



COMMONWEALTH OF AUSTRALIA

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SENATE

ENVIRONMENT AND COMMUNICATIONS LEGISLATION COMMITTEE

Estimates

(Public)

TUESDAY, 27 FEBRUARY 2024

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ENVIRONMENT AND COMMUNICATIONS LEGISLATION COMMITTEE

Tuesday, 27 February 2024

Members in attendance: Senators Cadell, Davey, Duniam, Grogan, Payman, Barbara Pocock and Rennick

CLIMATE CHANGE, ENERGY, THE ENVIRONMENT AND WATER PORTFOLIO

In Attendance

Senator McAllister, Assistant Minister for Climate Change and Energy

Department of Climate Change, Energy, the Environment and Water

Executive

Mr David Fredericks PSM, Secretary

Ms Rachel Parry, Deputy Secretary

Ms Lyn O'Connell, Deputy Secretary

Agencies

Australian Institute of Marine Science

Professor Selina Stead, Chief Executive Officer

Mr Basil Ahyick, Chief Finance Officer

Dr David Wachenfeld, Research Program Director

Bureau of Meteorology

Dr Andrew Johnson, Chief Executive Officer and Director of Meteorology

Dr Peter Stone, Group Executive, Business Solutions

Ms Paula Goodwin, Group Executive Enterprise Services / Chief Operating Officer

Ms Joanna Stone, Chief Financial Officer

Committee met at 18:29

CHAIR (Senator Grogan): I declare open this spillover hearing of the Environment and Communications Legislation Committee into the 2023-24 additional estimates. I begin by acknowledging the traditional owners of the land on which we meet, and pay our respects to elders past, present and emerging. The committee's proceedings today will begin with the Bureau of Meteorology. The committee has set Tuesday 16 April, as the date for the return of answers to questions taken on notice from today's hearing. Under standing order 26, the committee must take all evidence in public session. This includes the answers to questions on notice.

I remind all witnesses that, in giving evidence to the committee, they are protected by parliamentary privilege. It is unlawful for anyone to threaten or disadvantage a witness on account of evidence given to a committee, and such action may be treated by the Senate as a contempt. It is also a contempt to give false or misleading evidence. The Senate has endorsed the following test of relevance for questions at estimates hearing: any question going to the operation or financial positions of the departments and agencies which are seeking funds at 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 a discretion to withhold details or explanations from the parliament or its committees, unless the parliament has expressly provided otherwise. The Senate has resolved also that an officer of the 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 offices or to a minister. The resolution does not preclude questions asking for explanation of policies or factual questions about when and how policies were adopted. Witnesses are reminded of the Senate order specifying the process by which a claim of public interest immunity should be raised. I incorporate the public immunity statement into the *Hansard*.

The extract read as follows—

Public interest immunity claims

That the Senate—

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

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

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

(1) If:

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

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

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

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

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

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

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

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

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

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

(13 May 2009 J.1941)

(Extract, Senate Standing Orders)

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

Bureau of Meteorology

[18:31]

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

Senator McAllister: No, thank you, Chair.

CHAIR: I'd also like to welcome Ms Lyn O'Connell, Deputy Secretary of the Department of Climate Change, Energy, the Environment and Water. Would you care to make an opening statement?

Ms O'Connell: No, thank you, Chair.

CHAIR: Dr Andrew Johnson from the Bureau of Meteorology, Chief Executive Officer and Director, do you wish to make an opening statement?

Dr Johnson: No, I don't; thank you, Chair.

CHAIR: We will go directly to questions. We will start with Senator Duniam.

Senator DUNIAM: Thank you, Chair. Welcome Dr Johnson and colleagues. Dr Johnson, have you ever given false or inaccurate information to a court of law?

Dr Johnson: No, I have not.

Senator DUNIAM: Dr Stone, have you ever given false or misleading evidence to a court of law?

Dr Stone: I am not able to discuss the proceedings that are currently in process.

Senator DUNIAM: I didn't ask about the court case. I just asked whether you'd provided false or misleading evidence to a court of law—ever?

Dr Stone: Senator, it is still the answer I gave. That's the only court case I've appeared in, and I am not able to talk about it further.

Senator DUNIAM: I am not asking about the court case. I am just asking about your activity, but you aren't going to. What are sanctions for officials at the Bureau of Meteorology for providing false or misleading evidence to a court, if any?

Dr Johnson: I think you are referring to a hypothetical. I am not sure what you are referring to. Sanctions would be in accordance with the Public Service Code of Conduct and so forth. I'd have to take advice on those matters from the Public Service Commission, if and when those matters arose.

Senator DUNIAM: I didn't ask a hypothetical. I just asked what the sanctions were. You referred to the code of conduct. Is that your answer?

Dr Johnson: If sanctions were to be given in a matter proven to warrant them, then I'd take advice from the Public Service Commission.

Senator DUNIAM: So you would ask the Public Service Commission about what sanctions there are?

Dr Johnson: If I felt that there were grounds to question the conduct of officers, I would seek advice from the Public Service Commission in that regard. It's a hypothetical, because I have not had to do so since—

Senator DUNIAM: I haven't asked if certain things happened; I asked what the sanctions are for doing something. If I ask a hypothetical I will start with an 'if', but I haven't. Has ever false or misleading evidence been given to a Senate committee or a question on notice by the BOM?

Dr Johnson: I can only vouch for the answers that I've given during my tenure as chief executive, and the responses that the bureau provides back, I sign off. I am not aware in the time that I've been chief executive. If you are asking forever, obviously I'm not in a position to comment on that.

Senator DUNIAM: Sorry?

Dr Johnson: Only during the time I have been here, I can only be held accountable for that.

Senator DUNIAM: As omniscient as you might be, I don't think you are responsible for things before your time. Do you sign off on all answers?

Dr Johnson: Yes, I clear all answers on notice.

Senator DUNIAM: Dr Stone, have you ever provided false or misleading evidence to a Senate committee?

Dr Stone: No.

Senator DUNIAM: Is there a standard for the advice provided to the minister in terms of its accuracy and veracity? What has the BOM put in place to ensure the quality of information going to the minister?

Dr Johnson: We always seek to provide accurate and timely information to the minister, and to discharge our duties consistent with the APS Values.

Senator DUNIAM: Is there a written guide around those values?

Dr Johnson: The APS Values are published. They are visible at every workplace. All our staff are familiar with them.

Senator DUNIAM: There is a training program provided.

Dr Johnson: That's correct. All our staff are familiar with their obligations under the APS Values.

Senator DUNIAM: That's provided to staff on commencement of employment?

Dr Johnson: At commencement and regularly discussed in the organisation.

Senator DUNIAM: What quality assurance measures are taken on the way through, in terms of both briefs to the minister and answers to questions on notice?

Dr Johnson: We have an excellent team of senior leaders in the organisation who check the quality of the material that is put together and respond to questions on notice and advice to the minister. There are checks and balances and controls on those advices. Ultimately, the officer clearing that advice to the minister has accountability for those advices. I have no reason to believe that any of those officers are operating in any way that's in conflict with the APS Values.

Senator DUNIAM: I was just asking what the process was, not whether you thought anyone was breaching them. I understand there are sensitivities, of course, at the moment. Ms O'Connell, with respect to Dr Stone's reference to case—I don't seek to go to the specifics of the case, and I understand the matter is still before the

courts—it was reported that the minister has sought urgent advice from the department. When was that request received by the department?

Ms O'Connell: That request was received on 13 February.

Senator DUNIAM: When was the decision of the Federal Court?

Dr Johnson: The judgement was handed down on 9 February. It was an interlocutory judgement, which means—as you know and as you have referred to in your questions—that the matter is still ongoing. It is probably worth knowing with respect to these discussions that, on Friday, the bureau filed papers in the Federal Court seeking leave to appeal the decision. That is now before the Federal Court in terms of how that request for leave to appeal is handled. That is probably all we can say.

Senator DUNIAM: That is fine. I don't intend to interrogate the specifics. You certainly can't, for a range of very obvious reasons. What form did the request for urgent advice arrive in, Ms O'Connell?

Ms O'Connell: I'll have to take that on notice because it was a request to the secretary for that advice.

Senator DUNIAM: And from whom it was received, whether it was a member of staff or the minister herself. There was a request received then. I presume it was sent and received on the same day; it wasn't in transit over a couple of days?

Ms O'Connell: Not that I am aware of.

Senator DUNIAM: If you could just check. Did the minister ask for a date by which urgent advice was to be received?

Ms O'Connell: The issue in discussing this is that the matter is still before the courts. That really does preclude us from making much comment in relation to the matter.

Senator DUNIAM: I am not asking for the content of the advice, which I dare say is probably not completed yet. You have been able to tell me when you received the request. You are taking on notice in what form it was received. I am asking whether in that request, which is separate to the matter before the court, when the minister was seeking to have advice back to her by?

Ms O'Connell: The request for advice was related to the matter before the court.

Senator DUNIAM: The date on which the requester will receive the advice back will be a subject before the court?

Ms O'Connell: No. The content of the request for the advice relates to the matter before the court.

Senator DUNIAM: I understand matters that are being litigated can't be discussed. As a student of law, I get that. But I am not sure how, for a minister discharging her duties, quite rightly seeking advice from a public sector agency asking for advice, and perhaps saying, 'I want this brief by next Friday'—which of course will be unrelated to what is happening in the court, although that will have some bearing on it—is something you can't discuss with me.

Ms O'Connell: You are not asking about the content. You're asking about whether there was a date?

Senator DUNIAM: No, no. I have not once asked for the content. The date was it.

Ms O'Connell: I will take that on notice to give you a date.

Senator DUNIAM: Dr Johnson, over the course of your time at the bureau, how many of the senior management positions have turned over?

Dr Johnson: Are you talking about at the executive team level?

Senator DUNIAM: Yes, I think so.

Dr Johnson: I don't know the exact answer. All I can say is that the current executive team, with the exception of two individuals, have been on the executive team anywhere between four and five years. One colleague, unfortunately, had to retire because of medical reasons. Another colleague left at the conclusion of a major program. All the other members of the executive team have been on the ET since 2020. I would have to take on notice prior to 2020. That is starting to exceed the limits of my memory.

Senator DUNIAM: When did you start with the bureau?

Dr Johnson: In 2016.

Senator DUNIAM: Do any of them pre-date you?

Dr Johnson: Any?

Senator DUNIAM: The senior executive team, do they pre-date you?

Dr Johnson: No. All the members of the executive team joined post 2016.

Senator DUNIAM: The most recent one would have joined when?

Dr Johnson: In 2021. I believe that is Ms Woodburn—when the Australian Climate Service was formed.

CHAIR: If you're going to change topics, I think we're going to—

Senator DUNIAM: No, I'm not changing topics.

CHAIR: There was a pause there. I thought that might be an opportunity to rotate.

Senator DAVEY: It was a pause for dramatic effect.

Senator DUNIAM: I'm happy if you do want to rotate the call.

CHAIR: Yes, that would be good. I know that we've got lots of other people coming, so I just want to make sure we keep going around until such time as we have others.

Senator DUNIAM: Sure. That's fine. I'm happy for you to do that.

CHAIR: We'll go to Senator Davey.

Senator DAVEY: Thank you very much. First of all, I want to explore your new role in water market reporting and water information.

Dr Johnson: Certainly. The folks who do our water related work sit within Dr Stone's line of responsibility, so he'll be happy to take your questions.

CHAIR: I am afraid we're going to have to suspend.

Proceedings suspended from 18:43 to 19:00

CHAIR: We will now resume with the Bureau of Meteorology.

Senator RENNICK: A bit of a rough summer on the old forecasting: one minute it is going to be dry and then it suddenly gets wet. Not good, is it?—not good at all. The last time I was in this room, we finished at 11 o'clock on a Thursday night, and the forecast was clear conditions in Brisbane. I woke up about six hours later, and my wife had texted me to say they had 100 millilitres in Brisbane overnight. It wasn't part of the forecast. Have you anything to say about the poor short-term weather forecasting, especially in Queensland, in regard to people on the Gold Coast over Christmas and in Cairns just prior to Christmas?

Dr Johnson: I appreciate the opportunity to get on the record a few facts. The performance of our folk was fantastic during those two events. All of those events impacted large numbers of the community. I want to put on the record the thoughts of my colleagues at the bureau in regard to the communities that have been impacted by those severe weather events. Many of those communities are still recovering. I would also like to place on the record how proud I am of our people, who did a superb job over the summer. Summer is still going; it finishes at the end of this month. To put on the record some facts: maybe we could start with Tropical Cyclone Jasper, which is the storm that impacted the wet tropics. We first warned the community eight days ahead of the crossing of the likelihood of a tropical cyclone, which is extraordinary advance warning. We first warned of heavy rains and flood six days in advance. We first warned of heavy to intense rain leading to life-threatening flash flooding four days in advance. It was an extraordinary effort from our people to provide the community with that level of advanced warning. The coastal crossing was very close to where we said it would be and at a strength we said it would be. The performance of our people in giving the community that level of advanced warning would not have been possible in years gone by. We forecast daily rainfall totals of 400 millimetres to 500 millimetres. That is what happened. We issued 26 cyclone warnings, 29 severe weather warnings, 14 flood watches, 121 flood warnings—

Senator RENNICK: Thank you.

Dr Johnson: I am answering your question.

Senator RENNICK: I know, but my time is short because the bell is going to ring.

Dr Johnson: Senator, you have cast aspersions on the quality of the bureau's forecast. This is an opportunity for the bureau to get on the record some facts.

Senator RENNICK: I appreciate that, but I am short of time.

Dr Johnson: We issued 30 social media posts on our website, 117 severe weather briefings to emergency management partners, and 75 verbal advices over the phone to emergency management partners. So there was an enormous amount of warning. With the storms on the Gold Coast and in Brisbane on 25 and 26 December we first warned of the likelihood of severe thunderstorms on 22 December, three days in advance: damaging winds, large hail, intense rainfall, life-threatening flash flooding. That is exactly what happened.

Senator RENNICK: Thank you. That is sufficient.

Dr Johnson: We issued severe thunderstorm warnings four hours in advance. For the severe thunderstorm that hit the Gold Coast we gave an hour and a half notice. The performance of our team—

Senator RENNICK: I will go to my next question now.

Dr Johnson: was extraordinary. The quality of the forecast was excellent.

Senator RENNICK: Dr Johnson, estimates are an opportunity for senators to ask questions. When I have the answer I need, I will let you know, and I will go on to the next question. You also forecast a very dry summer, which led to farmers selling cattle when they didn't need to; they had to sell those cattle at a loss. Now they have to go back and restock on the basis of your forecasts. I have seen those forecasts. You forecast below average rainfall for Queensland.

Dr Johnson: Senator, again, I would welcome—

Senator RENNICK: That is a comment. I want to get back to these questions.

Senator McAllister: Chair, when senators put a set of assertions on the record that go to the performance of the agency, it is reasonable to allow the officials to respond—

Senator RENNICK: I did, Minister.

Senator McAllister: You have now placed a second set of assertions about the agency on the record.

Senator RENNICK: It is not an assertion: it is a fact.

Senator McAllister: The official wishes to respond.

CHAIR: We are not going to have an argument about this. Senator Rennick, it is your right to put questions—

Senator RENNICK: Thank you, Chair.

CHAIR: and it is their right to answer. However, I ask that you try—

Senator RENNICK: I let him go for two or three minutes.

CHAIR: Just hear me out. I ask that you respect the fact that, if you have placed an assertion, an accusation, or anything upon the record, then officials have a right to respond.

Senator RENNICK: I did let him respond.

CHAIR: I ask you, Dr Johnson, to respond in a tight fashion because we are time-poor.

Dr Johnson: I will endeavour to do so. Thank you, Chair, for your indulgence. This is an important point because again, there has been widespread reporting about what the bureau allegedly said. I would like to put on the record what we did say. So let us be clear: on 24 August, in our three-month seasonal forecast, we said that there was a high likelihood of dry and warm conditions. That is exactly what happened. We had the driest spring in Australia on record, and the warmest winter and spring in Australia on record.

Senator RENNICK: You are saying that was the warmest summer?

Dr Johnson: It was the driest spring on record. We update our forecasts regularly. In our 19 October forecast—our three-month seasonal forecast, which is the transition from spring to summer—we forecast a switch from dry to neutral conditions, with an equal chance of dry or wet conditions and rain in eastern Australia. That is what happened.

Senator RENNICK: Okay; thank you.

Dr Johnson: Then, in our update on 23 November, our seasonal forecast, we forecast a moistening trend, with neutral to positive conditions in December and January, and that is what happened.

CHAIR: Dr Johnson, thank you.

Senator DAVEY: He has conveniently skipped a forecast—

CHAIR: Senator Davey!

Senator DAVEY: which I want to—

CHAIR: You can question that afterwards.

Senator RENNICK: He is chewing up the time; he knows I have limited time.

CHAIR: Can everyone stop, including you, Senator Rennick? We are not going to waste time arguing here. We have a short period of time. The senators have a right to ask questions. The witnesses have a right to answer. I ask that we are swift in terms of the answers, particularly if a senator has achieved what they need. Witnesses have a right to defend against any accusations made, but I ask us to try to keep this calm, effective, and efficient.

Senator RENNICK: Can I ask the next question?

Dr Johnson: To summarise, Chair—

CHAIR: If you can be swift, Dr Johnson.

Dr Johnson: I will be very quick.

CHAIR: We have all got where you are going.

Dr Johnson: Our forecasts were excellent. There are many reasons why producers choose to sell cattle. Coming off the back of a triple La Nina, the Eastern States Young Cattle Indicator dropped 60 per cent—

Senator RENNICK: This is not a tight answer.

Dr Johnson: before we declared an El Nino.

CHAIR: Dr Johnson, I ask you to put on notice any further information you have on this question.

Dr Johnson: Thank you; happy to do so.

CHAIR: Senator Rennick.

Senator RENNICK: Thank you, Chair. That leads me back to the independent peer review of 2011 commissioned under the former Gillard government. They said, in paragraph C7:

Before public release of—

the homogenised dataset—

the Bureau should determine and document the reasons why the new data-set shows a lower average temperature in the period prior to 1940 than is shown by data from whole network, and by previous international analysis ...

When you just said that was the warmest winter on record, was that quoting actual observations, or the homogenised data from either ACORN-1 or ACORN-2?

Dr Johnson: It would be both. I am just going on the observed record during this winter, which is the warmest winter on record—

Senator RENNICK: What have you got to say about the independent peer review that says you homogenised data records down prior to 1940?

Dr Johnson: I am not sure what your question is.

Senator RENNICK: My question is: have you answered the question of the independent peer review which wanted to know why you homogenised records? For example, you took the original recordings and then you changed them; you pushed them down to make it look like temperature records have increased.

Dr Stone: I am not sure that is a correct interpretation of the peer review.

Senator RENNICK: That is exactly the correct interpretation.

Dr Stone: The bureau has completed 30 of the 31 recommendations in that review. To directly address the point you have made about homogenisation, if the observation network never changed it would show a warming trend greater than that which we currently estimate.

Senator RENNICK: That is not true.

Dr Stone: No, that is true—

CHAIR: Senator Rennick, you have a range of documents there that the rest of us do not have. Would you care to table those, and to place on notice the questions related to the finite information that you obviously have flagged and highlighted there, so that we can get an accurate response?

Senator RENNICK: Because that was a misleading response. I table the document.

CHAIR: It may well not be the response you are after.

Senator RENNICK: It is their own document. I can read it. I can read mathematics.

CHAIR: Well done. I always have an issue with referring to documents that the rest of the room do not have in front of them.

Senator RENNICK: I will table it. The independent peer review found:

However, throughout the last 100 years, Bureau of Meteorology guidance has allowed for a tolerance of $\pm 0.5^{\circ}\text{C}$ for field checks of either in-glass or resistance thermometers. This is the primary reason the Panel did not rate the observing practices amongst international best practices.

Have you got the margin of error down plus or minus 0.2 degrees?

Dr Stone: Yes.

Senator RENNICK: As per this?

Dr Johnson: For automated weather stations, yes.

Senator RENNICK: Given that prior to 2011 you had a plus or minus half a degree margin of error; that is, one degree in total, do you accept that a large part of what you call the change in temperature of the earth is within the margin of error?

Dr Stone: The margin of error for the estimate of long-term temperature trend is 0.24. The tolerance that applied to temperature measurements was formerly 0.5.

Senator RENNICK: Exactly. Your tolerance on thermometer is greater than what you are claiming for the margin of error. That is nonsensical. You can't do that.

Dr Stone: You can, because the tolerance of 0.5 relates to point measurements at single points using a single piece of equipment. When those are put into the regression line used to estimate a long-term trend, that tolerance error disappears, and it is the deviation of the points from the regression line that comprises the error.

Senator RENNICK: That is because you are using the plus one; the variance is still a degree. Thank you.

CHAIR: We will now go to Senator Davey.

Senator DAVEY: I come back to the forecasting issue. Dr Johnson, you very conveniently quoted your 24 August forecast, your 19 October forecast, and your November-December forecast. You seem to conveniently skip over your 21 September forecast.

Dr Johnson: The forecasts are updated every week.

Senator DAVEY: The 21 September forecast predicted unusually low rainfall, at least twice as likely for parts of southern and northern-eastern Australia, with a chance of unusually low rainfall increasing to three times as likely for south-east and WA and parts of southern Victoria. You then went on to say, 'unusually low rainfall equates to the driest 20 per cent of October to December periods from 1981 to 2018.' It is that forecast which a lot of people are saying cemented their decisions on what stocking rates to go through over the summer months. Then we went onto a very wet October to December. As you say, by 19 October you were predicting a neutral forecast, by which stage a lot of farmers had put their stock on the market and changed their cropping rotations because September is when you need to do your summer cropping planning. I come back to the question Senator Rennick was asking: do you accept in any way that forecast might have led some farmers to make business decisions that—

Dr Johnson: I cannot speculate on what motivates individual farm businesses to make decisions. As you would know, coming from rural and regional Australia, each business has its own unique set of circumstances. I would be surprised—but again I would be speculating, and it is probably not wise to speculate—if a single forecast would impact a decision that a farm business would make. We update our seasonal forecasts regularly. Farmers know that—

Senator DAVEY: It wasn't single—

CHAIR: Senator Davey, I ask you also not to interrupt the witness when they are answering the question that you have just asked them.

Dr Johnson: We update our forecasts regularly. We all know that there is a degree of uncertainty in those forecasts. They are probabilistic. They provide the user with an estimate of the chance of exceeding a median value, whether it is rainfall, temperature—whatever. They are not deterministic. They do not say, 'It will be dry. It will be wet.' They provide the user with an estimate, a probability of it exceeding, or not, median rainfall. We update that information regularly because the conditions that drive those estimates are continuously changing. Again, I'd be very surprised if one forecast influenced the decision of one farm family or one farm business. As you also know, there are many other factors. It had been very dry during the winter, feed prices were high, stocking rates were high, cattle prices were falling—they had been falling since January 2022. There are a whole range of factors. To say it is all due to a bureau forecast is really—

Senator DAVEY: I didn't say that. I said that it could influence it. There is no doubt that it does, as does the media reporting. As shadow minister for emergency management, I was also relying on your predictions, your forecasts about a hotter, drier summer and extreme fire danger when I was talking to people and encouraging them to have their bushfire plans in place. I am just urging a little bit of awareness of the impact of forecasts on business decisions and planning decisions for government departments, for rural fire services and the like.

Dr Johnson: I am acutely aware. I live it and our people live it every day. Every decision we make, everything we do, we know has an impact on almost every Australian. We didn't say there wouldn't be fire. We said that there would be fire. Indeed, there has been fire this week. There was fire last week.

Senator DAVEY: Yes, there has been fire.

Dr Johnson: We said there would be a normal tropical cyclone season. That's what we've had. We said there would be a normal thunderstorm season. That's what we've had. We said there would still be a risk of riverine flooding. That's what we've had. We said it would be hotter, and it has been hotter. I don't know many people in this room, but certainly where I live and in large parts of Australia it has been hotter. Temperature records have been broken right across the country, particularly night-time temperatures. In large parts of the country, it has been wet. In large parts of the country, it has been dry. As I said, our projections around the seasonal conditions are probabilistic. They provide an estimate based on the probability. Individual businesses have to make their own business decisions, based on their own risk profile.

Senator DAVEY: But when there was continued media reporting of a hot, dry summer—and your forecasts had been adjusted by that stage—I didn't see the bureau coming out and saying, 'No, no; that's a bit of an exaggeration. We've adjusted our forecast.' There was no active correction. It was just: 'Check out our website.'

Dr Johnson: I think your comments on the media reporting are entirely accurate. I think the media latches onto these things. What I have observed this summer is a catastrophising, frankly, of a whole range of weather events. One could again speculate why that is. When we put out our forecasts and our updates, we distribute that through all of our media channels—social media and traditional media. We speak about it on the radio—all of these things. We can't be accountable for how the media chooses to report particular matters. I can assure you that we try our best to get those messages through. Certainly, one of the things that we will be reflecting deeply on at the end of this summer is: what else can we be doing to try to get these messages across? Clearly, some folks didn't hear it.

I think it is important, for the record, to say that those messages were issued. How they are received goes to Senator Rennick's question about the warnings and so on that we issued about the severe weather in Queensland and the Gold Coast. Those warnings are issued. A lot of folks have said to me, 'I didn't receive those warnings,' or 'I didn't receive a text message.' How those warnings are then ingested, taken on board by emergency management agencies, local government agencies and so on, is certainly something where there is very active discussion going on at the moment as to how we can have that pipeline improved so that the community is better informed.

Senator DAVEY: I will move on to the water market information. The bureau webpage on water market information states that you are developing a new water data hub, a digital platform. That website will allow farmers to access live water market updates for the first time, and it will have a new water markets data standard to enable transparency and enforceability. How is the construction of that website going? Is there any idea of when it will be live?

Dr Johnson: Dr Stone is responsible for that area of work, so I will ask him to respond.

Dr Stone: The work is progressing well. We expect that part of the website that you refer to to be live by July 2026.

Senator DAVEY: Which is when the new water market regulations are due to be enforceable?

Ms O'Connell: Perhaps I will take this. We stepped through in estimates the timing of the various reform elements for the water market. Certainly, the data hub reporting is to commence from 1 July 2026. That's the data reforms. The reporting in accordance with the new water markets data standards commences on 1 July 2026.

Senator DAVEY: Is the bureau working with the states to ensure that their existing water market registers are compatible and can speak to the new water market data hub?

Dr Stone: Yes.

Senator DAVEY: Are they being cooperative?

Dr Stone: Yes.

Senator DAVEY: Will they need to upgrade their systems? Is there going to be a cost to states to upgrade their systems to make them compatible, or are you building a hub that will be compatible with their existing systems?

Dr Stone: There could be some changes required at each end to make sure that things work smoothly.

Senator DAVEY: The ACCC road map, recommendation 10, outlines what the new water market data standards should be, including unique identifiers for all parties, single transaction identifiers, and that not only the water market price but the strike date of price agreements should be reported. Will all government agencies have to comply with these requirements and report through the water market data hub?

Dr Stone: The scope of the pre-trade data that we will be collecting initially is limited to that which comes from trading platforms with live matching services. If the government puts out a tender to buy water, that wouldn't be captured as pre-trade data. When the trade occurs, that would be captured as post-trade information, in the same way as all other entitlement trades, including the strike date.

CHAIR: We will now need to suspend for a division, I'm afraid.

Senator DAVEY: I had momentum.

Proceedings suspended from 19:22 to 19:27

CHAIR: We will reconvene with the Bureau of Meteorology. We will go to Senator Davey to wrap up her questions.

Senator DAVEY: I am fascinated. You just said the pre-trade data is limited to trade from live platforms. If the government holds a tender, it will not have to report on the water market data hub?

Dr Stone: No; it will. It will be captured as post-trade information.

Senator DAVEY: Post trade?

Dr Stone: Yes. As you will be aware, entitlement trades move much more slowly than the allocation market.

Senator DAVEY: Yes. Will there still be a requirement to report the strike date so that people can look at the price that is eventually paid but understand that the agreement was made six months prior and that's why it looks like a bargain today, but it was fair market value on the date that it was agreed?

Dr Stone: I can't address the question of bargains or whatever. Certainly, it will be captured as post-trade information, in the same way as all other entitlement trades, including strike date and price.

Senator DAVEY: You have talked about 'near real-time data'. I understand that entitlement and allocation are quite different, but when we are talking about entitlement, what does 'near real-time' look like?

Dr Stone: That's not going to be hastened by this process, in part because that information is managed by state governments. As I mentioned, it is a much slower moving variable than the allocation trade.

Senator DAVEY: We might come back to me.

CHAIR: Certainly.

Senator BARBARA POCKOCK: I have some questions about ROBUST and about some consulting projects. In your answers to questions that I put to you in October about the budget for ROBUST, you stated that you couldn't give a budget figure for the program, due to it being a decision of cabinet, in part motivated by national security concerns and in part by issues of commercial confidence. Senate resolution 11 is very clear on the question of commercial confidentiality. There is no broad public interest immunity that can be claimed. While I could perhaps understand a national security argument in relation to detailed information, I have great difficulty accepting that there is a threat to national security in disclosing the headline budget figure. We are routinely given these kinds of details in relation to, say, AUKUS or the F-35 Joint Strike Fighter program. Are you able to give a general headline figure, just a simple dollar amount, for the budget for ROBUST?

Dr Johnson: I wish I could tell you. It is a cabinet decision. The cabinet decision was that the moneys allocated are not for publication. I am not at liberty to disclose those to you. As you would be aware, it's a long-standing tradition around cabinet confidentiality that I am not in a position to compromise.

Senator BARBARA POCKOCK: That's very disappointing. The ANAO performance audit in 2019 provides some information on the budget for the first two tranches of ROBUST: \$41.2 million for tranche 1 and \$18.8 million for tranche 2, with expected additional spending of around \$20 million. Can you confirm the accuracy of those figures?

Dr Johnson: Senator, I am not commenting. You have asked me about the budget for ROBUST. I am not going to speak to it, I'm sorry.

Senator BARBARA POCKOCK: But, if the ANAO can be provided with these kinds of numbers, surely the Senate can.

Dr Johnson: I can't speak for what the ANAO do or don't do. All I know is that the decision was not for publication, and I am honouring that convention.

Senator BARBARA POCKOCK: Minister, it is vital that there's a level of accountability where public funds are being spent. This is one of the biggest IT projects undertaken in Australia, and neither the taxpaying public nor the parliament have any idea how much it is costing us. What's your view or response to that?

Senator McAllister: As the official has explained, it was indicated as 'not for publication' at the time of budget. I don't have anything further to add to that. It is routine that some matters are withheld from publication for reasons. If there is more information I can provide to you about the reasons for that decision I will, but I can't do that at this time.

Senator BARBARA POCOCK: I would be keen to hear them. In 2019 the Department of Finance conducted a gateway review on ROBUST. The ANAO performance audit in 2019 refers to progress reports for ROBUST, which were delivered to the bureau's governance committees. Do these documents contain information on the allocation of funds for ROBUST, the expenditure of those funds and performance time lines for contracts? I see you shaking your head.

Dr Johnson: I don't believe so, no. I haven't committed all of those documents to memory, but I don't believe so, no.

Senator BARBARA POCOCK: Can you provide the committee with those reports?

Dr Johnson: If I am able to, yes.

Senator BARBARA POCOCK: If you could take that on notice. I understand that the bureau has developed a ROBUST delivery framework, which sets out the processes and standards applied during the program. When was that framework developed and has it been updated?

Dr Johnson: I can't give you the exact date of that now. I am happy to take it on notice.

Senator BARBARA POCOCK: And on notice any updates to it. Could you provide the committee with a copy of the ROBUST delivery framework?

Dr Johnson: If I am able to. Again, I may need to take legal advice on it, for reasons we have discussed. I will do my best to help your inquiries wherever I can.

Senator BARBARA POCOCK: I look forward to your best efforts on that. In the Bureau of Meteorology's 2022-23 annual report, BOM said Australis II would be operating this financial year. In particular, it said that the national analysis system for enabling situational awareness and alerting was 'scheduled to be installed on the Australis II in early 2023-24'. When is the installation known as the 'midterm upgrade' switchover now scheduled?

Dr Johnson: It will definitely be delivered this calendar year. It's on schedule to be delivered this calendar year.

Senator BARBARA POCOCK: I thought it was scheduled for August 2024.

Dr Johnson: That's this calendar year.

Senator BARBARA POCOCK: You expect it to be done by August?

Dr Johnson: I am not going to give you a firm commitment now. These are very complex—extremely complex—technical matters. I am confident that it will be delivered this calendar year. I would be loathed to give you a month here.

Senator BARBARA POCOCK: What is the main reason for the delay in delivery of this capability to the BOM?

Dr Johnson: Australis II? There are a number of reasons why it is where it is. There are probably two principal factors. Firstly, it was a decision we took ourselves to delay its implementation because Australis I wasn't being fully utilised, so we didn't see it as appropriate to incur further expenditure whilst the existing circuit computer wasn't being fully utilised. That's a key reason we took ourselves. Secondly, we wanted to shift the schedule a little—because the Australis program is not part of the ROBUST program; it is a misconception with a lot of folks—because we wanted to align Australis II to the additional security arrangements we are putting in as part of the ROBUST program. So we felt there was—

Senator BARBARA POCOCK: That is not my question. My question is: Why was it delayed?

Dr Johnson: This is the answer. The decision the bureau's executive took was to shift the date back so we could get enhanced security benefits. Thirdly, because of COVID, there were quite significant delays in supplies of material and labour. There were some internal reasons within our control where we chose to move it back a little bit, which we think were prudent and which were in the national interest, and there were some reasons beyond our control due to the COVID pandemic.

Senator BARBARA POCOCK: Do the contracts with your suppliers—those external reasons in that basket—for the ROBUST program contain any penalty clauses related to the late delivery?

Dr Johnson: I can't answer that question here.

Senator BARBARA POCOCK: Could you take that on notice?

Dr Johnson: I'll do my best.

Senator BARBARA POCOCK: I am interested in whether there are penalty clauses in anything that is run late; and, if they exist, have they been acted on?

Dr Johnson: I can't answer that here now. If I am able to I will, Senator.

Senator BARBARA POCOCK: Can you take it on notice. Is it the case that the BOM contracted various consulting firms, including Deloitte and Accenture, to design and deliver different parts of the ROBUST project, and that those contracts have been extended and adjusted over time?

Dr Johnson: To deliver ROBUST we have required the support of the private sector, including the companies that you've mentioned. So, yes, we absolutely have had close involvement with a whole range of external providers to help deliver the program. As you said in your opening statement, it is a very large, complex program, and certainly the bureau doesn't have the internal capability to deliver on its own.

Senator BARBARA POCOCK: I understand that, but have those contracts been extended and adjusted?

Dr Johnson: There have been many different contracts. I am not sure exactly which ones you are referring to; some may have been, some may have not. There's a very large procurement and program management and vendor management effort required here. I am not across the detail of each individual one. I'd need some more information to answer your question.

Senator BARBARA POCOCK: I am very interested in it and I would like the information. I am very keen to know. I have collected evidence, as have many senators in the last 12 months, around extensions of contracts. There is a public interest in some of the profiteering that we have seen. I am keen to hear from you, on notice it seems, which contracts have been extended and what fee increases were involved in each contract extension.

Dr Johnson: I'll do my best to help you.

Senator BARBARA POCOCK: I wouldn't expect you to have it off the top of your head. I am very keen to hear it. What's the total value of the contracts with Deloitte and the total value with Accenture?

Dr Johnson: I can't answer that question here.

Senator BARBARA POCOCK: Could you take that on notice?

Dr Johnson: With respect to ROBUST, or in general?

Senator BARBARA POCOCK: With respect to ROBUST, that program—Deloitte and Accenture.

Dr Johnson: Again, I am not across that level of detail myself personally.

Senator BARBARA POCOCK: Will you provide it to me?

Dr Johnson: If you ask for anything on notice, we will do our best to answer the question.

Senator BARBARA POCOCK: I am asking you that. Thank you very much. I can't believe it, I'm on my last question. We are doing very well, Dr Johnson.

Dr Johnson: I am trying hard to be helpful, Senator.

Senator BARBARA POCOCK: I am looking forward to a thick tome. This is the impact on your forecasting capacity. How many ongoing forecaster positions are currently funded on the BOM budget?

Dr Johnson: How many meteorologists' positions?

Senator BARBARA POCOCK: Ongoing forecaster positions.

Dr Johnson: That are funded by bureau appropriation?

Senator BARBARA POCOCK: That are currently funded in your budget?

Dr Johnson: Again, I can't give you the exact answer. I know, roughly speaking, we have between 305 and 310 meteorologists in the organisation. They are all funded, of course. They are meteorologists. Obviously, we also have people who forecast floods and climatologists and so forth. All of those meteorologists are funded. Again, I can't give you exact numbers of how many are ongoing or not ongoing. I am looking at my colleague here. I would expect almost all of them would be ongoing. I would be very surprised if many were non-ongoing.

Senator BARBARA POCOCK: Can you tell me how that compares with the number of those positions you had in 2017?

Dr Johnson: Not now I can't. We can certainly provide you with the number. I think it is fair to say, to the best of my knowledge, and I will double-check, the bureau has more meteorologists now than we have ever had. Overall there is an increase in trend. Obviously there is movement year on year as things move around, but overall that's my understanding. I am happy to provide you with the accurate data.

Senator BARBARA POCOCK: I appreciate that. It was reported in the media last year that you were operating with 25 fewer forecasters than you required. Is that untrue?

Dr Johnson: I am not aware of what report you're talking about, Senator. A lot of things are said in the media about us that are untrue.

Senator BARBARA POCOCK: Of course there are, yes. Do you have any unfilled positions at the moment?

Dr Johnson: In the whole bureau?

Senator BARBARA POCOCK: No, in the forecaster area?

Dr Johnson: Again, I'm not sure. I am not across individual recruitment processes within that part of the organisation.

Senator BARBARA POCOCK: If you could advise how many are unfilled at the moment. Is the BOM currently using any forecasting systems that have AI components?

Dr Johnson: Not to my knowledge—not in terms of forecasting systems. We certainly use automation. Again, it depends on how you define AI. It's a very broad term. If you are asking about using things like ChatGPT, not forecasting, no.

Senator BARBARA POCOCK: No, not ChatGPT.

Dr Johnson: But if you are using things like machine learning and advanced statistical methodologies, which all fall within the bucket of artificial intelligence, yes, we are and have been for some time, as do all our peer organisations around the world.

Senator BARBARA POCOCK: Could you provide me with a description of the functions that you are using the AI systems for? That would be of interest. And are you using any AI systems on a trial basis?

Dr Johnson: For forecasting?

Senator BARBARA POCOCK: Yes.

Dr Johnson: I know that research is going on in terms of the use of machine learning. Again, I'd rather you asked the question specifically and I'll endeavour to give you a specific answer.

Senator BARBARA POCOCK: My specific question is: are you using any AI systems in relation to forecasting on a trial basis, or do you have any plans to do so?

Dr Johnson: I'll get you that. As to how AI is defined and how it is used, I would rather give you an accurate answer. We have been using machine learning and statistical methods for a long time. I want to get you the correct answer.

Senator BARBARA POCOCK: Thank you.

Senator DUNIAM: Following on from that, I want to get a bit of an understanding around staffing more broadly. In terms of forecasting, meteorologists are one component of the forecasting team; is that right? They feed into that? If you can explain it to me?

Dr Johnson: I am pleased you ask, because a lot of folks think that the forecasting business is all about the meteorologists. Obviously they play a very important role. There is a value chain that starts with the collection of the data. We have a lot of people involved in that, as well as 700 plus weather stations. We have an enormous footprint of observing equipment in the field, in the ocean and land. That data comes in. It is QAed. It is QCed. It goes into numerical weather prediction systems on our super computers. Again, many staff are involved in ensuring that the quality of those models that run the weather forecast and climate projections, and so on, are world standard. We have a whole bunch of technologists to run the equipment—enormous complexity. That process exits data. That data often gets additional processing in QA and QC, which is then used by those providing forecasts and warnings to issue products to the public. And often those products are delivered through multiple channels, which also involve a whole range of folks. If you think about it as an end-to-end process, it involves many hundreds of people, not just in the bureau but from around the world.

Senator DUNIAM: In terms of the bureau's role, and in terms of forecasting, what is the in whole or in part number of staff involved in the forecasting element?

Dr Johnson: Again, if you take that whole end-to-end process, there's many hundreds of people. I couldn't give you an exact number because, as I said, it involves almost everybody in the bureau, except for some of our corporate services functions. Just about everyone else in the bureau is aligned to deliver those forecasts and warnings to the community. It's a very complex technological, scientific and operational endeavour. Our meteorologists, who are wonderful and who are world standard and very important, are part of a much bigger value chain that delivers the products and services. Each one of those pieces along the chain is as important as the other. We can't issue the data without the computers. Everyone comes together to deliver those services.

Senator DUNIAM: Perhaps on notice, can you provide the overall number of staff at the bureau as at today.

Dr Johnson: There are 1,754 staff as of today.

Senator DUNIAM: You talked about that end to end. I know it is complex. But in whole or in part of those 1,754 how many have some involvement in the forecasting process?

Dr Johnson: As I said, the latest numbers I have are around 300-plus meteorologists, about 80 hydrologists who do the flood forecasts and warnings, and probably about 40, I suppose—I don't know the exact number—climatologists. Then if you think about the technology part of the business, that's our largest part of the bureau. There are more than 500 staff in the engine room, computing, the models, the observations, which make it all happen.

Senator DUNIAM: You would say over a thousand?

Dr Johnson: It would be close to 900. Again, I wouldn't want to speculate. It is a very large number of the organisation.

Senator DUNIAM: Take it on notice. As best you can; that would be very helpful. In terms of staff, as I understand it, back in December 2022, the bureau announced that there would be a change in terms of how the more than 700 radio crosses that were done by bureau meteorologists would be replaced by a community information team.

Dr Johnson: That's not correct.

Senator DUNIAM: Not correct—never happened?

Dr Johnson: Part of your question is accurate. We do hundreds and hundreds of crosses to the community every year. Peter is probably on top of the actual number. It is an enormous number. I should add, and it is not well understood, that we are not required to do it. There is nowhere in our act that says we have to do it.

Senator DUNIAM: We are grateful to you.

Dr Johnson: We don't get paid for it, but it is an important community service, and we value that, as a deep connection we have with the community. Those services are very popular with the community. One of the consequences of popularity is that people want more and more, so we have augmented that service. The service now involves qualified meteorologists—these are people with a formal WMO accredited qualification—augmented by other scientific staff who have appropriate scientific training, and who can also help to deliver the messaging into the community. They are mobilised into the emergency management space in order to help us cope with the workload and provide flexibility, particularly during times of really severe weather—severe and prolonged weather, as we seem to be experiencing more and more in this country, unfortunately. These are paraprofessionals; they're fully qualified. They are fully briefed. They are high-calibre people. They will have some basic instruction in meteorology, hydrology and climatology. They are there to augment and help to manage the workloads, having regard to that really exponential growth in demand for those pieces of information.

Senator DUNIAM: Does everyone who has been brought on to augment that team have some form of scientific qualification?

Dr Johnson: Absolutely. I am a case in point. I brief all sorts of folk, including some the most senior officials in this country. I am not a meteorologist. I am a trained scientist. I am brilliantly briefed by my people. Hopefully, I provide a coherent briefing to those at the other end. It's the same principle. They're not issuing forecasts and warnings; they are there as highly skilled communicators with a strong scientific base.

Senator DUNIAM: Everyone has a scientific tertiary qualification?

Dr Johnson: To the best of my knowledge, yes.

Senator DUNIAM: Could you confirm that for me on notice?

Dr Johnson: I can confirm that. That is to the best of my knowledge, unless I am otherwise advised here. I will take it on notice.

Senator DUNIAM: If you could confirm that all of those that were used to augment that service have appropriate scientific tertiary qualifications.

Dr Johnson: Just to confirm, there are still trained meteorologists as part of that team who are doing it as well. It is not an 'either-or'; it's an 'and'.

Senator DUNIAM: I understand. Going back to Senator Pocock's questions around ROBUST, in terms of the funding for that, was any funding taken from elsewhere within the bureau's budget to supplement costs related to ROBUST?

Dr Johnson: This is a complex question. The bureau received additional funding. I am having a senior's moment here about which year of the budget it was. We received funding from the previous government to sustain the benefits of the ROBUST program so that, regarding the fundamental reasons why we had to go to government in

the first place, we would minimise the risk of it happening again. We are using that funding, with the full support of government, to complete the program. It was money that was not assigned to bureau core operations; it was designed to sustain the benefits of the ROBUST program. That's how the program is continuing to conclusion.

Senator DUNIAM: To that end, no funding has gone from any other operation or function of the bureau into ROBUST.

Dr Johnson: I am not sure I would characterise it like that. The bureau gets funding. We've made a commitment to complete ROBUST, and we will do that. To do so will require us to draw upon the funding that was provided to sustain the benefits of ROBUST, and government has given us permission to do so.

Senator DUNIAM: If I understand you correctly, you are saying that funding was given to the bureau, in addition to what was originally allocated for ROBUST.

Dr Johnson: Correct. Money was given to the bureau for ROBUST and another quantum of money was given to the bureau to sustain the benefits of ROBUST going forward. Again, I am not at liberty to talk about or mention that because there are national security reasons at hand here.

Senator DUNIAM: I am not seeking that.

Dr Johnson: Government has agreed with us that it made sense to draw upon that funding that was designated to sustain the benefits of ROBUST to complete the program. It has taken about a year longer than anticipated to complete the program. That was a legitimate call on the sustainment funding. That is how the program is being completed and that is why we have not needed, in a sense, to go back to government to ask for more money to finish the program.

Senator DUNIAM: Which is always helpful. If I can understand it—sorry to labour this—bureau core funding—

Dr Johnson: Correct.

Senator DUNIAM: You had your original allocation for ROBUST; then this additional funding to sustain the benefits of ROBUST, as I think you characterised it.

Dr Johnson: It's a 10-year investment.

Senator DUNIAM: You haven't had to go back to core funding to be able to meet those—you haven't had to strip funding from anywhere else?

Dr Johnson: We have an overall budget, and we are using our budget to complete the ROBUST program. We have an agreed set of budget parameters that the Australian government has given us. We are not deviating from those agreed parameters. We are delivering within the parameters that the government has set for us with respect to the funding of the program.

Senator DUNIAM: We've had internal shifts of money that have gone—

Dr Johnson: There are always internal shifts of money going on in the organisation. I think you would expect that to be normal.

Senator DUNIAM: To complete ROBUST.

Dr Johnson: That sustainment funding had a whole number of things associated with it. Some of those things are not happening now—they will happen later—because money is being used from that sustainment fund to complete the program as originally scoped.

Senator BARBARA POCOCK: Arising from what Senator Duniam was asking, and from my earlier questions, are you happy with the quality of the work that is been done by Deloitte and Accenture, and any other large contractors that you have contracts with?

Dr Johnson: I am pleased you have asked that question because it has been a very challenging project; as you said, it is one of the largest IT programs in the Commonwealth. I would like to thank everybody who has been involved, including our external providers, who I think have done a remarkable job. If you compare it with other major programs of the same scale and scope, both in the Australian government and in the private sector, this program compares very well. I think they should all be congratulated. There are always ups and downs in the performance of individual contractors, as you would imagine, Senator. Overall, the performance of our providers has been excellent, and the performance of our in-house people has been excellent.

Senator BARBARA POCOCK: Have you had any disputes of significance with any suppliers?

Dr Johnson: Not that I am aware of. As I said, in a program of this scale, there are many, many contracts. I am not across the individual contract management processes. I am not aware of any disputes. Certainly, there have been times when we have had significant technical challenges, for example, where there's been rigorous and robust

discussion with our suppliers around the solution to those technical challenges. To the best of my knowledge, none of them have resulted in any form of commercial dispute. I would be happy to double-check. I am not aware of it.

Senator BARBARA POCOCK: Thank you; if you would. The reason I am asking is that we have had an inquiry into large consultants, and particular concerns have been raised by insiders and people who have recently left places like Deloitte, saying the staffing skills are sometimes not up to the task and they are spread very thinly on very large contracts. Big partners who win the contract are not always present doing the work. There are issues that I am hoping you can illuminate, if they are occurring.

Dr Johnson: You are absolutely doing a good job in asking those questions. They are important questions. My general comment on this is that, in general, we have been very happy with the quality of the people that we have received. Of course, there will be exceptions from time to time. We have over 570—574, I think, is the number; something of that order—folk from outside the organisation working on this program at the moment. Of course, from time to time there will be performance issues, just as there are inside organisations. A couple of times where we've had some challenges, I've been very pleased with the way that senior leadership in those external providers have leaned in to help solve the problem. The other thing I'd say—I have been involved in these sorts of things for a long time now—is that, often, one of the challenges you also see is very poor integration and collaboration across those providers. In my view—again, there are always individual exceptions—as a general comment, the collaboration across the various firms, big and small, that are working to support us on this has been good. It's probably the best I've seen. There are always individual cases where there are challenges, as you can imagine. Again, I will, as always, do my best to answer the specifics of your question.

Senator DUNIAM: Dr Johnson, I doubt whether you would be involved in every HR decision of the organisation.

Dr Johnson: I have staff who deal with it.

Senator DUNIAM: The suffering team! Have you had to actively terminate the employment of anyone at the BOM in your time, since June?

Dr Johnson: Have I had to take a decision to terminate anyone at the BOM? That's a good question. I don't believe so. I'd have to check. Nothing comes to mind.

Senator DUNIAM: Take it on notice.

Dr Johnson: I have seven direct reports. Everyone else reports to somebody else. Generally, if there was a decision to terminate, regrettably, an employee's employment, that would be done by the delegate, who is obviously not me. I don't believe that I have. I don't have any recollection of it.

Senator DUNIAM: Take it on notice and see whether you have; and, indeed, how many employment arrangements have been terminated by the bureau either by mutual agreement or in less happier circumstances. Just a number, that's all I'm after.

Dr Johnson: Yes, sure.

Senator DUNIAM: Can you tell me what the assessment of the culture for employees at the bureau is?

Dr Johnson: Again, I am glad that you asked this question because this is something where there have been all sorts of claims made in the media which are not well substantiated. We spend a lot of time measuring the culture of our people. We have our own culture surveys and assessment programs, and deep engagement with our people, which is wonderfully led by our organisational development team. The most publicly visible of those is obviously our census results. In the 2023 census, our staff engagement score, which is an aggregate measure of staff wellbeing and happiness, was 73 compared with the APS average of 71. The APS average for large operational agencies like ours is 71. So we are above the APS average. Obviously, I am not satisfied with just being above; I'd like it to be further. Eighty per cent of our staff said that the bureau supports an inclusive culture; 81 per cent of our staff said they are proud to work at the bureau; 91 per cent of staff said they felt free and able to suggest ideas and felt they were supported; 88 per cent of staff said they go the extra mile; and 89 per cent said their supervisor cares about their wellbeing. I am proud of the culture that we have. We have a wonderful group of people who are committed to keeping this country safe, secure and prosperous. Our HSC stats are good. Our turnover rates are low. Our claims around bullying and harassment are very low. After some of the issues that were raised in 2022, we had a Comcare inspection, just to test some things. They gave us a clean bill of health. I am happy to provide the Comcare recommendation on notice.

I am proud of the culture we have and the wonderful people we have. I can assure all Australians who are listening tonight—hopefully, not too many; they have better things to do—that we never rest on it. It's a job that's never done. We work hard on it. The senior leadership care a lot about our people. We'll keep working on it.

Senator DAVEY: What was the response rate for that staff satisfaction survey/

Dr Johnson: That's a good question.

Senator DAVEY: Eighty-eight per cent of 10 per cent is not much.

Dr Johnson: No; we absolutely had a statistically significant sample. That's not in question.

Senator DAVEY: On notice is fine.

Dr Johnson: As a scientist, I wouldn't be going down that pathway. We had an absolutely statistically significant sample.

Senator DUNIAM: I turn to the Australian weather calendar for 2024.

Dr Johnson: Is there something you would like to submit, Senator?

Senator DUNIAM: I am a terrible photographer.

Dr Johnson: I don't judge it. No conflicts of interest.

Senator DUNIAM: I just want to know how many were produced in total and the cost.

Dr Johnson: It is the 2023 calendar I think you are referring to. We are in 2024 now.

Senator DUNIAM: Correct.

Dr Johnson: The 2023 calendar for 2024, yes.

Senator DUNIAM: Is it done by financial year?

Dr Johnson: Sorry; I was confused about what you were asking. The one that is now hanging on your wall?

Senator DUNIAM: Indeed, I think it might be.

Dr Johnson: All members of parliament receive a copy.

Senator DAVEY: I think it is layers of Melbourne, today.

Dr Johnson: It's fog in Melbourne, actually.

Senator DUNIAM: How many were produced?

Dr Johnson: It was in the order of 80,000. We don't have the exact number. We'll take it on notice.

Senator DUNIAM: On notice: what the cost was and whether any were sold, or were they all given away for free?

Dr Johnson: No. A very large number were sold. Complementary copies were given to members of parliament—

Senator DUNIAM: Which we appreciate.

Dr Johnson: and other VIPs.

Senator DUNIAM: How many are unsold? On notice; that is fine.

Dr Johnson: Happy to do that.

CHAIR: Thank you very much. We appreciate your time this evening. We will now let you go.

Australian Institute of Marine Science

[20:01]

CHAIR: I would like to welcome you all. I acknowledge that this is Professor Selina Stead's first appearance before this committee in estimates. I congratulate you on your recent appointment as chief executive officer. Professor Stead, would you like to make an opening statement?

Prof. Stead: Yes, Chair, if I may. Thank you for this opportunity to make an opening statement. I would like to acknowledge the traditional owners of this meeting site and all AIMS sites, and pay our respects to them as the first scientists of these lands. We value their unique wisdom, scientific insights and collaboration. We recognise the deep and timeless connection between Aboriginal and Torres Strait Islander people, their land and sea country. We pay our respects to elders past and present and future leaders of tomorrow. I am thrilled to be here on day 19 as the new CEO of AIMS. I would like to start by thanking my colleague Basil Ahyick for his leadership and commitment as acting CEO of AIMS. As an introduction to my background and to highlight why I moved my family to Australia to join the AIMS team, I will address three questions, if I may: who I am, why am I here and why now.

Who am I? I am a marine biologist who seeks out like-minded scientists, which I have found at AIMS, who share my ambitions for improving the health of our oceans. I've had a dual career in both academia and government for over 30 years. Like AIMS, I'm committing to driving change at pace, through the delivery of robust scientific

solutions to support evidence based decision-making and science policy. I will lead the team at AIMS in prioritising the science we need to future-proof interventions for resilience and to mitigate and, if necessary, manage the effects of climate change and human impacts in tropical marine ecosystems.

My own research background ranges from advising governments on nature-positive solutions to enhance coral reef biodiversity, particularly following bleaching events, to increasing seafood productivity using the best available science, good governance, systems thinking and open innovation. I've worked on culture in many key species for ecological functioning, such as sea cucumbers, the ocean equivalents to earthworms, to support biodiversity conservation, seafood production, sustainable livelihoods and use of marine resources. My interdisciplinary background, combined with knowledge from my colleagues at AIMS, will help focus our efforts to support partners wanting to impact their environmental, social and governance commitments to achieving sustainable development.

Why am I here? Australia is the guardian of many of the world's most important marine ecosystems, including World Heritage listed coral reefs, the sentinels for ocean health in the face of climate change. AIMS has the people, the facilities, the locations and the wider support from strategic partners to co-create the science to reimagine and tackle future scenarios. I am impressed by the breadth of the expertise at AIMS across different geographical locations and with its range of facilities, such as the research vessels and the National Sea Simulator, the SeaSim, among others.

Having recently headed up the UK's top environmental research faculty, key for the empirical science needed so that models can predict future scenarios in climate change and inform decisions on how to deal with impacts, I know what a good research organisation looks like, and there is no place else I'd rather be than at AIMS.

Why now? I believe I'm in the best place in the world, with the best team, to deliver science that will not only benefit Australians and Australia's oceans but co-create solutions that can be shared globally. Having experienced severe Tropical Cyclone Kirrily on day five after arriving in Townsville, I was reminded of this urgency. We need to produce science to enable us to adapt, mitigate and tackle the effects of extreme events on oceans and on the people who depend on them for their livelihoods. Through the reputation of AIMS and the trust built with Indigenous partners, coastal communities, government and industry, we will build ocean resilience to climate change, biodiversity loss and future challenges.

I will give everything I have, and the best of my ability, to drive AIMS in using open innovation and systems thinking to deliver high-quality science to inform evidence based decision-making. AIMS will enhance the reputation of Australia's marine science and that of its strategic partners as the go-to for scientific advice for improving marine ecosystem health.

In these unprecedented times, with 2023 having been the hottest year on record and these trends continuing into 2024, and with severe heatwaves causing widespread coral bleaching in the last Northern Hemisphere summer, our world needs effective action to reduce greenhouse gas emissions. The tropical marine science delivered by AIMS is critical for responding to unavoidable climate change while simultaneously drawing down carbon from the atmosphere by enhancing blue carbon processes. Under my leadership, AIMS stands ready to deliver that science.

Finally, I would like to extend my thanks to our council chair, Beth Woods, AIMS and the government for appointing me to this once in a lifetime opportunity to help make a positive difference to the health of Australia's oceans. I look forward to working with all of you and to giving you assurance on AIMS's delivery of high-quality science to meet our future challenges. Thank you for this opportunity.

CHAIR: Thank you. We will go directly to Senator Duniam.

Senator DUNIAM: Professor, welcome. Thank you for that. I hope your family enjoy the Townsville weather, which I suspect is very different from whence you came. You mentioned in your opening statement facilities and locations. I wonder if you or one of your colleagues is able to tell me around what date the work is now scheduled to be completed on the project of refurbishing the headquarters in Townsville.

Mr Ahyick: The work on the facilities has gone out to tender. I think we had some questions on notice with regard to that. We are working on receiving those in time and getting that work underway. At the moment, we're meeting the time lines that we set out for the funding we received.

Senator DUNIAM: So it should be in accordance with what was originally set out.

Mr Ahyick: Yes.

Senator DUNIAM: There have been no changes to what was originally envisaged would be upgraded?

Mr Ahyick: No, Senator.

Senator DUNIAM: The scope is exactly the same?

Mr Ahyick: The scope is staying the same.

Senator DUNIAM: The tender process, as I understand it, was supposed to be completed by mid last year; is that right?

Mr Ahyick: Which specific tender process are you referring to?

Senator DUNIAM: The refurbishment of your headquarters in Townsville—Townsville head office.

Mr Ahyick: We've done the Sea Simulator. The refurbishment of the buildings is currently in process.

Senator DUNIAM: Out for tender.

Mr Ahyick: And going out.

Senator DUNIAM: Am I confused? Are there two separate projects?

Mr Ahyick: There are multiple projects going on. There are a lot of projects going on under the various aspects of the funding. While the funding was a package, there are multiple components to that package. They are all proceeding in line with the plan.

Senator DUNIAM: Can you step me through? There is the Sea Simulator, which is completed; is that right?

Mr Ahyick: The expansion is completed. The operation of that is starting over the next several months, in terms of bringing it into operational facility.

Senator DUNIAM: That is not delayed; that's on time.

Mr Ahyick: That's not delayed. Correct.

Senator DUNIAM: The headquarters, the office refurbishment, is on time. You're out to tender now.

Mr Ahyick: There are multiple components of that.

Senator DUNIAM: Nothing is delayed; nothing has changed.

Mr Ahyick: Correct.

Senator DUNIAM: Scoping and time are exactly the same. Are there any other elements beyond those two—one large with multiple elements and the Sea Simulator—

Mr Ahyick: We are currently designing the replacement of the RV *Cape Ferguson*. That design is also on track.

Senator DUNIAM: That is on track as well. That's a scoping project now, is it? In terms of design, that will then inform how much is required?

Mr Ahyick: Yes: how much we need and when we need that for.

Senator DUNIAM: That is not yet budgeted. That is something on which you will then go to the government on and say, 'We need X.'

Mr Ahyick: We will work with the government around that process.

Senator DUNIAM: Indeed; however you characterise it. Was there any outside support provided, like an infrastructure program management team or anything like that, for the projects we just talked about?

Mr Ahyick: We hire in a project manager who has worked with us over time on our infrastructure. That person came back in. There are construction contractors and a major building firm for the SeaSim. As we build each project, there will be different subcontractors used for that.

Senator DUNIAM: I presume there would be a degree of local know-how.

Mr Ahyick: Yes, significant local. That is part of our tender process.

Senator DUNIAM: Townsville based.

Mr Ahyick: Yes.

Senator DUNIAM: The answer to question on notice SQ23-001580 talked about delays having been experienced due to the limited availability of existing staff, I believe, and difficulties recruiting new project team staff. What delays have been experienced?

Mr Ahyick: The delays in going out to tender. In terms of us finishing projects and bringing them back into the time lines, we expect to complete. The process of going out to tender, ramping up what we needed to do and getting the labour on board for that is what we have experienced delays on.

Senator DUNIAM: So you are committing that they will all be delivered, best endeavours, on time, as per the budget?

Mr Ahyick: Yes. It is a multi-year program. We expect to bring those back on time.

Senator DUNIAM: In recruiting new project team staff, what difficulties have been experienced there?

Mr Ahyick: It's the labour market across the country, in terms of being able to bring in construction. You've seen the construction environment right now. We've had—

Senator DUNIAM: It is construction work?

Mr Ahyick: Construction work, yes.

Senator DUNIAM: Not expertise within AIMS; we're talking about contracting.

Mr Ahyick: Not scientific expertise, no.

Senator DUNIAM: What is the current full cost of this project over the forward estimates and each year? Are you able to remind me of that?

Mr Ahyick: There was multiple funding provided over the last couple of years by the government. The last package was \$163.4 million, announced at the last budget. That was to cover both ASL and labour. It was also to cover capital works, which was a multitude of things. It was the Townsville headquarters critical lab and office facilities; there was our power upgrades and resilience work that needed to be done; there was the replacement of the research vessel *Apollo*, a small vessel; and it included our technology development and deployment funding.

Senator DUNIAM: Professor, what's your big hope for AIMS over the next 12 months?

Prof. Stead: There are so many hopes.

Senator DUNIAM: Maybe top five then.

Prof. Stead: The science is extraordinary. If I may give a couple of examples. The ability of the sea simulator to be able to look at different future climate-change scenarios is really quite exceptional. The fact that we can look at changes in temperature, with light and with pH, means that we can really look at daily seasonal changes. I've never seen that capability before; it does not exist. That will allow us to give a level of detail that we've not been able to do before. We're also investing in our data innovation, particularly on the analytics. What attracted me to AIMS is the fact that we can collect empirical science from field work and from research vessels, where colleagues can dive and see the changes in the health of the corals, as well as the fish. Combining that with the SeaSim, where you can see individual corals and how their growth varies under different conditions, and then looking at the different types of technology about how we can upscale our surveys—so being able to take the different scale, the different methods—is really extraordinary. That will allow us to really extend our predictive modelling for the different future scenarios, which will then allow us to look at different management measures.

Senator DUNIAM: Thank you, Professor, and the AIMS team.

CHAIR: It is very nice to have you here, Professor. I wonder, just in wrapping up: what do you see as the biggest challenge in front of you at AIMS right now?

Prof. Stead: The biggest challenge is probably curbing my colleagues' passion and enthusiasm. They really are quite an extraordinary team of people. Right now it's really prioritising, looking at not only how we make the biggest impacts in terms of the health of the reef but also making sure that we've got local communities. We've done a lot of work with Indigenous partnerships. I'm really keen that we get that inclusive collaboration. Right now the biggest challenge is really being able to get the implementation of the science at the pace we would like. As I say, I can't emphasise enough that the extraordinary wealth of expertise and the passion and excitement of my colleagues is really very exciting for what we will do in the coming 12 months and beyond.

CHAIR: Thank you very much. With that, we will adjourn. Thank you for coming. Thanks to all the witnesses who have appeared, whether they spoke or they didn't. Thank you particularly to Hansard and Broadcasting for their tireless work to make all this happen. Thank you to the secretariat and my colleagues on the committee for this delightful estimates spillover. I remind senators that the committee has agreed that written questions on notice for any witness should be lodged with the secretariat by 5 March.

Committee adjourned at 20:18