



# Business Plan

1 April 2021 to 31 March 2024

*Cleaning up the UK's earliest nuclear sites,  
caring for people and the environment*





# Nuclear Decommissioning Authority

## Business Plan

*Financial year beginning April 2021 to  
financial year ending March 2024*

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Business Plan presented to Parliament pursuant  
to Schedule 3 of the Energy Act 2004.

Business Plan laid before Scottish Parliament  
by the Scottish Ministers pursuant to Schedule 3  
of the Energy Act 2004.

March 2021

SG/2021/66

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# Response to the consultation

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## Introduction

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In December 2020 the NDA published its draft Business Plan 2021-24.

Our consultation on the plan ran for 8 weeks, from 7 December 2020 to 1 February 2021. We are conscious that the timing of our annual Business Plan consultation may cause difficulties for some stakeholders wanting to respond, but we are constrained to the current planned period due to the timing of seeking consultation responses and following the required approvals process. We will continue to review and improve the consultation process within the current constraints.

Consultees were able to respond by email or by post. The consultation ran in accordance with the criteria set out in the Cabinet Office's Consultation principles guidelines: [www.gov.uk/government/publications/consultation-principles-guidelines](http://www.gov.uk/government/publications/consultation-principles-guidelines)

## Our Findings

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We received 16 formal responses from a range of individuals, local authorities, stakeholder groups and the supply chain. A summary of the general points raised are covered below.

We have considered the feedback and made appropriate changes to amend the draft document.

Where stakeholders have requested or have asked for a level of information that is not appropriate

for this document we will follow up with further engagement.

If respondents feel that their feedback has not been adequately addressed, please email: [businessplanning@nda.gov.uk](mailto:businessplanning@nda.gov.uk)

## Activities and requests for more information on targets

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A number of respondents asked for more detailed targets to be included in the Plan. The Plan's purpose is to provide a summary of activities and expected progress for our 17 nuclear sites over the next 3 years, in line with the funding agreed with HM Treasury and the Department for Business, Energy and Industrial Strategy.

We continue to improve how we tell our story and how our mission flows into delivery on the ground. Pages 20 – 29, are where we have outlined our 4 strategic themes, which can be broken down into 47 outcomes. Our critical enablers' page also describes the importance of these activities to our mission. Good work is happening in these areas and we will share some success stories in our Annual Report and Accounts in July 2021.

## Accelerated decommissioning of Magnox sites

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Alongside the development of this Business Plan, the NDA has been consulting with stakeholders on its new strategy. One of the key changes is a revised approach to decommissioning the former Magnox nuclear power stations. A more detailed business case is

now being developed to reflect this change and allow site-specific plans and dates to be worked up. The recent completion of the strategy consultation and the ongoing impacts of COVID-19 have meant that these dates are not yet available for inclusion in this current edition of the Business Plan. Further information will be made available on the NDA website during the year.

## Funding

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A number of respondents asked for a more detailed split in expenditure. The intent of including expenditure figures is to outline planned allocations of available funding. NDA operates a portfolio funding approach across the group and retains flexibility in final allocations through the year. This allows us to focus on our highest hazards and high risk areas, while maximising value for money. This means that it is not always appropriate to provide a more detailed split of the expenditure.

## Sustainability/Net Zero

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There was interest in this area from a number of respondents. We are committed to supporting the UK and Welsh government target of carbon net zero by 2050 and the target of 2045 set by Scottish Government. This year we will be developing a roadmap to define our plans to embed sustainability across the NDA group. More information on our current approach to sustainability can be found in section 8.2 of our new Strategy.

# Response to the consultation contd

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## Socio-economics

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There was continued interest in the NDA's work in this area and how it allocates budget for these activities. We recently revised our approach to socio-economics in our new Local Social and Economic Impact Strategy update and revised guidance on how to apply for grants is available on our website. For more information on our current spending on socio-economics across the group please see the latest the latest socio-economic report published recently on our website.

## Mission Progress

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There were a number of respondents who were interested in how frequently the Mission Progress Report would be published. Currently we plan on publishing the report at least every 5 years, exact timing and regularity however will continue to be reviewed and we will inform our stakeholders when the next iteration will be published.

## Other minor changes in the Plan

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- Aligned the terms used for critical enablers and strategic outcomes with those in the newly published Strategy.
- A switch in grant and revenue due to anticipated timing of completion of commercial negotiations included in our funding section. There is no impact on expenditure.
- On the critical enablers page, we have more information on Socio-economics and included a section on Skills.
- Included the announcement of the new Transport and Waste divisions in line with a One NDA approach
- Update on the BEIS Departmental Review and Magnox Inquiry in the CEO foreword

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# Preface

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*We're charged with the mission to clean up the UK's earliest nuclear sites safely, securely and cost-effectively. Doing this with care for our people, communities and the environment is at the heart of our work. We're committed to overcoming the challenges of nuclear clean-up and decommissioning, leaving our 17 sites safe and ready for their next use.*

Engaging openly and transparently on our work is important to us. We create and consult on a wide range of publications every year, including the annual Business Plan. This plan sets out the activities that need to take place to advance

our important clean-up and decommissioning work and operate our facilities safely and securely over the next 3 years. It also highlights some of the other essential work to enable us to carry out our mission-critical activities.

As well as describing the key activities over the next 3 years, our plan also sets out our expected income and expenditure for the next financial year.





# How we communicate our strategy and report progress

## ENGAGE WITH OUR STAKEHOLDERS



### NDA Strategy

Last Published: March 2021

12 week public consultation

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 5 years.

## REPORT PROGRESS



### Mission Progress Report

Last Published: July 2019

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 5 years.



### NDA Business Plan

Last Published: April 2020

8 week public consultation

Describes key activities across the group over the next 3 years that align to our strategic outcomes and details the funding available for the next year.

Energy Act requirement. Covers 3 years.

Published every year.



### NDA Mid-Year Performance Report

Last Published: Feb 2021

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

Published every year.



### NDA Annual Report and Accounts

Last Published: July 2020

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

Energy Act requirement. Covers 1 year.

Published every year.

# A message from our Chief Executive

## *David Peattie*

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Though the world continues to face the unprecedented difficulties of COVID-19, the development of vaccines brings with it hope. Over the last 18 months we've had the privilege of supporting pandemic response efforts, both within the communities we serve and nationally, providing PPE equipment and channelling socio-economic funding to reach those in need.

Despite the unparalleled challenges, the NDA group is well prepared for responding to complex issues and dealing with unforeseen events. Our legacy is centred on keeping people, communities and the environment safe, while maintaining vital operations and progressing our decommissioning mission.

### Improvement

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The last 12 months have seen a continued focus and significant progress on organisational and cultural improvements, including our transition to a group operating model. Earlier this year, we announced our intention to make Dounreay Site Restoration Ltd and Low Level Waste Repository Ltd, NDA subsidiaries. These moves will see all companies involved in delivering our mission being NDA subsidiaries by July this year. This will help to unlock the full potential and benefits that come from operating a group of integrated companies.

Further simplification to our structures has seen the creation of a single nuclear transport division bringing together our transport expertise and capabilities across the NDA group. The new organisation is called Nuclear Transport Solutions (NTS) and started operating as a single organisation on 1 February, ahead of its full launch at the start of the 2021/22 financial year.

In November 2020, we outlined significant improvements to how we manage and dispose of radioactive waste. Our Integrated Waste Management Programme across the NDA group will be an important focus for us over the next few years. We will also create a single waste division to bring together our group-wide waste management expertise enabling us to grow capability, simplify how we operate and deliver greater value for the taxpayer.

The new waste division will include our waste disposal companies LLWR and RWM.

### Progress

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We updated our Strategy during 2020 and this has been through a process of public consultation. One of the key changes in the new strategy is a revised approach to decommissioning the former Magnox nuclear power stations. This will see more site-specific strategies being implemented, with Trawsfynydd as the lead site for reactor decommissioning. The NDA is working to develop revised plans for the sites and expects to be able to confirm key milestones during the financial year. The fourth iteration of our Strategy will be published in March 2021.

At Sellafield, progress has been made to reduce the hazard in the legacy ponds and silos, some of the most complex and difficult decommissioning challenges in the world. Innovative systems are used to retrieve waste from the ponds, routinely emptying radioactive waste and packaging for safe storage.

Government's policy remains for higher activity radioactive waste in England and Wales to be disposed of in a deep geological disposal

facility (GDF) and in November the first community working group was established. Engagement with the group has begun, marking an important milestone in this nationally significant programme of work. A second working group was also announced in January.

### Looking Forward

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Safety will continue to be our number one priority, including the new importance placed on us to manage the ongoing response to COVID-19. Alongside conventional and nuclear safety, never before has our work to promote mental health and wellbeing been more important. Government's one year spending round, setting out its spending plans for 2021/22, underlines the commitment to our nationally important work. Funding levels account for our planned increase in decommissioning activity and include agreed improvements in productivity and efficiency of delivery. We will collectively further enhance our financial governance to drive value for money for the UK taxpayer.

In the next 3 years, we'll see some notable milestones being achieved in our mission. Sellafield's proud history of nuclear fuel reprocessing will end with the closure of the Magnox Reprocessing Plant. As a result, we'll also see the end to the separation of plutonium and uranium. These are two important outcomes for our mission. We will begin bulk retrievals from one of our highest hazard facilities Magnox Swarf Storage Silo at Sellafield, it has taken many years of preparations on the facilities for this work to commence.

At Dounreay, the Fast Reactor is scheduled to be defueled by 2022. Completing this work will mark another significant reduction of radiological hazard and is an important step closer to decommissioning the site.

Our mission to leave the environment a better place for future generations includes the impact we leave as a result of our operations. We will be placing significant emphasis on our roadmap to becoming net carbon zero, having this year established a dedicated programme team to take this work forward. The next few years are critical in the world's fight against climate change and we must play our part to the fullest.

## People

This year I was delighted to welcome Dr Ros Rivaz as Chair of the NDA Board, bringing a wealth of experience in executive and non-executive roles across UK and international blue-chip companies. Ros succeeded Tom Smith, who stepped down after 3 years in post and 7 years in total on the NDA Board. I'd like to thank Tom for his significant contribution to the mission.

We continue our important focus on workplace culture and have made significant progress in the last 3 years. My goal is clear, to create great places to work for everyone and encouraging inclusion and diversity at every level. Our continued aim of futureproofing our workforce saw our highest intake yet of nuclear graduates, with almost 40% of those being female. Attracting and retaining the right people with the right skills is vital in pushing our mission forward.

## Our stakeholders

Building and maintaining the trust of our stakeholders remain an enduring priority. I'm grateful for the support of our stakeholders, who continue to play an important role in challenging and influencing the decisions we take.

The scrutiny provided by our stakeholders is important and as this Business Plan was being finalised, the final report of the Magnox Inquiry was published. I am grateful for its recommendations, which we will carefully consider before publishing a formal response later this year. We have already acted upon many of the findings that came from the Interim Report in 2017. The NDA is now a much stronger organisation, operating under a very different model than at the time of the issues, which we have learned from.

Later this year I also expect to receive the conclusion of a BEIS Departmental Review, formerly the Tailored Review.

In addition, and alongside Magnox Limited, we are actively addressing the recommendations from the Public Accounts Committee report on the NDA's management of the Magnox contract, received in November 2020.

## Thanks

I'd like to end by thanking everyone involved in the NDA mission for their support and dedication in what has been a difficult year. The commitment of the UK nuclear decommissioning workforce is unwavering and it's a great privilege for me to lead such a great team.

**David Peattie**  
NDA Chief Executive



*It's our duty to carry out this highly complex mission safely and efficiently, ensuring people and the environment are protected at all times. Safety is, and always will be, our number one priority.*

# The NDA

---



*We lead the nuclear clean-up and decommissioning mission on behalf of government and develop the strategy for how it should be carried out.*

We evolve our strategy continuously and every 5 years we bring it all together for consultation and publication. At the end of 2020 we consulted on the fourth edition of our Strategy and later 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 from government by generating revenue from commercial activities.

As owners of one of the largest nuclear decommissioning and remediation programmes in Europe, our main priority is to lead the work across the NDA group. We also play an important role in supporting government's aspiration for the UK to be a global leader in the civil nuclear sector.

## How we're set up

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We're a non-departmental public body created by the Energy Act 2004 to lead the clean-up and decommissioning work at our 17 sites on behalf of government.

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 to operate within.

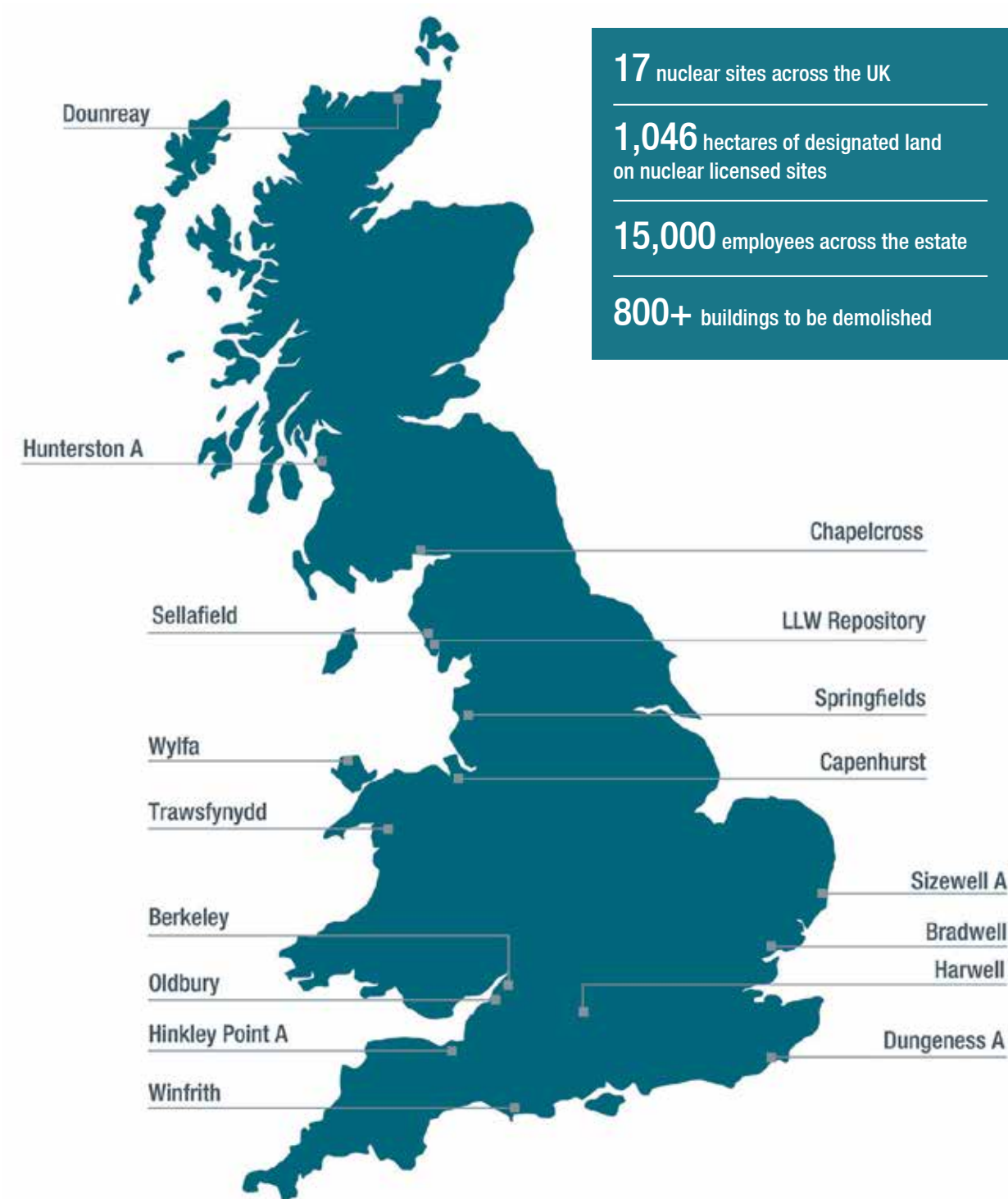
We have 5 offices across the UK, in Cumbria, Dounreay, Harwell, Warrington and London, and employ 330 permanent staff.



# Our Sites

The UK's nuclear landscape began to take shape in the post-war period and has evolved over many decades. Our 17 sites reflect this 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 ultimate goal is to achieve the end state at all sites by 2125.



**17** nuclear sites across the UK

**1,046** hectares of designated land on nuclear licensed sites

**15,000** employees across the estate

**800+** buildings to be demolished



Current plans indicate it will take 100+ years to complete our mission of nuclear clean-up and waste management.



# The NDA group

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*We don't deliver our mission alone. Accomplishing this important work requires the best efforts of the entire NDA group.*

Together with the NDA Corporate Centre, there are a further 11 organisations involved in delivering the NDA mission to clean-up and decommission our 17 sites.

Over the last few years, important decisions have been taken on the way in which the component parts of the NDA group are managed, to deliver our mission more effectively and efficiently. The next 12 months will conclude our transition to an NDA group operating model away from the previous parent body organisation approach. In doing so we will have created a stronger and more simply structured NDA group, with increased opportunity to deliver our vision.

In the first half of 2021, we'll complete the transition to NDA subsidiaries of the 2 remaining site licence companies. The changes for Dounreay Site Restoration Ltd (DSRL) and Low Level Waste Repository (LLWR) follow similar moves for Sellafield and Magnox over the last 4 years, seeing all 4 of the businesses charged with

managing our 17 sites being NDA subsidiaries.

This is a significant change and allows us to work together and focus decisions on our collective vision and strategic priorities, without commercial barriers.

Significantly, the start of 2021 has seen us bring our transport and logistics companies, International Nuclear Services (INS) and Direct Rail Services (DRS) together into a single division.

As well as being experts in transporting radioactive and nuclear materials, the division will engage in wider UK nuclear and transport strategic priorities and work with overseas governments on their challenges.

During the year, we will also create a single waste division to bring together our group-wide waste management expertise, enabling us to grow capability, simplify how we operate and deliver greater value for the taxpayer. The new waste division will include our waste disposal companies LLWR and

RWM. Our other subsidiaries include Rutherford Indemnity, NDA Archives and NDA Properties.

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## Our Vision

As well as our shared mission, our unified vision reflects the collective ambitions of the NDA group:

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

***Create great places to work and taking 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. 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 following the close out of THORP reprocessing contracts in 2018. Spending review 2020 only set the funding for 2021/22. Funding for the year 2022/23 will be determined by government in the anticipated 2021 spending review.

## Commercial income

We maximise revenue from our existing assets and operations to help fund decommissioning and clean-up, 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 2020/21

This Business Plan sets out our anticipated income and expenditure

for 2021/22 as agreed with Treasury and the Department for Business, Energy and Industrial Strategy (BEIS).

Our total planned expenditure for 2021/22 is £3.494 billion, of which £2.530 billion will be funded by UK Government and £0.964 billion by income from commercial operations.

Planned expenditure on site programmes will be £3.245 billion, while non-site expenditure is expected to be £0.249 billion.

This non-site expenditure includes skills development, socio-economic, research and development, insurance and pension costs, fees to businesses, implementing geological disposal and the NDA operating costs as detailed on the following pages.

**£3.494bn**

**Total planned expenditure 2021/2022**

**£2.530bn**

**Funded by UK government**

**£3.245bn**

**Planned site expenditure**

**£0.249bn**

**Planned non-site expenditure**



# Our funding

## Planned income and expenditure summary 2021/22

£M Businesses/Sites	Decom & Clean-up Costs (A)	Total Operations Costs: Running Cost (B)	Total Operations Costs: Capex (C)	2021/22 Plan Total (A+B+C)	2020/21 Plan Total
Sellafield Ltd	1,118	720	382	<b>2,220</b>	2,150
Magnox Ltd	505			<b>505</b>	515
Dounreay Site Restoration Ltd	200			<b>200</b>	200
LLWR Ltd	77			<b>77</b>	82
Springfields Fuels Ltd	36			<b>36</b>	18
Capenhurst	22			<b>22</b>	55
Nuclear Transport and Contract Management		107		<b>107</b>	92
Radioactive Waste Management Ltd	78			<b>78</b>	63
Non-Site Expenditure	249			<b>249</b>	216
<b>TOTAL</b>	<b>2,285</b>	<b>827</b>	<b>382</b>	<b>3,494</b>	<b>3,390</b>
<b>Income</b>				<b>964*</b>	<b>785*</b>
<b>Net (grant funded)</b>				<b>2,530*</b>	<b>2,605*</b>

### Notes:

- Numbers may not cast due to rounding
  - Final Annual Site Funding Limits issued in March 2021 may be adjusted to reflect efficiency, performance and portfolio pressures.
  - The NDA reserves the right to reallocate funding to meet prioritised programme needs.
- \* Additional income and corresponding reduction in Grant-in-Aid / Net spend to reflect changes in timing assumptions of revenue recognition – no impact on expenditure level.

## Summary of NDA funding 2021/22 onward

Summary of NDA funding	2021/22 £M	2022/23 £M	2023/24 £M
Income	<b>964</b>	<b>TBC</b>	<b>TBC</b>
Government Funding	<b>2,530</b>	<b>TBC</b>	<b>TBC</b>
Expenditure	<b>(3,494)</b>	<b>TBC</b>	<b>TBC</b>
<b>Net</b>	<b>0</b>	<b>TBC</b>	<b>TBC</b>

# Our funding

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## 2021/22 breakdown of non-site expenditure

Non-site expenditure	2021/22 Plan £M	2020/21 Plan £M
NDA operating costs	66	65
Critical enablers	67	60
Estate insurance	23	15
Other central spend	93	76
<b>Total</b>	<b>249</b>	<b>216</b>

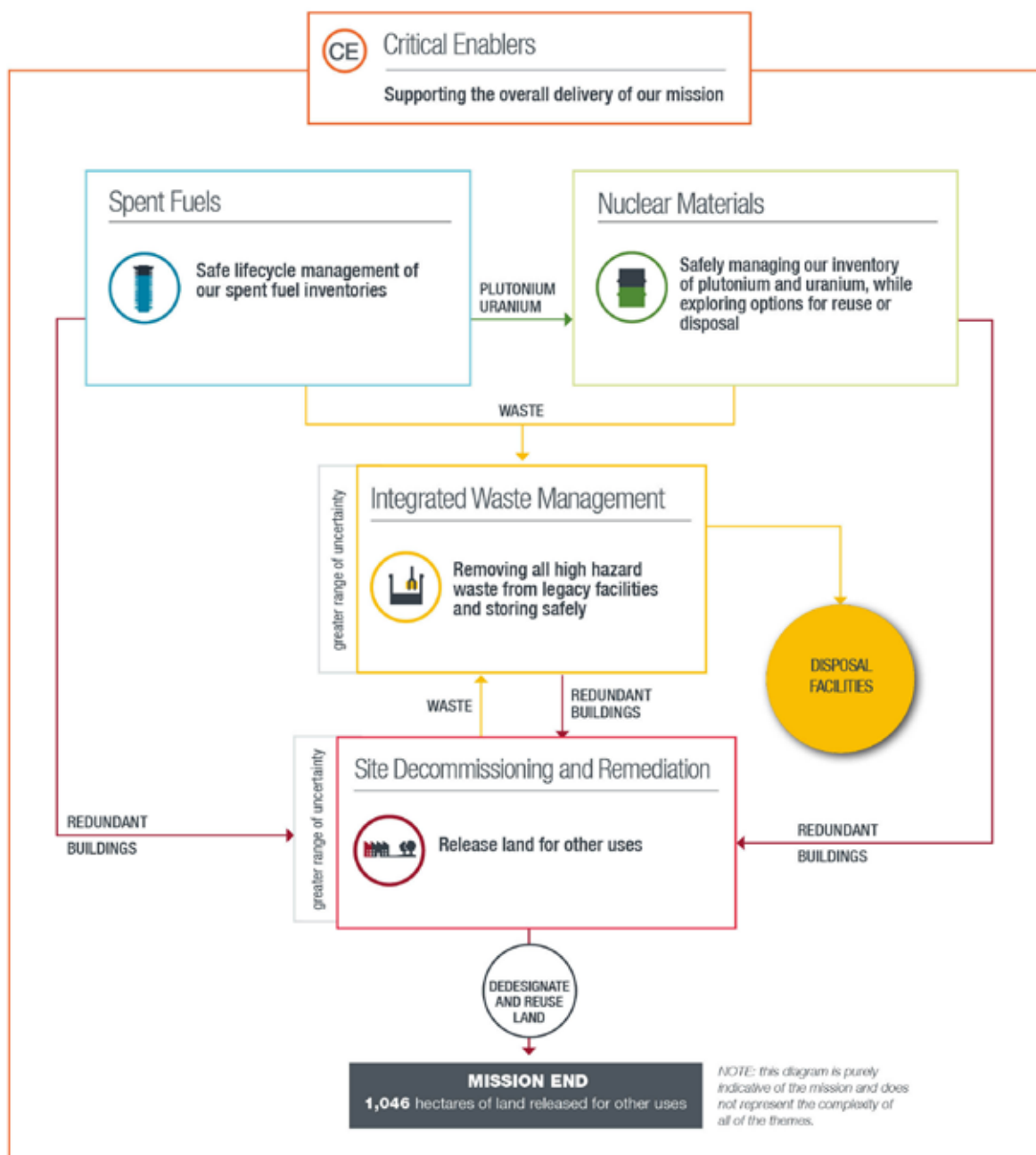
## 2021/22 breakdown of planned income by category

Income source	2021/22 Plan £M	2020/21 Plan £M
Reprocessing and fuel management services	545	470
NDA - INS transport	76	56
NDA Contracts	307	213
Intra site services	36	46
<b>Total</b>	<b>964</b>	<b>785</b>

# Our strategic approach and themes

*We use 5 strategic themes to describe all the activities needed to deliver the NDA's mission.*

The first 4, Spent Fuels, Nuclear Materials, Integrated Waste Management, and Site Decommissioning and Remediation relate directly to our clean-up and decommissioning and are known as driving themes. 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. This Business Plan details the activities under each of the themes that we will achieve over the next 3 years.





# Our 5 themes

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## 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 has already closed and the Magnox reprocessing plant will follow. All remaining spent fuel will be safely stored until a permanent solution for disposal is available.

Our spent fuel work is separated into 15 strategic outcomes that we must deliver, outlined on page 24.

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## Nuclear Materials



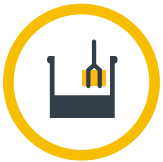
Our strategy defines our approach to dealing with the inventory of uranics and plutonium currently stored on some of our sites. These nuclear materials are by-products from different phases of the fuel cycle, either manufacturing or reprocessing. All nuclear materials must be managed safely and securely,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

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

Our nuclear materials work is separated into 10 strategic outcomes that we must deliver, outlined on page 25.

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## Integrated Waste Management



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

and, in the case of low level waste, some has already been permanently disposed of.

Retrieving, treating and interim storing the radioactive waste from Sellafield's four legacy ponds and silo facilities is the NDA's highest priority.

Our integrated waste management work is separated into 14 strategic outcomes that we must deliver, outlined on page 26.

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## 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 8 strategic outcomes that we must deliver, outlined on page 27.

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## 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 28 and 29 for more detail.







# Highlights 2021-2024

*This section shows some of the important work to be completed in the next 3 years.*

*This near-term activity is mapped against our strategic themes and specifically to the 47 outcomes\* that make up our mission.*

\*Our 47 outcomes cover all our strategic themes except 'critical enablers'.

# Spent Fuels highlights 2021-2024

## Spent Fuels

SPENT MAGNOX FUEL End date

**1 All sites defueled COMPLETED**

2 All legacy Magnox fuel retrieved 2025

3 All Magnox fuel reprocessing completed 2021

4 All remaining Magnox fuel in interim storage 2025

5 All remaining Magnox fuel disposed 2125

SPENT OXIDE FUEL

6 All EDFE oxide fuel received 2035

**7 All legacy oxide fuel retrieved COMPLETED**

**8 All oxide fuel reprocessing completed COMPLETED**

9 All remaining oxide fuel in interim storage 2035

10 All remaining oxide fuel disposed 2125

SPENT EXOTIC FUEL

11 All exotic fuel defueled 2022

12 All exotic fuel consolidated\* 2028

13 All exotic fuel reprocessing completed 2021

14 All remaining exotic fuel in interim storage 2028

15 All remaining exotic fuel disposed 2125



Magnox Reprocessing Plant - Sellafield

### End of reprocessing

*Delivering strategic outcome 3 - All Magnox fuel reprocessing completed*

*Delivering strategic outcome 11 - All exotic fuel defueled*

*Delivering strategic outcome 13 - All exotic fuel reprocessing completed*

Magnox reprocessing operations are due to finish in 2021, allowing the completion of work to reprocess the remaining spent fuel from the UK's Magnox reactors – the world's first type of commercial nuclear power station.

The plant, which began operation in 1964, was originally scheduled to close in 2020, but operations were halted and the facility entered into a controlled shutdown because of the covid-19 pandemic.

The end of Magnox reprocessing will mark the end of a remarkable chapter in Sellafield's history. There are just over 500 tonnes of Magnox fuel left to process – around 1% of the total quantity of fuel that has been put through the chemical process to separate uranium and plutonium from the spent fuel after it has been removed from the Magnox reactors.

Work to remove the last remaining radioactive fuel elements from inside the Dounreay Fast Reactor, and transporting the material for consolidation at Sellafield, will continue to be a priority.

The majority of the fuel was removed from the reactor after its closure in 1977, but almost 1,000 fuel elements were jammed and had to be extracted using purpose-built remotely operated tools.

For more information on the management of spent fuels please see section 5 of the NDA Strategy.



Dounreay Fast Reactor

\* irradiated fuel only



## Nuclear Materials

### PLUTONIUM

End date

16 All plutonium produced 2021

17 All plutonium consolidated COMPLETED

18 A: All plutonium packed in long term storage 2060  
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

### URANICS

21 All uranium produced 2021

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 highlights 2021-2024



THORP Product Store - Sellafield



Hex drums being stored at Capenhurst

## End of plutonium and uranium separation

*Delivering strategic outcome 16 - All plutonium produced*

*Delivering strategic outcome 21 - All uranium produced*

In 2021, reprocessing operations to chemically separate uranium and plutonium from spent nuclear fuel will come to an end.

Work to consolidate the stockpile of civil separated plutonium at Sellafield, the UK's centre of excellence for plutonium management, was completed in 2019. Approximately 140 tonnes of the material are held in safe and secure storage at Sellafield.

The focus for the next 3 years is the progression of a project to construct a facility which will ensure the continued safe and secure storage of plutonium in stores with enhanced resilience measures; and to repack and retreat plutonium packages in a way that will allow time to implement the right long-term solution for this material.



## Integrated Waste Management

# Integrated Waste Management highlights 2021-2024

### LOW LEVEL WASTE End date

26	All LLW produced	2125
27	All LLW treated - to enable diversion or reuse	2125
28	All waste suitable for disposal in NDA facilities	2125
29	All waste suitable for permitted landfill disposed	2125

### INTERMEDIATE LEVEL WASTE

30	All ILW produced	2120
31	All legacy waste retrieved	2046
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
37	All HLW in interim storage	2030
38	All overseas HLW exported	2025
39	All HLW disposed	2104



Our IWM Strategy published in September 2019

### Our IWM Programme

Following a commitment made in the 2019 Radioactive Waste Strategy, the NDA has established an integrated waste management programme to ensure a lifecycle approach to managing radioactive waste across all of its businesses from waste generation through to final disposal. Our aim is to reduce the cost of decommissioning and clean-up, avoiding unnecessary use of resources such as waste packaging, conditioning and storage, to support the acceleration of decommissioning programmes, and reduce risks and hazards on our sites sooner.



Emptying machine installation at the MSSS

### Legacy ponds and silos

*Work to deliver strategic outcome 31 - All legacy waste retrieved*

Over the next 3 years the main focus will be the removal of high hazard waste from Sellafield's 4 legacy ponds and silos and safely storing it in modern facilities at the site. The ponds and silos pose some of the most complex decommissioning challenges in the world, however, significant progress has already been made in retrieving some of the waste.

Work started on removing empty nuclear fuel skips from the First Generation Magnox Storage Pond and access doors to retrieve waste were installed in the Pile Fuel Cladding Silo. This year installation work began on the second of 3 emptying machines at the Magnox Swarf Storage Silo, with waste retrievals scheduled to start soon.

Retrievals are set to be completed by 2046.





## Site Decommissioning and Remediation

OPERATIONAL AND PLANNED		End date
40	All planned new buildings operational	2090
41	All buildings primary function completed	2125
DECOMMISSIONING AND DEMOLITION		
42	All buildings decommissioned	2125
43	All buildings demolished or reused	2125
SITES		
44	All land delicensed or relicensed	2125
45	All land in End State - all planned physical work complete	2125
46	All land demonstrated as suitable for reuse	2125
47	All land dedesignated or reused	2125

### Dounreay Materials Test Reactor

*Work to deliver strategic outcome 42 - All buildings decommissioned*

Dounreay Materials Test Reactor (DMTR) was the first nuclear reactor in Scotland, built to test the effects of radiation on different materials. DMTR achieved criticality in 1958 and operated for 11 years. Preparatory work, including removing many of the reactor building's internal structures, had been underway for a decade leading up to the start of demolition.

Final completion of the work to demolish the reactor building will be a major skyline change for Dounreay and another major hazard reduction milestone. A contract for the demolition work was placed in 2018, to a consortium from the nuclear supply chain that included several companies based close to the site in Caithness.

# Site Decommissioning and Remediation highlights 2021-2024



Trawsfynydd, North Wales where reactor decommissioning is set to be brought forward

### Magnox Reactor Decommissioning

*Work to deliver strategic outcomes 42 and 43 - All buildings decommissioned, demolished or reused*

The next 12-18 months will see Magnox developing site specific strategies for reactor decommissioning. This follows a proposed change to our previous strategy of deferred decommissioning across the entire Magnox fleet.

Following a review of Magnox reactor decommissioning, we've concluded that a site specific approach should be taken, based on a range of factors including design, location, age and condition. This new approach was set out in Strategy 4, published in March 2021.

Consequently, the period covered by this Business Plan will see Magnox developing site specific strategies for each reactor site and supporting business cases, which could see decommissioning being brought forward in some cases. This important programme of work will be informed by local and national stakeholder views and will include any necessary revisions to enabling strategies like skills and the supply chain.

### Harwell Northern Area Delicensed by 2021-22

*Work to deliver strategic outcome 46 - All contaminated land remediated*

Work continues on land remediation work at Harwell's former Liquid Effluent Treatment Plant (LETP), the land remediation work is expected to be completed in 2021 with the expected land release date of 2023. During 2019 the NDA approved the accelerated funding of work on 2 further plots of land on the Harwell site, for eventual redevelopment as part of the wider Harwell Campus as a major UK Science and Technology Business park. The land area equates to around 26ha (about one quarter of the current nuclear licensed site).

The majority of the area, around 17ha, is open fields; this along with a small area (4ha) located on the main site is expected to be released over the next few years. The remaining area of 5ha, still needs to be decommissioned; this is expected to be released in the medium-term. The Harwell Campus operators remain in contact with the NDA, Magnox and BEIS regarding opportunities for further land release.

# Critical Enablers Highlights 2021-2024

## Sustainability - carbon net zero



Reducing carbon across our offices as well as sites

### Our commitment to becoming carbon net zero

Earlier this year we set out our commitment to supporting the UK and Welsh government target of carbon net zero by 2050 and the target of 2045 set by Scottish Government. As a public arm's length body and one which has a mission of environmental restoration, we feel a particular duty to make changes now to protect our environment for future generations.

Delivering on this ambition is a huge challenge but also a tremendous opportunity, and one we must act upon. While this is a long term programme of change, the next year or two are important. They will see us laying out a roadmap for how the NDA group will work towards its carbon targets, providing us with a framework for change. This will include developing strategies to combat key sources of carbon emission factors such as steam generation. We'll be working closely with our supply chain businesses to bring down indirect emissions and in doing so support our collective net zero targets. Aiming for net zero is not only the right thing to do for the NDA group, but for our communities and society more broadly.

## Socio-Economics - supporting local communities



Scrabster Harbour, near Dounreay

### Partnership working

Strongly committed to our local communities, we want to provide a positive legacy when decommissioning is completed. Our work in this area is taking an even sharper focus given the current social and economic challenges that COVID-19 has presented us with. In our grants programme, we continue to be flexible and adaptive to meet the needs of our local communities.

Broadly we'll continue to support locally led initiatives and transformational projects, working in partnership with local authorities and organisations to increase the impact of our funding, aligned with the strategic objectives of local areas. We'll also continue to strive to deliver social value and benefit to our communities from all aspects of our work, including how we procure goods and services, looking for opportunities to use decommissioned land for local benefit and skills development for our staff and the wider community.

For more information on our socio economic work please refer to the NDA local social and economic impact strategy: 2020 update and the latest socio-economic report which are both available on our website.

## People - leadership



Engaging with group employees on leadership

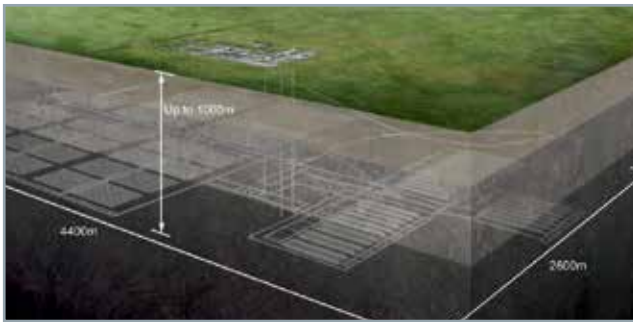
### The NDA group's new Leadership Academy

Next year will see the first cohort joining the NDA group's new Leadership Academy. As an enabler for our people strategy, a programme was set up in 2020 to create a

Leadership Academy to develop and strengthen leadership across the NDA group. An important milestone is the creation of an NDA group Leadership Standard, developed collaboratively, through engagement with employees at different levels across all our group.

The Leadership Academy, driven by the development of our new Leadership Standard, aims to create a cadre of NDA group leaders to safely deliver our collective mission and vision, and ensure value for money for the taxpayer. The Academy will enable us to strengthen our leadership population, drive collaboration and support cross-group career development and progression. Supporting the development of effective leaders is a key part of our People strategy, which is focused on driving the delivery of the NDA mission through attracting, retaining and developing highly skilled, talented and motivated people and creating a culture in which our employees can thrive.

## Public and Stakeholder Engagement - GDF



An artist's illustration of a geological disposal facility

### GDF engagement

We welcomed the recent announcement that the first community working group(s) have been formed to explore the opportunity of hosting a Geological Disposal Facility (GDF) in their area. The Working Group(s) will identify Search Areas, within their community, for consideration as suitable sites to build a facility to safely dispose of the UKs' higher-activity radioactive waste.

The formation of a longer-term Community Partnership will trigger access to community investment funding, available for projects and initiatives that drive economic development of the area, improve the local environment, or community well-being.

## Cyber Security - skills focus



The Cyber Lab classroom

### Enhancing cyber security skills

Cyber security and resilience is a priority for the NDA group and with the ever-changing nature of cyber threats, a group-wide Cyber Security Resilience Programme was established to ensure that we become an increasingly harder target for those who seek to do harm to our businesses or our sites.

Bolstered by £80 million and continued investment over the next few years in cyber safety, the NDA group has also focused on growing capability and capacity in cyber security skills.

It funded the Cyber Lab classroom, a first class facility in Cumbria which trains apprentices, aimed at closing the skills gap in cyber security. The fourth apprentice cohort is now in training along with a second cohort of cyber graduates.

## Transport and logistics

### Combining transport capabilities to create one world-leading division

The start of 2021 has seen us bring together our extensive and logistics expertise into a single transport division. Delivering our mission relies on us being able to safely transport radioactive materials and bulk materials to, from and between our sites, with nearly half of our 47 strategic outcomes needing effective transport capability.

By bringing together our subsidiaries Direct Rail Services (DRS) and International Nuclear Services (INS), the NDA group's transport division will be a centre of excellence in the transport of radioactive nuclear materials and other critical materials. The division will continue to support the NDA group's important mission as well as generate revenue through commercial opportunities beyond the NDA mission, in the UK and overseas.

The integration of our transport capabilities builds on the UK's long history of being a global leader in this field. DRS is a world specialist in the transportation of nuclear materials by rail, having safely transported spent fuel for over 20 years. INS also has vast experience and expertise in nuclear transport, both in the UK and overseas and is the major shareholder of Pacific Nuclear Transport Ltd (PNTL). PNTL has operated marine voyages for more than 40 years between Europe and Japan, with the most experienced nuclear transport crews in the world.

Amongst other priorities, our new transport division will be identifying and implementing opportunities to reduce our carbon footprint.

## New subsidiaries

### DSRL and LLWR transition will complete NDA's move to a group operating model

2021 is a significant year in our move to a group operating model. Site licence companies DSRL and LLWR will both become NDA subsidiaries in March and July respectively. The changes mark the completion of the NDA's transition from the previous parent body organisation model to a group approach. This follows similar changes successfully completed for Sellafield in 2016 and Magnox in 2019.

Having all of the operating companies within the NDA group enables us to optimise the new group operating model, and pursue its benefits to the fullest. This includes enhanced performance and value for money. This is the start of a new chapter for the NDA group, in which we will work together to deliver optimum outcomes for our people, our communities and the UK taxpayer.

## Skills

Our mission needs a diverse range of individuals and organisations to provide the capability and capacity to deliver effectively, so having the right skills at the right time within the NDA group and our supply chain is a priority.

Our strategy on skills is three-fold: attracting the right calibre of people, developing future skills, and developing our existing talent.





# NDA group key activities

*The NDA group's key activities for the next 3 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.*

At the time of publication, it is too early to predict how the delivery of some of the activities included in this plan may be impacted because of COVID-19.

# NDA Corporate Centre



## Important milestones

### 2021-2024

- Implement Strategy 4
- Complete transition to NDA subsidiaries of the 2 remaining SLC's Dounreay Site Restoration Ltd and Low Level Waste Repository Ltd
- Operations as one transport and logistics division commences, bringing together our expert capabilities from DRS and INS into one single division
- Identify opportunities for carbon reduction to support the government commitment to net zero greenhouse gas emissions for the UK by 2050
- Develop a One NDA Leadership Academy

Planned expenditure  
for 2021/22

£66 million

### Key Activities

### Timescale

#### Spent Fuels

Continue to work with EDFE 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	2021-2024
Continue to work with our subsidiaries, especially RWM, on the potential disposal of our spent fuels to a GDF	2021-2024

#### Nuclear Materials

Work with the UK government on a disposition solution that puts the UK's plutonium beyond reach	2021-2024
Implement a programme of research and development to mature the credible options for plutonium disposition	2021-2024
Support our Safeguards experts across the Group in developing and implementing their plans to meet the new safeguards regulations which come into force when the UK leaves Euratom at the end of the transition period	2021-2024

#### Integrated Waste Management

To 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 nonradioactive wastes. This risk-informed approach enables wider application of the Waste Hierarchy and allows us to make optimum use of our treatment, storage and disposal infrastructure	2021-2024
Work with group businesses to explore alternative disposal options for Higher Activity Waste	2021-2024

#### Site Decommissioning and Remediation

Ensure that approaches to decommissioning and remediation reflect the changing level and nature of hazards that exist throughout the lifetime of a nuclear installation, and support businesses with developing proportionate arrangements	2021-2024
Review the use of Safety and Environmental Detriment scores to determine if and how they might be improved as a consistent means of expressing the level of risk to people and the environment. Seek to develop meaningful indicators for other factors in the Value Framework as an input to decision-making	2021-2024
Work with government, regulators and local communities to ensure that remediation of our sites is safe, sustainable and publicly acceptable, and enables their beneficial reuse as early as possible	2021-2024
Facilitate beneficial reuse of wastes generated from demolition activities and land remediation to restore sites where it represents the most sustainable solution	2021-2024
Engage with UK government and local government to better understand what they need from NDA land and develop our understanding of the controls required to reuse our sites safely where residual contamination is being managed	2021-2024



Key Activities	Timescale
<b>Critical Enablers</b>	
Implement recommendations from the Departmental Review	2021-2022
Complete transition to NDA subsidiaries of the 2 remaining SLC's Dounreay Site Restoration Ltd and Low Level Waste Repository Ltd	2021-2022
Operations as one transport and logistics division commences, bringing together our expert capabilities from DRS and INS into one single division	2021-2022
Implement Strategy 4	2021-2024
Develop strategic opportunities that optimise delivery of the mission	2021-2024
Embed the key tenets of the Industrial Strategy, including active participation in the Nuclear Sector Deal to help achieve HMG deliverables	2021-2024
Provide support to government on nuclear new build decommissioning plans	2021-2024
Develop a group-wide accommodation strategy (including welfare, warehousing, transport and logistics) allowing effective re-use of the operational land for construction of new facilities required to deliver the NDA mission and support UK Industrial Strategy	2021-2024
<b>HSSE&amp;W</b>	
Lead in the area of Mental Health and Wellbeing across the NDA group and further enhance the wellbeing community across the group	2021-2024
Contribute to sustainability performance and meet Greening Government Commitments	2021-2024
Having established our Group carbon footprint, we will work with our businesses to identify opportunities for carbon reduction and to develop a roadmap for how we will support the government commitment to net zero greenhouse gas emissions for the UK by 2050	2021-2024
<b>Security and Resilience</b>	
Implement new ICT infrastructure, software and working practices to allow smarter, flexible working across the NDA	2021-2024
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	2021-2024
<b>Cyber Security</b>	
Enable the group to proactively deter, detect, defend against, recover from and be resilient to both current and evolving cyber threats	2021-2024
<b>Research, Development and Innovation</b>	
Work with other nuclear and non-nuclear organisations to encourage and leverage cross-sector investment in RD&I and foster technology transfer between sectors and internationally	2021-2024
Lead the promotion and adoption of technology and innovation across the NDA group, developing an environment where innovation can thrive	2021-2024
Work collaboratively across the NDA group to embed good practices in Technology and Innovation Management, Technical Assurance, Radioactive Waste Inventory and Materials and Samples Management	2021-2024
<b>People</b>	
Implement our strategic people delivery plan to enable resource planning, skills development and flexibility and mobility across the group	2021-2024
Develop a One NDA Leadership Academy to future proof our leadership capability to deliver the mission	2021-2022
Lead the strategic diversity and inclusion agenda across the NDA group ensuring effective governance and oversight to drive One NDA Inclusion, including achieving targets in the Nuclear Sector Deal and supporting our vision to create great places to work	2021-2024
Implement government led reforms of public sector pensions across the NDA group	2021-2024
<b>Asset Management</b>	
Work with our businesses to mature and deliver asset management and continuous improvement capability and performance to support mission delivery at best value for money	2021-2024
<b>Supply Chain</b>	
Support small and medium enterprise organisations by increasing overall spend with them in line with the government growth agenda	2021-2022
Implement and exercise amendments to UK procurement and supply chain regulations as a result of the UK leaving the European union	2021-2024
<b>Socio-Economics</b>	
Implement the group Socio-Economic Strategy outlining opportunities for the wider economy and supporting the government's economic policy such as the levelling up agenda	2021-2024
<b>International Relations</b>	
International support, sharing knowledge and expertise in decommissioning and clean-up activities	2021-2024
<b>Regulatory Control</b>	
Continue working with regulators and government to determine institutional controls appropriate to restoration of nuclear sites	2021-2024

# Sellafield Limited

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

## Important milestones

### 2021-2022

- Begin retrievals from the Pile Fuel Cladding Silo and Magnox Swarf Storage Silos
- Support future decommissioning through optimisation of future storage and treatment

### 2022-2023

- Continue with improvements to the site utilities infrastructure including new Steam Generating Plant
- Commence bulk retrievals from Magnox Swarf Storage Silo

### 2024-2026

- Bulk sludge retrievals from Pile Fuel Storage Pond
- Bulk retrievals started from the Pile Fuel Cladding Silo
- Bulk sludge retrievals from First Generation Magnox Storage Pond

## Planned expenditure for 2021/22

£2,220 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	<b>TBD</b>
	All Land Remediated	<b>2125</b>
	All Land Dedesignated	<b>2125</b>

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

Key Activities	Timescale	Strategic Outcome
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### 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

<b>First Generation Magnox Storage Pond</b> Complete the capability to export all fuel for interim storage	2022-2023	2
Complete Magnox reprocessing and continued interim storage in FHP for any remnant fuel	2021-2022 *delays due to Covid-19	3 4

#### Spent Oxide Fuel

Enhance capacity to receive/manage and interim store AGR spent fuel from EDF Energy, to support bulk defueling	2021-2024	6 9
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#### Spent Exotic Fuel

Continue to receive Dounreay spent exotic fuel to be reprocessed or stored, and develop alternative capability for receipt and management of remaining spent exotic fuels from Dounreay	2021-2024	12 14
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### 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 in passive condition.

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 by enhancing capability to divert waste to LLWR and the supply chain	2021-2024	27
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#### Intermediate Level Waste

<b>Pile Fuel Storage Pond (PFSP)</b> • Progress waste retrieval by having waste skips either exported or ready to export • Demonstrate pond dewatering capability through completion of the bay dewatering trials	2021-2024 2021-2023	31 31
<b>First Generation Magnox Storage Pond (FGMSP)</b> • Support risk reduction from FGMSP through continued removal of fuel and waste from the facility	2021-2024	31
<b>Magnox Swarf Storage Silo</b> • Commence retrievals from MSSS • Progress the capability required for bulk retrievals	2022-2023 2021-2024	31 31
Support the NDA's strategy by continuing the programmes to receive and treat waste materials from Harwell and AWE Aldermaston	2021-2024	32
Support future waste treatment through implementing the capability to actively demonstrate characterisation, size reduction and decommissioning	2021-2024	32
Support risk reduction by developing additional capability for treatment of intermediate level liquid wastes and storage of by-products	2021-2024	32
Support future decommissioning through optimisation of future storage and treatment arrangements	2021-2022	32 33

#### High Level Waste

Continue the programme to repatriate overseas-owned vitrified waste to its country of origin	2021-2024	38
Support reprocessing plant decommissioning by establishing the capability and commencing processing of High Active Post Operational Clean Out of solids through the vitrification plant	2021-2024	36

Key Activities	Timescale	Strategic Outcome
<b>Nuclear Materials</b>		
Sellafield is the custodian of the majority of the UK's inventory of separated plutonium which is held in safe and secure storage.		
<b>Plutonium</b>		
Continue the safe and secure storage of plutonium by developing the capability to repack/retreat plutonium in line with UK policy	2021-2024	18 19
<b>Uranics</b>		
Support future decommissioning by implementing plans for consolidated storage of Sellafield uranics	2021-2024	22 24
<b>Site Decommissioning and Remediation</b>		
<b>Decommissioning and demolition</b>		
Complete decommissioning and demolition of the upper diffuser section of the Windscale Pile Chimney Number 1	2021-2023	42 43
Establish decommissioning capability by implementing the alpha and beta gamma decommissioning programmes	2021-2022	43
Commence post operational clean-out (POCO) of Magnox Reprocessing Plant	2021-2022 *delays due to Covid-19	42
<b>Critical Enablers</b>		
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 the Sellafield transformation to support future business requirements including the development and embedding of a value-led culture	2021-2024	-
Develop and embed the long-term partnership with the supply chain	2021-2024	-
Progress the transformation of project delivery on site and continue to embed the Programme and Project Partnership	2021-2024	-
Support small and medium enterprise organisations by increasing overall spend with them in line with the government growth agenda	2021-2024	-
Continue the Sellafield security enhancement programme	2021-2024	-
Continue with improvements to the site utilities infrastructure and new Steam Generating Plant	2021-2024	-
Continue the programme to ensure the analytical services capability is available to support the mission	2021-2024	-
Embed the key tenets of the Industrial Strategy, including the Nuclear Sector Deal	2021-2024	-
Working to embed the capability to proactively protect, detect, respond and recover against current and evolving cyber threats	2021-2024	-
Manage and deliver asset management and continuous improvement capability and performance to support mission delivery	2021-2024	-
<b>Regulatory Control</b>		
Ensure discharges are in line with UK discharge strategy	2021-2024	-
Reduce environmental risk (including retrieval and treatment of legacy wastes, reduction of HAL stocks)	2021-2024	-



# 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 2021/22

£505 million

Magnox became a wholly-owned subsidiary of the NDA on 1 September 2019.

Following a review of the Magnox reactor decommissioning strategy (strategic outcome 42), the NDA has endorsed a site-specific approach to Magnox reactor decommissioning which will involve a mix of decommissioning strategies. For some sites this will result in their decommissioning being brought forward whilst for others a deferral strategy will be the chosen approach.

The intention is that together, the site specific strategies will result in a rolling programme of activity as the Magnox fleet is decommissioned. This will maximise the opportunity for sharing any lessons learned, developing and implementing new technologies and strengthening wider capability. As a whole, 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.

While we expect the new site-specific decommissioning strategies to be defined over the next 12 to 18 months, they will be continually reviewed and optimised using the learning obtained from the sites being decommissioned. It is expected that the strategy for decommissioning Calder Hall (a former Magnox reactor on the Sellafield site) will also incorporate learning from the lead Magnox site, Trawsfynydd.

A timetable will now be set that best suits each site and a business case developed to set out the benefits and cost and schedule impacts of any changes. The widespread effects of the COVID-19 pandemic have meant that this process has taken longer than originally planned. When the site specific plans and dates are confirmed they will be published on the NDA's website.

The development of site-specific strategies at the Magnox reactor sites does not affect programmes at Harwell and Winfrith. Continued focus on safety and risk reduction will remain the overriding priorities across all the sites.

Key Activities	Timescale	Strategic Outcome
<b>Site Decommissioning and Remediation</b>		
<b>Decommissioning and demolition</b>		
Continue estate decommissioning and demolition activities in line with individual site strategies	2021-2024	42 43
Continue reactor decommissioning	2021-2024	43
Asbestos management – Continued focus on the major risk of asbestos including production of an optimised, underpinned strategy for asbestos	2021-2024	42
Continue development of site specific strategies as part of a rolling programme of decommissioning	2021-2024	42
<b>Dedesignate or Reuse</b>		
Continue working with Regulators to ensure appropriately scaled management arrangements and permissioning for Interim States and Interim End States are determined and agreed	2021-2024	44
Development of Interim State approaches, utilising revised management arrangements	2021-2024	44
Monitoring of management and maintenance arrangements for sites in Care and Maintenance	2021-2024	44
Progress land dedesignation and release to support re-use	2021-2024	47
Provision of support to nuclear new build	2021-2024	47
<b>Nuclear Materials</b>		
<b>Uranics</b>		
Continue the programme for the transfer of nuclear materials	2021-2024	22
Regulatory permissioning in support of the transfer of nuclear materials between sites	2021-2024	22
<b>Integrated Waste Management</b>		
<b>Low Level Waste</b>		
Delivery of the Magnox elements of the estate-wide low level waste management plan including diversion to alternative treatment including development of updated Integrated Waste Strategy	2021-2024	26 27 28 29
<b>Intermediate Level Waste</b>		
Progress activities to retrieve, treat and store ILW	2021-2024	31 32 33
Continue to pursue opportunities to consolidate ILW to interim stores	2021-2024	33
<b>Critical Enablers</b>		
Support Government in activities to deliver preparations for decommissioning the Advanced Gas-cooled Reactor fleet	2021-2024	-
Continue delivery of the “Sift & Lift” programme to rationalise all Magnox records and transfer as appropriate to the NDA Archive in Wick	2021-2024	-
Support small and medium enterprise organisations by increasing overall spend with them in line with the government growth agenda	2021-2024	-
Continue enhancement of Cyber Capability	2021-2024	-
Mature and deliver Asset Management and Continuous Improvement capability and performance to support mission delivery	2021-2024	-
Progress development of workforce capability and skills for decommissioning in Magnox and the supply chain	2021-2024	-

# Berkeley

## Site in Gloucestershire







27 hectares

## Hectares dedesignated

11 hectares

16 hectares remain covered by the nuclear site licence.

## SITE PROGRESS (ACHIEVED AND EXPECTED)

	Free from Spent Fuel	<b>ACHIEVED</b>
	Free from Nuclear Materials	<b>ACHIEVED</b>
	Free from Radioactive Waste	<b>TBD</b>
	All Buildings Decommissioned	<b>TBD</b>
	All Land Remediated	<b>2079</b>
	All Land Dedesignated	<b>2079</b>

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

## Key Activities

## Timescale

## Strategic Outcome

### Integrated Waste Management

#### Intermediate Level Waste

New Build – Complete Design and Build of remaining ILW retrieval plant	2021-2023	31
Progress activities to retrieve, treat and store ILW wastes	2021-2024	31 32 33
Progress encapsulation of ILW packages	2021-2024	32

### Site Decommissioning and Remediation

#### Decommissioning and Demolition

Decommissioning (including asbestos removal) and demolition activities ongoing in preparation for the site's deferral period	2021-2024	42 43
Commence and progress the asbestos and plant removal from the Blower Houses.	2021-2024	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	<b>ACHIEVED</b>
	Free from Nuclear Materials	<b>ACHIEVED</b>
	Free from Radioactive Waste	<b>TBD</b>
	All Buildings Decommissioned	<b>TBD</b>
	All Land Remediated	<b>2092</b>
	All Land Dedesignated	<b>2092</b>

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

## Key Activities

## Timescale

## Strategic Outcome

### Site Decommissioning and Remediation

### Dedesignate and Reuse

Ongoing management of site during Care and Maintenance period

2021-2024

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	<b>ACHIEVED</b>
	Free from Nuclear Materials	<b>ACHIEVED</b>
	Free from Radioactive Waste	<b>TBD</b>
	All Buildings Decommissioned	<b>TBD</b>
	All Land Remediated	<b>2095</b>
	All Land Dedesignated	<b>2095</b>

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

Key Activities	Timescale	Strategic Outcome
<b>Integrated Waste Management</b>		
<b>Intermediate Level Waste</b>		
New Build - Complete active commissioning of the Modular Active Effluent Treatment Plant	2021-2022	32
Progress activities to retrieve, treat and store ILW wastes	2021-2024	31 32 33
New Build - Complete Design and Build of ILW Encapsulation facility	2021-2022	32
Operation of Interim Storage Facility	2021-2024	33
<b>Site Decommissioning and Remediation</b>		
<b>Decommissioning and Demolition</b>		
Preparations for pond draining and stabilisation	2021-2024	42
Decommissioning (including asbestos removal) and demolition activities in preparation for the site's deferral period	2021-2024	42 43
Prepare and execute land remediation activities	2021-2023	46
Commence and progress Turbine Hall asbestos removal.	2022-2024	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	<b>ACHIEVED</b>
	Free from Nuclear Materials	<b>ACHIEVED</b>
	Free from Radioactive Waste	<b>TBD</b>
	All Buildings Decommissioned	<b>TBD</b>
	All Land Remediated	<b>2097</b>
	All Land Dedesignated	<b>2097</b>

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

Key Activities	Timescale	Strategic Outcome
<b>Integrated Waste Management</b>		
<b>Low Level Waste</b>		
Progress activities supporting consolidated ILW storage	2021-2024	33
<b>Intermediate Level Waste</b>		
Progress activities to retrieve, treat and store ILW wastes	2021-2024	31 32 33
<b>Site Decommissioning and Remediation</b>		
<b>Decommissioning and Demolition</b>		
Decommissioning (including asbestos removal) and demolition activities in preparation for the site's deferral period	2021-2024	42 43
Commence and progress decommissioning the Active Effluent Treatment facilities	2021-2024	42
Commence and progress the demolition of the boilers and associated buildings	2021-2024	43
Complete ponds stabilisation	2021-2022	42

# 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	<b>ACHIEVED</b>
	Free from Nuclear Materials	<b>2025</b>
	Free from Radioactive Waste	<b>TBD</b>
	All Buildings Decommissioned	<b>TBD</b>
	All Land Remediated	<b>2064</b>
	All Land Dedesignated	<b>2064</b>

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

Key Activities	Timescale	Strategic Outcome
<b>Nuclear Materials</b>		
Uranics		
Continue the programme for the transfer of nuclear materials	2021-2024	22
<b>Integrated Waste Management</b>		
Intermediate Level Waste		
Progress activities to retrieve, treat and store ILW	2021-2024	31 32 33
<b>Site Decommissioning and Remediation</b>		
<b>Decommissioning and Demolition</b>		
Decommissioning (including asbestos removal) and demolition activities	2021-2024	42 43
Continue preparations for decommissioning of the Radium Chemistry Laboratory facilities (B220)	2021-2024	42
Decommissioning, demolition, land remediation, reinstatement and delicensing of the Liquid Effluent Treatment Plant (LETP)	2021-2024	42 43 46
Prepare, commence, and progress the decommissioning of the British Experimental Pile Zero reactor (BEPO)	2021-2024	42
Prepare, commence, and progress the decommissioning of the Solid Waste Complex facility (B462)	2023-2024	42
Prepare and commence the decommissioning of the Active Waste Handling facility (B459).	2021-2024	42
<b>Dedesignate or Reuse</b>		
Continue incremental release of land to the Harwell campus through targeted demolitions, remediation and clearance of land tracts	2021-2024	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	<b>ACHIEVED</b>
	Free from Nuclear Materials	<b>ACHIEVED</b>
	Free from Radioactive Waste	<b>TBD</b>
	All Buildings Decommissioned	<b>TBD</b>
	All Land Remediated	<b>2090</b>
	All Land Dedesignated	<b>2090</b>

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

Key Activities	Timescale	Strategic Outcome
<b>Integrated Waste Management</b>		
<b>Low Level Waste</b>		
New Build - Completion of active commissioning of the Modular Active Effluent Treatment Plant	2021-2022	28
<b>Intermediate Level Waste</b>		
Progression of activities to retrieve, treat and store ILW.	2021-2024	31 32 33
New Build - Complete Design and Build of ILW Encapsulation facility	2021-2022	32
<b>Site Decommissioning and Remediation</b>		
<b>Decommissioning and Demolition</b>		
Decommissioning (including asbestos removal) and demolition activities in preparation for the site's deferral period	2021-2024	42 43
Continue asbestos removal from the Reactor Building complex.	2021-2024	42
Complete the decommissioning of the Turbine Hall.	2021-2023	42
Commence the decommissioning of the Active Effluent Treatment facilities.	2021-2024	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	<b>ACHIEVED</b>
	Free from Nuclear Materials	<b>ACHIEVED</b>
	Free from Radioactive Waste	<b>TBD</b>
	All Buildings Decommissioned	<b>TBD</b>
	All Land Remediated	<b>2080</b>
	All Land Dedesignated	<b>2080</b>

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

Key Activities	Timescale	Strategic Outcome
<b>Integrated Waste Management</b>		
<b>Intermediate Level Waste</b>		
Progress activities to retrieve, treat and store ILW	2021-2024	31 32 33
Continue complete solid active waste bunker retrieval operations excluding post operational clean out	2021-2022	31
New Build – Commissioning of the solid ILW encapsulation plant	2021-2024	32
<b>Site Decommissioning and Remediation</b>		
<b>Decommissioning and Demolition</b>		
Decommissioning (including asbestos removal) and demolition activities in preparation for the site's deferral period	2021-2024	42 43
Continue the decommissioning of the Active Effluent Treatment facilities	2021-2024	42
Commence the re-cladding of the Reactor building	2021-2024	42
Commence the deplanting of the cooling pond overbuilding	2021-2024	43

# 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	<b>ACHIEVED</b>
	Free from Nuclear Materials	<b>ACHIEVED</b>
	Free from Radioactive Waste	<b>TBD</b>
	All Buildings Decommissioned	<b>TBD</b>
	All Land Remediated	<b>2103</b>
	All Land Dedesignated	<b>2103</b>

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

Key Activities	Timescale	Strategic Outcome
<b>Integrated Waste Management</b>		
<b>Intermediate Level Waste</b>		
Progress activities supporting consolidated ILW storage	2021-2024	33
Progress activities to retrieve, treat and store ILW	2021-2024	31 32 33
<b>Site Decommissioning and Remediation</b>		
<b>Decommissioning and Demolition</b>		
Decommissioning (including asbestos removal) and demolition activities in preparation for the site's deferral period	2021-2024	42 43
Commence and progress the decommissioning of the Active Effluent Treatment facilities.	2021-2024	42
Commence and progress the asbestos removal, deplant and demolition of the Turbine Hall.	2021-2024	42
Commence the asbestos removal from the Reactor Building	2021-2024	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	<b>ACHIEVED</b>
	Free from Nuclear Materials	<b>ACHIEVED</b>
	Free from Radioactive Waste	<b>TBD</b>
	All Buildings Decommissioned	<b>TBD</b>
	All Land Remediated	<b>2097</b>
	All Land Dedesignated	<b>2097</b>

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

Key Activities	Timescale	Strategic Outcome
<b>Integrated Waste Management</b>		
<b>Intermediate Level Waste</b>		
Progress activities to support consolidation of ILW storage	2021-2024	33
Progress activities to retrieve, treat and store ILW	2021-2024	31 32 33
Commence and progress ILW retrieval enabling works	2021-2024	31
<b>Site Decommissioning and Remediation</b>		
<b>Decommissioning and Demolition</b>		
Decommissioning (including asbestos removal) and demolition activities in preparation for the site's deferral period	2021-2024	42 43
Commence and progress the decommissioning of the Active Effluent Treatment facilities	2021-2024	42
Commence and progress the asbestos removal, deplant and demolition of the Turbine Hall	2021-2024	42
Commence the asbestos removal from the Reactor Building	2021-2024	42
Complete the Cooling Ponds stabilisation	2021-2022	42

# Trawsfynydd

As published in our draft Strategy 4 - reactor decommissioning is being brought forwards

## 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	<b>ACHIEVED</b>
	Free from Nuclear Materials	<b>ACHIEVED</b>
	Free from Radioactive Waste	<b>TBD</b>
	All Buildings Decommissioned	<b>TBD</b>
	All Land Remediated	<b>2083</b>
	All Land Dedesignated	<b>2083</b>

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

Key Activities	Timescale	Strategic Outcome
<b>Integrated Waste Management</b>		
<b>Intermediate Level Waste</b>		
Continue and complete ILW retrievals and encapsulation	2021-2023	31 33
Progress activities to retrieve, treat and store ILW	2021-2024	31 32 33
<b>Site Decommissioning and Remediation</b>		
<b>Decommissioning and Demolition</b>		
Decommissioning (including asbestos removal) and demolition activities in preparation for the site's deferral period	2021-2024	42 43
Continue reactor height reduction preparations	2021-2024	43
Decommissioning and demolition of the Ponds complex facility	2021-2024	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	<b>ACHIEVED</b>
	Free from Nuclear Materials	<b>ACHIEVED</b>
	Free from Radioactive Waste	<b>TBD</b>
	Site in interim end state	<b>2023*</b>

\*TBD' is shown when the date for completing the strategic outcome is not sufficiently clear for a specific date to be given.

**\*Subject to change following review by the new Magnox Executive**

### Key Activities

### Timescale

### Strategic Outcome

#### Integrated Waste Management

##### Low Level Waste

Continue and complete shipments of LLW drums to LLWR

2021-2024

28

#### Site Decommissioning and Remediation

##### Decommissioning and Demolition

Continue DRAGON reactor decommissioning, including the construction and installation of the Core Segmentation equipment

2021-2024

42

Continue SGHWR decommissioning, including the construction and installation of the Core Segmentation equipment

2021-2024

42

Preparatory works for the removal of the discharge pipelines

2021-2024

42

Complete the removal of active drains

2021-2022

42

Continue land remediation activities and end state development

2021-2024

46

Decommissioning (including asbestos removal) and demolition activities

2021-2024

42 43

# 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 Spent Fuel	<b>ACHIEVED</b>
	Free from Nuclear Materials	<b>ACHIEVED</b>
	Free from Radioactive Waste	<b>TBD</b>
	All Buildings Decommissioned	<b>TBD</b>
	All Land Remediated	<b>2105</b>
	All Land Dedesignated	<b>2105</b>

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

## Key Activities

## Timescale

## Strategic Outcome

### Integrated Waste Management

#### Intermediate Level Waste

Prepare for ILW retrievals and packaging

2021-2024

31

Progress activities to retrieve, treat and store ILW

2021-2024

31

32

33

### Site Decommissioning and Remediation

#### Decommissioning and Demolition

Prepare for decommissioning (including asbestos removal) and demolition for the site's deferral period

2021-2024

42

43

Continue asbestos removal from turbine hall

2021-2024

42

Commence and progress asbestos removal from the Reactor Building

2021-2024

42

Prepare and install a replacement electrical overlay scheme

2021-2024

42

# Dounreay Site Restoration Limited

*Dounreay Site Restoration Ltd (DSRL) is responsible for cleaning up and decommissioning 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. The organisation is owned and managed by parent body organisation Cavendish Dounreay Partnership. Transition arrangements have commenced to become a wholly owned subsidiary of the NDA from the end of March 2021.*

## Important milestones

The activities below give the current understanding of the lifetime plan and are subject to change.

### 2025

- All fuel in long-term storage or shipped off site.
- Dounreay Fast Reactor (DFR) dismantled

### 2027

- Prototype Fast Reactor (PFR) dismantled

### 2028

- Shaft and silo encapsulation complete

### 2031

- Site clearance and environmental restoration phase 3 complete

### 2032-33

- Interim end state achieved

## Planned expenditure for 2021/22

£200 million

### Site in Northern Scotland

60 hectares







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

### Hectares Dededesignated

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	2025
	Free from Nuclear Materials	TBD
	Free from Radioactive Waste	TBD
	All Buildings Decommissioned	TBD
	All Land Remediated	TBD
	All Land Dededesignated	TBD

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



Key Activities	Timescale	Strategic Outcome
<b>Spent Fuel</b>		
<b>Spent Exotic Fuel</b>		
Continue removal of Breeder Fuel elements from DFR	2021-2022	11
Complete delivery of all in reactor DFR Breeder Fuel to Sellafield	2021-2023	12
Complete delivery of all fuels from DFR	2021-2023	12
<b>Nuclear Materials</b>		
Continue consolidation of remaining unirradiated exotics material (remnants)	2021-2023	-
<b>Integrated Waste Management</b>		
<b>Low Level Waste</b>		
Continue transfer of LLW to LLW vault	2021-2024	27
Complete design and build of D3110 Waste Treatment Plant	2022-2023	28
<b>Intermediate Level Waste</b>		
Complete construction of Dounreay Cementation Plant (DCP) Store Extension Construction	2021-2022	32
PFR Raffinate Immobilisation Complete	2022-2023	32
<b>Site Decommissioning and Remediation</b>		
<b>Decommissioning and Demolition</b>		
Dounreay Material Test Reactor Building Complex Decontamination Complete	2021-2023	42
PFR – Removal of Sodium Disposal Plant Equipment (not tanks)	2021-2022	42
PFR - Complete Reactor Vessel Residual Na Treatment Operations - Turn Reactor Vessel atmosphere from nitrogen to air	2022-2023	42
Dounreay Material Test Reactor Structures demolished	2022-2023	43
<b>Dedesignate or Reuse</b>		
NDA and Regulatory permissioning in support of the Interim End State definition and arrangements for Dounreay	2021-2024	44
<b>Critical Enablers</b>		
Support small and medium enterprise organisations by increasing overall spend with them in line with the government growth agenda	2021-2024	-



# LLWR Limited

*Low Level Waste Repository is managed under the parent body organisation model and owned by Nuclear Waste Management Ltd. It manages and operates the UK's low level waste repository in west Cumbria, providing safe, permanent disposal for a range of radioactive wastes. It's also responsible for delivering the UK's national low level waste programme and associated waste management services. Transition arrangements have commenced to become a wholly owned subsidiary of the NDA from July 2021.*

## Important milestones

### 2021

- Transition to NDA subsidiary
- PCM ancillary buildings demolition

### 2030

- Final capping of Vault 8

### 2135

- Final site clearance achieved

## Planned expenditure for 2021/22

£77 million

### Site in Cumbria



99 hectares

### Hectares Dededesignated

0 hectares

All 99 hectares remain covered by the nuclear site licence.

### SITE PROGRESS (ACHIEVED AND EXPECTED)

 All Buildings Decommissioned	<b>TBD</b>
 All Land Remediated	<b>TBD</b>
 All Land Dededesignated	<b>2135</b>

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

Key Activities	Timescale	Strategic Outcome
<b>Integrated Waste Management</b>		
<b>Low Level Waste</b>		
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	2021-2024	26 27 28 29
<b>Intermediate Level Waste</b>		
Work with NDA to support innovation in approaches to integrated waste management	2021-2024	32 33 34
Type B Packaging capability to support NDA and MOD customers	2021-2024	33
<b>Site Decommissioning and Remediation</b>		
Site End State Gate B paper delivered	2021-2024	
<b>New Build and Operations</b>		
Enabling works for phased construction of the final cap for trenches 1 to 7 and Vault 8	2021-2024	41
<b>Critical Enablers</b>		
Support hazard reduction across the NDA group	2021-2024	-
Deliver the LLW packaging and transport services	2021-2024	-
Manage and operate LLWR safely to provide an effective UK disposal service	2021-2024	-
Consider options to further optimise operations at the LLWR	2021-2024	-
Continue to pursue overall cost savings in delivery of the Lifetime Plan	2021-2024	-
Support small and medium enterprise organisations by increasing overall spend with them in line with the government growth agenda	2021-2024	-
Active participation in the Nuclear Sector Deal and the North West Nuclear Arc to help achieve HMG key deliverables	2021-2024	-
Manage the existing LLWR Management and Operations contract through to completion and transition to new ownership arrangements	2021-2024	-
Deliver the LLWR Transformation Programme and actively support the development of One NDA	2021-2024	-
Mature and deliver asset management and continuous improvement capability and performance to support mission delivery	2021-2024	-
<b>Regulatory Control</b>		
Contribute to sustainability performance under the Greening Government Commitments (GGC)	2021-2024	-

# Radioactive Waste Management Limited

*Radioactive Waste Management Limited (RWM) is an NDA subsidiary, responsible for providing a range of waste management services including delivering a geological disposal facility in England and Wales. This includes finding a suitable site with a willing community to host this permanent and safe solution for managing radioactive waste.*

Key Activities	Timescale	Strategic Outcome
<b>Integrated Waste Management – Intermediate and High Level Waste</b>		
Implement government policy on geological disposal of higher activity waste	2021-2024	34 39
Through activity and enabling partners - Work proactively with waste producers, planning for and delivering waste management solutions	2021-2024	34 39
Through activity and enabling partners - Deliver a robust technical programme, support the GDF programme and waste management	2021-2024	34 39
<b>Critical Enablers</b>		
Develop RWM into a high-performing delivery organisation	2021-2024	-
Continue to work with each community to provide information and help develop a detailed community vision	2021-2024	-
Work in partnership with communities to evaluate potential sites for a GDF	2021-2024	-
Design studies for specific sites, initial safety analyses, and environmental and economic assessments to help establish whether sites could be suitable	2021-2024	-

# Transport and Logistics

*In 2021 the NDA is bringing its extensive transport and logistics capabilities together into a single transport division - Nuclear Transport Solutions (NTS).*

*The UK has long been a global leader in this field through the expertise that currently exists within the NDA's subsidiary organisations, International Nuclear Services (INS), Direct Rail Services (DRS), and the INS subsidiary Pacific Nuclear Transport Ltd (PNTL).*

*The new transport division will be a centre of excellence and a strategic UK capability for the transport of radioactive nuclear materials and other critical materials.*

*As well as enhancing the capability, knowledge and assets required to transport materials in support of the NDA mission, the division will support wider UK nuclear and transport strategic priorities and work with overseas governments on their challenges.*

Key Activities	Timescale	Strategic Outcome
<b>Spent Fuels – Spent Oxide Fuel</b>		
Support AGR fuel movements by rail for EDF from stations to Sellafield, including preparations for the AGR defueling programme.	2021-2024	6
<b>Nuclear Materials – Plutonium and Uranics</b>		
Support national nuclear material rail movements for Harwell, Winfrith and DSRL.	2021-2024	17 22
<b>Integrated Waste Management – High Level Waste</b>		
Continue to deliver important international transports of vitrified High Level Waste (HLW) and conditioned Intermediate Level Waste (ILW)	2021-2024	36 37
<b>Critical Enablers</b>		
Develop a comprehensive overview of projected nuclear and critical non-nuclear transports, identifying opportunities to deliver more efficient and environmentally sustainable solutions to the NDA's transport requirements	2021-2024	-
Seek opportunities for new business within nuclear shipping, rail, packaging and design by providing transport enabling solutions to UK and international markets	2021-2024	-
Undertake appropriate non-nuclear business to maintain and enhance the skills and capabilities required to support the core nuclear mission	2021-2024	-
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	2021-2024	-
Attract and retain the necessary skills, capability and diversity of talent to deliver business in a safe, secure and reliable manner	2021-2024	-
Support the discharge of NDA obligations with respect to MOD nuclear rail transportation	2021-2024	-
Continue to deliver NDA's contractual obligations for transport of mixed oxide (MOX) fuel from France to Japan	2021-2024	-
Undertake a series of transformation activities that bring transport capabilities together into a single division that is efficient, commercially competitive and self-funding	2021-2024	-





# NDA Archives Limited

NDA Archives is an NDA subsidiary, responsible for the Nucleus (the Nuclear and Caithness Archives). The facility is operated by a commercial partner and provides long-term records management and archiving services for the NDA group.

Key Activities	Timescale
<b>Critical Enablers</b>	
Develop NDA Group Digital Preservation and Digitisation policies	2021-2022
Mature and implement the NDA Group Heritage Guidelines	2021-2022
Development of the Hub and Spokes delivery model – centralised inventory and management with dispersed, off-site storage where appropriate	2021-2023
Magnox collection sift completed and ready for accession	2021-2024
Sellafield offsite collection sift completed and ready for accession	2021-2024
Capacity management planning	2021-2024
Re-competition of the commercial partner contract	2022-2023



# 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
<b>Critical Enablers</b>	
Effective and efficient management and assurance of retained landholding consisting of 1203 hectares across 92 properties	2021-2024
Effective management and close out of the Landlord's Essential Works Programme, including property portfolio projects for repair work (CAPEX) and improved preventative on-going repair and maintenance	2021-2022
Review and deliver progressive environmental stewardship across the portfolio estate	2021-2024
Effective management of Hinton House including collaborative partnership working with Sellafield Ltd to align with the award on the next generation Facilities Management contract	2021-2023
Strategic transfer of land and property from NDAPL to NDA to facilitate and enhance operational activities and objectives	2021-2022
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	2021-2024
To engage and collaborate with NDA Group and stakeholders to target Carbon Zero objectives	2021-2024

# Rutherford Indemnity Limited

Rutherford Indemnity Ltd provides insurance cover for the NDA group. It has a particular focus on nuclear liability cover and the provision of support for changes to insurance requirements. The company is a wholly-owned NDA subsidiary, managed for the NDA by Marsh Captive Management Services, and has no direct employees.

Key Activities	Timescale
<b>Critical Enablers</b>	
Provide optimal insurance coverage to the NDA to support its NDA group-wide insurance programme and exploit opportunities to reduce overall cost of insurance risk	2021-2024
Explore all avenues to develop potential innovative solutions to the increased financial security or insurance requirement resulting from the Nuclear Installations (Liability For Damage) Order 2016 and to respond to demands for new or additional policy or cover required from January 2022	2021-2022
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	2021-2024
Continue to use a prudent proportion of Rutherford's assets to support infrastructure investment within the NDA group	2021-2024
Assist with the NDA group insurance broker tender to ensure all outsourced activities improve efficiency and are aligned to support NDA group Insurance Strategy	2021-2024
Develop and implement comprehensive major incident claims management solution	2021-2022
Procure Third Party Administrator to implement NDA-controlled nuclear liability claims handling administration	2021-2022

## ENERGUS.

# Energus

Energus is an NDA subsidiary offering 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
<b>Critical Enablers</b>	
Continue to work closely with the NDA and stakeholders across the nuclear sector to upskill and develop the workforce of today and tomorrow	2021-2024
Continue to manage and facilitate a number of training opportunities for the NDA group and wider nuclear sector; including nuclear graduates, cyber security graduates and apprentices and other bespoke programmes to support the NDA People Strategy	2021-2024
Continue to work in partnership with the National Cyber Security Centre (NCSC) and NDA Cyber Security Resilience (CSR) to deliver a pipeline of cyber security young talent into the sector. Deliver CyberFirst and be the venue of choice for Cyber Security training in the North West	2021-2024
Continue to be a Cumbrian venue of choice for the NDA group's events, conferences and delivery of training and education.	2021-2024

# Springfields

- Planned expenditure for 2021/22 - £36 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
<b>Site Decommissioning and Remediation</b>		
<b>Decommissioning and Demolition</b>		
Complete post operational clean out of the Residues Recovery Plant	2021-2023	42
Continue decommissioning of the Magnox Island	2021-2023	42
<b>Nuclear Materials</b>		
<b>Uranics</b>		
Continue to appropriately manage, care and maintain NDA stock of uranic materials	2021-2024	23 25

# Capenhurst



- Planned expenditure for 2021/22 - £22 million
- 31 hectare site in Cheshire.
- 17 hectares have been dedesignated.
- Modification of Designating Direction signed by the Minister in May 2010 and July 2012.
- Remaining 14 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
<b>Site Decommissioning and Remediation</b>		
<b>Decommissioning and Demolition</b>		
Continue decommissioning and demolition of key facilities	2021-2024	42 43
<b>Nuclear Materials</b>		
<b>Uranics</b>		
Continue the safe storage and management of uranic materials, including uranium hexafluoride tails prior to processing through the Tails Management Facility	2021-2024	23 24 25

# DELIVERY OF OUR MISSION OVER THE NEXT 20 YEARS, UP TO 2040 - Spent Fuels and Nuclear Materials

## STRATEGIC OUTCOMES

### Spent Fuels

#### SPENT MAGNOX FUEL

- ① All sites defueled - ACHIEVED
- ② All legacy Magnox fuel retrieved
- ③ All Magnox fuel reprocessing completed
- ④ All remaining Magnox fuel in interim storage
- ⑤ All remaining Magnox fuel disposed

#### SPENT OXIDE FUEL

- ⑥ All EDFE oxide fuel received
- ⑦ All legacy oxide fuel retrieved - ACHIEVED
- ⑧ All oxide fuel reprocessing completed - ACHIEVED
- ⑨ All remaining oxide fuel in interim storage
- ⑩ All remaining oxide fuel disposed

#### SPENT EXOTIC FUEL

- ⑪ All exotic fuel defueled
- ⑫ All exotic fuel consolidated
- ⑬ All exotic fuel reprocessing completed
- ⑭ All remaining exotic fuel in interim storage
- ⑮ All remaining exotic fuel disposed

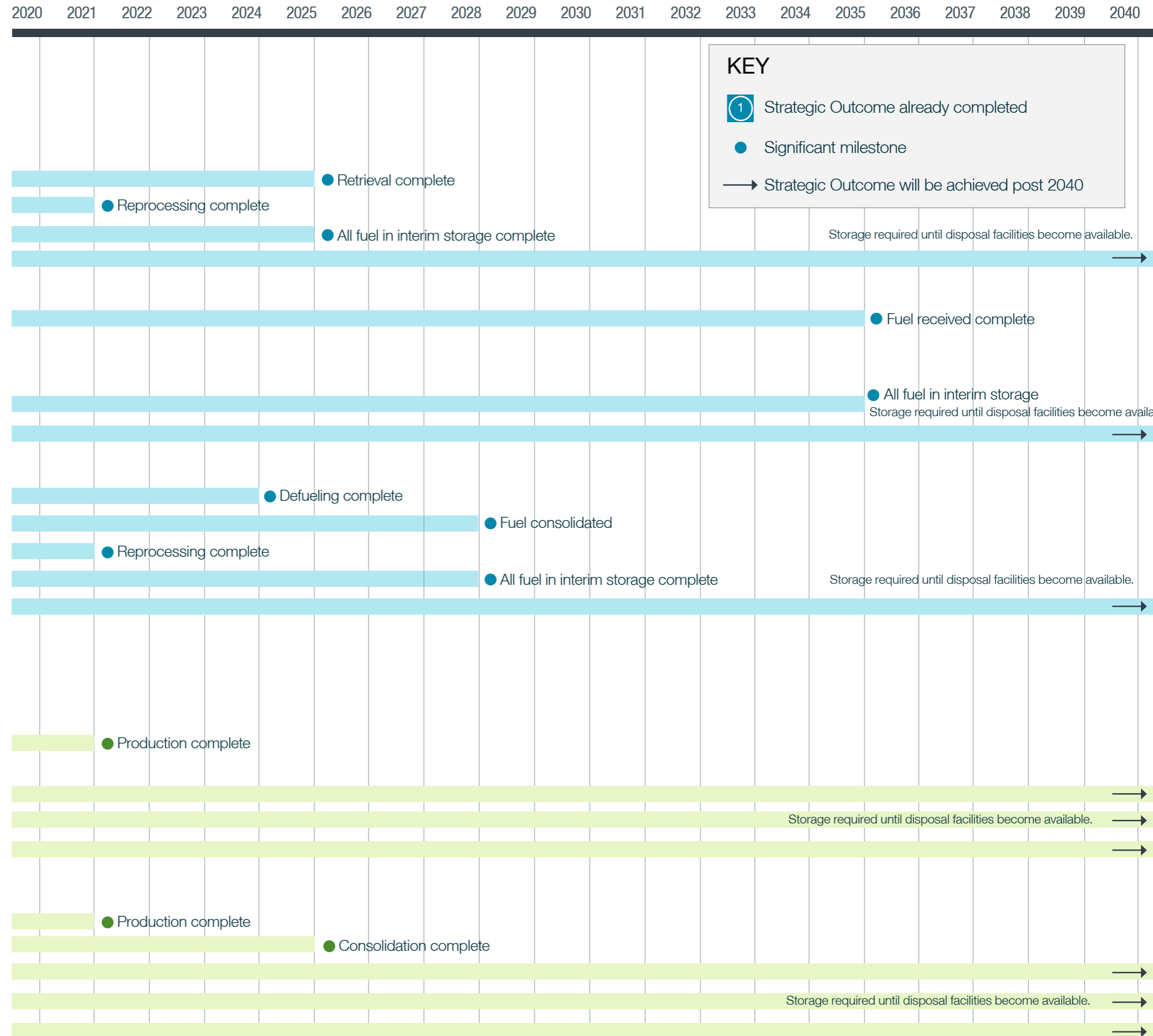
### Nuclear Materials

#### PLUTONIUM

- ⑯ All plutonium produced
- ⑰ All plutonium consolidated - ACHIEVED
- ⑱ A: All plutonium packed in long term storage  
B: All cans not suitable for extended storage repackaged
- ⑲ All plutonium in modern interim storage
- ⑳ All plutonium reused or disposed

#### URANICS

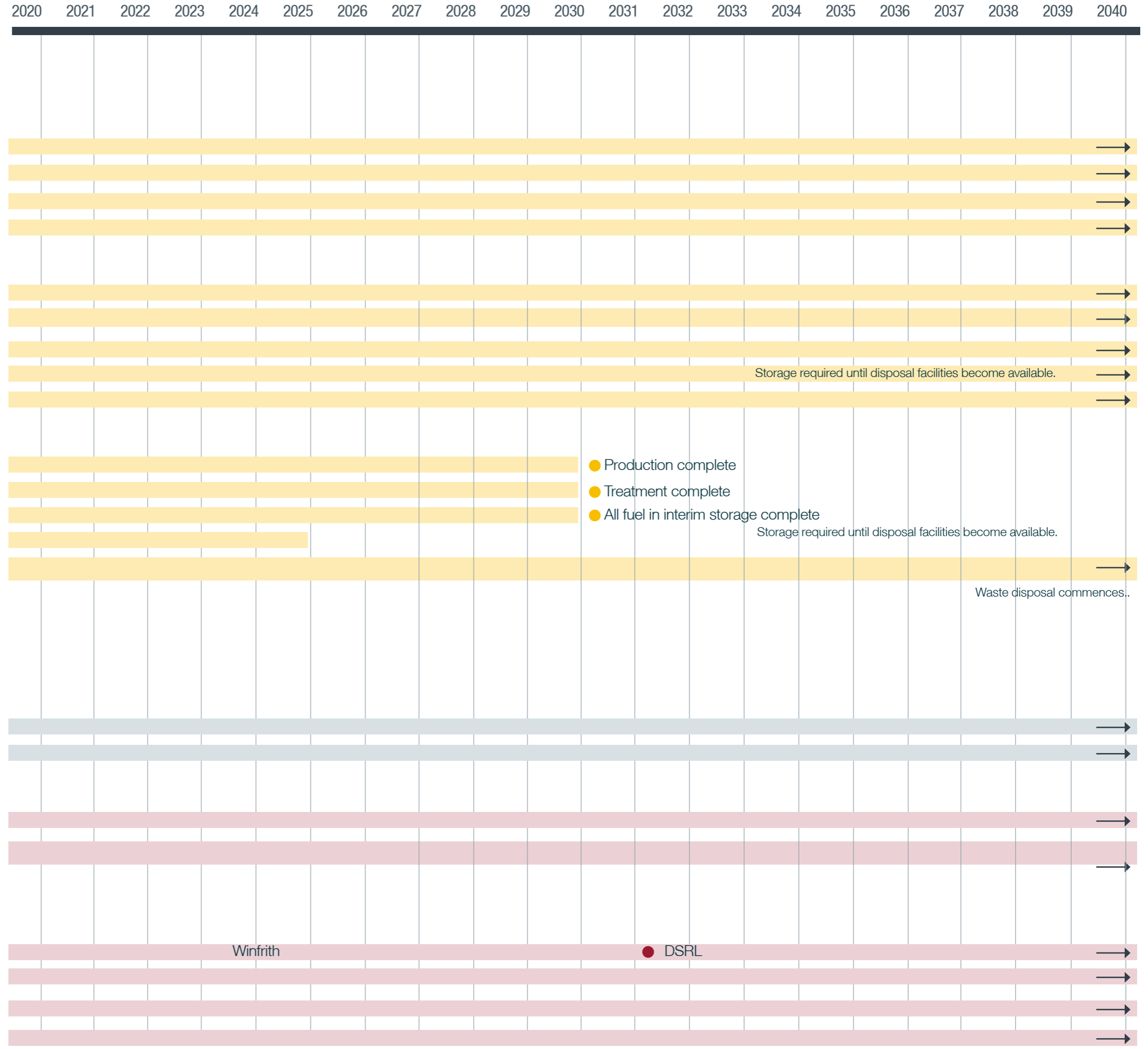
- ㉑ All uranium produced
- ㉒ All uranium consolidated
- ㉓ All uranium treated
- ㉔ All uranium in interim storage
- ㉕ All uranium reused or disposed





# DELIVERY OF OUR MISSION OVER THE NEXT 20 YEARS, UP TO 2040 - Integrated Waste Management and Site Decommissioning and Remediation

## STRATEGIC OUTCOMES



### Integrated Waste Management

#### LOW LEVEL WASTE

- 26 All LLW produced
- 27 All LLW treated - to enable diversion or reuse
- 28 All waste suitable for disposal in NDA facilities
- 29 All waste suitable for permitted landfill disposed

#### INTERMEDIATE LEVEL WASTE

- 30 All ILW produced
- 31 All legacy waste retrieved
- 32 All ILW treated
- 33 All ILW in interim storage
- 34 All ILW disposed

#### HIGH LEVEL WASTE

- 35 All HLW produced
- 36 All HLW treated
- 37 All HLW in interim storage
- 38 All overseas HLW exported
- 39 All HLW disposed

### Site Decommissioning and Remediation

#### NEW BUILD

- 40 All planned new buildings operational
- 41 All buildings primary function completed

#### DECOMMISSION AND DEMOLISH

- 42 All buildings decommissioned
- 43 All buildings demolished or reused

#### DEDESIGNATE OR REUSE

- 44 All land delicensed or relicensed
- 45 All land in End State - all planned physical work complete
- 46 All land demonstrated as suitable for reuse
- 47 All land dedesignated or reused

# References

## 1. Energy Act (2004)

## Useful links

- Nuclear Decommissioning Authority ([www.gov.uk/nda](http://www.gov.uk/nda))
- Department for Business, Energy and Industrial Strategy ([www.gov.uk/beis](http://www.gov.uk/beis))
- Sellafield Ltd ([www.gov.uk/government/organisations/sellafield-ltd](http://www.gov.uk/government/organisations/sellafield-ltd))
- Magnox Ltd ([www.gov.uk/government/organisations/magnox-ltd](http://www.gov.uk/government/organisations/magnox-ltd))
- LLWR Ltd ([www.gov.uk/government/organisations/low-level-waste-repository-ltd](http://www.gov.uk/government/organisations/low-level-waste-repository-ltd))
- Dounreay Ltd ([www.gov.uk/government/organisations/dounreay](http://www.gov.uk/government/organisations/dounreay))
- International Nuclear Services Ltd ([www.innuserv.com](http://www.innuserv.com))
- Radioactive Waste Management Ltd ([www.gov.uk/government/organisations/radioactive-waste-management](http://www.gov.uk/government/organisations/radioactive-waste-management))
- Direct Rail Services Ltd ([www.directrailservices.com](http://www.directrailservices.com))
- URENCO Ltd ([www.urenco.com](http://www.urenco.com))
- Springfields Fuels Ltd ([www.westinghousenuclear.com](http://www.westinghousenuclear.com))

## Useful documentation

- NDA Strategy - March 2021  
[www.gov.uk/government/consultations/nuclear-decommissioning-authority-nda-strategy](http://www.gov.uk/government/consultations/nuclear-decommissioning-authority-nda-strategy)
- NDA Strategy - March 2016  
[www.gov.uk/government/consultations/nuclear-decommissioning-authority-draft-strategy](http://www.gov.uk/government/consultations/nuclear-decommissioning-authority-draft-strategy)
- NDA Annual Report and Accounts 2019-20  
[www.gov.uk/government/publications/nuclear-decommissioning-authority-annual-report-and-accounts-2019-to-2020](http://www.gov.uk/government/publications/nuclear-decommissioning-authority-annual-report-and-accounts-2019-to-2020)
- NDA Mission Progress Report (July 2019)  
[www.gov.uk/government/publications/nuclear-decommissioning-authority-mission-progress-report](http://www.gov.uk/government/publications/nuclear-decommissioning-authority-mission-progress-report)
- Mid-Year Performance Report 2020-2021  
[www.gov.uk/government/publications/nda-mid-year-performance-report-2020-to-2021](http://www.gov.uk/government/publications/nda-mid-year-performance-report-2020-to-2021)
- NDA Group Equality Diversity and Inclusion Strategy 2018-2022  
[www.gov.uk/government/publications/nda-group-equality-diversity-and-inclusion-strategy-2018-to-2022](http://www.gov.uk/government/publications/nda-group-equality-diversity-and-inclusion-strategy-2018-to-2022)
- NDA gender pay gap data 2019  
[www.gov.uk/government/publications/nda-gender-pay-gap-report-and-data-2019](http://www.gov.uk/government/publications/nda-gender-pay-gap-report-and-data-2019)
- NDA Direct Research Portfolio (DRP) Projects 2019/20: Quarter two update  
[www.gov.uk/government/publications/nda-direct-research-portfolio-drp-projects-quarterly-update](http://www.gov.uk/government/publications/nda-direct-research-portfolio-drp-projects-quarterly-update)
- NDA 5-year research and development plan 2019 to 2024  
[www.gov.uk/government/publications/nda-5-year-research-and-development-plan-2019-to-2024](http://www.gov.uk/government/publications/nda-5-year-research-and-development-plan-2019-to-2024)
- NDA SME Action Plan 2019 to 2022  
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- NDA Socio-Economic Report 2020 -2021  
[www.gov.uk/government/publications/nda-xxxxxxx](http://www.gov.uk/government/publications/nda-xxxxxxx)
- NDA local social and economic impact strategy 2020 update  
[www.gov.uk/government/consultations/nda-local-economic-and-social-impact-strategy-2020-to-2026-draft-for-consultation](http://www.gov.uk/government/consultations/nda-local-economic-and-social-impact-strategy-2020-to-2026-draft-for-consultation)

# Glossary

<b>AGR</b>	Advanced Gas-Cooled Reactor
<b>BEIS</b>	Department for Business, Energy and Industrial Strategy
<b>CAPEX</b>	capital expenditure
<b>DFR</b>	Dounreay Fast Reactor
<b>DRS</b>	Direct Rail Services Ltd
<b>DSRL</b>	Dounreay Site Restoration Ltd
<b>EDFE</b>	EDF Energy
<b>ED&amp;I</b>	Equality, Diversity and Inclusion
<b>FGMSP</b>	First Generation Magnox Storage Pond
<b>FHP</b>	Fuel Handling Plant
<b>GDF</b>	Geological Disposal Facility
<b>HAL</b>	Highly Active Liquor
<b>ILW</b>	Intermediate Level Waste
<b>INS</b>	International Nuclear Services Ltd
<b>LETP</b>	Liquid Effluent Treatment Plant
<b>LLW</b>	Low Level Waste
<b>LLWR</b>	Low Level Waste Repository
<b>MOD</b>	Ministry of Defence
<b>MOX</b>	Mixed Oxide Fuel
<b>MSSS</b>	Magnox Swarf Storage Silo
<b>NDA</b>	Nuclear Decommissioning Authority
<b>NDAPLC</b>	NDA Properties Ltd
<b>POCO</b>	Post Operational Clean Out
<b>PFR</b>	Prototype Fast Reactor
<b>PFSP</b>	Pile Fuel Storage Pond
<b>PPP</b>	Programme and Project Partner
<b>RD&amp;I</b>	Research, Development and Innovation
<b>RWM</b>	Radioactive Waste Management Ltd
<b>SGHWR</b>	Steam Generating Heavy Water Reactor
<b>SLC</b>	Site Licence Company
<b>SME</b>	Small and Medium Enterprise
<b>THORP</b>	Thermal Oxide Reprocessing Plant
<b>UKGI</b>	UK Government Investments







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