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# Nuclear Decommissioning Authority

# **Draft Business Plan**

Financial year beginning April 2023 to financial year ending March 2026

Published for consultation on 12 December 2022

# Introduction to the consultation

Our consultation on this draft Business Plan starts on 12 December 2022 and closes on 6 February 2023.

#### This consultation

We want to hear from anyone who has a comment on any aspect of this document. In your response, please tell us whether you're replying as an individual or representing the views of an organisation. If you're acting on behalf of an organisation, please tell us its name and, if applicable, how you gathered the views of its members.

When looking at the responses, we'll give greater consideration to those that are based on evidence, rather than personal expressions of support or opposition.

You can respond by letter or email using the contact details below. Please address all responses to NDA Business Planning, Business Plan Consultation.

#### By Letter:

NDA Business Planning, Business Plan Consultation, Nuclear Decommissioning Authority, Herdus House, Westlakes Science and Technology Park, Moor Row, Cumbria, CA24 3HU

Email: businessplanning@nda.gov.uk

#### If you've got a question or concern

If you've got a question relating to this consultation, or concern about how it's being carried out please let us know, using the contact details already stated. Please mark your correspondence with 'business plan consultation'.

#### Confidentiality and data protection

Any information we receive in response to this consultation, including personal data, may be subject to publication or disclosure in accordance with UK information access legislation (the Freedom of Information Act 2000, the Data Protection

Act 2018 and the Environmental Information Regulations 2004), unless suitable exemptions/ exceptions apply. If you want the information that you provide to be treated as confidential please let us know, but be aware that we cannot guarantee confidentiality in all circumstances. For example, an automatic confidentiality disclaimer generated by your IT system won't necessarily be binding on the NDA. Please refer to Information Commissioner's Office (ICO) guidance on information provided in confidence for more detail.

Most of the personal information we collect and process is provided to us directly by you. This could include your name, email address, and anything that could be used to identify you. It is an essential part of the consultation process, so that we can contact you regarding your response or for statistical purposes. The NDA is committed to protecting the privacy and security of your personal information. Our Personal Information Charter explains your rights and gives you the information you are entitled to under data protection legislation (the Data Protection Act 2018 and the UK General Data Protection Regulation). If you would like to exercise any of these rights please contact our Data Protection Officer at dpo@nda.gov.uk. If you are dissatisfied with the way we have processed your data you may also contact the ICO.

#### **Additional copies**

This draft business plan is available at www.gov.uk/nda

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A copy of the consultation criteria is available at www.gov.uk/government/publications/consultation-principles-guidance

#### **Next steps**

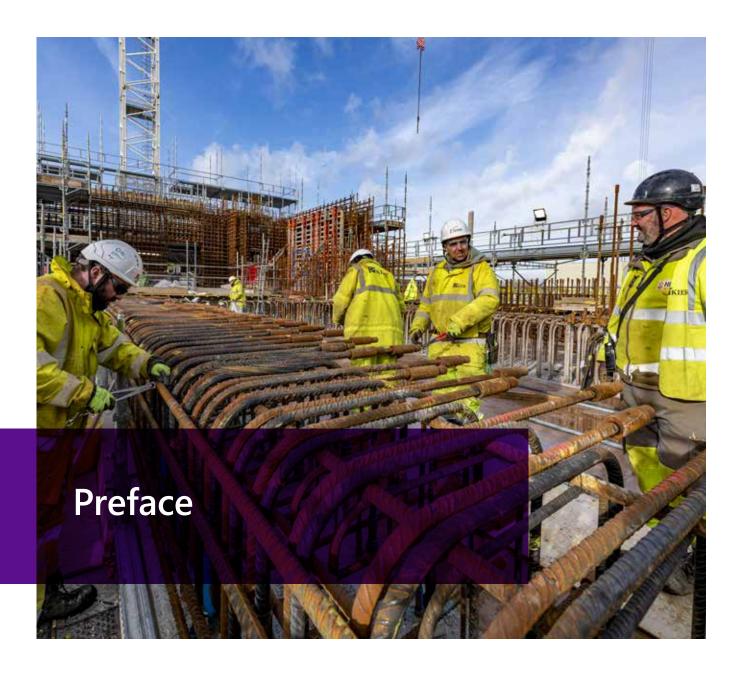
We'll consider responses to the consultation and revise this draft document as appropriate.

Subject to approval by the UK and Scottish Governments, we'll publish the final version of our Business Plan before the end of March 2023.



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The NDA is charged, on behalf of Government, with the mission to clean up the UK's earliest nuclear sites safely, securely and cost effectively. We're committed to overcoming the challenges of nuclear clean-up and decommissioning, leaving the 17 nuclear sites ready for their next use. We do this work with care for our people, communities and the environment, with safety, as always, our number one priority.

Engaging openly and transparently on our work is important to us. This Business Plan is one of several publications which we create and consult on every year. In line with Energy Act requirements, it sets out the activities that will take place over the next three years to advance our important clean-up and decommissioning work and operate our facilities safely and securely. It shows anticipated funding for each of the businesses for 2023/24 and outline total funding for the following year. We show how the activities are helping to deliver our mission by aligning them to the 47 Strategic Outcomes identified in our Strategy and Mission Progress Report. We also include key work across our range of critical enablers vital to the delivery of the mission.

# How we communicate our strategy and report progress

#### **ENGAGE WITH OUR STAKEHOLDERS**



## **NDA Strategy**

Twelve week public consultation every five years. Describes how we will deliver our mission, ensuring that the UK's nuclear legacy sites are decommissioned and cleaned up safely, securely, cost-effectively and in ways that protect people and the environment.

Energy Act requirement. Covers 100+ years. Published every five years.

#### REPORT PROGRESS



## **Mission Progress Report**

Provides our stakeholders with a clear and concise story of NDA mission progress since 2005, that demonstrates delivery of our strategic themes and outcomes as explained in our Strategy.

Covers 100+ years.
Published every year.



## **NDA Business Plan**

Eight week public consultation every year.

Describes key activities across the group over the next three years that align to our strategic outcomes and details the funding available for the next year.

Energy Act requirement. Covers three years (the first year in more detail).
Published every year.



## **NDA Mid-Year Performance Report**

Provides a progress update against Business Plan activities and incorporates the NDA group targets.

Published every year.



## **NDA Annual Report and Accounts**

Describes achievements and spending. Reports against Business Plan activities and contains an overall progress update against our mission.

Published every year.

# A message from our Chief Executive David Peattie



Welcome to the NDA's Business Plan, setting out our plans to 2026.

#### A simplified, stronger group

Last year I reported that all parts of the group had become NDA subsidiaries and that Nuclear Transport Solutions and Nuclear Waste Services had been formed. Preparations are now underway for Magnox Ltd and Dounreay Site Restoration Ltd to join together in 2023, subject to regulatory approval, as we continue to maximise the way that the NDA group works together.

The benefits of this simplified, stronger group are already clear. This plan highlights areas where our new operating model is making a difference, including the development of group-wide strategies on topics such as sustainability, innovation, asset management and digital. We've also agreed an operating framework that confirms the responsibilities held by all parts of the group and how we'll work together to deliver best value for taxpayers.

I am acutely aware of the economic challenges facing the country and continue to welcome Government's support for our nationally important work, mindful that there is a very clear need for us to spend money wisely and provide maximum value for the UK.

#### **Progressing our mission**

We organise our work into five themes and 47 strategic outcomes, providing a clear view of progress towards our mission. Many outcomes are long-term, delivered over many years. As a result, it's rewarding to see some major milestones completed in the last year.

The Magnox Reprocessing Plant at Sellafield closed in July after 58 years, having handled around 55,000 tonnes of spent fuel during its lifetime. This enables the site to fully focus on decommissioning, with the recent start of waste retrievals from the Magnox Swarf Storage Silo a sign of that. Around two decades in the planning, it's a significant moment to see material removed from one of our highest hazard facilities. Retrievals continue to be a focus for Sellafield, along with receiving and dismantling fuel from EDF Energy's advanced gas-cooled reactors (AGRs).

Waste management is important across the estate, including at Magnox where a modular encapsulation plant recently went into service at Berkeley, helping to make intermediate level waste safe and generate learning that will shape plans at other sites. High hazard reduction also continues at Dounreay, in areas such as the Dounreay Fast Reactor and Prototype Fast Reactor, while the team develops an updated lifetime plan following its move to be an NDA subsidiary.

The work by Nuclear Waste Services (NWS) to find a suitable location for a geological disposal facility (GDF) has now seen four Community Partnerships established. Geophysical investigations have been completed off the Cumbrian coast, with geological analysis beyond the Lincolnshire coast due next year. This will enable site specific designs and safety assessments, providing communities with a better understanding of what hosting a GDF would mean for them.

"This business plan sets out a challenging programme of work, reducing hazards while contributing to a globally significant sustainability agenda, developing our people and supporting our communities."

NWS also manages an Integrated Waste Management Programme on behalf of the wider group. A five-year delivery plan has been developed, with innovative treatment, packaging and disposal solutions being considered that could lead to more sustainable outcomes

Nuclear Transport Solutions (NTS) is taking that learning and creating an Integrated Transport Management Programme, ensuring the NDA group's transport requirements are joined up. It's also progressing important work on the global stage, transporting mixed oxide (MOX) fuel from France to Japan and delivering vitrified high level waste and conditioned intermediate level waste to international customers.

Of course it's not just what we do, but how we do it that is important and sustainability is now a critical enabler of our mission. Pioneering and innovative steps are being taken across our estate as we maintain our commitment to become carbon net zero by 2050, and 2045 in Scotland, with carbon management plans expected to be implemented in each part of the group during the next three years.

#### Trusted to do more

Our mission is growing, with preparations underway for EDF Energy to transfer seven AGR stations to the NDA, for decommissioning by Magnox. This is the most significant increase to the NDA's portfolio since our creation, with each site moving across when defueling is complete. Strategies are being aligned and assumptions agreed before Hunterston B is expected to become the first site to transfer.

We're also working with the Ministry of Defence to consider the potential for the NDA group to decommission its Vulcan site which sits next to Dounreay in Caithness. In addition, the UK Government has asked us to support its Energy Security Strategy and we recently signed a Memorandum of Understanding with Cwmni Egino. This will see us share information and expertise on the characteristics of land around our Trawsfynydd site to support the development of a new small-scale nuclear project.

While exploring and progressing these opportunities, our core mission remains unchanged.

#### Attracting and retaining skills to deliver our mission

With a complex range of skills needed to deliver this crucial and growing mission, our ambition to create great places to work has never been more important.

This is particularly true as we face a so-called 'war for talent'.

I'm pleased that our Leadership Academy and other development activities, such as a bespoke women's development programme, are exceling. Attracting new people to the industry is also important and we're set to launch a new NDA group graduate scheme that will see us do more to develop professional pathways in a number of areas, helping us to meet our requirements and importantly offering a fantastic way for graduates to start a career.

#### Working with stakeholders

An important part of my role is to engage with stakeholders and representatives of the communities in which we operate. This year has seen us get back together in person after many pandemic-related delays, welcoming hundreds of companies to our supply chain event and around 200 community representatives to our stakeholder summit in Edinburgh. These events were truly valuable, listening to views and understanding different perspectives.

In Edinburgh we signed an agreement to create a nongovernmental organisation, or NGO, forum. The first meeting will soon take place, providing an important channel for dialogue about our future work.

We've also recently completed a stakeholder survey, with 829 individuals taking the time to provide us with detailed feedback on our progress, transparency and leadership. I'm happy to say the results are extremely encouraging, with community stakeholders underlining their positive perceptions of the NDA group, the importance of our strong relationships, and the robust platforms for dialogue and engagement.

### Thank you

This Business Plan sets out a challenging programme of work, reducing hazards while contributing to a globally significant sustainability agenda, developing our people and supporting our communities. I remain proud of colleagues across the group who continue to safely progress our nationally important mission and together I'm confident we can deliver our mission, create great places to work and be trusted to do more.

## David Peattie CEng HonFNucl NDA Group Chief Executive Officer



#### What we do

As owners of one of the largest nuclear decommissioning and remediation programmes in Europe, we develop the strategy for how work should be carried out. We also play an important role in supporting Government's aspiration for the UK to be a leader in the civil nuclear sector within our remit and areas of expertise. Our strategy is continually evolving and is updated every five years. Our fourth iteration was published in March 2021. We strive to deliver best value for the UK taxpayer by focusing on reducing the highest hazards and risks, while ensuring safe, secure, and environmentally responsible operations at our sites. We seek ways to reduce the level of public funding by generating revenue through our commercial activities.

## How we're set up

We're a non-departmental public body created by the Energy Act 2004 to clean-up and decommission our 17 sites. We're sponsored and funded by the Department for Business, Energy and Industrial Strategy (BEIS). Our plans for cleaning up the sites are approved by BEIS and Scottish ministers, who provide a framework for us. We have offices across the UK, in Cumbria, Warrington, Dounreay, Harwell and London and employ just over 380 permanent staff.

## **Our sites**

The UK's nuclear landscape began to take shape in the post-war period and has evolved over many decades. The focus during the Cold War arms race was on producing material for Britain's nuclear deterrent. When the nation's priorities shifted, facilities were turned into nuclear power stations, and, from 1956 onwards, the UK's first nuclear power stations began generating electricity for homes and businesses. Fuel fabrication and reprocessing plants were built from the 1970s to 1990s. Our 17 sites reflect

this legacy and include the first fleet of nuclear power stations, research centres, fuel-related facilities, and Sellafield, which has the largest radioactive inventory and the most complex facilities to decommission. Current plans indicate it will take more than 100 years to complete our core mission of nuclear clean-up and waste management. The goal is to achieve the end state at all sites by 2130s, with all land on Scottish sites expected to be de-designated by 2333.



nuclear sites across the UK



16,900 employees across the group



950

hectares of designated land on nuclear licensed sites



800+
buildings to be demolished





Accomplishing this important work requires the best efforts of the entire NDA group.

Cleaning up and decommissioning the UK's nuclear legacy is a complex undertaking and relies on the full range of expertise and skills within the NDA group. Over the last few years, important decisions have been taken about how the organisations delivering our mission are managed, with the intention of simplifying structures and creating a stronger NDA group.

Last year we took the final steps to move to a group (subsidiary) operating model, away from the previous contractual, parent body organisation approach.

Dounreay Site Restoration Limited (DSRL) became an NDA subsidiary in April 2021, followed by Low Level Waste Repository Limited (LLWR) in July. These follow similar changes for Sellafield in 2016 and Magnox in 2019.

Moving to a group model has enabled us to make further improvements and simplify structures. In January 2022 Radioactive Waste Management (RWM) and LLWR came together into one waste organisation, Nuclear Waste Services (NWS). We have also announced our intention to join Dounreay with Magnox in 2023, subject to regulatory agreement.

The NDA group will then be made up of the NDA and operating companies: Sellafield, Magnox with Dounreay, Nuclear Waste Services and Nuclear Transport Solutions. Our other subsidiaries include Rutherford Indemnity, NDA Archives, NDA Properties and Energus.

With the finalisation of this structure comes the ability to introduce group-wide policy statements in a number of areas.

There are nine policy statements and the NDA and its operating companies will meet the requirements of these through their individual arrangements:

- Ethics
- Sustainability
- Socio-economics
- Health and safety
- Environment
- Security
- Accounting
- Value for money\*
- Diversity and inclusion\*

The scope of the NDA group is set to grow, following arrangements agreed by the Government and EDF Energy for decommissioning Britain's seven advanced gas-cooled reactor (AGR) stations.

The AGRs will reach the end of their operational lives over the next 10 years and, as they come offline, their ownership will transfer to the NDA for decommissioning, utilising the expertise of our group and significantly, Magnox and its experience in decommissioning the older Magnox stations.

\*Still under development



# **Our vision**



Deliver our mission together safely, securely and more creatively, transparently and efficiently



Create great places to work and take pride in what we do

Trusted to do more in the UK and globally

# **Our funding**

We are publicly funded through the Department for Business, Energy and Industrial Strategy (BEIS). Our total planned expenditure is voted upon annually by Parliament in line with the Spending Review.

### **Funding framework**

Government has shown continued support for the NDA mission over recent years with increased grant funding offsetting the decline in commercial revenue. Spending Review 2021 (SR21) set funding for three financial years from 2022/23 to 2024/25. Funding for the final year of this plan (2025/26) has not yet been established and will be set as part of a future Spending Review process.

#### Commercial income

We maximise revenue from our existing assets and operations to help fund decommissioning and cleanup, in order to reduce the level of public funding needed to meet the scope of our plans and delivery of the NDA mission.

Our commercial operations are primarily spent fuel and nuclear materials management with additional opportunities identified in providing transportation services.

We will pursue all commercial opportunities using our existing assets, operations and people where they do not materially impact on our core mission or increase our liabilities.

## Prioritisation and allocation of funding

Within affordability constraints, we will seek to maintain progress and maximise value for money through the effective implementation of our strategy. This means focusing on reducing our highest hazards and risks, whilst ensuring that safe, secure and environmentally responsible site operations are maintained.

#### Planned income and expenditure in 2023/24

This Business Plan sets out our anticipated income and expenditure for 2023/24. High inflation has placed significant cost pressure on many areas of our spend, but has also resulted in an expected increase in our income.

Our total planned expenditure for 2023/24 is £4.133 billion, of which £2.963 billion will be funded by UK Government and £1.170 billion from internally generated revenue.

Planned expenditure on site programmes will be £3.948 billion, while non-site expenditure is expected to be £0.185 billion.

This non-site expenditure includes skills development, socio-economic, research and development, insurance and pension costs, implementing geological disposal and the NDA operating costs as detailed on page 16.

£4.133bn

Total planned expenditure 2023/2024

£2.963bn

Funded by UK Government £3.948bn

Planned site expenditure

£0.185bn

Planned non-site expenditure

# Planned income and expenditure summary 2023/24

£m Businesses/Sites	Decom and Clean-up Costs (A)	Total Operations Costs: Running Cost (B)	Total Operations Costs: Capex (C)	2023/24 Plan Total (A+B+C)	2022/23 Plan Total
Sellafield Limited	1,462	731	607	2,800	2,345
Magnox Limited	530			530	515
Dounreay Site Restoration Limited	221			221	205
Nuclear Waste Services	240			240	*202
Nuclear Transport Solutions		111		111	86
Springfields Fuels Limited	22			22	30
Capenhurst	24			24	31
Non-site expenditure	185			185	*231
Total	2,684	842	607	4,133	3,645
Income				1,170	820
Net (grant funded)				2,963	2,825

#### Notes:

- 1. Numbers may not cast due to rounding
- 2. Final Annual Site Funding Limits issued in March 2023 may be adjusted to reflect efficiency, performance and portfolio pressures.
- 3. The NDA reserves the right to reallocate funding to meet prioritised programme needs.

# Summary of NDA funding 2023/24 onward

Summary of NDA funding	2023/24 £m	2024/25 £m	2025/26 £m
Income	1,170	1,338	tbc
Government funding	2,963	2,940	tbc
Expenditure	(4,133)	(4,278)	tbc
Net	-	-	-

<sup>\* 2022/23</sup> figures differ from that disclosed in last year's plan as some waste-related expenditure previously shown in non-site expenditure is now shown under Nuclear Waste Services

# Our funding continued

# 2023/24 breakdown of non-site expenditure

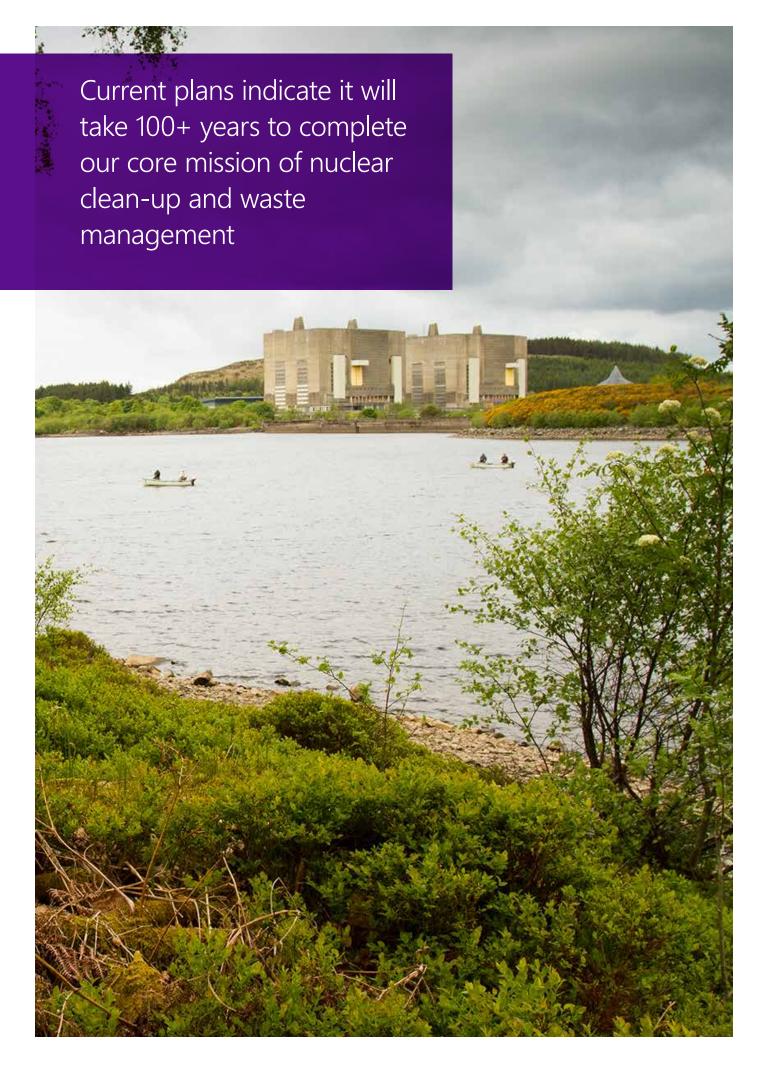
Non-site expenditure	2023/24 Plan £m	2022/23 Plan £m
NDA operating costs	38	*37
Critical enablers	74	71
Estate insurance	12	11
Other central spend	61	**110
Total	185	229

<sup>\*</sup> figure differs from that shown in last year's plan due to a reclassification of costs to 'Other central spend'

# 2023/24 breakdown of planned income by category

Income source	2023/24 Plan £m	2022/23 Plan £m
Reprocessing and fuel management services	906	548
NDA - INS transport	73	51
NDA-generated revenue	152	177
Intra-site services	39	44
Total	1,170	820

<sup>\*\*</sup> figure differs from that shown in last year's plan due to i) a reclassification of costs from 'NDA operating costs' and ii) a reclassification of certain waste-related costs now shown under Nuclear Waste Services



# Our strategic approach and themes

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

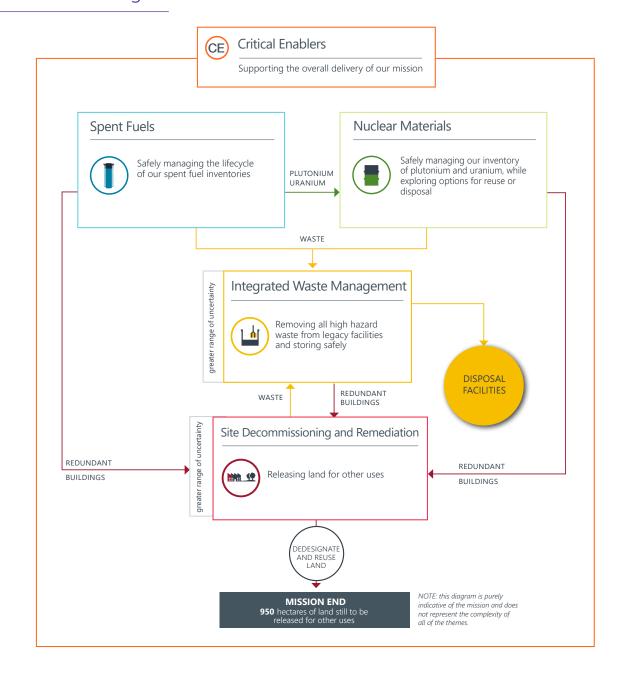
The first four strategic themes, Spent Fuels, Nuclear Materials, Integrated Waste Management and Site Decommissioning and Remediation relate directly to our clean-up and decommissioning work and are known as driving themes.

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 our 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.

## Integration of our strategies



# Our five 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 THORP reprocessing plant and the Magnox reprocessing plant have now closed. All remaining spent fuel will be safely stored until a permanent solution for disposal is available.

Our spent fuel work is separated into fifteen strategic outcomes that we must deliver, outlined on page 21.

#### **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 ten strategic outcomes that we must deliver, outlined on page 22.

## **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 fourteen strategic outcomes that we must deliver, outlined on page 23.

# 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.

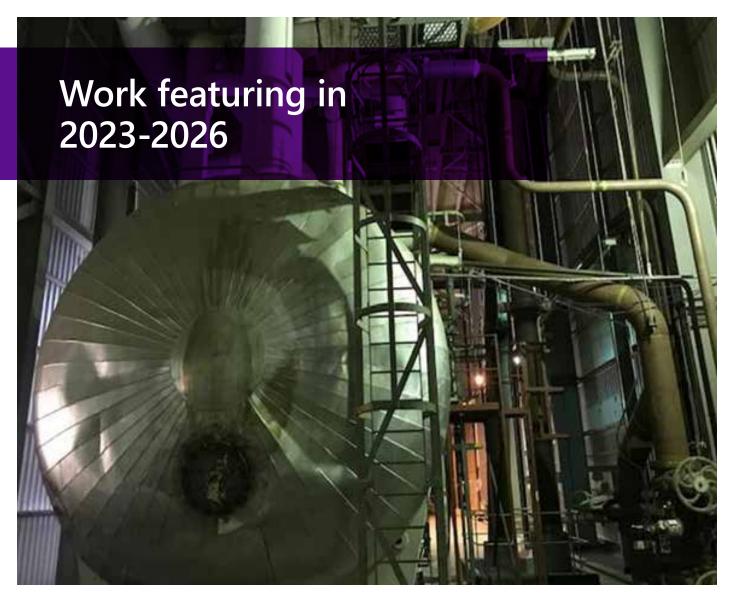
The NDA is currently assessing alternatives for the final stages of decommissioning that could lead to earlier release of land, continued employment and opportunities to reuse the land.

Our site decommissioning and remediation work is separated into eight strategic outcomes that we must deliver, outlined on page 24.

# Critical Enablers



Some of the work we do, we describe as 'critical enablers'. Critical enablers cover the important activities needed to support the overall delivery of our mission. See pages 25 to 29 for more detail.



Asbestos removal at Wylfa

This Business Plan covers the work we will do over the next three years to progress or complete activity across our five strategic themes. You can find the 2023-2026 plans for each of the NDA group operating companies on pages 31 to 59.

The next few pages present in more detail examples of some of the important work that will either be completed or advanced in the next three years. This near-term activity is mapped against our strategic themes and specifically to the 47 outcomes\* that make up our mission.

<sup>\*</sup>Our 47 outcomes cover all our strategic themes except 'critical enablers'.

# Spent Fuels

## End date SPENT MAGNOX FUEL All sites defueled COMPLETED All legacy Magnox fuel 2039 retrieved All Magnox fuel **COMPLETED\*** reprocessing completed All remaining Magnox 2042 fuel in interim storage All remaining Magnox 2125 fuel disposed SPENT OXIDE FUEL All EDFE Oxide fuel 2035 received All legacy oxide fuel **COMPLETED** retrieved All oxide fuel **COMPLETED** reprocessing completed All remaining oxide fuel 2035 in interim storage All remaining oxide fuel 10 2125 disposed SPENT EXOTIC FUEL 2024 All exotic fuel defueled All exotic fuel 2028 consolidated All exotic fuel **COMPLETED\*** reprocessing completed

All remaining exotic fuel

All remaining exotic fuel

in interim storage

\*Completed subject to final data verification.

disposed

2028

2125

# Spent Fuels 2023-2026



### Magnox Reprocessing Plant completes mission

Sellafield's Magnox Reprocessing Plant ceased operations this year, completing a mission spanning almost six decades.

The plant handled around 55,000 tonnes of spent fuel during its lifetime from the UK's fleet of 11 Magnox plants as well as reprocessing Magnox fuel from Italy, Japan, and fast breeder fuel from Dounreay. In total, it returned over 15,000 tonnes of uranium back into the fuel cycle. All Magnox reactors have stopped generating and completed final defuelling, with the last load of burnt-up Magnox fuel arriving at Sellafield in 2019.

Fewer than 250 tonnes of fuel is now left for interim storage on the site before eventual final storage in a geological disposal facility.



#### Preparations for AGR stations to transfer

Arrangements have been agreed by the UK Government and EDF Energy for Britain's seven advanced gas-cooled reactor (AGR) stations to be decommissioned by the NDA group.

The first site to transfer is likely to be Hunterston B in 2026, with exact timescales to be determined by factors including defueling progress. The final AGR station will likely transfer in the early 2030s.

Preparations are underway, including collaborative work to align decommissioning strategies and plans and the development of key strategic assumptions which will determine the position the first site will be in when it transfers after final defueling is completed. This will act as a template and learning basis for subsequent station transfers.

# **Nuclear Materials**

PLUT	TONIUM	End date			
16	All plutonium produced	2023			
17	All plutonium consolidated	COMPLETED			
18	A: All plutonium repacked in long-term st B: All cans not suitable for extended storage repackaged	2060			
19	All plutonium in modern interim storage	2060			
20	All plutonium reused or disposed	2120			
URA	URANIUM				
21	All uranium produced	2023			
22	All uranium consolidated	2025			
23	All uranium treated	2055			
24	All uranium in interim storage	2055			
25	All uranium reused or disposed	2120			

# Nuclear Materials 2023-2026



Hexafluoride drums being stored at Capenhurst

#### Uranium consolidation programme

Reprocessing spent nuclear fuel separates uranium, plutonium and other fission products. Large quantities, approximately 70,000 tonnes of uranium, in various forms, have been generated as a legacy of the UK's civil nuclear programme. The NDA is responsible for safely managing this inventory of uranic material.

81% of this uranic material has now been consolidated at the Capenhurst site in Cheshire, where it is safely stored pending a decision on future use or disposition.

Approximately 2,900 tonnes of uranium still need to be consolidated:

- 2,000 tonnes in the form of uranium hexafluoride at Springfields fuel manufacturing site in Lancashire
- 200 tonnes of uranium produced from reprocessing operations at Sellafield
- The remainder is held in various sites across the NDA group

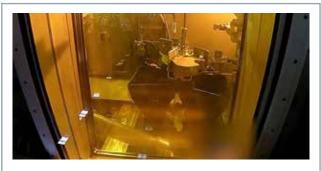
Good progress continues to be made as part of the consolidation programme with over 100 tonnes of uranic material consolidated from across the NDA group to Capenhurst in 2022, including ongoing monitoring and assessment to ensure the material continues to be stored safely.



# Integrated Waste Management

LOW LEVEL WASTE	End date
26 All LLW produced	2127
All LLW treated - to enable diversion or reuse	2127
All waste suitable for disposal in NDA facilities	2127
All waste suitable for permitted landfill disposed	2127
INTERMEDIATE LEVEL WASTE	
30 All ILW produced	2120
31 All legacy waste retrieved	2048
32 All ILW treated	2120
33 All ILW in interim storage	2120
34 All ILW disposed	2125
HIGH LEVEL WASTE	
35 All HLW produced	2030
36 All HLW treated	2030
All HLW waste in interim storage	2030
38 All overseas HLW exported	2025
39 All HLW disposed	2104

# Integrated Waste Management 2023-2026



# First waste removed from legacy silo at Sellafield

The first waste has been retrieved from Sellafield's Magnox Swarf Storage Silo (MSSS). It's part of work to progress the retrieval of high hazard waste from Sellafield's four legacy ponds and silos and place it in modern facilities at the site.

It represents a significant step in the site's decommissioning and is a milestone that's involved around two decades of planning and preparation. This achievement is the result of a significant effort by Sellafield Ltd, the supply chain and key stakeholders such as regulators and Government.

Retrieval of material from the Pile Fuel Cladding Silo was also expected to commence in 2022, but a number of operational challenges mean this is now expected in 2023. It will mean that all four legacy facilities have then commenced the process of retrievals.

#### A solution for the future

Delivering a geological disposal facility (GDF) to dispose of higher activity radioactive waste is an important project for the UK. It's a key focus for the recently formed Nuclear Waste Services, an NDA group company responsible for managing radioactive waste.

Significant progress has been made in finding a willing community this year. Four communities have formed Community Partnerships, three in Cumbria, Mid-Copeland, South-Copeland and Allerdale, and one in Theddlethorpe in Lincolnshire.

As well as progressing with community engagement, the first phase of site evaluation has taken place with geophysical investigations off the coast of Cumbria conducted over the summer.

Further geological analysis beyond the Lincolnshire coast will take place next year. This will allow us to develop site specific designs and safety assessments providing local communities with a better understanding of what hosting a GDF would mean for them.



# Site Decommissioning and Remediation

OPER	RATIONAL AND PLANNED	End date
40	All planned new buildings operational	2090
41	All buildings primary function completed	2127
DECC	DMMISSIONING AND DEMOLITION	N
42	All buildings decommissioned	2131
43	All buildings demolished or reused	2133
SITES	5	
44	All land delicensed or relicensed	2135
45	All land in End State - all planned physical work complet	<b>2134</b> e
46	All land demonstrated as suitable for reuse	2135
47	All land dedesignated or reused	2333

# Site Decommissioning and Remediation 2023-2026

#### Establishing site end states

Dounreay, Hunterston A, LLW Repository, Trawsfynydd and Winfrith sites have taken the lead in developing preferred end state assumptions.

We have a responsibility to propose end states for each of our sites - defined as the physical condition to which the site will be taken at the end of the decommissioning process.

It will vary between sites, taking into account factors such as safety, community requirements and environmental sensitivities. Given most end states will not be achieved for decades, the focus is on developing credible options to set direction.

Work at these lead sites is an example of collaboration across the NDA group, alongside wider engagement with regulators and local authorities as well as UK and international good practice forums.

A delivery schedule for the remaining Magnox sites has also been agreed alongside the establishment of an end state enabling programme at Sellafield.

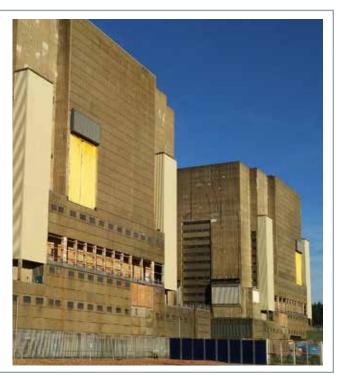
## Trawsfynydd looks to reduce reactor height

Magnox has taken an important step towards its goal of reducing the height of the reactor buildings at Trawsfynydd, which is a major milestone it its programme to decommission the site.

The former nuclear power plant is nestled in Snowdonia National Park, so the aesthetics of the site are considered alongside safe and sustainable decommissioning. The project will reduce the height of the reactors and soften the skyline whilst addressing structural and safety deficiencies associated with the full height structure.

An outline business case was approved this year enabling detailed development to begin. The project will go out to tender next year, providing opportunities for suppliers and the local economy.

Completion of the project will see the volume of the building diminish by 96,000m<sup>3</sup>, the height reduce by 29 metres and 30,000 tonnes of concrete removed, crushed and reused on the site.



# Critical Enablers 2023-2026

## Socio-Economic

## Investing in our communities

The NDA has a legal duty set out in the Energy Act to have regard for the impact of our activities upon those communities living near our sites. In addition, we share the same responsibilities all public bodies have under the Public Services (Social Value) Act to secure wider social, economic and environmental benefits from how we undertake our work.

Our approach towards fulfilling these responsibilities can be found in the NDA Local Social and Economic Impact Strategy and this informs our social impact programme.

The NDA Group Social Impact programme invests approximately £15 million per year in those communities where we are progressing our nuclear decommissioning mission, leveraging millions more in the process.

This programme addresses the key, structural economic challenges facing our site communities and is delivered by local social impact teams working in our operating companies and living in those communities where we are working to achieve change.

By building partnerships, leveraging funding, and attracting investment, we are building a lasting social and economic legacy for future generations beyond the completion of our mission.



# Morlais Tidal Energy Project, Ynys Môn

Working with social enterprise Menter Môn, a £900,000 investment from the NDA and Magnox Ltd has leveraged £39 million from the Welsh Government to develop Morlais - a 240 megawatt tidal energy project off Holy Island, creating at least 100 new jobs in the area with the potential for many more.

Menter Môn works across north Wales to deliver a range of regeneration, environmental and cultural projects by working in partnership with Government, the third sector and business.

Still in the development process, the Morlais project supports local businesses and has taken on eight new local apprentices to date. All profits will be reinvested locally through a new community benefit fund and through Menter Môn community projects. As a renewable energy project, providing clean energy, new jobs and economic diversification, the Morlais project is the definition of 'green growth'.



# iSH - The Industrial Solutions Hub, Cleator Moor

With an investment of over £10 million from the NDA and Sellafield Ltd, the Industrial Solutions Hub (iSH) will unlock millions more funding as part of a £22.5 million Town Deal for Cleator Moor.

iSH is a social enterprise, owned by Copeland Borough Council with the aim of growing and diversifying the economy of West Cumbria away from an over-dependency upon Sellafield. It brings together Sellafield Ltd, its supply chain, academia and research facilities into a business cluster focused on industrial problem solving and practical applications, creating an ecosystem to encourage and foster successful business start-ups and nurture small and medium-sized enterprise (SME) development.

The iSH campus aims to create around 700 new job opportunities and is set to generate an additional £40 million per year of revenue for local businesses.

# Critical Enablers 2023-2026

# **Group strategies**



The NDA group

Digital Vision and Strategy 2022-25

# Group-wide Digital and Innovation strategies launched

Group-wide digital and innovation strategies have been developed and published this year.

Everyday lives have become increasingly digitally enabled, with the pandemic leading to a significant change in working processes and practices, facilitated by technology.

Our Digital Strategy enables better collaboration, and freeing up time to be spent on delivery at all levels of the organisation.

Meanwhile innovation, alongside research and development, is a critical enabler of the NDA's Strategy 4. The Innovation Strategy draws heavily upon collective knowledge, capabilities and information infrastructure. Essential to successful implementation will be enabling a culture where innovation can thrive.

Change extends beyond technology and engineering. It includes our approach to project management, finance, risk, contracting, skills development, assurance, and approvals.



# Research, Development and Innovation



# NDA and National Decommissioning Centre launch research partnership

The NDA and the National Decommissioning Centre (NDC) have signed a three-year collaborative research agreement - the first of its kind between the nuclear and oil and gas decommissioning sectors.

The unique strategic partnership, supporting research with a potential value of up to £900,000, will see us work with researchers from the University of Aberdeen in areas of mutual interest to both the nuclear and oil and gas sectors.

These will include decarbonisation of decommissioning activities, economic impacts, cost benchmarking and remote operations in hazardous environments.

The partnership will draw on current research taking place at the NDC and the University of Aberdeen as well as harnessing the capabilities of the NDC's £1.6 million simulation suite, to enable operational scenarios related to nuclear decommissioning activity to be trialled in a safe, virtual environment.

This will allow users to reduce the risks in operations such as the removal or moving of infrastructure, or deployment of new technologies to understand which are best suited to a task.

# **People**



# Launching an NDA group graduate programme

NDA needs the right people, with the right skills, in the right place, at the right time to deliver our mission. Ensuring that we have a pipeline of future talent is one of the most important investments we make.

The Nuclear Graduates programme, established by NDA in 2008, is an award-winning two-year programme playing a key role in attracting diverse, critical skills and talent into the sector.

More than 400 graduates have so far been recruited by the programme, working across the NDA group and wider industry.

We have also recently invested in specialist programmes to meet head on some of the skills challenges we face. These include cyber, radiation protection and finance, audit and risk.

Building on that success, we're preparing to launch an NDA group graduate scheme, complementing the existing Nuclear Graduates programme and enabling us to bring together professional pathways in a way which not only enables us to meet our skills needs, but offers a unique and rich experience for our successful graduates.

## Stakeholder Relations



Signing of NDA NGO forum charter

# Public and Stakeholder Engagement as a key enabler

Around 170 representatives of communities and organisations from across the UK gathered in Edinburgh for the NDA group's stakeholder summit in September.

It was the first time in three years that stakeholders have gathered in person due to the pandemic. The event covered updates on the decommissioning mission, social value, skills and sustainability.

The event supports the NDA's objective of building better understanding and support of our mission with stakeholders and the general public, maintaining their support, confidence, and trust through consultation, engagement and outreach.

The summit also saw an agreement signed to create an NDA/non-governmental organisation (NGO) forum underpinning NDA's commitment to openness and transparency, by encouraging wider scrutiny of activities. Stakeholder feedback received during engagement on NDA's latest strategy and regular surveys highlighted a request to broaden engagement to include more young people and also pressure groups and NGOs, to allow greater inclusivity of viewpoints, and challenge.

## **Asset Management**



# Digital transformation is the future of asset management

NDA group colleagues have been actively working together to understand how best we can manage the multiple assets we have across the estate.

Our sites have facilities that are 50-70 years old. They are well beyond their design life and, in many cases, destined for deactivation and decommissioning. Other facilities are needed to support the continuing missions, such as the retrieval, treatment and stabilisation of legacy waste and environmental remediation efforts, missions which are expected to last for many years. It's an extremely complex picture.

The key to managing these assets sustainably, balancing cost, risk and performance is to have reliable, consistent data. Efficient data and information management are essential to allow for better informed decision-making, ultimately leading to greater longevity for assets and improved process performance.

The group has been collaborating on a joint Asset Management Strategy. This sets out an agreed approach by which we can drive towards achieving the best industry standards in asset management.

Teams are looking at how we can move from a situation where there is heavy reliance on manual processes, inconsistent data sets and join up systems that need to talk to each other, standardising diagnostic information from plants and facilities across sites. It's work that has the potential to achieve multi-million pound efficiency savings.

Beginning with pilot schemes at Dounreay and Sellafield, teams will be working together to achieve the bridging of the gap between IT/OT (Information Technology and Operational Technology) so that the estate will be able to create connected infrastructure.

Magnox is being supported through its Enterprise Asset Management transformation program to bring on board the NDA Asset Information Strategy. This will transform the way work is delivered and asset risk is managed while readying Magnox to integrate the AGR fleet successfully.

# **Diversity and Inclusion**



# Passports help diversity and inclusion journey

Our employee-led disability network, known as Enable, has sponsored and championed a group-wide initiative to introduce workplace adjustment passports.

They can be used by all employees and not just those with recognised disabilities, long-term illnesses or caring responsibilities.

The passport records any agreed reasonable adjustments, changes to work schedules, role and responsibilities, working environments, provision of specialist technology and other support and assistance as may be required. If employees move roles within the group, the passport can be taken with them to support conversations about adjustments in the new workplace.

Enable is just one of our employee-led networks, with gender balance, menopause, LGBT+ and race equality groups also helping to connect with colleagues and support our diversity and inclusion journey.

# Sustainability

The NDA group has a legal, moral and ethical responsibility to deliver our mission sustainably, with care for our people, communities and the environment. Demonstrating its importance, sustainability was introduced as a critical enabler to our mission in the NDA Strategy 4, published in 2021.

A resulting Sustainability Strategy has been launched this year with a focus on delivering sustainable outcomes through decommissioning practices, with care for the environment through positive and sustainable socio-economic outcomes for nuclear communities.

The strategy links with other wider considerations including achieving carbon net zero by 2050 in England and Wales and 2045 in Scotland, Government's Nuclear Sector Deal and Ten Point Plan for Green Industrial Revolution, as well as adopting the United Nations 17 sustainable development goals.

# CO<sub>2</sub> shipping improvement



Nuclear Transport Solutions (NTS) has improved its carbon footprint and reduced fuel usage in its shipping operations as the business works to reduce CO<sub>2</sub> output.

With transportation heavily reliant on fuel, shipping operations at NTS have focused on new ways to sail differently, using less fuel and reducing exhaust emissions.

On a voyage earlier this year, NTS put a number of techniques into practice, saving over 14% of fuel and 19% in CO<sub>2</sub> emissions in comparison to original estimates. This meant an overall saving of 918 tonnes of CO<sub>2</sub>.

The fuel-saving techniques included:

- Planning more efficient voyages and, where possible, using economical speeds
- Strategic weather routing by the ship's Master using currents, tidal streams and weather windows
- Single engine operations used where possible
- At the ships' home port of Barrow, a link to mains power has been installed meaning ships no longer have to run their generators. Solar panels have also been installed to provide electricity to the site.

# Introducing supplier carbon reduction plans

Dounreay now requests that carbon reduction plans are submitted when suppliers bid for work at the site through Contracts Finder. This is encouraging companies to think about how they help the UK to be net carbon zero by 2050. Around 60% of companies bidding for work since the request was introduced have submitted plans, while a quarter don't have plans, they have alternative polices in place and the remaining companies don't yet have any arrangements in place.

# Restoring a local environment in Snowdonia



Gwen Parry-Jones, CEO Magnox Ltd, and Steve Hardy, NDA Environment Director

When trees in a conifer plantation near Magnox's Trawsfynydd site were damaged in recent storms, the NDA and Magnox looked for a sustainable solution. The existing conifers, planted several decades ago, are not native to the area.

So, the decision was taken to replace the damaged plantation with native deciduous trees in keeping with the natural vegetation of this part of Wales. This means that the local environment is protected, providing a more appropriate habitat for local wildlife and giving the local community a more natural and sensitive landscape.

The replanting scheme is just one small part of a programme to understand and improve the local environments across the NDA group – some 4,500 hectares of land in all.

In this part of Snowdonia, these activities are already having an effect. Having seen what the NDA has been doing, a neighbouring farmer is in the process of planting native trees on three hectares of his own land.



Site Ion Exchange Effluent Plant (SIXEP) Continuity Plant (SCP)

The NDA group's key activities for the next three years are set out on the following pages.

All activities and dates shown in the subsequent pages represent the latest emerging information and are subject to change.

Where we expect an activity to complete during the Business Plan period, this is clearly stated. All other activities will continue into the following year.

# NDA





# Important milestones

#### 2023-2026

- Continue preparations for the transfer of Advanced Gas-cooled Reactor (AGR) stations to the NDA group for decommissioning
- Continue to embed our Sustainability Strategy to support the NDA's carbon net zero commitment
- Continue to support the maintenance of sustainable local economies for communities living near NDA sites and contribute to regional economic growth where possible
- Continue to work with group businesses to explore alternative disposal options for Higher Activity Waste

Planned expenditure for 2023/24

£38 million

Key activities	Timescale	Strategic Outcome
Spent Fuels		
Spent Oxide Fuel		
Continue to work with EDF Energy and our subsidiaries on the integrated and collaborative delivery programme for the safe and cost-effective defueling of AGR power stations, the AGR Operating Programme	2023-2026	6 9
Spent Exotic Fuel		
Work with our group businesses to optimise the strategy for the consolidation of exotic fuels from Dounreay to Sellafield	2023-2026	12 14
Nuclear Materials		
Plutonium		
Work with the UK Government on a disposition solution that puts the UK's plutonium beyond reach	2023-2026	20
Implement a programme of research and development to mature the credible options for plutonium disposition	2023-2026	20
Uranium		
In line with our Strategy, and following business case approval, implement the preferred approach to dealing with the NDA owned uranium hexafluoride at Capenhurst	2023-2026	22 23 24 25
Integrated Waste Management		
Make more use of a risk informed approach for waste management and to seek solutions that help to optimise the lifecycle of both radioactive and non radioactive wastes	2023-2026	26 → 39
Work with group businesses to explore alternative disposal options for Higher Activity Waste	2023-2026	34 39
Site Decommissioning and Remediation		
Work with our operating companies to support the continued optimisation of our strategies for decommissioning and clean-up, embedding a rolling programme of decommissioning across Magnox reactor sites and planning for the integration of AGRs	2023-2026	42 43 44 45 46
Reviewing and establishing new guidance on the selection of decommissioning strategies, including our approach to prioritisation	2023-2026	42 43
Dedesignate or reuse		
Work with Government, regulators and our operating companies to support continued development of more proportionate regulatory arrangements for final stage decommissioning and clean-up and the timely delivery of these	2023-2026	45 46 47
Continue to lead the NDA group Remediation Forum, helping embed approaches to the determination and delivery of site end-states across our sites, and sharing our learning through the wider Nuclear Industry Group on Land Quality	2023-2026	45
Review opportunities available under our Group Operating Framework to make better use of our land, across the NDA-owned estate, to support delivery of our decommissioning and clean-up mission and also ensuring we deliver relevant long term controls and stewardship of our sites.	2023-2026	46 47

Key activities  Critical Englishers	Timescale
Critical Enablers  Develop strategic opportunities that optimise delivery of the mission	2023-2026
Active participation in the British Energy Security Strategy to help achieve HMG deliverables	2023-2026
Provide support to Government on nuclear new build decommissioning plans  Develop a group-wide accommodation strategy (including welfare, warehousing, transport and logistics) allowing effective re-use of the	2023-2026
operational land and creating great places to work  Effective and efficient management and assurance of retained landholding consisting of 2,110 hectares across 81 properties	2023-2026
Proactively dispose/release surplus assets no longer required by the NDA group or wider parts of Government, including those that have	2023-2020
high socio-economic value	2023-2026
Continuing to engage with UK and international bodies and partners to share our learning and knowledge, learn from others, and support development of improved approaches to decommissioning and clean-up	2023-2026
Reviewing our ways of working, including our decision-making tool, the Value Framework, to better monitor and deliver sustainability outcomes through our decommissioning and clean-up activities	2023-2026
Reviewing opportunities to embed principles of Circular Economy and Environmental Stewardship into our approaches to site decommissioning and clean-up activities	2023-2026
Sustainability and health, safety, environment and wellbeing	
Ensure that our mission outcomes and the journey to deliver them are sustainable	2023-2026
Having established our group carbon footprint, group carbon policy and a roadmap to net zero by 2050, develop and implement carbon reductions through carbon management plans at each operating company	2023-2026
Build on our natural capital baseline assessment of our NDA owned land and develop a plan to improve the environmental value of this land where this aligns with other strategic land use opportunities	2023-2026
Contribute to environmental sustainability performance and meet Greening Government Commitment	2023-2026
Lead in the area of mental health and wellbeing across the NDA group and further enhance the wellbeing community across the group	2023-2026
Security, resilience, ICT, information governance and digital	<u> </u>
Implement new ICT programmes to allow smarter, flexible working across the NDA. To include digital transformation and Information Governance initiatives aimed at improving the way we work and collaborate, whilst maintaining information security and legislative compliance	2023-2026
Lead on the evolution of the Digital Vision and Strategy and the development of a Data Strategy and Target Operating Model for the NDA group	2023-2026
Support implementation of forthcoming new nuclear emergency preparedness standards across the NDA group, as part of the UK's implementation of the Basic Safety Standards Directive 2013	2023-2026
Improved intelligence sharing capabilities with national intelligence service providers and the NDA group	2023-2026
Cyber security The	2022 2026
Proactively deter, detect, defend against, recover from and be resilient to both current and evolving cyber threats  Research, development and innovation	2023-2026
Work with other nuclear and non-nuclear organisations to encourage and leverage cross-sector investment in research, development and	2023-2026
innovation and foster technology transfer between sectors and internationally	
Lead the promotion and adoption of technology and innovation across the NDA group, developing an environment where innovation can thrive	2023-2026
Work collaboratively across the NDA group to embed good practices in Technology and Innovation Management and Technical Assurance	2023-2026
People  Enable and drive the delivery of our mission through our people by attracting, retaining and developing a high performing, highly skilled, talented and motivated workforce and creating a culture in which they can thrive. We will continue our commitment to apprentices, graduates and developing the leaders and experts for the short, medium and long term as well as addressing the key skills gap to support delivering our mission	2023-2026
Lead the diversity and inclusion strategy across the NDA group ensuring effective governance and co-ordination to drive a One NDA Inclusion approach, including achieving sector targets, strategy goals and commitments supporting our vision to create great places to work	2023-2026
Implement Government led reforms of public sector pensions across the NDA group	2023-2026
Asset management	1
Secure safe, reliable, maintainable and sustainable asset performance and optimise through life cost of assets	2023-2026
Supply chain  Build commercial capability which maintains a resilient, sustainable, diverse, ethical and innovative supply chain that optimises value for money for the UK taxpayer when sourcing goods and services	2023-2026
Socio-economics	
Support the maintenance of sustainable local economies for communities living near NDA sites and, where possible, contribute to regional economic growth	2023-2026
Public and stakeholder engagement	1
Provide opportunities for the public and stakeholders to better understand our mission, comment on and influence NDA planning and decision making, and draw on the knowledge and experience of stakeholders	2023-2026
International relations	2022 222
Be a world leader in facilitating international collaboration in nuclear decommissioning  Transport	2023-2026
Ensure the effective, safe and secure transportation of materials to enable the successful delivery of the NDA mission	2023-2026
Non-NDA liabilities  Identify, assess and decide how to manage non-NDA liabilities, whether public or private sector, to deliver greater value for the UK, while	
ensuring the successful delivery of our mission remains our priority	2023-2026



# **Sellafield Limited**



Sellafield Limited is an NDA subsidiary, responsible for delivering the NDA mission, through operating and decommissioning Europe's largest and most complex nuclear site. This includes cleaning up nuclear facilities and safeguarding nuclear fuel, materials, and waste.

The portfolio of work is balanced around the following priorities:

- Safeguarding and keeping secure special nuclear material
- Reducing risk and hazard in high hazard areas
- Support the nation's civil nuclear programme by:
  - The safe management and storage of Advance Gas cooled Reactor (AGR) fuel
  - Facilitating the effective defueling of the AGR reactors
- Ongoing safe storage of Magnox remnant fuel
- Ensuring the infrastructure is resilient
- Progressing risk and hazard reduction in other site areas
- Supporting NDA group material consolidation

# Important milestones

#### 2023-2026

- Continue to receive and dismantle AGR spent fuel from EDF
- Continued and sustained retrievals from Magnox Swarf Storage Silo (MSSS)
- Continue to retrieve materials from the First Generation Magnox Storage Pond (FGMSP)
- Implement a revised strategy for Magnox remnant fuel

Planned expenditure for 2023/24

£2,800 million

Site in Cumbria

# 276 hectares

Hectares dedesignated

# 0 hectares

All 276 hectares remain covered by the nuclear site licence.

## SITE PROGRESS (ACHIEVED AND EXPECTED)

All buildings decommissioned	TBD
All land remediated	2125
All land dedesignated	2125

TBD is shown when the date for completing the strategic outcome is not sufficiently clear for a specific date to be given at this time.

#### **Spent Fuels**

All spent fuels discharged from the operating Advanced Gas-Cooled Reactor (AGR) power stations and defueling of all Magnox power stations reactors are sent to Sellafield for management. The receipt of AGR fuels will continue until the end of the AGR electricity programme, whilst all the Magnox fuel has now been received at Sellafield. The management of AGR fuel under contracts with EDF Energy provides a significant income stream to NDA.

#### Spent Magnox Fuel

Speric Magnox ruer		
Continue to interim store in the Fuel Handling Plant (FHP) remnant Magnox fuel and fuels recovered from the First Generation Magnox Storage Pond (FGMSP)	2023-2026	4
Continue to retrieve fuels from FGMSP	2023-2026	2
Implement a strategy for all of the fuel and fuel bearing materials in FHP	2023-2024	4
Completion of Programme Studies including pre-treatment in FHP for remnant Magnox Fuel	2023-2025	2
Spent Oxide Fuel		
Enhance the capacity to receive/manage and interim store AGR spent fuel from EDF energy to support bulk defueling	2023-2026	6 9
Spent Exotic Fuel		
Continue to receive and manage Dounreay spent exotic fuel, and develop alternative capability for receipt and management of remaining spent exotic fuels from Dounreay	2023-2026	12 14

#### **Integrated Waste Management**

The various activities across the site produce wastes in many forms. These require varying degrees of treatment and onward processing. The site continues to focus on safe, efficient management of these wastes, including: the conversion of Highly Active Liquor (HAL) into passively safe vitrified waste; the return of vitrified material overseas; and the management of on-site intermediate and low level wastes.

The areas of principal focus are the redundant Legacy Ponds and Silos facilities, made up of the Pile Fuel Storage Pond, Pile Fuel Cladding Silo, First Generation Magnox Storage Pond and Magnox Swarf Storage Silo. These facilities supported the development of the nuclear programme in the UK from the early 1950s. Subsequently, they supported electricity generation from the fleet of Magnox power stations. The programmes include the removal of nuclear fuel, sludge and solid material which require the provision of equipment to retrieve the various wastes and then treat and store them.

This process needs to take into account the role of integrated waste management in achieving hazard reduction and long-term safety, security and environmental protection requirements.

#### Low Level Waste

Continue to generate savings and preserve capacity at the Low-Level Waste Repository (LLWR) by enhancing capability to divert waste from LLWR and into the supply chain	2023-2026	27
Intermediate Level Waste		
Support risk reduction from Legacy Ponds through continued removal of fuel and waste from the facilities	2023-2026	31
Magnox Swarf Storage Silo (MSSS)  • Continue retrievals from MSSS  • Progress the capability required for bulk retrievals	2023-2026 2023-2026	31
Commence retrievals from Pile Fuel Cladding Silo (PFCS)	2023-2026	31
Support the NDA's strategy by continuing the programmes to receive and treat waste materials from Harwell and AWE Aldermaston	2023-2025	32
Support future waste treatment through implementing the capability to actively demonstrate characterisation, size reduction and decommissioning	2023-2026	32
Support risk reduction by developing additional capability for treatment of intermediate level liquid wastes (Site Ion Exchange Effluent Plant (SIXEP) Continuity Plant (SCP))	2023-2026	32
Continue to support industry and health care in the management of used radioactive sources	2023-2026	33
Ensure continued storage capacity in the SIXEP facility, including the identification of alternative treatment options	2023-2025	33
High Level Waste		
Continue the programme to repatriate overseas-owned vitrified waste to its country of origin	2023-2026	38
Support risk reduction through the continued vitrification of highly active liquor	2023-2026	36

Key activities	Timescale	Strategic Outcome		
Nuclear Materials				
Sellafield is the custodian of the majority of the UK's inventory of separated plutonium which is held in safe and secure storage.				
Plutonium				
Continue the safe and secure storage of plutonium by developing the capability to repack plutonium in line with UK policy	2023-2026	18 19		
Continue to progress NDA disposition residues to waste	2023-2026	20		
Uranium				
Support future decommissioning by implementing plans for consolidated storage of Sellafield uranics	2023-2026	22 24		
Site Decommissioning and Remediation				
Decommissioning and demolition				
Commence post operational clean-out (POCO) of Magnox Reprocessing Plant	2023-2024	42		
Critical Enablers				
A number of key enabling activities require specific focus, ranging from infrastructure refurbishment or replacement projects, through to key change programmes which aim to improve operational delivery and efficiency on site.				
Continue to support future business requirements including the development and embedding of a value-led culture	2023-2026	-		
Develop and embed the long-term partnership with the supply chain	2023-2026	-		
Progress the transformation of project delivery on site and continue to embed the benefits of the Programme and Project Partnership	2023-2026	-		
Support small and medium enterprise organisations by increasing overall spend with them in line with the Government growth agenda	2023-2026	-		
Continue to embed the Sellafield security enhancement programme	2023-2026	-		
Continue with improvements to the site utilities infrastructure	2023-2026	-		
Continue the programme to ensure the analytical services capability is available to support the mission	2023-2026	-		
Working to embed the capability to proactively protect, detect, respond, and recover against current and evolving cyber threats	2023-2026	-		
Manage and deliver asset management and continuous improvement capability and performance to support mission delivery	2023-2026	-		
Implementation of an overarching Infrastructure Strategy which supports and enables delivery of the future mission	2023-2025	-		
Continue to progress the land programme to ensure SL has the land and property available to deliver the mission	2023-2026	-		
Continue to explore the opportunity for thermal treatment	2023-2026	-		
Continue to progress and embed sustainability through the key areas identified within the NDA Sustainability Policy	2023-2026	-		
2023 Corporate Plan development	2023-2025	-		
Continue to embed the One NDA approach and comply with the Group Operating Framework (GOF) model	2023-2026	-		
Regulatory engagement				
Ensure discharges are in line with UK discharge strategy	2023-2026	-		
Reduce environmental risk (including retrieval and treatment of legacy wastes, reduction of HAL stocks)	2023-2026	-		





# **Magnox Limited**

Magnox is an NDA subsidiary, responsible for 12 nuclear sites across the UK: Berkeley, Bradwell, Chapelcross, Dungeness A, Harwell, Hinkley Point A, Hunterston A, Oldbury, Sizewell A, Trawsfynydd, Winfrith and Wylfa. Magnox also generates electricity at the Maentwrog hydroelectric plant.

Planned expenditure for 2023/24

### £530 million

A change in decommissioning strategy to Site Specific Strategies (SSS) is being developed which takes into account all contributing factors for that site as well as the strategic and funding pressures on the Magnox Portfolio. The Rolling Programme of Decommissioning (RPD) strategy, which approaches decommissioning in a phased way, aims to reduce the overall cost, duration and uncertainty of the Magnox mission, enabling further beneficial re-use of some of our land for other purposes.

The RPD is the basis for the NDA Strategy 4 for Magnox. This will maximise the opportunity for sharing any lessons learned, developing and implementing new innovative technologies, and strengthening wider capability. The programme will collectively be geared towards reducing risk, reducing lifetime costs, and growing skills and knowledge to deliver benefits both nationally and to local communities. The site-specific decommissioning and end state strategies will be continually reviewed and optimised using the learning obtained from across the estate and other influencing factors such as Government policy and funding.

We will support economic growth and job creation by continuing to drive progress against a short-term plan with clear milestones. Each site will also have long-term options identified and decision points on both the decommissioning strategy and the end state. This will allow us to consider opportunities for more innovative approaches, based on the technology and external factors of the time, and provide a basis for ongoing engagement and consultation on our strategies for site decommissioning. In order to recognise the uncertainties in the long term, we have chosen to set out approximate dates that our best estimates of the earliest available options encompass rather than setting out specific dates for our milestones. The current best estimates for end state dates have been included in the 2023-2026 NDA Business Plan and reflect the work done to date on near-term plans and medium-term plans. These estimates are subject to change as we develop our plans and take account of contributing factors including HMG priorities, funding and approvals.

For example, further changes, as we develop our RPD plans, are liable to arise as we seek to integrate and optimise the Magnox plans with those of the AGRs and indeed any other future missions which Magnox may be asked to support in due course.

Key activities	Timescale	Strategic Outcome
Nuclear Materials		
Uranium		
Continue the programme for the transfer of nuclear materials including regulatory permissioning	2023-2026	22
Integrated Waste Management		
Low Level Waste		
Delivery of the Magnox elements of the estate-wide LLW Management Plan including diversion to alternative treatment including development of updated Integrated Waste Strategy	2023-2026	26 27 28 29
Intermediate Level Waste		
Progress activities to retrieve, treat and store ILW	2023-2026	31 32 33
Progress design and build of ILW retrieval plant	2023-2026	31
Continue to pursue opportunities to consolidate ILW to interim stores	2023-2026	33
Site Decommissioning and Remediation		
Decommissioning and demolition		
Continue estate decommissioning and demolition activities in line with individual site strategies	2023-2026	42 43
Continue reactor decommissioning	2023-2026	43
Continue to manage and remove asbestos	2023-2026	42
Continue development of site specific strategies as part of a rolling programme of decommissioning	2023-2026	42
Dedesignate or Reuse		
Continue working with regulators to ensure appropriately scaled management arrangements and permissioning for Interim States and Interim End States are determined and agreed	2023-2026	44 45
Development of Interim State approaches, utilising revised management arrangements	2023-2026	44
Monitoring of management and maintenance arrangements for sites in Care and Maintenance	2023-2026	44
Progress land quality activities to support suitability for reuse	2023-2026	44 46
Progress land dedesignation and release to support reuse	2023-2026	47
Provision of support to nuclear new build	2023-2026	47
Critical Enablers		
Support Government in activities to deliver preparations for decommissioning the Advanced Gas-cooled Reactor fleet	2023-2026	-
Prepare Magnox for the joining of Dounreay and each AGR as they reach fuel free state.  Develop and deliver the joint programmes with DSRL and EDF	2023-2026	-
Support small and medium enterprise organisations by increasing overall spend with them in line with the Government growth agenda	2023-2026	-
Continue enhancement of Cyber Security Capability and IT infrastructure	2023-2026	
Optimise Asset Management capability and performance to support mission delivery	2023-2026	-
Progress development of workforce capability and skills for decommissioning in Magnox and the supply chain	2023-2026	-
Develop and deliver to the sustainability agenda	2023-2026	-
Identify and realise opportunities in research, development and innovation	2023-2026	-

# Berkeley



Site in Gloucestershire

# 27 hectares

Hectares dedesignated

## 11 hectares

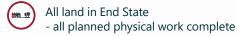
16 hectares remain covered by the nuclear site licence.

### SITE PROGRESS (ACHIEVED AND EXPECTED)





TBD



c.2060s\*

Key activities	Timescale	Strategic Outcome
Integrated Waste Management		
Intermediate Level Waste		
Continue to progress design and build of ILW retrieval plant	2023-2025	31
Complete design and build of the Gravel and Amalgum Retrieval Plant	2023-2026	31
Continue to progress activities to retrieve, treat and store ILW wastes	2023-2026	31 32 33
Site Decommissioning and Remediation		
Decommissioning and Demolition		
Commence the deplant and demolition of the Caesium Removal Plant	2025-2026	42 43
Continue to progress the asbestos and plant removal from the blower houses	2023-2026	42 43

# **Bradwell**

in care and maintenance



Site in Essex

# 20 hectares

Hectares dedesignated

## 0 hectares

All 20 hectares remain covered by the nuclear site licence.

#### SITE PROGRESS (ACHIEVED AND EXPECTED)

Free from Spent Fuel	ACHIEVED
Free from Nuclear Materials	ACHIEVED
All Radioactive Waste Disposed	TBD
All land in End State	

\*This is our best estimate of the earliest date to achieve milestones but is based on a number of dependences, assumptions, risks and exclusions and is subject to site specific strategy development and approval.

- all planned physical work complete

c.2080s\*

Key activities	Timescale	Strategic Outcome
Site Decommissioning and Remediation		
Dedesignate and Reuse		
Ongoing management of site during Care and Maintenance period	2023-2026	44

# Chapelcross



Site in Dumfries and Galloway

# 96 hectares

Hectares dedesignated

## 0 hectares

All 96 hectares remain covered by the nuclear site licence.

### SITE PROGRESS (ACHIEVED AND EXPECTED)

Free from Spent Fuel	ACHIEVED
Free from Nuclear Materials	ACHIEVED
All Radioactive Waste Disposed	TBD
All land in End State - all planned physical work complete	c.2060s*

Key activities	Timescale	Strategic Outcome
Integrated Waste Management		
Intermediate Level Waste		
Continue to progress activities to retrieve, treat and store ILW wastes	2023-2026	31 32 33
Continue to progress design and build of ILW retrieval plant	2023-2026	31
Site Decommissioning and Remediation		
Decommissioning and Demolition		
Progress preparations for pond draining and stabilisation including waste retrievals	2023-2026	42
Prepare and execute land remediation of the cooling tower basins	2023-2025	46
Commence and progress turbine hall asbestos removal	2025-2026	42

# Dungeness A



Site in Kent

# 20 hectares

**Hectares dedesignated** 

## 0 hectares

All 20 hectares remain covered by the nuclear site licence.

### SITE PROGRESS (ACHIEVED AND EXPECTED)

	Free from Spent Fuel	ACHIEVED
	Free from Nuclear Materials	ACHIEVED
	All Radioactive Waste Disposed	TBD
(H) (P)	All land in End State	

\*This is our best estimate of the earliest date to achieve milestones but is based on a number of dependences, assumptions, risks and exclusions and is subject to site specific strategy development and approval.

c.2050s\*

- all planned physical work complete

Key activities	Timescale	Strategic Outcome
Integrated Waste Management		
Intermediate Level Waste		
Continue to progress activities to retrieve, treat and store ILW wastes	2023-2026	31 32 33
Continue to progress design and build of ILW retrieval plant	2023-2026	31
Continue to progress activities supporting consolidated ILW storage	2023-2026	33
Site Decommissioning and Remediation		
Decommissioning and Demolition		
Commence and progress decommissioning the Active Effluent Treatment facilities	2023-2026	42
Prepare and progress the demolition of the boilers and associated buildings	2023-2026	43

# Harwell

Site in Oxfordshire

107 hectares

**Hectares dedesignated** 

23 hectares

84 hectares remain covered by the nuclear site licence.



### SITE PROGRESS (ACHIEVED AND EXPECTED)

Free from Spent Fuel	ACHIEVED
Free from Nuclear Materials	2025
All Radioactive Waste Disposed	TBD
All land in End State - all planned physical work complete	c.2050s*

Key activities	Timescale	Strategic Outcome
Nuclear Materials		
Uranium		
Continue the programme for the transfer of nuclear materials	2023-2026	22
Integrated Waste Management		
Intermediate Level Waste		
Continue to progress activities to retrieve, treat and store ILW	2023-2026	31 32 33
Site Decommissioning and Remediation		
Decommissioning and Demolition		
Continue preparations for decommissioning of the Radiochemistry Facility (B220)	2023-2026	42
Continue decommissioning, demolition, land remediation, reinstatement and delicensing of the Liquid Effluent Treatment Plant (LETP)	2023-2026	42 43 46
Continue preparations for the decommissioning of the British Experimental Pile Zero reactor (BEP0)	2023-2026	42
Continue preparations and planning for the decommissioning of the Active Waste Handling facility (B459)	2023-2026	42
Dedesignate or Reuse		
Continue incremental release of land to the Harwell campus through targeted demolitions, remediation and clearance of land tracts	2023-2026	42 43 47

# Hinkley Point A



Site in Somerset

# 19 hectares

**Hectares dedesignated** 

### 0 hectares

All 19 hectares remain covered by the nuclear site licence.

### SITE PROGRESS (ACHIEVED AND EXPECTED)

Free from Spent Fuel	ACHIEVED
Free from Nuclear Materials	ACHIEVED
All Radioactive Waste Disposed	TBD
All land in End State - all planned physical work complete	c.2060s*

Key activities	Timescale	Strategic Outcome
Integrated Waste Management		
Intermediate Level Waste		
Continue to progress activities to retrieve, treat and store ILW	2023-2026	31 32 33
Continue to progress design and build of ILW retrieval plant	2023-2026	31
Site Decommissioning and Remediation		
Decommissioning and Demolition		
Continue and complete asbestos removal from the reactor building	2023-2025	42
Continue to progress the de-planting of the reactor building	2023-2026	42

# **Hunterston A**



Site in Ayrshire

### 15 hectares

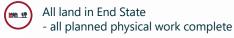
Hectares dedesignated

### 0 hectares

All 15 hectares remain covered by the nuclear site licence.

#### SITE PROGRESS (ACHIEVED AND EXPECTED)

Free from Spent Fuel	ACHIEVED
Free from Nuclear Materials	ACHIEVED
All Radioactive Waste Disposed	TBD
All land in End State	



c.2050s\*

Timescale	Strategic Outcome
2023-2026	31 32 33
2023-2026	31
2023-2026	32
2023-2026	42
2023-2026	42
2023-2026	42
	2023-2026 2023-2026 2023-2026 2023-2026 2023-2026

# Oldbury



Site in South Gloucestershire

# 47 hectares

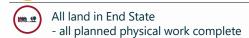
Hectares dedesignated

## 32 hectares

15 hectares remain covered by the nuclear site licence.

### SITE PROGRESS (ACHIEVED AND EXPECTED)

Free from Spent Fuel	ACHIEVED
Free from Nuclear Materials	ACHIEVED
All Radioactive Waste Disposed	TBD



c.2080s\*

Key activities	Timescale	Strategic Outcome
Integrated Waste Management		
Intermediate Level Waste		
Continue to progress activities supporting consolidated ILW storage	2023-2026	33
Commence the design and build of ILW retrieval plant	2023-2026	31
Continue to progress activities to retrieve, treat and store ILW (at Berkeley)	2023-2026	31 32 33
Site Decommissioning and Remediation		
Decommissioning and Demolition		
Continue to progress the decommissioning of the Active Effluent Treatment facilities	2023-2026	42
Commence and progress the asbestos removal, deplant and demolition of the turbine hall	2023-2026	42
Commence the asbestos removal from the reactor building	2023-2026	42

# Sizewell A



Site in East Suffolk

# 14 hectares

Hectares dedesignated

# 0 hectares

All 14 hectares remain covered by the nuclear site licence.

### SITE PROGRESS (ACHIEVED AND EXPECTED)

	Free from Spent Fuel	ACHIEVED
	Free from Nuclear Materials	ACHIEVED
	All Radioactive Waste Disposed	TBD
(P) (P)	All land in End State - all planned physical work complete	c.2070s*

Key activities	Timescale	Strategic Outcome
Integrated Waste Management		
Intermediate Level Waste		
Continue to progress activities to support consolidation of ILW storage	2023-2026	33
Commence design and build of ILW retrieval plant	2023-2026	31
Site Decommissioning and Remediation		
Decommissioning and Demolition		
Commence and progress the decommissioning of the Active Effluent Treatment facilities	2023-2026	42
Progress and complete the asbestos removal, deplant and demolition of the turbine Hall	2023-2026	42
Commence and progress the asbestos removal from the boiler houses	2023-2026	42
Progress and complete the asbestos removal, deplant and demolition of the turbine Hall		42

# Trawsfynydd

Our lead and learn site for rolling decommissioning



**Site in North Wales** 

# 15 hectares

Hectares dedesignated

### 0 hectares

All 15 hectares remain covered by the nuclear site licence.

#### SITE PROGRESS (ACHIEVED AND EXPECTED)

Free from Spent Fuel	ACHIEVED
Free from Nuclear Materials	ACHIEVED
All Radioactive Waste Disposed	TBD
All land in End State - all planned physical work complete	c.2050s*

Key activities	Timescale	Strategic Outcome
Integrated Waste Management		
Intermediate Level Waste		
Continue and complete activities to retrieve, treat and store ILW	2023-2025	31 32 33
Site Decommissioning and Remediation		
Decommissioning and Demolition		
Continue and complete reactor height reduction enabling activities	2023-2024	42
Commence, prepare, and progress reactor building height reduction	2023-2026	43
Continue deplanting, decommissioning and demolition of the ponds complex facility	2023-2026	42

# Winfrith



Site in Dorset

# 81 hectares

**Hectares dedesignated** 

# 10 hectares

71 hectares remain covered by the nuclear site licence.

### SITE PROGRESS (ACHIEVED AND EXPECTED)

	Free from Spent Fuel	ACHIEVED
	Free from Nuclear Materials	ACHIEVED
	All Radioactive Waste Disposed	TBD
(12 mm)	All land in End State	

\*This is our best estimate of the earliest date to achieve milestones but is based on a number of dependences, assumptions, risks and exclusions and is subject to site specific strategy development and approval.

c.2036s\*

- all planned physical work complete

Key activities	Timescale	Strategic Outcome
Integrated Waste Management		
Low Level Waste		
Complete shipments of LLW drums from Treated Radwaste Store to LLWR	2023-2025	28
Site Decommissioning and Remediation		
Decommissioning and Demolition		
Continue DRAGON reactor decommissioning, including the completion of the construction and installation of the core segmentation equipment	2023-2026	42
Continue SGHWR decommissioning, including the completion of the construction and installation of the core segmentation equipment	2023-2026	42
Commence and progress the removal of the discharge pipelines	2023-2026	42
Continue land remediation activities and end state development	2023-2026	46

# Wylfa



Site in Anglesey

# 21 hectares

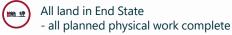
Hectares dedesignated

### 0 hectares

All 21 hectares remain covered by the nuclear site licence.

### SITE PROGRESS (ACHIEVED AND EXPECTED)

Free from Spe	ent Fuel ACHIEVED
Free from Nuc	clear Materials ACHIEVED
All Radioactiv	e Waste Disposed TBD
All land to Face	l.C.



c.2080s\*

Key activities	Timescale	Strategic Outcome
Integrated Waste Management		
Intermediate Level Waste		
Continue to progress activities to retrieve, treat and store ILW	2023-2026	31 32 33
Continue to progress design and build of ILW retrieval plant	2023-2026	31
Site Decommissioning and Remediation		
Decommissioning and Demolition		
Continue and complete asbestos removal from the de-aerator floor of the turbine hall	2023-2024	42
Commence and progress the isolation, asbestos removal, deplant and demolition of the turbine hall	2023-2026	42
Commence and progress asbestos removal from the reactor building	2023-2024	42





# **Dounreay Site Restoration Limited**

Dounreay Site Restoration Limited (DSRL) is an NDA subsidiary responsible for decommissioning and cleaning up the Dounreay site in the north of Scotland. It also operates a Low Level Waste (LLW) disposal facility to deal with waste from the site.

#### Important milestones

The activities below are extracted from the current site Lifetime Plan and are subject to change. A revised Lifetime Plan is in development following the transition to an NDA subsidiary.

- All fuel in long-term storage or shipped off site.
- Dounreay Fast Reactor (DFR) dismantled
- Prototype Fast Reactor (PFR) dismantled
- Shaft and silo encapsulation complete
- Site clearance and environmental restoration phase 3 complete
- · Interim end state achieved

Planned expenditure for 2023/24

### £221 million

Site in Northern Scotland

### 60 hectares

(plus 12 hectares designated for LLW facility) in Caithness.

**Hectares Dedesignated** 

### 0 hectares

60 hectares remain covered by the nuclear site licence, the 12 for the LLW facility are designated but not licensed.

#### SITE PROGRESS (ACHIEVED AND EXPECTED)

Defueled	TBD
Free from Nuclear Materials	TBD
All Radioactive Waste Disposed	TBD
All Buildings Decommissioned or Relicensed	TBD
All Land Demonstrated as Suitable for Reuse	TBD
All Land Dedesignated or Reused	TBD

TBD is shown when the date for completing the strategic outcome is not sufficiently clear for a specific date to be given at this time.

Key activities	Timescale	Strategic Outcome
Spent Fuel		
Spent Exotic Fuel		
Complete removal of in reactor DFR breeder fuel and transfer to interim storage	2023-2026	12
Integrated Waste Management		
Low Level Waste		
Continue transfer of LLW to LLW facility	2023-2026	27
Intermediate Level Waste		
Complete construction of Dounreay Cementation Plant (DCP) Store Extension	2023-2024	32
PFR raffinate immobilisation complete	2023-2025	32
Site Decommissioning and Remediation		
Decommissioning and Demolition		
PFR - complete reactor vessel residual sodium treatment operations - turn reactor vessel atmosphere from nitrogen to air	2023-2026	42
Dedesignate or Reuse		
NDA and regulatory permissioning in support of the Interim End State definition and arrangements for Dounreay	2023-2026	44
Critical Enablers		
Support small and medium enterprise organisations by increasing overall spend with them in line with the Government growth agenda	2023-2026	-
Prepare Dounreay for joining with Magnox. Develop and deliver the joint programme	2023-2026	-
Continue enhancement of Cyber Security Capability and IT infrastructure	2023-2026	-
Optimise Asset Management capability and performance to support mission delivery	2023-2026	-



### **Nuclear Waste Services**

Nuclear Waste Services (NWS) launched in January 2022. This new organisation brings together the long-established expertise of site operator Low Level Waste Repository Limited (LLWR), Geological Disposal Facility (GDF) developer Radioactive Waste Management (RWM) Limited and the NDA's Integrated Waste Management Programme. The NWS vision is to make nuclear waste permanently safe as soon as possible. It is focused on managing UK nuclear waste safely, innovatively, and sustainably, while driving value for money.

NWS is not a legal entity but provides strategic oversight over the operation and development of these businesses through a management board governance structure. The legal entities of LLWR and RWM will endure, although the intention is to move to a single legal entity operating under the NWS brand at an appropriate point in the future.

#### Important milestones

#### 2023

 Repository Development Programme (RDP) Tranche 1 design complete (\*)

#### 2024

RDP commence main construction (\*)

#### 2026

 Environmental Safety Case (ESC) submitted to the Environment Agency (\*)

#### 2026

 Decision to Government on communities to progress to deep borehole investigation and increased community investment

#### 2026-2027

RDP Vault 8 closure (\*)

#### 2029

 Start site characterisation deep borehole investigations

#### 2029

RDP final capping of Vault 8 (\*)

Planned expenditure for 2023/24

# £240 million

Site in Cumbria

### 100 hectares

**Hectares Dedesignated** 

### 0 hectares

All 100 hectares remain covered by the nuclear site licence.

#### SITE PROGRESS (ACHIEVED AND EXPECTED)



All Buildings Decommissioned or Relicensed

TBD



All Land Demonstrated as Suitable for Reuse

TBD 2135 (\*)

All Land Dedesignated or Reused

TBD is shown when the date for completing the strategic outcome is not sufficiently clear for a specific date to be given at this time.

(\*) indicates activities related to specific work at NWS Low Level Waste Repository site

Key activities	Timescale	Strategic Outcome
Integrated Waste Management		
Low Level Waste		
Deliver the National LLW Programme to optimise LLW Strategy implementation. Work with consigning SLCs to improve waste forecast and inventory and continue segregated waste, treatment, and disposal services (*)	2023-2026	26 27 28 29
Intermediate Level Waste		
Through activity and enabling partners – deliver a robust technical programme, support the GDF Programme and Waste Management	2023-2026	32 33 34
Work with NDA to support innovation in approaches to integrated waste management	2023-2026	33
Type B packaging capability to support NDA and MOD customers	2023-2026	34 39
Implement Government policy on geological disposal of higher activity waste to deliver a suitable site and willing community	2023-2026	34 39
Through activity and enabling partners – Deliver a robust technical programme, support the GDF Programme and Waste Management	2023-2026	34 39
Establish an innovation partnership for asbestos	2023-2026	34 39
Establish a standard group-wide service including a characterisation infrastructure plan	2023-2026	34 39
Establish thermal treatment as a proven technology for the group	2023-2026	34 39
Delivery of thermal treatment Plutonium Contaminated Material design and build	2023-2026	34 39
Deliver initial Near Surface Disposal capability subject to appropriate Government policy	2023-2026	34 39
Complete the Near Surface Disposal at surface and at depth optimisation works	2023-2026	34 39
Site Decommissioning and Remediation		
Site End State Gate B paper delivered (*)	2023-2026	44 45 47
New Build and Operations		
Complete enabling works for phased construction of the final capping for trenches 1 to 7 and Vault 8 (*)	2023-2026	41

Key activities	Timescale	Strategic Outcome
Critical Enablers		
Support hazard reduction across the NDA group	2023-2026	-
Deliver LLW packaging and transport services (*)	2023-2026	-
Manage and operate LLWR site safely to provide an effective UK disposal service (*)	2023-2026	-
Consider options to further optimise operations at the LLWR site (*)	2023-2026	-
Continue to pursue overall cost savings in delivery of the Lifetime Plan	2023-2026	-
Support small and medium enterprise organisations by increasing overall spend with them in line with the Government growth agenda	2023-2026	-
Active participation in the British Energy Security Strategy and the North West Nuclear Arc to help achieve HMG key deliverables	2023-2026	-
Mature and deliver asset management and continuous improvement capability and performance to support mission delivery	2023-2026	-
Ensure that NWS has willing communities – working closely with our Community Partnerships and interested parties to build understanding of the GDF Programme and maintain community participation	2023-2026	-
Ensure that NWS can put forward two best and suitable sites for detailed investigation in Tranche 3 – underpinned through site evaluation activities	2023-2026	-
Complete the transition to become a single legal entity	2023-2026	-
Optimise NWS business delivery efficiency and capability commitments including a new IT platform	2023-2026	-
Regulatory engagement		
Contribute to sustainability performance under the Greening Government Commitments (GGC)	2023-2026	-

<sup>(\*)</sup> indicates activities related to specific work at NWS Low Level Waste Repository site

# Nuclear Transport Solutions



Nuclear Transport Solutions (NTS) provides the NDA group with specialist transport and logistics capabilities.

Delivering our mission relies on being able to transport radioactive materials and other freight safely and sustainably. NTS supports this by transporting spent nuclear fuel from UK power stations to Sellafield, returning reprocessed products to customers overseas, and providing packaging and licensing solutions to the NDA group.

It also generates revenue through commercial opportunities in the UK and overseas – offsetting the cost of delivering decommissioning and clean-up work at the UK's oldest nuclear sites.

NTS operates Direct Rail Services (DRS) and Pacific Nuclear Transport Limited (PNTL) to deliver rail and shipping services for customers, building on decades of experience of providing safe, secure and reliable transport solutions

Planned expenditure for 2023/24

### £111 million

Key activities	Timescale	Strategic Outcome
Spent Fuels - Spent Oxide Fuel		
Support AGR fuel movements by rail for EDF from stations to Sellafield, including preparations for the AGR defueling programme	2023-2026	6
Nuclear Materials - Plutonium and Uranium		
Support national nuclear material rail movements for Harwell, Winfrith and DSRL	2023-2026	22
Integrated Waste Management - High Level Waste		
Continue to deliver important international transports of vitrified High Level Waste (HLW) and conditioned Intermediate Level Waste (ILW)	2023-2026	36 37
Critical Enablers		
Establish and implement an Integrated Transport Programme to identify opportunities and realise benefits from better coordination and optimisation of NDA group transports	2023-2026	-
Seek opportunities for new business within nuclear shipping, rail, packaging and design by providing transport enabling solutions to UK and international markets	2023-2026	-
Undertake appropriate non-nuclear business to maintain and enhance the skills and capabilities required to support the core nuclear mission	2023-2026	-
Maintain and operate a fleet of specialist transport assets which meet the highest standards of quality, safety and security in order to support NDA operations	2023-2026	-
Attract and retain the necessary skills, capability and diversity of talent to deliver business in a safe, secure and reliable manner	2023-2026	-
Support the discharge of NDA obligations with respect to MOD nuclear rail transportation	2023-2026	-
Continue to deliver NDA's contractual obligations for transport of mixed oxide (MOX) fuel from France to Japan	2023-2026	-
Develop and implement a carbon reduction plan to successfully achieve carbon net zero aspirations	2023-2026	-



### **NDA Archives Limited**

NDA Archives is an NDA subsidiary, responsible for Nucleus (the Nuclear and Caithness Archives) and related operational activities across the NDA group. The Nucleus facility is currently operated by a commercial partner and provides the centre of excellence for long-term records management, archive services, digital preservation and heritage management.

Key activities	Timescale
Critical Enablers	
Re-competition of the commercial partner contract	2023-2024
Continuing development of the Hub and Spokes delivery model – centralised inventory and management with dispersed, off-site storage where appropriate	2023-2024
Working with stakeholders to continue the development and implementation of the NDA's heritage strategy	2023-2024
Continuing to meet the environmental targets set across the NDA group in alignment with our obligations under the Greening Government Commitments Scheme	2023-2026
Development of accommodation options, including strategies/proposals for dealing with increased capacity needs at Nucleus and the NDA group's material and samples management and storage requirements	2023-2026
Magnox collection sift completed and ready for accession	2024-2025
Sellafield offsite collection sift completed and ready for accession	2024-2025

# **NDA Properties Limited**



NDA Properties Ltd is an NDA subsidiary, holding and managing the majority of the non-nuclear property assets within the NDA group.

Key activities	Timescale
Critical Enablers	
Effective and efficient management and assurance of retained landholding consisting of 640 hectares across 85 properties	2023-2026
Review and deliver progressive environmental stewardship across the portfolio estate	2023-2026
Proactively dispose/release surplus assets no longer required by the NDA group or wider parts of Government, including those that have high socio-economic value	2023-2026
To engage and collaborate with NDA group and stakeholders to target carbon net zero objectives	2023-2026

### Rutherford Indemnity Limited

# **Rutherford Indemnity Limited**

Rutherford Indemnity Ltd provides insurance cover for the NDA group. The company is a wholly-owned subsidiary, managed for the NDA by Marsh Management Services Guernsey Limited, and has no direct employees.

Key activities	Timescale
Critical Enablers	
Provide optimal insurance coverage to the NDA to support its NDA group-wide insurance programme, exploiting opportunities to reduce overall cost of insurance risk and offering insurance solutions (including support for claims handling enhancements) to meet the evolving needs of the group	2023-2026
Continue to deliver the target return on the investment portfolio, protecting Rutherford's ability to offer insurance on a cost-effective basis, maintaining liquidity in order to be able to respond promptly to a major loss	2023-2026
Continue to use a prudent proportion of Rutherford's assets to support infrastructure investment within the NDA group	2023-2026
Maintain capability for payment of dividends to the shareholder	2023-2026

# **Energus**

## ENERGUS.

Energus is an NDA subsidiary offering conference and events facilities and a range of training, education and business support services geared to providing and enhancing skills within both the local and national nuclear workforce.

Key activities	Timescale
Critical Enablers	
Continue to work closely with the NDA and stakeholders across the nuclear sector to upskill and develop the workforce of today and tomorrow	2023-2026
Continue to manage and facilitate a range of training opportunities for the NDA group and wider nuclear sector, including:  Nuclear Graduates  functional programmes for both graduates and apprentices including cyber security, finance, audit and risk, radiation protection, commercial, business and civil engineering  bespoke programmes to support the NDA People Strategy and the British Energy Security Strategy  support the development of the NDA group Graduate Scheme	2023-2026
Continue to work in partnership with the National Cyber Security Centre (NCSC) and NDA Cyber Security Resilience Programme (CSRP) to deliver a pipeline of cyber security young talent into the sector including:  • CyberFirst • Level 3 programme to Energy Coast UTC • Apprentices • Graduates and be the venue of choice for Cyber Security training in the North West	2023-2026
Provide a range of managed services within the people and skills arena including recruitment programmes, work experience and STEM engagement – supporting the NDA commitment to ED&I and achieving greater levels of social value and socio economic benefit to our communities and broader stakeholders	2023-2026
Provide a high quality training environment for all Sellafield apprentices, working with a range of education partners and suppliers	2023-2026
Continue to be a Cumbrian venue of choice for the NDA group's events, conferences and delivery of training and education	2023-2026

# **Springfields**



- Planned expenditure for 2023/24 £22 million
- 81 hectare site in Lancashire.
- All 81 hectares remain covered by the nuclear site licence.

Owned by Westinghouse Electric UK Holdings Limited.

Springfields is a nuclear fuel manufacturing site and is located near Preston in Lancashire. The site is operated by Springfields Fuels Limited (SFL) and is used to

manufacture a range of fuel products for UK and international customers, the processing of historic uranic residues and decommissioning of redundant facilities.

From April 2010, the NDA permanently transferred ownership of the company to Westinghouse Electric including the freedom to invest for the future under the terms of a new 150-year lease. SFL is contracted to provide decommissioning and clean-up services to the NDA to address historic liabilities.

Key activities	Timescale	Strategic Outcome
Nuclear Materials		
Uranium		
Continue to appropriately manage, care and maintain NDA stock of uranic materials	2023-2026	23 25
Site Decommissioning and Remediation		
Decommissioning and Demolition		
Continue decommissioning of the Magnox Island	2023-2025	42 43

# Capenhurst



- Planned expenditure for 2023/24 £24 million
- 30 hectare site in Cheshire.
- 17 hectares have been dedesignated.
- Modification of Designating Direction signed by the Minister in May 2010 and July 2012.
- Remaining 13 hectares are covered by the nuclear site licence.

#### Owned by URENCO

The NDA Capenhurst site is located near Ellesmere Port in Cheshire.

In 2012, the site was transferred to URENCO, owners of the adjacent licensed site, and was amalgamated into a single nuclear licensed site. As part of this transfer, URENCO established Urenco Nuclear Stewardship (UNS), formerly known as Capenhurst Nuclear Services, to provide responsible management of uranic materials and carry out remediation work on behalf of the NDA.

UNS manages a large proportion of the NDA's uranic inventory and also provides broader decommissioning and demolition works for redundant facilities, in order to reduce liability and optimise space utilisation on site.

Key activities	Timescale	Strategic Outcome
Nuclear Materials		
Uranium		
Continue the safe storage and management of uranic materials, including uranium hexafluoride tails prior to processing through the Tails Management Facility	2023-2026	22 23 24 25
Site Decommissioning and Remediation		
Decommissioning and Demolition		
Continue decommissioning of key facilities	2023-2025	41 42 43 47

### Delivery of our mission up to 2040 - Spent Fuels and Nuclear Materials

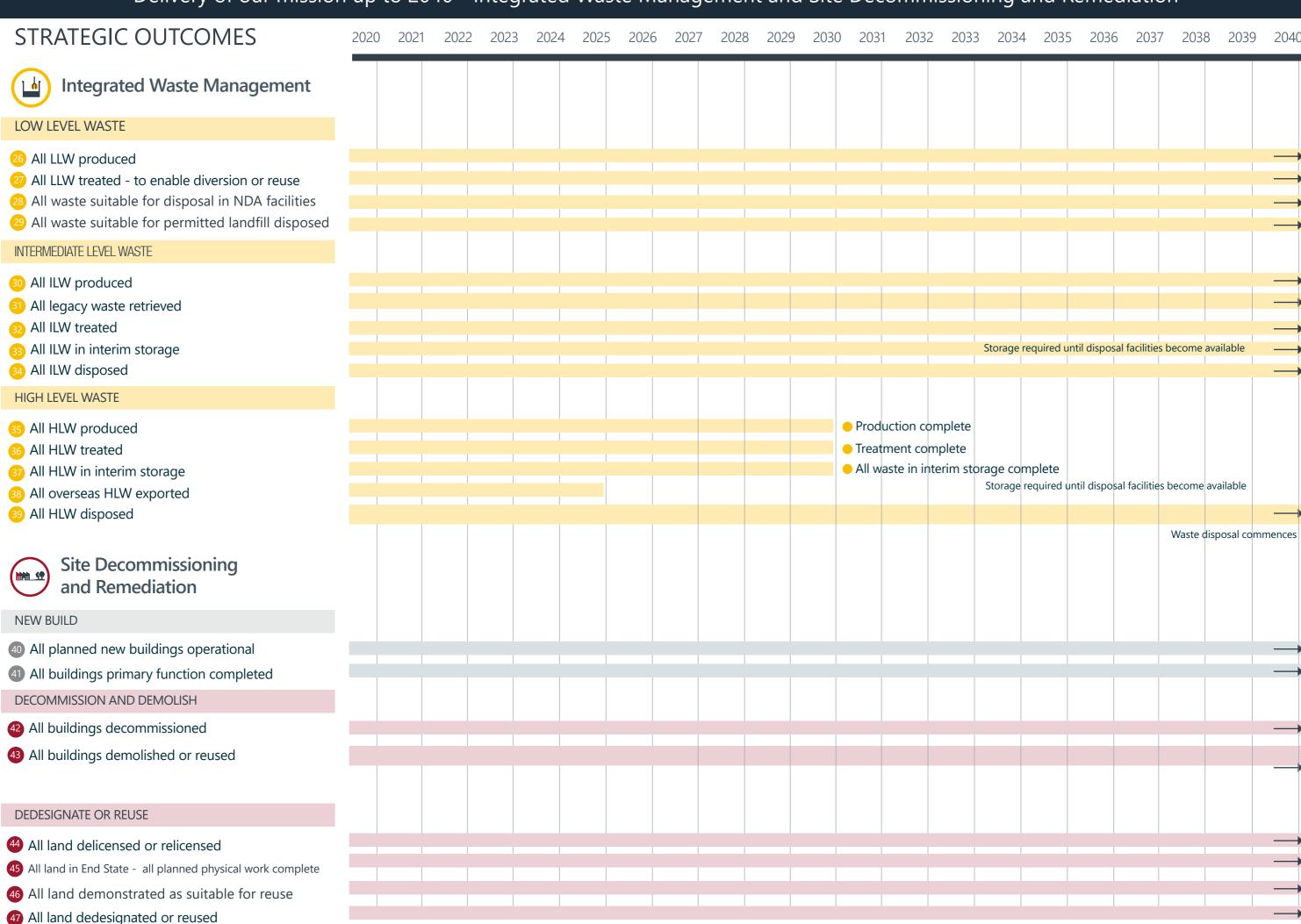
#### STRATEGIC OUTCOMES 2022 2023 2024 2025 2026 2027 2028 2029 2030 2031 **Spent Fuels KEY** Strategic Outcome already completed SPENT MAGNOX FUEL Significant milestone All sites defueled - ACHIEVED 2 All legacy Magnox fuel retrieved Retrieval complete → Strategic Outcome will be achieved post 2040 All Magnox fuel reprocessing completed - ACHIEVED\* Reprocessing complete 4 All remaining Magnox fuel in interim storage Storage required until disposal facilities become available All fuel in interim storage complete All remaining Magnox fuel disposed SPENT OXIDE FUEL 6 All EDFE oxide fuel received Fuel received complete All legacy oxide fuel retrieved - ACHIEVED All oxide fuel reprocessing completed - ACHIEVED All fuel in interim storage All remaining oxide fuel in interim storage Storage required until disposal facilities become available 10 All remaining oxide fuel disposed SPENT EXOTIC FUEL All exotic fuel defueled Defueling complete All exotic fuel consolidated Fuel consolidated All exotic fuel reprocessing completed - ACHIEVED\* Reprocessing complete All remaining exotic fuel in interim storage Storage required until disposal facilities become available All fuel in interim storage complete All remaining exotic fuel disposed **Nuclear Materials PLUTONIUM** 16 All plutonium produced Production complete 17 All plutonium consolidated - ACHIEVED A: All plutonium packed in long term storage B: All cans not suitable for extended storage repackaged Storage required until disposal facilities become available 19 All plutonium in modern interim storage 20 All plutonium reused or disposed **URANICS** 21 All uranium produced Production complete Consolidation complete All uranium consolidated 23 All uranium treated

25 All uranium reused or disposed \* Completed subject to final data verification

24 All uranium in interim storage

Storage required until disposal facilities become available

### Delivery of our mission up to 2040 - Integrated Waste Management and Site Decommissioning and Remediation



### **Useful links**

- Nuclear Decommissioning Authority www.gov.uk/nda
- Department for Business, Energy and Industrial Strategy www.gov.uk/beis
- Sellafield Ltd www.gov.uk/government/organisations/sellafield-ltd
- Magnox Ltd www.gov.uk/government/organisations/magnox-ltd
- Dounreay Ltd www.gov.uk/government/organisations/dounreay
- Nuclear Waste Services www.gov.uk/government/organisations/nuclear-waste-services
- Nuclear Transport Solutions www.nucleartransportsolutions.com
- URENCO Ltd www.urenco.com
- Springfields Fuels Ltd www.westinghousenuclear.com

### Useful documentation

- The NDA group Sustainability Strategy 2022 GOV.UK (www.gov.uk/nda)
- NDA Strategy March 2021 (www.gov.uk/nda)
- NDA Business Plan 2021 to 2024 and NDA Business Plan 2022 to 2025 (www.gov.uk/nda)
- NDA Mid-Year Performance Report 2020 to 2021 (www.gov.uk/nda)
- NDA Research and Development 5 year plan: 2019 to 2024 (www.gov.uk/nda)
- Nuclear Decommissioning: attracting and retaining skills (brochure) Nov 2016 (www.gov.uk/nda )
- NDA Corporate Centre: gender pay gap report, 2021 (www.gov.uk/nda)
- Register of Director's Interests and associated procedure (www.gov.uk/nda)
- NDA: working with our communities (www.gov.uk/nda)

## Glossary

AGR Advanced Gas-Cooled Reactor

**BEIS** Department for Business, Energy and Industrial Strategy

CAPEX Capital expenditureDFR Dounreay Fast ReactorDRS Direct Rail Services Ltd

**DSRL** Dounreay Site Restoration Ltd

**EDFE** EDF Energy

**ED&I** Equality, Diversity and Inclusion

**FGMSP** First Generation Magnox Storage Pond

**FHP** Fuel Handling Plant

**GDF** Geological Disposal Facility

HAL Highly Active Liquor

ILW Intermediate Level Waste

INS International Nuclear Services Ltd
Liquid Effluent Treatment Plant

**LLW** Low Level Waste

**LLWR** Low Level Waste Repository

MOD Ministry of Defence
MOX Mixed Oxide Fuel

MSSS Magnox Swarf Storage Silo

NDA Nuclear Decommissioning Authority

NDAPL NDA Properties Ltd

NTS Nuclear Transport Solutions
 NWS Nuclear Waste Services
 POCO Post Operational Clean Out
 PFR Prototype Fast Reactor
 PFSP Pile Fuel Storage Pond

**PPP** Programme and Project Partners

RD&I Research, Development and Innovation
RWM Radioactive Waste Management Ltd
SGHWR Steam Generating Heavy Water Reactor

**SLC** Site Licence Company

SMESmall and Medium EnterpriseTHORPThermal Oxide Reprocessing Plant

**UKGI** UK Government Investments