PARLIAMENT OF THE COMMONWEALTH OF AUSTRALIA

Report 8/2021

Referrals made June 2021

Parliamentary Standing Committee on Public Works

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Members

Chair Mr Rick Wilson MP

Deputy Chair Mr Tony Zappia MP

Members Senator Alex Gallacher (*until 29 August 2021)*

Senator Hollie Hughes

The Hon Barnaby Joyce MP (*until 22 June 2021*)

Ms Julie Owens MP

Mr Tony Pasin MP

Senator Ben Small

Mr David Smith MP

## Committee Secretariat

Committee Secretary Pauline Cullen

Inquiry Secretary Klara Fay

Senior Researcher Caroline Spencer

Office Manager Tanya Pratt

List of Recommendations

[Recommendation 1](#s77727rec1)

2.30 The Committee recommends that the House of Representatives resolve, pursuant to Section 18(7) of the *Public Works Committee Act 1969*, that it is expedient to carry out the following proposed works: Expansion of the National Sea Simulator at the Australian Institute of Marine Science, Townsville, Queensland.

[Recommendation 2](#s77973rec2)

3.37 The Committee recommends that the House of Representatives resolve, pursuant to Section 18(7) of the *Public Works Committee Act 1969*, that it is expedient to carry out the following proposed works: Australian Nuclear Science and Technology Organisation Intermediate Level Solid Waste Storage Facility Lucas Heights, NSW.

1. Introduction

1.1 Under the *Public Works Committee Act 1969* (the Act), the Parliamentary Standing Committee on Public Works (the Committee) is required to inquire into and report on public works referred to it through either house of Parliament. Referrals are made pursuant to section 18 of the Act, and by practice are made by the Minister for Finance or their delegate in the House of Representatives or the Senate.

1.2 All public works that have an estimated cost exceeding $15 million[[1]](#footnote-0) must be referred to the Committee and cannot be commenced until the Committee has made its report to Parliament and the House of Representatives receives that report and resolves that it is expedient to carry out the work.[[2]](#footnote-1)

1.3 Under section 5 of the Act, a public work is a work proposed to be undertaken by the Commonwealth, or on behalf of the Commonwealth concerning:

the construction, alteration, repair, refurbishment or fitting-out of buildings and other structures;

the installation, alteration or repair of plant and equipment designed to be used in, or in relation to, the provision of services for buildings and other structures;

the undertaking, construction, alteration or repair of landscaping and earthworks (whether or not in relation to buildings and other structures);

the demolition, destruction, dismantling or removal of buildings, plant and equipment, earthworks, and other structures;

the clearing of land and the development of land for use as urban land or otherwise; and

any other matter declared by the regulations to be a work.

1.4 Section 17 of the Act requires that the Committee consider and report on:

the purpose of the work and its suitability for that purpose;

the need for, or the advisability of, carrying out the work;

whether the money to be expended on the work is being spent in the most cost effective manner;

the amount of revenue the work will generate for the Commonwealth, if that is its purpose; and

the present and prospective public value of the work.

1.5 The Committee pays attention to the above matters and any other relevant factors when considering the proposed work.

# Structure of the report

1.6 In considering the works, the Committee analysed the evidence presented by the proponent agencies, including submissions and evidence received at the public and in-camera hearings.

1.7 In consideration of the need to report expeditiously as required by section 17(1) of the Act, the Committee has only reported on significant issues of interest or concern.

1.8 Chapter 2 addresses the proposed Expansion of the National Sea Simulator at the Australian Institute of Marine Science in Townsville, Queensland. The estimated cost of this project is $27.49 million (excluding GST).

1.9 Chapter 3 addresses the proposed Australian Nuclear Science and Technology Organisation Intermediate Level Solid Waste Storage Facility Lucas Heights, NSW. The estimated cost of this project is $59.8 million (excluding GST).

1.10 Submissions for the projects are listed at Appendix A, and the hearings and witnesses are listed at Appendix B.

2. Expansion of the National Sea Simulator at the Australian Institute of Marine Science, Townsville, Queensland

2.1 The Australian Institute of Marine Science (AIMS) seeks approval from the Committee to proceed with the proposed project, Expansion of the National Sea Simulator at the Australian Institute of Marine Science facilities near Townsville, Queensland.

2.2 AIMS works to ‘provide the research and knowledge of Australia’s tropical marine estate required to support growth’ of Australia’s unique ecosystems.[[3]](#footnote-2)

2.3 AIMS operates the National Sea Simulator (the SeaSim), a ‘unique, world-class research aquarium facility for tropical marine research’.[[4]](#footnote-3) The SeaSim was established in 2014, in which time it has proven its scientific value through the large volume of experiments undertaken, the quantity of peer reviewed publications produced, and the direct impact this research has on providing meaningful advice to stakeholders.[[5]](#footnote-4)

2.4 The objective of the project is to respond to an urgent need for expanded SeaSim research capabilities.[[6]](#footnote-5) This will ‘directly support significant research under the Reef 2050 Long term Sustainability Plan and the Great Barrier Reef Restoration and Adaptation Program (RRAP)’.[[7]](#footnote-6)

2.5 The estimated project cost is $27.49 million (excluding GST).[[8]](#footnote-7)

2.6 The project was referred to the Committee on 17 June 2021.

# Conduct of the inquiry

2.7 Following referral, the inquiry was publicised on the Committee’s website and via media release.

2.8 The Committee received one submission, and one confidential submission. A list of submissions can be found at Appendix A.

2.9 On 27 August 2021, the Committee held a project briefing, in-camera and public hearings via teleconference. A transcript of the public hearing is available on the Committee’s website.

# Need for the works

2.10 As a one of a kind facility, AIMS provides the unique research capabilities required to support significant research under the Reef 2050 Long term Sustainability Plan and the Great Barrier Reef Restoration and Adaptation Program.[[9]](#footnote-8)

2.11 The SeaSim in its current form provides researchers with the capacity to conduct large scale, multi-generational studies in conditions which closely resemble conditions on the reef both now and in the future. This capability does not exist in any other facility in the world and is critical in supporting research into understanding if and how future generations of marine organisms are able to acclimatise and adapt to a changing environment.’[[10]](#footnote-9)

2.12 At the public hearing AIMS drew attention to the impact of SeaSim research:

Using science citation impact as an academic measure, we're rated as No. 1 in the world in the field of marine and freshwater biology. More importantly, our work underpins measurable economic, environmental and social benefits for the nation. A recent study by the Centre of International Economics estimated that AIMS science contributes more than $220 million per year in direct market benefits.[[11]](#footnote-10)

2.13 The ability of the SeaSim to meet these complex needs has seen it become a ‘world-leading facility attracting national and international marine science researchers from some of the world’s leading research institutes’.[[12]](#footnote-11)

2.14 AIMS explained that expanded facilities will double the SeaSim’s capability, allowing additional capacity to ‘solve challenges in Australia’s marine estate’.[[13]](#footnote-12) Further, this will allow the SeaSim ‘to meet demands of the Reef 2050 plan, which is the key management plan for protecting the Great Barrier Reef, the economic value that it delivers for Australia, its ecosystem and natural value and its World Heritage status’.[[14]](#footnote-13)

# Options considered

2.15 AIMS considered the following options when assessing the proposed expansion of SeaSim research capabilities:

Option 1 – Do nothing: current and expected demands for research would not be met, negatively impacting research programs and desired outcomes.[[15]](#footnote-14)

Option 2 – Develop facilities at AIMS: extend current experimental area at AIMS, leveraging existing facilities, location and expertise. This is the lowest cost and preferred option.[[16]](#footnote-15)

Option 3 – Utilise facilities in a new location: no other comparable research facilities exist in Australia (none are known internationally).[[17]](#footnote-16)

Option 4 – Develop facilities at another location: this option is expensive, and there are no existing facilities in tropical Australia with access to high quality seawater.[[18]](#footnote-17)

2.16 AIMS considered Option 2, develop new facilities at the current AIMS location, to be the only viable option.[[19]](#footnote-18) AIMS made the point that:

No other sites exist that have the combination of access to high-quality seawater volumes along with access to the existing SeaSim team together with the co-location benefits of access to microbiology, genetics, and other high technology laboratories. Further, developing the facility at AIMS is the lowest cost, whole-of-life option given it leverages the existing sea water capabilities, as well as providing the co-location benefits arising from the existing operational expertise.[[20]](#footnote-19)

2.17 Option 2 leverages existing facilities available at the Cape Cleveland Site, 50 kilometres south-east of Townsville, and adjacent to the Great Barrier Reef.[[21]](#footnote-20) This option expands on capabilities, rather than the development of a greenfield site.[[22]](#footnote-21)

# Scope of the works

2.18 The proposed works seek to expand the SeaSim capabilities at the existing AIMS site near Townsville, Queensland. Scope includes expanding outdoor and indoor experimental areas, additional controlled environment rooms, expanded science support spaces, expanded seawater processing systems, and services infrastructure upgrades. Works are outlined in further detail below.

2.19 SeaSim -Experimental Space and Science Support Space Expansions:

expansion of open-plan outdoor experimental areas by more than 200 per cent and open-plan indoor experimental areas by approximately 40 per cent;

up to 8 additional controlled environment rooms; and

expansion of science support spaces (such as offices, workshops and plant rooms) by 660 square metres.[[23]](#footnote-22)

2.20 SeaSim -Expanded Seawater Processing Systems:

expansion of the seawater processing shed and construction of a reverse osmosis shed; and

expansion of current seawater processing and plant systems based off current systems.[[24]](#footnote-23)

2.21 AIMS Site Services Infrastructure Upgrades:

completion of the High Voltage Ring Main;

installation of an additional cooling tower; and

installation of generators synchronized to mains power supply.[[25]](#footnote-24)

# Consultation

2.22 In developing its plan for the works AIMS engaged with a broad range of stakeholders, research partners and collaborating institutions including; the Department of Industry, Science, Energy and Resources, Department of Education, Office of the Chief Scientist, numerous universities, and a number of research organisations around Australia.[[26]](#footnote-25)

# Cost of the works

2.23 The project cost estimate for the proposed works is $27.49 million (excluding GST).[[27]](#footnote-26) This cost estimate includes ‘construction costs, professional fees, furniture, fittings and equipment, IT infrastructure and equipment, contingencies, and an escalation allowance’.[[28]](#footnote-27)

2.24 The National Collaborative Research Infrastructure Strategy SeaSim Expansion grant covers $24.66 million of the project, and $2.83 million of internal capital funds covers the balance of costs.[[29]](#footnote-28)

# Revenue

2.25 There is no expected revenue from the project.[[30]](#footnote-29)

# Committee comment

2.26 The Committee acknowledged the unique nature of the facility and thanks AIMS for their comprehensive submission, and detailed presentation which was provided to the Committee in lieu of an in-person site inspection.

2.27 The Committee was pleased to learn that AIMS has sought feedback from, and engaged with a variety of stakeholders to ensure the facility supports a broad range of research requirements.

2.28 The Committee did not identify any issues of concern with the proposal and is satisfied that the project has merit in terms of need, scope and cost.

2.29 Having regard to its role and responsibilities contained in the *Public Works Committee Act 1969*, the Committee is of the view that this project signifies value for money for the Commonwealth and constitutes a project which is fit for purpose, having regard to the established need.

Recommendation 1

2.30 The Committee recommends that the House of Representatives resolve, pursuant to Section 18(7) of the ***Public Works Committee Act 1969*, that it is expedient to carry out the following proposed works: Expansion of the National Sea Simulator at the Australian Institute of Marine Science, Townsville, Queensland.**

3. Australian Nuclear Science and Technology Organisation Intermediate Level Solid Waste Storage Facility Lucas Heights, NSW

3.1 The Australian Nuclear Science Technology Organisation (ANSTO) seeks approval from the Committee to proceed with the proposed project, Intermedia Level Solid Waste Storage Facility at Lucas Heights, New South Wales.

3.2 ANSTO scientists, researchers and collaborators use nuclear technology to ‘investigate public health issues, the environment, and the nuclear fuel cycle to identify solutions to some of the biggest questions in science for the benefit of all Australia’.[[31]](#footnote-30)

3.3 In addition, ANSTO has been responsible for the maintenance of Australia's sovereign nuclear medicine production capability since the 1970s, manufacturing ‘a range of radiopharmaceutical products, which are used in the diagnosis and the treatment of disease, including a range of cancers, as well as in medical research and clinical trials’.[[32]](#footnote-31) A by-product of nuclear medicine production and radioactive waste, ANSTO is responsible for approximately 40 per cent of Australia’s low level waste and most of Australia’s intermediate level waste. [[33]](#footnote-32)

3.4 ANSTO’s current property portfolio is comprised of its two main campuses. Lucas Heights in Sydney, and Clayton, on the outskirts of Melbourne.[[34]](#footnote-33)

3.5 The objective of the project is to construct a purpose-built intermediate level waste storage facility at ANSTO’s Lucas Heights which will expand ANSTO’s intermediate level waste storage capacity by at least 10 years to 2037.[[35]](#footnote-34)

3.6 The proposed interim facility will largely replicate the design and functionality of the current waste storage facility at Lucas Heights and will be located near the existing facility ‘to allow for operational efficiencies.’[[36]](#footnote-35) It will accommodate wast on an interim basis (between 40 to 50 years), before the waste is required to be transferred to a longer term facility.[[37]](#footnote-36)

3.7 The estimated project cost is $59.8 million (excluding GST).[[38]](#footnote-37)

3.8 The project was referred to the Committee on 23 June 2021.

# Conduct of the inquiry

3.9 Following referral, the inquiry was publicised on the Committee’s website and via media release.

3.10 The Committee received twenty submissions, four supplementary submissions, 326 emails which the committee characterised as being 'campaign'[[39]](#footnote-38) and one confidential submission. A list of submissions can be found at Appendix A.

3.11 On 13 September 2021, the Committee held a project briefing, in-camera and public hearings via teleconference. A transcript of the public hearing is available on the Committee’s website.

# Need for the works

3.12 In making radiopharmaceutical products, ANSTO generates radioactive waste, which it is responsible for safely storing and managing prior to disposal.[[40]](#footnote-39)

3.13 ANSTO’s existing intermediate level solid radioactive waste storage facility at Lucas Heights is forecast to reach capacity from 2027 for certain waste streams.

3.14 While a National Radioactive Waste Management Facility (NRWMF) has been proposed as a long term storage solution, this facility is unlikely to commence receiving waste until after 2030. Furthermore, should ANSTO not have the ability to store further intermediate level solid radioactive waste prior to the completion of the NRWMF, it would be forced to cease nuclear medicine production, leading to major disruptions for the Australia’s healthcare system.[[41]](#footnote-40)

# Options considered

3.15 ANSTO considered five key options when assessing the proposed interim storage solution:

Option 1 –Waste conditioning: carried too high a technical risk, due to a site needing to be acquired and the necessary licensing and approvals processes needing to be undertaken.[[42]](#footnote-41)

Option 2 - Interim Storage Only Facility: selected as the preferred option as it achieves a direct continuation of exiting operations, presents a low risk of design delays, and is achievable in a shorter period of time than the other options considered. [[43]](#footnote-42)

Option 3 - Above-Ground Storage in Shielded Casks: at an estimated cost of $162 million, this option was discounted as it was deemed cost prohibitive and poor value for money.[[44]](#footnote-43)

Option 4 - Extension of Capacity of the Existing Storage Facility: while estimated at $16 million, this option was discounted as it would have required relocation of the ANSTO fence line into the surrounding buffer zone (with significant practical and regulatory implications), leading to unnecessary site expansion and a high environmental impact.[[45]](#footnote-44)

Option 5 – Do Nothing: discounted as it was not considered feasible due to ANSTO’s licence conditions, community and worker safety, and consequential risk to nuclear medicine production.[[46]](#footnote-45)

3.16 ANSTO considered Option 2, development of an interim storage only facility at the current Lucas Heights campus, to be the best option with the highest benefit for the capital outlay, achieving the ‘required minimum 10 years of storage for close to a third of the price of the next option considered.’[[47]](#footnote-46)

3.17 In addition, ANSTO stated that Option 2:

…unlike others, requires no additional staffing for waste operations or maintenance within ANSTO as it presents a direct continuation of existing operations – i.e., it is a ‘business as usual’ solution.[[48]](#footnote-47)

3.18 At the public hearing the Committee asked ANSTO if the Lucas Heights campus had the required space to build an additional interim storage facility if required in the future. ANSTO stated that if required, there was capacity on site to accommodate additional storage space.[[49]](#footnote-48)

# Scope of the works

3.19 The proposed works seek to store two intermediate level solid waste streams within the facility. The first waste stream being filter cups, which are used to remove solids from the radiopharmaceutical production process, and a second waste stream comprised of aluminium bins filled with wastes, such as glass vials and one-use pharmaceutical tubing.[[50]](#footnote-49)

3.20 To support the storage of the above mentioned waste streams the facility will require the following elements:

Secure below-ground concrete vault with radiation shielding and environmental monitoring

Engineered structures for retrievable below-ground storage locations for the ILSW filter cup storage vessels and aluminium bins

Secure above-ground superstructure including:

electric overhead travelling crane

active ventilation

information and operational technology connected to ANSTO’s secure network

Drive-through truck bay [[51]](#footnote-50)

3.21 The above elements are proposed to be housed in a Class 7b storage facility approximately 15 metres wide by 50 metres long and 10 metres tall. The structure will be comprised of a steel portal frame with pre-cast concrete walls.[[52]](#footnote-51)

# Consultation

3.22 In developing its plan for the works ANSTO engaged with a broad range of stakeholders, local representatives and community interest groups.[[53]](#footnote-52)

3.23 In addition, ANSTO state that the plans for the proposed facility have been developed though process of extensive internal stakeholder consultation with many ANSTO representatives having reviewed plans and arrangements prior to development of the current proposal.[[54]](#footnote-53)

# Public comment

3.24 The proposal for the Intermediate Level Solid Waste Storage Facility at Lucas Heights has raised little objection from the public, with many submissions supporting the ongoing used of Lucas Heights to store radioactive waste. However, the current proposal has opened up a wider debate about the future of storing nuclear waste in Australia.

3.25 A majority of the submissions, including the campaign emails, made to this inquiry pertain to the separate proposal to site and construct the proposed National Radioactive Waste Management Facility (NRWMF) project currently being managed by the Australian Radioactive Waste Agency.

3.26 While a number of submissions to the inquiry suggest that ANSTO should be looking to permanently store radioactive waste at Lucas Heights, rather than the proposed temporary solution, ANSTO told the Committee that:

…international best practice also looks at having a waste agency responsible for the ongoing management of disposal facilities as being separate to the producers of that waste. As we all know, ANSTO is one of the producers. The other aspect of storage of nuclear waste is having a strong social licence to host this waste repository, and ANSTO does not have that mandate. It has been made very clear to us by the shire council that they do not see us as a suitable site for permanent storage of waste.[[55]](#footnote-54)

3.27 Although the Committee is aware of the NRWMF process and the current public debate around its location, and has considered the emails and submissions which contribute to this debate, this inquiry considers the referral from the House of Representatives, to consider an Intermediate Level Solid Waste Storage Facility at Lucas Heights.

# Cost of the works

3.28 The project cost estimate for the proposed works is $59.8 million (excluding GST).[[56]](#footnote-55) This cost estimate includes the construction costs for the facility as well as regulatory, commissioning, and contingency costs.[[57]](#footnote-56)

3.29 The facility has been fully funded by the Australian Government in the 2020-21 and 2021-22 Budgets.[[58]](#footnote-57)

# Revenue

3.30 ANSTO state that:

The project will not directly deliver any revenue-generating assets or generate revenue because of its implementation. However, the works are required to sustain revenue-generating operations within ANSTO, such as the production and sale of radiopharmaceutical products.[[59]](#footnote-58)

# Committee comment

3.31 Due to COVID-19 restrictions the Committee were unable to undertake an in-person inspection of the proposed site, however the Committee would like to thank ANSTO for their comprehensive submission, detailed presentation and video which was provided to the Committee in lieu of an in-person site inspection.

3.32 The Committee acknowledges that the proposal is an interim solution and that the stored waste would need to be moved to a longer term solution after 40 to 50 years of storage.

3.33 Furthermore, the Committee notes that the current proposal will extend the storage capacity at Lucas Heights for approximately 10 years, and additional storage solutions would need to be sought if a National Radioactive Waste Management Facility has not been opened within that time.

3.34 The Committee would like to extend its thanks to all that took the time to make a submission to the inquiry and notes the concerns raised regarding the separate proposal for the National Radioactive Waste Management Facility (NRWMF). The Committee encourages members of the public to make a future submission to the NRWMF inquiry once the proposal has been referred to the Committee for consideration.

3.35 The Committee did not identify any issues of concern with the proposal and is satisfied that the project has merit in terms of need, scope and cost.

3.36 Having regard to its role and responsibilities contained in the *Public Works Committee Act 1969*, the Committee is of the view that this project signifies value for money for the Commonwealth and constitutes a project which is fit for purpose, having regard to the established need.

Recommendation 2

3.37 The Committee recommends that the House of Representatives resolve, pursuant to Section 18(7) of the ***Public Works Committee Act 1969*, that it is expedient to carry out the following proposed works: Australian Nuclear Science and Technology Organisation Intermediate Level Solid Waste Storage Facility Lucas Heights, NSW.**

Mr Rick Wilson MP **Chair**

A. List of submissions

# Expansion of the National Sea Simulator at the Australian Institute of Marine Science, Townsville, Queensland

1 Australian Institute of Marine Science

1.1 Confidential

# Australian Nuclear Science and Technology Organisation Intermediate Level Solid Waste Storage Facility Lucas Heights, NSW

1 Australian Nuclear Science and Technology Organisation

1.1 Confidential

2 Mr Leon Ashton

3 Mr David Noonan

4 Mr Barry Wakelin

4.1 Mr Barry Wakelin

5 Flinders Local Action Group

5.1 Flinders Local Action Group

6 Josephite SA Reconciliation Circle

7 No Radioactive Waste on Agricultural Land in Kimba or SA

8 The Hon. Mr George Gear

8.1 The Hon. Mr George Gear

9 Medical Association for Prevention of War

10 Australian Conservation Foundation

11 Caring for South Australia

12 Mr Dean Whittaker

13 Conservation Council of SA

14 Friends of the Earth Australia

15 Caroline Duggan

16 Andrew Alcock

17 Cathy Gill

18 Guy Sullivan

19 Christine Wakelin

19.1 Christine Wakelin

20 Noel Wauchope

The Committee also received 326 campaign emails.

B. List of public hearings

# Expansion of the National Sea Simulator at the Australian Institute of Marine Science, Townsville, Queensland

*Friday, 27 August 2021 – via teleconference*

Australian Institute of Marine Science

Dr John Chappell, Chief Operating Officer

Mr Craig Humphrey, Sea Simulator Manager

Mr David Crute, Project Manager

Mr Patrick Bunday, Operations Planner

Australian Nuclear Science and Technology Organisation Intermediate Level Solid Waste Storage Facility Lucas Heights, NSW

*Monday, 13 September 2021 – via teleconference*

Private Capacity

Mr David Noonan

Medical Association for Prevention of War

Dr Margaret Beavis, Vice President

Australian Conservation Foundation

Mr Dave Sweeny

Friends of the Earth Australia

Dr Jim Green, National nuclear campaigner

The Conservation Council of South Australia

Mr Craig Wilkins

Private Capacity

Mr Barry Wakelin

Australian Nuclear Science and Technology Organisation

Mr Con Lyras, Chief Engineer

Mrs Pamela Naidoo-Ameglio, Group Executive, Nuclear Operations and Nuclear Medicine

Ms Catherine Kelleher, Acting Senior Manager, Government and International Affairs

Ms Paula Berghofer, General Manager, Waste Management Services

1. The threshold amount for a public work for Defence purposes is $75 million as per *Public Works Committee Regulation 2016,* Part II, Section 7(a). [↑](#footnote-ref-0)
2. The Act, Part III, Section 18(8). Exemptions from this requirement are provided for work of an urgent nature, defence work contrary to the public interest, repetitive work and work by prescribed authorities listed in the Regulations. [↑](#footnote-ref-1)
3. Dr John Chappell, Chief Operating Officer, Australian Institute of Marine Science (AIMS) *Committee Hansard*, 27 August 2021, p. 1. [↑](#footnote-ref-2)
4. Australian Institute of Marine Science (AIMS), *Submission 1*, p. 5. [↑](#footnote-ref-3)
5. AIMS, *Submission 1*, p. 6. [↑](#footnote-ref-4)
6. AIMS, *Submission* *1*, p. 8. [↑](#footnote-ref-5)
7. AIMS, *Submission 1*, p. 5. [↑](#footnote-ref-6)
8. AIMS, *Submission 1,* p. 27. [↑](#footnote-ref-7)
9. AIMS, *Submission 1*, p. 5. [↑](#footnote-ref-8)
10. AIMS, *Submission 1*, p. 7. [↑](#footnote-ref-9)
11. Dr John Chappell, Chief Operating Officer, AIMS, *Committee Hansard*, 27 August 2021, p. 1. [↑](#footnote-ref-10)
12. AIMS, *Submission 1*, p. 7. [↑](#footnote-ref-11)
13. Dr John Chappell, Chief Operating Officer, AIMS, *Committee Hansard*, 27 August 2021, p. 2. [↑](#footnote-ref-12)
14. Dr John Chappell, Chief Operating Officer, AIMS, *Committee Hansard*, 27 August 2021, p. 1. [↑](#footnote-ref-13)
15. AIMS, *Submission 1*, p. 10. [↑](#footnote-ref-14)
16. AIMS, *Submission 1*, p. 10. [↑](#footnote-ref-15)
17. AIMS, *Submission 1*, p. 10. [↑](#footnote-ref-16)
18. AIMS, *Submission 1*, p. 11. [↑](#footnote-ref-17)
19. AIMS, *Submission 1*, p. 11. [↑](#footnote-ref-18)
20. AIMS, *Submission 1*, p. 11. [↑](#footnote-ref-19)
21. AIMS, *Submission 1*, p. 15. [↑](#footnote-ref-20)
22. AIMS, *Submission 1*, p. 11. [↑](#footnote-ref-21)
23. AIMS, *Submission 1*, pp. 15-17. [↑](#footnote-ref-22)
24. AIMS, *Submission 1*, p. 18. [↑](#footnote-ref-23)
25. AIMS, *Submission 1*, p. 19. [↑](#footnote-ref-24)
26. Dr John Chappell, Chief Operating Officer, AIMS, *Committee Hansard*, 27 August 2021, p. 1. [↑](#footnote-ref-25)
27. AIMS, *Submission 1*, p. 27. [↑](#footnote-ref-26)
28. AIMS, *Submission 1*, p. 27. [↑](#footnote-ref-27)
29. AIMS, *Submission 1*, p. 27. [↑](#footnote-ref-28)
30. AIMS, *Submission 1*, p. 14. [↑](#footnote-ref-29)
31. Australian Nuclear Science Technology Agency (ANSTO), *Submission 1*, p. 2. [↑](#footnote-ref-30)
32. Mr Con Lyras, Chief Engineer, ANSTO, *Committee Hansard*, 13 September 2021, p. 21. [↑](#footnote-ref-31)
33. ANSTO, *Submission 1*, p. 3. [↑](#footnote-ref-32)
34. ANSTO, *Submission 1*, p. 2. [↑](#footnote-ref-33)
35. Mr Con Lyras, Chief Engineer, ANSTO, *Committee Hansard*, 13 September 2021, p. 21. [↑](#footnote-ref-34)
36. ANSTO, *Submission 1*, p. 3. [↑](#footnote-ref-35)
37. Mr Con Lyras, Chief Engineer, ANSTO, *Committee Hansard*, 13 September 2021, p. 21. [↑](#footnote-ref-36)
38. ANSTO, *Submission 1*, p. 15. [↑](#footnote-ref-37)
39. many of these campaign emails relate to the location of a National Radioactive Waste Management Facility (NRWMF) which were outside the terms of reference of the inquiry [↑](#footnote-ref-38)
40. ANSTO, *Submission 1*, p. 3. [↑](#footnote-ref-39)
41. ANSTO, *Submission 1*, p. 2. [↑](#footnote-ref-40)
42. ANSTO, *Submission 1*, p. 5. [↑](#footnote-ref-41)
43. ANSTO, *Submission 1*, pp. 4-5. [↑](#footnote-ref-42)
44. ANSTO, *Submission 1*, p. 5. [↑](#footnote-ref-43)
45. ANSTO, *Submission 1*, p. 5. [↑](#footnote-ref-44)
46. ANSTO, *Submission 1*, p. 5. [↑](#footnote-ref-45)
47. ANSTO, *Submission 1*, pp. 4-5. [↑](#footnote-ref-46)
48. ANSTO, *Submission 1*, p. 5. [↑](#footnote-ref-47)
49. Mr Con Lyras, Chief Engineer, ANSTO, *Committee Hansard*, 13 September 2021, p. 21. [↑](#footnote-ref-48)
50. ANSTO, *Submission 1*, p. 6. [↑](#footnote-ref-49)
51. ANSTO, *Submission 1*, p. 6. [↑](#footnote-ref-50)
52. ANSTO, *Submission 1*, p. 7. [↑](#footnote-ref-51)
53. ANSTO, *Submission 1*, p. 16. [↑](#footnote-ref-52)
54. ANSTO, *Submission 1*, p. 16. [↑](#footnote-ref-53)
55. Mrs Pamela Naidoo-Ameglio, Group Executive, Nuclear Operations and Nuclear Medicine, ANSTO, *Committee Hansard*, 13 September 2021, p. 26. [↑](#footnote-ref-54)
56. ANSTO, *Submission 1*, p. 15. [↑](#footnote-ref-55)
57. ANSTO, *Submission 1*, p. 15. [↑](#footnote-ref-56)
58. ANSTO, *Submission 1*, p. 2. [↑](#footnote-ref-57)
59. ANSTO, *Submission 1*, p. 4. [↑](#footnote-ref-58)