COMMONWEALTH OF AUSTRALIA

Proof Committee Hansard

SENATE

ECONOMICS LEGISLATION COMMITTEE

Estimates

(Public)

TUESDAY, 2 JUNE 2026

CANBERRA

BY AUTHORITY OF THE SENATE

[PROOF COPY]

ECONOMICS LEGISLATION COMMITTEE

Tuesday, 2 June 2026

Members in attendance: Senators Bell, Brockman, Canavan, Darmanin, Liddle, McDonald, O'Neill, Barbara Pocock, David Pocock, Roberts, Walker and Whish-Wilson

INDUSTRY, SCIENCE AND RESOURCES PORTFOLIO

In Attendance

Senator Ayres, Minister for Industry and Innovation, Minister for Science

Department of Industry, Science and Resources

Ms Julia Pickworth, Acting Secretary

Department of Industry, Science and Resources Corporate

Mr Neal Mason, Deputy Secretary, Enabling and Business Services Group

Analysis, Insights and Strategy

Mr Dom English, Chief Economist and Head of Division

Ms Crystal Ossolinski, General Manager, Resource, Energy and Industry Insights

Ms Hayley Arbaut-Zaalen, General Manager, Strategic Policy

Chief Finance Officer

Ms Joanna Stone, Acting Chief Finance Officer

Chief Information Officer

Ms Rebecca Lee, Head of Division

Ms Simone Boulding, General Manager

Chief Operating Officer

Ms Casey Millward, Head of Division

Business Grants Hub

Mr Derek Stiller, Acting Head of Division

Chief Counsel and Integrity

Ms Janean Richards, Chief Counsel and Head of Division

International Strategy and National Security

Ms Alison Drury, Acting Head of Division

Outcome 1: Support economic growth, productivity and job creation for all Australians by investing in science and technology, growing innovative and competitive businesses, industries and regions, and supporting a strong resources sector.

Program 1.1: Growing innovative and competitive businesses, industries and regions

Mr Carl Chang, Acting Deputy Secretary, Industry and Commercialisation Group

Anti-Dumping Commission

Mr David Latina, Anti-Dumping Commissioner

Whole of Industry

Ms Bridget Gannon, Head of Division

Heavy Industry Transition

Ms Tara Oliver, Head of Division

Supply Chain and Policy Response

Ms Tara Oliver, Head of Division

Ms Ana Markulev, General Manager, Plastics Supply Chain

Ms Leah Wojcik, General Manager, Fertiliser Supply Chain

Ms Tanya Blight, General Manager, Food and Grocery Supply Chain

Ms Jocelyn Cooper, Acting Head of Division

Ms Jasminder Higgins, General Manager, Coordination and Response, Supply Chain Response

Mr Tim Wong, General Manager, Office of Supply Chain Resilience

Commercialisation

Mr Matthew Crawshaw, Acting Head of Division

Mr David Chuter, Executive Director, Industry Growth Program

Industrial Transition Response and Whyalla Steelworks Taskforce

Mr Troy Sloan, Head, Whyalla Steelworks Taskforce

Mr Lucas Rutherford, General Manager, Whyalla Steelworks Taskforce

Industrial Transition Response Team

Ms Louise Talbot, Acting Head of Division

Dr Tanja Racic, Acting General Manager

Mr Mark Beaumont, Acting General Manager

Net Zero Economy Authority

Mr David Shankey, Chief Executive Officer

Mr Travis Bover, Division Head, Regional Transformation Division

Ms Rachel Livingston, Division Head, Worker Transition Division

Mr Adam Carlon, General Manager, Communications Branch

Ms Linda Rademakers, Chief Operating Officer

National Reconstruction Fund Corporation

Mr David Gall, Chief Executive Officer

Dr Mary Manning, Chief Investment Officer

Ms Rebecca Manen, Chief Policy and Public Affairs Officer

Ms Julie Patterson, Chief Finance and Operations Officer

Program 1.2: Investing in science and technology

Mr Simon Writer PSM, Acting Deputy Secretary, Science and Technology

National Measurement Institute

Ms Deborah Anton, Chief Executive Officer

Questacon

Mr Steve Stirling, Acting Executive Director

Dr Bobby Cerini, General Manager, Science and Learning

Science

Mr Anthony McGregor, Head of Division

Ms Natalie Weddell, General Manager, Science Governance Branch

Ms Jo Fielding, Acting General Manager, International Science and Investment Branch

Technology and Digital Policy

Ms Jessica Foote, Acting Head of Division

Australian Space Agency

Mr Enrico Palermo, Head of Agency

Mr Christopher De Luis, General Manager, Office of the Space Regulator

National AI Centre

Mr Lee Hickin, Executive Director

Dr Brett Szmajda, Deputy Executive Director

Office of the Chief Scientist

Professor Tony Haymet, Chief Scientist

Commonwealth Scientific and Industrial Research Organisation

Professor Elanor Huntington, Acting Chief Executive

Mr Tom Munyard, Chief Operating Officer

Dr Peter Mayfield, Executive Director, Environment, Energy and Resources

Dr Jen Taylor, Executive Director, Future Industries

Dr Rob Hough, Executive Director, Digital and National Facilities and Collections

Australian Nuclear Science and Technology Organisation

Mr Shaun Jenkinson, Chief Executive Officer

Dr Miles Apperley, Group Executive, Nuclear Operations, Safety and Security

Ms Emily Hodgson, Chief Financial Officer

Program 1.3: Supporting a strong resources sector

Mr Robert Jeremenko, Deputy Secretary, Resources and Strategy Group

Minerals and Resources

Ms Marie Illman, Head of Division

Ms Samantha Robertson, General Manager, Critical Minerals Branch

Mr Geoff Mason, General Manager, Critical Minerals Security Branch

Ms Linda Lee, General Manager, Mining and Remediation Branch

Ms Katherine Pohl, Acting General Manager, Policy and Projects, Critical Minerals Strategic Reserve

Mr Damien Dunn, General Manager, Market Monitoring and Commercial, Critical Minerals Strategic Reserve

Ms Adna Aliskovic, Acting General Manager, Mining and Remediation Branch

Oil and Gas

Ms Sam Chard, Head of Division

Ms Norelle Laucher, General Manager, Offshore Strategy Branch

Mr Shane McWhinney, General Manager, Northern Endeavour Branch

Ms Jocelyn Taylor, Acting General Manager, Offshore Decommissioning Directorate

Mr Steven Taylor, Acting General Manager, National Offshore Petroleum Titles Administrator

Mr Daniel Quinn, General Manager, Gas Branch

Australian Radioactive Waste Agency

Mr Sam Usher, Chief Executive Officer

National Offshore Petroleum Safety and Environmental Management Authority

Ms Sue McCarrey, Chief Executive Officer

Mr Graham Blair, Deputy Chief Executive Officer, Regulatory Operations

Mr Cameron Grebe, Deputy Chief Executive Officer, Strategic Regulation and Improvement

Committee met at 09:06

CHAIR (Senator Darmanin): I declare open this hearing of the Economics Legislation Committee into the 2026-27 budget estimates. I begin by acknowledging the traditional custodians of the land on which we meet today and pay my respects to their elders past and present, and I extend that respect to Aboriginal and Torres Strait Islander people here today. The committee is due to report to the Senate on Tuesday 23 June 2026. The committee has set 12 June 2026 as the date by which senators are to submit written questions on notice and 24 July 2026 as the date for the return of answers to questions taken on notice.

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 of 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 estimates 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 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 shall 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.

surprise to the fund. The way we communicate it is important for the fund in terms of their operations. It also gives the public and the investment community a bit of insight into what we're trying to achieve.

Senator LIDDLE: I'll ask another question about how this process works in this department. Are the appointments to the board or the person in charge of the department aligned to that statement of expectation? Is there any alignment between performance and the statement of expectations in relation to who has accountability for the actual deliverable?

Ms Pickworth: If it's useful, I can step out the usual process around statements of expectations and then the statement of intent.

Senator LIDDLE: Yes, okay.

Ms Pickworth: The statement of expectations was updated to reflect the new subfunds. As the minister has picked up, there's some work being done with our Department of Finance colleagues and the Minister of Finance around consistency and the standardising of reporting across SIVs. In the department, we did consult with the NRFC to ensure it's workable and makes sense, but the government owns the statement of expectations. The portfolio entity in this case then responds with a statement of intent in reply to the statement of expectations. That's due within three months of the statement of expectations. That's the point in the process we're up to. The NRFC will provide back a statement of intent around how they're going to address the statement of expectations. The process around the statement of expectations is quite an established one. It is designed to make sure that the government can set its expectations and that the entities can reply back in terms of how they plan to give effect to that statement of expectations.

Mr Gall: The only thing I would add to that is that we do that in conjunction with our board, and a board agreed statement of intent then gets sent back to the ministers.

CHAIR: Further questions may be placed on notice. Thank you very much for coming.

Commonwealth Scientific and Industrial Research Organisation

[17:45]

CHAIR: Welcome. Would you like to make an opening statement?

Prof. Huntington: Yes, I would, thank you. As Australia's national science agency, CSIRO's purpose is to provide research and development to assist local industry, to further the interests of the community and to help meet national objectives. To deliver on this role today and in the decades ahead, we must ensure our research portfolio remains relevant to Australia's needs and capable of delivering maximum impact from our science, and over the past two years we have been sharpening our focus to achieve this.

To fulfil our purpose we must also be sustainable. We welcome the Australian government's commitment of an additional $387.4 million over the forward estimates announced in the 2026-27 federal budget. On behalf of CSIRO, including our chief executive, Dr Doug Hilton, who is currently on planned leave, we appreciate the support shown by the government and Minister Tim Ayres at a challenging time of competing national priorities.

This funding will allow us to plan and invest with greater certainty, and we take extremely seriously the responsibility and the trust inherent in this budget commitment. This will help us to address the effects of decades of underinvestment in CSIRO's infrastructure and to provide safe and fit-for-purpose sites as well as the scientific equipment, cyber protection and technology that our researchers and our collaborators need to make significant discoveries and turn them into real-world impact.

As this committee is aware, recent years have been difficult for our people. This includes shifts currently under way to our research portfolio, which will result in an estimated reduction of 300 to 350 roles. I want to acknowledge the impact that these changes continue to have on our staff and their families. We have now communicated final decisions for the research unit changes that we've been consulting on, providing greater clarity for our staff and marking a significant step in our change process.

As we've shared before, these changes are part of a strategic shift to help us maximise the impact of our research for Australia. We're continuing to progress these, and the associated savings will support our long-term sustainability while ensuring we deliver strong value for the nation. The additional funding in the federal budget will provide greater stability for our workforce in the future, which we know will be welcomed by our staff.

We're committed to ensuring our portfolio remains strategically focused to deliver impact at scale now and into the future. To enable this, we will continue to shape our capability to respond to evolving scientific and national needs. This is crucial if we are to utilise our funding with the focus and prudence that the community rightly expects of us.

Since we last appeared before this committee, we have also participated in the Senate inquiry into the funding and resourcing of the CSIRO. We thank the inquiry committee for its consideration, as well as all those across Australia's science ecosystem who provided submissions.

This month we are also marking our centenary, acknowledging the curiosity and persistence of our predecessors over many decades. It's now our responsibility to build on that legacy, ensuring the CSIRO remains focused, agile and capable of responding to Australia's needs for the years and decades ahead.

I am joined today by our chief operating officer and executive directors from across CSIRO's research portfolio, who are here to represent their areas and assist in answering the committee's questions. Thank you.

CHAIR: I think we've got interest from a few senators for CSIRO, so we'll try to stick to 10-minute blocks. Senator McDonald, I'll start with you.

Senator McDONALD: Good evening. CSIRO's current average staffing levels for 2025-26 is 5,300; is that correct?

Mr Munyard: That's correct. That's the published figure in the portfolio budget statements as well. That's our estimated ASL for 2025-26.

Senator McDONALD: The average staffing levels for 2026-27 is forecast to be 5,100; is that correct?

Mr Munyard: That's correct.

Senator McDONALD: That's a reduction of 200 positions; is that correct?

Mr Munyard: That's correct.

Senator McDONALD: These are average staffing level figures, so they represent full-time equivalent ongoing reductions; is that correct?

Mr Munyard: That's correct. That would be the average across both of those financial years.

Senator McDONALD: Of that 200, do you know the breakdown as to how many are full-time and how many are part-time positions?

Mr Munyard: I don't know. I'll have to take that on notice, and I don't know whether we'll have that, but I'll see if I can get an answer for you on notice.

Senator McDONALD: Can you confirm whether these positions are science and research staff or administrative and corporate roles.

Mr Munyard: What I can confirm is that they are reflective of all the announcements that we have made to date, so there are no further—separate to any other reductions, they are reflective of the announcements that we have on the public record already.

Senator McDONALD: So what proportion are in frontline scientific research roles versus corporate support functions?

Mr Munyard: I have to take that on notice, but what I will say is some of those figures reflect the tail end of the enterprise services corporate reductions that we undertook about 12 to 18 months ago, and some of those flowed through into 2025-26, so there'll be a part-year impact in that year, which will have a full-year impact in 2026-27. The remainder will be the research 300 to 350 that Professor Huntington outlined in the opening statement.

Senator McDONALD: CSIRO's stated mission is to deliver 'research and technology needed to address national challenges'. Does losing 200 staff in that next year improve or weaken CSIRO's ability to deliver on that mission?

Prof. Huntington: I might take that one. Dr Hilton has stated on a number of occasions that we face the consequences of multiple decades worth of underinvestment in our infrastructure, and, when we appeared in the Senate inquiry into the funding and resourcing of CSIRO, we laid out a very frank assessment of where we sat. We will always work with the budget trajectory that is given to us, and the thing that we are very focused on is maximising our impact from the research that we do.

Senator McDONALD: Did CSIRO approach government to request this staffing reduction, or was it directed from the minister's office?

Prof. Huntington: Our board is the accountable authority for CSIRO, and they have responsibility for a number of things, including the sustainability of the organisation. So, as management, we work with the board constantly to make sure that we are financially sustainable and prudent managers of the resources entrusted to us by the parliament.

Senator McDONALD: Was a request made to increase funding in order to avoid these staffing reductions?

Prof. Huntington: We work with government; we are in constant conversation with government. We work with the envelope that is given to us. We have said consistently all the way through this last year that, in order to put CSIRO onto a sustainable footing over the coming decade, we would, unfortunately, need to crystallise the savings that came from the strategic portfolio review that we did last year and crystallise the savings that came from a reduction of 300 to 350 staff and that we would need to work to find an additional, at least, $80 million to $135 million per annum over the next decade. That's what we're working with, and, as we've said all the way along, we will work with whatever budget trajectory is presented to us.

Senator McDONALD: So that reduction is a result of the government reducing the funding to the CSIRO?

Senator Ayres: That's not what has happened here. What has happened here is—in addition to the around-a-billion dollars that the government provides year in, year out—there's an additional $278 million, announced through 2025, and, in this budget, $387.4 million in addition to that over the course of the four years. The organisation, parallel to that, has undergone what I've described as a research prioritisation exercise. Professor Huntington will be able to describe that for you. But this is a very substantial increase in CSIRO funding, and we are, of course, working closely together on delivering that. In addition to that, it does include $38 million for the sustainability of the Australian Centre for Disease Preparedness as well.

Senator McDONALD: Was an independent assessment conducted of the scientific capability loss before agreeing to this reduction? Did you look outside the organisation to review what the capability loss of making these decisions would be?

Prof. Huntington: I might refer you to the submission that we made to the inquiry into the funding and resourcing of CSIRO. We outlined in that the process that we took for the research prioritisation process. This unfolded over 18 months and involved a number of stages of input from both within CSIRO and across the ecosystem. The key step that we took in September last year involved 300 of our staff attending a multiday workshop as well as having external advisers coming in to provide advice to us around the priority and the feasibility of the research agenda that was being proposed.

Senator McDONALD: CSIRO has then modelled the impact of this reduction on the delivery of its current research program. Is that right?

Prof. Huntington: We undertook a portfolio build process last year, and we took two items into account when we were doing that build. One was the potential impact, the quality and the scale of the research that was being proposed. That was as well as the funding envelope. We are confident that we can deliver the portfolio build that we came forward with.

Senator McDONALD: Can you provide that modelling?

Prof. Huntington: I'm not sure I understand the question.

Senator McDONALD: Can you provide what you've just described there—the restructure or the reprioritisation of the research. Did that end up being a document?

Prof. Huntington: We allocate resources across the portfolio based on the resources available as well as the priority of the research. We have made internal budget allocations on that basis.

Senator McDONALD: So there's no document that could be reviewed by the Senate estimates committee on how you made those decisions—how you prioritised those projects and people?

Prof. Huntington: Absolutely. Our submission to the inquiry earlier in the year provides a very comprehensive summary of that process.

Senator McDONALD: On notice, given I wasn't involved in that inquiry, would you mind retabling that, please?

Prof. Huntington: Absolutely.

Senator McDONALD: Thank you. Chair, I have some more questions on a slightly different topic. Would you like to rotate the call and come back to me?

CHAIR: Yes, thank you. Senator Whish-Wilson.

Senator WHISH-WILSON: Because the last hearing of the Senate inquiry occurred just prior to the announcement of the new round of job cuts, could I just clarify a few things with you and perhaps get an update. Have 350 jobs, as reported, now been lost or cut at CSIRO?

Prof. Huntington: As we outlined in our submission to the inquiry, we have a six-stage major change process. We have now reached step 5 of that major change process. We have confirmed the final sets of changes with all

of the affected research units. I might go to perhaps what's sitting underneath that question. Dr Hilton has been very clear all the way through that, in order to put ourselves onto a sustainable footing over the longer term, we would need to crystallise the savings that came from the strategic prioritisation and then find an additional—at least—$80 million to $135 million per annum over the next decade. So, yes, we will be proceeding with crystallising those changes.

Senator WHISH-WILSON: So the 350 are locked in. Is there any change in the composition of those, and were any voluntary redundancies offered and accepted?

Prof. Huntington: Absolutely there has been a change in the composition of those changes. I won't belabour the point. We have a very detailed process. I'm pretty sure that pretty much every one of the set of proposals that went out has had changes and modifications as a consequence of it, some very substantial and some less so, and we've received a very significant amount of feedback through that process, all of which we've read and thought about very carefully.

Senator WHISH-WILSON: When is stage 6 going to be completed?

Prof. Huntington: Stage 6 is implementation. We are now into implementation. This is the moment where we work very closely with all of our affected people to try to work our way through whether they can be effectively redeployed across the organisation and what their future might look like.

Senator WHISH-WILSON: It's been reported that 818 jobs were cut at CSIRO last year. Is that correct?

Prof. Huntington: I might hand to Mr Munyard on that one to go to some of the steps that we took prior to doing the portfolio bill.

Senator WHISH-WILSON: If you could, just confirm that number. I don't need the steps in any detail at this stage—

Mr Munyard: I'll just check that number for you.

Senator WHISH-WILSON: given the time. We could come back to that, if you like.

Mr Munyard: Thank you.

Senator WHISH-WILSON: Can I confirm—I'm just going on what's reported—that 11 out of 60 climate modellers lost their jobs?

Prof. Huntington: I'll hand to Dr Mayfield to talk you through some of the details of the changes, but, before I do, I might just make the wider comment that, when we were building the research portfolio and doing the review, one of the things that we really took very careful consideration of, across a number of research threads, was the idea that we need to invest both in very fundamental research and in the activities that would see that research utilised. And so, certainly, across CSIRO, the climate science that we do is much more comprehensive than what is described in some of the numbers around climate scientists and, indeed, much more wide than in the nature research area.

Senator WHISH-WILSON: I appreciate that, but you were aware of some very specific criticism from senior scientists about the modelling?

Prof. Huntington: Indeed, yes. I'll hand to Dr Mayfield.

Dr Mayfield: You are correct. In terms of post-consultation, we have 11 people from a group of 60 working on climate. They are not all modellers. There are a range of skillsets. It includes people doing atmospheric monitoring and measurement, so it's not just modellers. In the original proposal, there were 12 staff impacted. Through the process of consultation, we've been able to mitigate one of those. The other thing I'd say is that we're working through that part 6, which is that they're potentially impacted, and, at this point in time, no-one has actually left the organisation.

Senator WHISH-WILSON: Okay. It was also reported that five out of 15—and these were specific modellers—around the ACCESS, Australian Community Climate Earth System Simulator, modelling program have lost their jobs. Is that correct?

Dr Mayfield: For around ACCESS as opposed to ACCESS-NRI?

Senator WHISH-WILSON: Specifically in relation to ACCESS, yes.

Dr Mayfield: With respect to ACCESS-NRI, there are three FTEs that are impacted there.

Senator WHISH-WILSON: Only three?

Dr Mayfield: That's for ACCESS-NRI.

Senator WHISH-WILSON: Not five? Right, okay. Dr Mayfield, how do you respond to criticisms by some very senior climate scientists, including internationally, that this is going to impact not only our ability to conduct ACCESS but also IPCC projections and inputs into other global reports?

Dr Mayfield: We've been very careful with where we've had to make reductions so that we are quite comfortable that we can deliver on the CMIP7 obligations that are currently underway. When you come to ACCESS-NRI, that was a body that was pulled together originally to move the ACCESS model from being a development model to an operational model, and NCRIS came to the party and have been funding that. We have been providing services there, but they were always meant to be transitioned to ACCESS-NRI, who were funded to do that, and we're at the point where we want to put our resources into actually applying the models and doing scientific development of the models as opposed to operational work. So it's a well-known transition that was meant to take place. At this point in time, our expectation is that it will need to take place. The model continues. We'll maintain support there. We remain on the board. We remain on the scientific advisory committee. So we're not walking away from anything. We're actively trying to make sure we do well around climate science.

Senator WHISH-WILSON: The view you just expressed that these cuts to modelling won't impact our IPCC work—is that reflected by your staff in the Environmental Research Unit?

Dr Mayfield: As you can imagine, when we went through consultation with our staff, there was something like 439 submissions for the environment. They were not all about climate. While it's impacted, there's much greater impact across the other parts of the environment research unit—so they've come from all parts. No-one's ever happy about loss of roles.

Senator WHISH-WILSON: I appreciate that.

Dr Mayfield: But we've also looked at how we do the science better; that's been our driving force. We're focused on better science.

Senator WHISH-WILSON: Have we lost any scientists to other organisations or overseas organisations through this process?

Dr Mayfield: Not to my knowledge, but we can ask that question—

Senator WHISH-WILSON: If you could, take that on notice. Just to be clear, it was reported 92 staff lost their jobs in the environmental research unit out of a total of 350 across the board—is that correct?

Dr Mayfield: Post consultation, 92 staff were impacted. Of those, I think 86 are going to be redundancies, and the others are term ends that happen early.

Senator WHISH-WILSON: In terms of the budget, the number you just talked about, Professor—the $387.4 million that you mentioned—have we got a breakdown of how that's going to be allocated?

Prof. Huntington: I'll hand to Mr Munyard.

Senator WHISH-WILSON: Specifically, how much is going to go towards infrastructure costs versus—to quote your media release, Minister Ayres—critical science functions.

Prof. Huntington: I will hand to Mr Munyard. Just before doing so, as I'm sure everyone here is aware, new policy proposals are for very specific things. This injection of funding is all around securing CSIRO's sustainability—

Senator WHISH-WILSON: Sustainability is a very broad concept.

Prof. Huntington: and we are very focused on making sure that we are diligent about—

Senator WHISH-WILSON: What does 'sustainability' mean?

Mr Munyard: As Professor Huntington mentioned earlier, we need to invest an additional $80 million to $135 million per annum over the next 10 years to be sustainable.

Senator WHISH-WILSON: We're talking financially sustainable here?

Mr Munyard: We're talking financially sustainable, yes. Since the government's budget announcement, we've been working through our planning in terms of how we will invest that funding into things that are for the specific purpose the budget measure was for. We will be investing in critical repairs and maintenance to ensure our sites are safe and fit for purpose, as well as providing research equipment, infrastructure, cyber protection and technology. We are working through the actual split of how we will invest that funding over the three years for the funding that has been provided in order to make sure that we are as sustainable as we possibly can be at the end of that budget measure.

Senator WHISH-WILSON: Would it be fair to say it's going to tangible—you said technology, equipment, infrastructure. Is any going to go to paying scientists or recruiting scientists?

Mr Munyard: We've mentioned in this forum before the cost escalations we've seen in relation to technology, in applications and into our property footprint as well. We've had a property strategy for six years now to try and reduce the number of sites. In order to be financially sustainable, we need to accelerate that. We will be investing into not just making our site safe and fit for purpose but being able to ensure we get the maximum efficiency and effectiveness out of the sites we maintain.

Senator WHISH-WILSON: Just in relation to this funding, is CSIRO now able to rule out any further job cuts? I have concerns, and I know others do, that what we've seen in recent times could just be the tip of the iceberg. Can you look us in the eye and give us confidence that there are not more job cuts to come?

Prof. Huntington: We've said this funding will allow us to step with confidence into the sustainability agenda we've got, which now allows us to stabilise our overall workforce. I don't want to flatten the experience our people have had over the last couple of years. We acknowledge the impact this has had on people. We make our decisions about the investment into our research portfolio based on two criteria: one is our assessment of the overall impact of the work, the quality and the scale and so forth, and the other is based on our budget trajectory. The significant difference between the conversation we're having today and the conversation we had at the inquiry and the last estimates is that this injection of funding now allows us to stabilise the overall research workforce over the medium term.

Senator WHISH-WILSON: I'll come back to that.

CHAIR: Senator Roberts.

Senator ROBERTS: Thank you for appearing again. I'd like to go to your *GenCost* 2025-26 consultation draft. The purpose of *GenCost* is to show the different costs of each type of generation when all factors are taken into account—in essence, industrial wind and solar as compared to nuclear, coal and hydro. Do you think the assumptions made in this report around assessment periods for each type of power are conducive to producing an accurate cost of full life cycle generation?

Dr Mayfield: The latest consultation draft—so our final report—is not out at this point in time—

Senator ROBERTS: No, I meant the consultation draft.

Dr Mayfield: It is the same methodology, as we've discussed many, many times—so, yes, we think it's an appropriate methodology that's being applied.

Senator ROBERTS: One of the most common uses of this report is to show Australians, the media and the government which is supposedly the cheapest levelised cost of electricity. This in turn informs the debate around which type of generation is cheapest and accordingly should be the focus of the government's energy plans. Does this draft report make the right assumptions in the economic life of each type of generation?

Dr Mayfield: We've been through various assumptions; if you want to be explicit about some, that might help. We've talked about coal-fired power in the past. The assumptions that we have been using either are based on work that sits with AEMO or come out of the consultation process done with industry representatives as we develop the report.

Senator ROBERTS: Your answer is yes?

Dr Mayfield: Yes.

Senator ROBERTS: Thank you. The life of the project makes a huge difference to the cost of the electricity it puts into the grid. Coal, nuclear and hydro have higher construction costs than wind or solar. They also last much longer than wind and solar, so the higher cost can be repaid across a much longer period, which makes a huge difference to the final cost of electricity. Your draft sets the life span of coal, nuclear and hydropower stations at 30 years, with industrial wind and solar at 25 years. That's the absolute limit of cheap Chinese solar and wind installations. I would call 25 years fanciful, based upon what's happening around the world. This draft appraises coal, hydro and nuclear over less than half their life. Wind and solar are appraised over their entire life. Can you explain that to me, please?

Dr Mayfield: If you go back to previous estimates, Mr Graham has explained all those assumptions.

Senator ROBERTS: I'm asking you to explain it. This is the latest draft.

Dr Mayfield: I will take it on notice.

Senator ROBERTS: You haven't got the answer here?

Dr Mayfield: I haven't got the draft here with me, but I'll take it on notice.

Senator ROBERTS: Coal power stations last 50 years, which the draft acknowledges before using the shorter figure anyway. You show hydro at 100 years but use 30 years anyway. You show nuclear at up to 80 years but

use 30 years anyway. You are saying the decision has been taken based on the financial decision-making, which is based on risk mitigation. It's an unrelated metric to the actual cost of building out these power stations and makes coal, hydro and nuclear artificially more expensive. Is your argument simply designed to inflate the cost of baseload power and reduce the cost of wind and solar?

Dr Mayfield: We're technology agnostic. The assumptions are consistent across all the technologies. You'll appreciate there's reinvestment required during the lifetimes of all of those technologies, in various aspects. They've been done on a consistent basis.

Senator ROBERTS: Wind and solar reinvestment—you're absolutely right—is after about 20 years; let's go with 25. Coal is after 50 to 60 years, nuclear is after 60 years and hydro is after 100 years. Snowy Hydro has been going how many years—80-odd?

Dr Mayfield: You'll have to reinvest in turbines during that time.

Senator ROBERTS: Turbines. Snowy.

Senator Ayres: All these technologies require reinvestment.

Senator ROBERTS: Not completely—

Senator Ayres: That's not new news.

Senator ROBERTS: Maintenance is not replacement of capital.

Senator Ayres: It's the same old argument. You don't like the numbers provided by Australia's experts; I understand that. There's nothing credible about the approach that you bring to these questions. We'll endure the same imported talking points again. Go through it; we'll do our best to answer the questions. You will find that Dr Mayfield and others will have to refer you back to the same answers to the same questions that you insist on asking. I know you don't like the result, but that's science, that's engineering and that's economics right there.

Senator ROBERTS: And I'm all about protecting the taxpayer and the Australian citizen.

Senator Ayres: Sure. There's not much evidence of that either!

Senator ROBERTS: In any event, your assumptions are still wrong. Nuclear is being financed over 15 years to 20 years, hydro over 15—which is crazy for a 100-year asset—and coal is under 10 years. If this was to try and make *GenCost* accurate, you've failed. Your basic assumption of the life of the asset is wrong from a financial perspective, and it's certainly wrong from a reality perspective. Why are you making such a fundamental mistake repeatedly?

Dr Mayfield: If you can put your questions to us, I'll take them on notice and let the experts answer those.

Senator ROBERTS: You've got it. If a One Nation government were to issue 50-year infrastructure bonds or ones for a shorter period with a rollover option to fund nuclear, coal and hydro, what would that do to your report assumptions? You would have no reason to use the life-of-project figure you use, and you would then have to use the real life one. The government issuing financing in return for owning the generation would completely ruin this core assumption of *GenCost*, wouldn't it?

Senator Ayres: In the event that there was a 'One Nation Liberal National' uniparty government—

Senator ROBERTS: I said a One Nation government.

Senator Ayres: then you would bankrupt Australia with that kind of approach. You would drive manufacturing offshore. You would make us weaker and less secure. I know that doesn't suit the imported talking points that you insist on running through. It's a matter for you if you want to indulge that kind of perspective, but we are dealing with the real issues in a real economy for real firms—

Senator ROBERTS: That's what worries me.

Senator Ayres: and real generation. You are in an imaginarium of your own making.

Senator ROBERTS: If a One Nation government chose to fund the construction from consolidated revenue and own the generation, that would destroy your core *GenCost* assumption, wouldn't it?

Senator Ayres: You would bankrupt the government as well as the economy in that instance, Senator. You've got the right to put out the funny dodges and all that sort of stuff that you guys do—that's fine. We're going to deal with the real things in the real economy.

Senator ROBERTS: The draft *GenCost* figures are large-scale solar photovoltaic, $52 to $88 per megawatt hour; onshore wind, $78 to $129 per megawatt hour; black coal, $121 to $195 per megawatt hour; large-scale nuclear, $200 to $328 per megawatt hour. The capacity factor here is important. The more power that's generated

out of the nameplate capacity, the cheaper the power. What reliability figure have you used in the lower range and higher range figure for coal and nuclear?

Dr Mayfield: I'll take that on notice and refer you back to previous answers. We'll get the experts to give you detailed answers to your questions.

Senator ROBERTS: Did the experts produce this?

Dr Mayfield: The techno-economic people that we employ have produced that report in conjunction consultation with industry and with guidance through that process. It's a well-used process. We think it's a very robust process. We're very happy to provide those answers on notice. We've provided many of them already.

Senator ROBERTS: What capacity figure have you used in the lower and higher range for large-scale photovoltaic and onshore wind?

Dr Mayfield: I'll take that on notice again. I don't have the report with me today.

Senator ROBERTS: I look forward to your answers, On notice, please, what change would assessing project life for coal at 50 years, nuclear at 60 years and hydro at 80 years have on your draft levelised cost of electricity?

Dr Mayfield: Again, we'll take that all on notice.

Senator ROBERTS: We're getting through this pretty quickly, Chair. Coal power stations would likely go into a brownfield site, or the existing generation would be replaced with modern clean generation with higher capacity. This reduces the cost, whereas wind and solar are all greenfield—the highest cost—especially to the environment. Senator Whish-Wilson has been trying to shut down the Robbins Island wind turbines! Why have you removed the issue of brownfield versus greenfield from the calculation? It makes coal and nuclear look artificially bad, doesn't it?

Dr Mayfield: The whole basis of the *GenCost* report is to look at greenfield, new generation, costs; it's not looking at brownfield.

Senator ROBERTS: You don't consider brownfield at all?

Dr Mayfield: Not for *GenCost*—not for the purposes that AEMO are looking at.

Senator ROBERTS: Battery—

CHAIR: Senator, you're at 10 minutes.

Senator ROBERTS: I've just got two more.

CHAIR: Okay.

Senator ROBERTS: Battery backup is shown as a separate levelised cost of electricity. It's only needed to firm wind and solar, so it should be shown against the cost of wind and solar. Showing it separately will produce a misleading, much lower, figure for the cost of wind and solar. Why have you chosen this misrepresentation—omitted the cost of battery backup to make wind and solar look cheaper?

Dr Mayfield: Again, I'll take it on notice. We'll get the experts to give you detailed answers to your questions. As I said before, it's a robust process. We've provided many of those answers before.

Senator ROBERTS: Transmission lines appear to be included against wind and solar. Can you provide the annual cost here? What appears to be a $10 per megawatt hour charge would factor in how much in transmission line construction and maintenance? And will it be enough?

Dr Mayfield: Again, we'll take that on notice and provide you with a detailed answer.

Senator ROBERTS: Have you received any instruction or direction from the government to produce fraudulent costings to justify the net zero agenda? Yes or no? It's a simple question.

Dr Mayfield: I don't agree with the premise of that question at all.

Senator Ayres: Senator, I can assure you this is an independent process that is robust—and it deals with the with the technology changes, and the lowest possible cost of electricity. Battery costs, for example, have fallen by 91 per cent since the 1990s—that's the truth of it. Now, you want to take the country back to a sort of weaker, more expensive system? Really! We're trying to build a modern electricity system. You want to put people back in the caves, basically.

Senator ROBERTS: Senator Ayres, are you not aware that Australia had the cheapest—

Senator Ayres: We are getting—

Senator ROBERTS: coal-fired power station in the world?

Senator Ayres: In the olden days, Senator—in the olden days—

Senator ROBERTS: And we're now amongst the highest in the world—

Senator Ayres: when it was the only—

Senator ROBERTS: with solar and wind?

Senator Ayres: technology that—

Senator ROBERTS: Are you not aware of that?

Senator Ayres: was available for Australia—

Senator ROBERTS: These are basic things for manufacturing.

Senator Ayres: And, back in its day, coal was terrific—it was terrific. But the world has changed and technology has changed. These are lower cost, for a good environmental outcome. They are lower cost and they will make Australian industry more efficient. Our job, as electricity use expands, is to provide addition into the system and build a modern system. You want to take the joint backwards? Make that case. Go your hardest!

Senator ROBERTS: China burns more than 53 per cent of the world's coal consumption every year, and manufacturing is going to China.

Senator Ayres: If you want to argue that Australia should go backwards—

Senator ROBERTS: Manufacturing is going to China.

Senator Ayres: and get weaker and poorer—which is the outcome of your kinds of policy prescriptions: less secure, weaker and poorer—then go for your life! But you'll get the same answers from experts—

Senator ROBERTS: You're taking us backwards on standard of living already.

Senator Ayres: and from proper, robust processes.

CHAIR: Senator Roberts, do you have any more questions?

Senator ROBERTS: That's it. Thank you very much.

CHAIR: I'll go to Senator Pocock.

Senator DAVID POCOCK: Thank you for your time here this evening. Minister, I remain concerned about the long-term funding of CSIRO, and science more generally, but really acknowledge and congratulate your government on the additional $387.4 million over four years.

Professor Huntington, Senator Whish-Wilson asked you to rule out further cuts, in light of this injection of funding. I didn't hear a clear answer about whether you can actually rule out more cuts. We've heard that there are obviously big challenges in infrastructure upgrades and really necessary spending. Do you anticipate further cuts may be needed to maintain budget sustainability?

Prof. Huntington: Over the medium term, as I've said, this injection of funding gives us the confidence to step into the sustainability agenda, and we make our research portfolio investment decisions off the back of a rigorous prioritisation process, as well as what our funding trajectory would look like, and we need to hold space for prioritisation as we move into the future. But, as I've said, we are now in a position to be able to stabilise the overall scale of our workforce, which gives us the opportunity that, if we were to prioritise some areas, we could now re-invest in those higher priority areas, rather than needing to crystallise savings.

Senator DAVID POCOCK: What does holding space for prioritisation mean?

Prof. Huntington: Science moves; priorities move. We will continue to always look at our research portfolio to make sure that it is absolutely optimised to achieve the best possible impact for Australia.

Senator DAVID POCOCK: I don't want to verbal you here, but what I'm hearing is that, for the short-ish term, it seems fine, but you simply can't rule out cuts because you don't know what's going to happen in the future.

Prof. Huntington: As I said, over the medium term, we will always hold space for prioritisation over the medium term. We are confident that we can hold our overall workforce. I think the thing to say here is that this injection of funding allows us to move away from the kind of pace and scale of changes that we've been experiencing over the last few years, which is a relief to all of our people and to all of us.

Senator DAVID POCOCK: At this point today, you don't expect any more cuts in the short term.

Prof. Huntington: I don't want to speculate on the future; I don't want to foreclose. As I said, I'm not trying to be evasive. We will always hold space to run research prioritisation processes. If we choose to deprioritise some areas, we are now in a position to be able to reinvest in higher priority areas as we go forward. As I said, the pace and scale that we have been moving at will now significantly temper.

Senator DAVID POCOCK: How much space are you holding? What's your wiggle room?

Prof. Huntington: Sorry, that's a turn of phrase. Currently, for example, we are going through a review of our facilities and services, and we have an upcoming review of the tech economy research area. Every year, we will look across our research portfolio to make sure we are turned appropriately to make sure that we are optimising for maximum impact.

Senator DAVID POCOCK: Earlier, you said in response to questions from Senator McDonald that 200 ASL would be lost over the next year, but your evidence to Senator Whish-Wilson was that the 300 to 350 number that was part of your submission to the Senate Inquiry is also correct. What's the relationship between the 200 in the next year and the 350 that CSIRO are talking about?

Prof. Huntington: At this point, I'm going to hand to Mr Munyard to give you the deeper mysteries of the ASL.

Mr Munyard: I can answer that. At a high level, it's the full-time impact of those 300 to 350. Some of those will see a reduction in the 2025-26 year. We'll already see a reduction to get to the 5,300 in the current financial year. The four-year impact of the 300 reduction we expect to be 200 in 2026-27—so 5,300 down to 5,100. There's a part-year impact in 2025-26 that will see the full-year impact in 2026-27. As I said before, it relates to all staffing impacts that we've announced already.

Senator DAVID POCOCK: So it's 350?

Mr Munyard: It's the 300 to 350, yes.

Senator DAVID POCOCK: How many staff have left CSIRO since November 2025—redundancies, term cessations, nonrenewal of contracts, non-ongoing contracts not renewed or other workforce measures?

Mr Munyard: I don't have the exact figure from November 2025 in front of me. I'll have to take that on notice.

Senator DAVID POCOCK: Do you have anything there?

Mr Munyard: I've got a figure for the current financial year to March 2026. Over those nine months, our FTE has reduced by 301, which, as I said in an answer to an earlier question, will include the tail end of our enterprise services reform process that was kicked off around 12 to 18 months ago and some of the research reductions that have already taken place out of that 300 and 350 to have that part-year impact this year.

Senator DAVID POCOCK: What's the head count on that, not FTE?

Mr Munyard: The headcount reduction is 349.

Senator DAVID POCOCK: Dr Mayfield, Senator Whish-Wilson was asking about access, and you kept mentioning ACCESS-NRI. You said that there have been three people lost from ACCESS-NRI. Is that correct?

Dr Mayfield: It's not lost yet, but they were impacted, yes.

Senator DAVID POCOCK: What about the ACCESS model development team? Has that gone from 12 to seven?

Dr Mayfield: I couldn't answer that. I'd have to take that on notice for specifics. Overall, we still remain able to model using ACCESS and to do all the work that we need to do for climate.

Senator DAVID POCOCK: How come you don't have that number? This has been all over the media. I would have expected that, in preparing for estimates, you would have thought the climate modelling might come up.

Dr Mayfield: Part of the challenge you run into here is that you're getting down to a couple of individuals. For privacy reasons, you've got to be careful as to how small an increment you talk about, because they can be identified while they're going through this process. So we prefer not to get down to that level of granularity if we can avoid it.

Senator DAVID POCOCK: But isn't this the whole point when we're talking about cuts to climate modellers—that it's a tiny team and you lose that capability? In the Senate inquiry, one of the things that the NFF and others asked was, 'Listen, if CSIRO don't do this work, who does it?' So who will be doing this work?

Dr Mayfield: In terms of doing the modelling work, the monitoring work and the observing work, we'll still be doing that. We also do it in conjunction with other PFRAs. The BOM also do a lot of this work, as do AAD. So there's a bigger ecosystem out there. The one where we're really transferring responsibility is the ACCESS-NRI piece, where that's about running the model, and they're funded through NCRIS for that. That's where we're really letting go. But we're still putting in-kind into that, at least for the foreseeable future, so we're trying to make sure there's a transition that works. In terms of the actual modelling capability that we need to deliver, on our

accountabilities, we believe we still retain that. You'll appreciate that, from time to time, you have skills that you can use and skills that you can't use. We're trying to make sure that we get to the most efficient core group.

Senator DAVID POCOCK: If you're cutting people from that function of actually helping develop the model that ACCESS-NRI then runs and now you're saying, 'Well, we can still do it,' then what were those people doing before?

Dr Mayfield: I can't tell you the specifics of that myself, but you'll appreciate that we did a lot of work around the National Climate Risk Assessment. We've done a lot of downscaling work and things like that. A lot of the losses that we're having in that general space are around, probably, legacy observations that are being made. We're trying to get to a more efficient set of variables that you do measure and that we need for climate science. There are other examples. We currently have staff that go down to Macquarie Island to service equipment. We're going to work with BOM. BOM have a permanent presence, so let them do that work. We're looking at trying to take away things where there's an inefficiency or duplication. The ice lab that we run looks at ice cores and gets gas samples out of that. We're trying to work with AAD. That gets done in Burnie and Hobart rather than bringing it all the way up to Aspendale and Melbourne. There are a range of efficiencies that we're looking for, which we think are good for the nation because they're a better use of the research dollar.

Senator DAVID POCOCK: What were the discussions with BOM like over these changes? Did they say that they can step up and take over some of that?

Dr Mayfield: Yes. We have regular executive meetings. We've talked about that at those meetings. They were very positive towards that. In fact, they recognised there was a synergy. Similarly, with AAD, we've had an ongoing conversation there.

Senator DAVID POCOCK: When did these meetings take place with BOM?

Dr Mayfield: I'd have to get the dates for you, but they're twice a year. But we have a lot of counterparts that we work with regularly, as well, during the course of the year.

Senator DAVID POCOCK: Can you provide on notice the specific dates of consultation around cuts to the ACCESS model development.

Dr Mayfield: Yes. The most recent meeting was about two months ago.

Senator DAVID POCOCK: You said that, from time to time, you have skills that you don't need. Surely, when it comes to climate modelling, given what we're seeing, and the need to constantly update the models because we're constantly living in an unprecedented climate, are you seriously saying that these are skills that are essentially redundant to the Australian people and our future?

Dr Mayfield: We still have the ability to keep developing the climate models. We haven't lost that. But you'll appreciate that, from time to time, you've got skills that match well and skills that don't. I said at the beginning that there are a range of different skill types that go together to give us the overall climate-modelling package. They're not all just modellers. Sometimes they're coders, sometimes they're doing measurements—there are a range of different things, but we're trying to get to the most efficient use of our resources to deliver the same output. That's what we're trying to achieve.

Senator DAVID POCOCK: And you're confident seven people can maintain that model to international standard?

Dr Mayfield: The model's been through a lot of development, so it's at a more stable phase these days. It will keep undergoing development, but we've got a good solid basis that we work from. As I said before, CMIP7 is currently under way. We're doing work to fast track that, so we're looking to meet our climate obligations.

Senator BARBARA POCOCK: Just following on from that, I want to make sure I've understood. Is it correct that you announced on 21 May that you were shedding 92 FTE roles in the Environment Research Unit, or was that earlier number revised?

Dr Mayfield: That's a revised number down from 102, which was what went into consultation, and post consultation it was 92.

Senator BARBARA POCOCK: So you're shedding 92 roles. Is this around the most efficient use of our resources?

Dr Mayfield: Well, that's one of the considerations. There are others. We're trying to work out the priorities that we want to do our science in. Climate gets a lot of the focus in this area, but we're looking at a broader portfolio of activity. There are other areas.

Senator BARBARA POCOCK: Such as?

Dr Mayfield: Some of our bigger changes are around our industrial environments area, where we're doing wastewater monitoring. We do chemical contamination. A lot of that gets done these days by environmental consultants and things like that. It's work that we did traditionally but we're not the best people to do that going forward, so we're letting go of those areas so we can invest in others.

Senator BARBARA POCOCK: What are you investing in? Just name some of the areas you're taking resources to.

Dr Mayfield: A big part of what we will invest in going forward is a lot of work around climate adaptation. We do a lot of work around mitigation. We're trying to work at system level around climate impacts on biodiversity. We're trying to avoid getting caught doing measurements around single species and single locations. We're trying to use close kin type methodologies so that we can do that for larger areas and look at whole populations, so we're shifting in those directions.

Senator BARBARA POCOCK: Going back to your 92 number, is it correct that that means roughly a third of your climate modellers are losing their jobs?

Dr Mayfield: I would have to take that on notice because a lot of it comes down to how people define what is a climate modeller. We're saying 11 out of 60 people that work around climate modelling is what we've said consistently on the record, and that's our view. We've received two letters recently. People are saying 'a third' and that doesn't sort of resonate with us. We don't understand where they're getting that from.

Senator BARBARA POCOCK: Earlier in questions and discussion with Senator David Pocock, you said that you were trading functions with the BOM and you mentioned another agency.

Dr Mayfield: That was the Australian Antarctic Division.

Senator BARBARA POCOCK: Are you giving up any specific functions in terms of that shifting across to other bodies?

Dr Mayfield: It's an ongoing discussion that we're having with all the PFRAs. But in terms of servicing equipment on Macquarie Island, our intention is to pass that to the BOM to have that equipment serviced. Our intention is to work with the Australian Antarctic Division for them to do a lot of that ice lab work. At the moment, cores gets sent up to Melbourne and then moved around. Just keep it in Tasmania is a much more efficient approach, and they'll have the equipment that we currently have.

Senator BARBARA POCOCK: Are you confident that they have the capacity to do that? Are they expanding their capability in those areas to be able to pick up that work?

Dr Mayfield: They have overlapping interests. We've been having discussions with the Chief Scientist as part of our relationship through IMOS and directly as well. It's a conversation that's still in progress but has gone very well so far.

Senator BARBARA POCOCK: But you're telling us in estimates that there is no shrinkage in terms of the functions that are being done across that shared work.

Dr Mayfield: In terms of getting that work done, we don't see that as a shrinkage in that function being delivered. We think there's an opportunity to have a much bigger look at how we do environmental observing across the nation and do that in a more consistent way. But that's a bigger discussion yet to be had, and it's not around reducing resources per se; it's around what's the most efficient way to deliver those measurements that we need, and what are the legacy measurements that we currently take which we don't need? Some things are measured because they've been measured, not necessarily because we're using them, so we're trying to be as efficient as we can.

Senator BARBARA POCOCK: Sometimes you stop measuring something and then decide you actually did need that measurement.

Dr Mayfield: We are very conscious of that.

Senator BARBARA POCOCK: It is not always easily decided in advance.

Dr Mayfield: Yes. We're very conscious of timelines like that. But that's a conversation we want to have nationally with all of the agencies because we think it's an appropriate.

Senator BARBARA POCOCK: What functions are you giving up that the rest of the world relies on us in our unique geographical space to collect, if any?

Dr Mayfield: I'm not aware of any at this point in time.

Senator BARBARA POCOCK: If you could, take that on notice and let us know whether there are any functions that others rely on us to collect. Is it correct that CSIRO is cutting 59 roles as part of a merger of your health and biosecurity and Australian Animal Health Laboratory research units?

Prof. Huntington: I'll pass that to Dr Taylor. As a point of clarification, the merger is slightly different to some of their research portfolio prioritisation activities that occurred late last year, but I'll hand to Dr Taylor to take you through the detail.

Senator BARBARA POCOCK: I don't understand what you just said.

Dr Taylor: What the professor was saying was there are 59 redundancies impacted in our health and biosecurity research unit. It's not as a result of the merger of the two units; it's as a result of a prioritisation of the research built through the portfolio build process. We identified that there were some areas we were deprioritising basically, not because of the quality of the science that's there but because we could see there were other providers in the research system that could provide those equally well.

Senator BARBARA POCOCK: Can you provide on notice a description of what's been given up and what funds and staff have been moved in that reprioritisation, and an indication of which agencies are doing the work which you are now stopping doing.

Dr Taylor: I am happy to do that.

Senator BARBARA POCOCK: Professor Huntington, I want to go back to your language about looking to the future, and I want to press you so I walk out of this room understanding exactly what is going to happen in the future for CSIRO. What's your definition of 'medium term'?

Prof. Huntington: It is three or four years.

Senator BARBARA POCOCK: You said 'stabilise our workforce'. What does that mean?

Prof. Huntington: Many people heard through the inquiry earlier in the year, and I'm sure you've been hearing as well, that CSIRO has been undertaking a very significant number of changes over the last several years. We are now in a position to significantly temper the pace and scale of changes. We expect that the overall size of our research workforce once we execute against these changes can now stabilise over that medium term.

Senator BARBARA POCOCK: So you are going to stabilise over the medium term the size of the workforce. Does that mean you expect your current headcount and full-time equivalent staff to be at the same level for the coming four years?

Prof. Huntington: For our research workforce, yes, absolutely.

Senator BARBARA POCOCK: And for your wider workforce, including—

Prof. Huntington: We would very much expect that to be the case. The reason I put that caveat on is that we are living in a very, very unstable cost base at the moment, as you know; therefore, we will continue to look to find savings for our operating expenditure and so forth.

Senator BARBARA POCOCK: So does that mean your numbers may decline in your non-research?

Prof. Huntington: We don't expect that.

Senator BARBARA POCOCK: Can you tell me, and you may want to take it on notice, exactly what your research workforce is now in terms of headcount and EFT for research and non-research staff.

Prof. Huntington: Mr Munyard, do you have that?

Mr Munyard: I might have to take that exact split on notice.

Senator BARBARA POCOCK: That would be very helpful to know your current numbers by headcount and equivalent full-time at present across the different parts of the CSIRO workforce. Thanks for taking that on notice. I want to go to bonuses. Are bonuses being paid in the current year to any members of CSIRO?

Mr Munyard: We removed all bonus arrangements from employment arrangements a year or two ago. The only one that remains is that set for the chief executive as per the Remuneration Tribunal determinations.

Senator BARBARA POCOCK: So the CEO is going to receive a bonus this year; is that correct?

Mr Munyard: That's subject to the decision of the board at the end of the financial year in terms of performance et cetera.

Senator BARBARA POCOCK: Did they receive a bonus last year?

Mr Munyard: Yes.

Senator BARBARA POCOCK: How much?

Mr Munyard: The figure that was received is outlined in the annual report. We provided that. Apologies—

Prof. Huntington: While Mr Munyard finds that number, I'll just note Dr Hilton has previously expressed discomfort about being the only person in the organisation to receive a bonus and that he is working with board on that. But that is a board decision.

Senator BARBARA POCOCK: I'm really sorry, but I missed what you said then, Professor Huntington.

Prof. Huntington: Dr Hilton has previously expressed discomfort about being the only member of the leadership team to receive a bonus, and he's working with the CSIRO board on that issue. But that is a board matter and it is for them to decide.

Senator BARBARA POCOCK: In the current year and back—

Prof. Huntington: In terms of his employment contract writ large.

Mr Munyard: As I said, it's set by the Remuneration Tribunal. The board determines a percentage of the bonus that he will receive in line with performance. We've published the figure on page 115 of our annual report, in our financial statements in the key management personnel remuneration table. The salary at-risk payment or bonus payment in that financial year was $139,474.

Senator BARBARA POCOCK: But, if I understand what you've just said, that's under negotiation and review this year and there is a reluctance to take another bonus?

Prof. Huntington: I'm not across the details, sorry.

Senator BARBARA POCOCK: Could you provide further information on notice about what is planned and unfolding for the bonus in the current year.

Prof. Huntington: Yes.

Senator BARBARA POCOCK: Great. Thank you. Thanks for your answers.

Senator WHISH-WILSON: Can I ask just one very quick follow-up on that. Why was there the change to no longer take bonuses? Obviously executives were taking bonuses just a few years ago. Why was the decision taken to stop bonus payments?

Mr Munyard: It was a decision of the board at the time. It was to ensure that we remained consistent with policy and processes across the broader Public Service.

CHAIR: We are going to suspend for dinner now. There are still more questions for CSIRO, so we look forward to seeing you again after dinner.

Proceedings suspended from 18:47 to 19:51

CHAIR: We will go back to the CSIRO. Senator Bell.

Senator BELL: I have some questions prepared with the assistance of the member for New England, Barnaby Joyce, in relation to CSIRO and the Chiswick Research Station. The mayor of Uralla Shire Council wrote to the minister in March this year, advising that CSIRO Agriculture and Food had proposed cutting approximately 50 staff nationally from livestock research, with the majority of those losses falling on health, welfare and genetics—the very disciplines that are the mainstay of Chiswick. That same correspondence noted that over 50 per cent of current scientific staff at Chiswick are proposed to be made redundant, leaving the site with, in the mayor's words, 'a skeleton crew'. Staff at Chiswick were told by management that it is 'very rare for decisions to be reversed'. It doesn't really sound like a genuine consultation process has taken place. It sounds like a decision has already been made. How many full-time equivalent staff are currently employed at Chiswick? Could you break that down by scientific, technical and administrative roles.

Prof. Huntington: I'll hand to Dr Taylor, but, before I do, I'll reiterate a comment I made previously. Our change process is quite extensive, and we have six steps in that process. We have just reached the conclusion of step five. It sounds like some of the commentary that you're talking about comes from much earlier steps in the process. We take all input from across CSIRO as well as our external stakeholder groups very, very seriously. I'll hand to Dr Taylor to go to the question.

Dr Taylor: I can give an update on the Agriculture and Food changes. These were relayed in a decision town hall on 23 April. If I heard correctly, you mentioned a date in March. Is that correct?

Senator BELL: Yes.

Dr Taylor: This is post that date. As a result of consultation, both internal and external, the net reduction total for that research unit was 49 roles. That spans multiple areas, including our food innovation work. Not all of that is related to our livestock work. In regards to Chiswick station, which you mentioned, there was mitigation of

multiple roles there. I will take that on notice to give you the exact composition and breakdown of that. However, that is a clear example. At Chiswick station, that decision was reversed for some roles.

Senator BELL: How many roles of the scientific workforce there have been, or are currently proposed to be, made redundant? What is the percentage?

Dr Taylor: Are you talking specifically about Chiswick?

Senator BELL: Yes, just on Chiswick and the scientific workforce specifically. Do we know how many are proposed to be made redundant there?

Dr Taylor: I'll take that on notice, because we focus on the science and the capability that's required across—we have livestock research that exists at Chiswick but also at other sites. So I'll take that on notice specifically for that site.

Senator BELL: As a result, do you know what specific research programs, including animal welfare, livestock genetics and genomics, livestock health and resilience, flystrike management and virtual fencing—do you know which of those will be discontinued or reduced as a result?

Dr Taylor: I'm happy to provide more details on notice, but I do know that there were some considerations of shift of our livestock research away from single-animal focused research to managing livestock as a farming system. I think this is in line with where the industry impact is in terms of how most agribusinesses are managing livestock systems and in recognition of the fact that CSIRO has done work in livestock animal welfare for quite some time. Australia performs very strongly in terms of livestock animal welfare, It's well adopted across the industry. Therefore, we saw opportunities to move into other areas, such as methane work and managing livestock system productivity. So that work is ongoing, as is the integration of livestock systems with other agricultural systems, such as crops.

Senator BELL: My understanding is that a senior CSIRO administrator gave an explicit public assurance at a meeting in Armidale in December of last year that Chiswick was not on the target list for closures. That assurance was apparently given in good faith to the community, and now what we've got just months later is that there are these viability assessments underway. One Nation hear that, and we regard that as a serious breach of trust with the New England community. How does CSIRO reconcile the public commitments that were given with the current viability assessment process, which, as staff have noted themselves, amounts to cutting most people from the site and then potentially declaring it unviable?

Dr Taylor: Again, I will say that it is my understanding that there is no analysis ongoing now about the viability of the site. That was part of the proposal and would have been mentioned in your update to March. However, with the mitigation of staff on site, that is no longer the case. In that Chiswick research station in New England, there's a fantastic partnership with the University of New England in working on livestock methane work. There are strengths and capabilities in working through that area on the sustainability of Australia's livestock systems. We clearly are going to take a longer time to have a think about how best to use that work and where best to place that work.

Senator BELL: So the viability assessment is not going to continue. Can you rule out a closure of Chiswick now or into the future?

Dr Taylor: The viability assessment—that's my understanding. I'll confirm that on notice. Can I rule out the closure of Chiswick? I think as, Mr Munyard has said, we're considering our whole footprint basically in terms of efficiency and sustainability, and so Chiswick, along with all our other sites, will be considered in that, because we're quite determined to make sure that we use our research investments as sustainably as possible. Where sites have large impact and have unique offerings, then they remain an important part of our research portfolio. But we'll be asking that of all our sites over the coming years.

Senator BELL: When you say 'unique offerings'—if you look at Chiswick, it's not just a research station, because it hosts Australia's only paddock based quarantine regulated research facility. We regard that as a sovereign capability. It's not something that can easily be recreated by redirecting funding to a university or contracting out to industry. The National Farmers' Federation has publicly stated that CSIRO has 'irreplaceable sovereign facilities' and has actually urged the government to stop job losses in agriculture and food research. So it's good to hear that it sounds like that facility is not about to be closed down. So is Chiswick Australia's only paddock based quarantine regulated research facility?

Dr Taylor: I'd have to check that, but I don't believe so. I believe that the University of Queensland at Gatton is investing in facilities. I would also point to CSIRO's intent in this area to support the livestock industry. We have the ACDP facility in Geelong, which is actually one of three in the world that can do livestock biosecurity

quarantine research. I think that speaks to a truly unique capability. And we prioritise work to the livestock industry off a range of facilities.

Senator BELL: Did they also do the flystrike vaccine development, or was that something that was only occurring in Chiswick?

Dr Taylor: The Geelong facility does not do the flystrike vaccine work. However, that's potentially part of our biosecurity offering and something that we think is important work.

Senator BELL: New England does produce some of the world's finest wool. The mayor of Uralla has made clear that no small part of this success for the region has been built on 80 years of research at Chiswick. One of the active programs there, which is underway, is the flystrike vaccine development. That was a program funded in part by Australian Wool Innovation, and my understanding is it can only be conducted at Chiswick due to its unique quarantine status. Flystrike costs the wool industry hundreds of millions of dollars a year, and a vaccine would be transformative in assisting with that. If Chiswick were to be significantly reduced or have its capacity reduced, would that flystrike vaccine research continue? If so, where and under what arrangements?

Dr Taylor: I think you're asking a hypothetical question at the moment. I'll have to take that on notice. Basically what I've explained is that we've made a commitment to mitigate some roles that are based at Chiswick. That allows us to continue some of the work there that we got through consultation, we learnt. I believe that is tied to that quarantine facility and that we will continue that work. So, in terms of a hypothetical question, I'm not sure exactly how I can best answer that.

Senator BELL: Can you give any assurances that the flystrike program will continue despite, say, reduction of roles? I think you said something like 50 roles, roughly, would be reduced.

Dr Taylor: You're talking about the total number of reductions across the Agriculture and Food Research Unit. There is only a small number based at Chiswick. For example, we are reducing a whole program of work in food innovation, which is based out of Werribee. So that's the total for the research unit, which is a substantial program.

CHAIR: You have 10 minutes, Senator Bell.

Senator BELL: Let me just see.

CHAIR: We can come back to you.

Senator BELL: That's all for now. Thank you very much.

CHAIR: Senator Pocock.

Senator DAVID POCOCK: I was hoping to return to our conversation we were having prior to the dinner break about holding space. And as I understand it, you meant you were holding some of your budget to spend on changing priorities.

Prof. Huntington: Sorry, no. It was a turn of phrase. What I meant by that was that, as I said, we will continue to review our research portfolio going forward in order to make sure that it is optimally tuned to it in order to achieve impact for Australia. So, in that sense, we may need to make some reprioritisation decisions within the scope of some of those reviews, and that's what I meant by that.

Senator DAVID POCOCK: So it's holding space to potentially make some cuts but then move—

Prof. Huntington: It's intellectually holding space to allow us make sure that we continue to tune our research portfolio.

Senator DAVID POCOCK: Do you see that being a net loss of jobs or just a rearranging of—

Prof. Huntington: No. The whole point about the conversation around 'we can now stabilise our workforce' means that, as we find some things that are higher priority, we will be able to invest in those as we go forward.

Senator DAVID POCOCK: Thank you for clarifying that.

Prof. Huntington: Apologies for the ambiguous term.

Senator DAVID POCOCK: No problem at all. I'm glad we clarified it. What's the cost saving from the five climate modellers that you're expected to lose from the access team?

Dr Mayfield: I can't tell you what that is off-hand. We'll have to get that on notice.

Senator DAVID POCOCK: Maybe on notice. Have you got a rough figure?

Prof. Huntington: Senator, I might just step in and provide a bit of context there. As we've said all the way along, the way that we've been building the research portfolio has been to consider very carefully the balance of the activities that we conduct across the research portfolio. We think long and hard around the relationship

between fundamental research as well as the activities that might then be involved in translation of that research to achieve impact, because we're an applied science organisation. We think very much in terms of the balance between the particular activities across the entire research portfolio. So talking in terms of specific financial savings associated with particular activities separates it from the wider context of the thinking that we're doing.

Senator DAVID POCOCK: But, Professor Huntington, you surely wouldn't be cutting climate modellers if you didn't have a budget crisis.

Prof. Huntington: That's not what I said, Senator. What I was talking about was the idea that we look at the overall mix of the level of effort across the entire research portfolio.

Senator DAVID POCOCK: And you have to do that because of the budget constraints.

Prof. Huntington: We look across two dimensions, one of which is the relative priority for the research, and the other is the overall funding envelope that we have.

Senator DAVID POCOCK: This is probably one for Mr Munyard. How many employees have contracts due to expire in the next six months?

Mr Munyard: I might have to take that on notice. We have approximately 1,000 staff as term employees at the moment, but I don't know how many of those have an expiry in the next six months. I'll have to take that on notice.

Senator DAVID POCOCK: On notice, could you give me six months and 12 months. What's the average term length?

Mr Munyard: We typically employ our researchers on a term length of around three years.

Senator DAVID POCOCK: Of those thousand contracts due to expire, how many are expected not to be renewed?

Mr Munyard: I'll have to take that on notice. We obviously have some term ends coming through the current processes, but I'll have to take that on notice too.

Senator DAVID POCOCK: Are they part of the 350 we were talking about earlier?

Mr Munyard: There are some term ends that are part of that 300 to 350. They're not all redundancies through that 300 process; there are a number of term ends through there.

Senator DAVID POCOCK: Are there any that are not included in that 350?

Mr Munyard: Term ends? I'm not sure, Senator. I'll have to take that on notice. Again, as Professor Huntington has mentioned, we'll be able to stabilise our workforce at a level, so if there were some term ends that ceased, that would mean that we would be able to rehire, potentially, other capability.

Senator DAVID POCOCK: I mean, if they're not included in that 350, I'd find that concerning. If you can come back on notice, that'd be good. Has CSIRO undertaken any analysis of capability loss arising from nonrenewal of term contracts? Have you done that work?

Mr Munyard: I'm not quite sure what you mean. In terms of—

Senator DAVID POCOCK: You've got a thousand people on term contracts, and I assume there's a mix of some pretty impressive skills and capability amongst those thousand. Have you looked at what it would mean in terms of the loss of talent from CSIRO if you're not able to renew those thousand?

Mr Munyard: I'll hand to Dr Mayfield for that.

Dr Mayfield: To give you some context there, Senator, each of our research units typically runs a capability committee where they look at resourcing within that research unit and how it's deployed against projects. They make decisions on new hires and term ends. In some cases we will renew those; in some cases we'll get a different type of skill set coming in. That's on an ongoing basis. All through the last couple of years, those committees have been making decisions. We've been actively extending, renewing and looking at new terms as well as letting terms lapse as they reach the end of that contract. We do that on the basis of the capability that we need to deliver against the project portfolio. So it's this whole concept of having the right capability to deliver against the objectives that you're trying to do. It's a dynamic thing. It's always going to keep changing. That's part of the equation that we've got around how we prioritise capability, trying to make sure that we're bringing in the right people and retaining the right people as best we can within our constraints.

Senator DAVID POCOCK: Okay. Thank you. That's good to know. I'll put a few questions on notice about that. But, coming back to the climate modelling, do you accept that Australia is the only Southern Hemisphere nation that operates a climate model at scale?

Dr Mayfield: Yes. The ACCESS model is the only one in the Southern Hemisphere. It uses Southern Hemisphere data predominantly and is focused around that region.

Senator DAVID POCOCK: When does CSIRO expect Australia's climate model capability will fall behind comparable international models?

Dr Mayfield: I don't believe we see it falling behind. We are maintaining that and improving it as we go forward. A lot of the work we're doing is trying to make it more applicable to the real problem. So a lot of the work we did with the National Climate Risk Assessment through Australian Climate Services, along with BOM and others, was to understand how you can downscale. A lot of that was done around CMIP6. But how do you downscale those model predictions to make them usable when you're trying to look at hazards and impacts in more localised areas? In some cases, regional is good. In some cases you really ultimately need to get down to asset level to understand the hazard and the risks. So we've been doing that work actively and we continue to do that work.

Senator DAVID POCOCK: You said 'make it more applicable to the current problem'. What is the current problem?

Dr Mayfield: The problem is trying to understand. Everyone wants to know what climate will do to their location, whether that's a region, a local government area or a street. So that's the problem that we're focusing on as we go forward. So we're using the model predictions that come out of the coupled model in comparison project work but using that to make it more usable for the various end users, whether they're planning functions within councils or insurance companies. There's a whole range of those sorts of users that want climate information to make decisions. That's where we're trying to put a lot of our effort. That's what ACS and the National Climate Risk Assessment and, in turn, I expect, the National Adaptation Plan are trying to work on. We've got very good climate projections that do them every so often, but we're trying to use them as much as we can.

Senator DAVID POCOCK: But we're talking about a 40 per cent reduction in that team. How are they possibly going to do all that work and keep it up to international standard with a 40 per cent reduction in the workforce?

Dr Mayfield: You'll recall earlier I talked about the fact that a lot of our work happens more broadly around adaptation. That's away from that particular group. In the work we talked about around ACCESS-NRI, that's three FTE. Those people are doing work that is around coordination, data management, evaluation and calibration of models. Those roles are funded through ACCESS-NRI. So we're really finishing the transition to ACCESS-NRI there. They've got resources to do that. We are focusing on applying the models. That's where we think we add greater value. So we're a user of the models but we're applying them.

Senator DAVID POCOCK: But you won't tell me how many people have actually been lost from the climate-modelling team. I've been told that it's going from 12 to seven. Is that wrong?

Dr Mayfield: It's depending on your definition of who's in the climate-modelling space. We talk about it being about 60 FTE work in that space around climate modelling itself, not the adaptation pieces. Originally 12 were impacted. It's down to 11, based on consultation. So that's where we're seeing changes. Some of those changes are around monitoring atmospheric chemistry and things like that, which is a little bit different to doing specific climate modelling. It's observation and measurement. We're working with other PFRAs to make sure we've got coverage there.

Senator DAVID POCOCK: But I'm talking about actual climate modellers. I understand that it's gone from 12 to seven—

Dr Mayfield: To work out who actually models I would have to take it on notice, because everyone does slightly different roles.

Senator DAVID POCOCK: What definition are you using for the 60?

Dr Mayfield: We're using a broader definition for the 60. It takes people who are good at coding. It takes people who are good at basically managing data. It takes people who are good at actually running the models and improving them and looking at the actual physical processes that are taking place. So there's a whole range of different skills there. Some people are taking measurements and doing observations, which becomes input data. So it's an ecosystem. The ecosystem can still undertake that work going forward, but we're trying to understand more about the adaptation applications. That's where we see the science priority. We still very much see importance around doing modelling. It's a really critical input. But we think it's a mature space that we're more comfortable in. Adaptation is the place where we haven't made as much gain, and that's where I think we have to put more emphasis in.

CHAIR: Senator Whish-Wilson.

Senator WHISH-WILSON: It was pointed out to us, Dr Mayfield, in the inquiry—actually, as it was in 2017 when CSIRO was looking at cutting jobs from oceans and atmosphere—that there's no point in having adaption if you don't have the data to put into it in the first place and that you're cutting off your nose to spite your face. How do you respond to that?

Dr Mayfield: I would agree with you. But our intent is that we're maintaining the ability to do the modelling and to make that a key input. We've done a lot of that work through Australian Climate Service as well, along with the BOM, which has resources that do similar things. We continue to do that. We see the importance, just as you do, but we're looking to do both.

Senator WHISH-WILSON: You mentioned a couple of times that you want to take the modelling, the observations and the research and use them. I think you've also used the words that your focus is now on applying them.

Dr Mayfield: Yes.

Senator WHISH-WILSON: Is that code for looking for clients for these services?

Dr Mayfield: No. We're increasing the emphasis there. We have been working in adaptation for quite some time as well. But we're getting closer to—

Senator WHISH-WILSON: Indeed. You mentioned insurance companies as an example of who is interested in your modelling and your work.

Dr Mayfield: If you look at Australian Climate Services, it's currently building its data platform, which will put a lot of these things up there. Companies like insurance companies are very sophisticated in how they manage risk. They will take a lot of that data and do their own work. But, for other groups, they are less sophisticated. So there's probably opportunity for us to help them more. We're not looking for it to be a 'fee for service' type model. Australian Climate Services is about making the data available on a single source of truth.

Senator WHISH-WILSON: That was going to be my next question. The word 'prioritising' has been thrown around a lot tonight, and I was wondering: are we still prioritising scientists seeking external revenue to help cover the costs of their research? Is that still a cultural priority at CSIRO?

Prof. Huntington: I don't think we've ever said that.

Senator WHISH-WILSON: You've never had external revenue—

Prof. Huntington: I don't think we've ever said that we've prioritised on the basis of revenue.

Senator WHISH-WILSON: Really? In the last 10 years, CSIRO has never put pressure on their scientists to seek external revenue for their research?

Prof. Huntington: Senator, I'll refer you back to the submission that we made to the inquiry, where we actually wrote down what were the six criteria by which we made our prioritisation decisions, and external revenue was not in any of those.

Senator WHISH-WILSON: No. But that's different to what I've just mentioned, Professor. Are you saying that CSIRO has never had a culture of putting pressure on scientists to find external revenue to help fund their research projects?

Prof. Huntington: Senator, as you know, we do engage in a range of commercialisation activities, and we do engage in a range of consulting activities. The nature of the external funding that we might seek to attain as a consequence of that comes as a consequence of a range of decisions, including things like: do we believe that this is strategically relevant; do we believe that we might want to own some of the IP that comes as a consequence of this, to protect it for Australia; is this a fee for service piece of consulting; or, as Dr Mayfield said, are there collaborations that we engage in where we, for example, make data available to be open source? ACCESS-NRI is actually a very good example of a place where we have facilitated work that we did to make it open source available.

Senator WHISH-WILSON: I'll put it to you a different way, Professor. Are you aware of criticisms that have been raised with this committee, multiple times over a decade, about this growing culture at CSIRO? It's been going on for decades now to increasingly put pressure on scientists to find external revenue. I think we heard in the last hearings from scientists that said it might have started at 30 or 40 per cent of their budget, and, in some cases they said it was up to 90 per cent of their costs that had to be covered by finding clients—you know, monetising their research. Are you aware of that? You've been with CSIRO a long time. You're very senior.

Prof. Huntington: I've been in CSIRO for a little under five years, just for context. We heard some of that evidence at the inquiry as well. There were a range of positions put, as I understand it, as part of the testimony there, some of which were assertions along the lines that you describe and some of which were actually assertions where folks said that engaging with external stakeholders allowed them to understand the nature of the problems that they were interested in and to get a good sense of the research.

Senator WHISH-WILSON: Sure, you can put a positive spin on it. My question is whether you acknowledge that that has been ongoing criticism—

Prof. Huntington: CSIRO does indeed receive criticism for that. The observation that I would make would be that there are a range of much more sophisticated drivers than the one that you described.

Senator WHISH-WILSON: I have a couple more questions on this and then I have some specific questions on another matter. Professor, you've obviously done a lot of work with STEM. How damaging are the job cuts that we've seen in this round and in the previous round to the great work that's being done in the STEM area? The minister talks about this a lot. Is this causing problems when young aspiring scientists, from school age through to university, see jobs being cut across the board at their premier science agency?

Prof. Huntington: This has undoubtedly been an incredibly challenging time not just for observers of CSIRO but also for the people inside the organisation, and I do not want to flatten that experience at all. One of the things that I was certainly very pleased to see when we sat with you through the inquiry was a wider conversation around the role of science, technology and engineering and maths in Australia writ large. This is an important conversation that I think the Australian public needs to have.

Senator WHISH-WILSON: Minister, I can't remember the exact words you used, but I'm sure you won't dispute that you said something along these lines in the Senate chamber when we had a debate on the job cuts at CSIRO: if jobs were cut, those jobs could be picked up in other areas of science in the country, including some agencies that we've talked about tonight, like BOM and AAD, and other areas where there's crossover. Are you aware of any people, any workers or scientists, who've lost their jobs that have picked up work in other agencies?

Senator Ayres: People who work in the CSIRO are very talented and capable scientists and researchers. We have—

Senator WHISH-WILSON: Even though they've lost their jobs?

Senator Ayres: Yes, absolutely. The changes that the organisation has made are not a reflection on the quality of the work or the capabilities of the individuals involved. I think the management have been very consistent about that point. We have a big research ecosystem, and, wherever it's possible, in our universities and our other research institutions, where there are research priorities that engage these talents, I want to see people extending their careers.

Senator WHISH-WILSON: So, you're not aware of any that have occurred.

Senator Ayres: The organisation is part of the way through the process. That's been the subject of some evidence tonight.

Senator WHISH-WILSON: I want to ask a couple of quick questions about GISERA.

CHAIR: You're nearly at 10 minutes.

Senator WHISH-WILSON: Do you want to come back to me, then?

CHAIR: If you can be quick—

Senator WHISH-WILSON: How long have I got?

CHAIR: As quick as you can be.

Senator WHISH-WILSON: Sure. Are you aware of the following ongoing research projects being undertaken by GISERA: project W33, environmental baseline characterisation of Hot Springs Valley, Northern Territory, and project W38, groundwater connectivity between the CLA and the surface in the Eastern Beetaloo Sub-basin extension?

Dr Mayfield: In terms of the specific projects, I'd have to look into that. In terms of GISERA, it's effectively winding up at the end of this month and it'll formally be terminated in December of this year. Essentially, there have been no new projects taken on for some time, so it's been going through execution of those final projects and getting those completed. It's in that wind-up phase.

Senator WHISH-WILSON: Perhaps you could take it on notice, Dr Mayfield. What's the current timeline for the completion and publication of the findings of those two projects in particular?

Dr Mayfield: Yes.

Senator WHISH-WILSON: And are they on track for completion by 30 June?

Dr Mayfield: I'll double-check that for you. The intention was to try and have everything done by midyear, but there may be some stuff that spills over.

Senator WHISH-WILSON: Have you presented the GISERA findings on either projects to stakeholders, government stakeholders or industry stakeholders?

Dr Mayfield: Typically, they will hold either town halls or workshops. I would have to check on the specific details of that; I haven't looked, myself, of late. But also everything goes onto the website, so it's freely available. So there are a range of different avenues by which the information is made available, but let me check as to what they're actually doing.

Senator WHISH-WILSON: Including who was in attendance at those meetings? Does that detail go—

Dr Mayfield: I don't know if they keep a record of who attends, but I can find out for you.

Senator WHISH-WILSON: If you could, take that on notice. If not, could I get the dates and who was in attendance at those meetings for those two projects—

Dr Mayfield: I'll check to see what the plan was for winding up.

Senator WHISH-WILSON: and if any amendments were made to the report following those sessions. Just quickly, I understand Santos is a significant funder of the projects. Did the project team meet with Santos about the projects? Are you aware?

Dr Mayfield: I'm not aware of them meeting with Santos, no.

Senator WHISH-WILSON: I'll put some more detailed questions to you on that. Can you confirm who was on the technical reference groups for the projects?

Dr Mayfield: All of that information is available on their website, so we can make that available for you.

Senator WHISH-WILSON: Great, thank you. In particular, were Santos, Tamboran and Empire Energy part of that technical reference group? Lastly, how often did the technical reference group meet? I'll put them in writing to you.

Dr Mayfield: Again, that's very specific information, so I'll get that for you on notice.

Senator WHISH-WILSON: Great, thank you.

CHAIR: I'm just going to ask a couple of quick questions. I haven't been able to track down a copy of your opening statement, Professor Huntington. Firstly, congratulations to the organisation for making the centenary, a significant milestone. That is a significant thing for the organisation. In your opening statement, you talked about the additional funding that is contained in the budget and MYEFO, in addition to the $1 billion allocation that you have. I just wonder if you could go through what specific allocations those were, please.

Prof. Huntington: Sorry, can you repeat the last part of that question?

CHAIR: Specific further funding that's been provided on top of the $1 billion ongoing in this budget and also MYEFO.

Prof. Huntington: In MYEFO, we received $233 million. In the 2026-27 budget, we received $387.4 million.

CHAIR: Again, in your opening statement, I think you talked quite broadly about what some of that additional funding was going to be used for in relation to maximising research for Australia, long-term sustainability and workforce sustainability. I just wonder if you could talk in a bit more granularity about what you mean by those things and how this funding will help the board and management's focus on research that invents and deploys technology to address key national problems that we have.

Prof. Huntington: I'll hand to Mr Munyard in a second to go through some of the details of where the additional $387.4 million will go. Just to reiterate, the funding is specifically to address the profound and significant sustainability challenges that we face. This is a consequence of decades of underinvestment in our infrastructure. In general, our intention is to provide safe and fit-for-purpose sites as well as scientific equipment, cyber protection and technology so that our researchers and our collaborators can make the discoveries that we believe are incredibly important and turn them into real-world impact.

Mr Munyard: I mentioned before, in response to, I think, Senator Barbara Pocock's question in relation to the splits, we are working through the budget planning of those, but one of the most critical things for us is addressing what we define as our repairs and maintenance backlog on our infrastructure. We have 45 sites across the country, and we're estimating that across all those sites—we're on the record of saying this—it's approximately $280 million as our backlog that needs repairs and maintenance across there. We'll prioritise that, and we're in the

process of prioritising it for investment to make sure we're getting both the high-risk items and the areas and sites that we think we will stay at longer term.

On top of that we'll be investing in other research equipment and, quite importantly, in our cyber security. We are an at-risk organisation in relation to cyber, so it's very important that we maintain safe and secure systems as well as the infrastructure, both digital and physical. They're the major things we'll be investing in over the period.

CHAIR: Thank you. And I think the minister mentioned this in a comment earlier around $38 million for the Australian Centre for Disease Preparedness, in terms of receiving ongoing funding in the budget. Could you talk a little bit about the work of the ACDP and how the additional funding will be used there?

Prof. Huntington: Absolutely. I'll pass to Dr Taylor on that one.

Dr Taylor: That's correct: $38 million that contributes to the ongoing financial sustainability of the facility. Operating a facility of this complexity and criticality to Australia's biosecurity is at a substantial cost. Those operating funds go to maintaining the 24/7 stand-ready capabilities of the facility. This is a facility that has to be stand-ready to respond immediately to any emergency threats or risks that emerge. So that operating fund goes to things like: covering the workforce; maintaining the infrastructure; important compliance, including ethics compliance; and enterprise support to maintain continuous readiness.

I can give you an example. In 2025 that facility did 37,000 diagnostics tests, and more than 900 of those were exclusions for potentially notifiable diseases. That's the work of the facility. To come back with a 'no' on that is amazingly important to our agricultural industries and our communities. Some of this is required immediately, ASAP. A team of four will turn up at 2.30 on a Sunday morning and complete tests. For that facility to run 24/7 under high containment—that's what those operating funds allow us to do.

CHAIR: And we certainly heard in the inquiry, regarding the sustainability of CSIRO, about some significant challenges around the infrastructure repairs, maintenance and backlog. So thank you for providing that overview. I guess my final question to the minister is regarding the approach of this government around the funding for CSIRO compared with the previous government's approach to funding our national science and research agency.

Senator Ayres: It's certainly true to say that the government's commitment here, in addition to the $278 million that the government announced to 2025, is an additional $387.4 million that sits on top of the circa billion-dollar commitment every year for Australian science and a $39 billion investment more broadly in research and development for Australia, as well as an additional $2 billion over the forwards. That is this government's commitment to Australian science and research, and we do that because science and our research and development sector are crucial in order for Australia to meet the big national challenges. We don't second-guess the science. We don't spend time in internet chat rooms sharing conspiracy theories. We back Australian science to solve the big national problems for Australian agriculture, for our defence, for the future of our energy system, for the future of our resources sector and for our food security.

All of these big challenges require not just one of the world's premier applied science and industrial research organisations but a vital and vibrant university research sector and all of the scientific and research organisations that cooperate in this big national effort.

CHAIR: Thank you. I'll go to Senator Liddle. No? Senator Canavan.

Senator CANAVAN: I have some questions, not too many, about the *GenCost 2025-26* draft report. On page 55 of that report it says:

There is a clear trend that decreasing emissions increases 2050 electricity costs.

Does this mean your report concludes that going towards net zero by 2050 increases the price of electricity?

Dr Mayfield: I haven't got the report with me, I'm sorry. I'm happy to take that on notice and get Mr Graham to answer that for you.

Senator CANAVAN: This is a direct quote. It's page 55. You don't have the *GenCost* report in front of you?

Dr Mayfield: No, I don't have it with me today, I'm sorry.

Senator McDONALD: We ask questions about the *GenCost* report every estimates. This can't be a surprise.

Senator Ayres: It isn't that bad—

Senator CANAVAN: We might get this tabled for you then. I'll just need a second for that. While we do that, I might ask some other questions on a different topic. You've probably seen the news that recently some authors for the next IPCC report—the so-called AR7—have concluded that the RCP8.5 model is implausible and will not continue to be used in the IPCC reports. Does the CSIRO use the RCP8.5 model in any of its climate research?

Dr Mayfield: There are a range of different RCPs that have been used in the past. We've done cases for each of them. In terms of their use, depending on the context in which you're using it, you may use that. But we don't only use that—if we were to.

Senator CANAVAN: But you have used RCP8.5?

Dr Mayfield: Given that it was an internationally agreed concentration pathway—

Senator CANAVAN: Yes.

Dr Mayfield: But I'm not familiar with the quote that you've got there. If they're no longer using it, it's unlikely that we would be, either. But I haven't seen the quote.

Senator CANAVAN: But you might be aware that the RCP8.5 scenario is most associated with the most alarmist predictions of climate change. It has always seemed to me a little outlandish. It would mean a roughly seven-fold increase in coal production this century. It seems unlikely. Will you need, now, to go back and have a look at previous CSIRO work, including that released last year with the climate modelling or whatever that was called? Did any of that rely on the 8.5 scenario that's now discredited?

Dr Mayfield: It doesn't rely on it, so we—

Senator CANAVAN: Well, did any of the findings or conclusions in that report use the RCP8.5?

Dr Mayfield: Where there's use of different pathways, it's noted in the reports. I'd have to look at each report just to see which ones have been used. But we tend to use the three lower ones more than the upper one. But there are a range of scenarios. There's not a deterministic path that's expected. There are scenarios that are considered.

Senator CANAVAN: Are you going to go back and audit any of this work given it's been discredited?

Dr Mayfield: I'd have to see the quote to understand the full context. But I'm comfortable that the work would have been reported in such a way that those assumptions are quite clear and you can look at a range of scenarios and you can move with the set of scenarios that you think are most likely. We also use other ones that come from the International Energy Agency and things like that—the step change protocols that they have and the stated policies version. So there are a range of things which I think will give you a fairly agreed set of scenario frameworks to use.

Senator CANAVAN: It is true that often whatever you actually report the media reports—the most alarmist stuff, for understandable reasons. They effectively relied on your work, so I would hope that we rectify any misreporting of that in the future given that this particular scenario has been completely discredited. Going to the GISERA work—that's finishing this year, you say. Is CSIRO doing any work on helping to discover or exploit Australia's oil and gas reserves, post GISERA concluding?

Dr Mayfield: We don't do work around exploration and haven't done for some time. We do do work around carbon capture and storage. We're currently working in the Northern Territory, looking at how you might have common-user infrastructure that would allow you to do industry as well as capture carbon.

Senator CANAVAN: Is there anything else you're doing in the oil and gas space apart from, obviously, GISERA, which is concluding?

Dr Mayfield: We are working with Santos on some direct air capture technology that they're trialling up at Moomba at their gas plant there.

Senator CANAVAN: Is there anything that's not related to carbon, like just producing oil and gas? Is there anything about that that the CSIRO is doing?

Dr Mayfield: Previously, GISERA would have been looking at—

Senator CANAVAN: I know; it was great work.

Dr Mayfield: monitoring fugitives. That work is done. We also still do some work—not for gas—around fugitive management of underground coal that's been emitted.

Senator CANAVAN: It's still related to carbon emissions, though. I suppose what I'm getting at here—

Dr Mayfield: We're not doing gas exploration per se.

Senator CANAVAN: Probably the biggest economic issue in this country right now is the availability of liquid fuels. I'm just wondering what our premier industrial scientific organisation is doing to support industry to have more reliable supply of liquid fuels in Australia.

Dr Mayfield: In terms of creating liquid fuels, the technology and the resources are what they are at this point in time. We are looking at how you can do low-carbon liquid fuels in the future, using various starting points. We also have the TraNSIT model—that is a logistics model around transport—which is trying to understand how you

can optimise fuel efficiency for long haulage and things like that, which helps us minimise fuel consumption in a time when it's scarcer—

Senator CANAVAN: This can go to the minister, but I'm gobsmacked here that half of our nation's imports by weight are liquid fuels. It's a massive industrial strategic vulnerability. Once GISERA finishes, our premier industrial advisory body is not looking at increasing the supply of domestic fossil fuel production—well, I should say oil production; that's the key here. Is that true—there's just no research being done into that in the future?

Dr Mayfield: In terms of finding and extracting liquid hydrocarbons or gases, we're not working on that, no.

Senator CANAVAN: Unbelievable. So we can all see why we're in this absolute mess. That was a pretty clear question.

Senator WHISH-WILSON: It's Donald Trump. That's why we're in that.

Senator CANAVAN: Maybe we should take responsibility for ourselves for a change. I don't need to blame the US. I think we can solve our problems here in Australia. But, moving back to my original question, this is a—

Senator Ayres: I seem to recall that you—

Senator CANAVAN: Can this not be out of my 10 minutes, because I didn't ask a question here. The minister's decided to make a—

CHAIR: Let's have one at a time.

Senator CANAVAN: which is fine but not out of my 10 minutes, please.

CHAIR: There's been discussion all across—

Senator Ayres: I seem to recall that you were in government when drilling in the Great Australian Bight was abandoned. We'll see what comes—

Senator CANAVAN: I just don't give up. Just because one thing's failed, I don't give up, like you guys have done.

Senator Ayres: Well, you failed—

Senator CANAVAN: You've totally given up on liquid fuel security in this country, and the record is clear about that now.

Senator Ayres: If there's a credible plan to bring something forward, the government will have a look at it, but—

Senator CANAVAN: I'm happy to talk to you any time, but maybe—

Senator Ayres: there's not much evidence of that.

Senator CANAVAN: because I've only got limited time, rather than—

CHAIR: Yes, please.

Senator CANAVAN: The minister seems keen to be on this side of the table and ask me questions, and I'm happy for that reversal to occur at the appropriate time. Returning to my question, page 55 of the draft *GenCost* report says, as I said earlier:

There is a clear trend that decreasing emissions increases 2050 electricity costs.

Does that mean going to net zero increases electricity prices? That's what this says.

Dr Mayfield: Not necessarily. I'd like to read the page before it. It would be useful.

Senator CANAVAN: There's a graph there, too, Dr Mayfield.

Dr Mayfield: I can see the graph, yes.

Senator CANAVAN: The graph's pretty clear that no progress to net zero has the cheapest electricity prices. Doesn't that mean—

Senator Ayres: I think, given your history of cherrypicking this report—

Senator CANAVAN: That's what your report says!

Senator Ayres: and going down the rabbit hole, the official's entitled to take that question on notice.

Senator CANAVAN: Well, I'll put it the other way. Does the work done here in this *GenCost* draft report conclude that going to net zero will lower electricity prices?

Dr Mayfield: It doesn't as a universal summary. A lot of the points that come out of it still say, even with taking into account system costs, that PV and wind are lower on an LCOE basis, but you need to look at a total systems model to look at it in the broader context.

Senator CANAVAN: But that's what this modelling does, doesn't it? It does look at that, I thought. That modelling, your modelling, shows that not going to net zero would leave lower electricity prices for Australians. That's what the graph—

Dr Mayfield: If I could read the previous pages—

Senator CANAVAN: It seems pretty clear to me. It's a bit strange you can't—

Senator Ayres: What's clear to you, Senator Canavan, obviously evades the whole scientific community and anybody who's got any experience in the sector.

Senator CANAVAN: I'm happy for an explanation to be given rather than assertion—

Senator Ayres: No, we're just saying that, given your track record of cherrypicking and hanging out with the sorts of odd bods on these questions, the official is entitled to take it on notice—

CHAIR: One person at a time, please.

Senator Ayres: and he has, because—

Senator CANAVAN: I don't know why the minister is interrupting me. I've got one more question, if I can. Across that chart you've modelled the costs of five scenarios, and the one on the left—'no progress to net zero'. My reading, though, of the descriptions of scenarios is that, even under 'no progress to net zero', you're still estimating an 82 per cent renewable energy target by 2030, as all the other scenarios do with varying progress towards net zero. Have you actually modelled a world where we don't pursue 82 per cent renewable energy by 2030?

Dr Mayfield: I'd have to check with Mr Graham.

Senator CANAVAN: Okay—no answers from the government about electricity prices. Thank you, Chair.

Senator Ayres: Actually, there were some pretty good answers on electricity prices just a few days ago. I know you don't like it. I know you don't like a modernised electricity system.

Senator CANAVAN: You promised they'd come down.

Senator Ayres: I know you want to make the country weaker and poorer. That is the sum total of your efforts and your colleagues' efforts in this—disinvestment and a weaker economy as a result of a decade of inaction, laziness and policy failure—

Senator McDONALD: That's not what this data says.

Senator CANAVAN: It's your report.

Senator Ayres: Turning up and doing a bit of cherrypicking and conspiracy theory stuff doesn't obviate any of that.

CHAIR: Okay. Senator Liddle, you had a couple of questions.

Senator LIDDLE: Yes. I've got some questions about quantum and PsiQuantum. In 2022, former minister for—

Senator Ayres: I think that'll be in the—this is the CSIRO.

Senator LIDDLE: This is the CSIRO.

Senator Ayres: Yes, they are the CSIRO. But PsiQuantum is—

Senator LIDDLE: No, this is specific to what they have been involved in.

Senator McDONALD: Maybe let her ask the question first.

Senator LIDDLE: I have other questions in the other area, but this is specific. I even checked to make sure.

Senator Ayres: Please.

Senator LIDDLE: In 2022, former minister for industry and science Ed Husic MP announced the National Quantum Advisory Committee, and at that time the CSIRO's chief scientist was a member of the committee. Is CSIRO still part of the National Quantum Advisory Committee?

Prof. Huntington: Senator, I think you're referring to Professor Bronwyn Fox, who was with CSIRO at the time. As I understand it, she remained a member even after she moved to the University of New South Wales.

Senator LIDDLE: So the membership, as you understand it, was with the individual, not with the organisation.

Prof. Huntington: As I understand it.

Senator LIDDLE: That's as you understand it? Okay. As the acting CEO of CSIRO, have you received a briefing at all about the PsiQuantum project?

Prof. Huntington: I have not received a briefing on where the investments are at this point, no.

Senator LIDDLE: Okay. Well, I guess that's it then.

CHAIR: Senator Whish-Wilson?

Senator WHISH-WILSON: I'll put mine on notice.

CHAIR: Thank you. I appreciate that. We are now finished with the CSIRO. Thank you very much for joining us today.

Department of Industry, Science and Resources

Industry Innovation and Science Australia

[20:50]

CHAIR: Welcome to the Department of Industry, Science and Resources representatives for program 1.2, Investing in science, technology and commercialisation, along with Industry Innovation and Science Australia and the Office of the Chief Scientist. We will kick off with senators from the coalition. Senator Liddle?

Senator LIDDLE: Yes, thank you. That would be fine.

Senator McDONALD: Could I just ask if tech jobs are going to be reviewed?

Senator LIDDLE: Yes.

Senator McDONALD: Earlier this morning, Ms Pickworth, I started to ask some questions about tech jobs and was directed to come back to you later in the day. Is this now the right section?

Ms Pickworth: Yes, it is.

Senator McDONALD: Is the 1.2 million tech jobs target adopted by the government in 2022 and made a formal DISR performance measure still government policy?

Mr Writer: Presently, 1.2 million tech jobs is a performance measure that the department uses as part of its overall governance framework to assess the department's performance.

Senator McDONALD: DISR's own 2024-25 annual report confirmed approximately 31,000 tech jobs were lost in the year to May 2025. That's a 3.7 per cent decline while the broader labour market grew by two per cent. How would you answer that?

Mr Writer: I think that the range of factors that can influence the number of jobs in a particular sector are many and various. We observed that change. We have, over the last couple of years, seen an increase in tech jobs, a decline and an increase again. That's attributable to a broad range of factors concerning that industry which is, as we're all observing at present, undergoing significant disruption and change.

Senator McDONALD: Australia had approximately 949,000 tech workers as of May 2025. To reach 1.2 million by 2030, approximately 251,000 jobs need to be added in five years. In the most recent year, the sector lost 31,000 jobs. What is the government's plan to add 282,000 tech jobs in five years when the most recent trajectory is negative?

Senator Ayres: I'll give you the figures that I have, and then we can come back to you on notice. In February 2026, which is the latest figures that we have, Australia had reached 999,053 technology related jobs. I'm sure it's a high-tech approach to really nailing down that precise 53 bit. But that's an increase of around 2.2 per cent, in the order of 21,450 jobs, since December 2025, and that is the third consecutive quarterly increase. When we came to government and that target was set, I think the number of technology related jobs was in the order of 903,986. Technology related jobs were 4.4 per cent higher than the February quarter of 2025. As Mr Writer has said, that outperforms the national employment growth over the same period, but they will ebb and flow over time. We think that technology related jobs now account for about 6.8 per cent of total employment nationally. There is some growth there. We're watching it carefully, and there are a range of reasons that drive that work. Data from the most recent quarter shows some growth. We're attending to that carefully.

Senator McDONALD: Terrific. What had the government done to see that increase in jobs?

Senator Ayres: I'll give you one example. A lot of these jobs are private sector jobs. So there are individual firm's decisions here. But, since our free TAFE program began in January 2023, there have been more than 65,000 enrolments in technology and digital sector courses.

Senator McDONALD: Is that completions or enrolments?