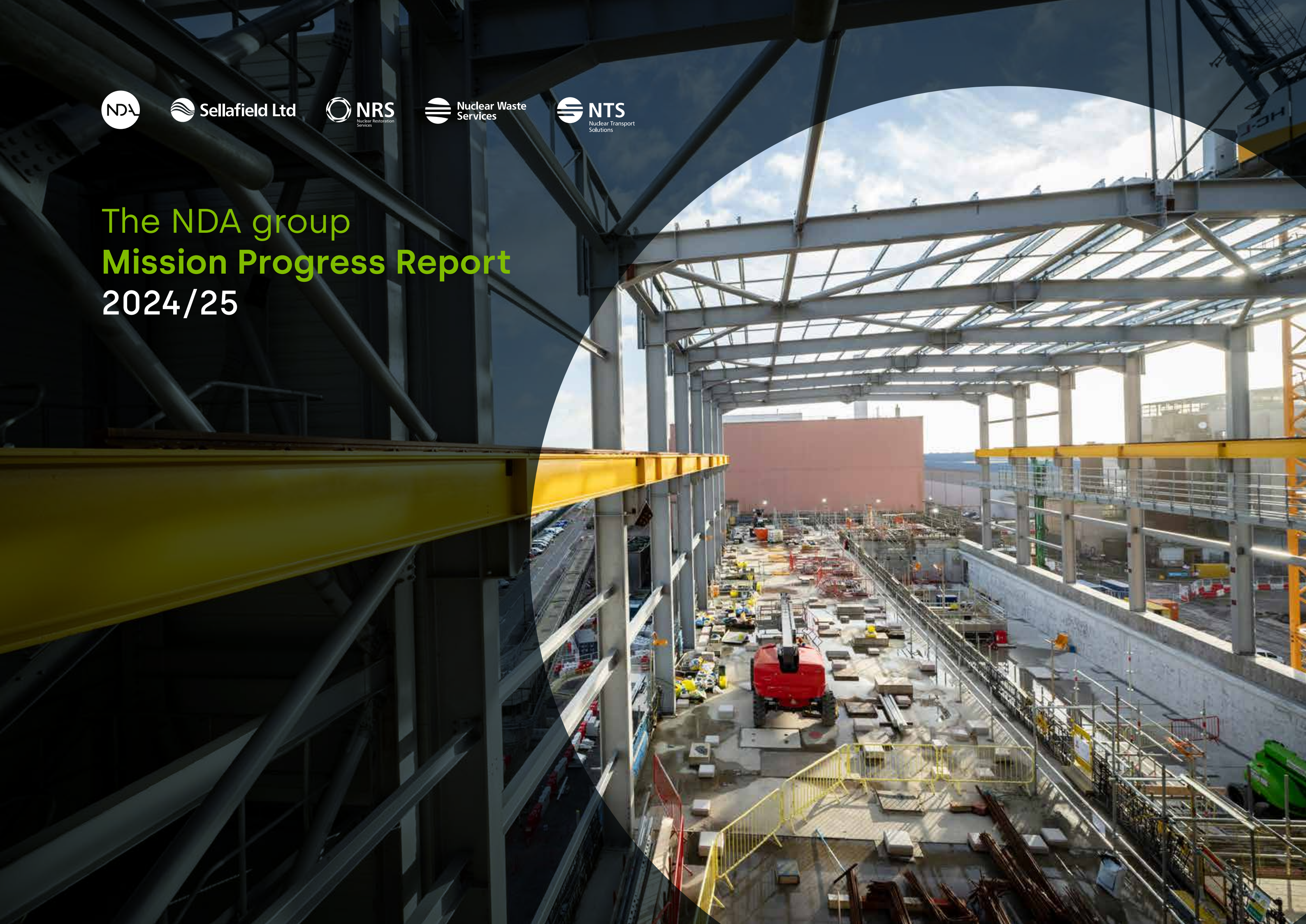




The NDA group Mission Progress Report 2024/25



Foreword



David Peattie
Group Chief Executive Officer

THE MISSION

Ours is one of the most important environmental programmes in the world, protecting people and the planet, decommissioning the UK's early nuclear sites safely, securely and cost effectively with care for people and the environment.

THE MISSION PROGRESS REPORT

The Mission Progress Report aligns with our Strategy (fourth edition) published in 2021. The document continues to demonstrate our approach to reporting progress against the mission, focussing on the four driving themes outlined in our strategy that are common across all sites and that help us to measure our achievements. Our mission delivery over the next five years and beyond will be set out in the fifth iteration of our Strategy, which we have been developing over recent months and is due for publication in the spring of 2026.

Progress continues to be made across the NDA's mission, which will continue well into the next century. With programmes stretching that far into the future, progress needs to be monitored and occasionally activities may need to be adjusted to take account of learning, experience, and new technologies.

This has been a significant year of delivery for the NDA leading up to our 20-year anniversary. We have been consolidating and further maximising the benefits offered by working as a group and enhancing our efficiencies. The emphasis remains to provide maximum value for the UK taxpayer and support the government's plan to strengthen the economy, support growth and ensure long-term financial stability. We remain focussed on delivering our mission and supporting the government in delivering its Plan for Change.

We continue to be trusted to do more in the NDA group and as our mission grows, we will incorporate this additional activity into the Mission Progress Report at the appropriate time.

David Peattie FREng FNucl
Group Chief Executive Officer

HOW TO READ THIS REPORT

This report is structured to illustrate the progress against the strategic objectives outlined in our strategy.

In the first two pages you'll see a very high-level summary of what the mission is and how far we have progressed since 2005.

Each of the four themes has an overview page to explain our objectives and the steps we need to take. Each step (or 'strategic outcome') shows the estimated inventory that has to be managed and what capability there is to deliver it.

We continue to build a more accurate picture of work that's still to be completed across our sites. As the data range matures over the next 120+ years, along with the reduction of uncertainty of the inventory, progression in the lifecycle and strategy development, it may well be subject to change. The figures contained within this report are correct up to 31 March 2025.

Excluded from this report are critical enablers, liquid and gaseous discharges, non-NDA liabilities and non-radioactive waste elements of our strategy.

Our strategic approach and themes

We use five strategic themes to describe all the activities needed to deliver the NDA's mission.

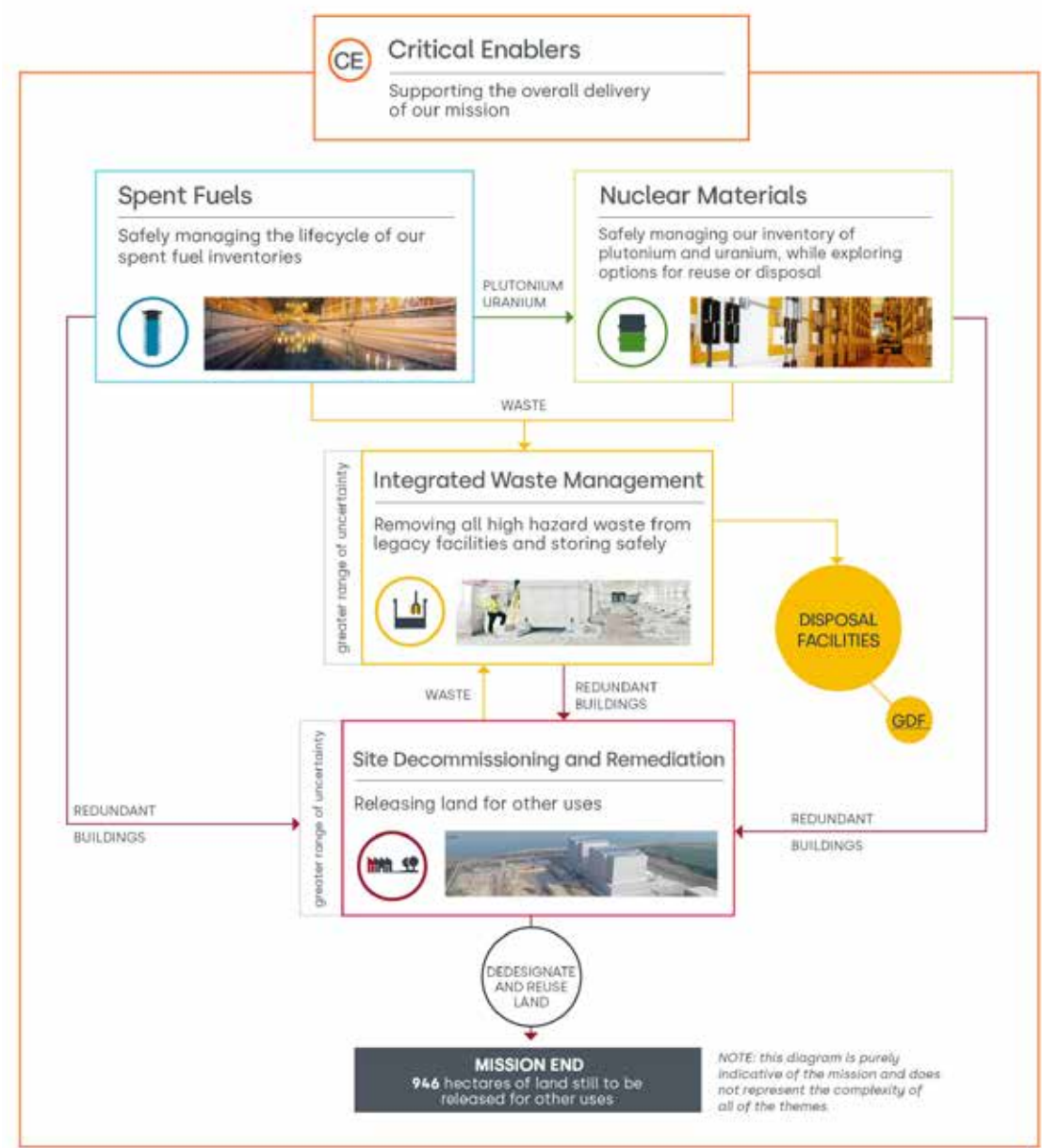
The first four strategic themes, spent fuels, nuclear materials, integrated waste management and site decommissioning and remediation relate directly to our clean-up and decommissioning and are known as driving themes. All data in this report relates to those four themes.

The fifth theme describes the important activities needed to support the delivery of our mission and

is known as critical enablers. The diagram below demonstrates how they interplay.

Currently, the most urgent task is dealing with sites' highest hazard materials: spent fuel, nuclear materials and highly-radioactive wastes.

Once the inventory has been made safe, the redundant nuclear facilities can be dismantled and demolished.



Our four driving themes

Spent Fuels



Our strategy defines our approach to managing the diverse range of spent fuels for which we are responsible, which are divided into Magnox, Oxide and Exotic. Once spent fuel is removed from a reactor, it is stored in a pond or dry store until it can be dispatched to Sellafield.

Reprocessing extracts materials (plutonium and uranium) that could potentially be re-used and also generates highly radioactive wastes, or fission products.

The NDA's strategy is to bring the reprocessing programme to an end. The Thermal Oxide Reprocessing Plant (THORP) and the Magnox reprocessing plant are now both closed. All remaining spent fuel will be safely stored until a permanent solution for disposal is available.

Our spent fuel work is separated into 15 strategic outcomes that we must deliver, see p4. For more detail on our spent fuels strategy see NDA Strategy 2021, p46-57.

Nuclear Materials

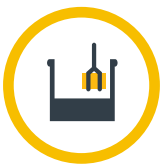


Our strategy defines our approach to dealing with the inventory of uranics and plutonium currently stored on some of our sites. These nuclear materials are by-products from different phases of the fuel cycle, either manufacturing or reprocessing. All nuclear materials must be managed safely and securely, by either converting them into new fuel or immobilising and storing them until a permanent UK disposal facility is available.

All of our plutonium is stored at Sellafield. Our uranium is located at a number of our sites and we are continuing to consolidate it at sites which we consider are best suited to its management.

Our nuclear materials work is separated into 10 strategic outcomes that we must deliver, outlined on page 4. For more detail on our nuclear materials strategy see NDA Strategy 2021, p58-67.

Integrated Waste Management



Our strategy considers how we manage all forms of waste arising from operating and decommissioning our sites, including waste retrieved from legacy facilities. Managing the large quantities of radioactive waste from electricity generation, research, the early defence programme and decommissioning is one of the NDA's biggest challenges. Some of this radioactive waste is in a raw (untreated) form, some has been treated and is being interim stored and, in the case of low level

waste, some has already been permanently disposed of. Retrieving, treating and interim storing the radioactive waste from Sellafield's four legacy ponds and silo facilities is the NDA's highest priority.

Our integrated waste management work is separated into 14 strategic outcomes that we must deliver, outlined on page 4. For more detail on our IWM strategy see NDA Strategy 2021, p68-85.

Site Decommissioning and Remediation



Our strategy defines our approach to decommissioning redundant facilities and managing land quality in order that each site can be released for its next planned use.

After the buildings on our sites have been decommissioned, decontaminated and dismantled, the land will be cleaned up to allow it to be released for other uses. At that point, its ownership would transfer to the new user of the land.

The NDA is currently assessing alternatives for the final stages of decommissioning that could lead to earlier release of land, continued employment and opportunities to reuse the land.

Our site decommissioning and remediation work is separated into eight strategic outcomes that we must deliver, outlined on page 4. For more detail on our SDR strategy see NDA Strategy 2021, p26-45.

PROGRESS OF STRATEGIC OUTCOMES - UP TO MARCH 2025

 Spent Fuels

SPENT MAGNOX FUEL		2025
1	All sites defueled	100%
2	All legacy Magnox fuel retrieved	25%
3	All Magnox fuel reprocessing completed	100%
4	All remaining Magnox fuel in interim storage	17%
5	All remaining Magnox fuel disposed	0%
SPENT OXIDE FUEL		
6	All EDFE oxide fuel received	71%
7	All legacy oxide fuel retrieved	100%
8	All oxide fuel reprocessing completed	100%
9	All remaining oxide fuel in interim storage	68%
10	All remaining oxide fuel disposed	0%
SPENT EXOTIC FUEL		
11	All exotic fuel defueled	77%
12	All exotic fuel consolidated	62%
13	All exotic fuel reprocessing completed	100%
14	All remaining exotic fuel in interim storage	84%
15	All remaining exotic fuel disposed	0%

 Nuclear Materials

PLUTONIUM		2025
16	All plutonium produced	100%
17	All plutonium consolidated	100%
18	A: All plutonium repacked in long-term storage B: All cans not suitable for extended storage repackaged	0% 81%
19	All plutonium in interim storage	0%
20	All plutonium reused or disposed	0%
URANIUM		
21	All uranium produced	100%
22	All uranium consolidated	83%
23	All uranium treated	4%
24	All uranium in interim storage	61%
25	All uranium reused or disposed	3%

 Integrated Waste Management

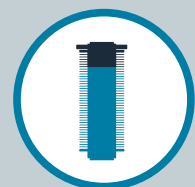
LOW LEVEL WASTE		2025
26	All LLW produced	8%
27	All LLW treated - to enable diversion or reuse	11%
28	All waste suitable for disposal in NDA facilities	19%
29	All waste suitable for permitted landfill disposed	5%
INTERMEDIATE LEVEL WASTE		
30	All ILW produced	33%
31	All legacy waste retrieved	10%
32	All ILW treated	10%
33	All ILW in interim storage	16%
34	All ILW disposed	0%
HIGH LEVEL WASTE		
35	All HLW produced	64%
36	All HLW treated	76%
37	All HLW waste in interim storage	84%
38	All overseas HLW exported	62%
39	All HLW disposed	0%

 Site Decommissioning and Remediation

OPERATIONAL AND PLANNED		2025
40	All planned new buildings operational	-*
41	All buildings primary function completed	40%
DECOMMISSIONING AND DEMOLITION		
42	All buildings decommissioned	23%
43	All buildings demolished or reused	21%
SITES		
44	All land delicensed or relicensed	9%
45	All land in End State - all planned physical work complete	44%
46	All land demonstrated as suitable for reuse	9%
47	All land de-designated or reused	9%

946 hectares of land still to be released for other uses

* due to historic data availability % complete cannot be calculated



Spent Fuels

ESTIMATED LIFETIME INVENTORY - 2005 TO MISSION END

Spent Magnox Fuel		Spent Oxide Fuel		Spent Exotic Fuel	
Opening stock	2,810te	Opening stock	3,150te	Opening stock	194te
Defueling	4,100te	Receiving	5,190te	Defueling	33te
Legacy	500te	Total	8,340te	Total	227te
Total	7,410te				

OBJECTIVE

To ensure safe, secure and cost-effective lifecycle management of our spent fuels - *Strategy 2021, p46*

WHAT ARE SPENT FUELS?

Fuel from a nuclear reactor is 'spent' once it has been used to generate electricity.

HOW ARE THE FUELS MANAGED?

Spent fuels are consolidated at Sellafield for management. They are placed in safe and secure interim storage in line with regulatory requirements pending a future decision on whether to classify them as waste for disposal in a Geological Disposal Facility (GDF). For planning purposes, we assume that the remaining spent fuels will be disposed of in a GDF.

WHAT HAS HAPPENED SINCE 2005?

THORP completed reprocessing operations of oxide fuels in 2019. The Magnox reactors are now all defueled, with all of the fuel brought to Sellafield for reprocessing. The Magnox reprocessing plant, which was Sellafield's last reprocessing facility finished reprocessing Magnox fuel in July 2022 with plant washout continued until March 2023.

WHAT HAS TO HAPPEN NEXT?

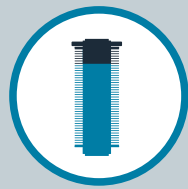
No more spent fuels will be reprocessed. Sellafield continues to receive oxide fuel under commercial contracts with EDF Energy (EDFE). All remaining spent fuel will be placed in interim storage pending a decision whether to classify it as waste for disposal.



STRATEGIC OUTCOMES - steps to achieving our mission

	Progress up to 2025	End date	Completed	Mission End
SPENT MAGNOX FUEL				
1 All sites defueled	100%	2020	COMPLETED	REUSED/DISPOSAL
2 All legacy Magnox fuel retrieved	25%	2045		
3 All Magnox fuel reprocessing completed	100%	2022	COMPLETED	
4 All remaining Magnox fuel in interim storage	17%	2045		
5 All remaining Magnox fuel disposed	0%	2125		
SPENT OXIDE FUEL				
6 All EDFE oxide fuel received	71%	2033		REUSED/DISPOSAL
7 All legacy fuel retrieved	100%	2016	COMPLETED	
8 All oxide fuel reprocessing completed	100%	2019	COMPLETED	
9 All remaining oxide fuel in interim storage	68%	2033		
10 All remaining oxide fuel disposed	0%	2125		
SPENT EXOTIC FUEL				
11 All exotic fuel defueled	77%	2028		REUSED/DISPOSAL
12 All exotic fuel consolidated*	62%	2044		
13 All exotic fuel reprocessing completed	100%	2023	COMPLETED	
14 All remaining exotic fuel in interim storage	84%	2044		
15 All remaining exotic fuel disposed	0%	2125		

*irradiated fuel only



Spent Fuels

To ensure safe, secure and cost-effective lifecycle management of our spent fuels.
Strategy 2021, p46

ESTIMATED LIFETIME INVENTORY - 2005 TO MISSION END

Spent Magnox Fuel	
Opening stock	2,810te
Defueling	4,100te
Legacy	500te
Total	7,410te

SPENT MAGNOX FUEL - To ensure safe, secure and cost-effective lifecycle management of spent Magnox fuels. *Strategy 2021, p52.*

Opening stock 2005

2,810te

Inventory

Capability

Strategic Outcome

In 2025, work continues to retrieve high hazard fuel from Sellafield and safely store the spent fuel on an interim basis.

STRATEGIC DECISIONS

Outputs

Defueling (te)



100% COMPLETE

All 26 reactors on 11 sites have been defueled

1 All sites defueled by 2020

All of the Magnox power stations are defueled. This strategic outcome is complete.

Legacy fuel retrieval (te)



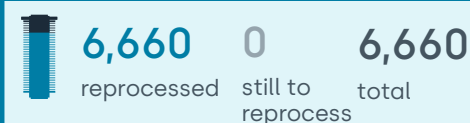
25% COMPLETE

First Generation Magnox Storage Pond (FGMSP) and Pile Fuel Storage Pond (PFSP) - Sellafield

2 All legacy Magnox fuel retrieved by 2045

Spent fuel arriving at Sellafield was originally stored in the First Generation Magnox Storage Pond (FGMSP) before transfer for reprocessing. FGMSP is one of the estate's most hazardous facilities. Some fuel was also contained in the Pile Fuel Storage Pond (PFSP). There have been no fuel exports for two years whilst new capabilities are brought into service to allow some of the more challenging fuel bearing materials to be exported, which has led to the forecast date moving out.

Reprocessing (te)



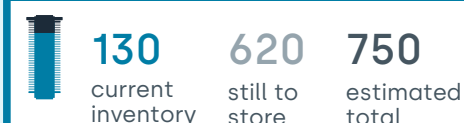
100% COMPLETE

Magnox reprocessing plants - Sellafield

3 All Magnox fuel reprocessing completed in 2022

After 58 years of reprocessing with nearly 55,000 tonnes of Magnox fuel being successfully reprocessed, reprocessing operations were completed in July 2022. Small quantities of remaining Magnox fuel will be interim stored before final waste conditioning and disposal.

Interim storage (te)



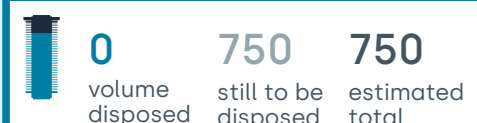
17% COMPLETE

Fuel Handling Plant (FHP) - Sellafield
Interim Storage Facility - Sellafield

4 All remaining Magnox fuel in interim storage by 2045

There are some degraded fuels either still in, or which have been recovered from the legacy ponds, FGMSP and PFSP. To reduce the risk of managing these fuels some of it has been transferred to the more modern pond, Fuel Handling Plant (FHP) for interim storage. The remainder will be recovered and interim stored in purpose-built containers, prior to final disposal. The same approach has been taken with the Magnox fuel remaining following the end of reprocessing operations. The forecast date is subject to Magnox fuel being retrieved (SO2).

Reuse/Disposal (te)



0% COMPLETE

NO FACILITY CURRENTLY EXISTS
Geological Disposal Facility (GDF) and Conditioning Plant

5 All remaining Magnox fuel disposed of by 2125

Remaining fuel will need to be stored and conditioned prior to transferring to a final disposal solution. Strategic options for this remaining fuel continue to be developed as part of a wider enterprise spent fuel consolidation study.

Plutonium Uranium

Waste

Redundant Buildings



Defueling activity at one of the Magnox stations



Pile Fuel Storage Pond - Sellafield



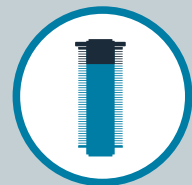
Magnox Reprocessing Plant - Sellafield



Fuel Handling Plant - Sellafield



Artist's impression of a Geological Disposal Facility



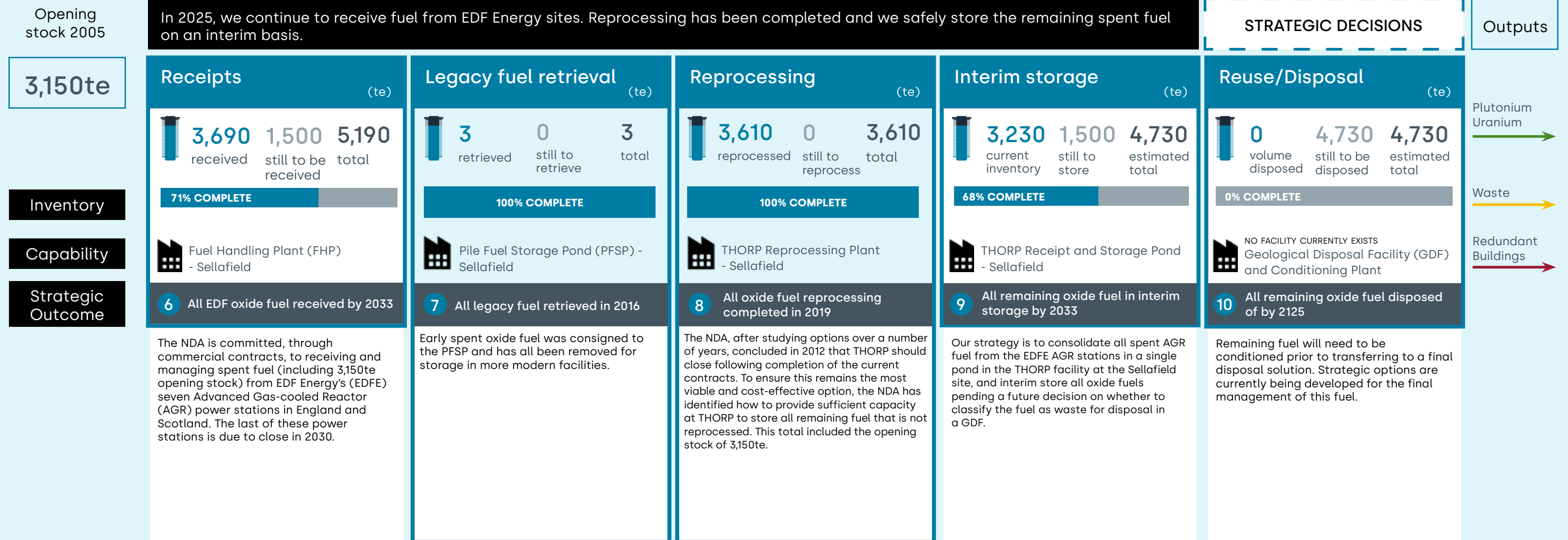
Spent Fuels

To ensure safe, secure and cost-effective lifecycle management of spent fuels.
Strategy 2021, p46

ESTIMATED LIFETIME INVENTORY - SINCE 2005

Spent Oxide Fuel	
Opening stock	3,150te
Receiving	5,190te
Total	8,340te

SPENT OXIDE FUEL - To ensure safe, secure and cost-effective lifecycle management of spent oxide fuels. *Strategy 2021, p50.*



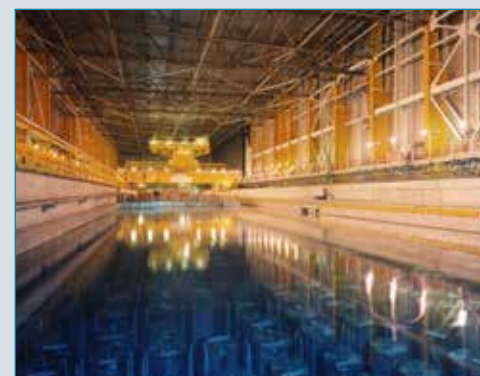
Hinkley Point A and the EDFE owned (B) station



Shearing operations - Sellafield



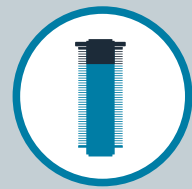
THORP - Sellafield



THORP Receipt and Storage Pond - Sellafield



Artist's impression of a Geological Disposal Facility



Spent Fuels

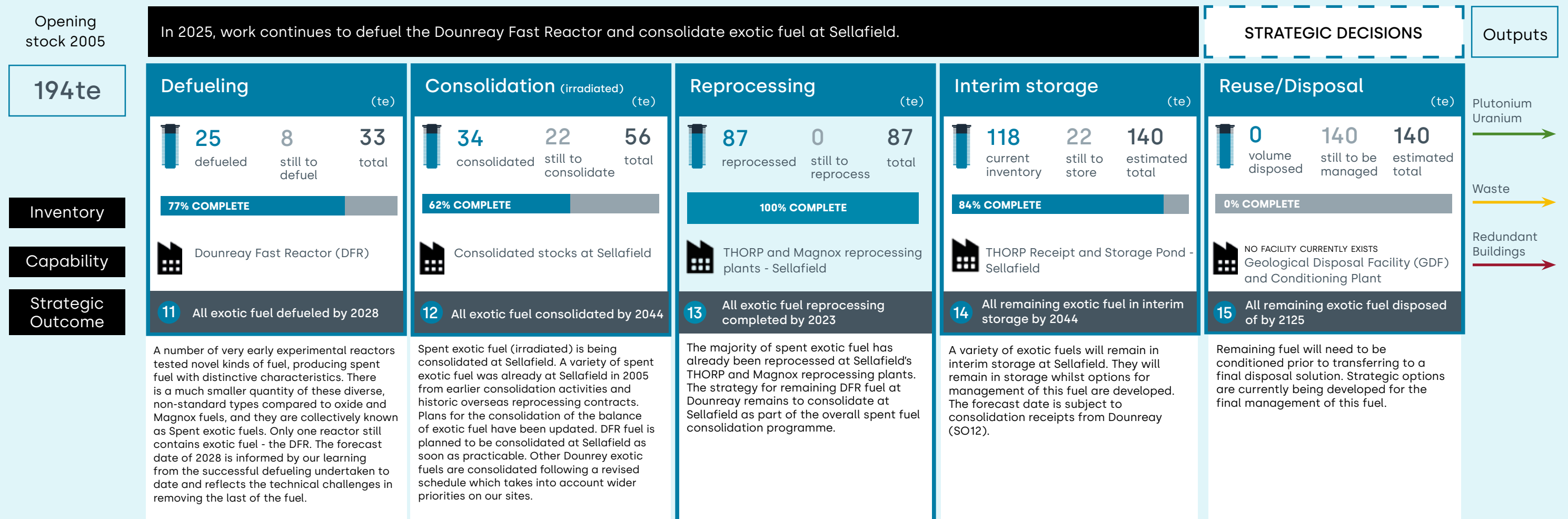
To ensure safe, secure and cost-effective lifecycle management of spent fuels.
Strategy 2021, p46

ESTIMATED LIFETIME INVENTORY - 2005 TO MISSION END

Spent Exotic Fuel

Opening stock	194te
Defueling	33te
Total	227te

SPENT EXOTIC FUEL - To ensure safe, secure and cost-effective lifecycle management of spent exotic fuels. *Strategy 2021, p54.*



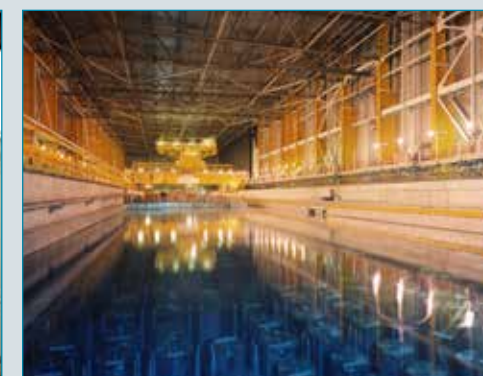
Dounreay Fast Reactor



Transporting exotic fuel to Sellafield



Magnox Reprocessing Plant - Sellafield



THORP Receipt and Storage Pond - Sellafield



Artist's impression of a Geological Disposal Facility



Nuclear Materials

ESTIMATED LIFETIME INVENTORY - 2005 TO MISSION END

Plutonium		Uranium	
Opening stock	104te	Opening stock	63,000te
Produced	37te	Produced	7,000te
Total	141te	Total	70,000te

OBJECTIVE

To ensure safe, secure and cost-effective lifecycle management of our nuclear materials - *Strategy 2021, p58*

WHAT ARE NUCLEAR MATERIALS?

The NDA owns an inventory of plutonium and uranium. Known collectively as 'nuclear materials', all are by-products from different phases of the fuel cycle, including the reprocessing of spent fuel.

HOW ARE THE MATERIALS MANAGED?

All nuclear materials are stored safely and securely under stringent management arrangements, in accordance with the requirements of the International Atomic Energy Agency (IAEA), as well as UK law, which are overseen by the independent Office for Nuclear Regulation (ONR) who are responsible for regulating safety and security across the UK.

WHAT HAS HAPPENED SINCE 2005?

The NDA is working with UK government and suppliers on options to put plutonium beyond reach. The NDA has largely completed uranium production and consolidation.

WHAT HAS TO HAPPEN NEXT?

All nuclear materials will be stored until an immobilisation process is available which will put the material beyond reach. The material will be disposed of to a geological repository when it becomes available. Consolidation of plutonium at Sellafield is now complete. Consolidation of uranium remains ongoing. Some uranium must be treated and repackaged for interim storage. Plutonium at Sellafield will be repackaged in a form suitable for long term storage. The NDA will support the UK government to develop a policy for plutonium and then implement that policy.



STRATEGIC OUTCOMES - steps to achieving our mission

PLUTONIUM

	Progress up to 2024	End date	Completed	Mission End
16 All Plutonium produced	100%	2023	COMPLETED	REUSED/DISPOSAL
17 All Plutonium consolidated	100%	2019	COMPLETED	
18 A: All plutonium repacked in long term storage	0%	2060		
B: All cans not suitable for extended storage repackaged	81%	2060		
19 All Plutonium in interim storage	0%	2060		
20 All Plutonium reused or disposed	0%	2120		

URANIUM

21 All Uranium produced	100%	2023	COMPLETED	REUSED/DISPOSAL
22 All Uranium consolidated	83%	2028		
23 All Uranium treated	4%	2055		
24 All Uranium in interim storage	61%	2055		
25 All Uranium reused or disposed	3%	2120		



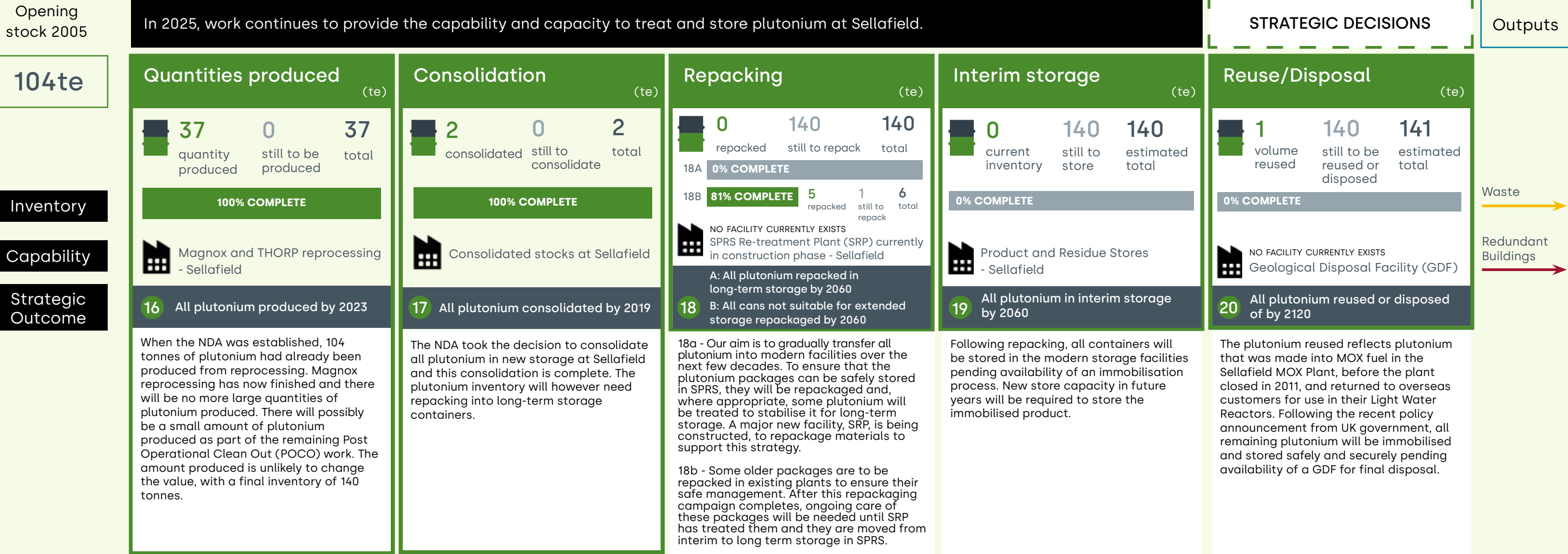
Nuclear Materials

To ensure safe, secure and cost-effective lifecycle management of our nuclear materials.
Strategy 2021, p58

ESTIMATED LIFETIME INVENTORY - 2005 TO MISSION END

Plutonium	
Opening stock	104te
Produced	37te
Total	141te

PLUTONIUM - To ensure the safe and secure management of separated plutonium held by the NDA and to work with the UK government to develop a long-term solution.
Strategy 2021, p60



Magnox Reprocessing Plant



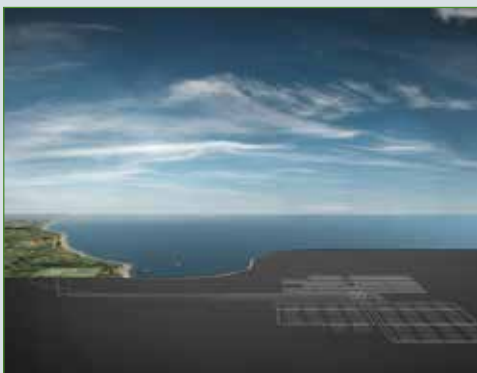
One of the NTS fleet of nuclear transport ships



THORP Product Store - Sellafield



Plutonium containers



Artist's impression of a Geological Disposal Facility

NOTE - On 24 January 2025 the UK Government announced a policy decision to immobilise the UK's inventory of civil separated plutonium at Sellafield. The following proposed strategic outcomes have been included in our latest Strategy which is due for publication March 2026.
SO18 (A,B merged) – All cans not suitable for extended storage repackaged
SO20 – All plutonium put beyond reach and then disposed



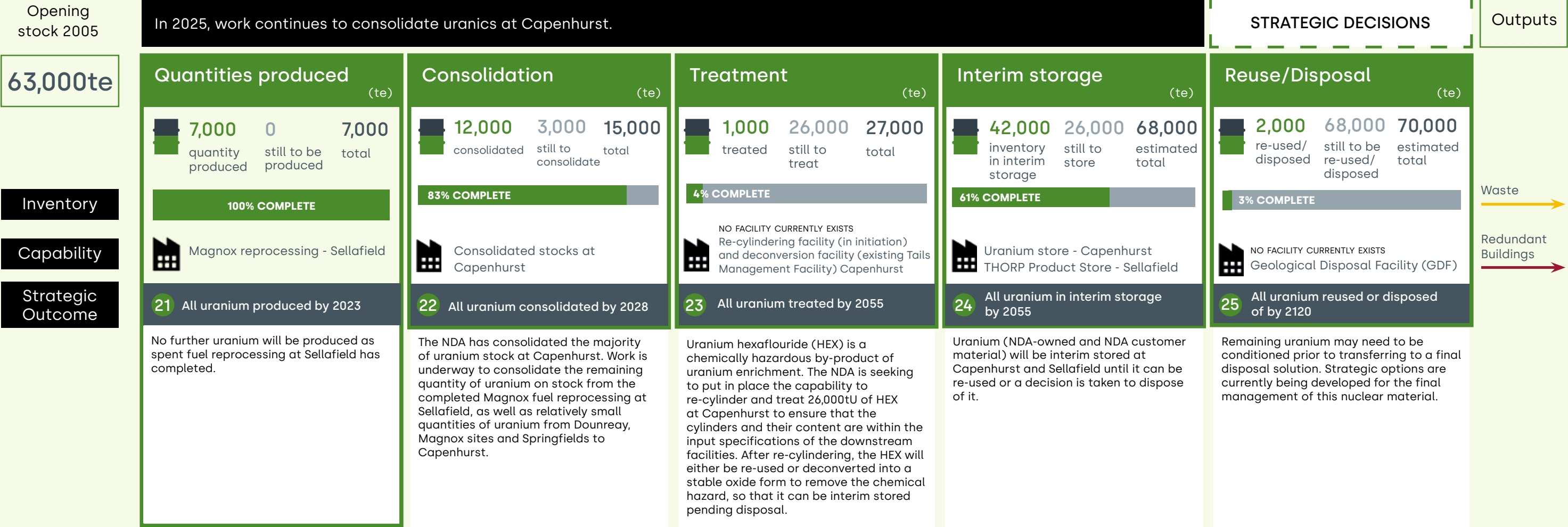
Nuclear Materials

To ensure safe, secure and cost-effective lifecycle management of our nuclear materials.
Strategy 2021, p58

ESTIMATED LIFETIME INVENTORY - 2005 TO MISSION END

Uranium	
Opening stock	63,000te
Produced	7,000te
Total	70,000te

URANIUM - To continue safe and secure storage of our uranium inventory, to support its reuse where cost-effective and to ensure its final disposition.
Strategy 2021, p63



Magnox Reprocessing Plant



Capenhurst



Current uranium storage at Capenhurst



Part of the uranium inventory at Capenhurst



Artist's impression of a Geological Disposal Facility



Integrated Waste Management

OBJECTIVE

To ensure that wastes are managed in a manner that protects people and the environment, now and in the future, and in ways that comply with government policies and provide value for money - *Strategy 2021, p68*

WHAT IS INTEGRATED WASTE MANAGEMENT?

Large quantities of diverse radioactive waste have been produced since the 1950s, and will continue to arise for decades to come. Managing these radioactive wastes, along with conventional waste, is one of the NDA's biggest challenges.

HOW ARE THE WASTES MANAGED?

Wastes are characterised and treated appropriately as informed by radiological, chemical and physical properties and associated handling requirements, before being packaged for long-term storage and/or transport and disposal. Low Level Waste (LLW) is managed in two main ways; diverted into the supply chain for treatment and/or recycling or is disposed of and Intermediate Level Waste (ILW) and High Level Waste (HLW) stored pending development of a final disposal route. Effective and optimised waste management is an essential requirement for the delivery of the mission and is a significant part of the programme.

WHAT HAS HAPPENED SINCE 2005?

Since 2005 considerable progress has been made with our preparations for retrievals of radioactive waste from legacy facilities, which has now commenced. The NDA has taken the decision to consolidate some waste at regional stores, avoiding the need to construct a store at each site. We are repackaging material where necessary and investigating more sustainable treatments for all waste categories. We've put in place a range of waste management services that has preserved capacity at the Low Level Waste Repository (LLWR). We are nearing completion of our bulk HLW vitrification programme, although the handover from operations to decommissioning is expected to take more than a decade. The NDA advocates a risk-informed strategy where radioactive wastes are managed according to the nature of the waste (radiological, physical and chemical) rather than simply the radioactive waste category they fall into. We have published our Treatment Strategic Position to clearly articulate why waste treatment is an important part of the NDA mission and why we invest significant time and effort on it. We provide industry guidance on an integrated approach to the interim storage of HLW and ILW packages with the next version available in 2026.

WHAT HAS TO HAPPEN NEXT?

A key aim for the NDA is to secure continuous retrieval operations at our highest priority legacy facilities, which will take a number of decades to complete. We will make best use of existing and future treatment and storage capability across the NDA estate as well as continuing to use off-site supply chain capability as appropriate. Permanent disposal facilities must be constructed for our highest hazard radioactive waste. The NDA's risk-informed radioactive waste strategy supports near-surface disposal for some of the ILW inventory where the case can be made. Such a risk-informed approach is now an expectation set in the managing radioactive substances and nuclear decommissioning policies update published in May 2024.



ESTIMATED LIFETIME INVENTORY TO DISPOSE - 2005 TO MISSION END

Low Level Waste

Raw waste 4,124,000m³
Packaged waste 272,000m³

Intermediate Level Waste

Raw waste 192,000m³
Packaged waste 471,000m³

High Level Waste

Raw waste 4,570m³
Packaged waste 1,450m³

STRATEGIC OUTCOMES - steps to achieving our mission

LOW LEVEL WASTE

	Progress up to 2024	End date	Completed	Mission End
26 All LLW produced	8%	2127		LLWR + LANDFILL
27 All LLW treated - to enable diversion or reuse	11%	2127		
28 All waste suitable for disposal in NDA facilities	19%	2127		
29 All waste suitable for permitted landfill disposed	5%	2127		

INTERMEDIATE LEVEL WASTE

30 All ILW produced	33%	2120		DISPOSAL
31 All legacy waste retrieved	10%	2059		
32 All ILW treated	10%	2120		
33 All ILW in interim storage	16%	2120		
34 All ILW disposed	0%	2379		

HIGH LEVEL WASTE

35 All HLW produced	64%	2039		DISPOSAL
36 All HLW treated	76%	2039		
37 All HLW in interim storage	84%	2039		
38 All overseas HLW exported	62%	2031		
39 All HLW disposed	0%	2104		



Integrated Waste Management

To ensure that wastes are managed in a manner that protects people and the environment, now and in the future, and in ways that comply with government policies and provide value for money.
Strategy 2021, p68

ESTIMATED LIFETIME INVENTORY TO DISPOSE - 2005 TO MISSION END

Low Level Waste

Raw waste 4,124,000m³
Packaged waste 272,000m³

LOW LEVEL WASTE

To manage radioactive waste and dispose of it where possible, or place it in safe, secure and suitable storage, ensuring that we implement the policies of UK government and the devolved administrations - *Strategy 2021, p72*

In 2025, work continues to divert LLW away from the Low Level Waste Repository prolonging the life of the facility.

Outputs

Quantities produced

(raw waste vol.m³)

 **343,000** **3,781,000** **4,124,000**
quantities produced estimated to be produced estimated total

8% COMPLETE

 LLW produced from NDA operations and decommissioning

26 All LLW produced by 2127

LLW and Very Low Level Waste (VLLW) (a sub category of LLW) are produced from the maintenance, operation and decommissioning of facilities across the NDA group; and are reported as aggregated totals here since 2021. These wastes are the largest volume radioactive waste arisings in the NDA group, but account for < 0.0001% of the overall radioactivity. We continue to progress the mission across all areas, noting a slight reduction in overall volume, due to waste processing and re-classification of waste.

Diversion

(raw waste vol.m³)

 **78,000** **605,000** **683,000**
diverted estimated still to divert estimated total

11% COMPLETE

 Diversion capabilities include - metal treatment and incineration

27 All LLW treated - to enable diversion or reuse by 2127

National policy and NDA Strategy promotes the application of the waste hierarchy to all radioactive waste, including LLW management to ensure that the group makes the best use of available disposal capacity. Waste diversion performance has remained high in 2024/25, with cross group diversion rates in excess of 98%, indicating that application of the waste hierarchy is business as usual across the NDA group.

Disposal (NDA Facilities)

(packaged waste vol.m³)

 **50,000** **222,000** **272,000**
LLW disposed LLW estimated still to dispose estimated total

19% COMPLETE

 x2 sites Low Level Waste Repository and Dounreay

28 All waste suitable for disposal in NDA facilities by 2127

Solid LLW is disposed of at two facilities - the Low Level Waste Repository (the UK's primary LLW disposal facility) and the Dounreay Low Level Waste Disposal Facility, adjacent to the Dounreay site (which only manages waste arisings from Dounreay and the neighbouring Vulcan site). There is a slight reduction in forecast volumes as we have seen predictions of a greater level of waste being diverted away from the LLWR site to alternative treatment, recycling and disposal routes (circa. 98% being diverted), reinforcing our application of the waste hierarchy.

Disposal (Landfill)

(imported vol.m³)

 **153,000** **3,009,000** **3,162,000**
VLLW disposed VLLW estimated still to dispose estimated total

5% COMPLETE

 A number of on site and off site licensed disposal routes.

29 All waste suitable for permitted landfill disposed by 2127

VLLW is the lowest hazard LLW, mainly consisting of soils, spoil and rubble. It's principally disposed of at appropriately permitted landfill sites and some on-site facilities in the NDA group. Good progress on managing VLLW arisings has been maintained during 2024/25, with successful management of ~6,000m³, again showing the benefit of applying our waste hierarchy.

Redundant Buildings →



LLW Repository



Metal melting - one of the ways of treating LLW



LLWR at Dounreay



Appropriate landfill sites can be used for VLLW



Integrated Waste Management

To ensure that wastes are managed in a manner that protects people and the environment, now and in the future, and in ways that comply with government policies and provide value for money.
Strategy 2021, p68

ESTIMATED LIFETIME INVENTORY TO DISPOSE - 2005 TO MISSION END

Intermediate Level Waste

Raw waste 192,000m³
Packaged waste 471,000m³

INTERMEDIATE LEVEL WASTE

- To manage radioactive waste and dispose of it where possible, or place it in safe, secure and suitable storage, ensuring that we implement the policies of UK government and the devolved administrations - *Strategy 2021, p72*

Opening stock 2005

10,800m³
raw waste
in store 2005

Inventory

Capability

Strategic Outcome

In 2025, ILW continues to be produced with a focus on retrieving waste from legacy ponds and silos.

STRATEGIC DECISIONS

Outputs

Quantities produced

(raw waste vol.m³)



33% COMPLETE

Waste from operations and decommissioning

30 All ILW produced by 2120

ILW - waste exceeding the upper boundary for LLW that is not significantly heat generating - takes a variety of forms including: redundant nuclear reactor components, reactor core graphite, sludges from radioactive liquid effluent treatment, redundant plant equipment and some building fabric. As the NDA group projects and programmes mature, the volume of ILW will be subject to change as we reduce uncertainty in the inventory.

Legacy ponds and silos

(raw waste vol.m³)



10% COMPLETE

New technology and capability projects to retrieve legacy waste

31 All legacy waste retrieved by 2059

The Sellafield Legacy Ponds and Silos (LP&S) represent some of the most complex and difficult global decommissioning challenges and are a key priority for the NDA group. Despite initial challenges waste exports from Pile Fuel Cladding Silo have continued as well as the retrievals of sludge and solids from the First Generation Magnox Storage Pond to interim storage facilities. However, overall retrieval rates remain below the rates required to deliver the current completion of bulk retrieval dates. In the Magnox Swarf Storage Silos, retrievals are still in the early ramp up and learning phase and the focus has been on installing additional capabilities to support completion of bulk retrievals by 2059. Residual waste now forms part of the work required to deliver interim state which falls under the requirements for delivering SO42.

Treatment

(raw waste vol.m³)



10% COMPLETE

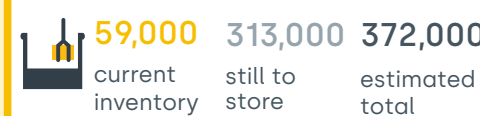
New capability required

32 All ILW treated by 2120

Different forms of ILW are treated in number of ways so they can be safely stored until a disposal facility is available. ILW treatment is ongoing using the many available treatment plants across the NDA group and work is ongoing to design, build and commission new treatment facilities that are needed to complete this important stage of the ILW lifecycle.

Interim storage

(packaged waste vol.m³)



16% COMPLETE

New capability required

33 All ILW in interim storage by 2120

Retrieved and packaged ILW undergoes safe storage until appropriate disposal facilities are available. 16% of the total packaged ILW to be produced over the lifetime of the NDA group is currently in safe storage. Further new stores will be required to enable safe storage of the remaining inventory at Sellafield and for NDA sites in Scotland.

Disposal

(packaged waste vol.m³)



0% COMPLETE

NO FACILITY CURRENTLY EXISTS
Geological Disposal Facility (GDF)

34 All ILW disposed by 2379

Final disposal of ILW arises from the NDA group is reliant on the availability of the right disposal facilities. The NDA group is working with UK Government, local communities, regulators and technical specialists to identify a site for construction of a GDF for ILW arisings in England and Wales. A new policy framework for managing radioactive substances and nuclear decommissioning has been published, which supports the development of near surface facilities for the safe disposal of less hazardous ILW, in England and Wales. The policy in Scotland is for near-site, near-surface management. Progress has been made with Community Partnerships for the GDF.

Redundant Buildings



ILW Magnox fuel cladding swarf



Retrieving waste from the legacy ponds



ILW Treatment and Storage at Sellafield



Trawsfynydd ILW Store



Artist's impression of a Geological Disposal Facility (GDF)



Integrated Waste Management

To ensure that wastes are managed in a manner that protects people and the environment, now and in the future, and in ways that comply with government policies and provide value for money. *Strategy 2021, p68*

ESTIMATED LIFETIME INVENTORY TO DISPOSE - 2005 TO MISSION END

High Level Waste

Raw waste 4,570m³
Packaged waste 1,450m³

HIGH LEVEL WASTE - To manage radioactive waste and dispose of it where possible, or place it in safe, secure and suitable storage, ensuring that we implement the policies of UK government and the devolved administrations. *Strategy 2021, p72*

In 2025, work will continue to treat and store HLW on an interim basis.

Outputs

Quantities produced

LIQUID

(raw waste vol.m³)



2,940

quantities produced

1,630

still to produce

4,570

total

64% COMPLETE



Highly Active Storage Tanks

35

All HLW produced by 2039 (including post operational clean out)

Highly Active Liquor (HAL) is a highly radioactive by-product of nuclear fuel reprocessing at the Sellafield site. The liquor is concentrated through evaporation and is stored in specially engineered Highly Active Storage Tanks prior to treatment. With reprocessing at Sellafield now complete, the remaining quantities to produce will come from management of those historic facilities culminating in post operational clean out.

Treatment

CONDENSED LIQUID

(raw waste vol.m³)



567

treated

181

still to treat

747

total

76% COMPLETE



Waste Vitrification Plant

36

All HLW treated by 2039

HAL is converted into a solid form for storage and disposal through a process called vitrification. In this process, the liquor is mixed with crushed glass in a furnace to produce a solid, stable glass which is poured into stainless steel cannisters.

Interim storage

SOLID

(packaged vol.m³)



1,210

current inventory

240

still to store

1,450

estimated total

84% COMPLETE



Vitrified Product Store (VPS)

37

All HLW in interim storage by 2039

The vitrified High Level Waste is stored in a purpose-built store - the Sellafield Vitrified Product Store(s) - until a UK disposal facility for HLW becomes available

Disposal/Export

(packaged vol.m³)



220

exported/ disposed

1,450

still to be exported or disposed

1,670

estimated total

13% COMPLETE

38

62% COMPLETE

220

exported

130

still to export

350

total

39

0% COMPLETE

0

disposed

1,320

still to dispose

1,320

total



NO FACILITY CURRENTLY EXISTS

Geological Disposal Facility (GDF)

38

All overseas HLW exported by 2031

39

All HLW disposed by 2104

UK HLW disposal is pending the availability of a GDF; and the NDA group is working with government, local communities, regulators, and other stakeholders to make progress on delivering this essential capability. Sellafield returns reprocessed spent fuel to overseas customers in line with contractual requirements. The end date is driven by commercial contract schedules with overseas customers.

Redundant Buildings



Inventory

Capability

Strategic Outcome



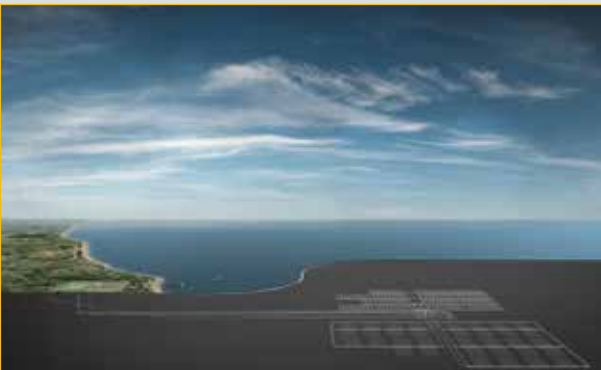
HLW containers



Waste Vitrification Plant



Vitrified Product Store - Sellafield



Artist's impression of a Geological Disposal Facility



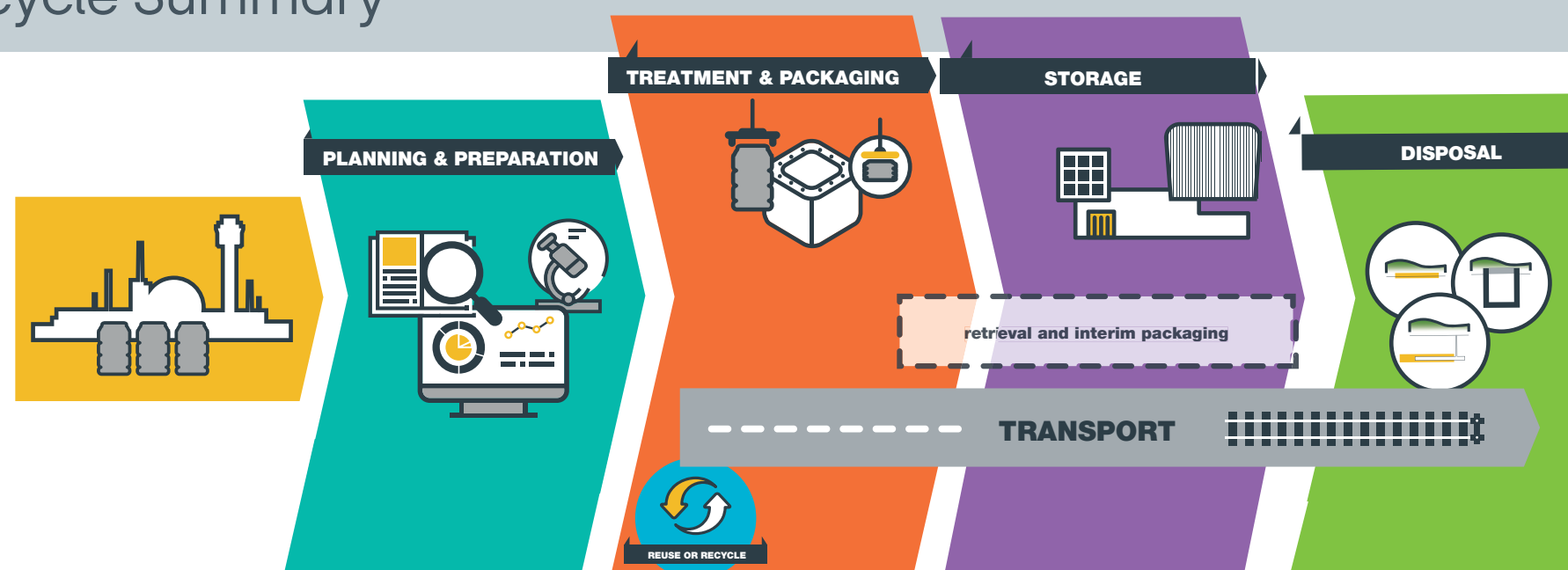
Integrated Waste Management - Waste Management Lifecycle Summary

This page introduces the Waste Management Lifecycle. The summary compliments the Integrated Waste Management pages which are split by waste hierarchy and should be read in conjunction with these pages.

The Waste Management Lifecycle (SO26-39)

Waste management on our sites is changing as our mission moves away from operations to decommissioning, site remediation (see **Site Decommissioning and Remediation**) and safe and secure management of those wastes that require interim storage. This means we will generate larger volumes of lower activity radioactive and non-radioactive wastes, with an associated increase in opportunities for waste minimisation, reuse and recycling. We expect our Site Licence

Companies (SLCs) to apply the Waste Hierarchy and we challenge them to ensure they derive as much value as practicable from the waste management system and appropriately manage the environmental impacts. However, we need to ensure that retrievals of legacy wastes (SO31) are managed promptly and effectively pending the availability of disposal routes.



STRATEGIC OUTCOMES - steps to achieving our mission

WASTE PRODUCED

- 26 All LLW produced
- 30 All ILW produced
- 31 All legacy waste retrieved
- 35 All HLW produced

WASTE TREATED

- 27 All LLW treated - to enable diversion or reuse
- 32 All ILW treated
- 36 All HLW treated

WASTE STORED

- 33 All ILW in interim storage
- 37 All HLW in interim storage

WASTE DISPOSED

- 28 All waste suitable for disposal in NDA facilities
- 29 All waste suitable for permitted landfill disposed
- 34 All ILW disposed - final disposal operational
- 38 All overseas HLW exported
- 39 All HLW disposed - final disposal operational

WASTE MANAGEMENT LIFECYCLE

		WASTE PRODUCED	WASTE TREATED	WASTE STORED	WASTE DISPOSED
WASTE CATEGORIES	LLW	26 All LLW produced 8% 343,000m ³ 2127	27 All LLW treated - to enable diversion or reuse 11% *78,000m ³ 2127 *Not all LLW can be treated to enable diversion and the balance is disposed	Disposal facilities available for LLW so interim storage not required	28 All waste suitable for disposal in NDA facilities 19% 50,000m ³ 2127 29 All waste suitable for permitted landfill disposal 5% 153,000m ³ 2127
	ILW	30 All ILW produced 33% 55,000m ³ 2120 31 All legacy waste retrieved 10% 1,900m ³ 2059	32 All ILW treated 10% 20,000m ³ 2120	33 All ILW in interim storage 16% 59,000m ³ 2120	34 All ILW disposed - final disposal operational 0% 0m ³ 2379
	HLW	35 All HLW produced 64% 2,940m ³ 2039	36 All HLW treated 76% 567m ³ 2039	37 All HLW in interim storage 84% 1,210m ³ 2039	38 All overseas HLW exported 62% 220m ³ 2031 39 All HLW disposed - final disposal operational 0% 0m ³ 2104
	TOTALS	9% 402,840m ³	11% 98,567m ³	16% 60,210m ³	5% 203,220m ³



Site Decommissioning and Remediation

ESTIMATED LIFETIME INVENTORY - 2005 TO MISSION END

Buildings (radioactive)		Land (ha)	
Lifetime stock	1,197	Opening stock	1,040ha
Planned new builds	109	Land de-designated/reused	94ha
Total	1,306	Still to be de-designated/reused	946ha
		Total	1,040ha

OBJECTIVE

To decommission and remediate our designated sites, and release them for other uses - *Strategy 2021, p26*

WHAT IS SITE DECOMMISSIONING AND REMEDIATION?

The NDA is responsible for the cleaning up of each site safely and cost-effectively so that land can be released for other uses. This requires all facilities to be decommissioned and the land remediated, including, where appropriate, the removal of wastes and demolition of structures.

WHAT HAS TO BE DONE?

The NDA defines the final condition (site end state) for each site including any remaining structures, infrastructure such as roads or services and the land itself, and must ensure the decommissioning strategies, in terms of the pace and timing of work, balance the benefits and detriments of each option so that the greatest net benefit is delivered. This influences future plans and near-term work targets, and shapes current activities.

WHAT HAS HAPPENED SINCE 2005?

Some structures have already been dismantled and demolished, and land released. The NDA is assessing alternatives for the final stages of decommissioning, earlier release of land and the potential for future employment opportunities when sites are released. The assumed end-states for each of our sites are being reviewed to ensure that they remain appropriate and end-state delivery is in line with regulatory guidance and stakeholder concerns. Consequently, initial opportunities for on-site disposal of low activity radioactive waste is being explored at two of our sites (Trawsfynydd and Winfrith) and learning from these will inform approaches at our other sites in due course. The NDA Strategy published in 2021 established a move to a Rolling Programme of Decommissioning at our Nuclear Restoration Services (NRS) Reactor sites. Work to implement this is underway with initial consideration being given to prompt decommissioning at our 'lead and learn' site at Trawsfynydd.

WHAT HAS TO HAPPEN NEXT?

In response to government's proposal to amend primary legislation and enable more streamlined regulation during the final stages of decommissioning, the NDA is working with regulators, SLCs and other stakeholders on the end state for each site. The NDA has worked with its OpCos and the ONR to support the development of revised regulatory guidance – to consider the implications of the Energy Act 2023 amendments for our sites and to consider what further, secondary legislation, might be required to establish a more proportionate regulatory regime for final stage decommissioning and clean-up. The NDA is also working with local authorities on their development plans, to ensure proposed end states and development plans are aligned. Associated with this, the NDA is also working with Government to consider opportunities within Planning regimes that might better support nuclear decommissioning and clean-up. An initial site-specific decommissioning strategy, for Trawsfynydd, is being developed and learning from this will inform a review of site-specific strategies across our other NRS Reactor sites. The NDA is supporting NRS, working with EDF, to enable the timely transfer of the AGR fleet of reactors and to consider the implications of this, especially at A and B sites, for our decommissioning strategies. Our focus is currently on Hunterston A and the transfer of the site in April 2026.

STRATEGIC OUTCOMES - steps to achieving our mission

	Progress up to 2024	End date	Completed	Mission End
OPERATIONAL AND PLANNED				
40 All planned new buildings operational	-*	2101		BUILDINGS COMPLETED
41 All buildings primary function completed	40%	2127		
DECOMMISSIONING AND DEMOLITION				
42 All buildings decommissioned	23%	2131		DECOMMISSIONED AND DEMOLISHED OR REUSED
43 All buildings demolished or reused	21%	2133		
SITES				
44 All land delicensed or relicensed	9%	2135		DEDESIGNATED OR REUSED
45 All land in End State - all planned physical work complete	44%	2134		
46 All land demonstrated as suitable for reuse	9%	2135		
47 All land de-designated or reused	9%	2380		

* due to historic data availability % complete cannot be calculated



Site Decommissioning and Remediation

To decommission and remediate our designated sites, and release them for other uses. *Strategy 2021, p26*

ESTIMATED LIFETIME INVENTORY - 2005 TO MISSION END

Buildings (<i>radioactive</i>)	
Lifetime stock	1,197
Planned new builds	109
Total	1,306

DECOMMISSIONING (radioactive buildings) - To deliver site end states as soon as reasonably practicable with a progressive reduction of risk and hazard. *Strategy 2021, p32*

Lifetime stock

1,197
No. of radioactive buildings (not including new builds)

Inventory

Strategic Outcome

NDA sites are making good progress decommissioning buildings that are no longer required, and a number of new builds are still required to deliver the mission.

STRATEGIC DECISION

Operational and planned

(No.)

 109 planned new builds	678 currently operational	519 completed primary function since 2005
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40% COMPLETED PRIMARY FUNCTION

40 All planned new buildings operational by 2101

41 All buildings primary function completed by 2127

When a nuclear installation or facility is nearing the end of their operational life, a phase of work begins to transition it from operations to decommissioning. This phase normally starts well before operations finish and includes post operational clean out (POCO) which removes most of the nuclear inventory, such as fissile material. New facilities are still to be built to support the decommissioning mission, for example to package and temporarily store waste and ultimately, these will be decommissioned once their operational life is complete. The change to the SO40 date is driven by encapsulation capability at Sellafield.

Decommissioning

(No.)

519 total	 34 in post operational clean out	55 in decommissioning (decontamination and dismantling)	129 decommissioning deferred	301 completed decommissioning since 2005
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23% COMPLETED DECOMMISSIONING

42 All buildings decommissioned by 2131

In line with UK Government strategy, NDA strategy is for nuclear facilities to be decommissioned immediately after cessation of operations. Sometimes however a decision might be taken to defer all or part of decommissioning in order to realise specific benefits such as radioactive decay or to manage a constraint (e.g. restricted access, a lack of waste management infrastructure or limited resources).

Demolition or reuse

(No.)

301 total	 23 available for demolition or reuse	2 in demolition	276 demolished or reused since 2005
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21% DEMOLISHED OR REUSED

43 All buildings demolished or reused by 2133

Decommissioning is the final phase in the asset lifecycle where dismantling is completed to an agreed end state. The final stages of dismantling include demolition which is dominated by non-nuclear risks. Deconstruction typically generates large volumes of waste, a proportion of which may be contaminated with radioactivity.



Turbine hall being cleared at Sizewell A



Demolition work at Harwell



Demolition work at Oldbury



Site Decommissioning and Remediation

To decommission and remediate our designated sites, and release them for other uses. *Strategy 2021, p26*

ESTIMATED LIFETIME INVENTORY - 2005 TO MISSION END

Land hectares (ha)	
Opening stock	1,040ha
Land de-designated/reused	94ha
Still to be de-designated/reused	946ha
Total	1,040ha

LAND QUALITY MANAGEMENT AND LAND USE (sites) - To optimise the reuse of NDA sites. *Strategy 2021, p44*

Opening stock 2005

1,040*

hectares (ha)

1,030

licensed & designated

10

Dounreay LLW facility

Inventory

Strategic Outcome

*The 1,040 hectares of land consists of 1,030 hectares of licensed and designated land and 10 hectares of land adjacent to the Dounreay nuclear licensed site that is used for the Dounreay LLW facility. Once all LLW has been removed from the Dounreay site the vaults will be sealed and the surface restored. The LLW facility site will then be monitored for 300 years, by which time 95% of the radioactivity will have decayed.

The NDA Mission is not complete until all Designated Directions associated with the land have been removed. Since 2005 we have completed 9% of the mission.

Licensing status of land (ha)



9% LAND DELICENSED SINCE 2005

44 All land delicensed or relicensed by 2135

Each NDA site operates under a nuclear site licence granted to the relevant Site License Company (SLC) by the Office for Nuclear Regulation (ONR). We continue to work with regulators and SLCs to secure opportunities for earlier delicensing.

Land quality management (assessment) (delivery) (ha)



49% LAND WHERE CHARACTERISATION IS COMPLETE SINCE 2005

44% LAND WHERE PHYSICAL WORK IS COMPLETE SINCE 2005

9% LAND DEMONSTRATED AS SUITABLE FOR REUSE SINCE 2005

45 All land in End State - all planned physical work complete by 2134

46 All land demonstrated as suitable for reuse by 2135

The NDA continues to support UK Government's plans to amend the legislative framework that applies to nuclear sites which will enable more proportionate regulation during the latter stages of dismantling. The amendments will enable site operators to determine end states on a site by site basis. With this in mind, the NDA is working with SLCs and other stakeholders on the end state for each site. The NDA is also working with local authorities to ensure that site end states and statements on the next planned use of sites are consistent with local waste and development plans.

MISSION END

Dedesignated or reused land (ha)



9% COMPLETE

47 All land dedesignated or reused by 2380

In 2005, the NDA was given responsibility for land, under a 'designating' order by the Secretary of State. 'De-designating' this order signifies that the NDA's mission is complete. Parts of Berkeley are now a college campus while land at Harwell and Winfrith has been developed as business parks. In 2024 we dedesignated 1.21 hectares of land at Sizewell.



Bradwell in care and maintenance



Harwell



Winfrith

