on that for the government.

Senator DAVID POCOCK: What was the reason that the department of climate change and energy didn't do your own modelling looking at the IRA?

Ms Evans: The main modelling capacity for the Commonwealth is now being built up in the Department of the Treasury. We don't have that kind of internal modelling capacity. We do have some internal modelling capacity for the electricity sector specifically, but, once you start to look more broadly at the economy, that's a capability that's being built up in the Treasury, and that's why we ourselves haven't done it.

Senator DAVID POCOCK: Did DCCEEW request Treasury do that modelling?

Ms Evans: No, I don't recall us making a specific request of that nature to the Treasury. They are working with us. You would have seen in the budget papers, in May, that there was an allocation of funding to the DCCEEW to continue to do analytical work looking at the Inflation Reduction Act and other things and to report back by the end of the year to the government. We continue to do that, and the Treasury is certainly working with us on that, but I don't think I recall making a request in that broad sense of, 'Can you analyse the Inflation Reduction Act?'

Senator McAllister: I was just going to say that sometimes we get into what can feel like a semantic conversation about the distinction between modelling and analysis. I think the evidence Ms Evans is just providing is that there's quite a lot of analysis being undertaken; it's just that it's not in the form of economic modelling, which is a more specific kind of activity.

Ms Evans: I might have to take it on notice and go back to around the time that the Inflation Reduction Act was introduced, for whether there was a specific piece of analytical work that was done. I just can't recall it right now.

Senator DAVID POCOCK: What analysis work has DCCEEW done on the US Inflation Reduction Act and what Australia might need to do to respond to meet our goals?

Ms Evans: We've certainly gone through and made sure we understood all of the different elements of the act, and we've sort of summarised the Inflation Reduction Act and summarised for ourselves, and provided advice to government on, what those subsidies, in particular, are going to do in the US. That's got in some areas very positive impacts on Australia, and at a global level our sense is that the Inflation Reduction Act will be a net positive overall to driving down the costs of clean energy technology and so on.

But there are elements—for example, when we did the work to establish the Hydrogen Headstart program, we were very much looking at what the competitive effect on Australia would be and what the competitive price is going to be for green hydrogen versus other forms of hydrogen. We've used that to help design a program that will work in Australia. So that's an example that's based around the Hydrogen Headstart program, which has already been announced. More broadly than that, what we're looking at is the kinds of industries where Australia has a genuine natural competitive or comparative advantage and the extent that the Inflation Reduction Act might impact on the ability for us to develop industries in those areas, as well as understanding why that might be the case and then starting to look at options for what we would do.

Senator DAVID POCOCK: Have options been provided to the government?

Ms Evans: Not at this stage.

Senator DAVID POCOCK: Is there a reason? It's been over a year, and what I'm hearing from industry is that there are a bunch of Australian companies making their final investment decision about whether to relocate to the US or to stay here.

Ms Evans: Sorry, I should just correct myself. Again, I go back and say that, with Hydrogen Headstart as the most clear and already publicly announced example, there have already been proposals put to the government about how they need to respond. I think I was being a little cautious because some of these processes are subject to ongoing government consideration.

Senator DAVID POCOCK: Would a failure to adequately respond to the IRA put our target of 82 per cent renewable energy by 2030 at risk?

Ms Evans: That's a hard question to answer. Mr Duggan has already explained that there is a lot of work underway to make sure that the 82 per cent renewable energy target will still be met. We'd see them as complementary. Australia's ability to have a decarbonised electricity sector is a core part of us becoming a

renewable energy superpower, so they're sort of related to one another. Maybe some of the other impacts we have seen are just impacts on the supply chain in the short term as a result of the kinds of subsidies that were going into the United States, but, again, over time, you will see those supply chains start to respond to that and things will start moving again.

We're seeing any particular concern in terms of the Inflation Reduction Act impacting on that particular objective. It's more about how we can build on that low-cost renewable energy that we have the potential to provide in such abundance in Australia. Are the subsidies being offered by the United States or some of the other countries standing in the way of us capitalising on that to build some of the other manufacturing industries—for example, green metals and so on—that we have the potential to do? That's the place where we're focusing our analytical effort to see whether there is still a role for government in those areas.

Senator DAVID POCOCK: I have a question for the minister to round out the IRA questions. A year on from the IRA, we haven't had a response from the government, apart from the two billion for hydrogen. Do you have concerns about capital moving to the US that could be deployed here in Australia? Is the government planning to give a response to the IRA?

Senator McAllister: The fact that the United States has taken the policy initiatives that they have taken to accelerate and catalyse low carbon industries in their very large market, broadly, we would see as a good thing for building the global supply chains that are necessary to meet the challenges of net zero. The decisions taken by the United States and by other countries doubtless change the investment environment for Australia. We need to consider that and think about how we respond. The last budget did include the Hydrogen Headstart Program, which we considered the first part of that response. I note that there is significant policy effort and funding available for establishing green industries in an Australian context, but we continue to seek advice because the landscape, globally, is changing, and we need to respond to that.

Senator DAVID POCOCK: I'll put the rest on notice on the IRA. It's interesting to learn from the department how much money the Living Wonders case cost the Commonwealth.

Ms Munro: I don't think that's for us.

Mr Fredericks: Senator, which case did you refer to?

Senator DAVID POCOCK: The recent Living Wonders court case, where the minister was joined by two coal companies.

Mr Fredericks: I think that's a question to be asked in our environment estimates at four o'clock.

Senator DAVID POCOCK: Why is that?

Mr Fredericks: It's in program 1.3—1.2, sorry.

CHAIR: Program 1.1 and 1.2 combined. Senator Bilyk.

Senator BILYK: I want to ask some questions around electric vehicles. Approximately how many electric vehicles are on the road according to the latest figures?

Mr Ryan: As of July, about 130,000.

Senator BILYK: How does that compare to, say, the same time last year?

Mr Ryan: I'd have to take that number on notice, but it has more than doubled.

Senator BILYK: More than doubled?

Mr Ryan: Yes.

Senator BILYK: Wonderful. Are you able to tell me what percentage of new light vehicle sales are EVs?

Mr Ryan: It's 8.4 per cent.

Senator BILYK: How does that compare to the same time last year?

Mr Ryan: I can look it up. It's about 2.3 per cent, from memory—3.8 per cent.

Senator BILYK: Sorry?

Mr Ryan: It's 3.8.

Senator BILYK: What was this year's?

Mr Ryan: It's 8.4, September year-to-date.

Senator BILYK: Are you able to show me how many publicly available fast chargers there are?

Mr Ryan: It depends on how you're going to define it, but at the very highest level the number of publicly available fast chargers, as at the end of last calendar year was—

Senator BILYK: So December 2022?

Mr Ryan: Yes. The number of chargers was 4,943. That's all types of chargers, from the very low end—the really low charging—right up to the superfast charging.

Senator BILYK: Can I get a breakdown of how many are chargers and how many are ultrafast chargers?

Mr Ryan: I could give you that breakdown by location but not by charger, because some locations have more than one charger.

Senator BILYK: Okay. How long—

Mr Ryan: As at the end of December 2022, there were 2,392 locations, of which 365 were fast and 99 were ultrafast. Fast is 24 kilowatts or more—

Senator BILYK: Twenty-four kilowatts plus, yes.

Mr Ryan: and ultrafast is a hundred kilowatts or more. The remaining—I hope I have the maths right—1,928 locations were below 24 kilowatts.

Senator BILYK: Are you able to tell me how that compares to the same time last year?

Mr Ryan: Up to December 2021 instead of December 2022?

Senator BILYK: Yes.

Mr Ryan: Locations in December 2021 were 1,614, of which 231 were fast and 86 were ultrafast, and the balance should be 1,297.

Senator BILYK: What do you think has led to this uptick?

Mr Ryan: A number of things. Obviously, there's the investment from government in the charging equipment, but it's not just that. It's also the uptake and businesses responding to people purchasing EVs. So there is an increase in the number of EVs that have been purchased and the need to be able to charge them. We know that most charging gets done at home. Eighty per cent of charging gets done at home.

Senator BILYK: How much?

Mr Ryan: Eighty per cent, roughly, is about the amount of charging that's done at home. But for the 20 per cent that's done on a trip or at a destination you've gone to—a bowling club, a hotel you're staying in or somewhere you're doing your shopping—there are chargers available there as well.

Senator BILYK: Thank you for that.

CHAIR: Senator Duniam.

Senator DUNIAM: I wasn't going to ask any questions, but what Senator Rice—

CHAIR: Then you couldn't help yourself!

Senator DUNIAM: I was here and I had to. Senator Rice said something that piqued my interest. She made an exclamation about the evidence that was provided here that—and Senator Rice might correct me—ending native forestry is good for climate change. I think that was your point, Senator Rice. Can I understand exactly the evidence that was tendered for Senator Rice to draw that conclusion.

Ms Ford: I think you may be referring to some evidence that I provided earlier in the session.

Senator DUNIAM: Quite possibly.

Ms Ford: I was referring to the 2022 emissions projections—the baseline scenario. In that scenario we found that the net sink in the land sector to 2025 increases mainly due to the sustained impact of the cessation of native timber harvesting, driven by state policies.

Senator DUNIAM: Can you explain to me how that is modelled, that projection?

Ms Ford: Can you repeat the question?

Senator DUNIAM: You mentioned that's a projection undertake in 2022 looking forward to 2025. How is that modelling done?

Ms Ford: That's a very good question. I might start from the very beginning to talk a little bit about the emissions that are associated with native forest harvesting. Obviously with native forest harvesting there are emissions associated with the harvesting and then there is sequestration, so removals that occur when the forests regrow. There's also the movement of carbon into the harvested waste products pool. The projection takes as its starting point the emissions associated in the national inventory report, and then we project forward using a number of modelling frameworks to understand what the potential net emissions from the land sector might be, including the emissions associated with native forest harvesting. In the projections we accounted for the state

policies that had been announced at the time that the projections were put together, which from memory were state announcements around the cessation or the bringing forward of the cessation of native forest harvesting in Victoria and, I think, Western Australia. Hopefully I've got that right. Yes.

Senator DUNIAM: On notice then I would be interested in the methodology around those calculations. I don't know if it's a per hectare per annum-type of proposition, but on notice if you provide that to me I'd be grateful.

Ms Ford: Yes.

Senator DUNIAM: I don't understand this sink projection—I think you referred to it as such. Is it roughly what you call it?

Ms Evans: Yes.

Senator DUNIAM: That is an account of what we are storing here in Australia. Is that right?

Ms Ford: Yes.

Senator DUNIAM: Do we look at anything internationally? I don't want to go down the path of things outside the remit of this department, but obviously cessation of native forest harvesting has an impact on supply of a product here, and we offset that with something somewhere else in the world. Do we do any comparisons internationally, or is it purely a domestic outlook?

Ms Ford: The projections are the domestic outlook for Australia's emissions to 2035. In putting together the projections we do need to take into account information about, for example, the international demand for some of Australia's products depending on the sort of sector at hand.

Senator DUNIAM: I'd be interested in some more information on that if at all possible. When you say you take into account demand for Australian products, is that in relation to products that might be derived from those forests that were harvested? Is that what you're talking about?

Ms Ford: Yes. I'd need to take the detail of that on notice.

Senator DUNIAM: I'm happy for you to do that. Minister, in terms of that information, as a minister, how does that information impact on the decision-making processes of government? Is it something that is factored in, or is it a stand-alone type? We have the EPBC, which we'll talk about later on today, and how it relates to native forestry. Is this information going to be taken into account when making a decision around native forestry?

Senator McAllister: I think last time we were together you asked me a similarly general question about native forestry, and I gave you the government's view generally about that question. You might need to be a little more specific if you wish to pursue this line of questioning, and I'll see how I can assist.

Senator DUNIAM: With regard to the information elicited by Senator Rice, the point was made that ending native forestry is good for climate change. The government has a plan to reduce emissions to a certain point by a certain date. I'm trying to understand, in terms of reaching those goals, where in the decision-making hierarchy information like this would be, as opposed by domestic industry, for example. It may be something we come back to later on, or I perhaps need to ask somewhere else. As minister you might have some view on that.

Senator McAllister: Perhaps the best way to think about it is this. We have a goal to reach net zero by 2050. Somewhat recently, the minister, Mr Bowen, indicated that as part of that we would be developing a series of sector based plans and that they would be developed across six sectors, one of which is the agriculture and land-use sector. That is the forum in which we imagined contemplating all of these important questions. It's intended that the sector plans will be developed through a process of intensive consultation with industry and other stakeholders.

It is a challenging thing for the world to proceed towards a net-zero outcome. I understand that this remains the policy of the Liberal Party, notwithstanding the National Party's attempts to alter that trajectory at their most recent national conference. But I understand the Liberal Party intends to reach net zero, and perhaps the coalition does as well. You'll understand, then, that this is an effort that needs to be pursued across the economy. We need to contemplate how we do that in a way that maximises the benefits and opportunities for Australian communities, including the economic benefits.

Senator DUNIAM: Am I able to interrogate the sector-specific plans here? Is this the right section?

Senator McAllister: Yes.

Senator DUNIAM: Where are we at with the agriculture and land-use strategy?

Senator McAllister: We did talk about it a little bit with Senator Rice, but I might ask one of the officials to talk through the work that's occurring and perhaps the time frame for the plans.

Senator DUNIAM: Yes, the time frame would be most important.

Mr Hutchinson: The different plans are all broadly on the same time frame. Some departments have had slightly longer to think about some of these issues than others due to existing capability. Agriculture has had a long period of time engaging with the role of the land sector and other things in emissions reduction. But right now the plans are drawing towards the end of an initial scoping and assessment phase to understand the broad parameters that we need to consider, the sort of capability we will we need to access, how we will we go about community engagement and consultation, what the major sources and sinks are to consider and those kinds of things. Broadly, the time frames for bringing all of these plans to conclusion are aligned with our international reporting framework under the Paris Agreement, where we will have to communicate our next nationally determined contribution to the UNFCCC in 2025. So we're looking to bring all of this work to a conclusion over the coming 12 months or so.

Senator DUNIAM: That's helpful. Thank you.

Senator RICE: Minister, given the evidence that was tendered to me before, does the government acknowledge that ending native forest logging has net carbon benefit?

Senator McAllister: Our economy—and we're not alone in this—is presently a carbon-intensive economy. That's true across the globe. So there are all sorts of things that if we simply stopped doing them would reduce emissions. The goal of net-zero planning is to work out, in consultation with the widest possible range of stakeholders, how we will proceed towards net zero by 2050 in a way that delivers economic benefits to Australians.

Senator RICE: That's understood, but that's not my question.

Senator McAllister: I think it is—

Senator RICE: No. Does the government acknowledge what the department has said—that ending native forest logging would have a net carbon benefit.

Senator McAllister: You heard the advice from the officials earlier.

Senator McKIM: I want to ask a few questions about the department's awareness of Hydro Tasmania's proposed work on the Edgar Dam and the Scotts Peak Dam in Tasmania. What is the department's awareness of those projects?

Mr Fredericks: It may be that that's a question for our environmental colleagues. It depends on where you're going with this question. If it's on contribution to energy—

Senator McKIM: Part of it is, so I'm happy to come back under environment. Has any request been received for Battery of the Nation funding for those projects?

Mr Duggan: No.

Senator McKIM: Has any request been received for Battery of the Nation funding for a fourth turbine in the Gordon power station?

Ms Gowans: Just at first, I would say that Battery of the Nation is a collection of Tasmanian projects loosely categorised by Tasmania, so DCCEEW does not have Battery of the Nation funding. What DCCEEW does have is Rewiring the Nation, on behalf of the government. Under the Rewiring the Nation program and the deal that was agreed between Minister Bowen and Tasmania, there are some funds that can be used, via an application to the CEFC, for projects that might come within the broad group of the Battery of the Nation collection of projects. My understanding to date is that the CEFC has not received a specific application for funding for any one of those projects.

Senator McKIM: Does that include Marinus Link, or is that a separate project?

Ms Gowans: The CEFC is definitely negotiating very early stages in relation to the funding of Marinus Link.

Senator McKIM: Okay, but the department has no knowledge of a request for or the provision of any funding for a fourth turbine in the Gordon power station?

Ms Gowans: Not to my knowledge. I'd be happy to check.

Senator McKIM: Could you check that on notice please. In terms of questions around referrals under EPBC and so forth, I should ask those in the environment section?

Mr Fredericks: Yes.

Senator McKIM: Thank you. I'm happy to cede the rest of my 10 minutes to Senator Waters.

Senator WATERS: Hello, folks. Could I start off with some questions about Eraring. What are the implications for our 2030 climate target of the New South Wales government keeping Eraring open beyond its scheduled shutdown date?

Mr Duggan: My understanding of where New South Wales is at currently, talking to Origin Energy, is that they're in discussions at the moment and no decision has been made at this stage, so we don't have any insight into any details around a possible extension.

Senator WATERS: Have you modelled the implications of it if they were to extend beyond its scheduled shutdown, as has been mooted?

Mr Duggan: We haven't done specific modelling on that question.

Senator WATERS: When would that modelling commence?

Mr Duggan: We heard a little bit earlier from the modellers around the annual emissions statement. As part of that, were there to be an announcement prior to the emissions projections being finalised, we would undertake modelling in that context.

Senator WATERS: And that's got to be done by December, so when do you finish doing the calculations so that you can produce that in December?

Ms Evans: I'd have to take on notice exactly when we finish. We're still working on those projections now. I think the existing 2022 projections modelled Eraring closing in 2025.

Senator WATERS: What was that last bit?

Ms Evans: The existing projections, which are in the public domain, included the closure of Eraring in 2025.

Senator WATERS: And what's being discussed? How long are they discussing extending it out to?

Mr Duggan: Again, we don't have insight into those discussions. They're between the New South Wales government and Origin Energy.

Senator WATERS: Are you across the percentage change of what reliability gap the closure of Eraring would have had? Is that something that sits in your level of expertise?

Mr Duggan: We can go to those questions.

Senator WATERS: What is the percentage change of the reliability gap the closure would have if it proceeded on time, with a 2025 closure?

Mr Duggan: It certainly has an impact. AEMO, in their energy statement of opportunities, project the implications of different coal closures and look at what additional firm capacity would be required in New South Wales to meet the reliability standard when Eraring power station has retired. Its estimates are that to meet the reliability standard in 2025-26, when Eraring power station has advised—at this stage—that it will retire, it will require an additional 191 megawatts of generation capacity.

Senator WATERS: That doesn't seem like terribly much. Could you give me that as a proportion of the total?

Mr Duggan: I'll ask my colleague.

Ms Pang: Eraring's current capacity is 2,880 megawatts.

Senator WATERS: I'm just trying to get at what percentage 191 megawatts is. It seems to me it will be a very tiny change in the reliability gap, but I'd like you to give me the figures for what the change is to the reliability gap.

Mr Duggan: In order to meet the reliability standard, as I said, AEMO's projection at the moment is that we will require an additional 191 megawatts relative to the already confirmed projects that will come into place before the Eraring power station closes. Of course, that's in the context of things like the Waratah Super Battery coming online broadly in that time frame, which will uplift capacity as well as other projects which, as Eraring comes out, will come in. So, the Eraring Big Battery, for example, in and of itself, will provide 460 megawatts at about that time.

Senator WATERS: Could you please take on notice for me what percentage change of the reliability gap there would be if Eraring comes offline as originally scheduled? Thank you. And, what is the expected cost to consumers of keeping Eraring open to meet that reliability standard?

Mr Duggan: I suspect this gets to questions that, at this stage, only Origin Energy can answer, and that's a conversation that they're having with the New South Wales government at the moment, which, again, we don't have any insight to.

Senator WATERS: Can I please move to the gas shortfall on the east coast market from 2027 and whether the PRRT changes have any impact on that. Can you confirm for me if all of the offshore gas fields that the government wants to see developed and which would be subject to the PRRT are, in fact, in the west and the north and would not impact on east coast markets?

Mr Duggan: The development of new gas fields is actually a question for the Department of Industry, Science and Resources, so it's not something we're able to answer for you in this portfolio.

Senator WATERS: Sure. But you do the emissions forecasts, so that's why I'm asking you.

Mr Duggan: We can certainly go to the emission impacts of different scenarios around gas.

Ms Evans: I'll just get Ms Rowley back to the table, but I'm not sure if I caught your question in the context of projections, so would you mind?

Senator WATERS: As far as I understand it, there is pushback on PRRT. Apparently, it would impact on east coast gas market supply, but actually none of the projects that the PRRT apply to are anywhere near the east coast market, so I'm asking you to say those words, if that's right. Which are the projects that would be subject to the PRRT, and are any of those in the east coast market or are they all in the north and the west?

Mr Fredericks: Very genuinely, we can talk to how our gas projects are accounted for in the projections, because we've had that discussion before. But a question around the impact of the PRRT on projects on the east coast is either one for the resources department or, potentially, Treasury, because I think it's in their bailiwick.

Senator WATERS: Are you able to answer for me, please, whether there are any new offshore oil and gas fields that are expected to commence that would service the east coast market?

Senator McAllister: Again, it's only to be expected that perhaps they are contemplating for other projections.

Senator WATERS: Sorry, could you speak up a little, Minister?

Senator McAllister: Treasury is on Wednesday morning, as I understand it, and Resources is on Thursday morning.

Ms Rowley: We could speak to what we assumed in the 2022 emissions projections with respect to projects coming online that would be assumed to serve the east coast gas market.

Senator WATERS: Yes. That might be helpful. Thank you.

Ms Ford: In the 2022 projections, we assumed that for the domestic market there would be new gas production from the Northern Territory from 2025, Narrabri in New South Wales from 2026 and gas in Queensland from 2028.

Senator WATERS: And that's the Serat Arrow project, is it?

Ms Ford: I don't have those specifics, sorry.

Senator WATERS: Okay, I might pursue that further with resources or Treasury. I'll move to the 1½-degree threshold, which has, sadly, been reached far ahead of schedule. I think this is in outcome 1.1, so I hope that I'm in the right spot. My understanding is that, initially, there was a projection that 2023 only had a one per cent chance of going over 1½ degrees but, in fact, global average temperatures have soared and now there's a 90 per cent chance that 2023 will have an average annual temperature of more than 1½ degrees—in fact there's a 99 per cent chance that it will be the hottest year on record. Is the department looking at those sorts of figures?

Ms Evans: That kind of data is collected by the Bureau of Meteorology and the CSIRO. We would wait for them to give us advice about those kinds of impacts.

Senator WATERS: Have they provided that advice yet?

Ms Evans: Not at this stage.

CHAIR: We need to rotate the call, Senator.

Senator WATERS: I'll come back to it.

Senator HUGHES: I just want to have a quick discussion about ensuring that whilst we look particularly towards solar as part of the renewable future that our energy markets and our energy systems maintain our sovereignty and security. Is anyone here aware of solar inverters and the discussion about those? Is that you, Mr Duggan?

Mr Duggan: I'll ask one of my colleagues, who has been working on this specifically, to come up.

Senator HUGHES: For those listening at home, a solar inverter is what we use to convert energy from rooftop solar panels into usable electricity for homes and businesses. Do we know what percentage of these solar inverters are coming from international markets? What percentage are Australian made, owned and operated?

Mr Squire: A large proportion of inverters installed in Australia are coming out of China and Austria, in terms of Fronius. I would have to take the exact percentages on notice.

Senator HUGHES: I'm happy to table an article here; it says that 58 per cent of the Australian inverter market is coming out of China. I don't know if anyone wants a copy of that, but I'm happy to table the article which talks about that. Could you explain this for us: these are connected to the internet—correct?

Mr Squire: Generally, if the people using the inverters have some form of monitoring, or they're connected to a virtual powerplant, then, yes, they're usually connected to the internet.

Senator HUGHES: What have been the considerations and the reviews looking at where these inverters have originated, particularly when it comes to the fact that under China's own national intelligence laws, fundamentally, Beijing can tell these companies to sabotage, do surveillance of or, perhaps, disrupt power supplies? What is being done to ensure that we have sovereignty and that our sovereign risk is protected when it comes to our energy markets?

Mr Squire: I might respond firstly to the part of your question about securing these devices, rather than the manufacturing issue, which is more for our colleagues from the Department of Industry, Science and Resources. The department is well aware of the concerns about potential for state actors and others to misuse rooftop inverters. In the October 2022 budget, the department received funding to enable us to do some work around developing standards to secure, or to better secure, rooftop inverters in terms of the cybersecurity for those particular inverters. That work is ongoing. We've engaged Standards Australia to do a standards assessment process for us. That work is on track. Standards Australia are currently in the process of finalising that report for the department, and then we'll be in a position to move forward with a standards development proposal with Standards Australia in terms of additional cyber standards for rooftop inverters.

Senator HUGHES: So it's still developing; we're still looking at how we can better secure and provide surety to those who have Chinese made inverters?

Mr Squire: Yes. The issue of standards development is a complicated process. As you'd be aware, Australia has the largest proportion of rooftop solar anywhere in the developed world—one in three households in Australia—and it's something the department has been focusing on. But it does take some time in doing the work to develop and then implement a solution.

Mr Fredericks: Senator, just on that: these are good questions that you're asking, and we are highly attuned to the criticality of them. At the moment that's a description of the work we're doing on standards, which is important. But I think it is worth just explaining the work we're doing on technical options as well. We're working with AEMO to see what options are available in the real world to enhance technical options. We could briefly talk to that. And we have been working very closely with the Department of Home Affairs through their critical infrastructure, which, as you know, started some years ago. The energy sector is a named critical piece of infrastructure. We work very closely with them. I can't go into detail on that.

Senator HUGHES: Okay.

Mr Fredericks: But we can give you anything more on the technical work we're doing with AEMO and others.

Mr Squire: The study produced by the cybersecurity CRC talks to the potential for misuse of rooftop inverters and the sorts of issues that that would create, particularly for the national electricity market, in terms of the incorrect signals that might be received by the Energy Market Operator. So, we're in early-stage discussions with the Australian Energy Market Operator about a potential technical solution that could be applied in the event that there is a successful cyberattack on rooftop inverters to restore functionality and stability to the grid.

Senator HUGHES: Yes. And there are concerns here that we did block Huawei from putting in our 5G rollout because of national security interests and our sovereignty. But on this hand, where we're racing towards 82 per cent renewable by 2030, we're going to potentially have Huawei having control over these supply inverters in our energy grid. I mean, I would have thought this is a critical—

Mr Fredericks: We are very live to that issue. That's an important issue. It is critical. Government has given us additional resources to deal with it. We are working closely with AEMO in ways that are described. I don't think we can say much more. We are working with Home Affairs historically. We have been for some years now. So, it's a point well made, and one we accept, and where we are leaning in very strongly.

Senator HUGHES: Thank you. I might leave that there.

Senator VAN: I want to go back to what we were talking about earlier in firming. Obviously two of the biggest projects that are on the books for firming are Snowy 2.0 and the Marinus Link. There are no other bigger ones, are there?

Mr Duggan: In terms of what they provide to the system, they would be the two biggest currently being worked up.

Senator VAN: Sure. And I know we will be hearing from Snowy Hydro later on, but perhaps I can ask some questions. What is the impact if, as we've heard, there are delays in Snowy 2.0 and there is uncertainty about the Battery of the Nation proceeding? Tell me if I'm wrong on that, but there have been reports of uncertainty on that. What happens if we steam ahead and build HumeLink and VNI West, and Snowy 2.0 doesn't happen or gets delayed by a significant period?

Mr Duggan: The sequencing of those things at the moment is that Snowy 2.0 is intended to come online before the related transmission infrastructure. In the first instance, were it to get pushed back beyond that December 2028 time frame, there wouldn't be much of an impact, frankly; but, were it get pushed back by a long way, there could be a substantive impact. It's important that these things come together broadly on the right time frames.

Senator VAN: Sure, but, if Snowy were to be delayed or—let's hope it doesn't happen—cancelled because it was just not feasible or affordable, does spending that much money on that much transmission still make sense?

Mr Duggan: As you said, the CEO and managing director of Snowy's here later and will be able to talk to this in more detail. One point I'd make is that we're now 40 per cent of the way through the construction of Snowy. The further you get on the project, the more certainty you have around time frames. You can never be entirely certain, but as the project develops and you're making more headway—again, Dennis Barnes will talk to this—the potential for major slippages is reducing naturally. The point I would make about Snowy is, yes, it provides a very important service to the system. Notwithstanding the cost increase, Snowy's estimated net present value in terms of the economic benefit of the project is still positive in the order of \$3 billion. That gives you an assessment of what it delivers to the grid, and that's still a very strong, positive number at this stage.

Senator VAN: Do you care to comment on where Battery of the Nation and Marinus are at?

Mr Duggan: What occurred in September was that we relooked at the deal that we've got through Rewiring the Nation with both Tasmania and Victoria to ensure that both Tasmanian and Victorian consumers wouldn't be subjected to unreasonable costs associated with that transmission project and that it was still delivering a very strong, positive economic benefit. That's in light of what we've seen globally in terms of some of the cost escalation, in particular around cable, that we've seen. For Marinus, getting in the queue and securing the cables has meant, obviously, making sure that, of the amount that's now required to pay for that cable, Tasmanian consumers are able to bear their portion of the cost. What that led to was us going through a further round with them about, first of all, the ownership structure of Marinus Link. The Commonwealth will now be taking a 49 per cent equity share, with Tasmania at 17 per cent and Victoria at 33 per cent. Importantly, we also, through the CEFC, increased the concessionality of the debt side of that. At the same time, while the Commonwealth's taking greater equity, we're also increasing the concessionality of the debt. This is an 80-20 debt-to-equity deal. At the end of that, our calculations show that the impost to Tasmanian and Victorian consumers is less after we've gone through that than it was projected to be when the government signed the deal back in October of 2022.

Senator VAN: Has any work been done with regard to the routing of Marinus and the sighting of offshore wind such that you might be able to reduce overall transmission by marrying up those routes?

Mr Duggan: It's an interesting question. I don't know whether our offshore wind colleagues—

Senator VAN: I only ask because I worked on Basslink when it was being done. I did all the stakeholder engagement through that time.

Mr Duggan: I'll let the experts answer the question.

Mr P Johnson: At the present time, the intention is that the Marinus Link cable is an HVDC cable. It's not designed to have a pick-up point in the offshore zone area—if you were asking if the offshore wind farms could directly connect into the cable.

Senator VAN: That's what I was asking, yes.

Mr P Johnson: No. VicGrid, who looks after transmission planning down in Victoria, is currently undertaking consultations on a proposal to build a transmission link to a site close to the coastal area adjacent to the offshore wind zone with the intention that the offshore wind farms will the join directly into that location.

Senator VAN: Good. That's what I was hoping for. Thank you. Minister, a quick question for you, if I may, and then I will hand back the call. Do you think the government's 43 per cent legislated target for Paris 2030 is ambitious enough?

Senator McAllister: The target was developed having regard to what would be possible in the Australian context. We know that we have to make a contribution to an ambitious global effort because of the risks to our country if the world doesn't succeed in holding warming below two degrees and as close as possible to 1½ degrees. We also came to government in the context of 10 years in which the previous government failed to settle a climate policy and then, as a consequence, failed to settle an energy policy. There is a lot of work to do. We think we can make the 43 per cent target.

Senator VAN: That was my next question. Do you think you can?

Senator McAllister: Yes, we do. The officials earlier provided some advice about our current projections based on our current policy settings. In addition to that, we have initiated the sector plans. I'm not sure if you were in the room when we were talking about this earlier. We are now moving into a phase of work where, in a range of sectors, we want to talk to stakeholders, industry and community about how we are going to make our way from here to net zero by 2050 across six key sectors. We can go through those again if that's of interest.

Senator VAN: We don't need to go through them now, but perhaps I'll seek a briefing. Last one: does the government intend to revisit the 43 per cent before 2030?

Senator McAllister: We are presently awaiting advice from the Climate Change Authority. We receive it every year about our progress. We will be required by 2025 to submit a revised target for 2035. That's likely to be the focus of government effort.

Senator VAN: Thank you.

CHAIR: Senator Cadell? Senator Davey? Senator Duniam? I am tidying up the ends.

Senator WATERS: I only need about five minutes, Chair, and then I'm done.

CHAIR: Everyone says that. We're going in order.

Senator DUNIAM: I will be very quick. If I can go back to the issue I was asking about before. The minister made a point around needing to have whole-of-economy consideration around matters relating to carbon emissions reduction and the inputs for a decision-making process. There was also a point made around international demand for Australian products. In the example I was talking about, that was forestry related products. Do we account for the replacement carbon emissions from a product imported into Australia as a result of Australia not producing said product at all?

Ms Rowley: For Australia's emissions inventory and our emissions projections, they're limited to emissions in Australia and sequestration in Australia—carbon sinks, which you were referring to earlier; the sequestration of carbon. They do not extend to the emissions that occur elsewhere in the world either from the use of products produced in Australia—the emissions from combustion of Australia's coal exports; a classic example—nor from the emissions from the production of goods and services that are consumed in Australia.

Senator DUNIAM: Is there anywhere to your knowledge within government, be that in the department of trade or any other function of the Australian government, where that sort of information would be accounted for at all?

Ms Rowley: Accounted for?

Senator DUNIAM: We're a global leader in many respects, and that is the impetus behind the Australian government's position on net zero and the need to reduce emissions. On that basis, leading by example here domestically is important, as are the choices we make here about the products we purchase. We don't harvest trees here, as a result of state government decisions. That has resulted in a net increase in carbon stored, according to these projections—supported very basically. We then import products from somewhere else—like the Congo Basin, for example. How do we account for what that might mean globally, or is that someone else's concern?

Ms Rowley: A couple of things, and then my colleague might want to add. Within climate action a lot of this is conducted within the context of international action. We engage with our trade partners through multilateral, regional and bilateral discussions on the collective transition to net zero, so that's the task of international climate discussions. As it relates to specific policies within Australia, one of the places where relative emissions intensity of production comes into close focus is things like carbon border adjustment mechanisms, which are being established by some other countries and could affect Australia's exports to those markets. But we're also considering that in the context of Australia's climate action and thinking about the relative emissions intensity of producers of products that might be produced here in Australia by facilities covered by the safeguard mechanism.

We're doing that carbon leakage review as part of the safeguard mechanism's broader work program, so that's another place where we think about it. Is there anything in the context of the inventory?

Ms Evans: The only other thing I might add is Australia is a participant in quite a few international initiatives that deal with forestry and forest related issues. I was trying to see if I could find the names of the ones we are already involved in, but they are definitely an environment in which this whole discussion about the net gain globally, as a result of the way the forestry industry is operating, can happen. It's not in our inventory or tracking against our own targets, but we are certainly involved in all the global conversations around the contribution of agriculture and land use change in forestry as part of the international framework convention on climate change.

Senator McAllister: It would be my expectation that these questions about how we should think about our own role and responsibility in the context of an international commodity like timber would be one of the features of the discussions that take place within the sector planning work we've been talking about this morning.

Senator DUNIAM: To that end, if it is one of the inputs into sector planning work, what modelling is done with regard to either contributions to international conversations or the sector planning work in relation to those?

Senator McAllister: When I said it's my expectation, I suppose my starting point is that the sector planning process is built on consultation. It's conceptualised as a process that will involve significant stakeholder work, and I would expect stakeholders will bring forward various views about that and will have the opportunity to work through that as the sector planning rolls out. This particular plan is being led jointly, as I understand it, by the department of agriculture and this department, and I think officials have already provided advice that we're in the early stages of working through how that planning process will occur.

Senator DUNIAM: My question was about modelling, though. I understand it is in a consultation process, but is there modelling to underpin the discussions that move forward?

Ms Rowley: There will be a range of analyses likely to include economic modelling as well as other analysis to inform both the sectoral plans and how that aggregates to the whole-of-economy net-zero plan.

Senator DUNIAM: None yet, but there will be?

Ms Rowley: That is the plan, yes.

Mr Hutchinson: If I can just add briefly to that, the Climate Change Authority will be providing advice to government on a range of issues around the sectoral planning process. They're working with CSIRO to provide whole-of-economy modelling, so that will be one of the inputs. But my understanding is that's focused on activity within Australia's borders, as Ms Rowley was saying before.

Senator DUNIAM: I might ask further questions on notice just about those international components.

CHAIR: Senator Waters.

Senator WATERS: As we were discussing before, the projections indicate that this year is now a 99 per cent chance of being the hottest year on record, whereas a year or so ago it was thought that this year wasn't going to be so problematic. Given those really scary meteorological developments, and given the fact that it looks like we've hit the 1½ degree threshold far earlier than we were warned, is the department re-evaluating what that means for Australia and for policy development?

Ms Evans: There are two parts to that response. On the emissions reduction side of things, as Senator McAllister already explained, the targets for 2030 are in legislation and they are not changing. We will, as part of all of the work that we are doing on the sectoral plans and the net zero plans, look at what the next target should be for Australia—and I should also say that the 2030 target is a floor, not a ceiling, so we'll still try to do even better than that. It does not change our approach to emissions reduction because, in essence, we are already pushing our emission reductions to go as fast as is possible for Australia. But, on the adaptation and climate risk side of things, we have embarked on the first detailed National Climate Risk Assessment for Australia, and some of these issues around the timing of when some of the higher temperatures might occur may well feature in that analysis.

Ms Geiger: As Ms Evans said, we are undertaking for the first time a National Climate Risk Assessment, which is looking at the key risks that Australia will face, which will then feed into a national adaptation plan. We are consulting quite widely because part of the purpose of doing this risk assessment is to develop a shared understanding of what the risks are across the country and across different sectors like health, defence, agriculture, the economy and so on.

Senator WATERS: Could you provide me on notice a little bit more detail about some time lines associated with the project that you've got underway? I am interested particularly, given these new figures, in whether the

department is looking at any new initiatives to cut methane, particularly from the coal and gas sector given its short-term potentials—very troubling.

Ms Evans: Australia's greenhouse gas emission reductions targets are all gases, so that includes methane, and some of the more significant measures that have been brought in since the government was elected in 2022 include the safeguard mechanism, for example, which is already providing regulated control over methane emissions from the most significant emitters in the economy. And we've got a number of programs looking at what you can do in the other sectors of the economy, particularly in agriculture, which is another big source of methane for Australia. You would have come across some of the investments that are happening, such as the Asparagopsis technology and so on, which help to reduce methane and things like that. There's a program—I might let Ms Rowley elaborate further.

Senator WATERS: Please don't because I'm short on time and I've actually been to that lab. I'm across that and I think it's great.

Ms Evans: It's an existing program. There aren't additional methane things coming in as a result of those climate figures.

Senator WATERS: Why isn't there additional reconsideration, given this new information about how much of a climate brink we are on? Why are you not reconsidering coal and gas policy, particularly about methane?

Ms Evans: Because the programs are already focused on reducing those. So it's already in train.

Senator WATERS: Minister, do you want to add anything to that? Are these new figures about how close we actually are to a climate tipping point not giving the government pause to rethink the strength of its policies?

Senator McAllister: Senator Waters, you are right that the advice that we are receiving from the scientific community indicates that this is a very important decade, and it is a period in which the world needs to work together to reduce our emissions. A feature of our international engagement is working as closely as we can with other global partners to build confidence in the possibility of concerted, coordinated action across the globe to reduce emissions. Our decision to—as you know—significantly increase our 2030 targets, commit to 2050 in legislation and re-engage constructively in the international discussions is targeted towards building collective global confidence that we can do this. We will be, of course, participating in the Conference of the Parties at the end of the year. At that time there will be a global stocktake released, which provides an assessment of the international community about how we're going. Our focus is on delivering the commitments that we have made and working in the context of the international community to support ambitious global action.

Senator WATERS: Is this new data, showing that we are in fact already exceeding 1½ degrees, giving the government pause to think about not approving new coal and gas projects? I note that there have been five approved under your government so far.

Senator McAllister: Senator Waters, we have talked about this often in this committee. The government's principal mechanisms for reducing emissions from these big facilities lie in the safeguard mechanism. I understand that your party's preference is for a different approach, which is to use a different act for that purpose, but we've been through a legislative process, and we were grateful for the Greens' engagement in discussions about that legislation. The safeguard mechanism is the means by which we seek to limit emissions from Australia's largest facilities, and that includes coal and gas production.

Senator WATERS: On that, the Gregory Crinum mine in Queensland, where I'm from, was recently extended by Minister Plibersek, amidst a whole host of other coal approvals that she has ticked off on. I understand that it has actually been extended in a way that means it is now above the safeguard mechanism threshold of 100,000 tonnes of emissions. It's now at 104,500 tonnes. My understanding—and this is what I'm seeking verification of—is that the environment minister is now meant to advise the climate minister of a significant new source of emissions. Has that happened?

Ms E Johnson: Yes, it has.

Senator WATERS: When did that happen?

Ms E Johnson: I'm sorry; I'd have to take that on notice. It was approximately a month or so ago, but I will take on notice the specific date.

Senator WATERS: Can you talk me through the steps that have been taken since that notification. What will now happen?

Ms E Johnson: Certainly. To take a step back, the environment minister has delegated the capacity to write with that scope 1 emissions information to an officer in the department. Following the approval of that mine, that officer wrote to the climate change minister, the CEO of the Climate Change Authority and the secretary of the

department, as required under the act. We, as the team responsible for the safeguard mechanism within the department, considered that scope 1 emissions information and advised to the secretary accordingly about whether or not the rules needed amendment, based on that emissions information. Based on the information received and the analysis, we advised the secretary that the safeguard rules do not require amendment.

Senator WATERS: Why was that?

Ms E Johnson: You might remember that as we developed the safeguard mechanism reforms, particularly the 4.9 per cent annual decline rate, we built a reserve into that. That reserve is currently 22 million tonnes over the period to 2030. We looked at that—

Senator WATERS: It's dipped into the reserve, then, so you don't have to redo the rules—sorry. You keep talking.

Ms E Johnson: That's right, effectively. We looked at the particular requirements, the overall emissions budget, the emissions outcome in 2029-30, the emissions outcome in 2049-50 and the five-year rolling average, and we advised the secretary accordingly.

Senator WATERS: How much of the reserve has been accessed so far?

Ms E Johnson: At the moment, the reserve stands at 22 million tonnes. That's as a result of the latest rule amendment, which was put through on 29 September. From memory, that was after the Gregory Crinum information had come through. I will correct that on notice if that sequence was the other way around, but I'm reasonably sure that the sequence was Gregory Crinum and then the rule amendment after that.

Senator WATERS: But the rule amendment wasn't triggered by the Crinum amendment. You're saying it was triggered by something else.

Ms E Johnson: That's right. That was to pick up the production variable changes we talked about earlier.

Senator WATERS: Okay. Thank you.

CHAIR: Just one question from me. Minister, is there any circumstance under which the minister for the environment can ignore the relevant legislation when she's looking at approvals?

Senator WATERS: Yes.

CHAIR: Does she have any capacity?

Senator WATERS: Yes, she—

CHAIR: I'm not asking you a question, Senator Waters. Minister?

Senator McAllister: The minister operates in accordance with the law.

CHAIR: In accordance with the law all the time.

Senator McAllister: Yes.

CHAIR: Excellent. Great to hear it. If nobody has any more questions, we will—

Ms Evans: Chair, just in response to Senator Pocock's questions earlier, I may have left an impression that the Hydrogen Headstart was the only thing we had done in response to the Inflation Reduction Act, and I just wanted to point the committee to box 1.1 in Budget Paper No. 1, which does a really good explanation of the \$40 billion worth of investment that has gone into things that are effectively part of our response to the Inflation Reduction Act, as well as building the renewable energy superpower. I was just quite conscious that I had left the impression that it was only that \$2 billion investment in Hydrogen Headstart, whereas in the budget itself there was, in addition to that, several other measures, including the \$1.3 billion for household energy upgrades and so on, so I just wanted to put that on the record as well.

CHAIR: Thank you very much. With that, we will dismiss this outcome. Thank you very much for your time this morning. It is much appreciated.

Australian Renewable Energy Agency

[12:48]

CHAIR: I now call officers from the Australian Renewable Energy Agency. Welcome, Mr Miller. Would you care to make an opening statement?

Mr Miller: We have an opening statement, but I think, in the interests of time, I'd be happy to just submit that onto the record and get straight to it.

CHAIR: Fantastic. If you could table that, that would be great. Senator Davey?

Senator DAVEY: Thank you for appearing. I have a few questions, particularly on the hydrogen hubs. The former coalition government committed over \$1.5 billion for the hydrogen hubs in eight locations across regional parts of all of Australia. Could you give us an update as to how these hubs are going and what their status is?

Ms Evans: The hydrogen hubs are administered by the department and, sadly, you've just let all my team go.

Senator DAVEY: Yes.

Ms Evans: The Hydrogen Headstart is the program that is administered by ARENA.

Senator DAVEY: I'll put on notice the questions about the hydrogen hub. Sorry, that must be our error. Could you explain how the Hydrogen Headstart—because I did have that down—is different to the hydrogen hubs?

Mr Miller: Would you like me to do that?

Ms Evans: Sure.

Mr Miller: Hydrogen Headstart is a new program announced by Minister Bowen on October 10. ARENA is the agency tasked with administering that program. It's a program of \$2 billion of funding which will be directed to very large hydrogen projects, the largest that Australia will have seen to date. The support will be in the form of a production credit, which is a similar mechanism to what you may see through the US Inflation Reduction Act. That program is in an expression-of-interest phase right now. There'll be a short window of time for the industry to come to ARENA with their potential projects. We'll assess those expressions of interest later this year and provide guidance to the industry as to which projects we will support through to a full application, which will happen during the next calendar year.

Senator DAVEY: And those projects won't have to be located at a site that has previously been identified as a potential hub hydrogen zone.

Mr Miller: Yes. That's correct. It's a different set of criteria and not related to the hubs.

Senator DAVEY: So we've got two completely separate hydrogen focused programs underway, one being administered by the department, and ARENA funding private enterprise through the Hydrogen Headstart program.

Mr Miller: We've got more than two. ARENA's been working on hydrogen for about five years now. We've actually supported 46 different hydrogen projects to date with over \$300 million of funding from our baseline funding. So, yes, you are correct that the hubs and the Hydrogen Headstart program are two separate programs, but they are two large programs amongst many other activities across government and industry.

Senator DAVEY: Of the 46 different projects you've funded to date, are any actually producing green hydrogen at a commercial scale?

Mr Miller: Yes. We provided at the last estimates on notice a list of all of those projects.

Senator DAVEY: Under the coalition government, ARENA's remit was also expanded to include blue hydrogen and carbon capture and storage. My understanding is that this decision has now been reversed, is that correct?

Mr Miller: That's correct.

Senator DAVEY: Carbon capture and storage is accepted in other countries around the globe. It has been identified by the International Energy Agency that it will be virtually impossible to achieve net zero emissions by 2050 without carbon capture and storage technologies. Do you agree that it is critical in decarbonising the grid?

Senator McAllister: It's really not a question for ARENA; it's a policy question for the department. Perhaps I can say more generally that the government understands the potential significance of carbon capture and storage and we're aware of the international literature that I think you were alluding to in your question just now. Notwithstanding that, the Australian Renewable Energy Agency has a specific purpose—the clue's in the name—and we have provided a mandate to the Australian Renewable Energy Agency to enable it to make investments to progress the contribution of renewables to the Australian energy system.

Senator DAVEY: Maybe we should change the name at the same time as we expand it. Were any projects underway when the decision to reverse them was taken, and were those projects then cancelled?

Mr Miller: We had not made any investments in carbon capture and storage projects related to blue hydrogen or other forms of CCS at that time.

Senator DAVEY: Were you assessing any projects?

Mr Miller: We were informing ourselves of the opportunities if we were to make investments. We thought that there might be some avenues around soil carbon capture and some R&D activities, but we never got to the

point of actually committing funding, given that the regulations that gave us the expanded mandate were in flux at the time in the parliament, so we took a cautious approach just to inform ourselves, rather than investing.

Senator DAVEY: I'll move on to the Powering the Regions program. In the budget papers, an additional \$400 million was set aside for projects yet to be announced. Can you talk us through what areas those projects will be looking into for the Powering the Regions Fund and the \$400 million?

Senator McAllister: Mr Miller will be able to talk through those aspects of Powering the Regions that are the responsibility of ARENA.

Mr Miller: I am happy to, yes. You're correct: we have a fund called the Industrial Transformation Stream of the Powering the Regions Fund, which is nominally \$400 million of grant funding. ARENA has, over the last few months, consulted widely with industry to understand which areas of industry's decarbonisation challenge we can most help with. We have concluded that consultation and we are in the design phase right now of looking at program guidelines. That has gone through my board and we're currently consulting with the minister responsible on those guidelines. Per our act, where we might provide more than \$15 million of funding to a project in a program, we're required to have those guidelines approved by the minister, and that's the phase we're in right now.

Senator McAllister: The reason that I made my earlier comment, Senator Davey, is that there are other aspects of Powering the Regions that are being administered by the Business Grants Hub, not by ARENA.

Senator DAVEY: Yes, that's right. Those guidelines are underway and in process; have you got an expected time line for those to be released and a time line for—

Mr Miller: My colleague can talk about the time line.

Mr Kay: We would hope that they would be launched by the end of the year.

Senator DAVEY: Right. Once the guidelines are lodged—opening, review and closing—do you have an idea of that time line?

Mr Miller: The guidelines will make it clear what the dates are for the program to be open and what types of projects we are looking for.

Senator DAVEY: The \$600 million safeguard mechanism?

Senator McAllister: That is the Safeguard Transformation Stream and it is being delivered by the Business Grants Hub. Again, with apologies, it might be better to ask during the department's evidence.

Senator DAVEY: I just want to double-check the streams—\$600 million for the safeguard mechanism, \$400 million for the industrial stream and \$400 million for critical inputs to clean energy.

Senator McAllister: Yes. There is the Safeguard Transformation Stream; the Industrial Transformation Stream, which is \$400 million and administered by ARENA, as we've discussed; and then the Critical Inputs to Clean Energy Industries, and that is also administered by the Business Grants Hub.

Senator DAVEY: The entire funding allocation is for \$1.9 billion. We've just covered off \$1.4 billion; what's the remainder for?

Ms Evans: The Powering the Regions Fund still has, in addition, an allocation of funding to continue to purchase the Australian carbon credit units; the exact figure for that isn't disclosed because it's commercially sensitive and will drive what the demand might or not be, depending on how much there is. And then in addition to that there were some small allocations made—for example, some of the funding that supported the review of the ACCU markets and also an allocation made to the offshore renewables, developing an industry strategy, some of the safeguard mechanism reforms and the carbon leakage review. The final portion of the \$1.9 billion went to some of the energy measures that are also relevant to regional transformation. So that has accounted for the full \$1.9 billion of the Powering the Regions Fund.

Senator DAVEY: And the review—

CHAIR: Senator Davey, I'm going to pull you up there. We will break for lunch and ask the officials to come back after the lunch break.

Proceedings suspended from 12:59 to 14:00

CHAIR: We will resume with the Australian Renewable Energy Agency.

Senator ROBERTS: Thank you for being here today. Revisiting your support for solar on the basis that you say it's the cheapest form of electricity generation in history, can you please elaborate on what you base that on?

Mr Miller: It was the International Energy Agency that made that statement, saying, in the right conditions—not everywhere, but in the right solar conditions—solar energy is the cheapest form of energy in history. I think that's what they said.

Senator ROBERTS: And what are the right conditions?

Mr Miller: Sunshine.

Senator ROBERTS: How much?

Mr Miller: It varies. Australia has incredibly good sunshine. Obviously, parts of Europe have less—I think Germany would have about half Australia's solar insolation over the course of the year. It depends on where you are on the planet.

Senator ROBERTS: And, of course, it doesn't shine at night.

Mr Miller: Not yet.

Senator ROBERTS: So it requires firming, it requires batteries, it requires backup. On rainy days and cloudy days, it requires some other source of power, especially if you have two or three days—or more—in a row.

Mr Miller: You're correct that it requires transmission systems and that it requires firming in the form of batteries and pumped hydro, for example.

Senator ROBERTS: And it destroys a lot of land, and takes up land from agriculture, rainforests and a lot of environmental land as well.

Mr Miller: I wouldn't characterise it like that. There's plenty of land that's available for silo that doesn't have those issues that you just mentioned. In fact, many of the silo farms these days can co-exist quite comfortably with agriculture, sheep grazing and cattle, for example.

Senator ROBERTS: Why are so many people becoming upset now that the regions are being smashed with solar panels and transmission lines?

CHAIR: The

Senator McAllister: The official may find it easier to answer your question if it doesn't have quite as much emotive language in it. For example, I don't think we would accept the characterisation as you've described it. There are developments proceeding and it is important in regional communities. The government considers it extremely important that we are engaging with those communities to address concerns. You'll also see state governments thinking about how to obtain the maximum benefit for regional communities where renewable facilities are installed.

Senator ROBERTS: When I'm using that word 'smashed', I'm using words from my constituents. Constituents all the way from Victoria, New South Wales, Southern Queensland, Central Queensland and Northern Queensland are talking about lifestyles, human habitat, the natural environment and agriculture being smashed. That's why I use it. Mr Miller, correct me if I'm wrong, but I'm led to believe that your support of solar is to support a giant iron and renewable steel manufacturing capability; is that correct?

Mr Miller: If we can get solar to even lower costs than it is today then we can produce energy very cheaply and use that renewable electricity to power heavy industrial processes like green iron which will be very energy-intensive. It is energy-intensive, but it will be so when it's powered by renewable solar energy too. So, yes, that is correct.

Senator ROBERTS: So the key word is your first word: if.

Mr Miller: Excuse me?

Senator McAllister: Is that a question?

Senator ROBERTS: Yes, it is.

Senator McAllister: It sounds like a statement.

Senator ROBERTS: I'd like to know about the uncertainties. For a start, can you tell me about anywhere in the world where anyone has successfully run a continuing commercial steel mill off solar?

Mr Miller: It's an emerging technology, so you can't expect that it would exist right now. We know that it is technically possible to produce green iron from electrolysis into hydrogen and hydrogen into the reduction process for converting iron ore into green iron. There are many people in the world working on this, and we in Australia should be concerned about this and working on it too, given our stature as the largest producer of iron ore and the largest exporter of iron ore. It's a big opportunity for Australia, but it's early days. It's going to take many, many years before this is a commercial proposition.

Senator ROBERTS: My understanding is that, at the moment, green steel is very brittle and of inferior quality and not acceptable. Let me move on to the next question. It's clear that solar might be cheap at midday, when there's an oversupply, and they have to pay people to pick up the demand. The fact is that there are huge additional costs in firming, transmission and storage to make that power available when we need it at peak times. As I understand it, no-one is looking at this, but the last time AEMO did, in 2016, wind put out less than 10 per cent of its nameplate capacity at times of peak demand. That's according to the AEMO. Saying that solar is the cheapest doesn't take into account the actual cost of running a grid off it. Is it your job to think about the cost of running the entire grid using wind and solar? Do you think of the consequences to the grid?

Mr Miller: ARENA, as the renewable energy agency, is most concerned with the technical possibilities for the future. What kinds of technologies are going to be required to provide renewable energy in greater and greater shares into the electricity system and then beyond the electricity system? We are concerned primarily with the technologies. We're proving that up through many of the things we're doing, particularly around the work we're doing in storage and demand flexibility. We're obviously trying to drive down the cost of solar even further so that those bulk electrons are even cheaper. It's not ARENA's job to do system modelling or to, in any granular way, figure out the cost structures of the market. That is done by others. However, having said that, we are aware of much of the work that's being done, and we're very encouraged by the possibility of having a large percentage of our system run by renewable energy at no more costly than it is today to run the current system. Much of the modelling at an 80 to 90 per cent share of renewable energy proves that.

Senator ROBERTS: No more than today? I thought the promise from the government was less than today?

Mr Miller: I said no more than today in terms of the modelling for very high shares of renewable energy, into the 90 to 95 per cent range.

Senator ROBERTS: The No. 1 thing that's given us our standard of living and our longer lifestyles since the industrial revolution has been cheap energy, yet no-one I talk to from renewable energy seems to think it's their job. It appears to me that we're about to drive off a cliff because nobody is thinking about it. We have instances where massive solar and wind generation industrial facilities are not connected to the grid because of this rush into solar and wind.

Senator McAllister: Senator Roberts, you are incorrect that it is not anyone's job to think about how the system functions.

Senator ROBERTS: No. I didn't say that it's no-one's job. I'm pleased that we're about to hear that maybe someone is going to do it, but I've said no-one I've found.

Senator McAllister: We have spoken with you before about the Australian Energy Market Operator that regularly releases information to the market about the operation of the national electricity market, and that includes an integrated system plan, which involves describing the least-cost pathway for the development of the national electricity market. It involves releasing regular statements of opportunities, which describe for investors the likely opportunities for investments in a range of asset classes, and it also releases quarterly market updates. All of those might be documents that are of interest to you, given your interest in this area of policy.

Senator ROBERTS: Is anyone anticipating what will happen to our grid as we increase solar and wind?

Senator McAllister: The role of the Australian Energy Market Operator is to contemplate the future technology pathways for the grid and to understand both in-market design issues and any engineering issues that might arise. Again, because of your interest in this policy area, I would encourage you to engage with some of the materials that they produce.

Senator ROBERTS: Okay, I'll do that. Thank you very much.

Senator PAYMAN: I have one brief question. What has ARENA identified are the opportunities to decarbonise the alumina industry and projects like those at the Yarwun Alumina Refinery?

Mr Miller: The most informative piece of work would be the alumina road map that ARENA funded and was developed by the alumina industry, which essentially brought the major players together. The analysis showed that there are credible pathways for the alumina industry to decarbonise, whether that's through direct electrification of various parts of the process or through using hydrogen, which itself is driven by electricity but which is used as a feed stock and a fuel. In Yarwun in particular we have a project that we announced a number of months ago that's looking at hydrogen in the calcination process of that refinery. It's a trial. People are confident it will work and, if it does, that provides a good indicator to the refinery and the other five in Australia—we have six alumina refineries—for their decarbonisation pathway.

CHAIR: Senator Hughes.

Senator HUGHES: How many of these projects were behind the meter as opposed to being attached to the grid?

Mr Miller: Sorry?

Senator HUGHES: With any of these projects that you're talking about, are they operating behind the meter or are they attaching to the grid?

Mr Miller: It's a complicated question because these big facilities have both behind-the-meter energy sources and grid energy sources. Take the Yarwun refinery; there will be an electrolyser there provided by Sumitomo that will be powered by grid electricity, which will be procured through a renewable energy PPA, for example. There is on-site generation as well, which may play a role as well, so it'd be a mixture for a facility like that.

Senator HUGHES: My concern is the enormous cost of Rewiring the Nation. If a lot of the big industrial users and others start to go behind the meter with some of their renewable projects, the upkeep costs of the network are going to be pushed onto the families, which still rely on the grid.

Mr Miller: I'd say it's always going to be a balance. There's going to be behind-the-metre, where people can do it. Often you run out of space by that point, so I think we're going to find—if you take that Rio facility in Yarwun, you see the scale of decarbonising that facility in totum is going to require renewals built on the grid somewhere. They don't have enough behind-the-meter space to provide everything that they need. As we work through these trials and then into the actual production facilities, I think we will find that none of the grid infrastructure we built will be wasted.

Senator HUGHES: Thank you.

CHAIR: Thank you so much for your time today. We do appreciate it.

Clean Energy Finance Corporation

[14:12]

CHAIR: I now call officers from the Clean Energy Finance Corporation. Do you wish to make an opening statement?

Mr Learmonth: No, thank you. We're happy to proceed.

CHAIR: Excellent. Thank you very much. Senator Hughes.

Senator HUGHES: You guys have picked a great time to come; we're pretty light on at the moment. No Greens, no Independents—we might whip through!

Have there been any off-budget allocations for funding projects made to the CEFC?

Mr Learmonth: When you say 'off budget'—there was obviously the recent appropriation of the Rewiring the Nation allocation, at \$19 billion, the housing energy upgrade of a further billion dollars and \$500 million for the Powering Australia Technology Fund. They all took place over the last few months.

Senator HUGHES: Where is Rewiring the Nation all up to? What's the spending committed? What's already been spent? What remains?

Mr Learmonth: The CEFC was allocated a further \$19 billion to invest in Rewiring the Nation, as outlined in our revised investment mandate.

Senator HUGHES: What's that up to now?

Mr Learmonth: Given that that capital has really only just arrived, we have made our first investment within \$100 million, which we have advanced to the special financial vehicle as part of the New South Wales—

Senator HUGHES: Is that the Macquarie Bank one?

Mr Learmonth: No, it relates to the New South Wales Electricity Infrastructure Roadmap. The \$100 million is part of working with EnergyCo there in New South Wales to invest in projects like Central-West Orana Renewable Energy Zone in New South Wales.

Senator HUGHES: So it's \$19 billion that you've got now?

Mr Learmonth: It's about \$19 billion and, as I said, it's only been with us for a few months, and we've already completed financing our first project for \$100 million. Having said that, we have invested in the grid in the lead up to Rewiring the Nation. There was very substantial investment with Transgrid and Project EnergyConnect, at \$295 million, and Powerlink in Queensland, at \$170 million, as part of an upgrade to transmission in south-west Queensland. So there have been investments in transmission in the lead up to Rewiring the Nation; but, yes, since then \$19 billion's landed, there has only technically been one investment.

Senator HUGHES: What about the Household Energy Upgrades Fund?

Mr Learmonth: The housing energy upgrade fund is a billion-dollar appropriation. At this point, only \$70 million has been appropriated to the CEFC. We're in the process of developing that particular program, working with industry and the finance sector on exactly how we'll deliver that to ensure that the outcomes of the policy are delivered. The board of the CEFC and the minister need to agree on the final arrangements before the balance of that capital will make its way to the CEFC.

Senator HUGHES: So I understand: is that part of this green residential infrastructure? I can table here some information on Mulpha's Norwest Quarter. Are you aware of that development?

Mr Learmonth: Yes, that's a project that we have been involved with independently of the housing energy upgrade fund. That was financing that we provided to that particular Mulpha project in north-west Sydney. It is about a residential development reaching extremely high levels of sustainability and energy efficiency.

Senator HUGHES: How does it do that? You're obviously using all electric and are gas free.

Mr Learmonth: That's right.

Senator HUGHES: Is it solar panels and battery storage? How are those sorts of things being achieved?

Mr Learmonth: Without going into the precise details of the project, it's one where we worked with Mulpha around how, yes, there would be no gas in these new apartment blocks. There would be the use of renewable energy by residents. It would be, as I say, highly efficient. In fact, I think it has a seven-star rating from NATHERS, which is really quite exceptional. So we provided finance to help that project be built in line with the ambitions that Mulpha had for the Norwest Quarter project.

Senator HUGHES: Are they fundamentally powering themselves, or are they still attached to the grid?

Mr Learmonth: I believe they are still connected to the grid.

Senator HUGHES: But they are less reliant.

Mr Learmonth: Yes—without the use of any gas cooking or gas heating, for example.

Senator HUGHES: If someone were looking to move in this direction—would you say these are higher-quality appliances, building materials and those sorts of things that need to be put into these developments to achieve these sorts of energy reductions?

Mr Learmonth: In looking at how we're improving the energy efficiency of homes throughout Australia—and that's obviously the key objective of the housing energy upgrade fund—we are looking across a whole raft of different sectors of residential Australia. There are obviously apartment buildings, the higher-end and medium-level apartments buildings. There are single dwellings as well. There's a whole spectrum of different sorts of homes that we're looking to address. Importantly, part of the objective of the Housing Energy Upgrades Fund is to also look at middle- and low-income homes and how we can improve energy efficiency in those homes and reduce power bills. So it's very broad. It's certainly not targeted to high-end apartments.

Senator HUGHES: I guess I'm just more conscious of the fact that we are seeing an increase in construction costs already. Are these standards going to impose a higher construction cost in general?

Mr Learmonth: Part of what we're doing, and have been for many years, is looking at the way apartments and homes have been built, but also how they might be upgraded, with appliances replaced, solar panels introduced, batteries, energy efficient appliances and so on, to reduce the cost of running those homes. The idea is to make those homes not only more energy efficient but also cheaper to live in.

Senator HUGHES: In the long run. Possibly higher upfront cost and then cheaper energy bills going forward?

Senator McAllister: Senator Hughes, I think you may be misunderstanding the role that CEFC is playing. I understand the broader policy interest that your question suggests, but the CEFC is playing a rather particular role, which is financing particular kinds of interventions that people can voluntarily engage in. You were asking about building standards. That's a different part of—

Senator HUGHES: Not so much building standards as it is whether or not these are additional costs, and the idea behind it is that there will higher costs upfront but not at the back end. Anyway, I'm happy to leave it there.

CHAIR: Senator Davey, do you have any questions?

Senator DAVEY: I want to double-check: the CEFC is a finance corporation. They're not grants per se; you get a return on investment?

Mr Learmonth: You do. That's right.

Senator DAVEY: How are projects evaluated with that return-on-investment lens? Are you seeking just to recover costs, or are you seeking to charge interest?

Mr Learmonth: Going back a step: we invest in a very broad range of different activities. We're in project finance, wind, solar and batteries. Sometimes we're an equity investor in funds—in, say, an agriculture funds that's looking at reducing emissions. Each project or potential investment opportunity is assessed on its merits, and we work out what the CEFC's capital would need to do to attract third-party capital to bring forward a particular project or accelerate its delivery, for example. And so the return expectations or the interest rate we might provide if it is a loan—they're not all loans; about 75 per cent of what we've done has been debt, but 25 per cent has been equity. We'd assess the project and see what sort of capital is required and what would be the appropriate interest rate, if it were a loan, for example. Something that has mortgage collateral—it might be something relatively cheap or on a low interest rate loan, something quite risky, some subordinated debt to unlock a new project—will have a higher expectation. So it's matched.

The government have given us a broad portfolio target in the non-specified funds, what we call our general portfolio, and that is two to three per cent above the five-year government bond rate. We target that in our general portfolio. To date, since inception, we are tracking at about that rate. In summary, yes, we get direction through our investment mandate as to what sort of returns we should seek out, and we keep that very much in mind. But it is worth reinforcing what I said at the start: every project is invested in on its merit, depending on the financial instrument—is it debt, is it equity, is it risky or is it maybe more secured and therefore lower expectations of interest?

Senator DAVEY: When it comes to, for example, transmission lines, however, your investment is not part of the Rewiring the Nation program?

Mr Learmonth: It will be.

Senator DAVEY: It will?

Mr Learmonth: Very much so. That \$19 billion is all about Rewiring the Nation, so investing in priority projects, these transmission projects, around the country. As I mentioned, we had our first loan in New South Wales, of \$100 million. Some will be very large, in some cases billions. They are things like HumeLink, Marinus Link and VNI West. That is what that capital is earmarked for.

Senator DAVEY: So when it comes to Humelink and BNI west, which have been announced and that we spoke about earlier, Humelink is \$4.7 billion and the BNI West is around 3.5. What portion of that is funding through the CEFC?

Mr Learmonth: These things all depend a bit on the project. We expect something like the Marinus Link, which has Tasmania, Victoria and the Commonwealth as shareholders, to provide something like 80 per cent of capital there, so a very large amount. For something like Humelink, which is a project being undertaken by Transgrid, we may only provide a far reduced portion, something like 20 per cent, because it will also attract senior debt and it will provide its own equity through its shareholders. Each of these different Rewiring the Nation projects have their own structures, different sorts of borrowers, different characteristics, so our involvement will be flexible depending on what is required.

Senator DAVEY: And you will get paid back for your investment over the life of the project?

Mr Learmonth: Over the life of the financing. In some cases, transmission has an effective life of 50 years or so. In some case we may provide finance that may only be for 10 years, for example. In other cases, it may be much longer, 20 or 30 years, so, yes, over the life of the financing.

Senator DAVEY: A quick change of tack, I note that the CEFC has provided \$100 million to Macquarie asset management targets to lower emissions across critical infrastructure. To a layman, which I am, Macquarie is also a financing corporation in its own right, so why is a bank lending to a bank? Could you explain that particular investment to us and what value it will add, what it is for.

Mr Learmonth: Just to be clear are you referring to Macquarie Australia infrastructure trust?

Senator DAVEY: 'Macquarie asset management' is what it says, I believe, on your website.

Mr Learmonth: It may well be electric vehicle financing that we provided. I will just check that. If it is not the infrastructure—

Senator DAVEY: It does not mention anything about that.

Mr Learmonth: Does it mention what sorts of underlying assets?

Senator DAVEY: It says, 'The Macquarie asset management Australian infrastructure platform is pursuing emissions reductions and improved energy efficiency across its Australian infrastructure platform.'

Mr Learmonth: Yes, that will be Macquarie Australian infrastructure trust. We work with many private sector players in helping decarbonise the economy and we work across many sectors including infrastructure. A leading player like Macquarie here in Australia has investments in infrastructure assets, as you would expect, and is looking to make further investments in infrastructure. We worked with Macquarie on this particular fund, where we undertook to make an investment in its domestic infrastructure fund if it would then work with the assets and drive emissions reductions through those particular assets. It can change the way they are configured, the way they are operated and so on. Infrastructure accounts for substantial emissions in the economy. We were an investor in an infrastructure fund and we have done that with other funds, for example QIC and IFN.

So, yes, Macquarie has the capability to raise funds as do other banks—CBA, ANZ, all these other people—but it is also partners for someone like the CEFC to use its capital alongside ours and change the way that they are making investments to help decarbonise the country..

Senator DAVEY: Do you charge fees on those investments?

Mr Learmonth: As an investor in a fund like that, you have an expectation of a commercial return alongside all other investors—superannuation funds and others—so, yes, we would be expecting a target return. I don't know what that particular fund's publicly stated return figure would be but it would be in excess of 10 per cent.

Senator DAVEY: I think that's it.

Senator McDONALD: Good afternoon, Mr Learmonth. I am new to your space, so I will ask some questions and feel free to give me the 101, please. Specifically, I want to ask you about funding for biofuel for biomass projects. Is that something the CEFC are supporting as part of the alternative fuels investment platform?

Mr Learmonth: Yes, we are working in that space more broadly, in biofuels and alternative fuels, but it's been a challenging space. We have done some transactions over the years in biofuels. As I say, the economics of it are challenging but we continue to work actively in that area.

Senator McDONALD: I have a northern Australia project proponent who received a response from the CEFC without asking any questions of his project, without wanting to see the signed-off agreements, saying it was a finance play. How does that fit within how we are encouraging alternative fuels to come to the market?

Mr Learmonth: It is difficult to comment on that particular project not knowing the details of it. I would be happy to follow up on the response that was received and make sure that was appropriate.

Senator McDONALD: I would appreciate that because the proponents in this space are not well versed with dealing with government. If that is the flat answer they get first, they come back to me and say, 'Well, the government is not actually supporting these projects. How do we move forward?' You are the expert in this space, not me. My understanding is the CEFC was established to finance emerging technologies and provide the de-risking for financing those kinds of projects. Is that correct?

Mr Learmonth: The original objective of the CEFC Act was to facilitate the flow of funds into the clean energy sector, so the concept of crowding in private funding capital is fundamental to the DNA of the CEFC. Since we have begun, for every dollar we put out the door there is \$2.80 of private sector capital, so it is very much about filling market gaps, investing in new technologies that we think are going to help decarbonise the Australian economy. All of those are features of the CEFC.

Senator McDONALD: Is the CEFC still taking and financing those kinds of solar and wind projects? I'm making the assumption they are no longer new and emerging technologies.

Mr Learmonth: Well, yes, that's true; they are proven technologies, certainly. But Australia has a big challenge on its hands getting to 82 per cent renewables by 2030. When we look out there at the market conditions for wind and solar with inflation, higher interest rates, labour shortages, and concerns about planning and social licence, using our capital in an effective way to help support the wind and solar sector is still very important. It's not the case that every project is easily banked by the private sector. They are all facing challenges. The use of the CEFC's capital, which can be flexible, in some cases can be concessional, longer-dated than the banks, can take positions in the capital structure that other people can't, all helps to stimulate investment in renewables to help us get to 82 per cent.

Senator McDONALD: I have listened to everything you've said. My experience is that I've got quite a conga line of people who are willing to invest in wind and solar projects, so is it still appropriate that the CEFC would be using its funds to be crowding out private investment?

Mr Learmonth: We're certainly very conscious of ever being in that position to crowd out banks or investors and very sensitive to it. One of the challenges is that there are good projects out there that may not have contracting for their electricity. They may not have power purchase agreements. They're wanting to build out and they have to take their chances on selling their power into the merchant market—the power markets—while they, over time, seek contracting. A lot of banks aren't prepared to lend into those sorts of projects. A lot of investors are sensitive about investing in them, but we would happily support those. Then, when the contracting takes place, they will attract finance and we may step out on the refinancing. There has been a huge turnover of our capital in the renewable energy sector around wind and solar. We're constantly being refinanced out. As I say, we're trying to participate only in projects where we think we're making a difference to help, taking that first-loss position, taking a longer dated loan to crowd in, certainly not crowd out, other investors.

Senator McDONALD: You've possibly been asked to table this information already. If you have, I apologise; I'll go and look for it. What I'm looking for is, say, the last 12 months and your pipeline for the next 12 months of projects that have been approved. I'm not asking for commercial-in-confidence projects you're considering. I'm trying to ascertain where that movement is from what is probably more recognised technology, because I am very concerned that the first response to this biomass project was immediate and was that it wouldn't be considered. I understand now that there's a meeting going ahead with the alternative fuels investment platform staff, but there shouldn't be a gateway that's shut. It should be, I would've thought, a more open portfolio. So, on notice, if you haven't already provided it, could you provide the analysis of projects approved for funding in the last 12 months and the next 12 months? I'm trying to understand at what point we're pivoting into projects that would receive funding from the private market.

Mr Powell: In relation to the last 12 months, they have already been published. They're public on our website. Every quarter we publish a list of all the investments that we've contractually committed to that quarter. So, if you look at the last four of those, that will tell you the whole 12 months.

Senator McDONALD: You might send me a link to that?

Mr Powell: We can send you a link to that, absolutely.

Senator McDONALD: That would be terrific. Then what about the next 12 months?

Mr Learmonth: We can give you some high-level information about our pipeline and how it looks over the next 12 months. Obviously, a lot of those transactions are commercial-in-confidence, but as I think about what is out there, there's a wide variety of different sorts of transactions, different technologies and different sectors. There are some big transmission projects. There are some battery deals. Increasingly, of course, we need to invest in storage to ensure that we've got a safe and reliable grid. There are some wind and solar projects, but, equally, there are investments in the ag sector, alternative fuels and hydrogen. So, yes, I'm happy to give you some information on that.

Senator McDONALD: What I'm seeking to understand is the different sectors. Finally—Chair, thank you for your patience—I want to ask: if there are cost blowouts on projects, which we know are happening everywhere, how does CEFC deal with those?

Mr Learmonth: Once again, there's a variety of different sorts of projects with different contracting structures. The ideal one is where there's a firm EPC contract so that the entity actually building the project takes responsibility for overruns. They are increasingly less common in the inflationary environment that we've got. If we were a lender in projects where the borrower is exposed to cost overruns, in many cases it would be the responsibility of the equity provider—the actual project sponsor. It's not the lender's responsibility. In other cases in the regulated asset world, which applies to transmission, there are regulatory rules around what happens when there are overruns in transmission projects. Some of the responsibility of the construction company or some part of the overrun can be included in the regulated asset base. Again, it depends upon what sort of project you are working, but we're very careful when we are evaluating these projects, particularly in the environment that we're in, so that we know exactly who's responsible for overruns and that it's not putting our investment at risk.

Senator McDONALD: Just back to that request for the information on notice for the future approvals—I'm also seeking to understand the difference between baseload and firming energy solutions, as opposed to variable energy. If you could keep that in mind—that's the sort of information I'm seeking to understand.

Mr Learmonth: I'm happy to do that.

Senator McDONALD: Thank you.

CHAIR: Senator Payman.

Senator PAYMAN: Thank you for your presence today. The revised investment mandate states:

... the provision of local employment opportunities in the delivery of clean energy technologies is a priority for the Australian government ...

What local employment opportunities are being generated by the CEFC's projects?

Mr Learmonth: Our projects, particularly our renewable energy and battery storage projects and the big transmission deals that are in our pipeline, are largely being undertaken in the regions, and they will create considerable employment opportunities in those parts of the country. That's obviously terrific, and we're very conscious about how important it is that there is a stimulus of employment as a result of this potential investment in the regions.

Senator PAYMAN: Thank you.

CHAIR: Senator Rice.

Senator RICE: Following negotiations between the government and the Greens, CEFC was allocated a billion dollars to your account in this year's budget for electrification and energy performance. What form will this program take—what will you spend the money on?

Mr Learmonth: Just to be clear, the billion-dollar allocation we are to receive is the Household Energy Upgrades Fund. We're working closely with the assistant minister for climate change on delivering that particular policy objective. It's directed at improving the energy efficiency and sustainability of homes throughout the country. We're currently going through a consultation process with the finance sector, because we'll work with partners to do that. The end borrowers of this concessional finance—these loans will be relatively small compared to our many billions, so we need to work with banks, non-bank lenders and other players in the finance sector who are best suited to reaching people who can then upgrade their homes to make them more energy-efficient. We're also working with industry, who are the people providing the actual equipment—the appliances, the LED lighting and the electrification work they'll need to do to take gas out of homes and put electric appliances in there. We are targeting a broad range of geographies and different residential sectors to ensure and improve energy efficiency in the home.

Senator RICE: Who do you see your partners are going to be, in terms of rolling it out? You've talked about the banks. Will the energy retailers or—

Mr Learmonth: Quite possibility.

Senator RICE: How else? Will there be other mechanisms for people to access the program?

Mr Learmonth: There are banks, of course, and other non-bank lenders who have origination capabilities because they're already lending to people for a mortgage or they might be a credit card provider or have a lending relationship with them. But also, yes, we could work with energy retailers, and we are in conversation with those players to see how they could provide an introduction to the appropriate equipment or the sort of renovation they might need or even a repayment mechanism that ties in with their electricity bill.

Senator RICE: Are there other agencies or areas? Local government springs to mind.

Mr Learmonth: Quite possibly. I've already been meeting with councils around the country who are, of course, very interested in this initiative. We are talking to councils, certainly, as another channel to potentially provide.

Senator RICE: Do you see the CEFC itself actually reaching out to householders directly?

Mr Learmonth: It's unlikely, just given that it's going to be a high-volume, smaller individual ticket, if you like.

Senator RICE: In terms of working out how this program's going to work, are you looking at prioritising mechanisms and measures that would reduce the upfront costs for householders, given the cost-of-living pressures that households are under at the moment?

Mr Learmonth: Yes. We are very much focused on that. One, the finance will be below-market finance, so we're wanting to use concessionality to provide low-cost finance through lower interest rates to households. But we're also helping households make investments, upgrades and renovations to their homes. The cost will be less because the cost of borrowing will be lower, but they'll also be reducing their power bills. So, ideally, over time, they'll be able to use those savings to repay the loan.

Senator RICE: That's over time, and we know that a huge barrier is upfront costs for low-income households that just haven't got the money to invest. So I'm interested in the mechanisms to reduce those upfront costs.

Senator McAllister: Senator Rice, we are asking the CEFC to progress the detailed arrangements for partnerships with banks, non-bank lenders or other entities. But the overall program design recognises two things.

One is that, for some households, connecting them with technology and finance can provide the opportunity for them to make an investment that they might not otherwise have made and then pay that off over time, and that's principally the work that we've asked the CEFC to consider. We recognise that, for some households, additional debt is not something that they would contemplate. For very low income households, that is unlikely to be something they wish to pursue. They may, but it's not likely. So the \$300 million social housing energy efficiency program is an additional part of the package which is designed to reach into that cohort of people, and we are working with the states and territories on opportunities to improve social housing.

Senator RICE: Is that specifically just for people who are in social and community housing?

Senator McAllister: That's correct.

Senator RICE: Right. As we know, so many low-income people who are in the private rental market are paying astronomical amounts of rent and, for those very reasons, are not capable of taking on extra debt. Are there mechanisms that you are going to be using to reach that cohort of people?

Senator McAllister: We're trying to bring together a package that will reach as far into the Australian community as we can. We have certainly asked the CEFC to consider opportunities to engage with renters in particular, because, aside from income, there are some additional barriers—

Senator RICE: They don't own the properties to benefit from the investments over time.

Mr Learmonth: Yes.

Senator McAllister: That's right. More generally, we'd like this particular set of programs to do at least two additional things. One is to create familiarity in the finance sector with the way that lending of this kind can work, because, in truth, there are many households in Australia. They are not all going to be financed by public sector financing, but we do think that there is space for the finance sector to support families through some of the renovations that will make their homes more comfortable and more affordable to live in. Secondly, we hope that this contributes to an ecosystem of service providers who can provide the practical and technical support that's necessary to make a house more draft resistant or to install a particular kind of energy-saving technology. There are millions of homes that were built before minimum performance standards were established for housing.

Senator RICE: There is a lot that can be done. There's no doubt about that.

Senator McAllister: There's a lot that can be done, and an ecosystem of providers to support households in those activities is one of the other outcomes that we're hoping for from the investment being made through this budget measure.

Senator RICE: Mr Learmonth, you mentioned, in your first answer, about reducing gas use. When do you expect this program will start reducing gas use?

Mr Learmonth: As I said, the program is in consultation to work out just exactly how it's going to be delivered and with whom. We're hoping that the program will be up financing in the upcoming calendar year—so early 2024. As for when the first electrification of an otherwise gas-using home takes place, I can only hazard a guess. We would hope that it'd be early on in the implementation of the program.

Senator RICE: So is it a specific priority, in addition to energy efficiency, to be shifting from gas to electrification?

Mr Learmonth: We are very focused on that.

Senator RICE: Given the expected gas shortfalls in the east coast gas market from 2027, are you particularly targeting the east coast gas market?

Mr Learmonth: We're leaving the dynamics of the gas market as something quite separate to what we're doing. We're really just focused on getting affordable finance out to Australian homes to make them more energy efficient.

Senator RICE: Do you have any sense of what proportion of the program is dedicated to getting households off gas, reducing gas demand, compared with energy efficiency measures?

Mr Learmonth: Not at this stage—too early to say.

Senator McAllister: One of the overarching principles is giving households choices so that people can make the best choices for themselves and their families about the kinds of technologies they think would suit them in reducing their overall energy consumption and, consequently, taking the pressure off their bills.

Senator RICE: Thank you.

Senator VAN: I'll follow on from Senator McDonald's questions on biofuels, and, again, thank you for appearing today. I may need to table this report. Are you familiar with it?

Mr Learmonth: I haven't seen it.

Senator VAN: It's the one that the CEFC did in conjunction with ARENA.

Senator McAllister: We might all need our glasses, Senator Van! Read us the title, would you?

Senator VAN: It's titled *Biofuels and transport: an Australian opportunity*. In it you talk about benefits beyond biofuel. You talk about the opportunity from both an economic and emissions reduction point of view, and then, most helpfully for those of us who study and look at national security, you talk about the Australia's overreliance in having to import all its liquid fuels by 2030. Given that's such a driver for Australia's national security, is there any imperative or direction given to the CEFC by the government to relook at biofuels as a way of not only reducing emissions but also ensuring Australia's fuel security and therefore national security?

Mr Learmonth: Through the act and the most recent investment mandate, we have broad directions from the government, obviously, to abate emissions. More recently, our act was amended to deliver the government's policy of 43 per cent reduction by 2030 and net zero by 2050. Again, we invest right across a range of sectors including biofuels, other forms of alternative fuel, green hydrogen and waste-to-energy projects—a whole raft of different projects—to try and improve the economics of those and also decarbonise certain sectors. We don't have an express direction around energy security in that sense, because we're much more focused on carbon abatement and the delivery of the decarbonisation of sectors like manufacturing and industry. That's the way that we're heading.

Senator VAN: If you are focusing more on abatement than, say, fuel security, don't biofuels do both at the same time?

Mr Learmonth: I'm sure it does, and it's the same with energy security more broadly. So, yes, that's a positive externality of it, certainly.

Senator VAN: In terms of offtake agreements for methanol or ethanol, whatever it's going to be, there is already a sophisticated marketplace for those offtakes, making your investments pretty safe, I would have thought, once the technology is proven up. If you're looking to help companies scale up into production, you have immediate uptakes—the transport sector, cars sitting in garages, those of us who don't yet have an EV, the Army and all of its trucks and vehicles that it runs on, Navy shipping and airlines that invest heavily in safe aviation fuel. It seems to me some low-hanging fruit, given that, as you say in your report, Australia has a natural abundance of biomass et cetera. Would it not be something that you would be looking at?

Mr Learmonth: And we are, certainly, Senator, very much so. As an example, we've financed hydrogen trucks in North Queensland with Arc Energy Group. We are looking at all those sorts of projects. They have been challenged by the economics of it and how they compete with the incumbent fossil fuel alternatives.

Senator VAN: But that's a key point, where your mandate is to bring down costs by helping industries scale up from test bench or lab bench to scale. There is a far more ready marketplace for biofuels than there is for hydrogen, for example. Just the infrastructure isn't there, whereas the infrastructure for biofuels can pretty much overtake or replace fossil fuels. It seems to me to be a very good opportunity for a greater form of investment in this space and to assist the country to abate carbon and reinforce our national security.

Mr Learmonth: Yes. As flagged with Senator McDonald, we have a dedicated alternative fuels team. They're looking at all these sorts of things as well. Hydrogen is included in that, but, yes, biofuels and sustainable aviation fuels. So we will continue to do work and look at good projects. All our projects, once committed, we go public on, so, hopefully, you'll be reading about some of them in the not-too-distant future.

Senator VAN: Excellent. If the minister was so minded, I wouldn't mind a briefing on some of those.

Mr Learmonth: I'm very happy to do that.

Senator VAN: Thank you very much.

Senator RICE: You recently said that around \$120 billion of cutbacks is needed to meet the 2030 renewables target.

Mr Learmonth: Yes.

Senator RICE: We have the Rewiring the Nation program, which I think is estimated at \$20 billion, and your general credit account of \$11 billion. How much of this \$120 billion do you expect the CEFC to be able to directly invest or leverage?

Mr Learmonth: The \$120-billion estimate covers storage capability, grid scale, utility scale, generation and storage. So it's certainly covering a broad range of activities. We've got \$19 billion, of course, related to the

transmission side of things. That's part of what it will be. I think we estimated that the transmission cost is something like \$33 billion—I'll just check that. So that's the capital cost of major grid projects in the NEM.

Senator RICE: Where is that \$33 billion going to come from?

Mr Learmonth: As I said, we've got \$19 billion. The balance will, of course, come from the private sector and potentially some state governments as well. Remember that a lot of transmission projects, once they become a regulated asset, are quite financeable by the private sector. Transmission across Australia is partly still owned by the states, and it's only privatised in some states. We've got \$19 billion for that contribution. The rest, as I said, will be private sector and state governments.

Senator RICE: Are you confident that the rest is going to be provided by the private sector and the states?

Mr Learmonth: I'm quietly confident that that will happen. There's a lot of private sector capital looking to invest in large regulated assets where they can. Yes, I think—

Senator RICE: So that's \$33 billion, but you said you had \$120 billion. So what's the \$87 billion—

Mr Learmonth: The balance, as I said, is around battery storage, grid-scale solar and wind, and solar rooftop PV, so that will all come from different participants and players—private sector. For those sorts of activities, that will come out of our general portfolio. We've got \$10 billion to do that. Currently, we've got just under \$6 billion of that out the door, so it's constantly being recycled. We've got some billions to contribute. But, again, what we're trying to do is use that to unlock the private sector. For example, in a large-scale wind project that might also have a battery on site, we might provide only 10 per cent of the capital cost there because that will allow senior lenders to come in from the private sector and it will also provide some comfort for the actual equity investment from the sponsors. So we're leveraging our capital.

Senator RICE: Again, are you confident with that leveraging of your capital—that the total of \$87 billion will end up being spent to meet the requirements that are needed in order to make the transmission that's required—and of the urgency of that given the climate crisis?

Mr Learmonth: Yes, I think it all comes back to that. Getting to 82 per cent is the big target, the light on the hill, that we're all working towards.

Senator RICE: And we need to do more.

Mr Learmonth: We do. I have said that the CEFC needs to put its nose to the wheel, help with investment and particularly get wind, solar and storage built out alongside transmission. But it's not just our capital; it is the private sector. So it's a big challenge, but we're up for the challenge.

Senator RICE: It's a big challenge. Are the current levels of investment going to meet that challenge, or do you think more needs to be done to meet that 82 per cent target?

Mr Learmonth: It is a challenge. The current investment run rate into utility-scale renewables hasn't been quite sufficient—certainly not in the last year—so we do need to pick up that pace.

Senator RICE: What's the role of the CEFC in helping to pick up that pace?

Mr Learmonth: It's to unlock the private sector investment that's needed to—

Senator RICE: We didn't have enough investment in the last year. Clearly that's making the challenge even more difficult in the years ahead. How confident are you that investment is going to pick up and that, in fact, the contribution of the CEFC is going to meet those challenges?

Senator McAllister: Senator Rice, you are veering close to asking Mr Learmonth for opinions about government policy, which—

Senator RICE: I'm interested to know what the program—

CHAIR: Please don't speak over the minister. We will all talk one at a time.

Senator McAllister: Of course the CEFC engages in market analysis, and Mr Learmonth should certainly share some of that analysis with the committee, but he is little constrained in his capacity to assess government policy. We had a opportunity this morning to talk with the departmental officials who are responsible for the policy settings around the energy sector.

Senator RICE: Are there programs, additional leverage or additional funding that CEFC is going to be able to roll out in future years to ensure that the slowdown that we had last year isn't going to continue?

Mr Learmonth: Anything additional to what we currently have is up to the government. We have what we have today, which is a very significant amount of capital across a range of different sectors, from Rewiring the Nation, the housing energy upgrades and, as we outlined, our general portfolio, which has a very broad

investment capability. We only operate off what we have today and, yes, future initiatives and policies will be up to the government?

Senator RICE: With the slowdown in the last year, how much of the cause of that was the limitation of CEFC leverage funding? Do you think there were other factors that meant the full potential of the CEFC leverage wasn't able to be realised?

Mr Learmonth: I think it's well documented there were headwinds in the buildout of renewables over the last 12 months: the inflationary environment, planning challenges, the cost of debt and labour shortages. Those sorts of things have been challenges.

Mr Every: There was also that the sheer number of sites which are required to build out the solar and wind capacity that Australia needs to turn renewable is currently grid constrained. A major element is the actual building out of the grid to these places with the best resources. That's what the Rewiring the Nation program should unlock. Then the other policy mechanisms which are around should support the rollout, but you need the line to go out there first.

Senator RICE: Is that being constrained by the amount of funding, or are there other constraints on that transmission through Rewiring the Nation?

Mr Every: That's probably historical and based on how the way the grid was traditionally built out was around large centralised coal fired generation, reasonably close to mine mouth and transporting electrons to the city. In the future, we are looking for different sites. Some can be old coal-fired power stations, but there can be other sites with better renewables resources. We need to get the line out there. But it's been well documented that the grid has been under quite severe capacity constraint for quite a long time.

Probably the other component is the need to interconnect between NEM regions and make sure that, if we do have a surplus of electricity in one jurisdiction, we can send it over the state border into the other jurisdiction and relieve them of some of the high spot prices.

CHAIR: We are over the time. If there's anything that you can truncate, shorten or put into questions on notice, we'd all be deeply grateful.

Senator RICE: Thank you. I have one final question then. In terms of the headwinds facing the rollout of renewables, how much of that was constrains in the last year—or was it other factors? If it was grid constraints, is there anything more that the CEFC can do to overcome those and get that rollout happening more quickly and more effectively?

Mr Learmonth: We're doing everything we can on the grid side. Yes, the historic grid constraints have been a challenge across the NEM as renewable energy has been built out on, as we've heard from my colleague, a grid that wasn't really designed for distributed energy generation. There have been things like marginal loss factors and projects having to be constrained. Those things have been a challenge. Everyone knows what the issues are, and we and the rest of the energy ecosystem are all working to address them.

Senator RICE: Perhaps you could take notice specifically what you are doing to address those constraints that will mean that things are going to improve in the future.

Mr Learmonth: I'm happy to do that.

Senator McAllister: We might also see if the department might provide a response to that. From the government's perspective, the financing piece is very important. It's why we have provided the money through Rewiring the Nation: so there is a pool of finance to support the buildout of transmission and concessional finance so that the impacts on consumers are less than they might be. But there are a range of other things that need to be repaired in our National Energy Market that had been left unattended for a very long time by the previous government. I won't run through them now, because the chair has asked us to think about the time, but there's quite a long list of things which are quite separate from the finance that are being done to ensure that the path towards 82 per cent remains open to us. We'll provide that to you.

Senator RICE: I'd be very happy to hear from the department as well.

Senator McAllister: Thank you.

CHAIR: Thank you very much for your time today. I release you from your obligations here.

Climate Change Authority

[15:11]

CHAIR: I will now call the Climate Change Authority to come to the table. Welcome, Mr Archer, Chief Executive Officer. Would you like to make an opening statement?

Mr Archer: I'm happy for the committee to move straight to questions.

CHAIR: Fantastic. If you did have an opening statement, we'd be delighted to receive it and table it accordingly. Senator Davey.

Senator DAVEY: I want to ask a few questions about your 2035 targets and modelling if that's okay. Specifically, when you're doing your modelling, what are the key inputs that are relied on and what information are you looking at to come up with our targets?

Mr Archer: Yes, we are undertaking some modelling as part of preparing our advice to the government on its 2035 targets under the Paris Agreement. We have engaged the CSIRO and its whole-of-economy modelling capacity as well as some of its sectoral modelling capacity to assist us with that work. We don't have our own in-house modelling capability. There are a range of important assumptions that need to be made to outline scenarios, which will help inform our advice on what the implications of certain targets might be.

First and foremost, you start with some scenarios and assumptions around what's happening generally in the rest of the world. That's important because Australia is a small, open economy. It's very much impacted by trends that are happening in the rest of the world in terms of how fast globally we are moving to reduce emissions and what the implications of that are for things like the demand and supply of fossil fuels, for other goods and services and for flows of capital around the world. So you need some idea about the global trends, as they might impact on the Australian economy.

Then, within Australia itself, you're looking at, again, what might be the different sorts of emissions profiles associated with adopting a particular target, and what might be the different assumptions that you have around a range of technologies that might be deployed to reduce emissions over time. All of that goes into the melting pot, which is the model, which will then give you information about what might happen in terms of output, employment and other factors in the economy over time.

Senator DAVEY: Models are entirely dependent on the inputs. So one of the questions I am asking is: with the 2035 models that you're using to evaluate the nationally determined contribution, the NDC, where are we building it from? Are we building it from the 2030 target? How flexible is it? Are we using real-time data, because we know where we are today, or are we actually looking at where we want to be in 2030, which we might not achieve—and when you listen to some experts, they are quite clear that we might be a long way off achieving that. Where are we starting? Where are the foundations for that 2035 target?

Mr Archer: I'll have an initial attempt at answering that question, and then I might invite Dr Searson to assist us. We are starting from where we are today in terms of Australia's emissions and the structure of our economy, and then we're looking at different scenarios for how emissions might reduce over time. It's certainly the case that one of the core scenarios we are considering is achieving the government's emissions reduction targets for both 2030 and net zero by 2050, and we will look at what the modelling tells us about achieving those outcomes. But we will also consider other scenarios to understand what the implications might be for going faster or possibly not achieving the 2030 target.

Senator DAVEY: I note that, as part of the work you're doing towards the 2035 target, you went out to public consultation with, effectively, a survey of 31 questions, including, 'What do you think Australia's target should be?' When we have got supposed experts like the CSIRO, the Productivity Commission and Treasury, how much weight are you putting on that public survey? Is it just a box-ticking exercise? When an individual like me fills it out, how much weight are you putting on the results of that survey process?

Mr Archer: We are required to undertake public consultation as part of this review. The modelling component, while it is only one component of the work that we are doing, is a very important component, so we think it is important that we undertake public consultation on that. The modelling consultation exercise is perhaps a little bit more niche in terms of the target audience, but the consultation paper was certainly there for anyone interested in providing a response to it. We are not the first organisation to attempt this kind of modelling, so we want to understand what others have done and what insights they might have that can assist us. It's all part of the mix, and it's a bit hard to put a percentage on how much weight we give this submission or that submission or the consultation exercise as a whole, but it certainly has been a valuable exercise for us in terms of providing inputs to our decision-making processes.

Senator DAVEY: Do you believe you provided enough context around the questions so that people could actually participate in and add value to the process, rather than potentially opening the doors to some less informed input?

Ms Murray: If I could just add to Mr Archer's answer to the last question and help answer yours, we published an issues paper back in May that had questions around what sorts of targets and what level of target the

authority should consider for Australia for 2035. That report was seeking input into four projects that we have running at the same time, and the objective there was to try and streamline submissions from people from a broad background to try and make it a bit easier for people to make submissions. That was for input into our annual progress report; targets advice for the nationally determined contribution; the NGERs review, the National Greenhouse and Energy Reporting Scheme; and the Australian Carbon Credit Units scheme review all at once. So we've done it at that quite open level, all in consultation.

We've also done some more targeted consultation on the detail, including one on the economic modelling, and that really goes into the more detailed expert questions. That paper was released a few months later. It goes into more detail. It provides a lot more of the context around how we're approaching the modelling and asks expert questions on that front to add to it as well. In addition to those two consultation papers related to the modelling, there's some further work going on and further consultation to get input from a few different perspectives on what the target could be, should be and why. We're really interested in hearing more about how Australia could meet the ambitious targets that we're hearing people are looking for—because we're working towards something that's both ambitious and achievable—and getting more information and more ideas about what the barriers are, what would make it more achievable and what the government could do to help streamline it. I think that is a valuable contribution from different groups.

Senator DAVEY: You talked about economic modelling. Mr Archer, you also talked earlier about how you rely a lot on CSIRO modelling. We know the CSIRO's modelling for the 2030 targets is treating all transmission infrastructure costs as sunk costs and there are differing opinions about whether that should be sunk or factored into the economic modelling. Does that affect the types of modelling that you're doing for the NDC targets for the 2035 targets?

Senator McAllister: We have had some discussion about this question of the CSIRO's treatment of sunk costs. I think you're talking about the GenCost report, which seeks to establish the levelised cost of energy for different technologies from 2030 onwards. I only say that because it's intended to answer a different question to what the target should be at a certain point in time. But I'll let Mr Archer speak to you about the approach that the authority is taking in relation to their modelling.

Senator DAVEY: I appreciate that, Minister, but, when we're talking about what the targets are and what the cost of achieving those targets is, I would hope that the government is comparing like for like and not using this set of figures for this set of modelling and that set of figures for a different set of modelling. I hope we are actually looking at the same things and looking at the actual cost of achieving the targets and factoring that in.

Mr Archer: Our general proposition is that we're seeking to work closely with all government departments that are involved in economic modelling as it relates to climate change to see if we can achieve as much consistency as possible so that we can get the most out of the various exercises that we're undertaking. The GenCost report is certainly something that we're considering as we're formulating the assumptions that we're making for our modelling exercise. It ultimately is the authority that will sign off on the assumptions that we use in our modelling. I'm not sure, Dr Searson, if there's anything further to add on the nature of the transmission costs specifically in terms of how we're approaching them.

Dr Searson: No. I don't think so. The authority will need to make some assumptions about what transmission projects are rolled out over the period to 2030 and 2035 in order to model the electricity sector as part of a whole economy model. As Mr Archer says, there will need to be a set of assumptions about those projects.

Senator DAVEY: When are we likely to know what the 2035 targets are?

Mr Archer: We've been asked by the minister to provide our advice not earlier than 1 October, so I guess we'll be providing our advice at some point from that date onwards. Ultimately it will be up to the government to make a decision about 2035 targets, and that's really a matter for the government.

Senator DAVEY: Is there a risk to Australia if they don't achieve the targets once they've been set? I appreciate you will provide the minister with advice, but the government will set the target. Is there a risk to Australia if the targets aren't met once they're set?

Mr Archer: The targets are a means to an end, which is achieving the emissions reductions that need to happen to respond to climate change. There are a range of considerations one might have in the scenario where a country is failing to meet its target. The answer is that it kind of depends on, for example, by how much and what the causes are of that. So it's a fairly hypothetical question. I think there would be some reputational concerns if a country were not meeting its target, but then what's happening in other countries? Are other countries meeting their targets or not? So there are really a lot of different considerations that you would have to take into account to come to a view on that. The important thing is that hopefully we're establishing a very strong trajectory towards

reducing emissions over time, and then, as I say, you sort of have to assess progress, making policy adjustments along the way as necessary. That's hopefully keeping you on track.

Senator DAVEY: Or hopefully we're setting realistic targets in the first place. Thank you, Chair.

CHAIR: Thank you, Senator Davey. Senator Van, do you have any questions?

Senator VAN: No. Thank you.

CHAIR: Excellent.

Senator HUGHES: I do.

CHAIR: Okay.

Senator HUGHES: I just have a quick one. With regard to the modelling that Senator Davey was talking to and any of the modelling that you're doing, are those conversations taking place with Treasury, with the broader department and with the Productivity Commission to make sure that we're not actually damaging the Australian economy while trying to chase a target?

Mr Archer: We certainly have no interest in damaging the Australian economy, and we're undertaking this analysis to ascertain how we can go about achieving our targets in a way that will ensure that the economy is continuing to grow and indeed to prosper. Certainly we are consulting with the sorts of departments that you mentioned, and that is to maximise the prospects that we get the best analysis.

Senator HUGHES: Keeping in mind we account for one per cent of global emissions, I think we need to keep a little bit of perspective here that we may make reductions, but, when we've got other major emitters continuing to increase their output, we need to make sure that we're not increasing pressure on power prices et cetera for Australians and that they can keep the lights on and they can keep their businesses functioning. The number that's produced from a climate change perspective does not necessarily keep in mind what the impact is going to be: the cost of Rewiring the Nation, the agricultural land that's going to have transmission lines through it, the cost of certain projects through this and the speed in which they're now occurring. I would hope that there is a great deal of discussion taking place with Treasury and the Productivity Commission at a very minimum.

Senator McAllister: I'll provide a quick answer, and then Mr Archer can speak to you about their approach. Firstly, I understand that it remains coalition policy to reach net zero by 2050, and I look forward to the coalition—

Senator HUGHES: That's not 2030 or 2035.

Senator McAllister: setting out their actual policies in relation to doing that. But of course the government is interested in the economic opportunities that come about, and in optimising our pathway to net zero to obtain the maximum benefits for the Australian community. I just opened up the modelling paper Mr Archer has been referring to. The first question it identifies as 'modelling question 1' is: 'What are the likely economic effects on Australia of different emissions pathways to net zero relative to Australia's current level of ambition?' It's very clearly central to the work that is being undertaken by the Climate Change Authority that will form independent advice to government. We will then process it based on a range of inputs, but we're looking forward to the independent advice that we will receive from the authority.

Senator HUGHES: Did you have anything to add, Mr Archer?

Mr Archer: I'm not sure what the question was.

Senator HUGHES: I want to ensure that the Climate Change Authority was working with other departments such as Treasury, as well as the Productivity Commission, to make sure that everyday Australians aren't having increased pressure put on their power prices and that businesses can keep functioning. In 2030-35 are targets outside of 2050 net zero, and to make sure that in the race to get to 83 per cent renewables we're not putting unintended costs onto Australian households and businesses at a time when we've heard from the department that there are international pressures from the war on Ukraine, which we're now going to see in the Middle East. I want to ensure there's a sensible view here, because we are one per cent of emissions. China are increasing theirs at way more of a rate than we are. We could not reduce ours to even slightly cover their increase in emissions. It is a global effort that's required but I want to make sure we're not cutting our nose off to spite our face, harming our families and our businesses to meet a figure that, in effect, is arbitrary.

Mr Archer: In fact, our legislation sets out a range of factors that we are required to have regard to when we are undertaking our functions. That is, any measures to respond to climate change should be economically efficient and environmentally efficient. There are a range of other factors that also takes into account the impact on households, businesses and communities, being in the public interest and being equitable. That's all part of the framework that we will be employing as we're preparing our advice. I've mentioned that in addition to modelling

there are other elements to the analysis that we're undertaking, including a wellbeing component to ensure that we're understanding the impacts that a transition to net zero will be having on Australian communities over time—

Senator HUGHES: Does that include the fact that when Australians are surveyed, they're all for reducing emissions but they're not all for paying for it? There's a very big shift in the Australian public's view of what they're prepared to pay for it. Is it factored in what each individual Australian is prepared to pay for this?

Mr Archer: We're not taking into account what each and every Australian is prepared to pay—

Senator HUGHES: No, but you've got to go out publicly to ask people. I assume you're asking Australians what they're prepared to pay for it.

Mr Archer: Through our consultation, we are definitely asking people what is of most concern to them in relation to climate change. Cost impacts are something which come through as being of concern to people, and that's something that we will be taking into account—certainly, as far as the authority is concerned—as we are developing recommendations to the government.

Senator HUGHES: Is the authority is in a position to say to the government, 'Slow down, this is going to cost too much money too quickly for the Australian consumer or businesses'? Or are you trying to find a way to meet the government's target? Which way are we going here? Can you give that advice of 'you're going too fast; you're not going to hit it'?

Mr Archer: We're in early days yet to anticipate which particular direction our advice is going to be on that—

Senator HUGHES: You're only seven years away.

Mr Archer: I'm talking in terms of the analysis we're undertaking to advise on the 2035 target. We need to do a bit more work yet before we understand whether that's something that would have to be an element of our advice.

Senator HUGHES: What about 2030? 'Hey, we're going too fast to 2030'—is that advice you can give? It's going to cost too much for each individual household, each individual Australian business to pay for this Rewiring the Nation or the new transmission lines or everything that's being rolled out. It's less than seven years away.

Mr Archer: Currently, our modelling efforts are focused on our project to advise on the 2035 target, and as I mentioned we don't have—

Senator HUGHES: So you accept that they're going to hit 2030 and that that's all in the bank?

Mr Archer: Actually, that relates to—

Senator HUGHES: I thought in your report it said that it was unlikely.

Mr Archer: No, I don't think we've ever said that achieving the 2030 target is unlikely. We are currently working on our advice for the minister for his annual climate change statement. That will have the authority's latest assessment of how we're tracking towards achieving the 2030 target. In our report last year, we did make the point that emissions reductions would need to accelerate to achieve minus 43 per cent by 2030. I don't think that was news to everybody. It's evident from looking at Australia's greenhouse gas inventory that we will have to pick up the pace, but at the same time we acknowledged that there was a whole range of policy measures that the government was introducing, and we can expect that those measures will start to take effect over the remainder of the period to 2030. As I mentioned, our updated advice on that will be provided to the minister towards the end of this month, and that will be published soon after that.

Senator HUGHES: Right. Thank you, Mr Archer.

CHAIR: Senator Rennick.

Senator RENNICK: I've discussed with the CSIRO previously how they calculate net zero and they've informed me that there are actually 40 different models for determining how you get to net zero. Do you guys discuss with the CSIRO and other related organisations which one of those 40 models you will use here in Australia and other countries will use so that there's no regulatory arbitrage in calculating how to get to net zero?

Mr Archer: Thank you for the question, Senator. I must admit I am struggling to understand it a little bit. I'm not conscious of the figure that you've mentioned that there of 40 different models for net zero. There are certainly different models for modelling the whole-of-economy impacts of responding to climate change. I wasn't aware that there were 40. That might be a number, but, from my point of view, the models all tend to be a little bit different. They can all provide insights that are important for analysis, but they don't provide the answers; they are a tool. We went through a process to select a CSIRO—

Senator RENNICK: With that in mind, how do you go about measuring the amount of CO₂ that's emitted by Australian organisations? If you're not modelling it—and that's good, because I believe in measuring rather than modelling—how do you measure the way CO₂ is reduced in Australia? How accurate is that? What's your margin of error on that measurement?

Mr Archer: We don't do our own estimates of Australia's greenhouse gas emissions. We use the official government estimates, which are prepared in the department.

Senator RENNICK: The environment or the energy department?

Mr Archer: The Department of Climate Change, Energy, the Environment and Water.

Senator RENNICK: Aren't you the Climate Change Authority?

Mr Archer: That's correct.

Senator RENNICK: But you don't fit within the department of climate change?

Mr Archer: We're a separate Commonwealth non-corporate entity.

Senator RENNICK: Okay. That's fine. I get confused with all these different departments. There are so many of them. Do you track how much Australian organisations, companies, NGOs or whatever else pay for carbon offsets earned offshore and how much Australian money goes offshore in earning those carbon offsets?

Mr Archer: No, we don't.

Senator RENNICK: You don't? Which department does that?

Mr Archer: I think that would possibly be a question for the department, but I'm not aware that the department is doing that specifically.

Senator RENNICK: It says here that you undertake reviews and make recommendations on the national greenhouse and energy reporting system, including the Safeguard Mechanism?

Mr Archer: Yes, that is correct.

Senator RENNICK: Aren't carbon offsets a part of that?

Senator McAllister: Senator Rennick, respectfully, the Safeguard Mechanism is not administered by the Climate Change Authority. The design characteristics are done by the department and elements of it are managed by the Clean Energy Regulator. International offsets are not available under the safeguard arrangements, so this question about international offsets being purchased for compliance with the safeguard requirements isn't a relevant question.

Senator RENNICK: It's just that the website said that's what you do; you make recommendations on the Safeguard Mechanism. With your Carbon Farming Initiative, I'm curious. I'm from south-west Queensland. It's a big carbon sink, the mulga farming out there. How is it that it's good for the country to pay farmers to basically not chop down mulga trees, or just lock up mulga, in the sense that the mulga grows anyway? The mulga is already growing, and now we're going to pay some farmers to basically pretend to be growing the mulga that was already growing. Isn't this an arbitrary thing now whereby we're going to increase the cost of energy, as some farmers are paid an enormous amount of money to do what Mother Nature was doing naturally anyway?

Mr Archer: I'm not sure I accept the premise of the question. The whole point of the Australian carbon credit unit scheme, which I think is the scheme that you are alluding to here, is to offer credits for changes in practices or behaviours that lead to abatement, either a reduction of emissions or the avoidance of emissions, and the project methods that are developed under the scheme are very much designed with that in mind. They're designed to be consistent with the offset integrity principles, which go to issues such as ensuring that the activity is actually additional.

Senator RENNICK: That's what these organisations are doing. They're paying farmers to basically grow mulga trees that were growing anyway, and that's an offset, so they're paying to earn carbon credits to offset against their emissions.

Mr Archer: I think the point is that they're not paying for something that would have happened anyway. The scheme's designed to ensure that's not happening.

Senator RENNICK: That is happening. I know for a fact it is happening.

Mr Archer: I don't have the evidence or information that you have.

Senator RENNICK: It is very simple. The mulga trees grow naturally, and you're paying farmers to basically grow the mulga trees that were already growing anyway.

Ms Murray: At the moment we're reviewing the ACCU Scheme, and we're looking to build on the work that was done for the Chubb review on this issue. One of the recommendations of the Chubb review was to administer the human-induced regeneration method in a way that ensures the projects conform with the current intent. Part of that is making sure that the project area can be expected to become native forest or retained forest cover and permanently store carbon as a direct result of the project management action. The government is currently looking into administering the recommendations of the Chubb review. That's something we haven't delved into in more detail at this time because it's too early for us to review the progress in responding and implementing that recommendation of the Chubb review.

Senator RENNICK: The mulga is fully grown by the time it's 20 to 25 years old, and it kills all the ground cover underneath it, so you just end up with red soil. Are you offsetting the amount of carbon stored in those mulga trees against the actual amount of carbon that isn't being stored in the grass? With that damage to the topsoil cover, you actually get much more erosion because the water won't sink in. The ground cover seals, and the water won't sink into the ground.

Mr Archer: There are two aspects to that. The first one would be that that's actually a question for the people who are estimating Australia's emissions, as that's a Greenhouse Gas Inventory question. Otherwise, specific concerns about what is or isn't happening under particular projects or under particular methods in the ACCU Scheme are questions for the Clean Energy Regulator, which is responsible for administering the scheme, but also the Emissions Reduction Assurance Committee—which I think will soon become the Carbon Abatement Integrity Committee—which is responsible for advising the government on the integrity of specific efforts.

Senator RENNICK: That's fine if you want me to do that. It's just that your page says you make reviews and recommendations on carbon farming.

Mr Archer: We are responsible, every three years, for undertaking a review of the operation of the ACCU Scheme.

CHAIR: Thank you very much for your time. We appreciate you coming along and we will let you go.

Mr Archer: Thank you, Chair.

CHAIR: Given Snowy will go for a little while, we will now suspend for afternoon tea.

Proceedings suspended from 15:45 to 16:00

Snowy Hydro Ltd

CHAIR: I now call officers from Snowy Hydro Ltd and welcome Mr Dennis Barnes, the chief executive officer. Would you care to make an opening statement?

Mr Barnes: I have prepared an opening statement and have tabled it, but in the interests of time I think we could just go straight to questions.

CHAIR: Maybe you want to just give us a bit of flavour. I think that would be valuable.

Mr Barnes: It's three minutes read slowly. Thanks for the opportunity. Since my last appearance in May we've concluded and announced the resets of Snowy 2.0 and the Hunter Power Project following comprehensive reviews. The total cost to complete Snowy 2.0 is now \$12 billion, and the commercial operation date of our units is 28 December. We have adopted a hybrid incentivised target cost contract model working as one team with Future Generation to achieve the project's objectives without compromising on safety, environment or quality. We've begun to see the benefits of closer collaboration with Future Generation and expect this to continue as the project progresses. Regrettably, Snowy 2.0 has been subject to a number of fines issued recently by the New South Wales Environment Protection Authority and Department of Planning and Environment. I'm confident this project reset will help us ensure our work activities are carried out in compliance with our obligations.

In positive news the project is now around 40 per cent complete with a workforce of 2,700 people. At Talbingo, TBM Lady Eileen Hudson is currently exceeding planned tunnelling rates and is now more than 500 metres into her journey. In my last appearance I'm sorry to have underestimated the timing for a safe restart of TBM Florence with the support of our regulators. The work has been far more complex than I personally had anticipated. TBM Florence is now ready to recommence tunnelling whilst we await approval from the New South Wales Department of Planning and Environment. A range of variable geological conditions in the headrace tunnel are expected ahead of Florence, which we're also looking at ways to derisk. I'll keep you updated as she progresses.

Onto the Hunter Power Project, this is now expected to cost \$950 million and remains on track for delivery in December 2024. We're progressing well with a strong workforce of 460 people, many of whom are local to the Hunter region. The role both these projects will have, along with the original Snowy scheme, in enabling the

energy transition is enormous. For example, Snowy 2.0's capacity of 2,200 megawatts will enable more than 6,000 megawatts of grid-scale renewable generation. Despite these headwinds, Snowy's existing assets, capabilities and retail arm are operating well, which is evidenced by the strong performance outlined in our 2023 annual report tabled in parliament last week.

Finally, while a review of the Snowy water licence isn't for some time, there is growing community and stakeholder interest in our operations under the licence. We're working closely with our shareholder government agencies and interested stakeholders to understand what positive role Snowy can play while also ensuring we comply with our licence requirements. Thank you again for your time, and I look forward to any questions.

CHAIR: Thank you for your upfront admissions of the issues we're facing. Do you believe that you have identified all of the challenges and cost blowouts? This has obviously been an ongoing issue for a couple of years, and I know that you've tried to draw a line. Are you confident that we're going to be on track to your revised project resets?

Mr Barnes: I can assure you we've carried out an incredibly comprehensive process which looks back at the costs and effort to get us to where we are and then extrapolates that forward with the support of a number of internationally renowned consultants. In that context, we have a degree of confidence. Although the contract model has changed, there are targets which require a delivery and incentivise a delivery for \$12 billion by December 28. With megaprojects, one can never say never, but that is a degree of confidence by me and the team.

CHAIR: Thank you. Senator Davey

Senator DAVEY: I want to start the questioning on the water licence and the season, and then I suspect I'll be able to sit back and enjoy the show after that. If I fail to get to my questions, I'll come back. Regarding the water season, much has been said about moving into an El Nino sequence. What are things looking like with the storages up there at the moment?

Mr Barnes: Eucumbene was, in December, close to 20-year highs, at 66 per cent full. It would have come off a little bit recently. I might refer to Mr Whitby for an update on Tantangara and what that might mean for the Murrumbidgee.

Mr Whitby: I might add that our overall storage is at just over 60 percent, so we're in quite a healthy position for this time of year and certainly in terms of the broader climate sequence. We are working with a number of stakeholders, as Dennis has mentioned, with respect to the Upper Murrumbidgee, where there's a variety of interest in the flows of the Upper Murrumbidgee. Clearly there are a number of trade-offs with respect to the various interests, whether they are ultimate water users or environmental issues, and, indeed, our own interests in terms of water for power generation. So we're working with stakeholders in that respect.

Senator DAVEY: When does the water licence review actually commence?

Mr Barnes: It's reviewed on a 10-yearly basis. The next one is 2028, and the work starts a couple of years in advance.

Senator DAVEY: With the next review, is Snowy looking at any major applications for change? In past reviews we've seen the establishment of a drought reserve policy and prerelease policies that have come about through reviews. Are there any of those sorts of changes that you're consulting with stakeholders on at this stage?

Mr Whitby: Yes, there are some initiatives currently being worked through with agencies. I might add, though, that, as ever, there are a number of trade-offs in those spaces. Change is never easy in that space.

Senator DAVEY: No potential changes to the required annual release for each valley?

Mr Whitby: None that I am aware of.

Senator DAVEY: So more management?

Mr Whitby: Correct.

Senator DAVEY: And timings and management of releases rather than changes to volumes and expectations?

Mr Whitby: Correct.

Senator DAVEY: Is part of that also looking at the role that the scheme could play in the water market—what used to be termed 'over-the-top transfers', which aren't, at this point in time, available to the day-to-day water market but are only available in very special circumstances?

Mr Whitby: Certainly at this stage we haven't been looking at any initiatives in that sphere.

Senator DAVEY: Right. Going forward into the season, if we do get a significantly dry period, at the moment the storages are looking good. Is there any preparation being undertaken for a potential significant dry turn?

Mr Whitby: Certainly we're factoring that in in terms of our planning and our broader operation. Yes, we obviously keep a keen eye on the climate outlook.

Senator DAVEY: I will leave it there at the moment on water and let other people question.

Senator CADELL: I might stay on water issues. The Snowy 2.0 section 402 exemption under the Biosecurity Act?

Mr Barnes: I wouldn't know the exact instrument, but that is a process underway to gain an exemption under the Biosecurity Act once the relevant plans are in place.

Senator CADELL: But you don't currently hold one?

Mr Barnes: I don't know the legislation in that level of detail. We are working through the process for an exemption to the 2015 Biosecurity Act as part of our—

Senator CADELL: Given that New South Wales Labor minister Tara Moriarty has confirmed the position of the current government that no exemption will be granted, has Snowy involved Ministers Bowen or McAllister in discussions to try facilitate this?

Mr Barnes: I think it's understood that an exemption will be granted assuming that the management plans are in preparation.

Senator CADELL: Sorry?

Mr Barnes: An exemption would be granted assuming the management plans that are in preparation are sufficient and approved.

Senator CADELL: The New South Wales minister said it's not their position that it will be done less than three months ago.

Mr Barnes: I'm not aware of that.

Senator CADELL: Are you aware of the transfer of any noxious fish, pests or pathogens from Talbingo to Tantangara?

Mr Barnes: Obviously the prospect of that is when the headrace tunnel is complete, and the management plans to avoid and monitor that risk are in development right now, but we are obviously aware of the issue and are working on the issue.

Senator CADELL: We've gone from \$6 billion to \$12 billion. We've blown this out. There is no guarantee that this exemption will be granted. What happens if it's not?

Mr Barnes: We fully expect that, once we work through the process of the management plan, the exemption will be granted.

Senator CADELL: What happens if it's not?

Mr Barnes: Then I think that would be a bigger question. We fully expect that we will be able to do everything possible to satisfy the conditions.

Senator CADELL: Could the New South Wales government hold this entire project, this \$12 billion project, to ransom over an exemption of 402?

Mr Barnes: Again, I am not familiar with the legislation that might allow that, but we fully expect that our management plans will satisfy that condition.

Senator CADELL: If you didn't think this could be held to ransom, why would you apply for it? Why, if it wasn't needed?

Mr Barnes: I think it was a condition of the environmental impact statement in 2018 that, through the course of construction prior to operation, we would develop fish management plans.

Senator DAVEY: I understand that there was work being done in conjunction with Charles Sturt University about the fish management plans. Is that project ongoing?

Mr Barnes: Charles Sturt University, which I understand to be one of the premier experts in the world, are in support of the management plans which are yet to be approved by New South Wales—I think that's correct.

Senator DAVEY: I think the last time I asked about it, work was still ongoing on the management plans. Have the management plans now been decided, finalised and that application has gone in, or is there still work ongoing on the management plan?

Mr Barnes: Clearly, because the project is delayed, the time that we needed to submit them practically could extend. Some of the plans are in their multiple revisions working with all the relevant agencies. They're well developed.

Senator DAVEY: You're confident that they will be successful?

Mr Barnes: We're confident that a combination of physical barriers, monitoring and action will enable us to satisfy the condition.

Senator CADELL: What time are you expecting to be done? What timetable for the completion and lodgement?

Mr Barnes: I think we are looking for formal lodgement, recognising that there has been an incredible amount of engagement over the years—I think one plan is on its seventh revision. I think we are looking at the end of this year for some of the plans and next year for some of the others. We're happy to provide a table of the individual plans and dates.

Senator CADELL: I have a different topic if you want to keep on going. In a Senate order for production for the project research document, it came through at 110 pages, with 44 fully redacted; only 14 unredacted, many of those press releases; and nothing in the documents and project status are about the project reset and its assessment test—that was completely redacted. Given other processes of Snowy have been released before, why isn't this available?

Mr Barnes: I might refer that to the department.

Senator McAllister: I'm happy to speak through it. I think that the material that was provided to the Senate was accompanied by a letter which set out the grounds on which material had been redacted. Those grounds included the following: where material was out of scope of the request or contained the personal information of departmental officials below the SES level, the personal information of ministerial staff or the personal information of non-executive Snowy Hydro staff, the text was redacted or withheld. The letter from Mr Bowen went on to say:

In addition, some documents have been redacted where they contain commercial-in-confidence material of Snowy Hydro Limited, and other third-party entities it contracts with. The release of this material is contrary to the public interest on the basis its disclosure would disadvantage Snow Hydro Limited, advantage competitors, diminish Snow Hydro Limited's ability to contribute to the security and reliability of the renewable energy market in Australia and correspondingly detrimentally impact Australian energy consumers.

Senator CADELL: Thanks, Minister. Minister Chris Bowen was on ABC Radio this morning with Sabra Lane. I have text here of things that might need to be tabled. In it he says he is concerned about the lack of public disclosure of the delays and blowouts, with the project now doubling since May 2023. If we're concerned with the lack of disclosure now, there is an opportunity to put these items on the public record now, and the department is not doing it now. I understand that personal information was in the press releases. That was contact information. The management plan that looked like the project management plan was fully redacted. There wasn't a word available on it, on what seems to be five or six pages of that at the rear end. It cannot all be commercial-in-confidence. Will you table it now?

Senator McAllister: I think Minister Bowen has made clear those aspects of the plan that may not be released. So I'll take that on notice. I think that the same grounds that were provided to the Senate would likely be provided again in relation to the request you are making now.

Can I say more generally in relation to your remarks on transparency: we have really sought to be as transparent as possible about this reset. It is why Minister Bowen informed the public of the outcomes of the reset very shortly after the outcomes were made known to him. I make the obvious point, that Mr Taylor was informed of delays to Snowy Hydro in 2022, and he decided to hide those delays from the Australian people. None of that was disclosed prior to the election. He preferred to leave that until much later. We would prefer as a government to be transparent, and that's how we're approaching this.

Senator CADELL: Given that taxpayers are seeing a more than doubling of the cost, wouldn't it be prudent to let them know under what basis? It's more than doubling. It has gone from under \$6 billion to \$12 billion.

Senator McAllister: I think the minister and Snowy Hydro management have in fact been very transparent about the reasons. It's been comprehensive. There hasn't been an attempt to define a single reason. You may wish to comment on this, Mr Barnes, but there is an attempt to make a comprehensive accounting about the causes of delays and increases to cost and also some of the remedies proposed by Snowy management to get the project back on track. We asked Mr Barnes, as the incoming CEO, to undertake this review and to really bring all of his

expertise and the expertise of his team to getting this project back on track. We're pleased with the constructive approach that Mr Barnes has taken.

Mr Barnes: We have disclosed that at the end of June the project was in the order of 40 per cent of the way through, with \$4.3 billion spent. We have a contract that was set at \$5.1 billion and a total cost of \$5.9 billion, which clearly was set in an environment of relatively benign contracting markets. Clearly, with those metrics, it is a dynamic that makes the contractor effectively incapable of completing the project, so it was very obvious to me that we had to look at the causes as to why we hadn't made more progress and what the future of the project was. The causes of the delay that have contributed to cost increase as laid out before are essentially a combination of COVID, escalation, design immaturity and geotechnical findings. I would also say that, in the same period, the prospects for long-duration storage have only improved. This is one of the hardest parts of a hard transition. The value to the Australian taxpayers is that the project, even on this \$12 billion cost base, has a positive MPV of around \$3 billion. The market really does need this asset, and I would characterise it as an investment for the Australian public.

Senator CADELL: I am not disputing that, but wouldn't it be good if that was contained in the document that was provided?

Mr Barnes: We are going through the formal approval with the shareholders. Like the original investment decision, there may be a business case that could be released, but we are still working that through.

Senator CADELL: Who initiated the change in the contract?

Mr Barnes: I am reluctant to take individual credit but it was clear that the contract, as it was formed, was not delivering. In fact, the contract that was in place—fixed price, serious penalties—would probably without some sort of revision end up costing the taxpayer more than the \$12 billion, because you would have ended up in a fight and a hiatus and not very productive, so I don't think you could say it was one person who initiated it or one entity.

Senator CADELL: Or one organisation?

Mr Barnes: I think we reached a meeting of the minds between Snowy and WeBuild.

Senator CADELL: Who started the conversation? You don't just get together and say: 'I thought it. You thought it. We thought it. Let's do it.'

Mr Barnes: There were \$3.9 billion of claims levelled against Snowy under the existing contract, so that's a conversation starter, which is incumbent on addressing. Once you start talking about, 'How we are going to resolve this?' with the objective of making progress, you quickly get into a, 'Well, what would work?' conversation, so you would say it was collective.

Senator CADELL: Was a delegation taken to Italy earlier this year?

Mr Barnes: Yes, we went to see the senior representatives of the contractor in Italy in late March, early April.

Senator CADELL: Who led the delegation and who was on it?

Mr Barnes: It was my chairman, David Knox, me, Mr Whitby, the project director at the time and the engineering director at the time.

Senator CADELL: Who did you meet with when you were there?

Mr Barnes: We met with Claudio Lautizi, who is the chief operating officer; Pietro Salini, who is the CEO; and a number of their staff including the regional head, Marco Assorati, and the project director—

Senator CADELL: Would you table the diary of you and your chairman for the trip?

Mr Barnes: I don't see any reason why we wouldn't. It was a short trip.

Senator CADELL: So you will?

Mr Barnes: I am happy to provide it on notice.

Senator CADELL: When did the contract change in relation to that trip?

Mr Barnes: Do you mean when did we execute the contracts?

Senator CADELL: No, not execute. When did you agree to move in the new contract phrase?

Mr Barnes: From that point through to the execution of the contract, we were negotiating the form and nature of the contract.

Senator CADELL: Do you mean from that point? Was that the first time we were speaking?

Mr Barnes: There was a proposal put in Rome. It was traversed at a subsequent board meeting. It clearly, in my opinion and our board's opinion, was the most sensible way to get this project done. So there is no one moment one can point out.

Senator CADELL: But the formal discussions started in Rome?

Mr Barnes: The formal discussions did start in Rome, yes.

CHAIR: I feel like you tipped on it in the last round of questions. Is Snowy 2.0 still a project that stacks up as a good investment for Snowy Hydro after the reset?

Mr Barnes: Yes.

CHAIR: Even though it is a significant increase, it is still a project that stacks up?

Mr Barnes: Yes, we have taken third-party modelling and determined that, over and above the \$12 billion of cost, there is a \$3 billion net present value of the project.

CHAIR: Okay, and is it still beneficial for the energy system as a whole?

Mr Barnes: Yes, absolutely.

Senator ROBERTS: Thank you for being here again today. Mr Whitby, in the November 2022 estimates, I asked you:

I note that the tunnelling machine Florence was bogged up near Tantangara Reservoir. Can you confirm how long it was bogged and confirm that it's now back in operation?

The answer you gave was:

The tunnel-boring machine hasn't been bogged. It encountered soft ground, which we expected. We have been progressing the tunnel-boring machine through that zone with care and diligence.

In February 2023, I was reassured Florence was not bogged, and, in May 2023, was advised it would progress shortly. Minister: today, the ABC published photos of Florence clearly in mud and water in a story that says it was flooded in and unable to function from the moment it hit the soft ground a year ago. It moved a matter of metres. Further, the article goes on to say Snowy Hydro authority knew it was bogged even as they testified in senate estimates that it was not. The authority was covering up the machinery to progress Florence. A slurry machine that lays down a base for the machine to travel over was not ordered when the waterlogging was discovered. It was only ordered when Florence became bogged. Why is the government allowing the authority to deliberately mislead the committee?

Senator McAllister: Thank you for the question, Senator Roberts. I don't quite recall the evidence being provided in the terms that you suggest in your question. But I confess I don't exactly remember all of the testimony that was provided at all of the estimates. I will invite Mr Barnes to respond.

Senator ROBERTS: Minister, before you do, were they lying to you? When did you know about the machine being bogged?

Senator McAllister: I will take that on notice. You will understand that I don't have all of the communications between the authority and shareholder ministers, so I will see what I can provide.

Senator ROBERTS: I would like to know when you found out the machine was bogged, if you made inquiries beforehand, were they lying to you, and whether or not you were misled.

Senator McAllister: I will take those questions on notice.

Mr Barnes: Obviously, there are many engineering terms, but bogged, paused or stuck, all have subjective definitions. There has been no point since Florence encountered this incredibly soft and wet ground in November 2022 that the machine has not been able in some way to move forward. In fact, as part of its stabilisation and commissioning of the slurry treatment plant since December 2022, it has in fact moved 10 metres as part of that activity, so it is not bogged; it is able to move. In May I apologised for my perhaps optimism regarding the ability to get Florence moving at pace again. The full story on the slurry treatment plant is that Florence is going to hit what we know to be naturally occurring asbestos about seven kilometres into its journey.

Senator ROBERTS: Naturally occurring what?

Mr Barnes: Asbestos.

Senator ROBERTS: Do you mean naturally in the strata?

Mr Barnes: Yes, and the slurry treatment plant is designed to handle those conditions. The incredibly soft ground it hit early in its journey was not predicted at that stage, so the slurry treatment plant, which was always envisaged—just not envisaged that quickly—was ordered and started to be designed as early as December 2022.

It is now complete, commissioned. Once we receive an approval from the New South Wales Department of Planning and Environment, we will be able to move forward.

Senator DAVEY: I agree with your recollection, Senator Roberts. Mr Barnes, you spoke in May about the fact that the slurry treatment plant was coming. I took it from that evidence that it would be activated sooner rather than later, but are you saying it still hasn't been turned on?

Mr Barnes: To jog your memory, I think I said weeks, not months. I should have said months, not weeks. It wasn't a mistake, it was my optimism at the time. The physical works to get the slurry plant complete and Florence able to move. We've all progressed. What I underestimated was the process with which to go through the approval process, given the sinkhole that formed in December is just outside our construction boundary.

Senator ROBERTS: Mr Barnes, could you give me on notice the movement of the machine, in metres, between November 2022 and February 2023, between February 2023 and May 2023, and from May 2023 to now?

Mr Barnes: Yes.

Senator ROBERTS: Thank you. Minister, it seems on the face of it that this is government misinformation covering up a massive failure. I'm not blaming you entirely for that, because this whole thing was started under Malcolm Turnbull as prime minister and Scott Morrison as prime minister. There was no fully disclosed business case. It was heavily redacted. There was no cost-benefit analysis done. The whole thing is based on a false premise. This is what happens when the top is rotten. I'm not referring to you as being rotten, Minister; I'm referring to the project when it was first given the go-ahead. But you're now carrying the can.

CHAIR: Is there a question?

Senator ROBERTS: Yes. Minister, what questions are you asking about the rest of the project, because this is serious stuff?

Senator McAllister: You are right in this regard: the project as first announced by the Turnbull government does not reflect the dimensions and characteristics of the project as we now understand it. Some of those changes and issues were known to the previous government and not revealed. Minister Bowen has made it very clear how disappointed he was when he came to government and discovered that aspects of the project, including significant delays in cost increases, had not been communicated. As I indicated earlier in my evidence, when Mr Barnes was appointed, the expectation from the shareholder ministers was communicated very clearly to the board and, I understand, through the department to Mr Barnes that we wanted to see this project back on track. We wanted the new management to examine it and provide advice about how to get it back on track. It took some time. It wasn't possible to do that in weeks; it has taken Mr Barnes some time. When that advice was provided, it was to the Minister, who then sought to communicate it directly to the Australian public.

These are complex projects. We accept that. We have noted a constructive tone and a more open approach to communication from the engagements we are presently having with Snowy Hydro, and we hope to see this project—which, as I indicated, is an important project for the energy system and the Australian people—back on track.

Senator ROBERTS: Let's move to something else that the government has lied about. This might not be ministerial staff or the ministers themselves, but we know that the agency has lied about the toxic gas in the shaft coming from isocyanate, used to strengthen the ground in the absence of proper machinery—the slurry machine. That was more government misinformation, wasn't it, Minister?

Mr Barnes: I'm happy to talk to this. You are referring to an incident that occurred in early July. When polyurethane foam, which is sometimes used in front of the tunnel boring machine, comes into contact with water it can create isocyanate gas. It did so. The incident was reported quickly, access to the site was restricted, additional personal protective equipment was provided and monitoring was put in place.

Senator ROBERTS: What was that personal protective equipment?

Mr Barnes: You can do positive-pressure face masks which stop any gases entering.

Senator ROBERTS: Does that involve carrying air or oxygen?

Mr Barnes: No. I don't know the reverser flow works, but you picture the large face masks with a positive flow meter. They have a filter. I don't know the details of how those machines work, but they do protect the individual. We have actually stopped using the polyurethane foam and reverted to grout on that.

Senator ROBERTS: So lives are at stake?

Mr Barnes: Absolutely. This is a complex project with many hazards.

Senator ROBERTS: And the economy is at stake if this project doesn't live up to nameplate design. How much is Florence worth, and who pays if you can't get it out or if it comes out as scrap?

Mr Barnes: Florence is not identified as a single item in the project line, but between \$100 million and \$200 million would be an estimate of a tunnel boring machine. But Florence is able to progress its journey once we receive the necessary approvals.

CHAIR: We'll need to rotate the call, Senator Roberts. Do you have a final question? We can come back to you.

Senator ROBERTS: In May I asked about the updated cost, and Mr Barnes replied, 'We haven't got an updated cost here and will provide that in months.' Your updated cost is now \$12 billion? Is that it?

Mr Barnes: That's correct.

Senator ROBERTS: Does that include two major expenses: transmission lines to get the power in and out and the ongoing cost of Florence still being bogged?

Mr Barnes: It is the cost to complete the project to the transmission lines at the power station, including all action necessary to complete the head race tunnel, which is where Florence is.

Senator ROBERTS: So any additional transmission lines needed to take the power out are not part of that project cost?

Mr Barnes: We have one transmission connection from the power station up to the grid, which Snowy Hydro pays for on an ongoing tariff.

Senator ROBERTS: My understanding is that the current transmission lines will not be adequate after Snowy 2 comes in.

Mr Barnes: For snowy 2 to get its full potential, there is an extension to the transmission grid required.

Senator ROBERTS: Thank you. So the total cost of this project—

CHAIR: We need to move on, Senator Roberts. We need to rotate the call.

Senator ROBERTS: Okay.

Senator McAllister: Senator Grogan, I took on notice a series of questions from Senator Roberts. I had previously indicated that these were questions for shareholder ministers and I would take them on notice on their behalf. I just want to clarify that that's also what you were seeking in the other questions that you put to me later on?

Senator ROBERTS: I'm happy to get an answer from the government ministers. It doesn't have to be you; just the person in charge would be perfect.

Senator McAllister: Thanks, Senator Roberts.

CHAIR: Senator Payman.

Senator PAYMAN: Mr Barnes, it has been reported that in the weeks before Florence was launched workers had drilled ahead to explore the tunnel's planned route. *Four Corners* has been told that around 100m in they hit soft ground. Thousands of litres of water gushed out. Can I confirm that the then management made the decision to launch Florence as planned, knowing the conditions ahead?

Mr Barnes: Well, obviously I wasn't there, but I'm sure there would have been a risk based decision given the ground conditions. There was an expectation that the early journey of Florence would have soft ground and would have wet ground. It just became softer and wetter.

Senator PAYMAN: Can I confirm when Florence was launched again?

Mr Barnes: I'll take it on notice, but the ballpark is October 2022.

Senator PAYMAN: Thank you. I want to ask about the ABC's *Four Corners* report airing tonight. The report states that as much as \$2 billion of the cost blowouts to Snowy Hydro can be attributed to insufficient geotechnical work surrounding tunnelling related to Florence, the stalled tunnel-boring machine. Do you agree with that assessment?

Mr Barnes: I think the four contributing factors to the cost and schedule blowout and delay are design immaturity, geotechnical, COVID and escalation. For design immaturity and geotechnical, it is in the order of \$2 billion, but only a fraction of that would be down to Florence specifically. This is recognising that, of these four factors, some are schedule only, some are cost only and some are both. To give you a sense of scale: Florence only has 20 people working on it, and the machine is paid for, so it wouldn't in any way be near \$2 billion just for Florence. But, for geotechnical and design immaturity, \$2 billion is a good round figure.

Senator PAYMAN: You've already spoken about the reset and stated that you're 'committed to ensuring these critically important projects are transparent and are placed on a robust and sustainable footing.' Would you care to elaborate on that?

Mr Barnes: I think it's really having a motivated contractor and a motivated workforce with a contract price and a schedule that is achievable. As I mentioned earlier, 40 per cent of the way in with \$4.3 billion spent tells you it's going to cost more than five, and now I've put it on a footing where these projects can actually move forward with success. We're a little bit further ahead on the collaboration journey for the Hunter Power Project, and we're already seeing very good progress on that side.

Senator PAYMAN: Thank you.

CHAIR: Senator Rennick.

Senator RENNICK: Hi, guys. Is Snowy Hydro certain that three and more of the six pumps at Snowy 2 can operate at the same time after HumeLink is completed?

Mr Whitby: I understand the question is: after HumeLink is completed, can—

Senator RENNICK: three or more pumps operate at the same time?

Mr Whitby: If it's completed in the configuration that HumeLink is generally anticipated to be, that's my understanding.

Senator RENNICK: Thank you. Is it true that the existing Tumut three pumps will use most of the allowable pumping capacity, meaning that it may not be possible for any of the Snowy 2.0 pumps to be operated at all?

Mr Barnes: I think that, once HumeLink is complete, the design is such that the scheme can operate at full capacity with Snowy 2.0.

Senator RENNICK: So they're going to be able to operate all altogether at the same time?

Mr Barnes: Yes, that's correct.

Senator RENNICK: So that's all been taken into consideration in the planning?

Mr Barnes: Yes.

Senator RENNICK: Okay. If the power system security study that's currently underway concludes that it will not be possible to run three or more of the pumps at the same time, will Snowy Hydro review the viability of investing a further \$8 billion to complete the project?

Mr Barnes: I'm not sure I understand the question. We will spend the \$12 billion to complete the 2,200 megawatts, and our expectation is that, with the planned transmission build, we will then be able to export all of that power.

Senator RENNICK: And has Snowy Hydro committed to all six Snowy 2.0 units being variable speed?

Mr Whitby: No. Three of the machines are fixed speed and three are variable speed.

Senator RENNICK: Thank you.

CHAIR: Senator Cadell.

Senator CADELL: You said the contract is an incentivised contract?

Mr Barnes: Yes.

Senator CADELL: Is it also a penalised contract?

Mr Barnes: Yes. In the event that the project is delayed past target dates and costs, there's a pain share mechanism with the contractor.

Senator CADELL: Was the board of Snowy Hydro indemnified to sign the revised contract?

Mr Barnes: We received support from the shareholding ministers to sign the contract with a condition of full approval.

Senator CADELL: I'm sorry; was it not indemnified in full?

Mr Barnes: We were supported to sign the contract with a condition in the contract which is conditional on full approval by the shareholder.

Senator CADELL: So, should something go wrong, where does the liability sit, with the board or with the government?

Mr Barnes: Currently, it is within our cost envelope of the approval from 2019, so the company is funded, the project is under way and we are working with the departments on final approval.

Senator CADELL: I understand, but, should this new contract not be met and we can't do it for \$12 billion, are the company and the board on the hook or is the taxpayer on the hook?

Mr Barnes: The company has got the contract with the contractor.

Senator CADELL: And they're not indemnified?

Mr Barnes: We've received support from the shareholder to enter into the contract.

Senator CADELL: I understand, but that's not an indemnity, is it?

Mr Barnes: We don't expect to require an indemnity as we're within the cost envelope of the original approval.

Senator CADELL: Did anyone from government, such as ministers, play a role in negotiating or discussing the new contract?

Mr Barnes: No. It was Snowy management and the board, and ministers—well, actually, shareholding departments' understanding as we went through the process, but no involvement.

Senator CADELL: Did Andrew Jagers or the deputy secretary of energy play any role in the new contract negotiations?

Mr Barnes: No.

Senator CADELL: Who signed the revised contract with you?

Mr Barnes: For Snowy?

Senator CADELL: Yes.

Mr Barnes: I signed the contract.

Senator CADELL: For both? Hunter has just extended its existing contract, hasn't it?

Mr Barnes: No. There was a new contract for Hunter, but I signed that as well.

Senator CADELL: The contract has now gone to \$12 billion. How much of that is allocated to contractors, not the workers on site, other than the major contractor? You said you had a third-party body review—

Mr Barnes: You might be referring to the owner's costs and the environmental costs. It's in the order of \$700 million.

Senator CADELL: You said earlier that a third party checked the modelling and gave a \$3 billion net benefit. Will you table that?

Mr Barnes: We were working with the shareholding departments on an approval, and that will include the revenue case, and I'm sure they will—

Senator CADELL: I understand that, but nothing is out of the scope of approval of taxpayer money now. Will you table that third-party modelling you referred to earlier?

Mr Barnes: As we work through the approval with the shareholding departments, then there'll be—

Senator CADELL: I hear you. Are you going to make a public interest immunity claim now on not tabling that issue?

Senator McAllister: We'll take it on notice, Senator Cadell. I think you'd understand that there are a range of reasons why that modelling may be sensitive.

Senator CADELL: I understand, Minister, that that document has been used in an answer today to back up a position. If it exists—and we know it does, because it has been used—it should be disclosed.

Senator McAllister: I'll take that on notice, Senator Cadell.

Senator CADELL: How many times has production been stopped on both Snowy and Kurri sites for poor performance or poor safety issues?

Mr Barnes: I'll take the actual number on notice, but individual worksites are often stopped proactively by Snowy management or the contractor to correct any control failures.

Senator CADELL: For the exact number, would you have a ballpark? Are we talking single digits, double digits, hundreds?

Mr Barnes: In the way you're characterising it, a full standdown would be relatively low numbers.

Senator CADELL: Has any production stopped, not forced to shut down across the site?

Mr Barnes: I'll have to take that on notice.

Senator CADELL: You mentioned the Snowy—and I'm looking at my own notes—and \$950 million for Kurri Kurri. That's 24 December, with 460 people on it. That wasn't part of the project reset. That was as it has gone forward. That was its own review process. You came to us at the last estimates and gave us similar numbers. Is that correct?

Mr Barnes: We did go through a reset with our with our project. It was a slightly different contract model, but, again, cleared. It was struggling to get momentum, so we did get external advice. We did reassess the costs, and we did change the contracting model.

Senator CADELL: Outside of that process, is there modelling still or are business cases still being developed for increased hydrogen burn at Snowy-Kurri?

Mr Barnes: We're currently working with Mitsubishi Heavy Industries on the ability for the gas turbine to move from 15 per cent tri-fuel burning—hydrogen, gas and diesel—to 30 per cent, and that study is underway.

Senator CADELL: That's been underway for some time, I think, since I've been coming here. Is there a completion date or an estimation date on that?

Mr Barnes: I think we're doing lab trials at the moment, so we would expect to have the results of that in months.

Senator CADELL: Have first-pass costings been done on what it would cost to change that model?

Mr Barnes: No. I think it all works backwards from the science of the burning. I think Mitsubishi have a confidence the machine can do 30 per cent.

Senator CADELL: On your first time here and my first time here, I think I said numbers of up to \$1.6 billion for that as a hydrogen model, and you said, 'Not even close.' Is that possible?

Mr Barnes: I mean, hydrogen obviously has a number of components—the production of hydrogen, transport and storage. The conversion of the plant to operate on 30 per cent hydrogen would be relatively modest in that context.

Senator CADELL: So still well under \$1.6 billion for the full—

Mr Barnes: Yes, for the plant, for the conversion of the plant.

Senator CADELL: So, \$950 million? It wouldn't be more than \$750 million?

Mr Barnes: We haven't done the work, so—

Senator McAllister: I don't think we can ask the official to speculate.

Senator CADELL: That's fine. What is the current internal rate of return for Kurri? In 2021 it was given at 12.8.

Mr Barnes: I'd have to take that on notice, and, subject to the release—

Senator CADELL: What is the construction schedule? Is it 24 hours up there? How many shifts are we doing up there?

Mr Barnes: There are a number of workers who work—they don't work 24 hours, but some activities are undertaken 24 hours. We are, at the moment, going through the process of procuring a workers camp such that we can work through weekends and holiday periods to perhaps accelerate the timetable but certainly meet it.

Senator CADELL: Okay. On the workers camp, there were 1,500 workers originally on Snowy 2.0, I think you stated, when we came in, and we're now at 2,000. Where are those extra 500 workers staying?

Mr Barnes: I think we have 2,700 people on the project, but only a proportion of those would be on site at any point in time because of the shift system. I think we now are close to 1,800 beds across three locations.

Senator CADELL: How many, sorry?

Mr Barnes: Three locations: Tantangara, Marica and Lobs Hole.

Senator CADELL: Are any of those numbers going to change because of the way the contract is now being utilised differently?

Mr Barnes: Not particularly.

Senator CADELL: Okay. In the \$12 billion, have we got a building contingency in that for Florence 2, electric boogaloo?

Mr Barnes: I believe if we were to, as we refer to it, tackle the headrace tunnel from the other end, then we would be able to do that within that envelope. But we would be doing that to de-risk, to achieve or better the timetable.

Senator CADELL: I hear that, but is there a contingency built into the \$12 billion?

Mr Barnes: There is a contingency in the \$12 billion.

Senator CADELL: Okay. Thank you, Chair.

Senator ROBERTS: Final questions. The total cost of this project, including transmission lines, to get it into a working state without further delays is likely to be around \$20 billion. How much will it cost to stop and just walk away from this mess?

Mr Barnes: I mean, obviously I'm responsible for delivering Snowy 2.0—

Senator ROBERTS: You were handed a pup.

Mr Barnes: which has a project cost of \$12 billion. It currently has a positive business case of \$3 billion, so we haven't contemplated that question. But the spend to date, which we have made public, as at 1 July was \$4.3 billion.

Senator ROBERTS: That includes everything? Ready to go?

Mr Barnes: That was the progress—

Senator ROBERTS: Power delivery?

Mr Barnes: I was saying that the project cost is \$12 billion. At 1 July this year we had spent \$4.3 billion.

Senator ROBERTS: Okay. How much do you expect the total cost to be now, including the transmission lines needed to be constructed to take the power from Snowy 2.0?

Mr Barnes: I have no responsibility for the transmission lines, their cost or their timing, but the Snowy 2.0 project I expect to be \$12 billion.

Senator ROBERTS: This was something we raised right from the start because they always knew that Snowy 2.0 would need additional transmission lines and other things. So, Minister, perhaps you could get that cost on notice, please, because it's obviously beyond Mr Barnes. That is not a slight on Mr Barnes; it's beyond his authority.

Senator McAllister: Thanks, Senator. I'll take it on notice.

Senator ROBERTS: I raised the option in May of walking away from this mess. How much extra has this project cost since last May? This project is burning billions of taxpayers' money for 350,000 megawatt hours of power annually. It will never pay for itself.

Mr Barnes: As I mentioned earlier, we expect the project to have a positive MPV of \$3 billion. There are lots of comparisons one can make as to the value of 350,000 megawatts, but in 2030, on current projections, that would be more than four times the capacity of all the batteries in the country. Its primary role is to be there when the sun isn't shining and the wind isn't blowing. It is designed to have a low operation factor, and it's there for backup.

Senator ROBERTS: And it relies on the failure of the National Electricity Market, whereby we now have high peak prices and low off-peak prices. Without that it doesn't stack up.

Mr Barnes: I would characterise it as enabling the build of wind and solar, such that, when they're not operating, there is an alternative source which allows low marginal cost wind and solar to come into the market.

Senator ROBERTS: Thank you for your honesty. At last people are starting to talk about the real costs of wind and solar. This has to be added to the costs of wind and solar.

Minister, you've already taken the question on notice about accountability when ministers were told about this being bogged and so on. I'd like to know what you will do about Snowy 2.0 officers who misled or grossly erred in their responses to stakeholder ministers and to Senate estimates?

Senator McAllister: Senator Roberts, your question assumes that those things happened.

Senator ROBERTS: Let's put the word 'if' in there.

Senator McAllister: I'm not going to speculate about things that may or may not have happened. But I did take your earlier question on notice, which was in relation to what communications occurred between Snowy and the government in relation to the tunnel boring machine, and we'll see what information can be provided.

Senator CADELL: Is Danny Buderus staying on as a spokesman for Snowy Hydro?

Senator McAllister: Sorry. I actually didn't—

Senator CADELL: Is Danny Buderus, a great Hunter local, still on board with New Energy and Red Energy as a spokesman under Snowy Hydro?

Mr Barnes: I don't know Danny Buderus.

Senator CADELL: He speaks for your brand! The tunnel workforce just lost productivity. It'll take you to about 2025.

Senator ROBERTS: They need a Knight in shining armour!

Mr Barnes: I expect they're busy building the power station, rather than watching Senate estimates.

CHAIR: Let's hope so! Thank you very much, Mr Barnes and Mr Whitby. We appreciate your time. You are free to go. Oh, no you're not!

Senator DAVEY: I have just one final question. With all of the Snowy 2.0 construction delays/resets, will that change in any way, shape or form the management of the water resource while it's still under construction?

Mr Whitby: I think the short answer is no.

Senator DAVEY: That's all I needed to hear. Thank you very much.

CHAIR: Now we're really going to let you go. I would suggest you race from the building.

Australian Energy Regulator

[16:57]

CHAIR: I now call officers from the Australian Energy Regulator and welcome Ms Clare Savage, the chair, to the table. Ms Savage, do you have an opening statement?

Ms Savage: No, Senator. We could go straight to questions if you'd like. I'll just acknowledge we're on Ngunnawal lands today. Thank you for having us.

Senator HUGHES: Good afternoon or good evening, wherever we're up to. Could we get an update on how the administration and management of ACCUs is progressing.

Ms Savage: Sorry; I'm having a bit of trouble hearing you, Senator Hughes. Did you say 'ACCUs'?

Senator HUGHES: Yes, ACCUs.

Ms Savage: That would for the Clean Energy Regulator, I think.

Senator HUGHES: I think I've opened up to the wrong page. My apologies. I don't know who I've got and where we are.

Ms Savage: I think you skipped them earlier today. That might be why.

Senator HUGHES: We did—hence why I'm confused about who I've got in front of me.

Ms Savage: I was getting worried I was meant to know the answer!

Senator HUGHES: No. You're right, darling. Don't worry. I'm only here for a little bit longer. Can we go somewhere else while I get everything organised?

CHAIR: Senator Roberts, do you have some questions?

Senator ROBERTS: I sure do—Australian Energy Regulator.

Ms Savage: That's us.

Senator ROBERTS: Can you please discuss the challenges facing the grid in terms of the expected shortfall of generation of power?

Ms Savage: I think what you might be referring to is the release of the Australian Energy Market Operator's electricity statement of opportunities; is that correct?

Senator ROBERTS: I'm just aware that the grid is facing an expected shortfall of power generation.

Ms Savage: The electricity statement of opportunities, which is produced by the Australian Energy Market Operator—so it's not produced by us—is forecasting some shortfalls at the moment, and it depends on which standard you use. I know that sounds like a strange thing to say.

Senator ROBERTS: No. It sounds about normal.

Ms Savage: We have an interim reliability standard at the moment which is based on 0.0006 per cent of unserved energy. The normal reliability standard is 0.002 per cent of unserved energy. So, at that tighter reliability standard, we are seeing some shortfalls in South Australia and in Victoria for the coming summer.

Senator ROBERTS: What do you mean when you say 'some'?

Ms Savage: It comes back to that unserved energy calculation. It means that there would be the probability of there potentially being an outage effectively at that zero point but less than 0.0006 per cent of the time.

Senator ROBERTS: But the costs are huge if there's an outage.

Ms Savage: No. What I'm saying is that the probability is very low.

Senator ROBERTS: The probability is low, but the cost of an outage, if it occurred, is high.

Ms Savage: We don't expect there to actually be an outage, because, when they forecast there being the potential for an outage, even at that very, very low probability that I just described, what the Australian Energy Market Operator does is it actually then contracts for what we would call RERTs, reliability and emergency reserve traders. They've already done that. So they've gone to market. They've called for submissions. My understanding, from the CEO at the Australian Energy Market Operator, is that they're currently reviewing those and that they'll be contracting with those extra resources in the next couple of weeks.

Senator ROBERTS: So there's an extra cost involved already.

Ms Savage: There is, but it's only if we need it. Those costs are only incurred if we actually have to call upon it in the coming summer. So, whilst there is, under that reliability standard, some very small probability of shortfalls this summer, AEMO has taken the steps necessary to procure additional reserves.

Senator ROBERTS: Have they done any modelling or have you done any modelling on how much wind and solar would actually be needed to build up for that shortfall?

Ms Savage: We haven't done any modelling on that because that's actually the Australian Energy Market Operator's job. But what they have done is they've talked about quite a significant pipeline of new investment. There's about 248 gigawatts of new projects in the investment pipeline. That's about four times the installed capacity we currently have in the system. So unlocking those new investments will definitely reduce the probability of any sort of shortfall, and there's always a chance of a shortfall. You can drive your car into a power pole tomorrow, and that contributes to unserved energy as well. But they will obviously, with that unlocking of the pipeline, bring down prices as well.

Senator ROBERTS: We know that, if a coal-fired power station with a nameplate capacity of two gigawatts shuts down, we would replace that with another two gigawatts of coal-fired power station, but the maths is different with solar and wind. Wind and solar only produce about 23 per cent of their nameplate capacity, plus there's a need for storage to back them up and they only produce 10 per cent of their nameplate capacity at peak hours. So, to replace the two gigawatts of nameplate capacity from coal, you would need to build many multiples of that in wind and solar. Have you done the calculations for how much wind and solar nameplate capacity plus storage the country would need to build to cover that predicted generation shortfall plus additional transmission lines?

Ms Savage: The Australian Energy Regulator doesn't do that forecast. That's done by the Australian Energy Market Operator, and it's done in their integrated system plan. The integrated system plan has the step change scenario, which is the sort of central scenario of that plan, and that actually sets out the least-cost development pathway to the future energy system. That sets out all of the generation, storage, how much of it, how much wind and solar and gas-fired generation and batteries and transmission we need to actually meet demand.

Senator ROBERTS: How do you interface with AEMO, and what specifically are your responsibilities? In what ways are they different from AEMO's?

Ms Savage: AEMO is the system operator, so they're the ones in the control room saying, 'You generate,' and, 'You turn off,' and settling the market.

Senator ROBERTS: And they're doing the planning as well?

Ms Savage: And they're doing the planning. What we do is make guidelines in accordance with the rules that actually tell AEMO what they can do when they're doing that planning—what costs and benefits to consider—and we also have a role in enforcing the rules. So, if AEMO were to do something where they broke the rules, for example, we'd have the job of enforcing that.

Senator ROBERTS: Who is responsible for the fact that we're told by people—constituents in North Queensland and by a farmer's wife, who's very, very concerned and switched on about what's happening in Victoria—that there are major wind and solar complexes that are not connected to the grid? Why would they be built?

Ms Savage: I'm not quite sure that I'm aware of those particular circumstances. There have been delays in connecting some new resources, and that has been around both planning and the speed at which connections can happen, but the Australian Energy Market Operator is responsible for connecting new resources to the system.

Senator ROBERTS: Minister, there are so many questions and uncertainties, and people's lives and livelihoods are at stake. What are you doing to make sure it all works in an integrated fashion?

Senator McAllister: The energy system is a market, and it's also an engineering system, and there are three important market bodies: the Australian Energy Market Operator; the AER, who is before you today; and the AEMC, the Australian Energy Market Commission. Those bodies have a range of different responsibilities. I may have said earlier in the hearings that, for those senators—and there are a number of them—who are very interested in the way these systems work, I really can commend some of the information that they produce about the practical operations of these systems.

From a government perspective, we are doing a range of things to establish the necessary conditions for the investment that's required to replace a whole lot of plant and equipment that is reaching the end of its life. Under the previous government, there were a range of coal-fired generation plants that announced closures or brought forward their closure dates. The dynamics that are producing that are not going to change. We need to replace this plant and equipment. The job of the system is to work out the most cost-effective way through that, and each of these market bodies have a role to play in that.

Senator ROBERTS: One of the things that the Japanese manufacturing miracle taught us in the seventies, eighties and nineties, where they went from nowhere to be No. 1 manufacturers in the world, was that we focus not just on level of production but on variation. I don't hear any talk about managing that. What we've done is we've taken a very stable, simple system in coal and increased the variability of it. We've increased the variability of the electricity generation system. That means huge costs, huge uncertainties and big penalties for people who fail to get their power. Is any consideration being given to variability, because wind and solar have enormous variability on them, which is an enemy of low cost? Has any consideration been given to that?

Senator McAllister: The questions that you're asking are really dealt with, principally, by the Australian Energy Market Operator in their integrated systems plan. From government's perspective, we are doing a range of things to bring on the investment that's required to meet the needs that are set out in that systems plan and then in the statements of opportunities. They include establishing the Capacity Investment Scheme, rolling out the Rewiring the Nation investments to bring on the necessary transmission, progressing a national energy workforce strategy to help forecast the workforce capabilities that are required, developing national social licence guidelines for transmission infrastructure, developing a framework for nationally significant transmission products to help alleviate barriers to getting this critical infrastructure through and, more generally, working collaboratively with the states and territories through the National Energy Transformation Partnership, which recognises that, actually, the national electricity market is a responsibility that we own jointly with the states and territories and we need to collaborate with them.

Senator ROBERTS: I know you're intelligent, Minister, so this is not meant as a slight. I don't know your experience in production and operations. The enemy of low cost and the enemy of high productivity is high variability, and many of the things you just discussed and listed are increasing variability in the whole sector. That leaves me more concerned.

Ms Savage: We are quite focused on cost and prices. That is something we do have a role in, so we monitor and report on prices in the market. We do that quite regularly on a daily, weekly, quarterly, annual and biennial basis. When you actually think about the price outcomes that consumers are experiencing, the extraordinarily high prices that we had last year were actually fossil fuel driven. The variability that we've experienced in coal plant, as its reliability has degraded, has actually made the system more difficult to run and operate. The very high coal and gas prices we had through 2022 and in 2023 have been significant contributors to the high prices that have actually been flowing through to consumer bills. I think unlocking that pipeline of investment that I talked about before, that 248 gigawatts, which actually includes the things to offset the variability of renewables—so it includes batteries and pumped hydro and gas-fired generation—bringing all of those technologies together along with upgrades to the grid is actually an antidote to high prices for customers.

Senator ROBERTS: I acknowledge your point about some of the problems with coal right now, because it's working in a system that it's not designed to work in.

Ms Savage: That's right.

Senator ROBERTS: That has put additional burdens, pressures and costs on the coal sector.

Ms Savage: But consumers have chosen to install solar PV on their roofs at astounding rates. I think there are 3½ million Australian households who have solar PV.

Senator ROBERTS: Because of subsidies.

Ms Savage: Not all of them because of subsidies. When you look at that level of solar PV in the system, it's bigger than the entire black-coal generation fleet now. When we have that level of solar resource sitting on the

rooftops of customers, we are going to have variability in our system and we're going to need to see that system transition to ensure that we can continue to provide stable and reliable power.

Senator ROBERTS: There is one fact that very few people talk about, and that is that every country that increases the proportion of solar and wind greatly increases the cost of producing power.

Ms Savage: I am not aware of that fact.

Senator ROBERTS: I am. Thank you, Chair.

CHAIR: Are there any other questions? Senator Hughes.

Senator HUGHES: I will follow on from the questions of Senator Roberts. You mentioned solar panels. How long do they normally last once they go up on someone's roof?

Ms Savage: My understanding is the latest design specification is about 25 years.

Senator HUGHES: What about when the first subsidies came in and there was a big flurry, probably eight or nine years ago?

Ms Savage: I don't know for a fact, but I would say my recollection was that they were about 10 years.

Senator HUGHES: So a lot of them are probably coming to the end of their lives now?

Ms Savage: I don't know that we have information on that, I'm sorry.

Senator HUGHES: So we don't know what we're doing with them when they all come off roofs?

Ms Savage: No, I'm just saying that is not the responsibility of the AER. We're not a standards regulator.

Senator HUGHES: Everyone has got their own little piece of the pie, and no-one seems to be able to tell me where they're putting solar panels that have come to the end of their lives.

Ms Savage: Is that your question, where they go?

Senator HUGHES: Where are they going once they come off someone's roof? But they were also heavily subsidised to go on the roof, and that's not the case anymore. If people want to maintain solar panels on their roof, are we going to have to have another whole round of subsidies to get people to put them up, or are we expecting Australians now to pay the full cost for the 10-year replaceable solar panels?

Ms Savage: I think the minister was just saying this may be a question for another part of the program.

Senator HUGHES: Do you know which part? I'm just intrigued. It was an excellent point made by Senator Roberts that yes, there are a lot of solar panels. I remember people going door-to-door in Moree and asking people if they wanted solar panels because it wouldn't cost them anything. But they're expiring now, so are people going to replace them? Are there going to be subsidies for them being replaced? Where are they going to go when they come off the roof? Who takes them off the roof?

Ms Savage: One thing to observe is that, when those decisions were made by individual households, they would have been looking at the payback period for that particular life, and so, when they were at 10 years or whatever the term of the life of the solar panel was, that would have been part of their calculation at the time. That's partly why the subsidies would have had a role to play. Putting a solar panel on your roof now, you would actually be paying back well and truly within the 25-year period. My understanding is it would be less than five years.

Senator HUGHES: People experiencing significant cost-of-living pressures at the moment may not have that residual income sitting around.

Ms Savage: Absolutely.

Senator HUGHES: So we may end up with a situation where a whole lot of people's solar panels are coming off and not going back on. That was an aside. Maybe, Ms Savage, you can give us a run through. You did say prices and costs were within part of your remit. We know the government put a relief measure in, but it didn't bring down power prices. It was a one-off payment to five million households if they reached certain criteria, with \$250 provided by the Commonwealth and the rest provided by the states. That's coming to an end. It didn't do anything to reduce prices; it was just a payment. What is actually happening to reduce power prices? Australian homes and Australian families and businesses are struggling to keep the lights on, and we're coming into what's predicted to be a very hot summer. What are we actually doing to reduce power prices?

Ms Savage: One of the roles we have is setting the default market offer. You may remember back in May I was talking to you at the time about the draft decision, and we made a final decision not long after that.

Senator HUGHES: Yes.

Ms Savage: One of the things we observed late last year was that we were seeing the very high fossil fuel prices I referred to before—so the coal and gas prices—were flowing through to the power market and they were impacting that forward price of electricity, which is what retailers use to manage their costs and how they set retail prices for households. In conversation not just with the federal government but with the state and territory governments as well we were doing estimates of what we thought the likely price increases could have been if fossil fuel prices had continued to flow through to power markets in the way they were for the balance of that year. What we were thinking at the time was that the price rises we might have had to announce in May this year would have been as high as 50 per cent from 1 July this year. There was the intervention in both coal and gas markets. We did see an immediate cooling—actually quite a significant fall—in the forward price of electricity at that time. The spot modelling that we do, which is the day-to-day market, also came off. Ultimately the price rises, which are still very difficult news for Australians—I don't disagree with the point you made before—was in the line of 20 per cent to 25 per cent instead of that 50 per cent number.

In terms of looking forward we will be putting out our default market offer 6—it's hard to believe we're there already—in May next year. We have actually seen the spot markets in the last quarter be considerably lower, so back to the sorts of levels we were seeing in 2021. That was largely driven, again, by increased offers from black coal, increased availability of coal and the lower price of coal as a result of the government's intervention. But it was also around very mild conditions in winter and early spring and also seeing huge output, actually, from solar panels through Q3 this year. Those sorts of lower spot price outcomes actually do feed into forward prices as well, so what we're seeing for next year is a more benign wholesale environment. We do have to think about what will happen to network costs, and certainly we've had very high inflation and increases in interest rates, which will flow through. But until we actually see some numbers out of the network businesses around what they've had around demand, it's very hard to tell whether those numbers will go up or down.

But we'll continue to do the work. We're consulting at the moment. We have an issues paper out on the default market offer 6, so we're talking to stakeholders about some of the issues that we will be considering in the context of that decision. I'm sure I will be able to update you more on it in estimates next year.

Senator HUGHES: In short, are they on the way up or are they on the way down?

Ms Savage: I don't think I could tell you the answer to that right now until we get the information from the network businesses, and that default market offer decision is obviously market sensitive as well.

Senator HUGHES: So promising \$275 off power bills probably wasn't the smartest line to run during an election campaign if we don't know?

Ms Savage: We've never modelled that number, I'm sorry.

Senator HUGHES: I don't think anyone seriously modelled that number, but that's for another day.

Senator PAYMAN: Ms Savage, your latest state of the energy market report talks about the outlook for reliability. In particular you quote AEMO's Electricity Statement of Opportunities, which states:

To ensure Australian customers continue to have access to reliable electricity, it's critical that planned investments in transmission, generation and storage projects are urgently delivered.

Does the Australian Energy Regulator share the view that planned investments in generation, storage and transmission are critical to ensure reliability.

Ms Savage: Absolutely. That figure I was talking about before of the pipeline of 248 gigawatts includes generation, storage and transmission projects, and all of those—well, not all of them; if we had all of them, we would have too much—or unlocking a lot of those projects is really important to actually meeting our reliability needs. As Senator Roberts suggested before, we do have some gaps appearing in the forecast, but we're ensuring we can meet reliability and also bring down prices.

Senator PAYMAN: How much of the planned investment in generation that the Australian Energy Market Operator refers to in the statement above is in renewables? Is it the majority, the vast majority, a small minority?

Ms Savage: My understanding is it's about half, I think, or the vast majority. But I'll just ask Ms Jolly if she knows the answer to that question.

Ms Jolly: I think that sounds about right. Let me check that for you, though.

Ms Savage: We might have to take that one on notice, because that actually relates to the Australian Energy Market Operator.

Senator PAYMAN: No worries. What would you expect the impact of pausing investment in renewable generation and transmission on prices and reliability would be? Is this something the government should consider?

Ms Savage: I would be quite concerned if we were pausing new investment in generation and transmission. We do have some gaps appearing in the forecast, as Senator Roberts pointed out earlier, so from a reliability perspective we really need to unlock those new investments.

As I said, we are seeing that the ageing coal fleet is becoming less reliable. We are seeing quite a number of outages at those power stations, and they're less predictable than they have been before. We tend to call that the forced outage rate, and that forced outage rate is much higher than it has been historically. That's one of the big drivers as to why we are seeing gaps in the reliability forecast in the latest Electricity Statement of Opportunities. From our perspective, in terms of ensuring that we have lower prices and a reliable system, we absolutely must unlock that new investment.

Senator VAN: I've got some questions for you, Ms Savage, or your team, and then for the minister. Will any of the benefits from VNI West be double counted when the AER considers approving the 50 per cent increase in HumeLink?

Ms Savage: I might, in a minute, refer to my colleague Mr Jim Cox, but I'm not quite sure how they'd be double counted, in the sense that the two projects are discreet. They do connect through the Western Renewables Link and Project EnergyConnect near Kerang, but they're all individual projects that are considered on their cost basis.

Senator VAN: But my point is that there is a part of VNI West that, if it didn't go ahead because of the TOOT methodology, you'd be recounting its loss back into the HumeLink benefit. Is that correct?

Mr Cox: No, I don't think we agree with that. What we do is look at it project by project and look at the costs of each project and the benefits of each project. Our view is that these projects all stand on their own merit.

Senator VAN: Okay. I'm not sure I agree with you, but we'll test that.

CHAIR: Can I ask a quick follow-up, if you don't mind?

Senator VAN: Of course.

CHAIR: If you're seeing these outages, the pause, which I believe has been called for by some—how would those two things interface? Are we going to end up in a worse situation if there were a consideration of a pause in renewable generation?

Ms Savage: We are in a place where we've got a least-cost development pathway, which is the integrated system plan. It's looked at how we develop the system. We know there are scheduled retirements. Eraring is due to exit the market in 2025 at this point, Yallourn in 2028, Bayswater I think between 2030 and 2033 and Loy Yang in Victoria in 2035. So we do need to keep the investment pipeline flowing, because these plants are going to exit and we won't have replacement capacity otherwise.

CHAIR: Are they likely to become more unreliable as they get closer to their retirement date?

Ms Savage: Yes. The type of investment that you make at that point in asset life—you wouldn't be doing a big replacement of a boiler, for example, necessarily. You might do tube replacements, but you'd generally be doing the type of capex that you would be doing to stay in business and for safety. So you would expect the forced-outage factors to increase as the plants age.

CHAIR: Thank you. Thank you, Senator Van.

Senator VAN: My pleasure. Will AER reconsider their previous approval of HumeLink and VNI West if Snowy 2.0 is severely limited in the number of pumps that can be run because of transmission instability on VNI?

Ms Savage: I know you've got a lot of experience in this sector, but do you mind if I just explain our role for the other senators in that context?

Senator VAN: Please.

Ms Savage: Our job in this space is, effectively, to write the cost-benefit analysis guidelines, which AEMO uses and which the transmission proponents use either in their integrated system plan or in the regulated investment test for transmission. Once AEMO has defined what might be the projects that need to go forward—their integrated system plan actionable projects—the transmission proponents then do a regulated investment test, which is a cost-benefit analysis, basically. They then select the option that maximises the net economic benefits of that project. And I know you will be interested in this, too, Senator Cadell. Then, once they have a credible option or a preferred option, there's a period where there can be a dispute, so we would be the body that hears any disputes over that. Then eventually they would come to us for a contingent project application, which is where the project itself gets funded. We would only be able to approve that if there are no disputes on foot—they've all been resolved—if there has also effectively been a resolution of the RIT-T, so it's a compliant RIT-T, and as long as it

has been through the feedback loop. Our job sits in those discreet points. We don't evaluate the project itself is the point I'm saying.

Senator VAN: No, but you get to test what gets counted in under the national electricity rules. You'll forgive me for putting these questions to you, but the parliament and therefore the people of Australia don't get the opportunity to put these questions to AEMC or AEMO. Minister, a question to you: would the government consider changing legislation to ensure those bodies were more accountable to the Australian people?

Senator McAllister: There are a range of reforms on the agenda of the ECMC. I don't believe that that is one of them. Mr Duggan may be able to clarify.

Mr Duggan: No. You'd know that those bodies operate for the purposes of all the jurisdictions that are member bodies. At the moment the governance structure of those two bodies is one that is effectively a shared governance structure, rather than a direct reporting to the Commonwealth. That's important because the states, many of whom run their own power systems—others with a greater degree of private involvement—are primarily running their own electricity systems, which means they're not really providing a service directly to the Commonwealth. It's with the states and the Commonwealth jointly.

Senator VAN: I understand. But you would have noticed a lot of frustration from senators over the times that you've been in front of us in estimates, in that AEMO is a predominantly transmission-run organisation. Its membership is made up of all the transmission companies plus the other jurisdictions and the Commonwealth.

Ms Savage: And the generators, too.

Senator VAN: And the generators. One only has to look at the ISP to say, 'Well, they're completely biased towards transmission.' Then we get into questions of gen costs that they commissioned CSIRO to do, with all the flaws in that modelling. It just further reinforces that AEMO is transmission oriented and seeks to serve the transmission companies in Australia, which are largely foreign owned. So there's a real flaw in accountability to the Australian people of what's going on here.

I'll give a simple example. I did a back-of-the-envelope 'What would it cost to put solar PV on every house in Australia?' It's about \$93 billion. Yet AEMO is putting forward a \$100 billion cost for Rewiring the Nation, which doesn't serve one electron, doesn't store an electron, doesn't add anything to it. All it does is connect up other industrial-scale PV out in the regions, running wires through people's backyards and farms, which is upsetting a lot of voters out there.

CHAIR: Senator Van, is there a question here?

Senator VAN: Yes. I'm interested to find out why there is a lack of accountability in the system when there is so much at stake both in terms of the absolute need to bring down emissions and having a reliable energy supply.

Ms Savage: If you wouldn't mind me just making an observation on AEMO's governance structure. They are 60 per cent owned by NEM jurisdictions—governments—and 40 per cent by industry participants, of which network companies would be in the minority. The number of generators and retailers would far outweigh the number of network companies in their membership. From that perspective, I don't think they have an ownership structure that biases them in any way towards building poles and wires over anything else. I'll make a joke, but I would say we think they're biased towards keeping the lights on, because they're a system operator. In that regard that's their focus, and what they're trying to do in the integrated system plan is a least-cost development pathway. So, they do take account of generation costs as well as network costs. There is quite a large amount of solar PV that comes on in that integrated system plan. Ms Jolly might pull it up for you in a minute if you want to see it.

But, if I pivot back to the question that you'd asked before about whether there was a significant change around Snowy, for example, the one thing I did forget to mention is that there is a material-change-in-circumstances provision under the legislation, and so it is the responsibility of the project proponent to form a view as to whether there has been a material change in circumstances. We recently wrote to TransGrid to remind them of that obligation in relation to HumeLink, because of the increase in its cost. If there is a material change in circumstances, they do need to think about whether the RIT-T would need to be re-applied. So I think, in the case you're describing, if something radically different happened with Snowy, and the networks were not yet built, they would have to consider whether there was a material change in circumstances. Did you want to add anything to that, Ms Jolly?

Mr Duggan: Could I just add to your point on governance? The chair of the AEMO board and the AEMO board itself are appointed under national energy laws by the Australian government and the state and territory governments, collectively. So its accountability structure is to governments, not to transmission companies or generation companies. It is collectively to all the jurisdictions that are members of the energy ministers forum.

Senator VAN: We're seeing such a blatant gap in the logic. I just gave you an example where one simple policy decision could change to a lower-cost option that does more for bringing down emissions and replacing fossil fuel electricity. That's just one simple example that a humble backbench senator has put forward. I could take you through the ISP backwards and forwards and not find anything in there. I could take you to the schedule talking about storage, and it's almost silent. I think it's schedule 4.2. It says there's going to be a trebling of that. They talk about coal-fired generation going out earlier. Yet there's nothing in here that shows how they're going to firm up all that transmission.

Ms Savage: I have the Integrated System Plan numbers here, if you'd like. I'm just having a look at the distributed PV generation.

Senator VAN: Maybe you should table them. I don't need them. I've read them more times than most people.

Ms Savage: I was just going to comment that the terawatt hours will go from 45 in 2030 to 93 in 2050. So the volume of distributed PV generation and underlying consumption that's met by distributed energy resources is actually very significant in terawatt hours under the step-change scenario.

Ms Jolly: I would also add that, in relation to the ISP, should there be a change in circumstances in the market, there's also an obligation under the rules for AEMO to go back and do an update on that. They would look at anything significant that has changed and what that drives in terms of the optimal development pathway. That's something that the rules require them to do in the same way that transmission providers are required to do it in relation to specific projects.

CHAIR: We'll need to rotate the call.

Senator VAN: I have one last question. Do you at AER test any of these scenarios yourselves?

Ms Savage: What we have as a role involves two things. We have to do a transparency review. We go through and look at their *Inputs, assumptions and scenarios report* and also the draft ISP. We go through and make sure that they can actually show that all of the inputs and assumptions have come from credible sources, that they can cite them and that the consultation processes have been followed, similarly with the scenario processes. So we have that transparency review role. And you probably would be quite interested in this: we've just done a review of the *Inputs, assumptions and scenarios report*, and there are quite a few areas—

Senator VAN: Is this for 2024?

Ms Savage: Yes, that's right. It's for 2024. There are quite a few areas where we've said AEMO needs to come back and do further work on them. So we do have an active role in that space.

Senator VAN: I'm going to keep coming back, because I think there's more that you could or should be doing. I'm not criticising the work you're doing, but I think there are some more tests and questions that could be asked. Thank you, Chair.

CHAIR: We'll go to Senator Cadell.

Senator CADELL: Hello, again. Suddenly, we have been here for three or four estimates, and I'm only starting to get a list of all the TLAs, the three-letter acronyms. It still throws me, being here. I'm playing three-card monte on the street in Brooklyn—you've always got to follow the queen, only there are 10 cards and you're trying to find out where the answer is and lays! But we're out there in the world. You were going through the processes before. It's easy to follow when you're sitting around saying, 'This is the process we're going through. You're out on people's farms that are being compulsorily acquired or negotiating with them for transmission lines, and there is a lot of good will out there. I went to a meeting at Dunedoo the other day where, I think, EnergyCo had a consultation, but people are still not feeling heard.

What's coming up, and it's come up a few times, is the AER least-cost delivery model. I want to know where and at what level that falls down—between RIT-T approvals, best solutions, where it goes on. I'm asking inquisitively. There's no thing here. When there is a preferred solution by a provider, they come to you and say, 'This is the proposed alignment,' or this, that and the other. They do a business cost. When those things go out, the landholder goes—I'll use an example from earlier this morning of a gentleman with a pacemaker. They're actually avoiding his property. It's going to cost money to route two 330 kV lines out in Orana west. What level is that at when they're getting to these numbers? Is that at RIT-T? Where does that fit in in all these amendments?

Ms Savage: I'll start, and I might hand over to Mr Cox in a minute. It can depend a little bit on what point they are up to in their community engagement. Was the project HumeLink?

Senator CADELL: No. This was Orana west.

Ms Savage: Central-West Orana, yes. What we've done with HumeLink, for example, is we've actually given Transgrid money earlier than we normally would. Normally, we wouldn't give the money until what's called a

contingent project assessment, which is when they come in with the whole kit and caboodle. What we've done with HumeLink, though, is give them two buckets of money before that. The first one, I think, was \$321.9 million, and the second bucket was \$227.9 million. That's so they can actually do some of that engagement early so that, when they come to us with the big bucket of money, they've got a much better sense of what they need to do. Otherwise it can be even after they've seen us by the time they're doing some of that consultation. That's had them out in community talking to landholders much earlier in the process and giving a much clearer sense of route, because often the route doesn't actually become clear until much later in the process. So that phasing of early works has, I think, brought forward some of that consultation, and that's a good thing. What it'll enable us to do when we get the big contingent project application at the end is assess some of the investments they want to make to manage some of those additional community issues and social licence issues that have come up through their engagement. Did you want to add to that at all, Mr Cox?

Mr Cox: Perhaps I would just say that we're seeing that the planning process has a number of stages to it. There was the ISP process, which Clare was talking about—very strategic. Then we go down a level to the RIT-T process, which is probably looking at planning on a more detailed level. Then, when you come down to the issues that may matter for individual farmers—where routes may go and so on—they probably come much later in the process, and we look at that when we look at the contingent project application to pass costs on to the consumer base. So there are a number of stages when this can happen. What we have been encouraging the businesses to do is go and talk to their communities. We are keen on good community engagement, and, as Ms Savage said, we put out a statement earlier today about how this might be done. So we are encouraging that, but, obviously, it's something that does need to be done particularly well with a particularly good skill set, and it's important to get that sort of work being done.

Senator CADELL: Given the importance of the grid going forward for what we're doing, are you looking at alternative models or best practice for stuff around consultation or route maps or anything that can happen to put more minds at rest as we go forward? I will give an instance after, but I'll let you answer.

Ms Savage: Yes, we are. I think it was interesting that you asked me a question about this in May, and I said to you that we were doing a piece of work at the time. So we, for ourselves, had some work done by Deloitte on what best practice looks like, and we've put that out today as well.

Senator CADELL: Today, have you?

Ms Savage: Yes, that's right. There's also been some work that the Energy Charter's done, and there's also, obviously, the work that Andrew Dyer's doing as part of his review. We're not trying to say that our work is definitive there, but what we are saying to the transmission companies is: 'We expect best-practice engagement, and we will fund you to undertake best-practice engagement.' We think that engagement's really important for a few reasons, such as understanding what the nature of the issues is, making sure the projects can proceed in a timely way so that we don't defer the benefits of these investments, and also ensuring that we get an optimal mix that meets the needs of communities while keeping costs down.

Senator CADELL: It's not just the engagement on processes; I'll give you an actual example. There is a gentleman from Dunedoo. He has a 2.9 kilometre run through his property proposed. He's written twice to EnergyCo suggesting other lines because the proposed line takes the only dry land in a wet area where his cattle race and silos are. I see the problem of the situation. To divert that, and the numbers on this—we have \$3.3 million going straight per kilometre and \$7 million when we're going like this. To divert his thing is, by my maths, the best part of \$9 million or \$10 million to keep his thing. When we're talking best practice, are we not looking at purchasing the entire farm and letting him farm elsewhere at a lower cost than diverting a route; that is probably a better outcome. Is anyone looking at outcomes like that?

Ms Savage: You're talking about a project in Central West Orana. That's a different regulatory regime to HumeLink.

Senator CADELL: I'm giving that example as—

Ms Savage: That's within the New South Wales renewable energy zone. They have got community payment and landholder payment—

Senator CADELL: They've got that. If it costs that much difference for a transmission line, surely there is flexibility in method?

Mr Cox: Perhaps not in Central West Orana but in other transmission lines there have been cases where they have brought properties that are particularly strategic. It does happen, for sure.

Senator CADELL: That's nice to know. Has the AER given any full RIT-T approval for any of the Rewiring the Nation program that requires a full transmission corridor being built yet? It's too early, isn't it?

Ms Savage: It's too early.

Senator CADELL: Is there a process where you've gone back and looked at the RIT-T approvals and the amount, and what AEMO uses to value it and any differences?

Ms Savage: For us to approve an actionable ISP project, before we can sign off on the money it has to go back through AEMO's feedback loop. They have to make sure it still stacks up once we know the final cost of it. Often when they're doing the ISP they've got an estimate, and that estimate may change over time.

Senator CADELL: Then the bloke with the heart problem—

Ms Savage: Yes, and they put it back through their model again to make sure it still stacks up, and it has to stack up for us to sign off on it.

Senator CADELL: Are you monitoring the difference from the AEMO estimates to what the final approvals are?

Ms Savage: AEMO don't necessarily tell us the estimate. They will say it has passed the feedback loop.

Senator CADELL: AEMO has an estimate in their costings going forward, but you don't know what the number is.

Ms Savage: No, not on an individual project basis. We would know whether it passes the feedback loop. We could probably ask them. I'm not saying they wouldn't tell us.

Senator CADELL: It'd be interesting knowing costings of stuff—that AEMO project this, but when you look at the difference it is almost double.

Ms Savage: That's why we have them go back again to AEMO. If you think about a project like HumeLink, when it was originally \$3 billion or \$3½ billion and when it was originally in the ISP, it's now, I've heard Transgrid say, estimated to be \$5 billion. Before they can come to us for funding, it's going back through AEMO's model to make sure it still makes sense at that price.

Senator CADELL: Understood.

Ms Savage: The other thing, just on that, is we have just updated our RIT-T guidelines. That puts more transparency and rigour on the transmission developer around the cost estimates they use—so actually requiring them to use a particular cost methodology or to explain why they're not using that. We're trying to also get a clearer focus on potential costs earlier in the process.

Senator CADELL: Potentially, if they don't do that, they lose their guaranteed rate of return or get a lower guaranteed rate of return? If an 8.5 goes for 6.6—

Ms Savage: That would be an interesting way of doing it, but, no, it would be more that they wouldn't be complying with the rules around the RIT-T.

Senator CADELL: What's the current scope of the rate of return?

Ms Savage: The current rate of return is project dependent because it depends on the 10-year—

Senator CADELL: What is the range?

Ms Savage: It's in the fives.

Mr Cox: In the fives, yes.

Senator CADELL: Are you receiving any RIT-D distribution applications for upgrade that have passed the distribution network at the moment?

Ms Savage: When we do a distribution reset, which is a five-year regulatory determination, that would be where we would tend to see the cost-benefit analysis for distribution level projects, and we get lots of them.

Senator CADELL: You get lots?

Ms Savage: Yes. Anything that's over \$7 million has to have a regulatory investment test for distribution. So, when we do a company like Ausgrid in Sydney, where it's got a regulated asset base of \$3½ billion or something, there will be loads and loads of RIT-Ds in that context.

Senator CADELL: Are any of those to augment rooftop solar, household batteries or anything like that?

Ms Savage: It would be a combination of things. In the latest reset for the three New South Wales businesses—we're doing seven at the moment, actually—there's a lot of new expenditure around climate resilience. That's making sure that the network is resilient to the impacts of climate change. Cybersecurity upgrades is a big one as well, and then we are seeing some for the integration of—

Senator CADELL: You are seeing some household integration?

Ms Savage: yes—distributed energy resources.

Senator CADELL: Okay. Thanks, Chair. I'll put the rest on notice because I'm trying to be nice for a change!

CHAIR: Thank you kindly—much appreciated. Excellent. Thank you very much for your time today. We do appreciate it. I will now let you go.

Department of Climate Change, Energy, the Environment and Water

[17:45]

CHAIR: We will now go to outcome 2. This session will be on program 2.1, Conserve, protect and sustainably manage Australia's natural environment through a nature positive approach. We'll start with Senator Hanson-Young.

Senator HANSON-YOUNG: I might start with the minister, if that's okay. I want to, firstly, go to Minister Plibersek's press release on 12 October, talking about the consultation and engagement around the government's new environment laws. Is the minister still planning to release the full package publicly in exposure draft form in December?

Senator McAllister: Thanks for the question, Senator Hanson-Young. I think you'll know that the genesis of this law reform project lies in two places: (1) a widespread view that the laws were not up to scratch and then (2) a piece of work undertaken by Mr Samuel, which took more than 10 years to complete, which highlighted a few things, particularly that the current legislation is neither protecting the environment nor working for business. The nature positive plan is our government's response to that set of recommendations and the set of issues that prompted it. The minister, as you've observed, has laid out the consultation timetable, including bringing forward the opportunities for stakeholders' engagement with detailed information about the proposed legislative changes.

Senator HANSON-YOUNG: Yes, but my specific question was: will the draft legislation, the exposure draft, be released in December?

Senator McAllister: My understanding is that the revised timetable provides opportunities for stakeholders to engage with the detailed legislative proposals, that that will be a rolling process of consultation, and that an opportunity will be provided for widespread public consultation when the bill is introduced. It's expected that that will be sometime next year. We're working through what is a very complex reform as best we can. I make the point that it is a very complex reform. It's more than a thousand pages in the existing act. We inherited from Professor Samuel a collaborative process and a collaborative culture, and we've sought to build on that. I think we would see at least two things as a marker of success: firstly that we continue to bring that stakeholder group, which is very broad, along with us and engage people deeply; and secondly that we get it right. It is a significant reform. It matters to conservation advocates and it matters to business, and it is actually important that we get it done.

Senator HANSON-YOUNG: The minister had committed several times to a public release of an exposure draft of the package, which was going to include several pieces of legislation. We've now had clarity that that is not going to happen; instead, this consultative group will have access to that information. The public won't see it until it's tabled in the parliament.

Senator McAllister: The proposal is that there be deep consultation with subject matter experts from business, industry, environment groups, the science community and civil society. There will be an opportunity to stress-test a range of elements of the package—the policy settings and definitions, the national environmental standards—and then an introduction at some point next year.

Senator HANSON-YOUNG: Perhaps somebody from the department may be able to shed some more specific light on this. Is the consultation group 30 individuals that represent 30 organisations, or is it 30 organisations, which might mean multiple individuals from each organisation on that committee?

Mr Tregurtha: An invitation has been extended to over 30 stakeholder organisations.

Senator HANSON-YOUNG: How many individuals will make up this group?

Mr Tregurtha: We expect each stakeholder organisation to send somewhere in the order of one to two representatives, so there will be something in the order of 50 to 60 people.

Senator HANSON-YOUNG: What is the list of those stakeholders? You're saying 'over 30'. Do you know who is going to be on that group so far, or is it that the minister has said, 'I want around 30,' and you've got to come up with 30?

Mr Tregurtha: No. As I think the minister was saying, we have sent invitations out to a range of organisations who we have been working with, frankly, since the start of the Samuels review.

Senator HANSON-YOUNG: Who will be on the group? I'm conscious of time. There are a lot of colleagues who want to ask questions. This is going to be a long session. Do you have a list of the groups?

Mr Tregurtha: I don't have the list with me, but I'm happy to take that on notice and provide it.

Senator HANSON-YOUNG: Didn't you think I was going to ask this?

Mr Knudson: To be clear about this, the reason why the list doesn't exist is that we're still receiving individuals and organisations that want to participate. Those are being considered. What Mr Tregurtha was talking about is what the starting point was, and then we'll add to that as we go along. If there are groups et cetera that you have been hearing from who have not been contacted and want to participate, it would be good to know those, and we can consider them as well.

Senator HANSON-YOUNG: First of all, I would like the list. The list as it exists today would be good. What are the criteria by which groups are going to be selected for this consultation?

Mr Tregurtha: I indicated that the groups that have been invited so far are those groups we've been working with. They have been participants in our working groups and our reference groups. We've reviewed the range of contributors to the range of consultations we've had, nearing 100 consultations over the past two years. We are genuinely trying to ensure that, as Mr Knudson was saying, we capture interested organisations. Also as Mr Knudson was saying, if there are organisations that feel they haven't been contacted, we'd be happy to hear about those as well.

Senator HANSON-YOUNG: If 60 organisations put up their hands and say they want to be involved, will they all be involved?

Mr Tregurtha: Clearly, there is a logistical issue here as well in terms of how we can accommodate—

Senator HANSON-YOUNG: So therefore you must have some criteria by which you are advising the minister which groups are in and which groups will miss out.

Senator McAllister: To be fair, it is not unusual for government to establish a representative—

Senator HANSON-YOUNG: No, of course not. That's why you must have some kind of formula.

CHAIR: We're not going to be talking over each other. Senator Hanson-Young, can you please allow the minister to finish. We've run this way all day, and we will be continuing so.

Senator McAllister: I doubt if there are formal criteria. As I understand it, there are a range of groups who have generously contributed their time and engaged constructively since the process began. That forms the core, but if there are other organisations that legitimately have a deep interest and expertise to bring to the table, of course the government is interested in hearing from those people. I'd add also that the minister will examine other opportunities for engagement as the consultation rolls out.

Senator HANSON-YOUNG: I haven't suggested that anybody is complaining about missing out. I'm trying to find out who you've invited.

Mr Knudson: I think we previously provided all the organisations that have been engaged in the various reference groups et cetera. I believe Senator Duniam has asked that question consistently. That's the starting list of the organisations.

Senator HANSON-YOUNG: So you must have that list.

Mr Knudson: What I'm saying is we haven't finalised it because we're still receiving different requests from different organisations. It hasn't been finalised yet.

Senator HANSON-YOUNG: Is Woodside on the list?

Mr Knudson: No—

Senator HANSON-YOUNG: Is the BCA on the list?

Mr Knudson: Yes, but let me just say in terms of your question—

Senator HANSON-YOUNG: Is the Minerals Council on the list?

Mr Knudson: Senator, can I please answer—

CHAIR: If we're going to start this session in this manner, it's going to be a very long and ugly night. Can we just ask a question and have respect and allow the officers to respond.

Senator HANSON-YOUNG: I would like some answers.

Mr Knudson: Woodside is not on the list, because we're not inviting any individual companies to attend. It's—

Senator HANSON-YOUNG: So there are criteria.

CHAIR: Senator Hanson-Young!

Mr Knudson: peak bodies from the business side as well as from the environmental side. As has been the case up to now, we've been engaging with those types of organisations. They will continue to be engaged with.

Senator HANSON-YOUNG: Could we have a list of who you've invited and who's on your working list so far. Surely we can get that tonight?

Mr Knudson: I'm happy to take that on notice.

Senator HANSON-YOUNG: Thank you. Will these groups receive the full omnibus package that we've been told is coming, or is it going to be more piecemeal than that?

Mr Knudson: As the minister indicated, it will be a rolling consultation. They will have different tranches of information provided as we go along and as they're made available.

Senator HANSON-YOUNG: Can we unpack that. What does that mean in reality? The reason I'm asking is that only three or four weeks ago I met with members of your own department and the minister's office and I was told, point blank, there would be an exposure draft released by December. We're now being told that's not happening and this is a rolling process. I really want to understand what that means because it is very different to what I was told in my office by the minister and your department.

Mr Knudson: What the minister's press release talks about also is that we've pulled forward the consultation. We will be dealing with, in effect, the policy settings on the main elements of the legislation, as well as the national environmental standards. That constitutes the core of the reforms, and we thought it was better to do that earlier and start the engagement now, even in advance of the exposure draft legislation being ready.

Senator HANSON-YOUNG: In December, will there be any exposure draft ready to be seen by this consultative group?

Mr Knudson: We do expect that there will be exposure draft legislation. That being said, that is not fully within the department's control. We are working very closely with the other parts of government to ensure that we do have as much available as possible on a rolling basis to engage stakeholders accordingly.

Senator HANSON-YOUNG: What types of rules will the individuals who participate in this process have to adhere to? If they are given a copy of legislation that is being considered by the government, are they bound by confidentiality?

Mr Knudson: No. Indeed, we want, for example, the peak bodies to be talking with their organisation members about the directions that we're going in et cetera, to get their feedback to inform that consultation process over the coming months.

Senator HANSON-YOUNG: So no-one is going to be told they can't share any of the documentation they're given?

Mr Knudson: What we plan to do is provide the documents in the room but not have them to be taken away. We want participants to be taking notes, to be able to have conversations with stakeholders et cetera, outside of those who are attending, but, no, it is not the intention to share—

Senator HANSON-YOUNG: So they're secret documents in this secret meeting?

Mr Knudson: But we're not making them secret at all. We're actually encouraging the participants to then turn around and talk to their member organisations.

Senator HANSON-YOUNG: But not give people the actual documentation so that they can consult within their organisations fully and properly? They'll rely on their handwritten notes, their interpretations?

Mr Knudson: As I've made the point, the minister has pulled this consultation forward. The quid pro quo on that is that we're sharing our thinking at this point that is not at the point where that would be fully out in the public domain, but that's to get early soundings from the key organisations—

Senator HANSON-YOUNG: What have you been doing for 18 months?

Mr Knudson: If you'd like me to walk through, we can go through in a fair amount of detail about the extent of the consultations that we've done.

Senator HANSON-YOUNG: I've sat in the Senate estimates quarter after quarter, and you keep telling me each time: 'We're in consultations. Yes, we're talking. We're close.'

Senator McAllister: It is a complex reform. It involves thinking about a range of different features of the proposed legislative arrangements and the ways that they interact. As I understand it, what is proposed is that a

structured consultation will take place with some of the key stakeholders who bring expertise to the table and are genuinely diverse—people drawn from environment organisations, business organisations, people who are familiar with the significance of the legislative changes. There will be a structured approach to providing information and allowing that group to work through the relevant questions in an orderly way. As Mr Knudson has indicated, it is bringing it forward so as to share some of the thinking at this point about specific provisions that are being contemplated for the legislation.

Senator HANSON-YOUNG: This is all just cover for the fact that you're running 18 months behind schedule.

Senator McAllister: In what sense? I'm sorry; I don't understand what the timing is that you're referring to.

Senator HANSON-YOUNG: The fact that your government committed to the Senate seeing this legislation and dealing with this legislation this time, this year. That is what I'm referring to. So you are already well and truly behind the commitments that your government gave.

Senator McAllister: It is a complex piece of legislation, and stakeholders are deeply interested in it. It's not surprising that, as we've gone along, we've learned a bit about how best to work with this group of stakeholders and how best to bring people together around complex concepts. The minister has indicated an intention to have a really frank and detailed discussion with the stakeholders between now and the end of the year and to continue into next year, prior to the introduction of legislation.

Senator HANSON-YOUNG: When will the consultations begin?

Mr Knudson: The consultations will begin on 30 and 31 October.

Senator HANSON-YOUNG: But you still don't have the final list?

Mr Knudson: That's correct.

Senator HANSON-YOUNG: It's less than a week, and we still don't have the final list?

Mr Knudson: That's correct. As I've said previously, we've got the vast majority, as is already on the public record, as to those organisations which have engaged over several months with us. We're building on that list as we speak. That's why it's not finalised.

Senator HANSON-YOUNG: When will that stakeholder group get a copy of the legislation?

Mr Tregurtha: As Mr Knudson has already said, and I think the minister has made clear, it's a rolling consultation. There will be tranches of drafts of the legislation that will be made available progressively as they become—

Senator HANSON-YOUNG: 'Rolling legislation' sounds very much like kicking the can down the road.

Mr Tregurtha: Rolling consultations. And drafts of the legislation will be made available as that rolling consultation proceeds.

Senator HANSON-YOUNG: Rolling consultation—kicking the can down the road.

Senator McAllister: I have to stop you there. You may wish to introduce into your questioning characterisations such as the one you've just used. That's not the characterisation we would use for this process. We are working with a group of stakeholders through a complex legislative reform, and we're committed to doing it in a good-faith way so as to get the detail right prior to the introduction of legislation into the parliament, where it will be scrutinised in the ordinary way. There's nothing very unusual about that.

Senator HANSON-YOUNG: No. It's just very different to what everybody was told was going to happen. That's why we're all asking questions now.

Senator McAllister: You're very welcome to ask questions. It is the characterisation of our approach and our motive that I am responding to, and I'm explaining to you that we're continuing to engage in a good-faith way with stakeholders on a piece of legislative reform that we consider to be very important.

Senator HANSON-YOUNG: I've almost finished this line. Then I'll be happy to hand on. When will the legislation be tabled in parliament?

Mr Knudson: The exact timing of that is a matter that is somewhat outside of our control, as you can imagine. We're talking about, as the minister pointed out, over 1,000 pages of existing legislation that needs to be rewritten.

Senator HANSON-YOUNG: So that time frame doesn't have a—

Mr Knudson: It does. It's as early as possible in 2024, but I can't give you more precision than that. That's all I want to say.

Senator HANSON-YOUNG: That surprises me, because a month ago we were told it would be March. So it's not March anymore?

Mr Knudson: I said 'as early in 2024 as possible'.

Senator HANSON-YOUNG: So it's not March?

Mr Knudson: I think I've answered the question.

Senator HANSON-YOUNG: Either it is or it isn't.

CHAIR: It might be.

Senator HANSON-YOUNG: You can't commit to that any longer?

CHAIR: He's not saying no.

Mr Fredericks: Senator, can I just say—

Senator HANSON-YOUNG: I don't understand. Three or four weeks ago you could say it was March and now you can't. What's the problem?

CHAIR: Let's allow the secretary to make some comments on this.

Mr Fredericks: To be fair to Mr Knudson, he's given the answer to that question. I would just emphasise a point that the minister has made, and, Senator, you'll respect this. This is incredibly complex legislation, and the truth of the matter is: I think as we've worked on it more and more we've come to understand just how complex it is. We know—and the minister has said—that this is legislation that's going to be at least 1,000 pages, if not more. We could wait for the perfect piece of draft legislation to put out, but it might be a long wait. This is a good-faith effort to try to bring forward our capacity to engage in detail on essentially the material that will be in the legislation. The principal point is: we want to engage early and well, not late, so we've prioritised early engagement. It's not perfect. At the end of the day, it's a massively complex piece of legislation, but it is a good-faith attempt by us off the back of—as you know—the exhaustive engagement that we've had with stakeholders on this legislation since the Samuel report. We know we're at a point where we've got to get to the next level of detail, and that's what we want to do as quickly as possible. It is a good-faith attempt to do that.

Senator HANSON-YOUNG: My final question, because I know the chair wants to rotate, is: is it still the intention of the government to introduce a full omnibus package, or are we talking about, as part of this rolling process, different pieces of legislation?

Senator McAllister: I might ask Mr Knudson to respond to that. He is more deeply involved in the consultations than I am, for obvious reasons.

Mr Knudson: We're continuing to pursue four pieces of legislation that will come before parliament as a job lot. That's our intention.

Senator HANSON-YOUNG: So all four would need to be ready before you introduce something?

Mr Knudson: That's correct.

Senator HANSON-YOUNG: Understood. Thanks, Chair.

CHAIR: Senator Duniam?

Senator DUNIAM: I'll pick up where Senator Hanson-Young has left off. In terms of this consultation process, you've indicated that the groups we know about thus far are part of that process. Have you invited further groups to participate, or were you waiting for invitations to come in?

Mr Tregurtha: We sent out an initial round of invitations, then that was followed by a few further invitations, as Mr Knudson was saying.

Senator DUNIAM: What dates did you send out the initial and further invitations?

Mr Tregurtha: I'll have that; I just don't have it—

Senator DUNIAM: Even roughly?

Mr Tregurtha: I wouldn't like to speculate. I'd prefer to get you an answer and come back to the committee tonight, if I may.

Senator DUNIAM: Yes, if you could, that would be helpful. I'm sure we'll get the detail of who, because I think that was taken on notice, wasn't it?

Mr Tregurtha: That's correct.

Senator DUNIAM: That'll tell us how many. Are all groups going to be a part of the consultation process on the 30th and 31st at once?

Mr Tregurtha: Yes.

Senator DUNIAM: Or are they going to be broken into workshops?

Mr Tregurtha: We have made the entirety of the 30th and 31st available to all the groups. We don't expect all of the groups to be in the room for the entirety of those two days, if I can put it that way. They could—those groups may stay for the entirety of those two days if they'd like, but there's no obligation, is what I'm trying to say. It's not a lock-up in the sense that there's a set period of time for which you're required to be in the room. That's what I'm trying to indicate.

Senator DUNIAM: I suspect a bulk of those participating in the consultation on the 30th and 31st are groups who have already been involved to date, so they've got buy-in on where the government is headed with this legislation. There may be others, and that remains to be seen. It wasn't clear to me in the answers to Senator Hanson-Young's questions what they will be given on that day. Are they going to have access to the 1,000 pages of four bills? Is that the proposal?

Mr Tregurtha: As I think Mr Knudson was saying, we'll be making available core provisions and the legislative settings of the core regulatory components, together with drafts of national environmental standards.

Senator DUNIAM: What are the core provisions and core regulatory settings?

Mr Tregurtha: The regulatory system, the assessment and approval system—

Senator DUNIAM: It will be a precis?

Mr Tregurtha: Pardon me?

Senator DUNIAM: Will it be a summary, a precis? Is that what you're talking about? Or would it be actual extracts of the legislation and regs?

Mr Tregurtha: Extracts of the legislation can only be made available when they're ready for inclusion in that rolling series of consultations that I described earlier. In October, we're providing, as I said, details of the legislative settings of the core provisions through a series of papers. That would include national environmental standards.

Senator DUNIAM: So we don't have those yet—the actual legislative provisions—in any form, draft or otherwise?

Mr Tregurtha: The department is working with the drafters in government to continue—there are a range of documents at a range of different levels of production, as we indicated, I think, in an earlier answer around making tranches available as soon as they become available. As for the actual provision of a package, of course, you would understand we need to ensure that a coherent package of information is available in each of those sessions, and that is what we are endeavouring to do.

Senator DUNIAM: Beyond 31 October, when is the next session of consultation?

Mr Tregurtha: We expect there will be at least one more session before the end of 2024. I can't give you an exact date on that at this point.

Senator DUNIAM: And then beyond that?

Mr Tregurtha: We would expect there would be at least one or two sessions in the very early part of next year, but, again, I'm not in a position to give you an exact date.

Senator DUNIAM: So we'll have this closed consultation process from 30 October until sometime in early 2024. Is that what you're saying?

Mr Tregurtha: That's what we currently anticipate.

Senator DUNIAM: And then how soon after? I've heard you say it's not in your control and it depends on what the stakeholder groups say and it's a matter for government, but there is no timeline.

Senator McAllister: The officials can't add anything more to what they've already indicated, which is as early as possible next year.

Senator DUNIAM: Right. When I read 'Next steps' in the *Nature Positive Plan: better for the environment, better for business*, on page 5, it says:

Draft legislation will be released to enable further consultation and detailed feedback. The legislation will be released as an exposure draft prior to being introduced into the Parliament before the end of 2023.

To what Mr Fredericks said, was it just harder and more complex than you thought it would be in the first place?

Senator McAllister: I think the way to characterise it is that we knew it would be complex and we were determined, as a government, to bring people with us. That has characterised the consultations to date, and the

department has had the opportunity to consider how best to continue that collaborative work. What is proposed is a continuation of detailed engagement with stakeholders and a frank sharing of the ideas that are proposed for the bill, but to do so in a way that isn't about examining technical drafting, but to deal with the core principles that will be included in each section of the legislation. And I think, as you heard earlier, it's ultimately anticipated that there will be a series of bills considered concurrently—considered at the same time—in the parliament.

Senator DUNIAM: The devil is always in the detail, though. Core provisions summarised in an extract document or precis isn't the same as seeing the legislation because there will be—

Mr Knudson: Senator, again, we've talked about the documents that will be provided for 30 and 31 October. We anticipate, given that we're rewriting 1,000 pages of legislation, there'll be tranches of that legislation ready for that sort of engagement between now and, as Mr Tregurtha was saying, into early 2024. For example, there are provisions on wildlife trade in the legislation which are not exactly seizing the nation. Some stakeholders care deeply about those, and we'll engage on those at the back end. What we've heard from stakeholders is that they're wanting to engage principally. When I say that, I'm talking about the large NGOs and the large business groups wanting to talk about the approvals and assessment system. So that's where we're starting with that core element of the legislation—focusing on that in the 30 and 31 October meeting, laying out how the system will work, which then is a precursor to what will follow later, which is discussion about proposed legislation.

Senator DUNIAM: How many standards are we looking at developing?

Mr Tregurtha: The *Nature Positive Plan* indicated there'd be seven standards—two of which, though, would only be developed in a second phase of developing standards, which were the data and information and compliance and enforcement standards. Now, in the intervening period—understanding this is a great example of where the feedback we've had from stakeholders over the course of consultations this year has indicated the importance of the data and information standards—we have brought forward that first package of standards and are working on developing a draft of it. So it's our intention in this first round of standards development that ultimately there will be six standards.

Senator DUNIAM: There'll be six. As part of this, between 30 October and some unspecified point in early 2024, they will be rolled out—in what form?

Mr Tregurtha: Senator, at the moment—I think we've spoken about this at previous estimates. We established a working group of stakeholders, scientists, academics, environment groups, business groups and industry groups who came together and helped us with initial drafts of some of those standards. So what we have prepared are draft standards. They're in, I guess, if you like, the form of a policy document at this point in time. We'll be making those available as part of the rolling consultations we've been talking about. When they are ready to be made—noting that they cannot be made, of course, until the power to make them is provided to the minister through the passage of a bill—they will need to be made as legislative instruments, so they'll need to be converted into legislative instruments to be made by the minister into law.

Senator DUNIAM: Obviously the work needs to be undertaken concurrently, given the legislation—

Mr Tregurtha: Absolutely.

Senator DUNIAM: which is virtually what we're doing.

Mr Tregurtha: Yes.

Senator DUNIAM: So there are six, you're saying. What are the six?

Mr Tregurtha: A standard for matters of national environmental significance; a standard for offsets; a standard for regional planning; a standard for community consultation; the standard for data and information that I mentioned earlier; and, of course, the standard for First Nations engagement and participation in decision-making.

Senator DUNIAM: What were the two that were going to be dealt with in a second tranche? Did you say—

Mr Tregurtha: The data and information one that I mentioned has been brought forward into that group, which I've just explained. The other one was compliance and enforcement. That one will follow the formal creation of the EPA, because it will be the EPA that will be responsible for administering the compliance and enforcement standard.

Senator DUNIAM: Okay. Flowing on from the closed-circuit consultation that will occur, what date do we expect to see an exposure draft now, roughly, of the legislation for bills and the standards? This is not just about stakeholder groups, be they business or ENGO. This is about a public good, and they will have a high degree of interest in this.

Mr Knudson: There are a couple of things on that. First of all, we anticipate carrying on with the engagement until early 2024, as we've said. The minister is also considering what can be done in terms of engagement with the

public more broadly. I would just note that, in terms of any engagement on this, I think, as the minister said, once this enters into a parliamentary process, there are absolutely opportunities for public engagement through that process as well.

Senator DUNIAM: So the minister is considering a broader consultation. That's in her thinking. Minister, are you able to add anything to that about what might be in the minister's contemplation?

Senator McAllister: No, not at this point.

Senator DUNIAM: Do you think that, throughout the course of the evening, you might be able to check for us about what indications there might be from the minister around this?

Senator McAllister: Senator Duniam, the officials and I have given you quite an amount of information about the workshops that are proposed between now and the end of the year. Mr Knudson has indicated that the minister is contemplating what other additional opportunities for consultation might be made available. I can't provide you further information about that at this point.

Senator DUNIAM: Why not?

Senator McAllister: Because it's under consideration.

Senator DUNIAM: It's been 18 months. It's a complex process. People have, at least to begin with, two days to look at the beginnings of a thousand pieces of legislation. The Australian public won't see this until sometime next year in any form.

Senator McAllister: Senator Duniam, I think you're mischaracterising the advice that has been provided to you, which is that the minister is considering other options for public engagement.

Senator DUNIAM: I'll have more. Thanks, Chair.

CHAIR: Senator Pocock?

Senator DAVID POCOCK: I'm just following up from Senator Hanson-Young's and Senator Duniam's questions about engagement. On a question on notice—I think it was from Senator Duniam at the last estimates—the minister had had five meetings with stakeholders about EPBC reforms, and I think three of those meetings were with the Business Council of Australia. Could you update us on how many more meetings the minister has had?

Mr Tregurtha: The department doesn't run the minister's diary, but I'm happy to take that on notice and come back to you on that.

Senator DAVID POCOCK: You don't attend EPBC briefings and meetings with her?

Mr Tregurtha: On some occasions we do, but not necessarily all of them. So, in order to get you the appropriate information, I'd like to take that on notice.

Senator DAVID POCOCK: Sure, take it on notice. A few weeks ago, the minister claimed that spending on the environment is the highest it has ever been under this government.

Senator HANSON-YOUNG: Under this government?

Senator DAVID POCOCK: Well, ever—

Senator HANSON-YOUNG: Ever.

Senator DAVID POCOCK: in Australia's history, but delivered by this government. I'm keen just to unpack that claim a little bit. Have you provided advice to the minister that this is the case?

Mr Knudson: What we have said is that, over the forward estimates, when we added up all the commitments made by the government with respect to spending on the environment and the nature-positive related mission, it added up to \$4.8 billion. I haven't personally done the analysis on whether that is the highest level of spending, so we'd have to take that on notice.

Senator DAVID POCOCK: So you don't understand the basis of that claim?

Mr Knudson: I don't personally, no.

Senator DAVID POCOCK: That \$4.8 billion is over four years?

Mr Knudson: That's over the forward estimates, correct.

Senator DAVID POCOCK: I might put some stuff on notice about comparing that historically. Would that all be on environmental protection, or is there money there going to water and other things? What's that?

Mr Knudson: It goes to a range of things. I can give you a few illustrative examples, if that's helpful, of the larger items.

Senator DAVID POCOCK: Yes, sure.

Mr Knudson: We've got \$1.2 billion being spent on the Great Barrier Reef, \$1.1 billion being spent on the National Heritage Trust, and \$231 million to extend an additional ten Indigenous protected areas, to give you an idea. So it's a range, quite frankly, of initiatives across the country. All of them have an element of conservation and protection associated with them.

Senator DAVID POCOCK: But not all of them are environmental protection per se?

Mr Knudson: It depends on what you mean by 'environmental protection', because of the line between protection and conservation. 'Conservation' is just a slightly broader term, generally, in this space. But you can certainly argue that all of these initiatives—

Senator HANSON-YOUNG: I don't know how the concept of protecting the environment can be misinterpreted or not understood properly.

Mr Knudson: Listen: all I wanted to say is that 'protection' implies a certain set of activities, generally, for government officials.

Senator HANSON-YOUNG: Protecting—usually.

Mr Knudson: Right—through regulation et cetera. 'Conservation' can have a broader determination.

Senator DAVID POCOCK: I was looking at the forward estimates. The funding for conserving, protecting, managing and natural resources—really all investment in nature and environmental protection—is stable, if not reducing slightly, over the forward estimates. Do you agree that there's a slight taper in investment over the forwards, year on year?

Mr Knudson: I don't believe so, but I don't want to mislead you, so I'm very happy to come back with a comparison over the forward estimates—sorry, a historical comparison of spending on environmental or related initiatives.

Senator DAVID POCOCK: Of that record investment, how much is for threatened species?

Mr Knudson: I'll have to come back to you with the specifics, but I can say that the Natural Heritage Trust, for example—that \$1.1 billion—is principally about species protection and conservation. We can certainly expand on that. There are a number of programs that are within that, including the Saving Native Species program, which is \$224 million in that space, as an illustrative example.

Senator DAVID POCOCK: Are you confident that this level of investment is consistent with the commitment to no new extinctions?

Mr Knudson: A number of these initiatives have absolutely been designed—the Threatened Species Action Plan is designed around that commitment. It highlighted that as one of the two major commitments in that document that the government made at the time. So absolutely we're focused on the achievement of that objective.

Senator DAVID POCOCK: How are we going for time here, Chair? I can keep going?

CHAIR: Thank you. Senator Hanson-Young.

Senator HANSON-YOUNG: Talking about money that is being spent protecting the environment or being spent in other ways out of the department, I'm interested as to how much money was spent on the legal costs required for the minister to defend her right to approve fossil fuel projects in court recently.

Mr Fredericks: I think we'll have to take that on notice.

Senator DAVID POCOCK: But you said it was in this outcome.

Mr Fredericks: It is.

Senator DAVID POCOCK: If it is, surely you could talk about that.

Mr Fredericks: Sorry. I do apologise if that's the case. It's just a misunderstanding. I was explaining that that whole issue—all the discussion about that legal case—is in this outcome, so that's 100 per cent correct.

Senator DAVID POCOCK: This morning I said, 'How much money did the Living Wonders case cost the Commonwealth?' and you said to come back in this section.

Mr Fredericks: That's right.

Senator DAVID POCOCK: Senator Hanson-Young has just asked that question, and you're saying—

Mr Fredericks: To be fair, maybe I misspoke this morning. I do apologise for that.

Senator DAVID POCOCK: Well, someone in the department, surely—

Mr Fredericks: No. I think the problem—to both senators—is that I will ask my people for an answer to that question but I have a sneaking suspicion the answer is going to be, 'We don't know yet,' because we'll be in the process of finalising costs from all of the various providers. So I will take that on notice, and if I can get an answer—

Senator HANSON-YOUNG: So there are a few bills to tally up, then, are there?

Mr Fredericks: If I can get an answer tonight, I'll come back to you. Otherwise I'll come back and say I need to take it on notice. Senator, to you: I do apologise. I thought we were discussing the generality of it rather than that specific question.

Senator HANSON-YOUNG: Which part of the budget does defending the minister's right to approve coal and gas projects come from? Is it the protecting-the-environment budget or somewhere else? Is it part of that record-breaking money that the minister's spending on protecting the environment?

Senator McAllister: Senator, the officials may answer your question about the specifics of how legal matters are dealt with within the department budget. It's also the case that they may explain to you the purpose and the reason that the minister was engaged in that action, because we might not characterise it in quite the narrow terms that you do.

Ms Lalor: We have a central budget in the legal division that's dedicated to dealing with litigation that's either commenced on behalf of the minister or to deal with litigation that's brought against the minister.

Senator HANSON-YOUNG: How many of those cases are cases where the money is being spent protecting the environment?

Mr Fredericks: That's a very difficult question for officials to answer. At the end of the day, we expend money defending the position of the Commonwealth.

Senator HANSON-YOUNG: Yes, and this is the environment minister, and we've just heard how wonderful the environment minister is being at protecting the environment. Surely, she is only joining cases that protect the environment?

Ms Lalor: We have an obligation to comply with the Legal Services Directions, which means that we are model litigants in the court, and we support the minister and the Commonwealth in litigation in line with those obligations.

Senator HANSON-YOUNG: Not all cases are about protecting the environment, are they?

Ms Lalor: We have a range of matters in the department. They might involve things like employment matters and other issues as well.

Senator HANSON-YOUNG: Sure. Does defending the minister's right to approve a coalmine fall into the category of protecting the environment or not?

Senator McAllister: Again, I'm not a lawyer. I wasn't involved in the case, but the question of rights, as I understand it, doesn't arise. The minister has an obligation to make decisions as a decision-maker in the context of the legislation that she administers. The department may assist you by providing information about particular cases to the extent that that's possible given the various obligations around legal matters, but I think it's important to be clear about what the minister's purpose is and the department's purpose, which is to administer the law.

Mr Fredericks: At the end of the day, the minister and the department are obliged to act in accordance with the law, and we know that when we make those decisions we're making legally justiciable decisions that can be disputed in court and often are disputed in court. That's what we do, and then, when those court proceedings are commenced, we are bound by the Legal Services Directions to act in accordance with those directions in the conduct of those legal proceedings. I suppose, in a way, the question you're asking—and I understand why you're asking—is: is it about 'protecting' the environment? It doesn't arise for officials. We apply the law. We create justiciable decisions. When they are disputed in court, we follow the Legal Services Directions.

Senator HANSON-YOUNG: So is the law broken?

Senator McAllister: The government is committed to reforming the laws, and we accepted the conclusions drawn by Professor Samuel in the review that he undertook, and, as we've been discussing this evening, we're embarking on an extensive process of consultation to build new laws that do a better job of protecting the environment and also work more effectively for the businesses and other citizens who need to engage with them.

Senator HANSON-YOUNG: Will the new laws help the minister stop new coal and gas projects?

Senator McAllister: We have had this conversation on many occasions, Senator. The government's approach to managing the emissions associated with coalmines and with gas production, for completeness, are the

arrangements contained in the safeguard mechanism. We went through a process in the Senate, which all senators participated in, to debate that legislation earlier this year.

Senator HANSON-YOUNG: So your government is going through an extensive process of reviewing Australia's environment laws. You're spending record amounts of money protecting the environment, getting these new laws up-to-date, and they'll still allow the minister to approve coal and gas projects?

Senator McAllister: Senator Hanson-Young, we have talked about this before. I think you asked me almost the exact same question last time we were at estimates. What I said to you then remains the case now: the approach that our government takes to managing emissions from coal and gas projects—

Senator HANSON-YOUNG: I have heard that. I'm asking about the role of Australia's environment laws. Will your environment laws allow coal and gas to keep ruining the environment?

Senator McAllister: Senator Hanson-Young, you are in fact asking about managing emissions. As I understand it, and officials can provide a more precise answer, the present laws require an assessment of the impact of mining activity on environmental assets where they impact on matters of national environmental significance. The new laws can be anticipated to manage the impact of all projects that are within the law on the environment. But what you're really asking me about is emissions. What I'm saying to you is that the safeguard mechanism remains the way that the Australian government intends to manage the emissions from coal and gas mining activities.

Senator HANSON-YOUNG: What about the impact that logging has on the climate? Will the new environment laws stop the destruction of forests and the impact that has on climate change?

Senator McAllister: Senator Hanson-Young, again, I think we've canvassed the proposed approach in relation to the national environmental standards and forestry activity here before. I can ask officials to step you through it if that's of assistance.

Senator HANSON-YOUNG: Is there an answer to that question?

Mr Knudson: The commitment that the government's made is that the environmental standards that Mr Tregurtha was mentioning will apply to the regional forestry agreements. We believe that would strengthen the protections with respect to the forest assets for biodiversity. We've begun negotiations and consultations with the Department of Agriculture, Fisheries and Forestry. One thing I will say though is, because the standards are still being drafted and we're having the discussion with stakeholders on the 30th and 31st, those aren't finalised and, as Mr Tregurtha says, the legislation has to be passed before the standards can come into force through legislation or as a legislative instrument. So we've got a little way to go, but we are continuing those consultations with forestry.

Senator HANSON-YOUNG: Just to be clear: there is no commitment that the new environment laws will stop the destruction of native forests?

Mr Knudson: Again, Senator, the commitment that has been made is that the standards will be applied to the regional forestry agreements. The effect of those is yet to be—

Senator HANSON-YOUNG: We don't know what those standards will be yet.

Mr Knudson: Because they're being developed—exactly right, Senator.

Senator HANSON-YOUNG: Well, I won't be holding my breath!

Senator RENNICK: Hi guys, how are you going? My questions are directed to the Office of the Threatened Species Commissioner. Has your department done an assessment on the impact of renewables on endangered or threatened species?

Mr Knudson: I think the short answer is: we will have for individual projects that have come forward for approval, such as wind farms et cetera. I think Ms Kennedy may also have something to add from the overall biodiversity perspective.

Ms Kennedy: The Office of the Threatened Species Commissioner is in my division. As Mr Knudson has just said, individual conservation plans that we prepare for species take into account relevant threats to species, including, where relevant, impacts of offshore wind and other things like that.

Senator RENNICK: I know you can do it project by project, but are you also doing a consolidated national perspective of, say, how many koalas, hairy-nosed wombats or wedge-tailed eagles could be wiped and the impact offshore wind turbines on marine life? Have you got a national perspective on that as well? Do you do an annual national report on how many endangered species are being killed as these things are being built?

Senator McAllister: Senator Rennick, I said this to you this morning, or maybe it was earlier this afternoon: from a conservation perspective, with the way the law is administered and the way the policy settings are

administered, it's not so much the particular nature of the project as the fact that all projects are evaluated where they trigger national environmental laws for their impact on the environment; otherwise those matters are dealt with by state approval bodies.

Senator RENNICK: That's all very good, but net zero is a federal government policy—

Senator McAllister: It's actually coalition policy as well, Gerard!

Senator RENNICK: Well, not all of us agreed with it. You know some of us didn't get a say.

Senator McAllister: Thanks for clarifying.

Senator RENNICK: Whether you like it or not, regardless of where it came from, it's a federal government policy of both governments. We're doing this to save the environment. The Australian people have a right to know the impact of building this rapid industrialisation of renewables across the landscape on endangered and threatened species. Is the federal government going to take a consolidated, top-down, national approach? I can assure you a hairy-nosed wombat doesn't look at himself as being a Queenslander or from New South Wales. We're all Australians here. I want to know that all our species are protected from renewables. Is that being monitored or not?

Senator Cox interjecting—

Mr Fredericks: Can I pick that up? It's a conversation you and I had this morning.

Senator RENNICK: Senator Cox, you are in the Greens. You should be caring about the environment.

CHAIR: We're not going to have an argument across the table, thank you very much.

Senator RENNICK: Well, could you ask her to be quiet please.

Senator Cox interjecting—

CHAIR: Senator Rennick, you've asked the question. Senator Cox, thank you very much. Mr Fredericks, please go ahead—hopefully, in silence.

Mr Fredericks: In this instance on this particular issue, the approach that you're raising is effectively done threatened species by threatened species. I'll have Ms Kennedy explain more to you, but when a conservation plan or recovery plan is created for a species in a particular place or more broadly, that is the point in time when the analysis that you're describing—that is, what impact of all manner of threat to that species—is taken into account. It is done species by species. It is not done in a national, aggregate way.

Senator RENNICK: Thanks, Secretary. I appreciate that. This will be my last question. Do you do species by species on a national basis? Say, for example, koalas. Is there an annual report that says: 'In regard to koalas, they occupy this much habitat. This percentage of this much habitat will be eroded or threatened by the construction of renewables.' Likewise for, say, wedge-tailed eagles—that's one that's quite controversial at the moment. We're seeing them on the ground under wind turbines. Can we get, for example, a report on the impact that wind farms are having on wedge-tailed eagles across the country?

Mr Knudson: One of the things, as part of the reforms that we're prosecuting, is the establishment of Environment Information Australia. That will constitute an entity that will report on the state of the environment on a rolling basis—each five years—and then also updates as need be. That will report on not only how the populations are going but also trend analysis, so you'll be able to see which way different species are going. The other piece that we're complementing that with is the recovery strategies, which will indicate what the key threats are to those species. For example, you talked about wedge-tailed eagles. Because of the way that it flies, that is a species that we're very concerned about, with individual project assessments where it is core habitat for that species, and we're working with proponents on how to mitigate the effects on them. Sometimes it boils down to an individual project on a wind farm, but we want to be sure that we're reporting nationally on the overall trends for a species, and we're embedding that in the reforms.

Senator RENNICK: If we could do that annually, rather than every five years, that'd be better, but thank you.

CHAIR: Yes, Secretary?

Mr Fredericks: Can I add to an answer, please?

CHAIR: Certainly.

Mr Fredericks: It's the answer to Senator Pocock's question about legal fees—

CHAIR: Oh, good!

Mr Fredericks: and to you, Senator. I do now have the information, which is good. The summary of costs, both for the Narrabri case and the Mount Pleasant case: the total legal costs for that incurred \$160,000 for AGS

fees and disbursements, which is principally counsel fees. And I would note there's a cost order in relation to each of those matters in favour of the Commonwealth—\$160,000, Senator, and I do apologise again.

Senator DAVID POCOCK: No problem.

CHAIR: Thank you. Yes?

Mr Tregurtha: Chair, could I add to the answer to Senator Duniam? You asked when the invitations were released for the consultation. It was on 12 October.

Senator HANSON-YOUNG: Are we going to get the list?

CHAIR: We'll talk about that after dinner.

Senator HANSON-YOUNG: Will we have the list after the dinner break?

Mr Tregurtha: I'm still waiting on an answer on that.

Senator HANSON-YOUNG: Surely someone's got it in a little spreadsheet which wouldn't be hard to send across?

CHAIR: We will now break for dinner. We will return at 7.45 to continue with outcome 2, program 1.2 and program 2.2. However, if people could just pay attention for a minute, we will be pushing program 2.3 off to another date. We will also be deferring the Threatened Species Scientific Committee and, unless we make some pretty swift progress, we will also dispense with outcome 3, which is on at 10.30. I can't see us getting to that either the way we're going. Thank you.

Proceedings suspended from 18:31 to 19:45

CHAIR: Welcome back, everybody. We will return to program 2.1.

Mr Tregurtha: Excuse me, Chair. Can I just add to my previous evidence?

CHAIR: Of course.

Mr Tregurtha: I have the list of organisations invited to the rolling consultations—the initial list that was produced on 12 October. I seek to table that for the committee and put that into evidence.

CHAIR: Thank you. Senator Duniam.

Senator DUNIAM: That list that you've just tabled, Mr Tregurtha—the invitations were dispatched on the 12th?

Mr Tregurtha: That is correct.

Senator DUNIAM: How many of those have you had responses from?

Mr Tregurtha: Senator—

Senator DUNIAM: I'll ask for a response on notice.

Mr Tregurtha: We didn't seek responses to that invitation. It was more an initial invitation. We then needed to follow it with an email about logistics and timing, which followed, so the responses would be to that latter email.

Senator DUNIAM: What date was the subsequent email?

Mr Tregurtha: I'll have to—

Senator DUNIAM: Perhaps HQ could come back to us on that. I notice on the list here there is a reference to the Environmental Defenders Office.

Mr Tregurtha: Sorry, Senator—can I jump in and answer your previous question?

Senator DUNIAM: Yes, of course you can.

Mr Tregurtha: RSVPs are due this coming Wednesday, so they weren't actually due. We've had a few come back, but not all.

Senator DUNIAM: Sure. Where are you having the meeting?

Mr Tregurtha: It will be held on the premises at the department.

Senator DUNIAM: Okay. Environmental Defenders Office—I understand this morning there were some questions to the corporate section, which were referred to here, about the department's awareness level around EDO and their connection with environmental activist Emil Davey. Is that correct? Was anyone at corporate this morning? Secretary, were you there?

Mr Fredericks: I was.

Ms Parry: I was as well.

Senator DUNIAM: Yes, Ms Parry. Do you have any information to add now we're here in this section?

Ms Parry: I'd just get you to repeat the question. I was at the corporate session this morning, but it was a while ago now!

Senator DUNIAM: Yes, it was, wasn't it?

Mr Fredericks: In fairness, Senator, it would help us if we had a question!

Senator DUNIAM: Yes, exactly. I just wanted to make sure I wasn't going to be told to go somewhere else on a different day, probably more than anything else. The question was around what the department's level of awareness was of the EDO's connections with environment activist Emil Davey. This morning those questions, I'm told—I wasn't here; I was en route from Hobart—were redirected to this part of the program.

Ms Parry: The question that I recall was slightly different. I don't believe that we have had anything to do with the EDO, or that particular individual, from a regulatory perspective, but obviously it's a big department. I can't speak for the entire department.

Senator DUNIAM: Why would they have sent questions relating to that?

Mr Hanlon: Would you like me to clarify?

Senator DUNIAM: Yes, please, Mr Hanlon. Good to see you.

Mr Hanlon: I was here this morning. What I was pointing out was that the interest in EDO from a corporate perspective is only to do with the grant and that we could check whether our colleagues in environment have had any interactions with them. From what I'm understanding, in this case, the answer is potentially no.

Ms Parry: The answer's no.

Senator DUNIAM: No interactions; alright. I will leave the rest of those questions relating to the EDO for another time. Indigenous cultural heritage is covered in this section; is that right? Excellent. Am I to understand—and forgive my basic understanding of all of this—that the standalone national Indigenous cultural heritage laws are part of what we were talking about earlier on with regard to the response to the Samuel review, or is that a separate thing altogether?

Ms Parry: It is a separate item.

Senator DUNIAM: Where are we at with the development of those laws?

Ms Parry: I'm happy to hand it to my colleague. I just want to check with the chair. We're dipping into outcome 2.2; we're okay with that?

CHAIR: Yes—2.1 and 2.2.

Ms Parry: We're all good? Good.

Senator DUNIAM: Yes. We're a job lot.

Ms Dumazel: We're working through a process at the moment, designing the key elements of the reform with the First Nations Heritage Protection Alliance.

Senator DUNIAM: On what dates do you think we're going to be able to see something by way of an exposure draft in relation to that? Based on what you've said, it sounds like it's fairly early on in the piece.

Ms Dumazel: We're in the thick of designing the key elements. We're working through the detail. There's quite a lot to go through, so we're taking the time to get that detail right. Our intention, once we complete that process, is to then go out to full consultation on the proposed reforms.

Senator DUNIAM: When you say 'full consultation', can you step me through what that might look like?

Ms Dumazel: The exact way that that will operate has not been designed yet, but the idea is that everyone will get an opportunity to have their say. We'll obviously do some targeted consultations, but we'll be going out more broadly to First Nations people, and proponents and peaks, and everybody who is involved at the moment, in terms of cultural heritage protection.

Ms Parry: Let me just add to that. The co-design process that we're in with the cultural heritage alliance is representative of 36 different traditional owner organisations, so there is extensive consultation happening currently. As Ms Dumazel has pointed out, once we have something to go out with, that extensive consultation process will continue, and the government has committed to that.

Senator DUNIAM: What is the projected completion date? I understood that something was supposed to be in the public domain by the middle of this year. Obviously, that hasn't been the case, so what are we looking at now in terms of when an exposure draft might be out?

Ms Dumazel: We're working through the details of the reform right now. We would hope to be able to be in a position to go out to consultation—what the timing might be will really depend on that consultation process, because it'll be really important that we have a broad consultation process and that we're getting feedback on the proposal that we're putting forward.

Senator DUNIAM: Indeed. Does the government have a goal, though, in terms of when that might be completed?

Ms Dumazel: The priority has been—the statements have been—that it's important to take the time to get this right and that the government will not be rushed in this process. We're in the process now of going through the detail, and we're hoping to get through that phase in the next couple of months, but what that next stage looks like is still to be determined.

Senator DUNIAM: Is there a chance it won't happen before the next election?

Ms Parry: It's unclear. As Ms Dumazel has said, the government is committed to making sure that they get it right. It has been a slow process. It's a tricky reform. We are working through the detail very carefully with the cultural heritage alliance. When we feel that we are ready to go to a broader consultation process, as Ms Dumazel has said, we'll go to peaks and to industry. We've got to engage with the states quite extensively. The government is very committed to the reform, but we don't yet have a time frame.

Senator DUNIAM: It's the flavour of the night, in terms of time lines. In terms of those 36 entities, the First Nations traditional owner representative groups, are there any from Tasmania?

Ms Dumazel: I'll have to take that on notice.

Ms Parry: We've got the list here, if you just give us a minute. It is publicly available on the website, as to all the different groups that make up the cultural heritage alliance, so just give us a minute to find it.

Senator DUNIAM: Sure, that's fine. On that, in terms of organisations within the department that are engaged in supporting the work of this piece of reform, there was talk earlier on today about Indigenous related branches or divisions. How many of those entities that were discussed earlier today are involved in the work of this particular reform?

Ms Dumazel: In the heritage division we have three branches. One is world national heritage. The other is First Nations heritage protection—that's responsible for the administration of the Aboriginal and Torres Strait Islander Heritage Protection Act. Then there's a heritage policy branch that's responsible for the First Nations cultural heritage as well as the grants program and heritage strategy.

Senator DUNIAM: Of the groups of officials that you've just mentioned, this Indigenous cultural heritage branch, the First Nations branch, I think was referred to earlier today as having 18 employees, I believe. Is that involved in the work that you're talking about here?

Ms Dumazel: I have 15 staff who in the First Nations heritage protection branch. That's responsible for the actual administration of ATSIHPA now. For the reform piece, there are 16 staff. A portion of the 16 staff in the heritage policy branch—I don't have the exact number—are responsible for the actual development of the reforms.

Ms Parry: Just to clarify, the cultural heritage branches within Michelle's division are dealing with A, ATSIHP applications, under the current legislation. Then we have the reform branch, which is separate from my First Nations branch, which sits in a separate part of the department. That was a question earlier. I just want to be clear that this is a separate branch dealing specifically with the reforms.

Senator DUNIAM: Indeed. Just for clarification, the role of the branch sitting separately is to—

Mr Fredericks: That is the branch that has the 18 people. We created it in May, I think, essentially, as I described this morning, it's responsible for helping to uplift our whole-of-department capability in our capacity to engage with First Nations groups as a department, and also a capacity to coordinate us across the department. You'll appreciate that a lot of work done across a very large department involves a lot of consultation with First Nations peoples, sometimes the same groups being approached for different consultations, so the expectation is that this branch will help in some ways to coordinate us better as well.

Senator DUNIAM: Is this new branch providing guidance and advice to your branch around work that you're doing, given this leadership role they play?

Ms Dumazel: Certainly. They're working quite closely with us in terms of the work that we're doing.

Senator DUNIAM: Can you describe that work for me?

Ms Dumazel: At the moment the work that we're undertaking is with the First Nations Heritage Protection Alliance. The central team are involved in those discussions around the key elements and provide us support in terms of the detail that we're looking at.

Senator DUNIAM: So providing support in terms of the detail—what does that mean?

Ms Dumazel: With the reforms, there are a number of elements that we're looking at. For example, one of the aspects is around engagement in decision-making and the idea of having the conversations early on, before a project might even start. So we're looking at participation in decision-making. We're also looking at cultural heritage mapping and information. They're part of those conversations. The other conversations are around data. So there are a number of elements of the reforms that we're working through with the alliance, and the central team are involved in those discussions as well.

Senator DUNIAM: In terms of the timeline, again, and it potentially blowing out past the next election, because there's no commitment to doing it before, when did we first become aware that that was going to be an issue?

Ms Parry: I don't think we would describe it as an issue.

Senator DUNIAM: I did, sorry.

Ms Parry: The government has committed to the reforms. They've committed to ensuring that they get those reforms right. They've committed to early engagement and deep engagement on a co-designed process with the cultural heritage alliance. This process started in 2021, when the original partnership was formed in response to the destruction of Juukan Gorge. It has carried on under successive governments, and this government has committed to the legislative reform process. But they have committed to getting it right and taking the time to get it right.

To Ms Dumazel's earlier points, we are deep in the design process now. We are grappling with some complex issues around ownership, who speaks for country, data, compliance and enforcement, so there is clarity for proponents and for people who might engage with the future reform. Once we have something to go out to consultation with, we will absolutely be going out and engaging more broadly. That will take time.

Senator DUNIAM: I dispute nothing you said. All of that makes absolute sense. But I guess my question was around when it became clear that original proposed timelines were not going to be met. We're now talking more open ended. There's no end date to this. There's no commitment to doing it before the election. We've just had a significant focus on the EPBC reforms, which, of course, don't seem to fit into any particular time frame either. So I am interested to know when it became apparent that we now need to go away into a lot more work on a very complex issue.

Ms Parry: It was always recognised that this was a complex issue and that it was going to take time to work through.

Senator DUNIAM: So why did we set down a time frame if it was always recognised as complex?

Ms Parry: I think the aspiration was to have something more publicly available this year. That might still happen, depending on how those continued engagements go with the cultural heritage alliance. Again, our focus has been to work through the detail and get it right.

Senator DUNIAM: Minister, do you have anything to add in relation to those questions around timelines? I know officials are constrained in what they say, but what is the government's intention?

Senator McAllister: Only to say that I think I was asked about this in a previous estimates and made the point that in addition to traditional owners there are other groups of Aboriginal and Torres Strait Islander people who may wish to be involved in the process. That might include different types of family groups, native title holders and Indigenous organisations. When you try and work deeply with a diverse immunity it can take time. We recognised that at the time we embarked on this journey. It is important to get it right.

Senator DUNIAM: This was an election commitment, to have it done by a specified point in time?

Senator McAllister: I will have to check on that. As you know, I represent Minister Plibersek in this forum, so I will need to check on what commitments were there. Fundamentally, we need to do this collaboratively with First Nations people. And then we need to engage with the other stakeholders who have interests in the operations of these laws.

Senator DUNIAM: Finally, did the debacle of what happened in Western Australia have any bearing on the work that was being undertaken by the department? Any cause for reflection?

Ms Parry: Our process is quite separate from what happens in the states. States and territories have primary responsibility around cultural heritage legislation. Our process is distinct and separate. The minister has indicated quite strongly that any reformed legislation at a Commonwealth level would not override state or territory legislation. She has made that very clear in parliament and other fora. What happened in Western Australia is a matter for the Western Australia government, but I think there are lessons learned there. Obviously we are watching that and speaking with our state colleagues. Again I go back to that point about the fundamental principle that we are holding as part of this process of ensuring that we take the time to get it right and consult broadly, deeply and widely.

Senator WHISH-WILSON: I have some questions on the Maugean skate and the national recovery team and other bits and pieces. As I understand it, the updated conservation advice came into effect under the EPBC act on 6 September 2023. I've got a copy of it here. In the bottom of the little box at the front it says:

This Conservation Advice provides a summary of the current threats to the species and a foundation to guide urgent conservation planning, actions, and research for the Maugean skate while the Tasmanian Government's Conservation Action Plan and the Commonwealth's EPBC Act listing assessment are finalised.

My first question is: has the EPBC listing assessment been finalised?

Dr Fraser: No, that listing assessment hasn't been finalised yet. It's on track to be finalised in October 2024. It has been prioritised for finalisation. The committee are working through that listing assessment at the moment and they will do that as quickly as possible.

Senator WHISH-WILSON: A media release the Minister put out on 7 September refers to the recovery plan for the Maugean skate. Can you tell us when that is due to be completed and released? I had a look on the species profile and threats database but couldn't find a copy.

Dr Fraser: There is no recovery plan planned for the Maugean skate. The TSSC's advice to the minister is that a conservation advice is appropriate for the Maugean skate. That media release does mention the phrase 'recovery plan' but I think that was probably for simplicity so that it wasn't bundled up with a lot of different terms.

Senator WHISH-WILSON: That's okay, it's not substantive to my questioning. Does the government's conservation advice have any bearing on the Tasmanian government's conservation action plan at a state level? Are they following the conservation advice?

Dr Fraser: They are two separate processes. The final content of that plan and that process is really a question for the Tasmanian government, but I would expect that a lot of the contemporary information the Australian government has pulled together to inform our conservation advice for the Maugean skate would be highly relevant information for the Tasmanian government to take into account.

Senator WHISH-WILSON: Have you provided that to them formally? Have you had formal discussions with them on this? Have you briefed them or provided a report?

Dr Fraser: We haven't formally briefed them specifically on the conservation action plan; however, we do meet with them very regularly in relation to the Maugean skate, including through the recovery team. All of those working groups which have been established under the recovery team are bringing to the surface a lot of that contemporary scientific information, which the Tasmanian government would have at their fingertips to take into account.

Senator WHISH-WILSON: I'm keen to see how the national recovery team works. That's a joint initiative team between the Tasmanian and federal governments. The federal government have put a couple of million dollars of funding into that; is that correct?

Dr Fraser: The federal government have put \$2.15 million most recently, but there's about \$6.6 million of federal government funding all up. That's not going into the recovery team—that's into urgent actions for the Maugean skate, focused on captive breeding and community engagement. The recovery team is bringing together the relevant stakeholders to work through those issues—

Senator WHISH-WILSON: Sorry to interrupt: to be clear, is the recovery team tying together some of those urgent actions that are provided for in the conservation advice?

Dr Fraser: Yes. The conservation advice provides at a higher level the key threats and urgent actions that are required for the skate. But to really drill down into and understand what action needs to be taken when, by whom, and over what time frames requires a little more work—the working group and the recovery team are doing that at the moment.

Senator WHISH-WILSON: So that's the recovery team's work—to identify the priorities and take action?

Dr Fraser: Yes. As you can appreciate, the science around this species is very complex. Even since the conservation advice was published, more information has come to light through us convening these experts not only from Tasmania and the mainland but also internationally with experts in this field.

Senator WHISH-WILSON: I might come back to that I understand the minister recently met with the aquaculture industry in Tasmania. Could you tell me who was present at that meeting?

Dr Fraser: No, I couldn't. I understand the minister did have a meeting in Devonport, but the department wasn't present and we weren't engaged in that meeting.

Senator WHISH-WILSON: Minister, could you take on notice who attended that meeting from the salmon industry and the purpose of the meeting? Was it a listening exercise for the salmon industry or in any way a briefing as to what the department's plans are around Macquarie Harbour?

Senator McAllister: I'll take that on notice and see what we can provide.

Senator WHISH-WILSON: In media releases on 29 June and on 17 September, the minister said there were fewer than a thousand Maugean skate in Macquarie Harbour. Where did the minister get that figure from? Does the department have an estimate of skate numbers at the moment?

Dr Fraser: There've been a series of PVAs—population viability analyses—for the Maugean skate over time, starting way back with the first one in, I think, 2014. I'm not exactly sure where that figure came from, but it was possibly from me. It's not an unreasonable estimate of the numbers of Maugean skates. I'm not trying to be evasive with this, but it's hard to measure the numbers of individuals and sometimes those analyses—

Senator WHISH-WILSON: It's just concerning, that we don't—

Dr Fraser: It's a very low number, but there are species where you can't go out and count every individual because they're really hard to see. The key facts are that the population has declined by about 50 per cent over that 10-year period and that's probably continued. There are probably, give or take, a few hundred either side of a thousand.

Senator WHISH-WILSON: The latest communique from the recovery team from 12 October—after their 9 October meeting—didn't reference the conservation action plan, which is the Tasmanian government's plan, nor did it reference any action that was recommended under the Commonwealth's conservation advice. I am shortening my paraphrasing of DCEEW's conservation advice for the Maugean skate, but it did recommend urgent actions in the near future—prior to summer 23—including a reduction in salmonid aquaculture organic loads, which it concluded is having catastrophic impacts on the species, saying:

There is a significant correlation between the reduction in dissolved oxygen levels and increases in salmonid aquaculture due to the bacterial degradation of organic material introduced into the water column from fish-feed and fish-waste.

Could you tell me why the recovery team hasn't said anything about either the state plan or about acting on the Commonwealth advice?

Dr Fraser: The presentation on the process for developing the Tasmanian national recovery action plan was provided by Tasmania's Department of Natural Resources and Environment. The recovery team and the working groups under the recovery team have talked about their recommendations in the conservation advice, including the prospect of lowering salmon biomass. It's a complex beast—

Senator WHISH-WILSON: To be specific, have they talked about it at those meetings?

Dr Fraser: Yes. As you can appreciate, there's a complex group of stakeholders in the room who have different values and different expectations, and there hasn't been a consensus view on that topic in the room. That doesn't mean that it's not an action that would result in the raising of oxygen levels and improved conditions for the Maugean skate; it just means that not everyone in the room has agreed to that.

Senator WHISH-WILSON: On that point, I know the aquaculture industry is represented in that group. Do the terms of reference require them to recuse themselves in discussions around the impacts of the salmonid industry on the skate, and did they do that in the meeting?

Dr Fraser: The recovery team does ask members to declare conflicts of interest, and pretty much every member of the recovery team has a conflict of interest in some way, shape or form. I'd have to take on notice exactly what conflicts of interest have been declared but certainly that's—

Senator WHISH-WILSON: It's a pretty major one, isn't it? The scientists have recommended a significant reduction in biomass and nitrogen loads before the summer, and yet the salmon industry is on that recovery team. Clearly, you've been very vocal. I'm not saying anything anybody here doesn't know. Do they not believe it's the case that they should have to reduce biomass any further. How do you manage those conflicts of interest?

Dr Fraser: Essentially, the recovery team is a more—

Senator WHISH-WILSON: I'm not saying you don't have a difficult job, Dr Fraser. I respect that you do.

Dr Fraser: The recovery team does bring together those disparate parties, and we won't always reach consensus views on what the actions are going to be. It's a forum, I guess, for exploring those different options and exploring ways forward collectively. It's not a decision-making body; it's a body to work through processes. It doesn't set government policy. It doesn't set regulation. It's to explore the potential actions and how they might be implemented. It is important to have the salmon industry engaged in that, because it is their practices that will need to be addressed in some way, shape or form if we're to improve the water quality of the harbour.

Senator WHISH-WILSON: If we are to improve the water quality of the harbour—as you say, it's not a decision-making body—who ultimately is going to make the decision on whether aquaculture is going to be reduced this summer? Is it the Tasmanian government, or does the Commonwealth have jurisdiction in that?

Dr Fraser: Currently the Tasmanian EPA is the regulator in Macquarie Harbour, so there are questions about how the industry is regulated in the harbour going forward.

Parking the regulation, there are a number of no-regrets actions that the Australian government is pursuing in my space, in the proactive recovery space, which relate to the captive breeding work that you've talked about, to community engagement to raise awareness and engagement in the conservation actions for the skate. We're also working very closely with those working groups in the recovery team to understand what technical solutions there might be to injecting oxygen into the water at lower levels and related remediation measures like that. There is a whole lot of other proactive work that we're doing with Hydro Tasmania, CSIRO and BOM to support that.

CHAIR: I have to rotate the call.

Senator WHISH-WILSON: Two more questions please, Chair. It would have been nice to have seen that oxygenation trial done 10 years ago, when we all knew this was a problem. You talk about no regrets. I'm not sure what that terminology is, but there will be regrets if that's all that's done, and we end up having an extinction on our hands.

Dr Fraser: I guess what I meant by no regrets was, regardless of what happens in regulatory space, having an insurance population that's managed ex situ, possibly for translocation back into the wild, is quite important for the future of the skate. And regardless of what happens with the numbers of fish in the water going forward, even if we took the fish out of the water right now, the water levels and the sediment are so damaged by the lack of oxygen that we do require some external injections of oxygen to address that.

Senator WHISH-WILSON: Last question: in terms of the Commonwealth's jurisdiction, if there's no action taken in line with the conservation advice, which, I'll repeat, does talk about urgent actions prior to summer 2023, including reducing the salmonoid load in the harbour, has the minister or the department sought advice about the options available under the EPBC Act, particularly giving consideration to controlled action decisions in light of the new information?

Mr Edwards: We've received three requests to reconsider the 2012 EPBC approval that relates to those activities, so we're currently looking at those three over a couple of months. It's pretty complex, but we're working through those at the moment.

Senator WHISH-WILSON: When you say you received those, are those from third parties?

Mr Edwards: That's correct. Basically, a reconsideration is where you believe there's new information that might change the impact of the project that's been approved. We're working through those three at the moment.

Senator WHISH-WILSON: On that particular point, at last estimates I talked about marine farming expansion 2012/6406. It's shown online as being active, but you suggested that their particular manner provision was time limited to two years. Can you just confirm that that is the case, Mr Edwards?

Mr Edwards: That's one of those matters that we've been taking further advice on. Our current understanding is that those provisions, because they relate to the ongoing management of the harbour by the Tasmanian EPA, who set those, could in fact be live. We are considering—as I said, it's pretty complex—three different proposals. We're looking at it in the context of that 2012 decision.

Senator WHISH-WILSON: Can you give me any time line on when you may have some kind of decision around those three proposals?

Mr Edwards: That's very hard. I don't want to pre-empt the decision-maker on that, but we've had them for a couple of months. We're trying to untangle them. I expect to be in a position to recommend a decision before Christmas this year.

Senator WHISH-WILSON: Before summer?

Mr Edwards: Yes.

Senator WHISH-WILSON: Very last question—

CHAIR: You always say that!

Senator WHISH-WILSON: I absolutely promise!

CHAIR: This is your last.

Senator WHISH-WILSON: Has the department sought a briefing from BOM with an updated forecast at a granular level for Macquarie Harbour, for the west coast of Tasmania?

Mr Knudson: Yes.

Senator WHISH-WILSON: When was that? Would that be available for other people—for me, for example? Would you be able to table that for me or provide that?

Dr Fraser: I'm not sure what we've got in writing to provide to you; however, we have had BOM actively engaged in the working groups—

Senator WHISH-WILSON: And they've been doing briefings for people down on the west coast?

CHAIR: Senator Whish-Wilson, you're going to have to wait for your next run.

Senator WHISH-WILSON: You're right; I am, Chair. You're absolutely right.

CHAIR: Okay! Senator Pocock. Let's go!

Senator DAVID POCOCK: Well done, Pete; that was impressive! I'd like to ask about the bird of the year, the swift parrot. To start, maybe you could give us an update on the current status and the likely implementation date of the Commonwealth recovery plan for this critically endangered parrot.

Ms Kennedy: We do have an update since we spoke about this previously. As to the recovery plan, we are still waiting for advice from Victoria, in terms of whether they will make the recovery plan jointly with the Commonwealth, but that's the last jurisdiction we are waiting for that advice on.

Senator DAVID POCOCK: And the other jurisdictions have agreed?

Ms Kennedy: They've all responded. Not all have agreed. They are all supportive of the actions outlined in the recovery plan, but, for various reasons—including whether or not their jurisdiction's legislative arrangements allow for joint making arrangements—there are some jurisdictions that have declined to jointly make it with us.

Senator DAVID POCOCK: Given that it seems apparent that there needs to be collaboration, what is the significance of key jurisdictions not being signatories to this recovery plan?

Ms Kennedy: Of course we would always welcome having all range jurisdictions jointly make the recovery plan with us, but, in terms of its legal effect under the EPBC Act, there is no significance. It will still continue to have application across the full range of the swift parrot's habitat. All of those jurisdictions will continue to be part of the recovery team. All have indicated in their correspondence to us that they are very keen to continue to be part of proactive measures to help with the recovery of the swift parrot.

Senator DAVID POCOCK: Last year we saw an FOI'd draft version of the plan, and it was clear that one of the key impacts on swift parrots—native forest logging—was being downplayed by Tasmania and the Commonwealth. How is that consistent with achieving the stated objectives of the plan?

Ms Kennedy: Dr Kiessling might be able to add more to this, but I'd just like to reassure you that, in the final version of the recovery plan that Minister Plibersek has agreed to, it's very clear that forestry is one of the key threats to the swift parrot. Dr Kiessling may want to add more detail around that FOI process. But of course there are a range of comments that come in during the drafting of a recovery plan; that does not necessarily mean that those are taken into the final version that is then endorsed by the TSSC and then agreed by the minister. Obviously, the recovery plan isn't published yet, because it's published at the point where it comes into law, but, when it is, I'm confident that you will see that it is very clear about the impact of forestry operations on the swift parrot.

Senator DAVID POCOCK: So you acknowledge that there may have been attempts, through comments and the process, to try and water down the impact of native forest logging, but the final one is really strong on native forest logging?

Ms Kennedy: I wouldn't characterise it as that. What I was trying to say is that there are a range of comments that come in from a number of different places, but I was trying to reassure you that forestry remains identified as a key threat under the recovery plan.

Senator DAVID POCOCK: Why wasn't the recovery team consulted before the plan was finalised?

Ms Kennedy: The recovery team was a very key part of drafting the recovery plan, and they have been consulted along the way as well and have provided incredibly valuable comments. We've provided them with updates along the way as well. I think, because I've seen their concern and we've obviously spoken with them, they would have liked to see a version of the recovery plan now, at the point where it's waiting for joint making process. Unfortunately, because of the regulatory uncertainty that that can create—at the point where it's final, from the Commonwealth minister's perspective—we're waiting for those replies from the states. That's not at a point where we can publish it. It's after the point when it goes onto the federal register that we're able to publish it. What I would like to say is that the recovery team has absolutely been and will continue to be a very big part of recovery actions for the swift parrot and did play a key role in drafting the recovery plan.

Senator DAVID POCOCK: You confirmed that forestry is one of the key threats to the parrot. Why wasn't that in the draft?

Dr Kiessling: The draft swift parrot recovery plan had extensive consultation. There were a range of public comments that came in, and those comments were considered in finalising the plan. Forestry was identified as a key threat to the species in the draft plan, and habitat protection was also identified as being very important. The comments that came in were, as I said, taken into consideration in finalising the plan. If we compare the draft that went out for public consultation and the draft that has been endorsed by the Threatened Species Scientific Committee, the changes that were made were primarily in terms of adding to the detail around the habitat critical to the survival of the species. So there were extensive additions that were made in relation to the habitat of the species. There were no substantive changes to the actions. There were only a couple of actions that were removed because they had actually been completed in the time that it had taken for the public consultation to happen. So there were no substantive changes to the description of the threats to the species, insofar as forestry was identified as a clear threat and a primary threat to the species, both in Tasmania and on the mainland, and actions in terms of protection of habitat were identified as being deeply important to the species.

Senator DAVID POCOCK: So native forest logging was identified as a key threat in the draft—

Dr Kiessling: And it continues to be—

Senator DAVID POCOCK: and there was no attempt to try and remove that with comments from the Commonwealth or Tasmania.

Ms Kennedy: I think what we've said a couple of times is that there were comments that were received from a range of sources.

Senator DAVID POCOCK: You've said that, but—

Ms Kennedy: I don't think it's really our place to speculate about what the motivation was—

Senator DAVID POCOCK: Who were those comments from?

Ms Kennedy: We could take on notice where all the different comments came from.

Dr Kiessling: There were 24 submissions that were made.

Ms Kennedy: Yes, we can provide those on notice. But it wasn't a single source or anything like that. It was a comprehensive consultation process.

Senator DAVID POCOCK: Could I come back to the funding question. I was thinking about it during the break. Mr Knudson, did you say it was \$1.1 billion a year on conservation?

Mr Knudson: What I said was that \$4.8 billion has been committed by the government since they came into power over the forward estimates. So that's \$1.2 billion on average. It will be above that and below that in different years.

Senator DAVID POCOCK: I know we've covered this ground before in estimates, but the Biodiversity Council, who you may be aware of, put out a report looking at what it would take to halt extinctions and save our threatened species. They talk about EPBC reform and all these things that we're talking about, but then they say that \$2 billion a year is needed, targeting threatened species. You're saying it's \$1.2 billion across the board broadly. In their own report, they say there's a 93 per cent underspend. I'm just interested: how are we going to save these species if the Biodiversity Council is saying we've got a 93 per cent underspend? I'm not hearing that there's more money on the way. What's the secret here?

Mr Knudson: We had the budget in October 2022 and the budget in May, so we've had two budgets, and we already have \$4.8 billion that the Commonwealth alone committed.

Senator DAVID POCOCK: But how much of that is new money?

Mr Knudson: I can come back to you on the specific number.

Senator DAVID POCOCK: That would be great.

Mr Knudson: What I was going to say, though, is this. You've got a different entity saying \$2 billion a year is needed to be invested—I think this is where it's really key—and they rightly point out that, yes, we have to reform the laws. So the laws need to protect more of what matters. But we also need to work collaboratively and not only with other jurisdictions. I really would like my colleague to talk a little bit about what we're doing with the states and territories, because it's really significant to achieving exactly what you're talking about, combined with—and we've talked about this before—how you also mobilise private sector money. We've talked about that a bit. But I wanted to return to my—

Senator DAVID POCOCK: This is a 93 per cent underspend, the Biodiversity Council says—and they aren't a bunch of loonies. This is what they do.

Mr Knudson: Right.

Senator DAVID POCOCK: And they're saying: 'We're nowhere near it.' So how are we going to do this? We've got a government that's committed to no new extinctions. You have to deliver on that. Do we need more money? Is that it?

Mr Knudson: We absolutely need more money, and the Commonwealth has a key role to play in that. What I'm trying to say is that there has been, in two budgets, already a really significant step-up in terms of the investment. That's No. 1. No. 2 is that we're working with the states and territories on key parts which are absolutely essential to delivering this agenda—

Senator DAVID POCOCK: Sure, but at a Commonwealth level—I'm here for the federal level—

Mr Knudson: I understand, but I don't think that the Biodiversity Council was talking about the Commonwealth being the only answer on every single element of it.

Senator DAVID POCOCK: Even the ACT government can't tell me what they spend on threatened species. It's tiny. This is across the board. Do you have a number? How much more money do you need to deliver no new extinctions for Australia?

Mr Knudson: Unfortunately, it's not just about money. You've talked about how we need to reform our regulation. We need to work with other jurisdictions. We need to get private landholders involved. We need to get international action. If you'll allow me, I'm just going to turn to my colleague Mr Manning, and he'll walk through very quickly some good illustrative examples of what each of those are. It's that totality—not just money but also regulation, information and partnerships. Those, together—

Senator DAVID POCOCK: The Biodiversity Council say, 'Yes, we need all those things—

Mr Knudson: Exactly right.

Senator DAVID POCOCK: and we need money.'

Mr Knudson: And they're right. We do need money. All I'm saying is that there has been a fair amount.

CHAIR: Last question, Senator Pocock.

Senator DAVID POCOCK: I've got two more and then I'll wrap up.

CHAIR: Be quick, please. I will just remind everyone that we are significantly over time. We've got people who've travelled from interstate who are expecting to come on tonight. If you've got questions you can put on notice—

Senator DAVID POCOCK: Sure. I'll wrap it up. It's just—

CHAIR: Please don't talk over me. If you've got questions you can put on notice, please do. Otherwise, let's keep it as focused as we can.

Mr Knudson: I will come back to you on notice. We will get the figures.

Senator DAVID POCOCK: That would be great, thank you. Sorry, Mr Manning; I'm under the pump here. My last question was on this. I saw—I don't know; maybe it was a social media post—from the minister a really bold claim: 'the most money ever'. I'm so surprised that that wasn't checked with the department at least. Is that—

Mr Knudson: Senator, what I said was—

Senator DAVID POCOCK: Is that the case—that the minister went out saying, 'We've never spent more,' and didn't check with you, Mr Knudson, and didn't check with you, Ms Parry, whether or not that was correct?

Mr Knudson: I doesn't necessarily mean that it wasn't checked, and what I did say earlier on, when this was asked, was that I was happy to provide a historical look-back on spending.

Senator DAVID POCOCK: My question was: did the minister ask you for advice?

Mr Knudson: And what I'm saying is: while I may not have been asked personally, there may have been—

Senator DAVID POCOCK: Well, anyone—

Mr Knudson: So I'd love to come back—

Senator DAVID POCOCK: here at the table?

Mr Hanlon: As to the \$4.8 billion, just to give some context—this came out of last estimates—

Senator DAVID POCOCK: I'm sorry. We're so short on time. I'm just interested: did the minister ask the department? Did they say: 'Hey, I'm wanting to say we've never spent more on environment. Does this check out?' Ms Parry, were you asked?

Ms Parry: Sorry—the Chief Financial Officer—

Mr Hanlon: If I can, just quickly: as to the \$4.8 billion, we did that as a department. We compared the environment spend. We used the same methodology that was used by the previous department, the Department of Agriculture, Water and the Environment. The funding is higher than what was previously used. That's the difference.

Senator DAVID POCOCK: Was that adjusted for inflation?

Mr Hanlon: No.

Senator DAVID POCOCK: Did the minister ask you to check that?

Mr Hanlon: It came out of the last estimates when we were asked about the spend by Senator Hanson-Young, I think. We took that on notice, and that's when we came up with the methodology to get to \$4.8 million.

Senator DAVID POCOCK: Ms Parry, were you asked to check that?

Senator McAllister: Senator Pocock, not everyone in the department needs to answer all the questions, just one person.

Senator DAVID POCOCK: Last one, Ms Parry.

Senator McAllister: The relevant officer has given you an answer.

Mr Fredericks: Mr Hanlon has given the answer for the department.

Senator DAVID POCOCK: I'm interested in Ms Parry's answer.

Mr Fredericks: She's going to give the answer I just gave.

Senator DAVID POCOCK: You weren't asked.

Ms Parry: I'm going to give the same answer. Mr Hanlon has answered the question.

Senator DAVID POCOCK: I'm asking if you were asked that.

Senator McAllister: Sorry, Mr Hanlon's role is the chief finance officer, so it is not surprising that he provides the answer on—

Senator DAVID POCOCK: Minister, we're here to try to work out what is happening behind the scenes. I asked earlier—

Ms Parry: I wasn't in the department at time, so the minister wouldn't have asked me.

Senator DAVID POCOCK: No-one had answered, and now we hear that you weren't asked. I'm just trying to work out what's going on here.

Mr Fredericks: I think the CFO has given the answer. It came out at the estimates. That's when he did the methodology. It became obvious when we did the methodology comparing to the previous spend that this spend was bigger, and the minister's office is aware of that fact.

Senator DAVID POCOCK: If it is adjusted for inflation, would it still be?

CHAIR: There are a lot of senators here with questions to ask.

Senator DAVID POCOCK: Please take it on notice.

Mr Hanlon: Yes.

CHAIR: Senator Hughes.

Senator HUGHES: I've got a suggestion that might help shorten the EPBC Act. Who is here to talk about section 140A? There are four little words we could remove from that part: 'a nuclear power plant'. If we removed those words and lifted the moratorium, we could let the market decide. Whilst we're reviewing the thousands of

pages in this ongoing review and all these consultations that there are no time line for, is there any move to look at removing those four words from section 140A(b), 'a nuclear power plant'? That would allow the market to decide whether nuclear should play a role in a low- or zero emissions future?

Senator McAllister: The government's policy does not include removing those provisions out of the environment legislation.

Senator HUGHES: Minister, just to clarify, you are refuting that there is any move whatsoever for the government to remove those four words that would in effect remove the moratorium, which would then allow the market to come into play. I'm not saying, 'Let's build a nuclear power plant.' I'm saying let the market decide. They will then be able to develop a business case. You are removing the option for the market to decide, just so we're clear about what this government's position is.

Senator McAllister: It's a shame you didn't think to ask this when the officers who work in the energy part of the portfolio were here.

Senator HUGHES: Minister McAllister, we've asked lots of questions which were just passed up the line. This is EPBC, and this is where we're up to.

Senator McAllister: I've given you an answer to your question. But you—

Senator HUGHES: It is not part of energy; it is part of EPBC.

Senator McAllister: You're interrupting me again.

CHAIR: Please don't speak over each other.

Senator HUGHES: You're trying to send me back to a department we've already spoken with.

CHAIR: Senator Hughes, let's be respectful. Please allow Minister McAllister to answer.

Senator McAllister: I'm simply making the point that the government's position on a civil nuclear industry is clear. Your questioning now goes to the economics of nuclear power, which—

Senator HUGHES: No, it goes to four words in the EPBC Act.

Senator McAllister: I've answered that question.

Senator HUGHES: So no, you have no intention of removing those four words to allow the market to decide.

CHAIR: So we're clear.

Senator HUGHES: Crystal clear. Thank you.

CHAIR: Senator Cox.

Senator COX: I have a question in relation to the rehabilitation of the Ranger uranium mine.

Mr Fredericks: I think we're waiting for Mr Taylor to come online for that one.

Senator COX: The supervising scientist?

Mr Fredericks: Yes.

Senator COX: Can you provide to the committee an update about the rehabilitation activities at Ranger?

Mr Taylor: Yes. Processing at the Ranger uranium mine stopped in January 2021 and, at that point, rehabilitation commenced in earnest. At this point, pit 1 has been completely backfilled with tailings and capped with waste rock, and revegetation has commenced. The underground mine has been filled in. All the tailings have been moved from the Ranger tailings dam into pit 3, as is required. At the moment, ERA is now waiting for those tailings to consolidate sufficiently to put waste rock onto the tailings and complete the capping of the pit. That's the point at which things are at the moment. The next steps will be the demolition of the mill and construction of a final landform, which will happen in several years time.

Senator COX: Are you or the department aware of the recent visit of the United Nations Special Rapporteur on toxics and human rights? Is there any commentary that you could make in relation to any of the things that were said, or to the report from the visit?

Mr Taylor: I am aware of the visit but, no, I don't have any commentary on it.

Senator COX: I table to the committee the statement from the UN Special Rapporteur on toxics and human rights because I want to refer to some of the text:

Despite the complex, applicable regulatory framework, there has been a persistent pattern of failure to rehabilitate uranium mines. Nevertheless, there appear to be promising developments at Ranger ...

Can you tell us what, exactly, those developments are?

Mr Tayler: I think the failures that were referred to were for historic sites, when standards were different. Ranger is an opportunity for us to almost redefine what is possible in mining rehabilitation. Of particular significance with Ranger is the engagement with the traditional owners, to make sure that the site is delivered back to its former owners in a state that they're happy with and that supports the resumption of cultural practices. I don't think that's necessarily something that's been a big focus in mining rehabilitation in the past. That's certainly something that Ranger is doing reasonably well that may not have been done well historically.

The other key thing with Ranger is that the target, which is essentially full ecosystem restoration, is also not something that is typically targeted in mining rehabilitation. It's setting a very, very high bar—as would be appropriate for a mine that is surrounded by a World Heritage national park.

Senator COX: Both the Mirarr people and I—as part of the committee that passed the legislation earlier this year, in relation to the rehabilitation of Ranger—are becoming ever increasingly concerned about the time lines and the cost of this project blowing out. It's been recently reported that the blowout will now be beyond \$2.2 billion, in order to rehabilitate it. Are you able to give some level of guarantee to the Mirarr people and the Australian public that these critical works will be completed to the highest possible standard and that the Australian taxpayer will not be asked to foot the bill? We continue to see the can being kicked down the road, and now we're looking at another extension of this project, into September 2027.

Mr Tayler: I think the extension in time frames is, whilst regrettable, probably for the good in that it's far better that the project is done properly rather than done to a time frame. From that perspective, I support the extensions in time frame, though, obviously, it does slow down the process of returning the site to the traditional owners. As to the costing, ERA has recently advised the market that the cost will increase beyond that \$2.2 billion. However, Rio Tinto has committed numerous times, and publicly, to the successful rehabilitation of Ranger. At this stage, I don't have any specific concerns that those costs won't be met.

Senator COX: As an ASX listed company, ERA, and particularly Willy Packer, keep going to the media talking about not continuing to rehabilitate Ranger and opening it up to the market—as we've just heard from the opposition—and the extension of the nearby Jabiluka mine. This is all against the wishes of the Mirarr people, the traditional owners for this country. We have to give some level of commitment to the people who don't want this on their country. They had it there for 40 years and we continue to ignore their voices. Surely there must be something that we can do to make sure this doesn't continue to be extension after extension and that we get the job done?

Mr Tayler: I can't really pass comment on your previous comments there. The role of the supervising scientist is to make sure that Ranger is rehabilitated to the highest possible standards. I tend to focus on the environmental aspects of rehabilitation, and my team and I will continue to do that. We are very focused on making sure that the rehabilitation is completed as required and the land can be handed back. As far as the comments of ERA's shareholders, that's not something I have any control over or any engagement with.

Senator COX: My final question is about the water modelling and the extension of that area in relation to the water that needs to be treated. Is that the reason for the extension to September 2027?

Mr Tayler: I don't believe so. One of the key reasons is the tailings in the pit need to consolidate, and that's a physical process. Drains have been put in there to speed that up as much as possible, but beyond that there's not a lot you can do to speed that up. That will certainly take as long as it takes.

The water treatment issues that the ERA referred to in their ASX release is really that ERA are having another look at their water treatment strategy going forward. That's more of an engineering study looking at the age of equipment, what may or may not need to be replaced and things like that. So, no, I don't think it was the water treatment strategy that was driving that time frame, it was things like the tailings deposition, but the time frame then has implications for water treatment that ERA needs to understand.

Senator COX: I look forward to a further update on that. Thank you.

Mr Tayler: You're welcome.

Senator PAYMAN: My questions are around renewable energy projects. I know that Minister Plibersek signed off on a number of renewable energy projects recently. Could you outline which projects these have been? So what's the number of renewable energy projects the minister has signed off since coming to office and where are those projects?

Mr Edwards: First of all, that number is 37 renewable energy projects since coming to office. I'm not sure I have a full list of which ones they are, so we can take that on notice.

Senator PAYMAN: Sure. Is this trend similar to the rate of renewable approvals the department has seen with previous ministers?

Mr Edwards: There's certainly a ramp up. We're having more renewables referrals to the department, and they certainly are coming through more rapidly and so we're obviously trying to turn around all projects on statutory time frames. But, yes, it's growing as a percentage of our case load.

Senator PAYMAN: So you would characterise the rate as 'growing'?

Mr Edwards: Yes.

Senator PAYMAN: Okay. Can you give the committee a sense of the size of these approvals? Take the Melbourne Renewable Energy Hub, for example. What is the scale of a project like that?

Mr Edwards: One moment, Senator; we'll just see if we've got that.

Senator PAYMAN: No worries.

Mr Say: The Melton Renewable Energy Hub, now the Melbourne Renewable Energy Hub, was 1,200 megawatts of storage and 12.5 megawatts of solar.

Senator PAYMAN: Okay. Are you able to give the committee a sense of the size of these approvals? Are they generally big projects?

Mr Say: They're a range of sizes. Some are very large; some are smaller. Across the 37 projects that have been green lit by this government, there's the full gamut.

Senator PAYMAN: And how many homes can these projects power?

Mr Say: I don't have that information.

Mr Edwards: Sorry, we don't have that. In terms of scale, the other thing to add to that is we only assess things that are going to have a significant impact on the matters we protect. By virtue, they are generally quite large projects that we're looking at, but we could take on notice the number of homes that it would power. It's a quite substantial number, I think.

Senator PAYMAN: Okay. Are you able to outline what sorts of jobs are created by these projects?

Mr Edwards: Again, Senator, that's not the sort of thing we collect as part of an environmental approval, but we can see what we do have and then come back on that.

Senator PAYMAN: Great. Thank you. That's all from me.

Senator RICE: I've got a follow-up on Senator Pocock's questions about swift parrots. Minister Plibersek, during Threatened Species Week, issued a media release stating that the government 'has today released a new recovery plan'. Given that the recovery plan actually hasn't been released, was that a mistake?

Ms Kennedy: The broader context of that media release made it clear that the minister had finalised the recovery plan from the Commonwealth's perspective and that she was writing to the states and had responses from some and was very close to getting responses from the others, and so on Threatened Species Day she was wanting to draw attention to what is one of the priority species in the Threatened Species Action Plan.

Senator RICE: The terminology 'released' was misleading, was it?

Ms Kennedy: It wasn't published, but it was released to the states. In that sense it was finalised and released.

Unidentified speaker: [inaudible]

Senator RICE: No, that's right—a very limited release! Senator Pocock was asking questions about the most recent consultation with the recovery team. When was the most recent consultation with them?

Ms Kennedy: Dr Kiessling might be able to help with that.

Dr Kiessling: The last that the recovery team had a conversation about the swift parrot recovery plan was in June of this year.

Senator RICE: Okay. What was the consultation with them? Were they made aware that the plan was going to be different from the draft plan at that stage?

Dr Kiessling: At that time there was a member of the department who attended a meeting of the recovery team and provided an update on the progress of the recovery plan at that point in time.

Senator RICE: Okay. You said that there have been changes made—adding more details, specifying habitat, reinforcing that forestry is a threatening process to swift parrots. Can you assure us, under the new recovery plan, that there will be no logging of swift parrot habitat?

Ms Kennedy: Senator Rice, we've had conversations about this before.

Senator RICE: Yes.

Ms Kennedy: As we've discussed before, the recovery plan—

Senator RICE: So you can't assure me?

Ms Kennedy: Well, the purpose of the recovery plan is to outline the threats and provide a regulatory basis for the assessments under the EPBC Act to take place and also, because I know you will raise this, to be considered as one of the relevant statutory documents under the RFAs as well.

Senator RICE: So you can't assure me that the recovery plan will ensure that there is no logging of swift parrot habitat. You can't give me that assurance.

Mr Fredericks: I think the officer has answered your question.

Senator RICE: Yes, I think she has! Astounding!

Mr Fredericks: In fairness, it's not her position to be giving you assurance. It's her position to tell you the facts.

Senator RICE: Minister, can you give me assurance there's not going to be logging of swift parrot habitat given this is a critically endangered species? There's an estimated 300 to 700 swift parrots left in the whole world.

Senator McAllister: We're pleased to be making the progress that we are making on getting our recovery plan in place. The officer has described to you the way that will interact, as a statutory document, with the activities. I can't add any more to that.

Senator RICE: Okay, let's move on to the Leadbeater's possum. We'll wallet the recovery plan for that.

Ms Kennedy: Senator—oh, I probably shouldn't answer because you didn't ask a question, but I anticipate—

Senator RICE: I can remind you at last estimates, and—

Unidentified speaker: We've all heard the question before; we know what's coming next!

Senator RICE: every estimates in the 9½ years I've been in the Senate—

Unidentified speaker: Good pre-empting, Ms Kennedy! Please go ahead!

Senator RICE: Last estimates you told me that you're going to the—

CHAIR: Senator Rice, if we could let Ms Kennedy answer the question?

Ms Kennedy: Senator, I'm pleased to be able to provide you with an update on progress since last estimates. I can confirm that the TSSC has considered and endorsed the recovery plan for the Leadbeater's possum. That was in late September.

Senator RICE: Okay. When will that be 'released into the wild'?

Ms Kennedy: I think that you're aware of the next steps that take place after that—we just went through them for the National Swift Parrot Recovery Plan. Without pre-empting in this particular instance, the next step would be for the Commonwealth minister to consider that recovery plan and then invite the relevant jurisdictions to make the plan jointly with the Commonwealth, if they wish to. Then it would be finalised and brought—

Senator RICE: Are you expecting any hold-ups similar to the hold-ups you're currently having with the Swift Parrot Recovery Plan? Given, particularly, that Victoria is the jurisdiction—it only occurs in Victoria, in a very small area of mountain ash forest—and I know from the discussions we've had over the last 9½ years that there have been extensive consultations with Victoria over that decade, are you expecting Victoria to sign off on the recovery plan very promptly?

Ms Kennedy: I can't anticipate what will happen in the future, but I can say that Victoria has been very involved in the work to get the recovery plan to the point where it has now been endorsed by the TSSC. So I think we are very well positioned in terms of that recent progress we've made.

Senator RICE: Do you expect to have an answer for me by next estimates?

Ms Kennedy: I look forward to giving you an update at next estimates.

Senator RICE: Greater gliders—we don't have a recovery plan for greater gliders and we have logging continuing in greater glider habitat, despite the huge decimation of their population during the Black Summer fires. In August, we had a report that the Forestry Corporation of New South Wales was ordered to stop logging parts of the Tallaganda State Forest after the state EPA found a greater glider dead. So where are we up to with the greater glider recovery plan, and what's happening in the meantime to protect the habitat of greater gliders?

Ms Kennedy: We can provide an update. The work on the recovery plan for greater gliders—for both species of greater gliders—is continuing. There has been quite a lot of progress since last estimates. The drafting is being

led by the Zoo and Aquarium Association Australasia in consultation with the department. We're well progressed with the draft, and workshops are being scheduled with stakeholders to codevelop actions and conservation objectives. Importantly, the glider working group, which has been contributing to the drafting, is now in the process of forming up to be a national recovery team—this will be really helpful, both for the drafting of the recovery plan and also going forward.

Senator RICE: Given the time lines that we've seen with other recovery plans, are we going to have to wait another five years or more for a recovery plan for greater gliders?

Ms Kennedy: There are still statutory steps that need to take place. Again, I don't want to pre-empt this; I can't provide any guarantees, and there are public consultations and other things that still need to take place. But, at this stage, it's scheduled to be finalised in 2024, and I expect that to be the case.

Senator RICE: But when you say 'finalised', is that the Threatened Species Scientific Committee signing off on it, or is it the processes which happen after that, which it sounds like have delayed many a plan?

Ms Kennedy: At this stage, it's scheduled to be finalised in 2024.

Senator RICE: Are you aware of the reports that the Forestry Corporation of New South Wales has acknowledged that it only carries out daytime searches for greater gliders, despite greater gliders being nocturnal?

Ms Kennedy: I think that this is a question for a different area of the department from mine. We've discussed RFA and compliance previously and I'm not sure if my compliance colleagues might want to join us. I am aware of media reporting about this and I'm aware of the situation personally in terms of the Tallaganda forest. I know that the stop-work order is still in operation. We are involved when we have discussions with relevant RFA states in terms of compliance with the—

Senator RICE: Specifically, what compliance actions is the Commonwealth taking when, clearly, we have a totally inadequate monitoring and observation regime for greater gliders?

Ms Kennedy: I know I've said this before but, primarily, compliance with the RFAs sits with the Department of Agriculture, Fisheries and Forestry, who are on tomorrow.

Senator RICE: I will ask them these questions tomorrow.

Ms Kennedy: But we're certainly involved and very interested in it.

Senator RICE: My last question is with regard to plantations in northern New South Wales. Is the department, or the minister, aware that native vegetation, including natural forest, old-growth forest and rainforest, may be cleared under New South Wales legislation governing plantations?

Mr Knudson: No. We'll have to follow up on that and come back to you on notice, but we'll have a discussion with the New South Wales government to better understand that issue.

Senator RICE: Okay, because there's a definition that allows for clearing of this native vegetation if it's under a hectare for plantation design purposes, for infrastructure, or for areas over 30 hectares, if those areas are offset. So yes, perhaps you could come back to me about what the Commonwealth's view is on that practice.

Mr Knudson: Thank you, Senator.

Senator DUNIAM: I have one question, going back to the Indigenous cultural heritage matter. I just wanted to know whether there was any interaction or communication from the minister's office to relevant officials around perhaps slowing the progress of the work on the reforms that were being worked on at any point in time.

Ms Parry: Just to clarify your question: are you asking whether we received any direction from the minister's office to slow it down?

Senator DUNIAM: Yes, including that, or any discussion around time lines that might indicate a desire from any party to slow it down.

Ms Parry: No. The minister's office has not requested or asked us to slow down any process around the cultural heritage reforms.

Senator DUNIAM: Thank you.

Senator WATERS: In the short time I've got available, I have some questions about the Toondah Harbour proposed development by Walker Corporation and Ramsar listed Moreton Bay. This is the project that, if you recall, the department initially suggested that the minister dismiss as clearly unacceptable under the act. Unfortunately, the minister took a different approach. We now have a new minister, and I'm hoping for a different approach again. My question is: has the minister received the EIS yet?

Mr Edwards: The minister hasn't received that EIS yet. Where that is up to is that the document has been consulted on by the proponent. So, there's a draft EIS. They went out to consultation. They're currently considering quite a large number of public comments.

Senator WATERS: Indeed.

Mr Edwards: So, once they finalise that process they'll give us the final—

Senator WATERS: The rumours I'm hearing from community members are that the EIS is imminently to reach the minister's table. Is that not what you're expecting?

Mr Edwards: Well, we haven't received it yet, as a department.

Senator WATERS: Have you had any indications from the proponent as to when you might receive that?

Mr Edwards: I don't think so. I'm just looking at my colleague, but my understanding is that there were 26,000 comments that they were working through; that is the number off the top of my head. So, we would ask that they consider all those comments and do that comprehensively, so that's where our focus has been—just making sure that occurs first.

Senator WATERS: Okay. Thank you. Given that your initial suggestion was that the project be rejected for being clearly unacceptable overdevelopment in an internationally significant wetland, are you expecting to recommend that same approach and for the minister to refuse approval?

Mr Edwards: I certainly can't pre-empt that. I think you're referring to the 2017 referral. That referral was withdrawn by the proponent, and a separate, different referral was put forward, with a smaller footprint. And that's proceeded through that assessment process. So, again, we can't say where that's going to land yet. That'll be a matter for the minister to consider at the right time.

Senator WATERS: Noting your reference to the 26,000 submissions that were received, that seems like a lot to me. Is that a bit more than you'd normally get on an EPBC referral?

Mr Edwards: It's quite a bit, but it's not unusual to have several thousand comments on EPBC approval.

Senator WATERS: But 26,000?

Mr Edwards: That's certainly up the higher end, yes.

Senator WATERS: Okay. Well, it's almost as many as the number of eastern curlews that we have left on the planet. I understand there are 30,000 eastern curlews, which are critically endangered. So, we're all watching and hoping that the minister makes a good, science based decision here. Thank you very much.

CHAIR: Thank you.

Proceedings suspended from 21:04 to 21:20

Senator DUNIAM: Welcome, Dr Johnson. I want to start with your speech to the National Disaster Preparedness Summit in September. In relation to the points you made around risks to the energy grid, you had some pretty serious advice. Has any of that filtered through into formal advice to government about decisions to be made on how we manage the energy grid or anything like that? Does the bureau—

Dr Johnson: Yes is the short answer. We're regularly engaged with relevant officials and ministers on those matters.

Senator DUNIAM: So can you talk me through in brief how you are plugged into the decision-making processes both at an official level and with ministers?

Dr Johnson: Sure. We're obviously engaged with officials within our own portfolio. I also brief, as do other officers when I'm unavailable, Minister Bowen through a forum that he convenes with state energy ministers. That's at their discretion. To date it has sort of been a monthly or six-weekly update on what's going on with the weather and with the seasonal outlook. We're very heavily engaged with the Australian Energy Market Operator. We regularly engage with them. We also have staff embedded within AEMO's operations centre to provide decision support services to AEMO. We're also obviously engaged with various actors in the wider ecosystem. For example, in Queensland we work closely with transmission operators like Powerlink and so forth. Through the energy ecosystem we have various points of engagement to try to bring the best available advice on the season ahead to those actors.

Senator DUNIAM: Has that involvement, that role that you and your agency play, increased over time because of the—

Dr Johnson: I certainly think interest in the weather and its impacts on the energy system as a whole have increased over time, yes—certainly since I've been in this role, from 2016.

Senator DUNIAM: Sure. Okay. If I can just move to a couple of smaller specific projects I'm interested in, very quickly, Chair. With regard to Mount Stapylton and the radar infrastructure there, are there any plans, either with the bureau or government more broadly, or is there any funding in place, to improve the infrastructure there?

Dr Johnson: Mount Stapylton is a relatively young piece of infrastructure. The bureau has 69 radars around the country, ranging from almost brand new to 30-plus years old. Mount Stapylton is a relatively young piece of equipment.

Senator DUNIAM: So no plans for that one?

Dr Johnson: There are no plans to replace it. What I would say, though, is that the backup system for Brisbane or the Brisbane area at Marburg is being replaced. The Marburg radar is in the process of being replaced. We're also in the process of selecting a site to put a new radar on the Darling Downs, probably just north of Toowoomba near Crows Nest. Whilst these upgrades and new installations are taking place, we've also got a temporary radar in place at Brisbane Airport. Being a Brisbane resident myself I take a—it's not that I take a stronger interest in Brisbane than anywhere else in Australia, but I have a direct line of feedback from the community in Brisbane around services with Mount Stapylton, so I can assure residents who might be listening to this broadcast around Mount Stapylton that we've got quite a lot of redundancy.

Senator DUNIAM: Your line is as good as mine, because your answers were in the order of the questions I was going to ask! So thank you for that. On notice, if you could provide a few more details around the dollar costs associated with both the Marburg and the new radar arrangements, and any other detail, that would be helpful.

Dr Johnson: I'm happy to.

Senator BARBARA POCOCK: That was quick. Thank you, and thanks for being here.

Dr Johnson: Pleasure.

Senator BARBARA POCOCK: It was reported in the *Guardian* on 6 August this year that BOM had commissioned work from several external consultants to develop software for a new computer system under the title of ROBUST. It was reported that the project is running over budget and over time. I'm interested in the value for money that taxpayers are getting from this project, particularly the spending of large sums of money on consultants. Can you update us on how it's going? Are we there yet? Do we have a completion date?

Dr Johnson: Sure. I'll do the best I can, because there are some national security and commercial sensitivity matters associated with this. What I would say, to commence with, is regrettably almost everything that was in that *Guardian* article was inaccurate, despite the bureau supplying the relevant journalist with the facts.

ROBUST is a program that was initiated in 2016 following an incursion into the bureau's systems in 2015 by a state actor. Those matters are on the public record, and they probably don't warrant elaboration. It is a long-term investment in the security, stability and resilience of the bureau's ICT and observing systems, including things like the radars that we've just heard about from Senator Duniam. It's a very large, complex project. The project was due to close on 30 June this year. It has been extended by a year, to 30 June 2024. The program will be delivered on scope. We will deliver the scope that was anticipated, and we haven't gone back to the government to ask for any more money to deliver the project. The project or the program will be delivered within the agreed budget parameters.

We're basically running a year behind schedule. The main reason for that is the impacts of COVID. We experienced quite significant disruptions in terms of both supply of materials and infrastructure and also disruptions to the labour market. Given the scale and complexity of a program of this size, I'm very proud, actually, of the achievement of our people, our suppliers and our vendors and so on to be in a position where we should be able to deliver almost all of the program's scope by 30 June 2024. There will be a small residual tail, which is not uncommon for projects of this size, but the bureau won't be seeking any more financial support from the Australian government to complete the scope of the program as envisaged when the program was approved back in 2017.

Senator BARBARA POCOCK: We've been hearing evidence at various Senate inquiries about consultants and their common practice of bidding low for contracts and then requesting extensions to the contract, which increases the value of the work either through extensions or variations. Has there been any variation in the amount of money paid for the contract for Robust—

Dr Johnson: Yes, both under and over. For a program of this scale and size—and again I'm not at liberty to talk about the financial investment, because it's been a longstanding convention that it's not for publication—it's large. We have a large number of vendors assisting us with the implementation of the program. Accordingly, there are a large number of contracts associated with it. Some of those contracts, yes, have required extensions

and increases, and for others we've been able to deliver the scope for less than was envisaged. It's under and over, but, as per my previous answer, we're confident that we'll be able to deliver the program in the remaining eight-and-a-bit months within the agreed budget parameters.

Senator BARBARA POCOCK: It's public money.

Dr Johnson: Correct.

Senator BARBARA POCOCK: What is the current estimate of the total cost of Robust, and how does it compare with your original target.

Dr Johnson: As I said, we're confident eight months out that we'll be able to deliver within the agreed budget parameters. When the government made a decision to fund Robust for both national security and commercial-in-confidence reasons, the decision was taken by cabinet that the funding envelope be not for publication, so I'm not in a position to disclose. That's been a longstanding convention at this committee.

Senator BARBARA POCOCK: Could you give on notice the decision-making machinery which said that the budget amount was never to be published?

Dr Johnson: Sure.

Senator BARBARA POCOCK: I'm not aware of other contracts where that's the case. It has been rumoured to be a cost of up to a billion dollars—

Dr Johnson: That's incorrect.

Senator BARBARA POCOCK: Is it more or less than that?

Dr Johnson: It's less. But I think I'd really like not to say any more for the reasons that I've indicated.

Senator McAllister: I can confirm, Senator, that I have previously from another seat tried to ask Dr Johnson about this same matter, and he refused to give me the same answer, in the same way, for the same reasons.

Dr Johnson: But that number and a number of the matters that were raised in the *Guardian*, as per my first answer, were factually incorrect, including that estimate of the cost.

Senator BARBARA POCOCK: You said there had been some under and some over, but has the net effect been an overspend beyond your initial—

Dr Johnson: The program isn't completed yet, but, as I said before, at this juncture, eight-and-a-half months out from program completion, I'm confident that we'll deliver it within the agreed budget parameters.

Senator BARBARA POCOCK: And have you taken money from other parts of BOM's budget in order to achieve completion or near-completion of the project without having to ask for further funding? Have you done internal distributions?

Dr Johnson: Yes. At the end of 2024, as I said before, we expect there to be a residual, small tail that needs to be finalised with scope post the formal program closure. We will draw upon internal bureau resources to deliver that, but that again as well will be within the budget parameters that we agreed with government.

Senator BARBARA POCOCK: Can you describe the nature of the work that will be this small tail you're able to—

Dr Johnson: I'd rather not for security reasons, if that's alright. The program is fundamentally initiated in response to a breach of our systems by a foreign actor. Every time we talk about the program, we see an exponential increase of people who don't have our national interests at heart seeking to impact on the bureau's systems. There may be ways—through chair and the minister present—in which we can perhaps provide you with an in camera briefing if that's of interest to you. But I'd really rather not talk about it in an open forum, if that's okay.

Senator BARBARA POCOCK: In a public forum—thank you for that offer, which we'll certainly consider.

Dr Johnson: And we have done that before with senators who had a particular interest.

Senator BARBARA POCOCK: Have any extensions to contracts or changes in arrangements continued to involve mostly Deloitte and Accenture?

Dr Johnson: There are a range of contracts, including some of the companies that you mentioned. It's been a very complex and challenging program, so we've used a range of vendors, including the two that you mentioned. But it's by no means limited to them.

Senator BARBARA POCOCK: What impact has the delay of a year which you mentioned had on your ability to provide the best forecasting and warnings?

Dr Johnson: None, I would say. The bureau continues to deliver outstanding services and warnings to the community, so the delay that we've seen here has no impact on the product and services that we deliver. It does mean—and, again, I'm really in territory that I'd rather not traverse in a public forum—that some of the measures we were putting in place around security and stability will not have been finalised in a timeframe that we would have hoped. I hope you can infer from my answer what that might mean.

The actual products that you and your constituents see every day from the Bureau would have no impact on their delivery. In fact, in some cases, the committee will already have seen enhancements to the services that we deliver—for example, upgrades to radars, some of which Senator Duniam was referring to before, and upgrades to flood warning gauges and networks. Some of those things have already occurred. There are automatic balloon launches, so the capacity to increase the frequency of launching weather balloons. A number of those benefits are already playing out. I suppose they do flow through in a positive way to the products and services that we deliver to the community. But the tone of the *Guardian* article was that there was going to be some negative impact on Bureau services. I can assure the community that that's not the case.

Senator BARBARA POCOCK: What is BOM doing to ensure that it has adequate fire weather forecasters available this summer? Is it the case that thunderstorm forecasters, who I understand usually have limited experience, are being prepared to take on fire weather planning?

Dr Johnson: I'm not sure what you're referring to there, Senator. We have a range of meteorologists, 300-odd meteorologists, many of whom have competencies across multiple hazards, including severe weather, thunderstorms, fire weather and so on. We have a very comprehensive program of assurance to make sure that, before the start of the severe weather season, we have the right people in the right place with the right competencies. So I'm not aware of what you're talking about there in terms of insufficient numbers of staff with the right competencies. The advice that I've had from the relevant senior staff in the Bureau is that we have the relevant teams in place.

Senator BARBARA POCOCK: Are you using forecasters from places such as Singapore and the UK Met Office to fill in volcanic and aviation forecasting? Is that because there are issues with internal financing to hire and train the forecasters here?

Dr Johnson: I'm not aware of that. I might ask Dr Stone, who looks after the aviation area. To give Dr Stone a chance to double-check his records, I will say that it's a highly collaborative international effort in terms of volcanic ash. In terms of Australia's interest—touch wood—we don't have any active volcanoes in this country. Most of the active volcanism we see is to our north and to our east. We work very closely with specialists in those countries to provide the aviation sector and the travelling public in Australia with the best possible advice around volcanic ash, as well as our in-house capabilities. It wouldn't at all be a surprise to me that we're working with colleagues in Singapore, Indonesia, Fiji or wherever it might be around preparing the volcanic ash advisories that we prepare. But, at that level of granularity, I don't have that line of sight.

Senator BARBARA POCOCK: Do the contracts you have with organisations like Deloitte and Accenture have penalty clauses for when things go wrong?

Dr Johnson: Again, I may have to take that on notice. I would assume that they do. We have so many that I'm not across the detail of individual contracts, but, generally, it would be standard practice. I'm looking at Ms Goodwin, our chief operating officer. You're not sure. We can take it on notice.

Senator BARBARA POCOCK: If you could take that on notice, because I'm curious to know what the penalty clauses are in the consultant contracts that you're dealing with. Have you had occasion to implement or activate any of those penalty clauses?

Dr Johnson: Not to my knowledge, but that doesn't mean to say that we have. We've got hundreds of contracts, and I'm not across the detail of every one, as you would expect. I'm not aware of it—if it's occurred.

Senator BARBARA POCOCK: If you could take it on notice and correct it if it's incorrect.

Dr Johnson: I'm happy to.

Senator BARBARA POCOCK: Thanks very much for your answers and for your work.

Senator DAVEY: We've spoken a lot about the ROBUST project and the *Guardian*. Can you explain the difference between the ROBUST project and the Australis II project?

Dr Johnson: I'm very happy to. The two are separate but complementary activities. Australis was a supercomputer that the Bureau commissioned mid-last decade—Australis I. These machines have a natural lifecycle, and they go through an upgrade pathway. Australia II is a new machine. Again, this was an inaccuracy

in the media article that implied that, just like your laptop, you go down to Dick Smith electronics and plug a few more memory boards in the back. It's actually a separate machine.

Senator DAVEY: It's like a new iPhone, but it's lasted longer.

Dr Johnson: Apologies for opening the door on metaphors, but it's a new machine. Again, we sought to clarify that with that particular media outlet. It is a new machine. Australis I is running at the moment. It's running well. It's doing a marvellous job in terms of providing the capability we need to help deliver our forecasts and warnings. Australis II is a new machine, roughly double the capacity. It is in the process of testing and commissioning at the moment. It will come online mid next year. That's our plan.

With ROBUST, the previous government made a decision to fund a second supercomputer to act as a disaster recovery machine. In the event that something catastrophic happened to Australis, either I or II—again, further to Senator Pocock's questions, I really wouldn't like to go into a lot of detail, if you'll indulge me—there will be a second computer. It has arrived. It's being assembled. It is in the process of being commissioned. If there was a catastrophic event with Australis, either I or II, the bureau has the capacity to failover—

Senator DAVEY: It's a back-up generator.

Dr Johnson: It's a back-up and it runs hot. So there's the capacity to back up. Again, I'm not going to go into detail, but it's a highly capable disaster recovery machine. So the two things are quite different.

Senator DAVEY: What I am hearing is that there will be no gap in capacity because Australis I is running and doing fine, we're building Australis II and Australis I will not be turned off until Australis II is up and running—

Dr Johnson: Correct.

Senator DAVEY: and, if everything goes pear-shaped in some future emergency, ROBUST is the back-up generator that will come in while we are fixing—

Dr Johnson: Our strong intent is to synchronise the commissioning of the disaster recovery machine with Australis II so that that risk can be fully mitigated. Again, without going into detail, the current risk is mitigated to a certain extent by Australis I, but it won't be fully mitigated until we have the separate disaster recovery machine at a separate location.

Senator DAVEY: Does that also mean that when that article talked about staff, saying that low-hanging fruit such as replacing automatic weather stations and installing new radars have been completed, that's actually got nothing to do with Australis I or II or ROBUST? It's conflating—

Dr Johnson: Partially. As part of ROBUST, we are replacing all of the bureau's 760-odd automatic weather stations. These are the official bureau stations. Obviously we receive rainfall, temperature and other meteorological data from other parties. But all of the bureau's official weather stations are being replaced. Forty-eight, I think, of our radars are being upgraded to improve their security, stability and resilience. We're installing, as I said before in answer to Senator Pocock's questions, new automatic balloon launches instead of having humans launch them because we can launch more of them more often. It is also safer because these balloons are fuelled with hydrogen and it is dangerous. So from a safety point of view it's good for our staff as well. So there are a number of other things that are occurring, including those things I've mentioned. There's a whole range of observational infrastructure as well as the back-up recovery machine and also a whole range of internal IT infrastructure issues. Again, I'd rather not go into a lot of detail on that here. Basically, we are rebuilding the bureau's entire ICT and observing systems capability. We're running the current system to continue to provide continuity of service. A new website will go live next year. All of these things—

Senator DAVEY: Branded 'Bureau' rather than 'BOM'?

Dr Johnson: The Bureau of Meteorology. But you can call it whatever you like, as per my previous injunctions with this committee. All of this is going to happen. We're at the pointy end of the project. All of the tremendous hard work our people and our partners have been doing has to come together over the next 8½ months. It's a very challenging endeavour to turn the bureau off and then turn it on without any interruptions to service. So it will be done very carefully and with the highest of standards. We won't be decommissioning anything until we're absolutely confident that the new systems are working well.

Senator DAVEY: Thank you very much. That's reassuring. With the new radars, just as a bit of a left-field question, I understand that the Barkly Region in the Northern Territory were promised a radar service in 2019. I'm hearing concerns that it's not up and running yet.

Dr Johnson: No, it's still further delayed. I'd really like to be able to give you an answer to that. I can't. The core issue is around resolving appropriate land tenure arrangements. We've been in longstanding discussions with

the relevant First Nations stakeholders in the region. It's proving challenging, and I say that not in a pejorative sense in any way. There have been various reasons why it's been challenging. We have sought help from the relevant native title bodies and the Northern Territory government.

To give you an example, we were hoping to have a meeting a few weeks ago with the relevant stakeholders, and you're probably aware that Tennant Creek had to be evacuated because of the bushfires. So there are these little curveballs that come along. We were supposed to meet, I think, last week; unfortunately, there was a death in the community, so there was a funeral. We are very, very sensitive to and want to pay deep attention and respect to the First Nations and traditional owners up there. That is adding some time to the various processes we need to go through.

To your question, I'm also deeply sensitive to the needs of the community and the fact that they haven't had a service there. They are expecting a service. I'm passionately and strongly committed to getting one for them. I ask for their ongoing forbearance and patience while we work through some of these issues. The machine has been purchased. It's ready to go. We just have to have the necessary land tenure arrangements in place to enable us to commence site works. Once we have site works commenced, it's relatively quick—a matter of months.

Senator DAVEY: To be clear, the service would benefit the whole community for floods, fires and all sorts of scenarios. It would help the community better prepare and also identify resilience projects.

Dr Johnson: Correct.

Senator DAVEY: As we're talking about all the forecasting, I have heard reports of concerns with the new bushfire ratings. The old model had—this is my interpretation of the reports—very simplistic vegetation models that you'd put in with the bushfire rating, and the new model has a lot more inputs.

Dr Johnson: Correct.

Senator DAVEY: So it potentially could give you better, more accurate risk ratings. However, there are a few issues at the moment. In some areas the rating was higher than it should have been. The worry is that it leads to complacency. What are we doing about that?

Dr Johnson: I understand the issues that you're talking about. It might be worthwhile, with the chair's indulgence, to back up a little bit and set some context about the bureau's involvement. The Australian Fire Danger Rating System, which you referred to, is a collaboration between the bureau, various state agencies and the Australasian Fire Authorities Council, AFAC. AFAC is the managing partner of the collaboration, for want of a better word. All of the parties have various roles in the new system.

You're right, Senator—and I'll unpack this in a bit more detail—that there have been some changes. One of the most important changes is there is now consistency in the use of language to communicate with communities right across Australia. If you're in New South Wales, you're getting the same messaging and colour schemes as you would in Queensland, South Australia, the Northern Territory or Victoria. The risk of confusion, particularly for border communities or for travellers, has been mitigated by having a single consistent national warning language. There has been some significant investment by the bureau in upgrading and updating our fire weather warning capability, which, again, we're very proud of and which is absolutely making a difference on the ground, supporting frontline emergency managers, who are unfortunately having to deal with the fires that are omnipresent in this country.

There has also been, as you correctly point out, an update to the approach to modelling vegetation. That is not the bureau's responsibility; it's the responsibility of the jurisdictions. Yes, in most of the jurisdictions previously there was a three-component vegetation model. I believe—apologies if I've got this wrong—it's now an eight-component vegetation model. I think it's fair to say there has been some learning as the country has implemented this this first season, with some vegetation types where there may have been an overestimation or underestimation of the characteristics of that vegetation. That vegetation modelling is fed in and integrated with the weather data, terrain data and all these sorts of things to issue advice and guidance to the community and to emergency managers. I'm aware that, for example, in the Western Downs in Queensland, there was probably an overestimation of the biomass load there, which led QFES, the Queensland agency, to take some action with the community which in hindsight may not have been necessary. The reason I raise this is the bureau is just one cog in this big wheel, and the issue that has been most sensitive, where there's still a lot of learning going on, is in the vegetation modelling space, which is the responsibility of the states.

Senator DAVEY: So the states input that data.

Dr Johnson: Yes. Each of the state agencies have their own capability in that area. In your home state, New South Wales RFS have got a whole wing of one floor at Parramatta—you've probably seen it—with folks who just specialise in that. Ditto in Kedron in my home state with specialists. There have been teething experiences. I

know it's not appropriate for officials to pass opinion, but—again, with your indulgence, Chair—I think it's a huge step forward for our country, and often when you're making big steps forward there are learnings in the first year. Net-net, I think the community will have a much better service than we've ever had delivered in this country. As the fire weather risk grows with changing climate, it's incumbent on all of us who are involved in this space to deliver the best possible service to the community.

CHAIR: Senator Davey, do you have a great deal more?

Senator DAVEY: On this topic, one last question, and then I'm happy to share the call and come back very briefly. With all those inputs, vegetation changes over time. Is this an iterative—

Dr Johnson: Yes, it is. The agencies will continue to modify their advice to the community as the vegetation states change during the year. As you would know, living in rural New South Wales, it can change very quickly. That's one of the strengths of the new system: hopefully, we have a much finer resolution in space and time as the landscape changes, and we can advise the community accordingly.

CHAIR: Thank you. Senator Payman.

Senator PAYMAN: Dr Johnson, what conversations is the bureau having with the National Emergency Management Agency, and how regularly are you in touch with them?

Dr Johnson: Continuously, I would say. We engage with NEMA at a whole range of levels, starting from permanently posted staff in the National Situation Room just down the hill, who are there 24/7 to support NEMA in their activities, all the way through to situation briefs, seasonal scenario testing and the engagements that Senator Duniam asked me about before, like, for example, the recent high-risk weather season summit. The relationship between NEMA and the bureau is very, very important. They're one of our most important customers. We work very closely with them at a range of levels. Also, the bureau is a partner of the Australian Climate Service. The ACS has a very, very deep engagement with NEMA at a range of levels in their functions.

Senator PAYMAN: You just mentioned the National Disaster Preparedness Summit. What was the importance of the summit, and what role did the bureau play? What was its significance?

Dr Johnson: The purpose of the summit is a question probably best directed towards NEMA, but my take on it, for what it's worth, is that was the first time such an event has been convened, so my congratulations to all those involved for having the vision and foresight to do that. As per my comment to Senator Davey a minute ago, the risks from natural hazards in this country are increasing, not decreasing, so having all the key players across all three levels of government, industry, not-for-profits and other community interests present in one room to talk about the future, to stress-test the system and to work through different scenarios is very powerful. My congratulations to our colleagues at NEMA.

The bureau played a number of roles. The main role with the summit itself was twofold. Firstly, I made some remark about the seasonal outlook, some of which were misreported in the News Ltd press, though accurately reported in the Nine Entertainment press. That gave the delegates a very strong and hopefully insightful view around the season that we're facing. Our teams also worked shoulder to shoulder with the NEMA teams to prepare the scenarios that were used by the delegates to test their preparedness for the season ahead. That sounds like quite a trivial exercise; it's not. It's actually a really complicated and intense scientific endeavour, so kudos to them.

Senator PAYMAN: What is the summer forecast outlook for Australia? What should we be prepared for?

Dr Johnson: It's hard to summarise that in one word, being a big country like we are. My general message is 'hotter and drier'. We were talking about the drying and warming trend as far back as March. Most parts, not all, of the country are likely to see warmer temperatures both at daytime and night-time, and drier conditions particularly in the south, the south-west and the east. It will be less windy in some parts of the country—and with that goes bushfire risk. I've been on the public record as saying—and I'd ask all of you, in your roles of engaging with your communities, to ask your constituents to be aware that, in this country, any hazard can happen at any time. We have a tropical cyclone out in the Coral Sea at the moment. Even though the trend is around 'drier and warmer', all the hazards like thunderstorms and floods—we had floods in Victoria over the weekend—can manifest in this country. It's both one of the great joys and tragedies that, in a country of this scale and diversity, anything can happen at any time.

At a whole and national level, we're heading into a drier outlook and a warmer outlook. Particularly with the heat story, I encourage everybody to pay attention. I know in your home state you've already had very warm temperatures in Perth. Particularly in the eastern suburbs of Perth, the western suburbs of Sydney, the northern suburbs of Melbourne and the western suburbs of Brisbane, that's where we can get some really extreme temperatures during the summer—so pay attention to that. The bureau has a new heatwave warning service it

launched this year to inform the community of the risk. Please ask your constituents to pay attention to it. So, yes, a hotter and drier outlook.

Senator PAYMAN: Thank you.

Senator WHISH-WILSON: Just as a matter of interest: do you give heatwave warning briefings or presentations on the ocean to different stakeholders?

Dr Johnson: Yes, we do. We work very closely with the marine park authority; they would be our primary partner in terms of ocean temperatures. We also work with the fishing sector. We stand ready to brief anyone who has a particular interest in these matters.

Senator WHISH-WILSON: Could you take on notice whether you did a briefing recently for the Tasmanian government for the west coast, for the aquaculture industry.

Dr Johnson: I think we have. We were requested by DCCEEW some time ago to provide some meteorological and national geographic support to matters of interest in Macquarie Harbour.

Senator WHISH-WILSON: That's the one.

Dr Johnson: Given the significance of the issue at hand, we have made our staff available to support the department in any way we can. I understand those briefings have occurred.

Senator WHISH-WILSON: Are they available for the public?

Dr Johnson: I can't see any reason why they wouldn't be.

Senator WHISH-WILSON: Can I ask you to provide a copy of those, if you could, on notice.

Dr Johnson: I'd have to consult with the department, but prima facie I can see no reason why they wouldn't be publicly available.

Senator WHISH-WILSON: I've seen some IMAS one that are probably their own overlays, but I would be interested in that. I have a couple of questions on global temperatures. Who measures global temperatures?

Dr Johnson: There's no one single entity. Effectively all the national meteorological and hydrological services measure temperatures in their own countries, and, as part of the international collaboration arrangements and conventions that exist, we feed that data and a whole range of other meteorological data into the World Meteorological Organization. They will undertake a synthesis of that data and often make statements about what's happening at a global level.

Senator WHISH-WILSON: But you're pretty confident in the numbers that—

Dr Johnson: I'm confident in our numbers! I have no control over what goes on anywhere else in the world, but I know, to your question, that in the major nations the standards that are applied are very high. I have no reason to doubt them, but I'm not accountable for them.

Senator WHISH-WILSON: Do you agree that, this year, every month from July through to September has seen the hottest-ever recorded temperatures by large global levels?

Dr Johnson: Yes, that's correct.

Senator WHISH-WILSON: September exceeded the previous hottest September by 0.5 degrees. New data shows 'average global temperatures in September were not just the hottest-ever recorded but 0.5 degrees above the previous record and 1.8 degrees above temperatures in pre-industrial times'. Can you tell us a bit more about your thoughts on the guardrail debate?

Dr Johnson: I'm not sure what you mean by 'the guardrail'.

Senator WHISH-WILSON: Globally we've exceeded 1.5 degrees for a short period of time. At what point do you, as a bureau, provide advice to different departments on the implications of that?

Dr Johnson: We merely report the observations we take. We don't provide policy advice to the departments on those measurements; they speak for themselves.

Senator WHISH-WILSON: Do you think there are any policy implications for exceeding 1.5 degrees this year?

Dr Johnson: That's a complex social, economic, environmental and ecological question.

Senator WHISH-WILSON: It most certainly is, which is probably why we're exceeding 1.5 degrees!

Dr Johnson: You're asking me to give an opinion on something we're not accountable for.

Senator WHISH-WILSON: What do you think is behind the extraordinary heat we've seen?

Dr Johnson: Again, we've been on the record for many, many years, including in the most recent *State of the climate* report, as saying that the increase in both atmospheric land and ocean temperatures is because of human activities. There's no question about that in our minds. The evidence is compelling.

Senator WHISH-WILSON: And aerosols and other issues that are being—

Dr Johnson: There are all sorts of factors that play into what the observed temperatures are, both positives and negatives. But the net result in this country, as reported in our last *State of the climate* report—and there will be a new one coming out next year, in 2024—is that the 2022 state of the climate was 1.47 degrees above the national baseline in 1910, plus or minus 0.24 of a degree. We're very confident around that.

Senator WHISH-WILSON: You've probably seen that there was a bit of controversy a few months ago. The government wouldn't release an ONI—Office of National Intelligence—report on the risks of climate to national security. Were BOM asked to do any work, or did you do any consulting, in relation to projections or forecasts on that?

Dr Johnson: I'm not sure which report you're referring to particularly. I can say that we work very closely with a range of national security agencies as part of our core business. We have a national security and space program whose sole mission is to support the intelligence needs—

Senator WHISH-WILSON: I asked some questions last estimates about balloons, in relation to that.

Dr Johnson: Yes, correct. We have a dedicated team within the bureau whose job is to support all the national security apparatus. On this specific report, I don't know the answer. It's possible that, given the continuous engagement we have with national security agencies, they may have drawn upon our information.

Senator WHISH-WILSON: Looking at sensitivity analysis: if the world was on track for a warming of between 2.1 and 2.9 degrees, based on current commitments, would you be able to help provide assessments on what parts of the country may be uninhabitable or what kinds of impacts that would have? Or is that CSIRO's work?

Dr Johnson: It's both; we work closely with CSIRO on those future climate projections. The impact of that is an area under development—again, I commend the government; in fact, Minister McAllister is taking leadership on this. This nation's first-ever national climate risk assessment will be looking at the impacts of those projections and the risks associated with them across various geographies, sectors, infrastructure and so forth. The first pass results of those, subject to the minister's approval, will be out later this year and there will be a more detailed product next year. That risk assessment you're referring to hasn't been done before at a national level, but it's been done in parts by some of the states. This will be the first time we've ever had a national risk assessment done.

Senator WHISH-WILSON: Have you got any thoughts on the fact that we have just exceeded 1.5 degrees globally in September? Do you have any projections or forecasts on how long that kind of heat will last or whether next year is going to exceed it again?

Dr Johnson: As per my answer earlier, we're very much forecasting a hot seasonal outlook into summer. We have a high degree of confidence that it'll be in the top 20 per cent of hot summers that we've had. We're on track, but it's still too early to call, to have a hot year this year. It's still only October, but we're on track. I don't want to call it yet, because we've still got two and a bit months of the year to go, but we're on track, potentially, for breaking some records in terms of heat and rainfall. Again, with some very small exceptions, most of the country has been incredibly dry this year. We've swung very hard from being very wet to very dry. It depends what happens over the next few months, but, at the moment, we're sort of in the territory where the only comparator is the Federation drought, at a national average. So we're at the Federation drought levels.

Senator WHISH-WILSON: Just a point of clarification: in terms of the El Nino event itself, you're expecting it will be a kind of normal El Nino; it won't be super—

Dr Johnson: Every one is different. It manifests in different ways in different parts of the country. We also have this year the impact of phenomena in the Indian Ocean. We have a confluence of the Indian Ocean Dipole with El Nino/La Nina dynamics in the Pacific. It's not uncommon to have both El Nino and an IOD. It's probably happened half a dozen times since 1960. Each one of those has been different. The last time we had an IOD and an El Nino was in 2015. Large parts of the country were dry. Parts of New South Wales were wet. Every one is different. Back to my answer to Senator Payman: my strong encouragement to all of you, with your constituents, is to remind your constituents to be alert to all the hazards. This country is the most climatically variable inhabited country on the planet. Anything can happen anywhere. We can still get highly localised events of flood, cyclone, severe thunderstorm or whatever. But, at a continental level, the drying and heating trend is the dominant trend. But, as we know from 2015, there can be localised impacts—that is, wet in central New South Wales and dry as a chip in South-East Queensland and Tasmania.

Senator WHISH-WILSON: And we've had the earliest recorded cyclone in the Pacific. Has that ended up becoming a cyclone?

Dr Johnson: No. We have had cyclones recorded in our region in every month of the calendar year, but it's a long time since we've had a cyclone—we've only really got strong confidence in that historical record back to 1970, but our cyclone experts tell me that, back as far as 1970, it's the first time we've had a cyclone out in the Coral Sea in October. That doesn't mean to say we haven't had a cyclone in the Indian Ocean or the Gulf of Carpentaria or anywhere.

Senator WHISH-WILSON: But in—

Dr Johnson: In October it's the first time—

Senator WHISH-WILSON: In October in the Coral Sea.

Dr Johnson: As far as we know, since 1970. There could have been something pre-1970, when our records weren't as comprehensive. But, to your point, it's very unusual. But I should say, Chair, with your indulgence, at this juncture we don't see any risk of landfall on Australia. It is likely to stay well offshore from Australia. It is obviously of concern if you're in Vanuatu or our Pacific neighbours, who we're thinking of and in constant engagement around, but, in terms of threats to the Australian coast, at this stage it's very, very low likelihood.

CHAIR: I remind everyone that we have two more agencies to get through, and its 10 past 10. Please be succinct and, where possible, put any questions on notice and focus on the things that are really important to you. Senator Roberts.

Senator ROBERTS: Thank you again for being here again. You and the government claim that atmospheric carbon dioxide levels are detrimentally affecting climate and that, as a consequence, carbon dioxide from human activity needs to be cut, necessitating cuts in the use of gas, petrol, coal, oil, diesel and farm grazing of cattle, sheep and pigs. Given what you claim about carbon dioxide from human activity, could you please provide me, on notice, with the total number of bureau weather stations from which weather data is collected for the bureau to use, both those that the bureau operates and those that other individuals or entities operate, and, of them, the number that measure atmospheric carbon dioxide levels?

Dr Johnson: Okay. I can probably answer that now.

Senator ROBERTS: Sure.

Dr Johnson: The CO₂ levels for our region are measured at Kennaook/Cape Grim, north-west Tasmania. That's one of three, I think, global baseline CO₂ measuring stations. That's where those stations measure. There are many, many, many pieces of equipment in the field that measure local CO₂ emissions for all sorts of reasons, but in terms of the global baseline station, that is at Cape Grim—Kennaook.

Senator ROBERTS: I want to know how many stations you have, how many your colleagues—

Dr Johnson: We'll take it on notice.

Senator ROBERTS: And how many measure carbon dioxide levels.

Dr Johnson: Yes.

Senator ROBERTS: And could you provide the locations of any other entities' stations that are measuring carbon dioxide levels whose data the bureau relies upon for its climate reports and claims, both within Australia and overseas? You've already mentioned three.

Dr Johnson: Yes.

Senator ROBERTS: That won't be a problem. Now, if you look at the document I've tabled—

Dr Johnson: I'm sorry, I'm not in receipt of it—I'm now in receipt.

CHAIR: You may want to talk to it.

Senator ROBERTS: Yes. These are graphs from—the source data is Scripps institute and CSIRO. These are atmospheric carbon dioxide levels measured at those 10 points around the world. Now, it's claimed that we need to cut the level of carbon dioxide in the earth's atmosphere, and to do that we must cut carbon dioxide from human activity, correct? That's what the claim is.

Dr Johnson: Senator, I'm not in a position to pass an opinion on that. Direct that to the department. All I can tell you is that, from our measurements of the changes that are occurring in the atmosphere, it couldn't be clearer, in terms of the trends we're observing, and our science—

Senator ROBERTS: I want to ask you about those trends.

Dr Johnson: And our science is very clear that the causes of those trends, to a very large extent, are human activities.

Senator ROBERTS: You claim that cutting human production of carbon dioxide will cut atmospheric carbon dioxide levels.

Dr Johnson: No. Just to reaffirm, it's not our role to do that. Our role is to measure the atmospheric, oceanographic and, in some cases, terrestrial phenomena. We've never made such claims. All we've said is—

Senator ROBERTS: So you don't—

Dr Johnson: that all of these parameters are rising and that the cause of that increase, to a very large extent—a predominant extent—is human activity. That's all we've said.

Senator ROBERTS: So carbon dioxide from human activity is causing a rise in atmospheric carbon dioxide.

Dr Johnson: And other emissions—methane and so on—are causing the escalation in oceanic and atmospheric temperatures.

Senator ROBERTS: In 2009, after the global financial crisis, and in 2020, during the COVID lockdowns, we experienced severe global recessions. During those recessions, energy use fell dramatically and the use of hydrocarbon fuels like coal, oil and natural gas for transport, residences and industry was cut severely, leading to dramatic reductions of carbon dioxide from human activity. Yet, despite those cuts in human carbon dioxide production, atmospheric carbon dioxide levels continued to rise.

Dr Johnson: Correct.

Senator ROBERTS: All the Scripps and CSIRO measurement stations reveal no decrease or downward inflection, just continued rise in atmospheric carbon dioxide levels. This real-world empirical evidence proves that drastic cuts in carbon dioxide from human activity have no effect on atmospheric carbon dioxide levels. Making the drastic cuts is pointless and is damaging economically and socially. On notice, could you please specify the dates, quantity and duration of any inflections or downturns on those graphs?

Dr Johnson: I'm happy to, Senator. But, very quickly—with the chair's indulgence—the premise of your question is false. It is a well-established fact that the consequences of human activity have long lag periods between when they occur and when they're observed in the atmosphere. So, even if CO₂ emissions were to stop today, the atmosphere is loaded, as is the ocean, and it will take centuries for that signature to work its way through; hence the urgency around the challenge to reduce emissions now.

Senator ROBERTS: How well is carbon dioxide mixed in the atmosphere?

Dr Johnson: How well is it mixed?

Senator ROBERTS: How well mixed is it?

Dr Johnson: I'm not an expert on carbon dioxide atmospheric mixing.

Senator ROBERTS: How does it vary temporally, spatially and with regard to surface cover—for example, vegetation type?

Dr Johnson: I'd have to take that on notice. I'm not an expert in those matters.

Senator ROBERTS: Could you take the next question on notice as well. Given that the atmospheric carbon dioxide levels over—

Senator WHISH-WILSON: Could you just put them on notice now? Could it go to us, because people are waiting?

Senator ROBERTS: I want to get this to make sure I've got the question right for Dr Johnson. I'll put the other two on notice after this. Given that the atmospheric carbon dioxide levels over the short term and without spatial and temporal context have increased substantially, what impact has this had on global and national atmospheric temperatures? Specifically, what is the rate of temperature increase over the period 1995 to today?

Dr Johnson: Again, you're asking me a specific question on a specific set of dates. I don't have that number with me.

Senator ROBERTS: No, on notice. I'm happy for you to do that on notice.

Dr Johnson: If we have that data, I'll provide it, sure.

Senator ROBERTS: I'm sure you've got the temperature data. Could you please specify in your answer the statistical methods and procedures, as well as the data periods and sources of data. Could you please use the global and national atmospheric temperature data from the following sources: from the Bureau of Meteorology, obviously, atmospheric temperature data for Australia and the world—

CHAIR: Senator Roberts, you can log them in writing, if you would like. And, if you're asking for an answer, you probably shouldn't specify where they get the data from. It would be entirely up to them if you're asking—

Senator ROBERTS: No, I'm not specifying the data. I just want some alternatives because there's variation between—

CHAIR: But I will speed you up, Senator Roberts.

Senator ROBERTS: I'm happy to put them on notice.

CHAIR: That would be lovely.

Senator ROBERTS: I'll also be asking you for NASA's University of Alabama, Huntsville, and RSS data.

Dr Johnson: You'd probably best direct your questions about NASA data to NASA.

Senator ROBERTS: Okay.

Senator WHISH-WILSON: Is this about Earth, Malcolm, or some other planet?

CHAIR: Right. We are going to move on.

Senator ROBERTS: I'll put two more questions on notice.

CHAIR: Thank you so much. Senator Davey.

Senator DAVEY: I will be quite brief. I asked in May about the \$236 million of flood warning infrastructure money that was allocated which will enable the bureau to take ownership of a lot of our river flood gauges. At the time, you indicated Queensland were a high priority—and also because they were the first state to enter into a funding agreement.

Dr Johnson: Correct.

Senator DAVEY: Have we had any progress with other states to enter co-funding agreements?

Dr Johnson: The short answer is yes. They haven't been concluded. We're working very actively with New South Wales, and we're particularly sensitive around the urgency of having activity underway in the Northern Rivers. I'm not sure if Dr Stone wants to add any more to that. He's been handling these matters day to day. We have been engaged with most of the states, but our particular emphasis, as you point out, has been on Queensland and New South Wales. Peter, did you want to add anything?

Dr Stone: No, just that there's broad agreement on the idea of cost sharing the maintenance.

Senator DAVEY: So the conversation's ongoing with New South Wales, but it's in progress in Queensland. How far has that progressed? Have you done an audit of the gauges that are currently owned by Queensland, what you might take over and what upgrades might be needed?

Dr Johnson: You've heard enough of my voice probably anyhow now, Senator! I'll ask Dr Stone, who's handling this, to give you that.

Dr Stone: A very detailed scoping study was done for Queensland and completed probably about two years ago. That was work done in collaboration with the Queensland Reconstruction Authority and the Local Government Association of Queensland. So we had all of the stakeholders—

Senator DAVEY: So you had it before the funding was announced?

Dr Stone: Yes.

Senator DAVEY: Right.

Dr Johnson: Maybe I can just add to that. It was done at a macro level. What we've done since the government's announcement is have officers in the field discussing priorities in detail with councils because, obviously—again, you'd know this well, Senator—catchment boundaries don't necessarily correlate with local government boundaries. So we work with the government on a catchment-by-catchment basis, and we just need to work through the fine details with each local government around which assets in their local government area we will be prioritising, getting really deep, specific local insight.

Senator DAVEY: Will that audit be publicly available when finalised?

Dr Johnson: Absolutely.

Senator DAVEY: Have you engaged additional staff to do these projects, and what's the quantum of extra staff?

Dr Stone: We're in the process of recruiting for the project. The quantum goes up over time, starting off, from memory, with about 15 staff at the moment and ramping up to closer to 30.

Senator DAVEY: In your discussions with other states—you've progressed well with New South Wales; I'm very pleased to hear that, but I'm not parochial. In Western Australia, particularly up around the Fitzroy basin, my understanding is there are currently only two gauges in the whole Fitzroy basin that provide flood warning data to the west. Have you had conversations at that level, and is there going to be scope to improve the warning systems in that region?

Dr Stone: Yes.

Senator DAVEY: Yes, but too premature to give me a detailed answer?

Dr Stone: Yes. We don't have the detail on that at the moment.

Dr Johnson: Just on that, we're very cognisant of the risk there and the significant trauma that communities in the Fitzroy catchment went through at the start of this year. Our team in Perth, working with their national hydrologic colleagues, are paying particular attention to supporting the community there. Our group executive of community services was in the region two weeks ago. We are deeply sensitive to the sensitivity there, with another wet season coming. Even though there's been enormous progress on the replacement bridge, there's still a lot of folks there that are not back in their own houses et cetera, so it's a real watch point for us. We're putting appropriate management attention towards it.

Senator DAVEY: Would it be possible, on notice, to provide us with a table of the progress with each state and where you're at—Queensland you've done an audit that might be publicly available, and New South Wales progress—just so we've got a bit of Gantt chart that we can follow?

Dr Johnson: Sure. I'm happy to do that.

CHAIR: Thank you very much, Dr Johnson. We really appreciate it. We will let you go.

Director of National Parks

[22:21]

CHAIR: If I could ask the Director of National Parks to come to the table as swiftly as humanly possible, that would be great. Could we move quite swiftly, please. We really are a bit out of time. Welcome, Mr Sean Sullivan, Acting Director of National Parks. Would you like to make an opening statement?

Mr Sullivan: No thanks, Senator.

CHAIR: Excellent. We'll go straight to Senator Whish-Wilson.

Senator WHISH-WILSON: Could I get a standard update on the South East Marine Park review? What's the status of the draft management plan at the moment? Could you give me an update from the last time I asked, which was May, I think.

Mr Mundy: Since the last time we spoke, I think the status is that we have held the first of two necessary rounds of statutory public consultation. You might recall the first round was held simultaneously on the proposal to expand Macquarie Island Marine Park and the proposal to create a new management plan for the south-east. Those two processes were run concurrently. Since then, as you'd be aware, the Macquarie Island Marine Park has been expanded and proclaimed, and that's now included as part of the south-east network of marine parks.

Senator WHISH-WILSON: Does that need to come before the Senate in a reg at all?

Mr Mundy: No, not for the creation of the marine park. That park has been created and is now being actively managed. What does need to come forward is a draft management plan for the south-east network, including for the newly expanded Macquarie Island Marine Park. Through that first round of public consultations on the south-east plan, we received 13,569 submissions, comprised of a large number of campaign submissions and 40 unique submissions. They were split between the commercial fishing industry, conservation sector, general public and science as the predominant respondees.

Senator WHISH-WILSON: By 'unique' you mean they're not form submissions?

Mr Mundy: Yes, that's right. The Director of National Parks is currently in the process of working through those submissions, working through the data that we have on the existing south-east and preparing a new management plan. The next step of the process will be for a draft management plan to be released for 30 days of statutory public consultation, and that's the second and final public consultation for the south-east plan. Following that, the director will take account of the feedback received through that consultation, prepare a report for the Minister for the Environment and Water and propose a new management plan for the minister to approve. Once that's approved, that gets tabled in both houses for a disallowance period. Depending on the date of entry into effect, it may come into effect either before or following that disallowance period.

Senator WHISH-WILSON: What was the expected date for the draft management plan release?

Mr Mundy: I think it's likely to be early next year. As mentioned earlier, we're working through the feedback received through public consultation, but we're also working through scientific information on the south-east that we've learnt over the 10 years of the preceding management plan and fisheries data, to try and help us understand what activities are occurring where and what the impact of any proposed changes of zoning might be.

Senator WHISH-WILSON: Could you briefly elaborate on what 'working through' means? Are you consulting with AFMA, for example, on the closure of parts of the South East Trawl Fishery? How are you coordinating your data?

Mr Mundy: You'd be aware, Senator, that the government, together with state and territory governments, have committed to exploring opportunities to strengthen protection of marine areas where possible. One of the things that we're doing is working through the feedback that we've received and the data on fisheries and other environmental information to determine what, if any, modifications of the existing protections might be appropriate, potentially to increase protections in line with that commitment. So we're looking at fisheries data. We're talking to fisheries management agencies to make sure that we understand and have good and accurate fisheries data to help inform any decisions about changes to zoning and to understand the impacts that they could have on users. But also we revisit and refine our understanding of ecological features and biological processes in the area to make sure that we're finding the best opportunities to refine protection within those 14 parks in the south-east.

Senator WHISH-WILSON: The head of AFMA said on record, maybe two estimates ago, that the fishing industry had no appetite for any more closures or any more marine parks in the area because of the closure of parts of the South East Trawl Fishery. Is that the feedback you've received from AFMA or fishing stakeholders?

Mr Mundy: Through the public consultations that we've received—I mentioned that a number of them were from the fishing industry; in fact, we've posted those online, so they're available for people to see on the Parks Australia website—it's fair to say that some of the predominant themes from the fishing industry were concerns over the cumulative impacts of various processes and economic impacts on their businesses, and marine parks are one of those.

Senator WHISH-WILSON: Okay. I'll put my other questions on that on notice, Chair.

CHAIR: Thank you. Senator Van?

Senator VAN: I just have a quick follow-up question: do you see that often where marine parks are impinging on catch limits et cetera, and does National Parks look at that as a factor in making decisions?

Mr Mundy: Very much so. Nationally our marine parks have two objectives: firstly, to protect and conserve the natural and cultural values of the places that they're protecting; and, secondly, to enable sustainable economic activity where that's consistent with the first objective. So we work very hard to try to find that sweet spot and the balance between enabling sustainable economic activity to occur and, in fact, to flourish and ensuring that the ecosystems and biodiversity that parks are created to protect are, in fact, protected appropriately.

Senator VAN: All strength to your arm on that. Thank you.

CHAIR: Senator Duniam?

Senator DUNIAM: Hello there. How are you going? I will go to a question I asked verbally that was taken on notice last estimates, relating to the declaration of the Macquarie Island Marine Park and a tweet from the minister on 22 May 2023. I asked when the documentation was given to the minister to make a decision, and the package of information was given to the minister on 2 June according to that answer. Just to refresh people's memories, it was in reference to questions around the plan to expand the marine park, and the minister said that what she was doing was in fact a 'no-brainer', indicating that it was going to happen, yet submissions hadn't closed yet. Is that correct?

Mr Mundy: What was the date of the tweets?

Senator DUNIAM: It was 22 May at 7.29 pm.

Mr Mundy: From recollection—you have the dates before you on which the brief was provided to the minister and on which it was considered.

Senator DUNIAM: Yes, it was provided from the director on 2 June.

Mr Mundy: June or July?

Ms Musso: June.

Mr Mundy: June, yes.

Senator DUNIAM: So the minister wasn't in possession of submissions or the recommendations from the Director of National Parks at 22 May.

Mr Mundy: That's correct.

Senator DUNIAM: Is there any preliminary information provided to the minister prior to the final package, or some update on the way through—an interim summary of items—or not?

Mr Mundy: Because of the way the EPBC Act is constructed, before the proposal is put to the public, one must have a proposition to place before the public for that consultation. Obviously, in the course of deciding what proposal to put to the public for the consultations around the proposed expansion of the marine park, we had engagement with the minister and put up the proposal for that zoning and set of management arrangements.

Senator DUNIAM: So that was what was before the minister. It was then what was put out for public consultation, which hadn't yet closed, and the summary of information compiled by the Director of National Parks was not yet furnished to the minister. How many of the 14,000 or so—I think it was 14,736—were unique submissions?

Mr Mundy: Forty-one were unique submissions.

Senator DUNIAM: And the rest were form?

Mr Mundy: Correct. They were campaign submissions.

Senator DUNIAM: So the 14,690-odd were identical?

Mr Mundy: No. They came from two separate campaigns. I think the content may have varied slightly between those two, but the tenor of campaign submissions was quite close across—

Senator DUNIAM: Both were pro-expansion?

Mr Mundy: Yes.

Senator DUNIAM: And the 41 were broken down between industry and—?

Mr Mundy: There were 14 conservation, eight research, 16 general public, two industry and one government.

Senator DUNIAM: Is there any weighting given to a form submission, or is it given equal weighting to unique submissions?

Mr Mundy: No. There's no formula which ascribes a weight. It's not a voting process. It's a matter of seeking input from relevant stakeholders to help inform judgements by the Director of National Parks, to inform recommendations to the minister and then, in turn, decisions by the minister.

Senator DUNIAM: Are all the submissions available online?

Mr Mundy: Yes. They're all posted online.

Senator DUNIAM: All 14,000? Great, I'll have a look at that.

Mr Mundy: I should say that not each one of the campaign submissions is posted individually.

Senator DUNIAM: That's quite understandable.

Senator WHISH-WILSON: You would've received all those emails anyway.

Senator DUNIAM: I'm not sure if I got all 14,000.

Senator WHISH-WILSON: I received them.

Mr Mundy: A small qualification.

CHAIR: We'll check in at the next estimates to see how many of them you got through.

Senator DUNIAM: Sure. I'll copy you in.

Mr Mundy: Just for full accuracy, I think we received a couple of submissions where they indicated that they wished their submissions to remain private. It's our practice in those instances to not post them.

Senator DUNIAM: There is a prescribed order of actions to be taken by the minister in declaring a marine park. Were all of those steps complied with?

Mr Mundy: Yes. I might add as well that the core piece of information and advice provided to the minister by the director is a document called the director's report. Effectively, that's a key step in the process which summarises fully the responses received through the public consultations and the director's views on those matters. That is also posted online. It's potentially a useful reference in working through feedback received.

Senator DUNIAM: I do have a couple of questions around that specific line, with reference to specific sections of the act. In the interests of time I will put them on notice. I will leave that there.

CHAIR: Thank you very much for your time, Mr Sullivan and your team. I appreciate you hanging around all day for what was a swift but valuable session.

Great Barrier Reef Marine Park Authority

[22:34]

Senator McAllister: It's the stayers at this point in the evening, isn't it, Chair?

CHAIR: Welcome, Mr Thomas. Would you care to make an opening statement?

Mr Thomas: I don't have an opening statement, but I'd like to make a short acknowledgement, if I may.

CHAIR: Certainly.

Mr Thomas: Ms Margaret Johnson, long-time general manager of the Great Barrier Reef Marine Park Authority, in service for over 15 years with us and for many years prior in multiple environmental policy roles across federal and state governments, will be retiring soon. This will be her last time here. She is in the room.

Senator DUNIAM: Where is Ms Johnson? Hear, hear! You've stayed all day!

CHAIR: Would you not care to join us at the table?

Senator DUNIAM: Come up; we'll embarrass you here!

CHAIR: Please, come up.

Ms M Johnson: I'm not sure what sort of farewell gift you think that is!

Senator DUNIAM: She'll be glad she's leaving!

Senator WHISH-WILSON: She gets parliamentary privilege for the last time.

Senator DUNIAM: Yes! Tell us what you think of your boss!

CHAIR: We're going to extend the committee hearing until about midnight, so we can explore with—I'm joking! We will start with Senator Van.

Senator VAN: Thank you for coming along, and, Ms Johnson, thank you for coming along. Can I start by acknowledging the good work you've done in keeping the Great Barrier Reef off the UNESCO endangered list. As you have heard me say many times in estimates, I'm a passionate lover of the reef, as I'm a keen diver and a lover of all things of the environment. So congratulations on that and on the work that you're doing.

We heard Mr Mundy say earlier that part of the park's remit is to protect the marine park, and also to protect and encourage the economic behaviour which goes on around it. It might be someone like me who plonks into the water and has a swim around, but there are many others as well. So I was surprised to hear both the Queensland state government and the environment minister come out in support of gillnet fishing in the Great Barrier Reef Marine Park recently. What is the authority's view on gillnet fishing within the park?

Mr Thomas: Thank you for acknowledging the work around UNESCO. When it comes to gillnet fishing, the marine park authority has long cited gillnet fishing and overfishing in certain parts of the marine park as being a key threat to threatened species and, in some instances, to some fish stocks. We're very aware of the announcement made back in June, I believe, by both federal and state ministers in relation to the phase-out of gillnets, out to 2027. The marine park authority is supportive of that phase-out to the extent that it will have a positive impact on threatened species and, indeed, the values in the marine park.

Senator VAN: What threatened species might it have an impact on?

Mr Thomas: The key ones are dugong, inshore dolphins and sawfish; they are the key three.

Senator VAN: Given that gillnet fishing for barramundi takes place in inland waters from the—I think the term is 'median low water mark'; do I have that right?

Mr Thomas: Yes, in inshore areas.

Senator VAN: Given that it's in those areas, it's not really impacting the reef in any way, is it?

Mr Thomas: There is reef in inshore areas of the marine park as well. Sometimes if nets are left unattended or come adrift, they can cause damage in other parts of the marine park environment.

Senator VAN: But upstream in a river which feeds into the sea?

Mr Thomas: Less so.

Senator VAN: In terms of incidents of dugongs that have been caught by gillnets, do you have any statistics on that? Do you keep records of bycatch in gillnets, or would dugongs—

Mr Thomas: I don't have those statistics here with me now, but, yes, there are statistics. They're self-reported by the industry, and assessment is done by the scientific people that we draw on in pulling together our reports on the health of the Great Barrier Reef and the impacts on those threatened species.

Senator VAN: Can I ask you to put on notice those reports, by the type of catch but also the type of bycatch—so which animals were caught in that? Is it also possible to break it down by licensed fishermen, illegal fishers, traditional owners and others that take that bycatch?

Mr Thomas: We can try and do that to the greatest extent possible. We know what we know about illegal fishing, and we don't know the other illegal fishing that is done—

Senator VAN: I know you do great work on that exact thing across the reef.

Mr Thomas: Yes, we certainly have compliance data around where there have been illegal interactions or other issues of concern that we can come back to you with more detail on.

Senator VAN: If you could come back with that, then I'm going to put some questions on notice, and maybe we can have a bit more time or get you on a bit earlier at next estimates to talk about the scientific ways that you can, as Mr Mundy said, protect the economic activity in the park while protecting the environment.

Mr Thomas: As a quick rejoinder to that: we certainly do support sustainable fishing in the marine park. It is a multiple use marine park, and there are a whole range of fishing activities in the park that we're entirely supportive of.

Senator VAN: I just have one last question out of interest. Have you or anyone else gone out with the barramundi fishers to see how they ply their craft?

Mr Thomas: I haven't personally been out with a barramundi fisher. I'm not sure if my team has.

Senator VAN: You can take that one notice, too!

Mr Thomas: We do have a lot of experts in the organisation who are very across the industry.

Senator VAN: If there's any other information you want to put on notice or on record for me to look at, I'll take it all.

Mr Thomas: Thanks.

CHAIR: And now you've disclosed exactly what Ms Johnson's going-away present was!

Mr Thomas: I might just add one more thing, if I may. A lot of the data that you're mentioning is actually held by Queensland, so we'll be in close touch with them. They tend to hold a lot more of the specific data that you're referring to.

Senator VAN: Okay.

CHAIR: Just to be clear about that: it is the state government that's responsible for regulating?

Mr Thomas: The state government is the primary regulator and manager of fisheries in Queensland, including on the Great Barrier Reef. Our role is really to have care and concern for the stewardship of threatened species in the marine park—so, where they're adversely affected by fishing, we'd express concern about that—and of course to make sure that we're upholding compliance against the zoning plan and other rules of engagement in the marine park.

CHAIR: Thank you. Senator Whish-Wilson.

Senator WHISH-WILSON: I might follow up Senator Van's questions on gillnets. I understand there was a Queensland government and federal government package of \$160 million compensation for affected fishers and an allocation of funds to improve fisheries' transparency and sustainability. How is the department monitoring the expenditure of \$160 million in terms of phasing out gillnets?

Mr Thomas: The marine park authority has been involved in that process, but we're not in control of the implementation of that package. The Queensland government has \$100 million for the structural adjustment of the industry, which I believe they're working away assiduously on to make sure that it's deployed reasonably, and the federal department has some \$60 million for the other component.

Senator WHISH-WILSON: How is the department monitoring the implementation of that funding?

Ms Parry: I probably have to take that specific question on notice because our monitoring people have long gone home, but I can tell you about the breakdown of the \$62 million if you're interested.

Senator WHISH-WILSON: Yes.

Ms Parry: That was part of the joint package. So \$62 million went to the design and implementation of the independent data validation on the high-risk fisheries, bycatch reduction initiatives, shifts to fishing gears that

pose a lower risk to protected species and the improved traceability of coral in the coral harvest fishery. The phase out of the gillnets is being funded by the Queensland government and informed by their taskforce.

Senator WHISH-WILSON: Thank you. Could you also take on notice what communication the department's had with the Queensland government in reference to the Future Fishing Taskforce—

Ms Parry: I will

Senator WHISH-WILSON: and when that's expected to provide its final report? I don't know if you have any views, Minister, or, Mr Thomas.

Senator McAllister: What I was really going to ask, Senator Whish-Wilson, was for a clarification because sometimes requests of that kind end up being quite large, actually, because they're so general in scope. Is there something in particular you want to know?

Senator WHISH-WILSON: Why don't I go away and perhaps define what communication means, if that's what you're worried about, Minister?

Ms Parry: That would be helpful.

Senator WHISH-WILSON: Or perhaps you could tell me how regularly you have communication with them.

Ms Parry: We meet with the Queensland government regularly on a whole range of issues. But if there is something specific—

Senator WHISH-WILSON: The Future Fishing Taskforce in particular—have you had any briefings with them? Is it an agenda item on your regular meetings? I can be more specific in writing, but, if you could actually get me an idea of when the taskforce is expected to provide its final report, that's probably the most useful—

Senator McAllister: Mr Thomas has some relevant information.

Senator WHISH-WILSON: Sure.

Mr Thomas: I can come back to you with some more specifics, but the marine park authority has been engaged with the Future Fishing Taskforce in relation to the advice they're seeking to pull together to better understand how to implement that net phase out through to 2027. We have been involved in that and we've provided some advice through that process.

Senator WHISH-WILSON: Thank you. Senator Davey might have asked the same questions if she'd been in here because we put them to AMSA in the rural and regional affairs committee. Does the Great Barrier Reef Marine Park Authority have any kind of consultation or oversight in relation to work done by AMSA in the renewal of marine navigation networks in the Great Barrier Reef Marine Park?

Mr Thomas: Not that we're aware of.

Senator WHISH-WILSON: Okay, but 40 per cent of Australia's navigation aids reside on the Great Barrier Reef. Obviously there's significant shipping through the reef, especially for coal ports. There are some concerns about changes to maintenance plans, and I might put those questions to you. But is that something you would be concerned about?

Mr Thomas: We're very interested to know more about that issue.

Senator WHISH-WILSON: The status of the marine navigation network?

Mr Thomas: Information is certainly shared between agencies—us, Maritime Safety Queensland, AMSA and ports—to understand ship movements in some instances, but, for the specific information you're referring to, I'm not aware of it.

Senator WHISH-WILSON: There are concerns that the plans aren't in place for the continuation of maintenance work on that network after June 2024. Obviously there have been shipping incidents and various things over the years that have been brought to our attention. But I'll put specific questions on whether you have any involvement in the North-East Shipping Management Plan, reviews and some other—

Mr Thomas: We have had policy involvement in that when it was committed to sometime ago. We can come back to you with more detail on that.

Senator WHISH-WILSON: Alright. Why don't I put some more detailed questions? In relation to the UNESCO in-danger listing. You're aware I have a very different view to that of Senator Van. But I was particularly interested that part of the decision to not list the Great Barrier Reef as in danger this time was that the Australian and Queensland governments have to report on the implementation of commitments made to the World Heritage Committee by 1 February next year. That's obviously the Queensland and Australian

governments, but I'm interested in how you intend to achieve meeting the world heritage commitment recommendations and, in particular, how the government will meet the requirement to reduce greenhouse gas emissions consistent with the efforts required to limit global average temperatures to 1.5 degrees.

I'll put some more detailed questions to you on protecting remnant native vegetation in catchment areas and water-quality targets. Perhaps it might be a better one for the minister, given you're not in charge of emissions, Mr Thomas. But, Senator McAllister, it's a genuine question. I think the government, through the safeguard mechanism and the 43 per cent emissions reduction target, has legislated cuts to around two degrees of warming. How does the government plan to improve what's supposed to be, I suppose, a base or a floor, rather than a ceiling? How do you intend to meet those commitments and show that to UNESCO by February next year?

Senator McAllister: I won't pre-empt the materials that will be submitted to UNESCO. I imagine that that will be delivered through the department, and it may be that Ms Parry can support that. But I suppose, broadly, we've been through a process, much of which was transacted in the Senate. I think you were there for some of it.

Senator WHISH-WILSON: I was.

Senator McAllister: We legislated our targets. We made clear the processes and information that government would draw on in updating those targets over time. We have initiated a process of net-zero planning across six sectors and more generally for the net-zero target. So I imagine that many of the steps the government is taking will be drawn upon in preparation of the submission, but Ms Parry may be able to assist you further.

Ms Parry: I will add a little to that. UNESCO has requested that we come back by 1 February to report on the three major commitments that the government has made. It's an update on the commitments, so it's an update on where we're at with the implementation of our climate change commitments, it's an update of where we're at with gillnet fishing and it's an update on where we're at in our water quality efforts. That's what the progress report will be focused on. It's not a full state of conservation report; it is a progress report. It will be submitted for the committee's consideration by 1 February.

Senator WHISH-WILSON: Okay. Will you be listing the approval of new fossil fuel projects? I only say that because the minister did reference the fact that they had knocked back a coalmine—

Ms Parry: As we've made the point to UNESCO multiple times, this is probably one of the most studied properties globally in terms of reefs. All the decisions we take are publicly available, including the outlook report. Our EPBC decisions are posted and are publicly available. Our progress report will be focused on those three matters that the committee have asked us to update them on.

Senator WHISH-WILSON: So you will include the approving of new fossil fuel projects? You'll list those?

Senator McAllister: Senator Whish-Wilson, I said that we weren't going to pre-empt the decisions that will be taken in the preparation of the report.

Senator WHISH-WILSON: Alright. I look forward to that—

Senator McAllister: As Ms Parry has indicated, it will include an update on the implementation of our climate change commitments.

Senator WHISH-WILSON: Thank you. Obviously we're in an El Niño year and we have concerns about ocean temperatures. The AIMS summary report was in April; is that correct, Mr Thomas? With the limited time we've got, will there be any other assessments done before February next year for the UNESCO report?

Mr Thomas: Dr Beeden will be better able to elaborate on this, but we're constantly tracking the state of the reef and temperatures on it and have obviously been concerned—

Senator WHISH-WILSON: Yes. You work with BOM on that presumably.

Mr Thomas: We absolutely do, and with a range of other partners—AIMS, CSIRO—

Senator WHISH-WILSON: Can you give us a very quick update on what you know now?

Mr Thomas: I'll let Roger Beeden jump straight into that.

Dr Beeden: We certainly work with the number of partners that Mr Thomas outlined. We have information coming in from surveys that we conduct, but also the AIMS long-term monitoring surveys and things like the COTs control program vessels that are out there all the time. At this point it's unlikely that before 1 February that we will have a specific report. We typically have a snapshot of what has happened in summer, and that's published around April. Then the AIMS long-term monitoring reports usually come in around August. The last one was published in August. However, we would be assembling the information that we've gathered over the summer and that would be able to be made available for the submission.

Mr Thomas: We have rolling updates weekly. Roger will be in front of the camera every week.

Senator WHISH-WILSON: In relation to temperatures or coral health conditions?

Mr Thomas: Absolutely. Because of the situation in terms of the El Nino event and what has happened in the Northern Hemisphere over the past few months we've certainly been bringing forward our preparations. We work with all those parties to look at what those forecasts are and then make sure we coordinate the assessment efforts that happen and make sure those are communicated out to our partner networks and to the general public.

Senator WHISH-WILSON: Is there any hope for the various adaptation measures that are being looked at—coral brightening, mirrors and the whole range of different things we have spent tens of millions of dollars on in the last 10 years?

Mr Thomas: There's a whole spectrum of activities that we think are really important for the future of the reef. Our existing management efforts are chief among those—the zoning plan and our compliance action. And, yes, the Reef Restoration and Adaptation Program is, hopefully, going to yield some very interesting projects. We're looking very closely at—

Senator WHISH-WILSON: What do you mean by that? We probably don't have time to go into it, Mr Thomas, but when will you provide an update on all that money that has been spent on all these projects?

Mr Thomas: We can certainly source some information for you on that. The Australian Institute of Marine Science is also very well placed to do that. As I said, there are a series of by degrees more and more ambitious projects under that program, all of which are intended to give the reef the brightest chance for the future. It's starting from quite simple relocation of corals spawned over certain reefs to cloud brightening, shading the reef and other things. Roger, would you like to elaborate?

Dr Beeden: Sure. The core part of the Reef Restoration and Adaptation Program is to look at whether measures could be scaled. There've been lots of restoration efforts that can work at small scales and have been proven in multiple places, and there's really looking at whether it's the four that Mr Thomas just outlined—

Senator WHISH-WILSON: Are we talking about 2,000-kilometre scales here?

Dr Beeden: No, we're looking at scales that might be sensible from a tourism operation perspective through to individual reefs and the like.

Senator WHISH-WILSON: I actually do support adaptation measures, by the way, because I think it gives people hope to try, but I wouldn't rely on them to make any significant difference. In terms of the temperatures, what's BOM forecasting for you now? Where are we with current ocean temperatures versus the forecast that you've got for this summer?

Dr Beeden: You heard Dr Johnson give an overview of what's happening globally on the Great Barrier Reef right now. Because it's been very windy, conditions are actually close to average. Certainly, we've had a marine heat wave during wintertime, but temperatures are coming back close to normal. They're slightly above average in the southern end of the reef. The forecast for temperatures during summer is certainly going to be influenced by the El Nino event and the Indian Ocean dipole, but, at the moment, it's looking like it will be between one-half and one degree above average during the main part of summertime, which is certainly a cause for concern but is not the same as what's happening in the middle of the Pacific, with two degrees—

Senator WHISH-WILSON: Or the Caribbean.

Dr Beeden: or as it's been in the Caribbean. It's uncertain at the moment, and it's obviously the combination of temperature, waves and other conditions that will determine what happens.

Senator WHISH-WILSON: What about cyclone season? What are the forecasts for extreme weather events? We know they can have positive and negative effects on coral health.

Dr Beeden: Absolutely. If they're severe enough in particular areas, they can cause catastrophic damage, but they can also bring a degree of cooling to the reef if it's above average temperatures. It's a balancing act depending on what actually transpires this summer.

Senator WHISH-WILSON: Okay.

CHAIR: I draw your attention to the time and the fact that you haven't left anything for your mate over here.

Senator WHISH-WILSON: Sorry, I didn't know John had any questions.

Senator DUNIAM: You're all right. You've got three minutes. I'll just put them on notice.

Senator WHISH-WILSON: No, you go. I insist.

Senator DUNIAM: Oh, do you? Thank you. I will go very quickly to the letter to the federal minister and also Minister Leanne Linard from Professor Chubb. There are a number of recommendations in that letter. Is that something that I can ask about here?

Mr Thomas: You can certainly ask. I don't have the letter in front of me, but fire away.

Senator DUNIAM: We'll see how we go. Are you aware of the letter I'm talking about?

Mr Thomas: I am aware of it, yes.

Senator DUNIAM: Then let's give it a stab. Do you know if either government has agreed to any of the recommendations and, if so, which ones?

Mr Thomas: This is the Australian Academy of Science recommendation.

Ms M Johnson: We do have a letter from the independent expert panel. We also have a letter from the Reef Advisory Committee. The government is going to look at the recommendations in the advice and subsequently make decisions, probably with advice from others.

Senator DUNIAM: Okay. I think that's a great way to end—on Ms Johnson's—

Senator WHISH-WILSON: Can we ask one last question, Chair? Can we ask Ms Johnson what question she would like to be asked for her very last question?

Ms M Johnson: No, you can't!

CHAIR: Let me try this one: what's the best or the worst question you've ever been asked in estimates—most memorable? Let's go with most memorable question.

Ms M Johnson: Oh, now I can't even remember! It would probably have to be questions around proponents of a granting and who got what grant and when.

Senator DUNIAM: I remember those.

Senator WHISH-WILSON: Was it the Great Barrier Reef Foundation?

Senator DUNIAM: Can we not mention that? We are not going there!

CHAIR: There are some things that should be left where they were left! Ms Johnson, I just want to say thank you so much for your dedication both to the authority and for turning up here time and time again. Our deepest apologies for the late nights and any bad behaviour, and best of luck in your next great adventure.

Senator McAllister: In the remaining 30 seconds, Ms Parry has something to tell Senator Duniam.

Ms Parry: To follow up on that last question really quickly: Professor Chubb, on behalf of the independent expert panel did write giving advice. The minister in turn did announce that Professor Chubb will in fact be working with the department and conferring with the Queensland government, looking at the overall investments to make sure they're aligned with both recommendations and the science. So we are working with Mr Chubb right now to implement that.

Senator DUNIAM: Thank you.

CHAIR: That concludes today's hearing. Thank you to all the witnesses who've appeared, to Hansard, to broadcasting and to the secretariat. A reminder that the committee has agreed that any written questions on notice should be lodged with the secretariat by 3 November. Thank you so much for coming. The committee stands adjourned.

Committee adjourned at 23:00