DEPARTMENT OF INDUSTRY, SCIENCE AND RESOURCES

MS23-001401

To: Minister for Resources (For Information)

RESTRICTIONS RELATING TO TRANSPORTATION OF RADIOACTIVE WASTE ACROSS STATE AND TERRITORY LINES

Recommendation: 1. That you note the Commonwealth, State and Territory legislation relating to the transport of radioactive waste across State and Territory lines. **Noted / Please Discuss** **Minister:** Date: **Comments:**			
Clearing Officer:	Jodie Lindsay	Chief Operating Officer, Australian Radioactive Waste Agency	Ph: s 22 Mob: s 22
Contact Officer:	s 22	Manager, Radioactive Waste Policy	Ph: s 22 Mob: s 22
For Parliamentary Services' use only. Date Submitted to the Minister's office in PDMS:			23/08/2023

Key Points:

1. You have requested information about the legal frameworks that affect the transport of radioactive waste across State and Territory borders in Australia.
2. s 47C
3. s 47C

Relevant laws

4. Commonwealth regulatory Acts that impose obligations on the Commonwealth to obtain licences, permits and approvals to transport radioactive waste include:

    a. *Australian Radiation Protection and Nuclear Safety Act 1998* – requires a licence approval to be given to a facility operator which would cover the transport of waste to that facility.

    b. *Nuclear Non-Proliferation (Safeguards) Act 1987* – requires a permit to be obtained for transport of nuclear material.

    c. *Environment Protection and Biodiversity Conservation Act 1999* – requires approval under the Act to transport radioactive waste.

5. All States and Territories other than the ACT and Tasmania have enacted 'Prohibition Acts' that would have the effect of prohibiting various nuclear actions, including differing effects on the transport of radioactive waste:

    a. South Australia and Western Australia – prevents the transport of nuclear waste within or through the state (with minor exceptions).

    b. Northern Territory – prohibits the transportation of nuclear waste into the Territory for storage at a nuclear waste storage facility in the Territory.

    c. Victoria – requires licences to be obtained for transport activities.

    d. NSW and Queensland – no prohibition on transport of waste.

6. There are other laws that would affect the transportation of radioactive waste and their impact needs to be considered in the context of any transport planning such as:

    a. Other Commonwealth, State and Territory laws that would incidentally apply to transport of waste such as work health and safety, radiation safety, environmental protection, dangerous goods and general road and rail laws.

    b. Other Commonwealth, State and Territory laws that would incidentally additionally apply to the transport of waste by sea such as the *Navigation Act 2012* and the *Marine Safety (Domestic Commercial Vessel) National Law Act 2012*.

7. In the context of the transport of radioactive waste for a facility selected pursuant to the *National Radioactive Waste Management Act 2012* (Cth) (NRWM Act). State and Territory laws relating to the transport of radioactive waste would likely be overridden to the extent that they would regulate, hinder or prevent the transport of waste to and from a selected site in the context of the NRWM Act.

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Data referenced:

11. N/A

Consultation with the Cities and Northern Australia Division, Department of Infrastructure, Transport, Regional Development, Communications and the Arts: NIL

12. The matter is not relevant to the Northern Australia portfolio.

Other Consultation: YES

s 42

Attachments

A: National Radioactive Waste Management Facility – Transport advice (Draft) – 13 September 2020

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QB23-000002

RADIOACTIVE WASTE MANAGEMENT

Issue

Managing Australia's radioactive waste safely for future generations.

Key Talking Points

Radioactive waste management in Australia

- Australia's radioactive waste is currently safely managed in temporary storage arrangements.
  - Australia has low-level (LLW) and intermediate-level (ILW) radioactive waste. There is currently no high-level (HLW) radioactive waste in Australia.
- Establishing permanent disposal pathways for Australia's radioactive waste is important to ensure safe management of this waste for generations to come.

Budget 2023-24 announcements

- In Budget 2023-24, the Government announced funding to support the long-term management and permanent disposal of Australia's radioactive waste.
- This includes $476.4 million to 30 June 2030 and an ongoing $38.7 million per annum from 2030-31 to:
  - enable the Australian Radioactive Waste Agency (ARWA) to continue to perform essential waste management functions;
  - review and update the Australian Radioactive Waste Management Framework; and

- progress interim storage and disposal pathways for Australia's radioactive waste, including starting work on a permanent disposal pathway for ILW.

Radioactive waste from nuclear-powered submarines

- The 2023-24 Budget also included $5.2 million over two years from 2023–24 for ARWA to support the development of radioactive waste management, storage and disposal arrangements with the Department of Defence.
- As a responsible nuclear steward, Australia will manage all radioactive waste from its nuclear-powered submarines.
- Operational radioactive waste will be stored at Defence sites in Australia.
- Defueling of Australia's nuclear-powered submarines is not expected to occur for decades. However, the complexity of the task means that early planning will be important.
- Australia's acquisition of nuclear-powered submarines and the management of radioactive waste from submarines is a matter for the Minister for Defence.

National Radioactive Waste Management Facility (the Facility) and the outcomes from the Judicial Review and Constitutional Challenge

- Please refer to **QB23-000074**.

QB23-000002

United Nations Special Rapporteur on the implications for human rights of the environmentally sound management and disposal of hazardous substances and wastes

- Please refer to **QB23-000074** regarding the Kimba Court decision and **QB23-000083** regarding the Special Rapporteur visit.

- ***Missing radioactive equipment in South Australia***

- As the appropriate regulator, the South Australian Environment Protection Authority (EPA SA) were notified on ~~Thursday afternoon,~~ 28 September ~~,~~2023, by OneSteel Manufacturing Pty Ltd (trading as Liberty OneSteel) that an industrial bin level gauge, that contained a radiation source, had been misplaced at its Whyalla plant.
  - EPA SA is the lead on searching for the gauge. ARPANSA is supporting EPA SA in this search.
  - ~~A commonly used item in industrial applications, the gauge was purchased 35 years ago in 1988. Given its age, its radioactivity has decreased to 30 megabecquerel (MBq), 100 times less than when the unit was new.~~ EPA SA does not believe ~~it~~the gauge poses a risk to workers or the public.

Commercial hazardous waste disposal facilities

- A small number of hazardous waste disposal facilities in Australia are in planning or operation. Some of these facilities plan to or can accept certain types of radioactive waste.
- Whether a facility can accept Commonwealth radioactive waste will depend on a jurisdiction's legislative and regulatory framework in

addition to strict waste acceptance criteria and possession of relevant permits and approvals.

~~EPA SA is continuing its investigation and directions to Liberty OneSteel to ensure the safety of workers and members of the public and verify that the item has not left the Whyalla site.~~

~~As part of this investigation the EPA SA is undertaking an assessment of the circumstances that led to the radioactive source being lost.~~

Background

Budget 2023-24 measures

- The *Safely Managing Australia's Radioactive Waste* measure will provide $476.4 million over seven years from 2023–24 (and $38.7 million ongoing from 2030–31) for the safe and sustainable management and disposal of Australia's radioactive waste. Funding includes:
  - $304.5 million over seven years from 2023–24 (and $38.7 million ongoing from 2030–31) for ARWA to continue to manage a comprehensive national inventory of radioactive waste, coordinate the safe disposal and storage of radioactive waste, and to establish safe and secure disposal pathways for radioactive waste
  - $162.2 million over seven years from 2023–24 to continue preparatory work for the establishment of the Facility, including technical, design, regulatory and governance activities, and community engagement consistent with the *National Radioactive Waste Management Act 2012*

  - $9.7 million over five years from 2023–24 to develop a pathway for the long-term disposal of Australia's intermediate level radioactive waste generated from non defence activities.

- The *Nuclear Powered Submarine Program – initial implementation* measure includes $5.2 million over two years from 2023–24 for ARWA to support the development of radioactive waste management, storage and disposal arrangements with the Department of Defence.

Radioactive Waste in Australia

- Australia's inventory of radioactive waste has accumulated for over 100 years and will continue to grow.
- The vast majority of Australia's radioactive waste is from producing nuclear medicine:
  - Every Australian is estimated to benefit from a nuclear medicine procedure in their lifetime.
- Radioactive materials are also used in scientific research, resources (e.g., in the characterisation and analysis of minerals samples) and agriculture. Naturally Occurring Radioactive Material (NORMs) must also be safely managed in the resources sector.
- For more than 40 years, successive Australian Governments have sought a site for a facility to store Australian radioactive waste found in hospitals, universities, and science facilities.
- The Australian Nuclear Science and Technology Organisation (ANSTO) currently safely manages a majority of Australia's radioactive waste at their Lucas Heights campus in Sydney, while a permanent disposal pathway is being developed.

- ILW can be safely stored at or near the Earth's surface in an appropriate container but requires permanent disposal deeper in the Earth than LLW.

ABC NEWS

Native title holders vote to support vast underground toxic waste storage facility south of Alice Springs

ABC Alice Springs / By Charmayne Allison

Posted Sat 4 Nov 2023 at 7:46am

Native title holder Reggie Kenny hopes the project will help surrounding Aboriginal communities. *(ABC Alice Springs: Charmayne Allison)*

Native title holders have voted to support the construction of a controversial toxic waste storage facility about 120km south of Alice Springs after 12 years of consultation.

Developers Tellus Holdings said the Chandler Project would be the first underground salt mine and deep geological waste repository of its kind in Australia.

The proposed facility will be built within a 500-million-year-old salt bed on Maryvale Station, 25 kilometres south-west of the remote Aboriginal community of Titjikala.

The project has been given approval to receive up to 400,000 tonnes per annum of hazardous material over 25 years, from both Australia and "strategic Pacific partners" overseas.

Key points:

- The Chandler facility will store 400,000 tonnes per annum of hazardous material in an ancient salt bed
- The waste will come from across Australia, as well as overseas
- Native title holders have voted in favour of the project, with hopes

This would include low-level radioactive waste and naturally occurring radioactive materials.

it will bring money to communities

computer-generated image of what the Chandler site could look like once complete. *(ABC Alice Springs: armayne Allison)*

Tellus said the waste would be stored in an underground vault, about 850 metres below the surface, within the vast salt bed.

"The scale of this project is unlike anything else being built in the world, particularly how remote it is," chief executive Nate Smith said.

"The unique part about Chandler is the geology. It has an extremely deep, stable, thick bed of salt, which is perfect to create that scientific natural halt to make sure that waste is permanently isolated."

Last week, native title holders gathered to vote in favour of the project, with many hoping it would bring a much-needed economic boost to their communities.

"Some of the older people think it's dangerous. But I think it would be better to go ahead," native title holder Reggie Kenny said.

"The salt, nothing's going to come out of it once they put it in there."

de Ritchie from Tellus addresses native title holders on the Chandler Project. *(Supplied: Tellus Holdings)*

Waste 'already exists' in the NT

Mr Smith said the low-level radioactive material would include medical waste, X-ray imaging and cancer treatment, as well as rare earths processing and water treatments.

"It's in hospital basements, it's sitting on the sides of curbs, it's sitting in on remediated mine sites," he said.

> "The question is, does it continue to sit in places where it can harm waterways in the community? Or does it go to truly one of the safest places on the planet?"

While Tellus would not confirm a dollar figure, Mr Smith said the construction of Chandler would likely be up to "10 times" the cost of Sandy Ridge, an open-cut mine and hazardous waste storage site developed by Tellus in WA.

He said this made it essential for the Chandler facility to accept waste from overseas, as there was "no way" the domestic market could support the cost.

jikala resident Elaine Shilling is concerned the toxic waste could impact water sources. *(ABC Alice Springs: armayne Allison)*

Concerns about water supply

Despite widespread support, some native title holders, like Titjikala resident Elaine Shilling, were concerned the facility could impact local water sources.

"Not good, it's going to affect us, all of us," she said.

"We're just worried about water because we've got a lot of kids, a new generation. I don't know what's going to happen."

But Mr Smith claimed there was nothing to worry about, as the vault would sit about 500m beneath the lowest known aquifer.

Tellus is also required to provide the EPA with an independent, peer-reviewed water management plan before any approval or decisions are made on the project.

stralian Conservation Foundation nuclear analyst Dave Sweeney says the project must be closely scrutinised. *upplied)*

However, Australian Conservation Foundation nuclear analyst Dave Sweeney said the project had "serious implications" and required "a high level of scrutiny and testing".

"Low-level waste does not necessarily mean low-level risk," he said.

"Some low-level waste has short activity and danger periods but some requires isolation from people and the wider environment for 300 years."

Mr Sweeney said he was concerned about the "potential for future project creep and the extension of materials deemed acceptable" at any future facility after the Chandler Project.

ntral Land Council chief executive Les Turner says they have worked to facilitate consultation between Tellus and tive title holders. *(Supplied)*

Claims facility will 'transform' communities

For more than a decade, the Central Land Council (CLC) has been facilitating consultation between Tellus and native title holders about the Chandler Project.

CLC chief executive and Arrernte man Les Turner said the project was initially proposed solely as a salt mine but had gradually changed over the years.

> "We commissioned independent advice on the radioactive waste component, and a lot of that's been provided to the native title holders ... and overall, the authorisation was provided," he said.

As Maryvale Station is a pastoral lease, native title holders do not have veto rights, only the right to consultation.

But Tellus claimed if native title holders had not given approval, the project would not have gone ahead.

me native title holders are concerned the facility could be dangerous. *(ABC Alice Springs: Charmayne Allison)*

Mr Smith said, from here, Tellus would work to "build trust" with the broader Alice Springs community, and start approaching potential clients.

He said, from there, construction could take up to five years and would aim to drive jobs in the NT for "the next 100 years".

Many native title holders like Mr Kenny hoped the project would have lasting impacts for local Aboriginal communities.

"This mob here has given us the time to think and do everything. That's what we want and they want," he said.

"We want it to go ahead."

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Australian Government
Department of Industry, Science and Resources

Australian Radioactive Waste Agency

Discussion and Emerging Findings: Radioactive Waste Disposal Options Assessment

22 April 2024

Minister's Office

industry.gov.au/arwa

Purpose of Discussion with Ministers Office 21 April

s 47C

Agenda

1. Context, Authority and Opportunity

2. Emerging Findings

3. Post-OACS next steps

4. Cabinet Submission approach, timing, consultation

Australian Government
Department of Industry, Science and Resources

Australian Radioactive Waste Agency

1. Context, Authority & Opportunity

industry.gov.au/arwa

Snapshot – Situation as of "May 2023"	What has happened since- current situation

• ARWA Planning to build a NRWMF:
  • Site declared under the *NRWM Act 2012:*
  • A disposal facility for low level radioactive waste
  • A consolidated interim storage facility for intermediate level radioactive waste
  • Ongoing Judicial review/Constitutional challenge of site declaration
• Future, separate process for ILW disposal site implied; but no plan or funding
• s 33(a)(ii) & 47C
• s 47C
	• s 47C
	• Commonwealth no longer has a declared site for RW management facility.
	  • Constitutional challenge resolved – legislation is constitutionally sound
	  • Judicial review concluded – site declaration overturned
	  • Confirmation that finding a Site(s) is the biggest challenge for RW disposal
	• s 47C
	• 10 August 2023, Minister for Resources' statement to Parliament
	• s 47C
	• s 33(a)(ii) & s 47C

s 47C

s 33(b) & s 47C

- s 33(a)(ii) & s 47C

21	.

Work remaining in this term of Parliament

- s 47C
  - s 33(a)(ii) & s 47C
- s 47C

Australian Government
Department of Industry, Science and Resources

Australian Radioactive Waste Agency

2. Assessment of options for disposal of Commonwealth radioactive waste

industry.gov.au/arwa

Overarching goals and principles

Overarching goal

Ensure the long-term safety, security, sustainability and protection of people and the environment by disposing of radioactive waste as soon as is reasonably practicable in permanent disposal facilities,

Foundational principles

Safety, security and protection of people and the environment is paramount.

The process to establish disposal pathways is long and **work should proceed now** to avoid deferring responsibility and demonstrate Australia's commitment to safe and secure stewardship of radioactive waste.

An approach based on **transparency and consent** (including with Fist Nations peoples) is a requirement for the successful implementation of radioactive waste disposal facilities.

To meet the highest safety and regulatory standards and build confidence with host communities and stakeholders, **international best practice should be applied to an Australian context**.

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Australian Government
Department of Industry, Science and Resources

Australian Radioactive Waste Agency

3. Future Work Scope and Next Steps

industry.gov.au/arwa

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Australian Government
Department of Industry, Science and Resources

Australian Radioactive Waste Agency

4. Cabinet Submission approach

industry.gov.au/arwa

s 47C

s 47C

s 33 & s 47C

Questions and discussion

s 34(1)(c)

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THE HON MADELEINE KING MP
Minister for Resources
Minister for Northern Australia

MEETING BRIEF REQUEST	
Title:	Meeting with the Deputy Prime Minister re Radioactive Waste
Date:	Tuesday 13 August 2024
Time:	11:30 am – 12 noon AEST
Location: If the meeting involves a site visit please provide an 'electorate brief' as an attachment. Contact DLOs for an example if required.	APH MG.41 (DPM's Office)
Contact: If a contact is listed by the MO please contact them to confirm any necessary details	Please contact relevant advisor if needed.
Attendees: If an adviser is not listed, there is no need to contact the Minister's Office as this is generally resolved closer to the meeting. However, if an adviser is listed here, please ensure they are on the list transcribed to the brief, including any notes about them representing the Minister.	The Hon Richard Marles MP, Deputy Prime Minister, Minister for Defence s 22 – Resources, the Office of the Hon Madeleine King MP s 22 – Northern Australia, the Office of the Hon Madeleine King MP

Required information:

Bios:	☐	Departmental Rep:	☐	Speech (full text):	☐
Talking Points:	☒	Record of Meeting:	☐	Media Release:	☐
Q&A:	☐	Speech Notes:	☐	Shell Release	☐

Background:	Meeting to discuss radioactive waste
MO Comments:	

QB24-000003

RADIOACTIVE WASTE MANAGEMENT

Issue

The Australian Government is committed to managing Australia's radioactive waste safely and securely.

Key Talking Points

Radioactive waste management in Australia

- Australia's radioactive waste is currently safely managed in temporary storage arrangements.
- Establishing permanent disposal pathways for Australia's radioactive waste is important to ensure safe and secure management of this waste for generations to come.

Budget 2024–25 measure

- In the 2024–25 Budget, the Government provided $43.0 million over six years from 2024–25 to the Australian Radioactive Waste Agency to continue activities around developing and implementing radioactive waste disposal pathways.

Former Site Selection Process and the National Radioactive Waste Management Facility (the Facility)

- Please refer to **QB24-000004**.

If asked about siting of a facility for waste disposal, progress on radioactive waste management since Kimba

Contact: s 22 , A/g Manager, Radioactive Waste Policy, ARWA: s 22
Cleared by: Sam Usher, Chief Executive Officer, ARWA: 08 8406 4787

Min ID: QB24-000003
Division: Australian Radioactive Waste Agency
Created: 22 January 2024
Updated: 02/10/2024

or whether radioactive waste can be provided to a commercial provider.

- I reiterate the firm commitment made by the Government to safely manage its own radioactive waste.
- Radioactive waste can take thousands of years to decay. This is long-lasting, multigenerational Government policy. It is important we get this right.
- My department is reflecting on lessons learned and assessing options for the storage and disposal of the Commonwealth's civilian low-level and intermediate-level radioactive waste.
- A process and timeframes for establishing radioactive waste disposal pathways and associated siting will be determined once the Government has considered options and made decisions in due course.
- Please refer to **QB24-000004** for more information on the recent Site Selection Process.

If asked about whether nuclear power waste can be accommodated in current planning for Australia's radioactive waste management

- Current radioactive waste management planning is assessing options for the safe and secure management of

existing Commonwealth's civilian waste and future waste generated from the nuclear-powered submarine program.

If asked about the future storage of AUKUS nuclear waste at Australian naval bases. ~~Australian Radiation Protection and Nuclear Safety Agency's (ARPANSA) decision on the Australian Submarine Agency (ASA) facility licence at HMAS Stirling~~

- The Government is clear that Australia will manage all radioactive waste from its nuclear-powered submarines.
- The Nuclear Power Submarine Program will require the management and storage of low-level radioactive waste associated with the maintenance of visiting US and UK nuclear propelled submarines at naval bases including HMAS Stirling in my electorate.
- This low-level radioactive waste is typical of the type of waste Australia currently manages safely at a number of sites and will consist of disposable gloves, wipes, reactor coolant and used personal protective equipment, with minor levels of contamination from contact with radioactive materials.
- This will involve temporary storage of low-level waste at these sites.
- This is distinct from the process to establish a permanent radioactive waste disposal facility which will require broad

community support including the traditional owners of the land.

- ~~On 17 July 2024, ARPANSA issued a licence to the ASA to prepare a site for a prescribed radiation facility known as the 'Controlled Industrial Facility.'~~
- Questions about future developments at our naval facilities and ~~the~~ licence applications should be directed to the Deputy Prime Minister.
- ~~Questions about the licence decision should be directed to the Minister for Health and Aged Care.~~
- ~~The Government is clear that Australia will manage all radioactive waste from its nuclear-powered submarines.~~
- ~~My department continues to work with the ASA on radioactive waste management matters.~~

If asked about the independent review into the Woomera Prohibited Area.

- On 16 August 2024, the Government announced it is undertaking an independent review into the settings of the Woomera Prohibited Area in South Australia, to ensure it remains fit for purpose and meets Australia's national security requirements.
- The independent review will not consider radioactive or nuclear waste disposal.

- Questions about the independent review should be directed to the Deputy Prime Minister.

If asked about the UN Special Rapporteur on Toxics and Human Rights - Final report of visit to Australia (the Report) comments on Indigenous engagement and cultural heritage

- The Report recommends amending the Act to "reflect the UN Declaration of the Rights of Indigenous Peoples and the right of free, prior and informed Consent of Indigenous Peoples".
- The UN definition of 'Indigenous lands' is not defined internationally, and not consistent within the context of Australian law.
- While free, prior and informed consent has not been incorporated into Australian domestic law, the Government makes all effort to consult in line with it.
- The consultation requirements outlined under legislation, including in *the Environment Protection and Biodiversity Conservation Act 1999 (EPBC Act)*, require considering the importance of a cooperative approach to protecting and managing the environment between the Government, community, landholders and Indigenous people.
- The *National Radioactive Waste Management Act 2012* does not include provisions to override Commonwealth laws in place to protect cultural heritage, including the EPBC Act.

- The Government has said all along a National Radioactive Waste Facility requires broad community support from the whole community, including Traditional Owners and First Nations people.
- In future siting of radioactive waste management facilities, I expect all agencies will work with Indigenous groups and heritage experts to ensure cultural heritage values are identified and fully protected.

If asked about the Report's comments on radioactive waste from the Nuclear-Powered Submarine Program

- As a responsible nuclear steward, Australia will manage all radioactive waste by its nuclear-powered submarines. Operational radioactive waste will be stored at Defence sites in Australia.
- Any specific questions on nuclear-powered submarines should be directed to the Deputy Prime Minister.

If asked about the House of Representative Inquiry into nuclear power generation in Australia

- On 10 October 2024, the House Select Committee on Nuclear Energy was established. The committee will inquire into and report on the consideration of nuclear power generation, including deployment of small modular reactors, in Australia.
- On 24 October 2024, an official from ARWA on behalf of the Department of Industry, Science and Resources attended the first public hearing of the Committee. Additional Canberra public hearings were held on 28 October and 7 November.
- Upcoming public hearings are scheduled around Australia in November and December 2024. The Committee is required to present its final report by no later than 30 April 2025.

Background

Policy commitments

2024–25 Budget

- In the 2024–25 Budget, the Government through the *Update on Radioactive Waste Management* measure provided $43.0 million over six years from 2024–25 to the Australian Radioactive Waste Agency to continue activities around identifying radioactive waste disposal pathways. Funding includes:
  - $38.8 million over two years from 2024–25 to assess options around alternative pathways for disposal of the Commonwealth's radioactive waste
  - $4.2 million over six years from 2024–25 to undertake remediation, supervision, and disposition activities of the former National Radioactive Waste Management Facility site following the outcome of the litigation in the Federal Court about the siting of the facility in July 2023.
- The Government will also reprofile funding previously provided in 2023–24 to allow for the development of future disposal pathways for the Commonwealth's radioactive waste.
- The cost of this measure will be met from a reprioritisation of funding from the 2023–24 Budget measure titled *Safely Managing Australia's Radioactive Waste*.

2023–24 Budget

- In the 2023–24 Budget, the Government through the *Safely Managing Australia's Radioactive Waste* measure committed to long-term funding to support the safe and sustainable management and disposal of Australia's radioactive waste.
  - Funding includes $476.4 million to 30 June 2030 and an ongoing $38.7 million per annum from 2030–31.
- In the 2023–24 Budget, $5.2 million over two years from 2023–24 was also committed to ARWA through the *Nuclear Powered Submarine Program – initial implementation* measure.
  - Funding is being used to support the development of radioactive waste management, storage and disposal arrangements with the Defence portfolio.

Radioactive Waste in Australia

- Australia's inventory of radioactive waste has accumulated for over 100 years and will continue to grow.
- The vast majority of Australia's radioactive waste is from producing nuclear medicine:
  - Every Australian is estimated to benefit from a nuclear medicine procedure in their lifetime.
- Radioactive materials are also used in scientific research, resources (e.g., in the characterisation and analysis of minerals samples) and agriculture. Naturally Occurring Radioactive Material (NORMs) must also be safely managed in the resources sector.

- For more than 40 years, successive governments have sought a site for a facility to dispose of Australian radioactive waste found in hospitals, universities, and science facilities.
- The Australian Nuclear Science and Technology Organisation (ANSTO) currently safely manages a majority of Australia's radioactive waste at their Lucas Heights campus in Sydney, while a permanent disposal pathway is being developed.
- Intermediate–Level waste (ILW) can be safely stored at or near the Earth's surface in an appropriate container but requires permanent disposal deeper in the Earth than Low–Level waste (LLW).

Australian Naval Nuclear Power Safety Bill (the ANNPS Bill)

- On 16 November 2023, the ANNPS Bill and the Australian Naval Nuclear Power Safety (Transitional Provisions) Bill were introduced into Parliament.
  - Following its commencement, the legislation will establish a framework to regulate the nuclear safety aspects of Australia's NPS enterprise.
  - The framework will also be able to accommodate future Government decisions regarding the management of radioactive waste.
- On 13 May 2024, the Senate Foreign Affairs, Defence and Trade Legislation Committee published a report on its inquiry into the ANNPS Bill. It included a recommendation directly relevant to radioactive waste management.
- Recommendation 3 of the report is "that the Government consider amending the Bill so that a distinction is made between Australia's

acceptance of low-level nuclear waste from AUKUS partners, but non-acceptance of high-level nuclear waste."

- The ANNPS Bill was amended to make clear that nothing in the Bill authorises the storage or disposal of spent nuclear fuel (as the only relevant source of high-level radioactive waste) that is not from an Australian submarine (including but not limited to a US submarine or UK submarine).
- On 10 October 2024, the ANNPS Bill passed in both Houses of Parliament.
- Questions about the nuclear safety legislation should be directed to the Department of Defence.

Storage of Radioactive Waste at the Osborne SA Shipyard

- On 18 November 2024 ABC news reported on a 7.30 story into the future storage of low level radioactive waste at Osborne In South Australia.
- Osborne is one the sites along with HMAS Stirling in WA prescribed by the *Australian Naval Nuclear Power Safety Act.*
- Some community groups claim there is a lack of consultation on future proposals at Osborne. Questions on future plans including on stakeholder consultation should be directed to the Deputy Prime Minister.

Australian Naval Nuclear Power Safety Regulator

- The ANNPS Bill also establishes a new Australian Naval Nuclear Power Safety Regulator (Regulator), an independent statutory agency within the Defence portfolio.

- Questions about the Regulator should be directed to the Department of Defence.

ARPANSA facility licence decision

- On 17 July 2024, ARPANSA issued a license to the ASA for a Controlled Industrial facility that will provide low-level waste management and maintenance services located at the HMAS Stirling site on Garden Island, Rockingham in Western Australia.
- The facility is not and will not be a permanent disposal facility for radioactive waste.

DEPARTMENT OF INDUSTRY, SCIENCE AND RESOURCES

MS24-001140

To: Minister for Resources (For Decision)

REVIEW AND UPDATE OF THE AUSTRALIAN RADIOACTIVE WASTE MANAGEMENT FRAMEWORK - PROPOSED APPROACH

Timing: Routine

Recommendations: That you

1. **Agree** in principle the proposed forward timeline to update the Australian Radioactive Waste Management Framework outlined in Attachment A, including release of a draft for public consultation in Q2 2025/26.

Agreed / Not agreed

2. **Note** the Australian Radioactive Waste Agency (ARWA) will seek your agreement to undertake public consultation on the updated Australian Radioactive Waste Management Framework (the Framework) prior to public consultation.

Noted / Please discuss

3. **Note** the proposed content in Attachment B for an updated Framework.

Noted / Please discuss

Minister: Date:

Comments:

Clearing Officer:	Mark Weaver	General Manager, Policy, Governance & Strategy Branch	Ph: 02 6243 7104 Mob: s 22
Contact Officer:	s 22	A/g Manager, Radioactive Waste Policy	s 22
For Parliamentary Services' use only. Date Submitted to the Minister's office in PDMS:			26/11/2024

Key Points:

1. The Australian Radioactive Waste Management Framework (the Framework) is a key policy document that – consistent with international best practice and treaty obligations – clearly sets out Australia's institutional arrangements, policies and plans for storage and disposal of radioactive waste.

2. The Framework needs to be reviewed and updated to reflect significant developments since its original publication in 2018, including:

    a. The establishment of ARWA.

    b. The announcement of the AUKUS partnership and the related radioactive waste management implications for the future.

    c. The Federal Court ruling in July 2023 setting aside the declaration of Napandee as the National Radioactive Waste Management Facility (NRWMF) site.

    d. The Australian Government's subsequent decision not to pursue Napandee and the previously shortlisted sites as the site for the NRWMF.

s 34(3)

    a. The 2025 release is now proposed to be in the form of an initial release for public consultation, to be followed by final publication in 2026. Attachment A sets out the proposed timing for the Framework release.

s 34(2)

5. The scoping table at Attachment B sets out the proposed content within the updated Framework. The content addresses gaps identified during an internal review of the existing Framework by ARWA.

6. The Framework project will consider future Government decisions on the management of Commonwealth and non-Commonwealth radioactive waste to ensure the updated Framework accurately reflects the government's approach to the management of Australia's radioactive waste.

Next Steps

7. The proposed timeline in Attachment A outlines key dates to support a staged consultation approach, including.

    a. **Consultation with key Australian Government stakeholders in late 2024 and early 2025**, including but not limited to:

        i. Australia's Nuclear Science Technology Organisation; Australian Radiation Protection and Nuclear Safety Agency; Department of Climate Change, Energy, the Environment and Water; Australian Submarine Agency; Australian Safeguards and Non-proliferation Office; Defence; Department of the Prime Minister and Cabinet; and the respective ministers.

b. **Public consultation in mid-to-late 2025** on the initial updated Framework before a final version is published in 2026, including but not limited to consultation with:

i. States and territories including regulators; waste holders and producers such as hospitals and universities; and other organisations with an interest.

8. The International Atomic Energy Agency is conducting an ARTEMIS peer review of Australia's waste management approach in 2025. This will provide an important input into the final Framework. Continuing work on an updated Framework now will support ARWA to make the most of this opportunity and maximise learning from an international best practice review.

a. Background information on the ARTEMIS review is at Attachment D.

s 34(2)

Sensitivities and Handling:

10. ARWA will work with your office to support engagement with relevant ministers at the appropriate timing.

11. Any public release of the updated Framework, including the consultation draft and final publication, will be subject to agreement from the Prime Minister.

s 47C

13. Public consultation is planned for mid-late 2025, which will be after a federal election.

Data referenced: NIL

Consultation with the Cities and Northern Australia Division, Department of Infrastructure, Transport, Regional Development, Communications and the Arts: NIL

14. This matter is not relevant to the Northern Australia portfolio.

Other Consultation: NIL

ATTACHMENTS:

A: Proposed Forward Timeline

B: Proposed Framework Scope

C: 2018 Australian Radioactive Waste Management Framework

D: Background on Upcoming ARTEMIS Peer Review

s 47C

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Australian Government
Department of Industry, Innovation and Science

Australian Radioactive Waste Management Framework

April 2018

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Australian Radioactive Waste Management Framework April 2018,
Australian Government Department of Industry, Innovation and Science, Canberra.

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Contents

Definitions

ARPANSA	Australian Radiation Protection and Nuclear Safety Agency
ARPANS Act	*Australian Radiation Protection and Nuclear Safety Act 1998 (Cth)*
ANSTO	Australian Nuclear Science and Technology Organisation
ASNO	Australian Safeguards and Non-proliferation Office
CSIRO	Commonwealth Scientific and Industrial Research Organisation
CPPNM	Convention on the Physical Protection of Nuclear Material
EPBC Act	*Environment Protection and Biodiversity Conservation Act 1999 (Cth)*
IAEA	International Atomic Energy Agency
ILW	Intermediate Level Waste
ILWDF	Intermediate Level Waste Disposal Facility
LLW	Low Level Waste
NDRP	National Directory for Radiation Protection
NORM	Naturally Occurring Radioactive Material
NPT	Treaty on the Non-Proliferation of Nuclear Weapons (Non-Proliferation Treaty)
NRWM Act	*National Radioactive Waste Management Act 2012 (Cth)*
NRWMF	National Radioactive Waste Management Facility
RWMO	Radioactive Waste Management Organisation
Safeguards Act	*Nuclear Non-Proliferation (Safeguards) Act 1987 (Cth)*
The department	Department of Industry, Innovation and Science
The Joint Convention	The Joint Convention on the Safety of Spent Fuel Management and on the Safety of Radioactive Waste Management
WAC	Waste Acceptance Criteria

1 Summary

Purpose

This framework sets out principles and long term goals for radioactive waste management in Australia

The need for a framework

- Establishing appropriate institutional arrangements and setting out clear practices and policies on coordinating and managing radioactive waste management between jurisdictions will help to meet policy objectives.
- Articulating the framework is essential preparatory work ahead of siting a National Radioactive Waste Management Facility, and developing a separate disposal option for intermediate level waste.
- While Commonwealth agencies hold the majority of legacy and future waste, this framework seeks holistic engagement and input at all tiers of government, including regulators.

Overarching policy objectives	Safety, security, safeguards-compliance and minimisation of waste and appropriate safe disposal of radioactive waste that cannot be managed by other means. The right legislative and regulatory settings are in place. Regulatory certainty for waste management licensing processes. Open and transparent waste management practices in line with Commonwealth policy.
Roles and responsibilities	Confirm roles and clarify responsibilities of the Commonwealth Government, states and territories, waste producers / holders, regulators and policy makers. Clearly define waste liability arrangements both before and after acceptance of waste at the Facility.
Institutional arrangements	Establish overarching oversight of the full life cycle management of Australia's radioactive waste – from production to disposal. Provide oversight of planned activities for the complete management of Australia's legacy, current and future waste. Adopt an engagement plan with current regulators.
Sustainable long-term funding arrangements	Establish cost structures for waste management activities and services. Provide resources required to ensure sustainable governance arrangements.

Outcome

To clearly articulate arrangements and responsibilities for managing Australia's radioactive waste.

2 Introduction

Australia is committed to providing for the safety and sustainability of radioactive waste management over generations, and for the adequate allocation of financial and human resources to achieve this over time. The objective is to maintain intergenerational equity, so that the benefits received by one generation do not create obligations and unfair burdens on succeeding generations.

This Australian Radioactive Waste Management Framework (the framework) describes the institutional arrangements for the full life cycle management of Australia's radioactive waste. Full life cycle management includes identification and monitoring of key waste streams, waste reduction and conditioning, requirements and methods of national waste management including inventory keeping and international reporting, and transportation and acceptance of waste for long-term storage and disposal.

By clearly setting out the various elements of Australia's arrangements for the management of radioactive waste, the framework:

- ensures consistency in how waste is managed across Australian Government agencies (as the largest waste holders and generators)
- identifies appropriate accountability for Australia's radioactive waste management practices
- provides explicit and mutually agreed principles and long-term goals to form the basis of Australia's national approach to radioactive waste policy making
- provides greater certainty to Commonwealth, state and territory regulators in facility licensing decisions
- ensures that Australia's domestic arrangements align with its international obligations.

The framework will be implemented through the various strategies and operational plans of the organisations responsible for all phases of the waste life cycle, and for regulation of these activities.

The framework draws on radioactive waste management policies from leading nuclear countries with established regulatory frameworks, tailored to meet the Australian radioactive waste management context. By international standards, Australia has only a relatively small amount of radioactive waste to manage. Australia's waste arises from important uses of nuclear research and development facilities, including a research reactor, and from the use of radioisotopes in medicine and industry. Australia has no nuclear power reactors.

The framework has five main elements:

- **Overarching policy objectives** such as safety, security, safeguards compliance and waste minimisation
- **Roles and responsibilities** including the responsibilities of waste producers/holders, regulators and policy makers
- **Institutional arrangements** underpinning the full life cycle management of radioactive waste in Australia – from planning new waste producing activities to implementing, decommissioning and waste disposal activities
- **Strategic planning of radioactive waste management**, which identifies the main sources of radioactive waste in Australia, including the decommissioning of facilities, and assists in the establishment of a common national inventory for radioactive waste
- **Sustainable long-term funding arrangements**, including full life cycle waste management costs being factored into consideration of new waste producing activities.

3 Background

3.1 Categories of Waste

Radioactive waste is material that no longer has any foreseeable use and contains radioactive materials with activities or activity concentrations at levels that require ongoing management to ensure its safety. The Australian classification scheme for disposal of radioactive waste is based on the international scheme issued by the International Atomic Energy Agency (IAEA). This considers the safety of disposal pathways, taking into account the radioactivity level of the waste and the time it will take for the radioactivity to decay (half-life). Australia's radioactive waste classification system and the intended pathway for storage and disposal of Commonwealth government waste is consistent with international best practice and is outlined in Table 1. Further details of these waste types are discussed in Section 6.2.

In addition to the safety requirements identified in the IAEA's classification guide, some material will be subject to additional regulatory requirements. For example, nuclear material (uranium, thorium and plutonium) is subject to safeguards and nuclear security regulation, irrespective of its radiological classification. There are different criteria for exemption from regulatory control for radiation safety purposes and for nuclear safeguard purposes. There are circumstances where nuclear material may be exempt from regulatory control for safety purposes because the level of radioactivity is low, but not exempt for safeguard purposes because it is still nuclear material.

Table 1. Classification and disposal of radioactive waste[1]

Classification	Description	Disposal method	Storage facility	Disposal facility
Exempt Waste (EW)	Contains very low levels of radioactivity where safety measures are not required.	Can be safely disposed of in the same way as non-radioactive waste.	Not required.	Ordinary waste disposal methods (e.g. landfill)
Very Short Lived Waste (VSLW)	Contains very short lived radioactivity.	Can be safely stored for short time periods and then disposed of the same way as non-radioactive waste.	Short term storage until decayed sufficient for ordinary waste disposal.	After decay, ordinary waste disposal methods.
Very Low Level Waste (VLLW)	Contains low levels of short lived radioactivity.	Can be safely disposed of in existing industrial or commercial landfill-type facilities with limited regulatory control.	Not required – can go straight to disposal.	Will require an appropriate disposal facility (e.g. appropriately licensed landfill-type facility).
Low Level Waste (LLW)	Contains higher levels of short lived radioactivity and low levels of long lived radioactivity.	Can be safely disposed of in an engineered above-surface or near-surface (3-30 metres) facility.	Onsite at producer until transported to National Radioactive Waste Management Facility (NRWMF).	NRWMF
Intermediate Level Waste (ILW)	Contains higher levels of long lived radioactivity.	Can be safely disposed of at greater depths (up to a few hundred metres).	Onsite at producer until transported to NRWMF.	Intermediate Level Waste Disposal Facility.
High Level Waste (HLW)	Contains levels of radioactivity high enough to generate significant amounts of heat during the radioactive decay process.	Disposal in deep, stable geological formations (several hundred metres below the surface) is recognised as the safe disposal pathway.	Australia does not have HLW.	

1 Based on Australian Radiation Protection and Nuclear Safety Agency (ARPANSA) waste classification at https://www.arpansa.gov.au/understanding-radiation/radiation-sources/more-radiation-sources/radioactive-waste-safety

3.2 Volumes and storage of waste

The main holders and producers of radioactive waste in Australia are Commonwealth agencies, accounting for about 96 per cent of estimated ILW legacy inventories and nearly all legacy LLW as at 10 January 2018 (Table 2). The Commonwealth is expected to continue to be the main producer of radioactive waste into the future.

These figures exclude waste arising from mining activities, which is considered out of scope for the purposes of this framework (see section 6.2.7).

Table 2. Radioactive waste inventory volumes (cubic metres) as at 10 January 2018[a]

	Low Level Waste		Intermediate Level Waste	
	Legacy	**Future**[b]	**Legacy**	**Future**[b]
Commonwealth				
ANSTO	2,771	4,685	1,211	1,849
ARPANSA	6	36	1	43
CSIRO	1,967	40	419	62
Defence	224	83	60	9
Subtotal C'wth	4,967	4,843	1,691	1,963
States and Territories	8	Not reported	66	Not reported
Industry, hospitals, universities[c]	Not reported	Not reported	13	Not reported
Total	**4,975**	**4,843**	**1,771**	**1,963**

a. Expected waste arising from current or future activities until 1 January 2070.

b. Data reported for these bodies only includes nuclear material held under permit from the Australian Safeguards and Non-proliferation Office (ASNO). There may be other radioactive waste held by these bodies which does not require an ASNO permit, and that is not currently reported in the inventory.

Estimated volumes now account for an estimation of the volume of waste including packaging, that is required for disposal or long term storage at the NRWMF. They also detail improved understanding of historical or 'legacy' waste, and updated estimates of expected future waste volumes. It is important to note these estimated inventory volumes have a level of uncertainty, and are derived from incomplete data which are being continually refined. Individual figures may not add to totals due to rounding.

Storage of this radioactive waste at various sites around Australia is strictly regulated by Commonwealth, state and territory governments. Independent regulators oversee the activities of organisations dealing with radioactive waste to ensure they protect people and the environment from the harmful effects of radiation, and to ensure that Australia meets its obligations under international treaties and agreements to which Australia is a party, including those relating to security and safeguards.

3.3 National radioactive waste management facilities

The Australian Government is moving to ensure the long-term safe and secure management of radioactive waste by building a single National Radioactive Waste Management Facility (NRWMF) to permanently dispose of Australia's LLW and temporarily store Australia's ILW. A separate process will be put in place to develop a permanent disposal facility for ILW (an Intermediate Level Waste Disposal Facility or ILWDF).

The move away from multiple storage sites is aligned with international best practice for the long-term management of radioactive waste as recognised by the Commonwealth radiation protection and nuclear safety regulator, ARPANSA.

The NRWMF will primarily be a facility for the management of waste generated, possessed or controlled by the Commonwealth or a Commonwealth entity. The NRWMF can also manage other radioactive waste (such as that generated by the states, territories or private sector), as long as possession or control of the material passes to the Commonwealth.

4 Radioactive waste management policy

The aim of Australia's management of radioactive waste is to safely and securely manage Australia's past and future radioactive waste holdings through appropriate processing, containment and eventual disposal. Doing so will reduce, to as low as practicable and justifiable, the associated health, safety, environmental, financial, security and safeguards risks to current and future generations.

The current policy, legislative and regulatory framework for the safe management of radioactive waste in Australia includes each jurisdiction licensing radioactive waste management activities. Radioactive waste management methods must conform to the highest appropriate standards as determined by Commonwealth, state and territory regulators, and requires acceptance by the general public.

To achieve these aims, implementation of this national framework involves active engagement across a number of key stakeholder groups including government (policy and regulatory), waste producers, and the general public. All radioactive waste management activities will be based on the best available science and technology and conducted in an open and transparent manner.

The Australian Government's approach towards long-term radioactive waste management includes implementing policy to site and establish a centralised, purpose-built NRWMF. This facility will dispose of Australia's domestically produced LLW, and store ILW for a period of time sufficient for the Australian Government to establish a permanent ILW disposal facility, consistent with international obligations and best practice. The Australian Government has also implemented policy, legislation and regulations aimed at ensuring Commonwealth waste holders and producers:

- adopt measures for minimising the generation of radioactive waste
- safely manage their waste until it is accepted by a national storage or disposal facility
- dispose or store their waste at the NRWMF or the ILWDF to the maximum extent possible, rather than in other facilities.

5 Roles and responsibilities for radioactive waste management

5.1 International agreements and Commonwealth legislation

The Australian Government is responsible for ensuring that radioactive waste management is carried out in a safe, environmentally sound and cost-effective manner in line with national policy objectives and international obligations.

As a party to the international Joint Convention on the Safety of Spent Fuel Management and on the Safety of Radioactive Waste Management (the Joint Convention), Australia is obligated to adopt a number of specific principles regarding radioactive waste management. These cover:

- sound waste management practices focused on minimisation, volume reduction, and compaction
- plans for managing the complete life cycle of a disposal facility, including financial guarantees to support the safety of the facility during the required period of post-closure institutional control
- defence-in-depth measures in facility design and operating procedures.

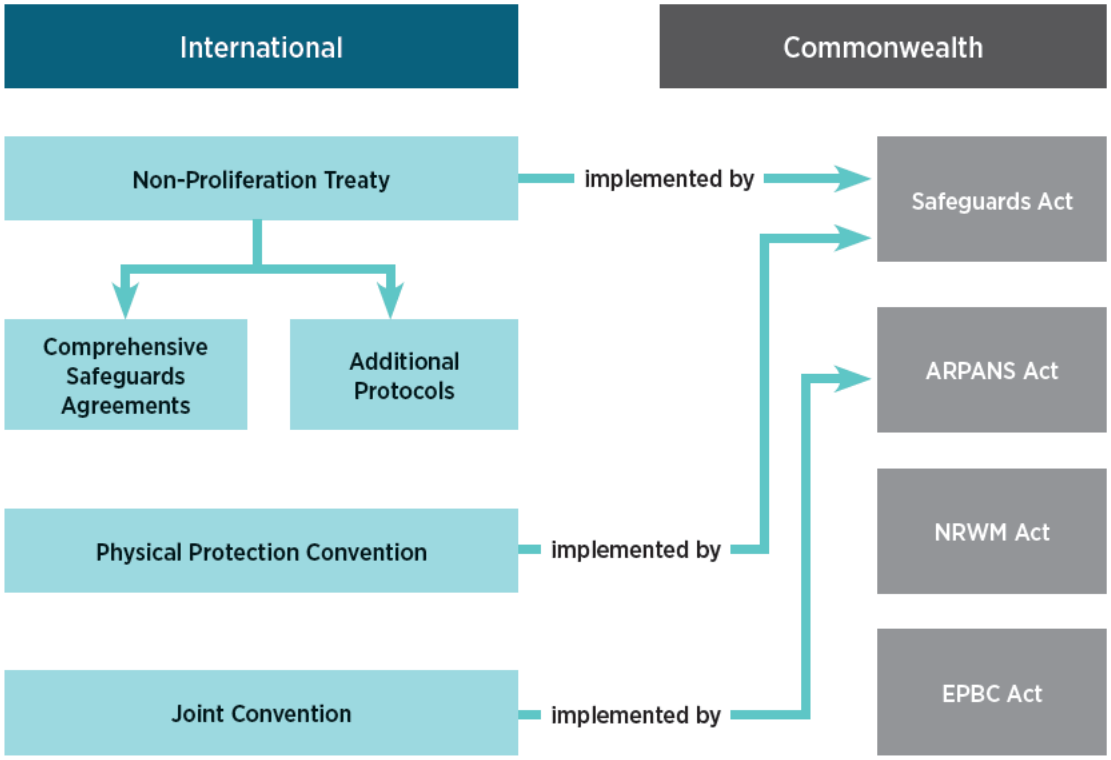
Australia is also a member of the IAEA which sets down a system of internationally recognised safety standards.

The Australian Government's focus is on safe management of radioactive waste, including safe storage and disposal. Legislation and regulations have been put in place to ensure domestic policy aims are met, while also ensuring that Australia meets its international obligations.

Legislated responsibilities are shared by several Australian Government agencies which respond to interrelated policy considerations including health, economic, and environmental issues related to radioactive waste management.

International treaties and agreements, and Commonwealth legislation, are outlined in Figure 1 and Attachment 1. Further information on international engagement and reporting is covered in section 6.8.

Figure 1. Commonwealth legislative arrangements for managing Australia's radioactive waste



5.2 Commonwealth policy and regulatory bodies

At the Commonwealth level, a number of departments and entities are jointly responsible for policies that direct the activities of waste owners to ensure their compliance with legal requirements and their ability to meet their funding and operational responsibilities according to approved waste management and disposal plans.

The Department of Industry, Innovation and Science (the department) has overall responsibility for radioactive waste management matters under the Administrative Arrangements Order. The department has developed and will maintain this framework. The department also administers the *National Radioactive Waste Management Act 2012* (NRWM Act), and under the NRWM Act is responsible for identifying a site for the NRWMF and setting the framework for its future operations.

The Department of Health is responsible for public health, including health protection. Within the Health portfolio, ARPANSA is the Australian Government's primary authority on radiation protection and nuclear safety. ARPANSA was established by the ARPANS Act and it:

- regulates Commonwealth entities that deal with radiation, with the objective of protecting people and the environment from the harmful effects of radiation
- leads Australia's international engagement related to radiation protection and nuclear safety, including under the Joint Convention
- promotes national uniformity in radiation protection and nuclear safety across all jurisdictions.

The Department of Foreign Affairs and Trade (DFAT) is responsible for external affairs, including among other things treaties and international security issues, including nuclear non-proliferation. The Australian Safeguards and Non-proliferation Office or ASNO is a statutory regulatory office within DFAT (established under the *Nuclear Non-Proliferation (Safeguards) Act 1987*), which ensures Australia's compliance with international obligations under the Nuclear Non-Proliferation Treaty (NPT), Australia's NPT safeguards agreements with the IAEA, the Convention on the Physical Protection of Nuclear Material (CPPNM) and its 2005 amendment, and Australia's various bilateral safeguards agreements. These Treaties are given effect in Australia through the *Nuclear Non-Proliferation (Safeguards) Act 1987*.

5.3 State and territory governments

States and territories are responsible for managing a range of radioactive waste holdings, accounting for about one per cent of total radioactive waste holdings in Australia. These are managed under specific legislation for each jurisdiction. Each state or territory has its own radiation protection regulator, typically within the environmental protection or public health portfolios, which oversees storage arrangements for radioactive materials and radioactive waste. State and territory governments also manage their own radioactive waste management facilities, some of which are permanently closed.

As noted in section 3.3, the NRWMF will only be used for the management of waste generated, possessed or controlled by the Commonwealth or a Commonwealth entity. However, some waste currently managed or regulated by state or territory governments could be managed by the NRWMF, if control of this waste is passed to the Commonwealth by the relevant jurisdiction. Such a transfer of control would be subject to the waste meeting acceptance criteria for the NRWMF (or ultimately the ILWDF) and mutually agreed arrangements between the Commonwealth and the state or territory in question.

5.4 Radioactive waste producers and managers

Waste owners and producers are responsible for the appropriate management of their waste, including the production, transport and delivery of waste packages. Table 3 summarises the key waste owners and producers in Australia. Some waste owners manage waste they have inherited from past activities of other organisations.

Table 3. Major radioactive waste producers and managers in Australia

Entity	Description
ANSTO	The Australian Nuclear Science and Technology Organisation (ANSTO) has legacy and ongoing waste, primarily resulting from the production of nuclear medicine. It will continue to generate waste as it produces nuclear medicines for hospitals and clinics across Australia and around the world, and conducts research and development using nuclear techniques. It also has legacy waste generated both by itself and its predecessor, the Australian Atomic Energy Commission, over the 60 year history of the Lucas Heights facility. ANSTO will generate a significant majority of future waste.
CSIRO	The Commonwealth Scientific and Industrial Research Organisation (CSIRO) predominantly holds legacy waste from scientific research and development activities. The majority of this waste is currently held in the Woomera Prohibited Area in South Australia. CSIRO has a small amount of legacy waste at other locations and is expected to produce a small amount of future waste from ongoing research and development activities.
ARPANSA	ARPANSA holds a small amount of legacy waste it has inherited from other sources, primarily the former Australian Radiation Laboratory.
Department of Defence	The majority of waste held on Defence sites is either legacy material from the former Australian Radiation Laboratory and Commonwealth X-ray and Radium Laboratory, or material remediated from Commonwealth land as a result of Australian Government direction. The remaining waste has arisen from the disposal of unserviceable or obsolete Defence equipment.
States and territories/Private producers	State and territory holdings include waste produced by hospital and university entities that produce and store radioactive waste from nuclear medicine and scientific research, as well as some waste from the private sector (primarily in the form of disused sealed radioactive sources which may have been used in radiotherapy or industry).

5.5 Radioactive waste management coordination function

It is the role of an appropriate radioactive waste management functional structure to clearly set expectations both domestically and internationally on Australia's approach to radioactive waste management. This includes defining practices and processes that establish and maintain a positive safety culture, and reflect international best practice. It provides Commonwealth, state and territory regulators with greater certainty around the Australian Government's long term outlook when assessing regulatory requirements and expectations for a NRWMF, and highlights the experience and knowledge necessary to ensure the effective and safe management of Australia's radioactive waste.

Attachment 2 outlines Australia's current institutional arrangements for managing radioactive waste. The department has policy responsibility for radioactive waste management, including this framework. The department, working closely with ANSTO (reflecting ANSTO's existing expertise in managing LLW and ILW storage facilities), is managing the site selection for, and design of, the NRWMF.

The Australian Government recognises that a radioactive waste management technical coordination function is a key role that will be performed by a Commonwealth entity. This function includes overseeing the long-term storage and disposal of legacy, current and future radioactive waste, and in the short to mid-term managing the research, development, construction and operation of the NRWMF. The organisation responsible for this technical coordination function may also be the operator of the NRWMF.

This approach is in line with international experience. The IAEA notes that in order to meet their obligations under the Joint Convention on the Safety of Spent Fuel Management and on the Safety of Radioactive Waste Management (to which Australia is a party), many Member States have decided to create a Radioactive Waste Management Organisation (RWMO) or assign this function to an existing organisation, to develop and implement one or more facilities for the disposal of radioactive waste.

Australia's RWMO, with input from other agencies including waste holders and producers, as well as the department and regulators, will develop a comprehensive radioactive waste management strategy that aligns with this framework. The strategy will provide detailed, long-term management pathways for individual waste streams over their full life cycle, including disposal pathways for LLW and ILW. The strategy will prioritise radioactive waste management activities across the Commonwealth. It includes defining critical path research, practices and processes that reflect international best practice, and establishing and maintaining a positive radioactive waste management safety culture. The RWMO will also monitor and oversee radioactive waste disposal facilities; and maintain an accurate national radioactive waste inventory.

The Australian Government will establish arrangements for providing the resources (financial, technical and human) to sustain these coordination functions, and for the implementation of the radioactive waste management strategy.

5.6 National Radioactive Waste Management Facility

The NRWM Act provides for the siting, development and operation of the NRWMF by the Commonwealth. ARPANSA licensing and ASNO permit conditions require the NRWMF licensee to demonstrate its ability to deliver on policy commitments and to ensure funding requirements are in place.

Under the NRWM Act, a national facility will only be established where it is accepted by a willing host community. Community consultation is currently being undertaken through the NRWMF siting process to educate communities on what it would mean to host the NRWMF, to understand and address community concerns, and to determine community sentiment towards hosting the facility.

The Australian Government (as licensee for the NRWMF) will be responsible for the safe and secure management of radioactive waste intended for the NRWMF by taking all necessary steps towards achieving this aim, including:

- suitable design, operation and decommissioning of its facilities to keep the generation of both the activity and volume of radioactive waste to a practicable minimum
- ensuring that radioactive waste is appropriately managed through classification, separation, treatment, conditioning, storage, disposal, and maintaining records of these activities including an inventory of radioactive waste
- ensuring that disposal of radioactive waste is not unnecessarily delayed
- reporting to the relevant regulatory authorities with required information as specified in their licence.

The NRWMF will only receive Australian domestic radioactive waste (excluding mining waste), for disposal of LLW and interim storage of ILW. It will have the appropriate functionality for legacy LLW and future LLW disposal to cater for the volume of waste reasonably foreseeable for the next 100 years, with a sufficient period of institutional control, without undue reliance on future generations or harm to the environment.

As part of its commitment to the safe and secure, full life cycle management of all of Australia's radioactive material, the Australian Government will develop a final disposal facility for Australia's ILW in the coming years. The NRWMF will store as much ILW as possible for an interim period of time sufficient for the Australian Government to develop and establish a disposal facility for this waste.

The radioactive waste management practices of states and territories are outside the Australian Government's control. The NRWMF will be open to accepting waste from states and territories, hospitals, universities and private industry, which would then pass to Commonwealth control, subject to satisfactory arrangements being agreed between the Commonwealth and the waste holder.

6 Core elements of radioactive waste management

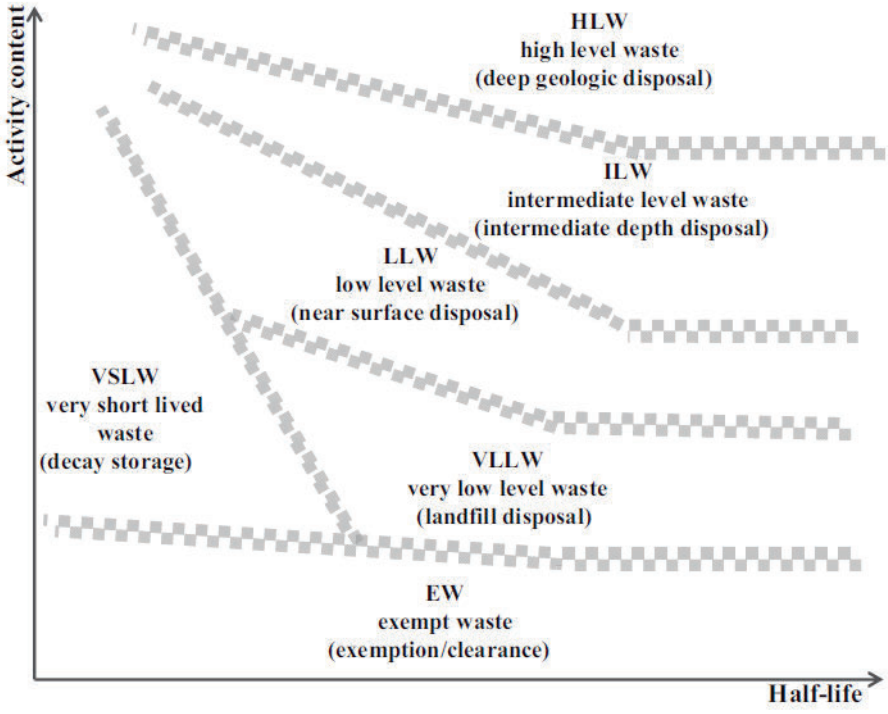
6.1 National inventory and classification system

Most Australian jurisdictions do not define radioactive waste in their legislation, and many do not classify radioactive materials in long-term storage as waste as defined by the Joint Convention. However, each jurisdiction has storage arrangements for radioactive materials and radioactive waste. Radioactive waste holders and producers currently manage their waste on a medium-term safety and security basis, consistent with their organisational mandates.

Australia has a uniform national radioactive waste classification system which harmonises the principles and practices for management of radioactive waste across the states and territories[2]. It is based on the IAEA[3]guidelines, adapted for the Australian situation. While the guidance is advisory, all jurisdictions in Australia have indicated their intention to adopt the scheme. It also forms the basis for the NRWMF's Waste Acceptance Criteria (WAC).

Having a common inventory baseline, consistent with this classification system (Figure 2), across Commonwealth agencies provides the basis for a whole of government approach on how best to treat, condition and package legacy waste holdings. This allows the Australian Government to make informed decisions on future radioactive waste management activities and key design arrangements prior to waste being accepted by the NRWMF. The government has established a national inventory working group who continually refine and update estimates of Australia's radioactive waste holdings, including those under the control of states and territories as well as the Commonwealth.

Figure 2: IAEA radioactive waste classification scheme[4]



2 RPS20 *Safety Guide for Classification of Radioactive Waste* (2010)
3 General Safety Guide: Classification of Radioactive Waste, No. GSG-1, IAEA, Vienna 2009.
4 Policies and Strategies for Radioactive Waste Management, No. NW-G-1.1, IAEA, Vienna 2009.

6.2 Australia's radioactive waste types

6.2.1 Exempt waste

Exempt waste contains levels of radioactivity below those required for regulatory control as specified by the relevant authority. Uniform provisions for exemption, based on international guidance from the IAEA, have been agreed by all federal, state and territory jurisdictions as part of the National Directory for Radiation Protection (NDRP)[5,6] through ARPANSA.

Exempt waste materials are managed as general, restricted or hazardous waste according to the specific chemical or radiochemical characteristics of the waste and will not be sent to the NRWMF. As a first step in radioactive waste management, waste producers will be required to arrange characterisation and assessment of their waste to determine if it meets the requirements for clearance from regulatory control as radioactive material. The RWMO may assist in characterisation and assessment of waste holdings on a cost recovery basis.

6.2.2 Low Level Waste (LLW)

The majority of radioactive waste by volume held in Australia is classified as LLW. LLW generally comprises laboratory wastes (cloths, paper, plastic and glassware), equipment (metal and plastic) and bulk materials (concrete from decommissioning or soil) with minor levels of contamination from contact with radioactive materials. Disused sealed radioactive sources which have low activity and/or contain short-lived radionuclides can be considered LLW for the purpose of disposal. The precise classification criteria for LLW to be disposed of at the NRWMF will be determined by the WAC for the NRWMF. Very Short Lived Waste and Very Low Level Waste are disposed of by other methods and will not need to be sent to the NRWMF.

Processing of LLW consists of treatment and conditioning to prepare for transport, storage and disposal. The treatment and conditioning options chosen are determined by taking into account the planned storage and/or disposal method used.

Options for the disposal of LLW include:

- Near surface disposal facilities: These are in the form of simple or engineered trenches or concrete vaults in which containerised waste is placed. An engineered or earthen cap is placed over the waste containers to further isolate the waste and to minimise water infiltration. The facilities are subject to surveillance until the hazard associated with the waste has declined to acceptable levels, as determined by safety regulators.
- Subsurface disposal facilities: disposing of LLW in subsurface facilities or co-locating LLW with ILW in deeper facilities.

6.2.3 Intermediate Level Waste (ILW)

ILW has a higher concentration of radionuclides, especially long-lived radionuclides, than LLW. As a result, ILW management typically requires increased shielding through appropriate containers or buildings to provide adequate protection for workers and greater provisions to ensure its isolation.[6]

Examples of ILW include waste from the production of nuclear medicines, residual waste from the reprocessing of spent fuel used in research reactors, and disused radioactive sources from industry and medicine.

In principle, all processing methods used for LLW are also acceptable for ILW as determined by the WAC.

The disposal of ILW requires different technical requirements to that for LLW disposal, and consequently a separate project will be required for the siting, design and construction of an ILWDF. A range of technical solutions exist for geological disposal of ILW within an engineered structure, including two main types of disposal systems:

- Shallow depth facilities consisting of engineered disposal units (caverns, vaults, tunnels or silos) that are located below the original ground surface, greater than about 30 metres deep.
- Facilities in which the waste is emplaced in greater depth geological formations or boreholes intended for waste, from a few tens of metres to hundreds of metres deep.

The IAEA have recognised the challenges for countries with small volumes of ILW, and appropriate means of disposal are being actively looked into. It is possible that further options for disposal of ILW may be identified that may be appropriate for Australia.

5 The NDRP is the principal means for addressing inconsistencies in radiation protection regulation across the various Australian jurisdictions.
6 Wlliams, G. and Woollett, S., *Managing Radioactive Waste in Australia,* ARPANSA, Issues Volume 92, September 2010, p 9–13

6.2.4 Spent nuclear fuel reprocessing

Nuclear fuel which has depleted to a level where it no longer powers a reactor efficiently is said to be 'spent'. Usable nuclear material typically remains in spent fuel, which can be separated from waste products through reprocessing.

In Australia, the Commonwealth is the only jurisdiction in which spent fuel is managed. Australia's spent fuel comes from ANSTO's research reactors. Unlike some other countries, Australia has no spent fuel arising from nuclear power, military or defence programmes. No spent fuel reprocessing facilities exist in, or are proposed for, Australia. It is the policy of the Australian Government that spent fuel is sent overseas for reprocessing, which entails the extraction of useful fissile materials remaining in the spent fuel, and the conditioning of residual waste materials into a durable form such as glass. The resulting long-lived ILW will be returned to Australia for storage and in accordance with contractual obligations. Ultimately, this waste will be disposed of at an ILWDF.

6.2.5 Material subject to Safeguards Act

As noted in section 6.2.4, any radioactive waste that is nuclear material is subject to additional regulatory requirements. ASNO regulates nuclear material for nuclear security and nuclear safeguards purposes, in accordance with treaty-level agreements with the IAEA and bilateral partners.

Through these agreements, safeguarded material must be physically protected, be accounted for and be available for inspection and verification by ASNO and the IAEA unless rendered inaccessible in accordance with IAEA requirements and prior approval has been given.

6.2.6 Disused sealed radioactive sources

Sealed radioactive sources have been in use for many decades for medical, industrial, agriculture, military and defence, and research applications. The IAEA defines a sealed source as "a radioactive material that is permanently sealed in a capsule, or closely bonded, and in a solid form".[7] Safety requirements for disused sealed sources are presented in IAEA Safety Standards publications.

In addition, Article 28 of the Joint Convention states that parties to the Convention must take appropriate steps to ensure that the possession, manufacturing or disposal of disused sealed sources takes place in a safe manner.

The focus of Australia's current regulatory control over disused sealed sources is through a requirement on the owner of the source to have a confirmed arrangement with the supplier for the return of the source at the end of its useful life. However, there were many sources brought into Australia – or manufactured in Australia – before these requirements came into effect. The pathway for sealed sources destined for disposal or storage at the NRWMF, including Australian legacy or orphan sources, will be determined in accordance with the NRWMF WAC.

6.2.7 Naturally Occurring Radioactive Material

Naturally Occurring Radioactive Material (NORM) arises from various mining and mineral processing industries as a by-product, residue or waste. A vast majority of this waste is generated and held by the mining sector, with smaller amounts resulting from research work currently held by the Commonwealth and state and territory governments. Currently there is no IAEA standard of what NORM means and it is up to each country to determine a definition.

The Australian Government's position is that NORM held by Commonwealth agencies will be managed by the NRWMF in a way that is safe, secure and meets the requirements of the WAC. Waste arising from uranium mining and mineral sands operations are excluded from acceptance at the NRMWF, as these miners have their own waste disposal operations regulated by state and territory governments, generally involving disposal at the mine site. Other NORM not generated by the mining sector could be considered for acceptance by the NRWMF on a case-by-case basis.

7 Management of Disused Sealed Radioactive Sources, No. NW-T-1.3, IAEA, Vienna 2014.

6.3 Waste Acceptance Criteria

Waste Acceptance Criteria (WAC) are requirements by which the acceptability of waste for storage or disposal can be judged in relation to the specific conditions of a given waste management facility. The WAC plays a key role in the management of interfaces between waste generators, waste processing, storage, and importantly, disposal facilities. Setting appropriate limits and specifications for acceptable waste packages that will ensure the safety objectives of the repository or store are met is an important part of the facility design and safety case development.

The objective of the WAC is to serve as a benchmark for facility operators who accept radioactive waste for disposal or storage, and processors who accept waste for processing (pre-treatment, treatment or conditioning). Using the WAC, the acceptability of waste can be assessed against the specific conditions of a given waste management step and the licensing conditions of the involved facility to ensure that the overall safety case for the facility is maintained. The WAC for the NRWMF will need to be approved by ARPANSA as part of the licensing of the facility.

The WAC for the NRWMF will specify that only radioactively contaminated or activated waste will be accepted for disposal or storage at the NRWMF. Waste must have been treated or packaged in such a way as to render it physically and chemically stable, immobile and resistant to degradation. Liquid wastes will not be accepted at the NRWMF. The NRWMF will only dispose of LLW and provide interim storage of ILW. The WAC also ensures that the NRWMF is able to be operated safely and in accordance with regulatory requirements throughout its life cycle (including post closure).

The WAC for the NRWMF will identify the requirements for ILW to be stored at the facility. A separate WAC for ILW disposal will be prepared as part of planning and development of an ILW disposal facility.

6.4 Research and development (R&D) requirements

In line with international best practice and IAEA guidelines, R&D will be integral to developing facilities to manage Australia's radioactive waste. International experience shows R&D will be required on waste classification standards, disposal concept development, site characterisation and safety assessment. As the NRWMF development progresses through site characterisation, design, safety assessment and community engagement, knowledge gaps will inevitably be identified. To ensure such gaps are addressed, the radioactive waste management strategy developed by the RWMO will incorporate a life-time R&D plan, flexible enough to be updated as planning and implementation of waste facilities proceeds and new information comes to light.

R&D prioritisation will be guided by NRWMF safety assessments, to inform effective use of R&D to ensure safety. A continued research programme is an important element of the safety strategy. The balance between the level of confidence at any point and additional insights from a continued research and monitoring programme will be a central element in interactions between the RWMO, the NRWMF operators and regulators.

The RWMO, as the organisation with overall technical responsibility for radioactive waste management functions, will have primary responsibility for ensuring that all necessary investigations of sites and materials are carried out, assessed for suitability and that all data necessary for safety assessment has been obtained. The RWMO will also ensure that necessary R&D is carried out so that planned NRWMF technical operations can be practically and safely accomplished, and demonstrated; as well as to understand and support the processes on which safe disposal depends. A collaborative approach will be taken with Australian and international expertise.

6.5 Radioactive waste management obligations and liability prior to acceptance

Waste producers have an obligation to manage waste produced and the costs of such obligations. Waste must be appropriately characterised, conditioned, and packaged to make it suitable for storage and ultimately for disposal.

Further consideration is required on the issue of where the obligations of waste producers will cease once the waste has been accepted by the NRWMF. Factors to be taken into account include when and where acceptance of the waste occurs (prior to the waste being transported to the NRWMF, or at the NRWMF gates), what that means for the transfer of liabilities, and implications for planning transport of the waste. The RWMO and/or the operator of the NRWMF will need to work with other government bodies and waste holders and producers in considering this issue.

6.6 Transportation of radioactive waste material

In transporting radioactive material, operators are required to protect the community and environment in accordance with transport regulations.

The transport of radioactive material and radioactive waste is governed by ARPANSA's *Code for the Safe Transport of Radioactive Material*. It is based on internationally accepted standards set by the IAEA[8] and has been adopted in legislation by all states and territories in Australia. The Code provides for:

- limits on the contents of individual containers of radioactive waste according to its radiation characteristics
- standards for the design, construction and testing of packages or containers to be used in the transport of radioactive materials
- accepted levels of radiation, temperature and pressure for such packages
- labelling requirements for containers of radioactive waste
- handling and storage conditions during transport.

ASNO also regulates transport security of nuclear material through the *Nuclear Non-Proliferation (Safeguards) Act 1987*, for quantities of nuclear material above the thresholds set in the Safeguards Regulations.

International experience demonstrates that the transport of radioactive material in accordance with the internationally accepted standards is safe. Development of a plan for transport of Australia's radioactive waste to the NRWMF will be led by the RWMO. This includes detailed planning of transport routes to the NRWMF and will commence following site selection and will form part of the full environmental and nuclear regulatory assessments undertaken prior to operation of the NRWMF.

6.7 Financial arrangements for radioactive waste management

Under the terms of the Joint Convention, Australia is required to ensure that adequate financial resources are available to support the safety of facilities for radioactive waste management. It is implicit in these requirements that appropriate steps are put in place to ensure that the required financial resources are available to the organisation responsible for oversight of Australia's radioactive waste management.

The Australian Government recognises the need for long term funding and provisions for decommissioning activities, predisposal and disposal of radioactive waste. Waste producers and owners are currently responsible for providing financing arrangements for developing and implementing acceptable radioactive waste management solutions, including identifying who will be responsible for the cost. Arrangements will ensure that adequate financial resources are available to support the safety of the NRWMF for long-term radioactive waste management including the institutional control period.

The Australian Government is considering appropriate funding arrangements (including costing and charging models) to provide a sustainable, cost effective final disposal pathway for the full life-cycle waste management of LLW and ILW.

The Australian Government recognises that the optimal outcome is one under which as much as possible of Australia's LLW and ILW is sent to the NRWMF for disposal or storage, and that the charging model that is adopted should reflect this.

It is anticipated that waste producers will need to factor the costs of long-term storage and disposal into consideration of new waste producing activities.

8 Regulations for the Safe Transport of Radioactive Materials, No. SSR-6, IAEA, Vienna 2012.

6.8 International engagement and reporting on radioactive waste

As outlined in Section 5.1, Australia is committed to meeting its international obligations for radioactive waste management.

Australia actively participates in the development, and domestic adoption, of international standards in nuclear safety and security (including transportation), radiation protection and radioactive waste management. This is through various engagement mechanisms, including: representation at the IAEA standards setting committees; participation in international technical meetings and conferences, and the sharing of knowledge and expertise with international operators.

Australia reports to the IAEA on radioactive waste management issues. An Australian National Report is coordinated and prepared by ARPANSA for the three yearly Review Meeting of the Joint Convention. The report provides an update on all relevant issues under the terms of the Joint Convention, including Australia's waste inventory.

While ARPANSA has ultimate responsibility for Australia meeting its reporting obligations under the Joint Convention, the RWMO in its role as responsible for the overall waste management function will be a key contributor to the Australian National Report, and any other international reporting requirements.

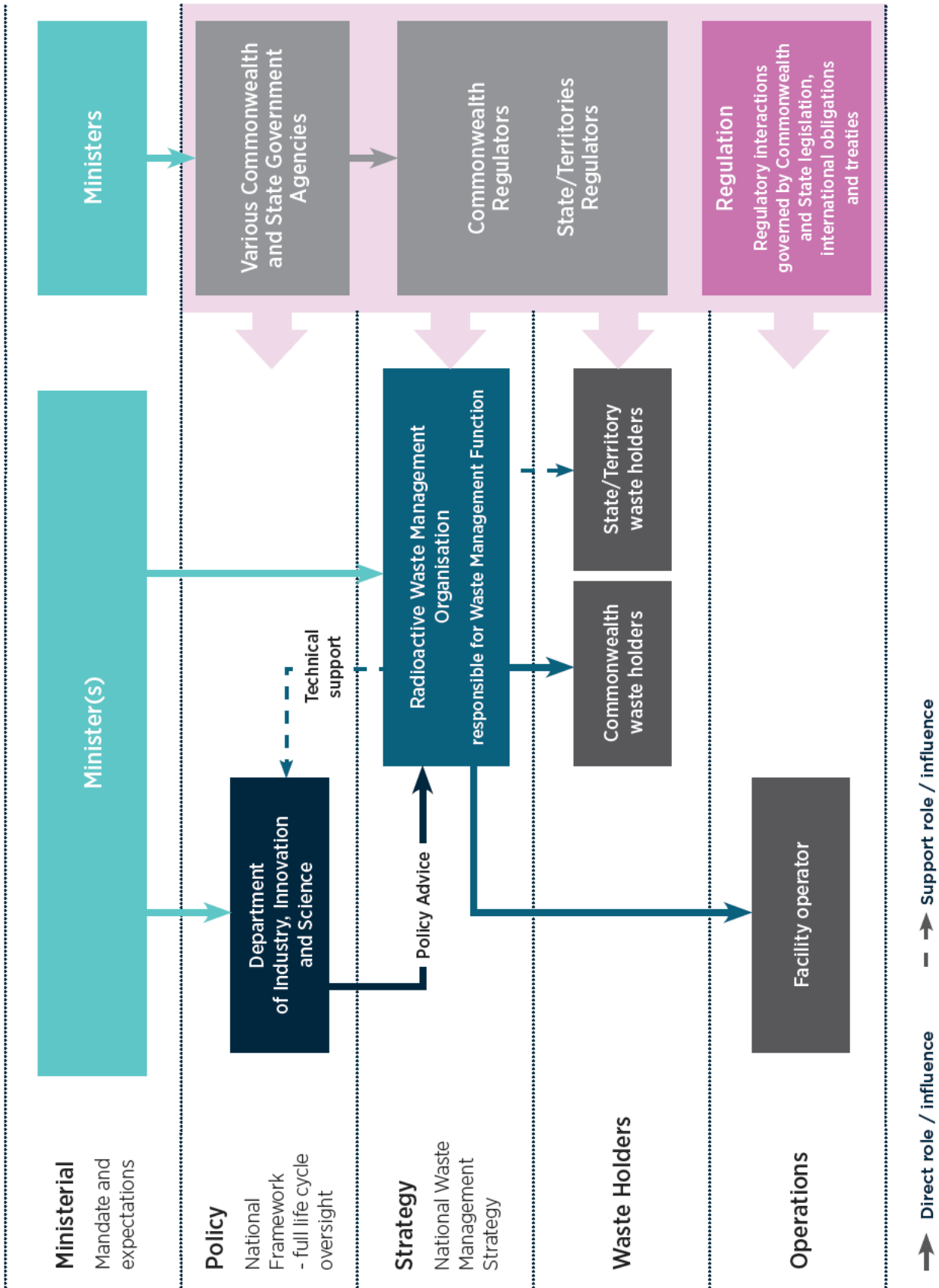
For the proportion of waste that is also nuclear material subject to the Safeguards Act, Australia has treaty-level obligations under the Comprehensive Safeguards Agreement with the IAEA to provide regular reports on all nuclear material inventory and inventory changes, including any that will be held in the NRWMF in the future. The government will also have to report design features of the NRWMF relevant to how the IAEA would conduct any required inspections.

Attachment 1. Key international treaties and Commonwealth legislation relevant to radioactive waste management

Abbreviation	Full title	Brief description
International treaties and agreements		
Non-Proliferation Treaty (NPT)	Treaty on the Non-Proliferation of Nuclear Weapons	An international treaty whose objective is to prevent the spread of nuclear weapons and weapons technology, to promote cooperation in the peaceful uses of nuclear energy and to further the goal of achieving nuclear disarmament and general and complete disarmament. A key condition in the NPT is the requirement to conclude a safeguards agreement with the IAEA, which gives the IAEA access to information and to do inspections to verify that each country is abiding by its NPT commitments.
Physical Protection Convention (CPPNM)	Convention on the Physical Protection of Nuclear Material (and its 2005 amendment)	The only international legally binding undertaking specific to the physical security of nuclear material. It establishes measures related to the prevention, detection and punishment of offences relating to nuclear material. The Amendment to the Convention on the Physical Protection of Nuclear Material, which entered into force in 2016, makes it legally binding for States Parties to protect nuclear facilities and material in peaceful domestic use, storage as well as transport. It also provides for expanded cooperation between and among States regarding rapid measures to locate and recover stolen or smuggled nuclear material, mitigate any radiological consequences of sabotage, and prevent and combat related offences.
Joint Convention	Joint Convention on the Safety of Spent Fuel Management and on the Safety of Radioactive Waste Management	The Joint Convention applies to spent fuel and radioactive waste resulting from civilian nuclear reactors and applications and to spent fuel and radioactive waste from military or defence programmes if and when such materials are transferred permanently to and managed within exclusively civilian programmes, or when declared as spent fuel or radioactive waste for the purpose of the Convention. The obligations of the Contracting Parties with respect to the safety of spent fuel and radioactive waste management include, in particular, the obligation to establish and maintain a legislative and regulatory framework to govern the safety of spent fuel and radioactive waste management and the obligation to ensure that individuals, society and the environment are adequately protected against radiological and other hazards, inter alia, by appropriate siting, design and construction of facilities and by making provisions for ensuring the safety of facilities both during their operation and after their closure.
Comprehensive Safeguards Agreement (CSA)	Agreement between Australia and the International Atomic Energy Agency for the application of safeguards in connection with the Treaty on the Non-Proliferation of Nuclear Weapons	Agreement between a state and the IAEA for the application of safeguards to all of the state's current and future nuclear material and activities, based on IAEA document INFCIRC/153. The measures in the CSA are designed to enable the IAEA to verify that NPT commitments to not use nuclear material and facilities for military purposes are being upheld. Under the CSA, states are required to maintain a system to account for and control all nuclear material. The CSA also requires states to report to the IAEA on all nuclear material inventory (with limited exceptions) and on design features of nuclear facilities, and to allow IAEA inspectors to inspect nuclear material and facilities.

Additional Protocol	Protocol Additional to the Agreement between Australia and the International Atomic Energy Agency for the application of safeguards in connection with the Treaty on the Non-Proliferation of Nuclear Weapons	An agreement designed to complement a state's safeguards agreement with the IAEA in order to strengthen the effectiveness and improve the efficiency of the safeguards system. The model text of the Additional Protocol is set out in IAEA document INFCIRC/540. The Additional Protocol gives the IAEA inspection access to a broader range of locations than under the CSA, and requires reporting to the IAEA on additional information about nuclear-related locations and activities not covered in the CSA.
Commonwealth legislation		
Safeguards Act	*Nuclear Non-Proliferation (Safeguards) Act 1987*	The principal object of this Act is to give effect to Australia's obligations under the NPT, Australia's Comprehensive Safeguards Agreement and Additional Protocol with the IAEA, the Convention on the Physical Protection of Nuclear Material (and its 2005 amendment); and agreements with various countries on the transfer of nuclear material, equipment and technology. Commitments under these international treaties are managed through a system of permits issued by ASNO for the possession of nuclear material, equipment and technology.
ARPANS Act	*Australian Radiation Protection and Nuclear Safety Act 1998*	The object of this Act is to protect the health and safety of people, and to protect the environment, from the harmful effects of radiation. The Act also gives effect to certain obligations that Australia has under the Joint Convention.
NRWM Act	*National Radioactive Waste Management Act 2012*	The object of this Act is to provide for: (a) the selection of a site for a radioactive waste management facility on voluntarily nominated land in Australia; and (b) the establishment and operation of such a facility on the selected site; to ensure that radioactive waste generated, possessed or controlled by the Commonwealth or a Commonwealth entity is safely and securely managed.
EPBC Act	*Environment Protection and Biodiversity Conservation Act 1999*	The EPBC Act provides a legal framework to protect and manage nationally and internationally important flora, fauna, ecological communities and heritage places — defined in the Act as matters of national environmental significance. Several aspects of the NRWMF make it a 'controlled action', requiring assessment and approval under the EPBC Act. The NRWMF is likely to meet the definition of a nuclear action under section 22 of the EPBC Act because it involves establishing a large-scale disposal facility for radioactive waste. Consideration of impacts to the 'environment' are also required because the NRWMF is being proposed by the Commonwealth.

Attachment 2. Australia's current institutional arrangements for managing radioactive waste



Attachment D

Background – Upcoming ARTEMIS Peer Review

- The International Atomic Energy Agency (IAEA) offers an integrated peer review service (ARTEMIS) to Member States for radioactive waste and spent fuel management, decommissioning and remediation programmes.
- The objective of an ARTEMIS review is to provide independent expert opinion and advice in the form of recommendations and suggestions.
- Australia, as a Member State, formally requested an ARTEMIS review in 2015. In April 2024, ARWA hosted a fact-finding mission in Adelaide with two IAEA officials and representatives from other nuclear agencies including ARPANSA, ANSTO and ASNO in attendance. Further discussions have earmarked scope and timing for the full peer review to be held in November 2025.
- ARWA has requested that the scope of the ARTEMIS review focuses on Policy, Framework and Strategy. This will delve into the Commonwealth policy on:
    - radioactive waste from generation to disposal, including the underpinning principles upon which such policy was formed;
    - the approval process for setting and/or amending Commonwealth policy positions;
    - how policy is reflected and documented;
    - legislative arrangements for the safe management of radioactive waste;
    - the assignment of responsibilities (including regulatory and operational) and where these are documented; and
    - regulatory provisions and implementation.
- The ARTEMIS review mission will involve meetings, interviews, site visits, and document reviews as necessary across relevant agencies. IAEA observations, preliminary findings and recommendations will be provided to Australia in a draft review report for clarifications and fact-checking before a final approved report is delivered.
    - Whilst the final review report is usually published on the IAEA ARTEMIS webpage, publication is at the discretion of Australia as the requesting Member State.
- As a cornerstone document on Australia's strategy for radioactive waste management, the intention is to focus the ARTEMIS mission on a review of the Australian Radioactive Waste Management Framework (Framework).
    - This will include both the existing Framework and a draft of the updated Framework.

- The review and update of Australia's Radioactive Waste Management Framework provides an opportunity to leverage international expertise through the ARTEMIS review. This will ensure the updated Framework is informed by international best practice and evidence, strengthening the Framework and ensuring it addresses current and future challenges in radioactive waste management based on international experience.
    - ARTEMIS feedback on the draft updated Framework will be considered and incorporated into the updated Framework alongside public consultation feedback before final publication of the Framework.
- The ARTEMIS review will also evaluate Australia's national inventory of radioactive waste and decommissioning and remediation programs.
- At the request of Australia, the following aspects will be out of scope for the review:
    - NORM Waste
    - Safeguards and Security; and
    - Defence Wastes.

DEPARTMENT OF INDUSTRY, SCIENCE AND RESOURCES

MS24-001759

To: Minister for Resources (For Decision)

RESPONSE TO s 22 – PROPOSAL FOR STORAGE OF LOW-LEVEL RADIOACTIVE WASTE

Timing: Routine – noting s 22 initial submission to Ms Louise Miller-Frost MP dates 10 August 2024.

Recommendation:

1. That you **sign** the letter to s 22 regarding his proposal submission (see Attachment A).

Signed / Not Signed

Minister: Date:

Comments:

Clearing Officer:	Sam Usher	Chief Executive Officer, Australian Radioactive Waste Agency	Mob: s 22
Contact Officer:	s 22	A/g Manager – Communications and Engagement	Ph: s 22
For Parliamentary Services' use only. Date Submitted to the Minister's office in PDMS:			17/1/2025

Key Points:

1. On 9 October 2024, your office received a letter from Ms Louise Miller-Frost MP on behalf of her constituent s 22 regarding a concept proposal for the storage of low-level radioactive waste (**MC24-004116** refers). This proposal was forwarded to the department.
2. On 8 November 2024, you sent a letter to Ms Miller-Frost thanking her for the proposal from her constituent (**MC24-004116** refers).

3. Your office then requested an information brief from the department about the proposal (**MB24-001037** refers). In this brief, the department advised that they considered the proposal for low-level uranium waste to be stored in wind turbines to be misaligned to domestic and international standards, requirements, and good practice for radioactive waste disposal facilities.

4. On 17 December 2024, you requested the department prepare a response for s 22 based on advice in **MB24-001037**. A draft response is provided for your consideration at Attachment A.

Sensitivities and Handling: NIL

Data referenced: NIL

Consultation with the Partnerships and Projects Division, Department of Infrastructure, Transport, Regional Development, Communications and the Arts: NIL

5. This matter is not relevant to the Northern Australia portfolio.

Other Consultation: NIL

ATTACHMENTS:

A: Response to s 22

B: MB24-001037 – Signed brief

C: Letter to Minister King from s 22

ALL ATTACHMENTS ARE OFFICIAL

THE HON MADELEINE KING MP
MINISTER FOR RESOURCES
MINISTER FOR NORTHERN AUSTRALIA

MS24-001759

s 22

s 22

s 22

Thank you for your letter of 10 August 2024 regarding your concept proposal for the storage and disposal of radioactive waste.

My department, which includes the Australian Radioactive Waste Agency (ARWA), is responsible for the safe and secure management of Australia's radioactive waste. As such, I have forwarded your concept proposal to ARWA for their review.

ARWA has advised that in developing strategies to manage radioactive waste, they strive to apply international best practice relevant to the unique context of Australia, which among many complex factors ensures waste is:

- isolated (separated from people and the environment);
- contained (prevented from being released from the disposal facility);
- retained (prevented from reaching people and the environment).

ARWA has advised that the above-ground disposal that would occur in windfarm turbine shafts, delivers significantly lower levels of isolation and protection than in other solutions, such as below-ground disposal seen in international solutions for similar waste types.

ARWA has further advised that radioactive waste remains hazardous over long periods of time and when disposal facilities are closed, they must remain undisturbed and safe for an extended period. The ongoing requirement for human involvement for the maintenance of wind turbines would not deliver the appropriate passive safety levels required by Australian regulators.

Based on the above reasons, using retired wind turbines for radioactive waste disposal is unlikely to meet the regulations, codes and other requirements to which, I am sure you can appreciate, the Australian Government must fully subscribe.

A range of complex issues need to be analysed to help decide the future disposal pathways for the Commonwealth's radioactive waste. There are many considerations, including Commonwealth and state regulatory and legislative considerations to any solution, which government has an obligation to investigate fully. ARWA continues to work on proposals for the safe and secure disposal of radioactive waste.

Your care for this matter is appreciated and I thank you again for writing to me.

Yours sincerely

Madeleine King MP

/ /2025

OFFICIAL

DEPARTMENT OF INDUSTRY, SCIENCE AND RESOURCES

MB24-001037

To: Minister for Resources (For Information)

PROPOSAL FOR STORAGE IN LOW LEVEL URANIUM WASTE - s 22

Recommendation:

1. That you **note:**

   a. The Australian Radioactive Waste Agency (ARWA) has reviewed the proposal by s 22 from 10 August 2024 regarding storage of low grade uranium waste within existing windfarm tower structures located near Snowtown, South Australia.

   b. That ARWA considers that disposal of solid radioactive waste (including low level uranium waste) in wind turbine shafts does not align with domestic and international standards, requirements, and good practice for radioactive waste disposal facilities.

s 22 **Please Discuss**

17-12-24

Clearing Officer:	Sam Usher	Chief Executive Officer, Australian Radioactive Waste Agency	Mob: s 22
Contact Officer:	s 22	Manager – Waste Operations & Inventory, Australian Radioactive Waste Agency	Mob: s 22
For Parliamentary Services' use only. Date Submitted to the Minister's office in PDMS:			13/11/2024

Key Points:

1. Your office requested an information brief from ARWA in response to **MC24-004116** *VIP MP's letter to Minister King, OBO constituent* s 22 *regarding Concept Proposal for the Storage of Low-Level Radioactive Waste (Ms Louise Miller-Frost MP).*

2. **MC24-004116** was prompted by a concept proposal from s 22 to the Minister for the storage (disposal) of 'Low Grade Radioactive Waste' within existing or new proposed windfarm tower structures on specific sites at Snowdon or Port Augusta, South Australia. The concept plan suggests the use of the hollow internal structures of wind turbines for the long-term storage of drummed radioactive waste.

3. ARWA is progressing work to support Government decision making on radioactive waste disposal pathways for Australia that applies international good practice and complies with international/Commonwealth requirements and obligations. ARWA has concluded that the proposal does not align with domestic and international best practice and standards for radioactive waste disposal systems.

4. The purpose of radioactive waste disposal is to protect people and the environment from potential harm from radiation and other hazards over the period that the waste is radioactive.

5. International consensus for radioactive waste facilities is that they should be designed, built, operated, and closed in such a way that ensures that waste is isolated (separated from people and the environment), contained (prevented from being released from the disposal facility) and retained (prevented from reaching people and the environment). In many international contexts, radioactive waste like that in Australia is disposed of underground (at a depth appropriate to the level of hazard of the waste, with more hazardous waste disposed of at greater depths) to achieve isolation, containment, and retention. Above ground disposal, such as in windfarm turbine shafts, delivers significantly lower levels of isolation than below ground disposal and risks loss of containment/retention if the turbine structures became damaged by environmental events, malicious action or degradation over time.

6. Radioactive waste remains hazardous over long periods of time (hundreds to thousands of years). When disposal facilities are closed, they must remain undisturbed and safe for an extended period. The Australian Radiation Protection and Nuclear Safety Agency (ARPANSA), the Australian nuclear safety regulator, expects that long-term safety is maintained without the need for continuing human involvement (so-called passive safety). Wind turbines have a typical lifespan of 25-30 years and so would require ongoing human involvement in their maintenance and replacement over the long-term, and would not deliver passive safety.

7. A fundamental safety principle in Australia and internationally is that anyone using or managing radioactive materials/wastes must make all practical efforts to prevent and mitigate accidents, and acts with malicious intent, that may give rise to radiation risks. This means that radioactive waste disposal facilities should be built, operated, and closed in a way that makes them less vulnerable to human activities such as terrorism or war. Facilities built above ground – such as in the proposal – are more vulnerable (given their visibility and accessibility) to such human activities than those underground.

8. Radioactive waste also requires protection from environmental processes such as extreme weather events and climate change. Building and operating disposal facilities below ground is safer and more resilient to such environmental events.

Data referenced:

9. International Atomic Energy Agency, 2011, IAEA Safety Standards Specific Safety Requirements No. SSR-5 Disposal of Radioactive Waste.

10. Australian Radiation Protection and Nuclear Safety Agency, 2018, Code for Disposal Facilities for Solid Radioactive Waste.

11. Alavi, Z., Khalilpour, K.R, Florin, N, 2024, *Forecasting End-Of-Life Wind Turbine Material Flows in Australia under Various Wind Energy Deployment Scenarios,* Energies 17(4):914.

Consultation with the Partnerships and Projects Division, Department of Infrastructure, Transport, Regional Development, Communications and the Arts: NIL

12. This matter is not relevant to the Northern Australia portfolio.

Other Consultation: NIL

10-8-2024

To the Minister for Resources, the Honorable Madeline King

I read with interest , your comments in conjunction with the 7.30 report on the ABC, dated 6-8-2024 in respect to the Sandy Ridge Low Level Radioactive Waste facility in Western Australia.

Firstly, your comment that the Federal Government is undertaking a formal review of past mistakes and future site options was pleasing to hear.

Secondly, that the above site has all the permits, all the approvals, and everything it needs to do to operate safely, but requires the appropriate processes to reach a final decision.
Was this a WA Government decision without consulting the Federal Government?

Thirdly, transport across the country bans of Radioactive Waste has to be overcome.
People with objections should be totally informed of what constitutes Low Grade Uranium Waste.

To know that the Federal Government is now seriously looking into solutions is a great step forward.

As I too have been developing a storage proposal for storing Low Level Radioactive Waste, my research into the Government Department web site, www.arpansa.gov.au, raises questions in respect to the above site complying with their strict requirements as follows.

1. Low Level Waste must be isolated from other substances and contained for a period of up to a few hundred years. This seems over the top as the USA requires a period up to 65 years.
2. The facility must not operate in an Isolated location.
3. It may be necessary to transport Low Level Waste between different facilities for conditioning.
4. Low Level Waste to be transported safely in a contained condition.
5. Low Level Waste must be accessable for the possible reuse in the future.

As I believe the Sandy Ridge facility is a step forward , I have great reservations about the life span of the canopy structure, as similar pit storage methods or tunnel storage in the USA have resulted in Billions of dollars being paid out by Governments in litigation claims for leakage as a result of earthquakes etc after spending Billions of dollars on research.

I also question the operators statement that they have processed 6000 cubic meters of Low Grade Radioactive Waste since commencing operations in 2021, excluding Lucus Heights where the bulk of Low Level Waste is stored, as the estimated accumulation of Low Grade Waste held in various locations around Australia is 5000 cubic meters over many years.

At this point, I wish to submit my proposal for consideration, direct to you.

Storage of LGRW,within existing or new proposed Windfarm Tower Structures.

While my submission stipulates Snowtown, SA, it can also apply to Pt Augusta, keeping the project South Australian based, but can also apply to States storing their own accumulated waste,present and future, but this would require a minor adjustment to the over all cost, but eliminates the problem of transporting the waste across Australia.

My submission excludes the total cost figure at the moment, but would be under $100 million based

on todays costings , state by state storage being the most costly option, but could be the best option when considering transportation of waste.

As stated in my submission, the concept has been fully costed, scrutinized by recognized engineers, procedure and time frame for completion within two (2) years approved by workshop management in respect to Snowtown and Pt Augusta, weather may have some effect on timing..

One or two States could be combined due to the possible low accumulation of waste, for example ,Tasmania with Victoria, Northern Territory with South Australia.

In the de-commissioning of Turbines if required, the upper sections of the Tower could be removed with the base section capped off.

End of life Turbine Towers remaining in place, rests with the land owner and could receive compensation for a period of time.

Complete details of my submission are attached, along with background information, a detailed drawing of the concept,which is applicable to all concepts whether existing or new towers in progress.

I know my concept falls into the calagory of "Thinking Outside The Square", but the aim is to utilize the empty inner space of Turbine Tower Structures.

As all windfarms present and future , are subject to strict Sacred Sites and environment considerations, again taking advantage of the Non infringment of both of these important issues, is a bonus to the State and Federal Governments.

By granting approval for the proposed concept, creates the opportunity for Australia to become World Leaders in storing waste and with a well prepared Business Plan, the Royalty Payments would generate a substancial income, as Australia`s accumulated waste is minor compared to many overseas countries and they are spending Billions investigating possible solutions.

Thanking you for taking the time to read my Submission,

s 22

s 22

From: "Minister King"
Sent: 6/02/2025 11:28:02 AM
To: s 22
Cc: "Minister King" <Minister.King@industry.gov.au>
Subject: Correspondence from Minister King - MS24-001759 [SEC=OFFICIAL]
Attachments: Correspondence from Minister King - MS24-001759.pdf

OFFICIAL

Dear s 22 ,

Please see attached correspondence from Minister King.

Kind Regards,

Office of the Hon Madeleine King MP
Minister for Resources
Minister for Northern Australia
Parliament House Canberra ACT 2600 Australia
T: (02) 6277 7930 **E:** minister.king@industry.gov.au

OFFICIAL

QB25-000009

RADIOACTIVE WASTE MANAGEMENT

Issue

The Australian Government is committed to the safe and secure management of Australia's radioactive waste.

Key Talking Points

Radioactive waste management in Australia

- Australia's radioactive waste is currently safely managed in temporary storage arrangements.
- Establishing permanent disposal pathways for Australia's radioactive waste is important to ensure safe and secure management of this waste for generations to come.

Former Site Selection Process and the National Radioactive Waste Management Facility (the Facility)

- On 18 July 2023, the Federal Court set aside the former Minister's declaration of Napandee as the proposed site for the Facility.
- On 10 August 2023, I announced that the Government did not intend to appeal the Federal Court's decision, nor pursue Napandee or the previously shortlisted Lyndhurst and Wallerberdina sites as a potential site for the Facility.
- Site characterisation activities that took place at and around the site near Kimba have ceased, and decommissioning has been completed.

Contact: s 22 Manager, Radioactive Waste Policy, ARWA: s 22
Cleared by: Mark Weaver, General Manager, Policy, Governance and Strategy, ARWA, s 22

Min ID: QB25-000009
Division: Australian Radioactive Waste Agency
Created: 17 January 2025
Updated: 3/26/2025 9:38 AM (date should stay in this format)

- The site is being supervised to ensure it remains safe and cultural heritage is protected while we work through disposition of the land.
- Work already undertaken will contribute to future progress on establishing safe and secure disposal pathways.

If asked about siting of a facility for waste disposal, progress on radioactive waste management since Kimba or whether radioactive waste can be provided to a commercial provider.

- I reiterate the Government's firm commitment to the safe management and disposal of Commonwealth radioactive waste.
- Radioactive waste can take thousands of years to decay. This requires long-lasting, multigenerational Government policy. It is important we get this right.
- My department is assessing options for the storage and disposal of the Commonwealth's civilian low-level and intermediate-level radioactive waste.
- A process and timeframes for establishing radioactive waste disposal pathways and associated siting will be determined once the Government has considered options and made decisions in due course.

If asked about whether nuclear-powered submarine waste can be accommodated in current planning for Australia's radioactive waste management

- The Government is assessing options for the safe and secure management of existing Commonwealth civilian radioactive waste, as well as future waste generated from the nuclear-powered submarine program.

If asked about the future storage of AUKUS nuclear waste at Australian naval bases.

- The Government is clear that Australia will manage all radioactive waste from its nuclear-powered submarines.
- The Nuclear Power Submarine Program will require the management and storage of low-level radioactive waste associated with the maintenance of visiting US and UK nuclear propelled submarines at naval bases including HMAS Stirling in my electorate.
- This low-level radioactive waste is typical of the type of waste Australia currently manages safely at several sites and will consist of disposable gloves, wipes, reactor coolant and used personal protective equipment, with minor levels of contamination from contact with radioactive materials.
- This will involve temporary storage of low-level waste at these sites.

- Questions about future developments at our naval facilities and licence applications should be directed to the Deputy Prime Minister.

If asked about the House of Representative Inquiry into nuclear power generation in Australia

- On 10 October 2024, the House Select Committee on Nuclear Energy (the Committee) was established. The Committee will inquire into, and report on, the consideration of nuclear power generation, including deployment of small modular reactors, in Australia.
- On 24 October 2024, an official from ARWA, on behalf of the Department of Industry, Science and Resources, attended the first public hearing of the Committee. Additional public hearings were held around Australia between 28 October and 17 December 2024.
- On 25 February 2025, the House Select Committee on Nuclear Energy released its Interim report for the inquiry into nuclear power generation in Australia.
- The interim report provided an overview of the evidence received on 2 of the 13 issues about the viability of nuclear power generation in Australia that have dominated the evidence the Committee has received:
  - The timeframes for the deployment of nuclear power generation in Australia; and

- The cost of the deployment of nuclear power generation in Australia.

- The interim report did not specifically address Radioactive Waste but does make the following references to waste/ previous siting processes for a facility:
  - Prohibition Acts in Western Australia and South Australia
  - Challenges in achieving social licence (including for radioactive waste facilities) impacting time frames
  - Specific reference to "*clear opposition to nuclear waste management sites, as demonstrated in June 2023 when efforts to construct a low-level nuclear waste site in South Australia were successfully blocked*" Para 2.26
  - Reference to future costs of waste management, disposal and plant decommissioning.

- The Committee is required to present its final report by no later than 30 April 2025. The Committee will cease to exist upon presenting its final report.

Background

Policy commitments

2024–25 Budget

- In the 2024–25 Budget, the Government, through the *Update on Radioactive Waste Management* measure, provided $43.0 million over six years from 2024–25 to the Australian Radioactive Waste Agency to continue activities around identifying radioactive waste disposal pathways.
- $15.6 million has since been reallocated within Outcome 1.3 in 2024-25. The remaining $27.4 million funding over six years from 2024-25 includes ~~Funding includes~~:
  - $23.2~~38.8~~ million over two years from 2024–25 to assess options around alternative pathways for disposal of the Commonwealth's radioactive waste
  - $4.2 million over six years from 2024–25 to undertake remediation, supervision, and disposition activities of the former National Radioactive Waste Management Facility site following the outcome of the litigation in the Federal Court in July 2023.
- s 47C

s 47C

2023–24 Budget

- In the 2023–24 Budget, the Government through, the *Safely Managing Australia's Radioactive Waste* measure, committed to long-term funding to support the safe and sustainable management and disposal of Australia's radioactive waste.
  - Funding includes $476.4 million to 30 June 2030 and an ongoing $38.7 million per annum from 2030–31.
- In the 2023–24 Budget, $5.2 million over two years from 2023–24 was also committed to ARWA through the *Nuclear Powered Submarine Program – initial implementation* measure.
  - Funding is being used to support the development of radioactive waste management, storage and disposal arrangements with the Defence portfolio.

Radioactive Waste in Australia

- Australia's inventory of radioactive waste has accumulated for over 100 years and will continue to grow.
- The vast majority of Australia's radioactive waste is from producing nuclear medicine. Every Australian is estimated to benefit from a nuclear medicine procedure in their lifetime.
- Radioactive materials are also used in scientific research, resources (e.g., in the characterisation and analysis of minerals samples) and agriculture. Naturally Occurring Radioactive Material (NORMs), a natural by-product in mining, must also be safely managed by the resources sector.
- For more than 40 years, successive governments have sought a site for a facility to dispose of Australian radioactive waste found in hospitals, universities, and science facilities.

- The Australian Nuclear Science and Technology Organisation (ANSTO) currently safely manages a majority of Australia's radioactive waste at their Lucas Heights campus in Sydney, while permanent disposal pathways are being developed.
- Intermediate–Level waste (ILW) can be safely stored at or near the earth's surface in an appropriate container but requires permanent disposal deeper in the earth than Low–Level waste (LLW).

Storage of Radioactive Waste at the Osborne SA Shipyard

- On 18 November 2024, ABC news reported on the future storage of low-level radioactive waste at Osborne in South Australia.
- Osborne is one of the sites, along with HMAS Stirling in WA, prescribed by the *Australian Naval Nuclear Power Safety Act.*
- Some community groups claim there is a lack of consultation on future proposals at Osborne. Questions on future plans including on stakeholder consultation should be directed to the Deputy Prime Minister.

ARPANSA HMAS Stirling facility licence decision

- On 17 July 2024, ARPANSA announced they had issued a license to the Australian Submarine Agency for a controlled Industrial facility that will provide low-level waste management and maintenance services located at the HMAS Stirling site on Garden Island, Rockingham in Western Australia.
- The facility is not and will not be a permanent disposal facility for radioactive waste.

DEPARTMENT OF INDUSTRY, SCIENCE AND RESOURCES

MB25-000219

To: Minister for Resources

MEETING WITH MEGHAN QUINN – ARWA STRATEGIC DISCUSSION

Timing: For meeting on 10 June 2025

Meeting with: The Minister for Resources, Madeleine King MP.

Prior meetings: The last meeting between the Minister and ARWA was held on 11 September 2024 ,to follow up the Cabinet discussion on radioactive waste.

Proposed note taker: Nil.

What we want: The Minister for Resources, Madeleine King MP (the Minister), to consider key issues and next steps for Commonwealth radioactive waste management outlined in the slide deck at Attachment A.

What they want: Strategic discussion on issues and next steps for radioactive waste management, including proposed approach and decisions for government.

Issues and Sensitivities: Nil.

Consultation with the Partnerships and Projects Division, Department of Infrastructure, Transport, Regional Development, Communications and the Arts: NIL.

Other Consultation: NIL

Attachments -

A: Strategic Discussion Slides

Clearing Officer:	Sam Usher	CEO, Australian Radioactive Waste Agency	Ph: 08 8406 4787 Mob: s 22
Contact Officer:	s 22	Manager Radioactive Waste Policy, ARWA	Ph: s 22 Mob: s 22
For Parliamentary Services' use only. Date Submitted to the Minister's office in PDMS:			06/06/2025

THE HON MADELEINE KING MP
Minister for Resources
Minister for Northern Australia

MEETING BRIEF REQUEST	
Title:	Meeting with Meghan Quinn – ARWA Strategic Discussion
Date:	Tuesday 10 June 2025
Time:	3:00 – 4:00pm (AEST)
Location: If the meeting involves a site visit please provide an 'electorate brief' as an attachment. Contact DLOs for an example if required.	M1.24 – APH
Contact: If a contact is listed by the MO please contact them to confirm any necessary details	s 22 **Executive Officer to Deputy Secretary Robert Jeremenko** **P** s 22 | **M** s 22 | **E** s 22 @industry.gov.au Department of Industry, Science and Resources Ngunnawal Country, Industry House, 10 Binara Street (GPO Box 2013) Canberra ACT 2601 Australia
Attendees:	Meghan Quinn – Secretary DISR Sam Usher CEO ARWA

Required information:

Bios:	☐	Departmental Rep:	☐	Speech (full text):	☐
Talking Points:	☒	Record of Meeting:	☐	Media Release:	☐
Q&A:	☐	Speech Notes:	☐	Shell Release	☐

Background:	

MO Comments:	Strategic Discussion on radioactive waste

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