The NDA group
Strategy

Effective from March 2026

Integrated Impact Assessment Report
Non Technical Summary

Glossary

AGR	Advanced Gas-Cooled Reactor
C&M	Care and Maintenance
DNO	Defence Nuclear Organisation
EA	Environment Agency
EDF	EDF Energy
EIA	Environmental Impact Assessment
EU	European Union
GDF	Geological Disposal Facility
GVA	Gross Value Added
ha	Hectare
HIA	Health Impact Assessment
IAEA	International Atomic Energy Agency
IIA	Integrated Impact Assessment
ILW	Intermediate Level Waste
LLW	Low Level Waste
LLWR	Low Level Waste Repository Ltd
MOD	Ministry of Defence
NDA	Nuclear Decommissioning Authority
NO_x	Nitrogen oxide
NSD	Near Surface Disposal
NTS	Nuclear Transport Solutions
NWS	Nuclear Waste Services
ONR	Office for Nuclear Regulation
PM	Particulate Matter
RIFE	Radioactivity in Food and the Environment
SDR	Site Decommissioning and Remediation
SEA	Strategic Environmental Assessment
SeIA	Socio-Economic Impact Assessment
SEPA	Scottish Environment Protection Agency
SLC	Site Licence Company
UK	United Kingdom

Contents

1. Introduction

Under the Energy Act 2004 [1], the Nuclear Decommissioning Authority (NDA) is required to publish a Strategy setting out its strategic direction for activities across its estate. The Integrated Impact Assessment (IIA) accompanies the NDA group Strategy (2026) document (the Strategy) [2], as required by the European Union's (EU)'s Strategic Environmental Assessment (SEA) Directive and transposing UK SEA Regulations.

The IIA comprises an SEA, a Health Impact Assessment (HIA) and a Socio-economic Impact Assessment (SeIA). Assessment of health and socio-economics is not a statutory requirement, but an HIA is recommended within the SEA Directive, and a SeIA demonstrates good practice.

This Non-Technical Summary summarises the findings of the IIA of the NDA group Strategy 5 (2026) [2]. These findings provide potential significant environmental, socio-economic and health impacts of the Strategy.

1.1 Objectives of the IIA

In order to guide the approach taken for conducting the IIA, two key objectives have been identified:

- To robustly and transparently assess the potential environmental, health and socio-economic effects of strategic options set out in the Strategy; and
- Where appropriate, inform development of strategy and provide a suitable methodology for future assessment work.

1.2 IIA report structure

The IIA report is split into three volumes:

- Volume 1: consists of an introduction, a summary of the NDA group Strategy (2026) [2] and associated credible options, a summary of baseline conditions, the approach to assessment and methodology, a summary of the results of the assessment, the measures identified to mitigate possible risks and enhance possible opportunities, and conclusions.
- Volume 2: provides the results of the assessment of the credible options.
- Volume 3: consists of baseline conditions and a review of policy and legislation.

1.3 NDA Estate

The NDA is a non-departmental public body established under the Energy Act 2004 [1]. The NDA mission is to deliver safe, sustainable and publicly acceptable solutions to the challenge of nuclear clean-up and waste management.

The NDA has responsibility to oversee the clean-up and decommissioning of 17 of the UK's civil public sector nuclear sites, shown in Figure 1. These range from Sellafield, a complex operational site, to previously operational nuclear power stations and nuclear research facilities.

Figure 1 Locations of NDA sites in the UK

2. NDA Group Strategy

The NDA group Strategy (2026) [2] identifies and selects a path which balances safety, cost and security with achieving benefits for the environment and society. The four Strategic Themes of the strategy are Site Decommissioning and Remediation, Spent Fuel, Nuclear Materials and Integrated Waste Management. The driving themes are supported by Critical Enablers, who cover other aspects of the NDA's activities, such as transport, environment, people and health, safety and wellbeing which support the delivery of the NDA mission.

2.1 Site Decommissioning and Remediation

The NDA recognises site decommissioning and remediation (SDR) as its primary focus and driving theme, and all other strategic themes support or enable its delivery.

2.1.1 Safe Stewardship

The NDA's strategy acknowledges that it cannot deliver decommissioning and remediation without first having in place the appropriate infrastructure and arrangements for the management of the NDA estate. The NDA owns the majority of land and is responsible for ensuring the through-life stewardship and safe management of those liabilities.

The following have been outlined as credible options for Safe Stewardship:

- Utilise existing assets to manage and maintain the estate
- Develop / construct new assets to manage and maintain the estate

2.1.2 Decommissioning

Decommissioning is defined in government policy [3] as those actions that would result in the release of a facility from regulatory control. In practice these actions include decontamination, dismantling, demolition and remediation. The NDA's preferred strategy is for decommissioning to be undertaken as soon as possible. However, the updated Strategy (2026) [2] recognises that there are clear benefits to slowing or deferring decommissioning, and that the benefits and disbenefits of credible options must be considered in line with the UK policy framework for managing radioactive substances and nuclear decommissioning strategies [3] and the NDA Value Framework [4].

The following have been outlined as credible options for decommissioning of NDA sites:

- Immediate dismantling – either accelerated, parallel or sequential
- Deferred dismantling – minimal interventions during Care and Maintenance (C&M)
- Deferred dismantling – planned interventions during C&M
- Combined strategy including interim state(s)

2.1.3 Site End States

The NDA owns significant quantities of land (circa 5,000 hectares [ha]), of which around one quarter is designated, i.e. land that has been assigned by the UK government for decommissioning and remediation. The site end state describes the condition which the site will take at the end of the decommissioning and remediation process. What end state is appropriate will be determined on a site-by-site basis.

The following have been outlines as credible options for Site End States:

- Leave the hazard where it is and restrict or manage land use
- Make land suitable for next planned use
- Remove the hazard completely so that the risk does not need to be controlled

2.1.4 Operational Estate Use

Operational Estate Use is the NDA's approach to ensuring the best use of land and assets during the delivery of its mission, as well as once its mission is complete. Options for credible uses will be made on a site-by-site basis and will explore all opportunities to achieve the best use of NDA land and assets, whether that is reuse by the NDA or by others.

The following have been outlined as credible options for Operational Estate Use:

- Retain land as an NDA asset or liability
- Divest the land (leasehold) for social, environmental or economic benefit
- Divest the land (freehold) for social, environmental or economic benefit

2.2 Spent Fuel

The Strategy aims to ensure the safe, secure and cost-effective lifecycle management of the NDA's spent fuels. The inventory of spent fuels consists of large quantities of oxide fuels, along with smaller quantities of Magnox fuel and diverse non-standard fuel types that are referred to as exotic fuels. Reprocessing operations ceased in the UK in July 2022 and UK Government policy has changed to reflect this, stating that the decisions regarding if or when to reprocess spent fuel rests with the spent fuel's owner [3].

2.2.1 Consolidation

The current baseline is for NDA to consolidate all spent fuels that they are contracted to manage at Sellafield. This approach also enables NDA to optimise the use of suitable facilities, skills and capability already in existence at Sellafield to treat and manage spent fuels.

The following have been outlined as credible options for consolidation of spent fuel:

- Only consolidate AGR spent fuel at Sellafield and store spent fuel from Dounreay at Dounreay until a disposition option becomes available
- Stop all consolidation activities and leave spent fuels on reactor sites until a disposition option becomes available

2.2.2 Interim Storage

The Strategy for interim storage is to store and manage spent fuel inventories in a way that does not foreclose future options, maintaining their condition in line with regulatory requirements until the packaging and treatment options for a Geological Disposal Facility (GDF) are fully underpinned. The current strategy for interim storage of spent fuels is that existing assets are used where they are appropriate.

The following have been outlined as credible options for interim of spent fuel:

- Treat and package all spent fuels now ready for disposal in a GDF, including drying spent oxide fuels and storing in disposal containers
- Minimise new storage solutions and use existing packages and facilities for all fuels

2.2.3 Disposition

The NDA's strategy is to provide safe and secure life-cycle management of spent fuels through storage and then disposal. The current strategy for disposition is to store spent fuels pending a decision to declare them as waste for disposal in a GDF. The NDA continue to manage spent fuels as potential assets.

The following have been outlined as credible options for disposition:

- Declare all fuels as waste today
- Store fuels indefinitely

2.3 Nuclear Materials

The NDA owns large quantities of civil uranium and plutonium from nuclear fuel enrichment, fabrication and reprocessing. These nuclear materials have a wide range of properties. Managing nuclear materials is essential to enable decommissioning of NDA sites. The focus of the Strategy is to support Site Licence Companies (SLCs) to safely and securely store nuclear materials in line with regulatory requirements in accordance with UK government policy and international good practice. The priority for the UK government is to put nuclear material beyond reach.

2.3.1 Plutonium

All the NDAs plutonium inventory is stored at the Sellafield site. Plutonium is highly radioactive, chemotoxic and fissile, requiring specialised skills and facilities for handling. It is managed strictly in accordance with the UK's voluntary International Safeguards agreements with the International Atomic Energy Agency (IAEA) and the Office for Nuclear Regulation (ONR) safeguards requirements. Building facilities to make fuel to enable use in a third-party reactor prior to storage and disposal to a GDF is no longer considered a credible option [5].

The following has been outlined as a credible option for the NDA's plutonium inventory:

- Build facilities to condition and treat plutonium prior to storage and disposal to a GDF

2.3.2 Uranium

The NDA's strategy is to continue safe and secure storage of the uranium inventory, to support its reuse where cost-effective and to ensure its final disposition. The two main types of uranium considered in this assessment, which are owned and strategically managed by the NDA, are Depleted Uranium Hexafluoride and Magnox Depleted Uranium, a product of spent fuel reprocessing.

The NDA's uranium stocks are currently held as a nil value asset pending reuse or development and implementation of disposition options. The NDA continues to develop disposition options for uranium, for sale and reuse or disposal as waste. The NDA is factoring in the possible inclusion of uranium into the design and development of a GDF.

The following have been outlined as credible options for the NDA's uranium inventory:

- Continued safe and secure storage pending sale for reuse, where economically and/or technically practicable
- Continued safe and secure storage pending disposal
- Continued safe and secure storage pending conditioning to an appropriate form for disposal

2.4 Integrated Waste Management

The management of radioactive waste is a lifecycle from, planning and preparation through retrieval, treatment and packaging, storage, and finally disposal. The NDA is employing a systems approach to waste management, looking at the overall capability of the NDA's waste management system rather than for individual projects and sites. The Waste Hierarchy continues to be an important part of the strategy, through the prevention and minimisation of waste from existing and new facilities.

2.4.1 Treatment, Packaging and Storage

The current baseline involves treatment, packaging and storage at currently open facilities.

The following have been outlined as credible options for treatment, packaging and storage of waste:

- Treatment, packaging and storage at local (on or near site) facilities
- Treatment, packaging and storage at regional facilities
- Treatment, packaging and storage at national facilities

2.4.2 Disposal

The current baseline is for the disposal of waste to currently open appropriate facilities, such as the Low-Level Waste Repository (LLWR). It is recognised that there are significant

constraints associated with the disposal of radioactive waste at LLWR. Therefore, the NDA is investigating alternative capabilities for the disposal of all radioactive waste that does not require disposal in a GDF.

The following have been outlined as credible options for the disposal of waste:

- On-site or in situ disposal at additional sites
- Disposal to Near Surface Disposal (NSD) at LLWR subject to permitting and planning
- Disposal to GDF subject to ongoing consultation and investigation

2.5 Critical Enablers

Critical Enablers undertake the important activities needed to support the delivery of the NDA mission. The Critical Enabler strategies do not themselves comprise options that can be assessed from an environment, health or socio-economic perspective, except for Transport. Several Critical Enablers relate directly to the impact assessment topics (for example, Environment, People) and their corresponding strategies can be considered as supporting means to enhance benefits or mitigate negative effects of the Strategy.

2.5.1 Transport

The strategy of the transport critical enabler is to ensure the effective, safe and secure transportation of materials to enable the successful delivery of the NDA mission. NTS is recognised as the NDA Group's expert in transporting radioactive and nuclear materials.

The increased use of rail transportation is a desirable and preferred option to reduce the impacts associated with the distribution of materials, such as construction products and soil from NDA sites. The NDA also intends to support the UK Government's efforts in transporting radioactive and nuclear materials by developing a new National Focal Point for nuclear transport.

3. Topics

The topics included in this IIA take into consideration the baseline conditions and activities that take place at NDA sites. Taking into account previous IIA's and in discussion with the NDA, health and well-being determinants have been identified and, where appropriate, combined to form five topics, against which the potential beneficial and adverse health effects of the Strategy have been assessed.

Sustainability is not included as a topic in the assessment but is now regarded as an overarching subject/strategic principle and is hardwired into the assessment rather than assessed as a singular topic.

The environmental, health and socio-economic topics are outlined below in Tables 1, 2 and 3, respectively.

Table 1 Environmental Topics

Topic	Overview	Relevance to the Strategy
Air Quality	Air quality is defined as the condition of the air with respect to the presence (or absence) of pollutants.	Emissions from plant and machinery used in nuclear decommissioning and operational activities can contain a number of pollutants.
Biodiversity	Biodiversity is defined as 'The variability among living organisms from all sources including, inter alia, terrestrial, marine and other aquatic ecosystems and the ecological complexes of which they are part; this includes diversity within species, between species and of ecosystems' [6].	The Environment Act 2021 [7] sets out how UK government will protect and enhance the environment for future generations. The Act introduces a mandatory requirement for biodiversity net gain in the planning system.
Climate Change	Climate change is one of the key challenges facing the UK and the world today and refers to long-term shifts in temperatures and weather patterns [8].	The UK Climate Risk Assessment (2022) [9] sets out the priority risk areas requiring further action in the UK over the next 5 years.
Coastal Change and Flood Risk	Coastal change refers to changes which may affect the coastal environment, including coastal waters and shores. Flood risk is a combination of the probability and the potential consequences of flooding from all sources.	Coastal change and flood risk is a relevant topic to the Strategy because 13 out of 17 NDA sites are situated directly on the coast, and an additional two are situated on low-lying land near the coast.

Cultural Heritage	Assessment of cultural heritage generally considers potential impacts under three sub-topics: archaeological remains; historic aesthetic appeal or structures not usually thought of as buildings; and historic landscape.	Historic features or archaeological remains may be affected by activities across the NDA's estate. Some buildings on NDA sites are valued as cultural heritage as a result of their iconic design or appearance, such as the Dounreay Fast Reactor 'golf ball'.
Geology and Soils	This topic considers potential effects of the Strategy on soil resources and quality (including contamination and the potential for activities to disturb historical contamination). The potential for effects on protected or important geological features such as designated geological sites has also been considered.	Soils may be used, damaged or removed during construction and decommissioning activities. The quality of land (including agricultural) at, and in proximity to, the NDA sites may also be influenced by the implementation of specific techniques to reduce or remove contamination.
Landscape and Visual Impacts	The landscape takes its character from a combination of elements, including topography, watercourses, land use and pattern, vegetation, public open space and cultural heritage features. Landscapes vary considerably in character and quality and are often considered a key component of the distinctiveness of any local area or region.	Many sites within the NDA estate are in a rural setting and as such tranquillity and remoteness are valued in these areas. The majority of the sites comprising the NDA estate are large and industrial, containing multiple facilities and structures which may impact the local landscape.
Materials and Waste	Wastes are substances or objects which are disposed of, are intended to be disposed of, or are required to be disposed of by the provisions of national law. Radioactive waste is any waste that contains radioactive material above certain low levels of radioactivity defined in legislation.	The NDA group Strategy (2026) [2] covers the management of radioactive materials and wastes. Across the NDA estate, large quantities of radioactive and non-radioactive materials and wastes are generated, stored, treated and where appropriate disposed of. Materials are used in the construction of new facilities or maintenance of existing facilities.
Noise and Vibration	Noise in its widest sense can be defined as 'unwanted sound'. It can come from industrial, agricultural, domestic, transportation or natural sources, and if experienced at high levels, may cause disturbance to people and wildlife.	Many of the activities undertaken at NDA sites have the potential to generate noise and vibration.

Radiological Emissions and Discharges	During the course of a nuclear site's operation and decommissioning, emissions and discharges of radioactivity may be released into the environment. These are controlled in accordance with legislation.	The potential for changes in radioactive emissions and discharges is considered in strategic assessment and decision-making.
Water Resources and Quality	The water environment provides a number of vital functions to support communities. From providing drinking supplies to serving as recreational facilities, water bodies of all types are fundamental for maintaining a healthy and active population.	Maintaining water resources and quality, including minimising pollution and abstraction, is a key consideration for the Strategy. Abstractions from surface and ground water, and discharges to the water environment are generally an ongoing occurrence at nuclear sites.

Table 2 Health Topics

Topic	Overview	Relevance to the Strategy
General Health	The definition of health given by the World Health Organization is a state of complete physical, mental and social well-being and not merely the absence of disease or infirmity [10].	As the NDA group Strategy may result in activities which can effect on physical, mental and social well-being there is potential for this to lead to a change in the perceived general health of the local population.
Life Expectancy	Life expectancy at birth is the average lifespan a newborn can be expected to live, assuming that age-specific mortality levels remain constant [10]. Life expectancy at birth is one of the most frequently used health status indicators.	Gains in life expectancy at birth can be attributed to several factors, including rising living standards, improved lifestyle and better education, as well as greater access to quality health services. These all have the potential to be influenced positively and negatively by the NDA group Strategy.
Mental Health	Mental health is a state of mental well-being that enables people to cope with the stresses of life, realize their abilities, learn well and work well, and contribute to their community.	The NDA group Strategy has the potential to affect the mental health and well-being of the local population in a number of ways, e.g. increased pollution, rapid

		demographic change, loss or changes to recreational facilities, employment opportunities etc.
Radioactivity	All people are exposed to a low level of radiation in everyday life, due to natural levels of radioactivity in the environment around us, particularly rocks and soils. Some radioactive particles also reach Earth from outer space.	Current radioactive discharges from the nuclear industry and waste management facilities are well below control limits. Strategic options contained in the Strategy may influence discharges within these limits, and there may be variation in terms of the risk associated with hazards, and the nature of intervention, if any, required to maintain safety.
Respiratory Disease	Incidences of respiratory disease are strongly linked to air quality. Of the pollutants considered under air quality, concentrations of Particulate Matter (PM) and nitrogen oxides (NO_x) are a primary concern from a health perspective.	As the NDA group Strategy may result in activities which can affect air quality, including construction, operation, decommissioning works and traffic, there is potential for this to lead to a change in the risk of respiratory conditions amongst the local population.

Table 3 Socio-economic Topics

Topic	Overview	Relevance to the Strategy
Diversity	Diversity can be defined as the range of human differences, including (but not limited to) differences in race, gender, religion, and age. In the UK the Equality Act [11] legally protects people from discrimination in the workplace and in wider society.	NDA group Strategy recognises the necessity of attracting and retaining talented and committed individuals from across society. Due to the importance of NDA sites as a source of employment in their local communities the Strategy may have impacts on the diversity of these areas.

Employment	The creation and maintenance of employment opportunities can help to reduce poverty and facilitate sustainable economic and social development in communities. Job-creation is considered a core element in national strategies relating to growth, poverty and social equality.	The strategic options contained the NDA group Strategy may differ in terms of the employment opportunities they provide. Some options may result in losses or changes in employment that need to be factored into decision-making and require appropriate mitigation.
Economy	The Economy topic is more specifically defined as a consideration of the potential for the Strategy to deliver gross value added (GVA). GVA is an economic productivity metric that measures the contribution of a company to an economy or region and is considered to be an important measurement of the contribution of strategic options to the national economy.	The options contained in the Strategy may vary in their different potential for creating economic opportunities. It is important that this is factored into strategic decision-making.
Local and National Assets	Local assets are defined within this assessment as infrastructure designed to meet the needs of the local community at a local or regional level. This includes health and community facilities, emergency services and transport infrastructure which enables accessibility and connectivity.	The NDA group Strategy and the strategic options identified in it may have the potential to result in changes to local and national assets. This could involve development of new assets, maintenance of current assets or loss of existing assets.
Population	Population is defined for the purpose of this assessment as all the inhabitants of the areas local to NDA sites. Socio-economic factors that can affect the population of an area include factors such as income, education, employment, community safety and social support.	The listed socio-economic factors can be influenced or affected by the NDA group Strategy.

4. Summary of Baseline Conditions

To inform the assessment, information was collected on the baseline environmental, health and socio-economic conditions for the UK, the devolved administrations and, where possible, for each of the NDA sites. A summary of these conditions are presented in Table 4, Table 5 and Table 6, respectively. This information covers both existing conditions and future conditions that would be likely to evolve assuming there are no further changes to the NDA group Strategy. Full results of this exercise are presented in Volume 3 of the IIA Report, which includes a description of the 17 sites comprising the NDA estate.

4.1 Environmental

Table 4 Summary of Environmental Baseline Conditions

Topic	Overview
Air Quality	The air quality baseline showed that the UK background concentrations for air pollutants were compliant with authorised limits. Radioactive discharges to air from all NDA sites were below legal limits in 2023.
Biodiversity	The UK's biodiversity indicators were assessed in 2024 and demonstrated a short term improvement in 25% of indicators, and a long term improvement trend in 40% of indicators.
Climate Change	The 2022 UK Greenhouse Gas Emissions demonstrate a 3.5% decrease in net territorial greenhouse gas emissions, in comparison to 2021.
Coastal Change	8 of the sites are in coastal areas, and a further 2 are situated on rivers that are highly tidal. This makes the sites more vulnerable to changes in the coastal environment, further impacted by climate change.
Flood Risk	As impacts from flooding are likely to increase as a result of climate change, it is broadly assumed that sites currently at risk of flooding will remain at risk throughout the Strategy period in the absence of intervention.
Cultural Heritage	Many NDA sites are surrounded by a number of graded buildings and/or monument(s).
Landscape and Visual Impacts	Many NDA sites are important features within their local areas and are widely visible.
Geology	A detailed site-specific breakdown of agricultural land classifications, soil type, and geology, can be viewed in Volume 3.
Soils	A detailed site-specific breakdown of agricultural land classifications, soil type, and geology, can be viewed in Volume 3.
Materials and Waste	Within the NDA estate, Sellafield generated the highest volume of non-radiological waste and reused approximately 97%. Nuclear Waste Services (NWS) generated the least and recycled approximately 80%.
Noise and Vibration	*No baseline information available for this topic, but it has been included as a topic in the assessment.*

Radiological Emissions and Discharges	Baseline information has been reported in other baseline topics, such as Air Quality, Water Resources and Quality, and Health.
Water Resources and Quality	A detailed site-specific breakdown of water resources and quality, can be viewed in Volume 3.

4.2 Health

Table 5 Summary of Health Baseline Conditions

Topic	Overview
General Health	Surveys stated that 45.1% of respondents from England, 44.5% of respondents from Wales, and 30% of respondents from Scotland reported their general health as 'very good'.
Health and Circulatory Disease	Death rates from all heart and circulatory diseases (per 100,000 people) have decreased by 48% in England, 42% in Scotland, and 48% in Wales, between 2001 and 2022.
Cancer	A detailed site-specific breakdown of cancer incidences can be viewed in Volume 3.
Life Expectancy	England's life expectancy at birth in 2021-2023 was estimated to be 81.08 years. For Scotland, this is 78.78 years, and for Wales, this is 80.01 years.
Mental Health	In England, an estimated 3.58 million people interacted with NHS-funded secondary mental health, learning disability and autism services during 2022-2023. Scotland and Wales utilised the Warwick-Edinburgh Mental-Wellbeing scale (WEMWBS). Scotland reported a mean WEMWBS score of 48.9 in 2023, and Wales scored 48.2.
Radioactivity	In 2023, England's highest exposure was 23% of the legal limit, Scotland's highest was 2% of the legal limit, and Wales's highest was 3% of the legal limit.

4.3 Socio-economic

Table 6 Summary of Socio-Economic Baseline Conditions

Topic	Overview
Diversity	A detailed breakdown of diversity within NDA Group can be viewed in Volume 3.
Population	The 2023 estimated population for England is 57,690,323, Scotland is 5,490,100, and Wales is 3,164,404.
Current Workforce in Nuclear	In 2024, 86,908 people were employed in the nuclear industry, which is an increase of 11% from 2023.

Dominant Occupation	A detailed site-specific breakdown of dominant occupations in the UK can be viewed in Volume 3.
Business Demography	A detailed site-specific breakdown of business demography in the UK can be viewed in Volume 3.
Indices of Multiple Deprivation	A detailed site-specific breakdown of indices of multiple deprivation can be viewed in Volume 3.

4.4 Legislative and policy baseline

Changes to the legislative context relevant to the NDA group Strategy have occurred mainly at a national and local government level within the UK since the previous strategy in 2021. An evaluation undertaken by the EU of the SEA Directive determined that it remains fit for purpose in its current guise.

Changes to the relevant legislative context include:

- The Oslo and Paris Conventions (OSPAR) North-East Atlantic Environment Strategy [45] was adopted on 1 October 2021, extending the targets of the previous incarnations.
- The UK ceased to be a member of the EU on 31st January 2020. The EU requested that the UK keep in step with EU environmental standards post-Brexit. This idea was rejected by the UK and replaced with provisions to maintain a level playing field. The level playing field is dealt with in the UK/EU Trade and Cooperation Agreement (TCA) [46].
- Structural changes to local government in England took place between 2019 and 2023. Some of these changes saw new unitary authorities being created from other types of local government districts. Sellafield, LLWR, Dungeness A and Hinkley Point A sites now sit within new or renamed local authorities.
- In May 2024, the UK Government issued the 'UK policy framework for managing radioactive substances and nuclear decommissioning' [3] with a purpose to provide a coherent UK-wide policy framework for managing radioactive substances and nuclear decommissioning.
- In January 2025, the UK Government released a statement regarding the policy decision to immobilise the UK's inventory of civil separated plutonium at Sellafield [5].

5. Summary of Methodology

The methodology of the assessment has been reviewed and will remain the same as that in the 2021 IIA [47] to allow for consistency across the implementation of the strategies.

The following assessment methodology was carried out in the 2021 IIA [47] and has been applied in the 2026 IIA. The wording has been updated to balance the potential for both positive and negative effects.

1. Identify the risks of adverse or opportunities for beneficial effects of the credible options identified in the Strategy, and how they might occur.
2. Identify any existing legislative requirements and forms of mitigation which may already address the risks.
3. Where the risk of or opportunity for an effect remains, assess the potential significance (based on the magnitude of the effect and the sensitivity of receptors), where possible considering uncertainties and factors which may cause the significance to vary.
4. Recommend further mitigation and enhancement measures.
5. Recommend monitoring and response mechanisms.

5.1 Impact Significance

The potential significance of impact on each of the topics was determined in accordance with Figure 2 below.

Figure 2 Impact Significance Matrix

Magnitude of Impact		Sensitivity of Receptor / Indicator					
		Low		Medium		High	
	High	Moderate		Major		Major	
		+ +	– –	+ + +	– – –	+ + +	– – –
	Medium	Minor		Moderate		Major	
		+	–	+ +	– –	+ + +	– – –
	Low	Minor		Minor		Moderate	
		+	–	+	–	+ +	– –

5.2 Generic Activities

We undertook the above methodology on four generic activities that are applicable to the credible options to remove repetition from the assessment. The four generic activities are:

- Land – either acquired or released as short term (ST) or long term (LT) activities

- Construction
- Maintenance
- Transport of NDA assets or liabilities – either increasing or decreasing

Where a credible option may require additional activities, the impacts of these are also discussed.

5.3 Geographic Scope

The assessment covers the UK, as the 17 sites which comprise the NDA estate are spread across England, Scotland and Wales. There are no NDA sites located in Northern Ireland. As this assessment is undertaken at a strategic level, Northern Ireland is not considered to be within the Zone of Influence (ZOI) at the time of this report.

As well as the 17 sites, non-nuclear liabilities are included, for example the Advanced Gas-Cooled Reactor (AGR) at Hunterston B, as well as other sites that may be transferred during the timescale (temporal scope) covered by Strategy 5.

5.4 Temporal Scope

The temporal scope of the assessment reflects the period of time for which the Strategy applies. The 2026 IIA assumes that the NDA group Strategy will be in operation until the final site in the NDA estate achieves its stated End State, the current target of which is 2135. However, it is also assumed that the Strategy will be reviewed and updated on a 5-year cycle within this period.

5.5 Response to Scoping Consultation

The IIA of NDA Strategy (2021) has been reviewed and updated to reflect Strategy 2026. As the IIA was updated rather than produced as a new document, a scoping workshop was not held. Instead, a scoping report was produced summarising the planned changes to the IIA and circulated to representatives of Statutory Consultees. Review comments were collated and addressed in the updates made to the IIA.

6. Summary of Assessment

This chapter presents a summary of the findings of the IIA. Full assessment results are presented in Volume 2 of the IIA. . Detailed assessments have been carried out for the following generic activities.

6.1Site Decommissioning and Remediation (SDR)

6.1.1 Safe Stewardship

6.1.1.1 Utilise existing assets to manage and maintain the estate

Utilising existing assets to manage and maintain the estate may only be suitable in certain situations. Where considered appropriate, existing assets would be used to manage risk, with controls in place to ensure the risks do not increase.

6.1.1.2 Develop / construct new assets to manage and maintain the estate

Developing and constructing new assets to manage and maintain aspects of the estate may be appropriate where it is not possible to utilise existing assets. As such there would be both potential opportunities and risks associated with land increase and construction in the short term, as well as additional operation and maintenance in the long term.

6.1.2 Decommissioning

6.1.2.1 Immediate dismantling – either accelerated, parallel or sequential

It is considered likely that immediate dismantling will pose the greatest risk of impact through its requirements for land to be increased in the short term and in the construction of waste management and storage facilities to enable decommissioning. Opportunities will also be provided associated with the release of NDA land in the long term.

6.1.2.2 Deferred dismantling – Minimal interventions during C&M

In certain cases, deferring dismantling can provide an opportunity to allow natural decay, which reduces the radiological risk to the public and the environment, and may reduce the level of physical activity required to clean up a site or facility. If there are short-lived radionuclides, then deferred dismantling may reduce the waste management burden, with potential knock-on implications in terms of reduced transport.

6.1.2.3 Deferred dismantling – Planned interventions during C&M

This option assumes a significant maintenance programme of work being required during the deferral period itself offset by much less work being required during the preparatory phase [48]. During this option, there may be periods with no active dismantling, in which programmes are implemented to ensure that the required level of safety and asset management is maintained. Deferred dismantling may apply only to particular buildings or structures in a facility or at a site, whilst everything else around it is cleared without interruption.

6.1.2.4 Combined strategy including interim state(s)

Any preferred strategy for a site will be case-specific and will consider the advantages and disadvantages of credible options in line with the code of practice for the selection of decommissioning strategies [48] and the NDA Value Framework [4]. It may be that some sites require a combination of strategies, starting with a pause at an interim state to consider and review performance, with a judgement made at that time to either change the timing of dismantling or to accelerate or slow down the rate of progress.

6.1.3 Site end-states

6.1.3.1 Leave the hazard where it is and restrict or manage land use

The option of leaving the hazard where it is and restricting or managing land use would not involve physical activity to improve the condition of the site, but may involve minimal activity to maintain, stabilise or prevent migration of contamination. For the most part, it would rely on controls (legal or administrative tools or actions such as restrictions on land use, environmental monitoring requirements, and site access and security measures) to manage risks to people and the environment. Such a strategy is only suitable in extreme cases where remediation is very difficult.

6.1.3.2 Make land suitable for new planned use

Where land is made suitable for its next planned use, sites would be remediated only as far as is required to be suitable for their next planned use. Where the next planned use does not need a nuclear site licence, the licence will be surrendered, with any residual radioactive or non-radioactive contamination subject to appropriate permit, planning and institutional controls.

6.1.3.3 Remove the hazard completely so that the risk does not need to be controlled

Removing a hazard completely so that the risk does not need to be controlled would enable sites to be restored to a condition where they can be used for any foreseeable use without the need for additional remediation or management controls. The level of intervention required to achieve this would likely be high.

6.1.4 Operational Estate use

6.1.4.1 Divest the land (leasehold or freehold) for social, environmental or economic benefit

Future site use will be defined by the NDA, UK Government, or a future owner in accordance with local planning regimes and incorporating consultation with stakeholders as appropriate. The aim of all the varying potential uses will be to provide opportunities for positive environmental, social or economic impacts.

6.1.4.2 Retain land as an NDA asset or liability

The alternative to divesting the land for socio-economic or environmental benefit is to either retain the land as an NDA asset or liability, or on behalf of the government as a national asset. Such options would offer reduced opportunities for environmental and socio-economic benefits and would only be preferred in the event that a more suitable use could not be identified.

6.1.4.3 Retain land on behalf of government as a national asset

Retaining land on behalf of the government gives the opportunities for reusing the land to support other government priorities such as national infrastructure projects, and in particular, for nuclear new build. This could include Small Modular Reactors (SMRs) as part of the Great British Nuclear competition.

6.2 Spent Fuel

6.2.1 Consolidation

In recent years, the NDA has been contractually committed to receiving and managing all of the spent fuel arising from the seven currently operating EDF AGR power stations in England and Scotland, and spent fuel from Dounreay, at Sellafield. This strategy of consolidation enables sites to be decommissioned then transferred to the NDA.

6.2.1.1 Only consolidate AGR spent fuels at Sellafield and store spent fuels from Dounreay at Dounreay until a disposition option becomes available

This option would require the spent fuel to be interim stored in newly built facilities at Dounreay pending the long-term aim of treatment and packaging prior to disposal in a GDF. New storage at Dounreay would need to be built in the short- to medium-term, and spent fuel would be moved to these storage facilities when they are available.

6.2.1.2 Stop all consolidation activities and leave spent fuels on reactor sites until a disposition option becomes available

Stopping consolidation activities and leaving spent fuels at reactor sites until such time as a disposition option becomes available is not currently considered a viable option, but circumstances may lead to it becoming one in the future. Stopping consolidation would create a number of issues to consider, such as non-optimal storage conditions at the reactor sites and the difficulty of packaging for GDF created by storing spent fuel on different sites for long time periods.

6.2.2 Interim Storage

6.2.2.1 Treat and package all spent fuels now ready for disposal in a GDF, including drying spent oxide fuels and storing in disposal containers

The treatment, packaging and storage of spent fuels that have not been reprocessed following closure of the reprocessing plants will require significant investment in infrastructure, as such there needs to be considered the impact of constructing new storage compared to using or modifying an existing store.

6.2.2.2 Minimise new storage solutions and use existing packages and facilities for all fuels

Managing the spent fuel inventory through existing storage facilities avoids most of the short, medium and long-term environmental impacts associated with construction, operation and decommissioning of a new facility to store the inventory.

6.2.3 Disposition

The current baseline for disposition is to store spent fuels pending a decision to declare them as waste for disposal in a GDF.

6.2.3.1 Declare all fuels as waste today

A decision by the NDA, the UK government and regulators to declare all spent fuels as waste today will not present any additional risks or opportunities for impact than the current baseline. Regardless of whether spent fuels are classed as waste there is a

continued need for them to be stored appropriately due to the nature of the inventory. The NDA and NWS's current plans for Sellafield are for all spent fuel to ultimately go to a GDF, and spent fuels are included on the planned inventory.

6.2.3.2 Store fuels indefinitely

If fuel were to be stored for an indefinite amount of time, then any storage facility would require ongoing operation and maintenance for that indefinite period. The spent fuel itself would similarly require management indefinitely.

6.3 Nuclear Materials

6.3.1 Uranium

6.3.1.1 Continued safe and secure storage pending sale for reuse, where economically and/or technically practicable

The storage and sale for reuse of uranium could involve using existing stores, or replacements of them. Replacing the stores presents the risk that the land the stores are built on cannot be reused by the local community. The sale of uranium for reuse would ultimately lead to the generation of waste depleted uranium.

6.3.1.2 Continued safe and secure storage pending disposal

The disposal of uranium would involve the construction of new facilities and the generation of materials and waste, which would have environmental impacts.

6.3.1.3 Continued safe and secure storage pending conditioning to an appropriate form for disposal

The continued safe and secure storage of uranium pending conditioning to an appropriate form for disposal may offer opportunities to enhance knowledge and skills in uranium conditioning, which could then be applied to the management of other radioactive materials.

6.3.2 Plutonium

There are two credible options for management of the NDA inventory of civil plutonium, one of which is the continuation of the current baseline of continued safe and secure storage of plutonium, renovating and replacing stores as required.

6.3.2.1 Build facilities to condition and treat plutonium prior to storage and disposal to a GDF

This option considers the most direct path to disposal. There are a number of potential technologies that could be used to condition the material ahead of disposal. Conditioning and treatment would take place at Sellafield. The material would then need to be placed in interim storage pending transfer to a GDF. The potential conditioning technologies would each involve construction of facilities. The extent of construction would likely be a single treatment plant and one or more interim stores.

6.4 Integrated Waste Management

The Strategy for Integrated Waste Management employs a systems approach, looking at the overall capability of the NDA's waste management system rather than for individual projects and sites.

6.4.1 Treatment, Packaging and Storage

6.4.1.1 Treatment, packaging and storage at local (or on near site) facilities

The treatment, packaging and storage of waste at local facilities will involve the construction of new facilities that are on or near to sites where waste continues to be produced. There is the potential for these to be modular in nature, or even mobile.

6.4.1.2 Treatment, packaging and storage at regional facilities

Storage, treatment and storage of waste at regional facilities would involve the construction of a number of regional hubs. These facilities would likely be located at or in close proximity to the site with the highest volume of waste in a particular area.

6.4.1.3 Treatment, packaging and storage at national facilities

Treatment, packaging and storage of waste at national facilities would involve establishing individual facilities at national locations that would serve all NDA sites for specific purposes. The implementation of this credible option would be dependent on the availability of sufficient transport infrastructure.

6.4.2 Disposal

6.4.2.1 On-site or in situ disposal at additional sites

It is recognised that there are significant constraints associated with the disposal of radioactive waste at the LLWR such as the potential risk of coastal erosion of the site. Therefore, to get the full benefits afforded by the updated policy framework for managing

radioactive substances [3], the NDA are investigating alternative capabilities for the disposal of all radioactive waste that does not require disposal in a GDF.

6.4.2.2 Disposal to NSD at LLWR subject to permitting and planning

The new policy framework for managing radioactive substances [3] enables implementation of NSD of less hazardous Intermediate Level Waste (ILW) in England and Wales. The first phase of NSD has been planned at the LLWR in Cumberland though permitting and planning is still required before it can receive less hazardous ILW.

6.4.2.3 Disposal to GDF subject to ongoing consultation and investigation

The strategy for radioactive waste disposal has devolved significantly since the previous IIA (2021) [47] due to the implementation of the new policy framework [3]. The policy continues the implementation of geological disposal for the most hazardous radioactive waste and reaffirms the UK and Welsh Governments' position on implementing geological disposal and their commitment to working in partnership with communities that are willing to participate in the siting process. However, a GDF will be a Nationally Significant Infrastructure Project (NSIP) that will require significant environmental, health and other assessments beyond the scope of this IIA and so has not been assessed.

6.5 Critical Enablers

6.5.1 Transport

The NDA has a commitment to ensuring the effective, safe, and secure transportation of materials. NTS is recognised as the NDA group's expert in transporting radioactive and nuclear materials. Additionally, the NDA aims to minimise the environmental, economic, and social impacts of its transport operations.

The increased use of rail transportation is a desirable and preferred option to reduce the impacts associated with the distribution of materials such as construction products and soil from NDA sites. The NDA also intends to support the UK Government's efforts in transporting radioactive and nuclear materials by developing a new National Focal Point for nuclear transport.

6.6 Cumulative Effects

Cumulative effects have been identified where potentially insignificant impacts occur simultaneously and combine to produce a more significant effect. Cumulative effects of the Strategy are discussed in detail in Volume 2 of the IIA. Two types of cumulative effects were identified, intra-strategy effects and inter-plan effects.

The four driving strategic themes of the Strategy do not operate in isolation at each of the NDA's sites. All four themes interact with one another and the Critical Enablers. The potential effects of implementing the Strategy may therefore be increased or decreased if preferred options under different themes result in development or changes in transport and other infrastructure over similar timescales, or in the same location.

The strategic themes identified as having the highest level of interaction and the greatest likelihood of cumulative effects are Site Decommissioning and Remediation and Integrated Waste Management, and Spent Fuels and Nuclear Materials.

7. Mitigation and Enhancement

In line with requirements of a Strategic Environmental Assessment, potential measures have been identified to mitigate adverse and enhance positive effects that may result from implementing the NDA group Strategy (2026) [2].

7.1 Mitigation

7.1.1 Legislation and Codes of Practice

The NDA are required to comply with a wide range of legislation and codes of practice applied at International, European, National and Local Government level. A common requirement of legislation and codes of practice is for impact assessments and management procedures to be carried out at a site-specific level to mitigate the impact of activities at sites.

7.1.2 NDA group Strategy and plans

In addition to external regulations the activity undertaken by the NDA is governed internally in accordance with its own strategies, plans, programmes and frameworks.

7.2 Enhancement

7.2.1 Environment

There are opportunities for the NDA to offer environmental enhancement through the implementation of the Strategy, including:

- Returning sites that have long been in industrial use to greenfield state (where possible) may promote biodiversity and development of green spaces.
- Sustainably managing nuclear materials and non-radioactive waste may reduce environmental risks associated with NDA sites in the long term.
- Implementing the waste hierarchy to reduce waste generation at NDA sites may reduce the historic environmental footprint of NDA Groups sites.
- Implementing energy efficient and/or low-carbon technologies where new facilities are required, in addition to a preference for rail transport over road, may allow an overall reduction in the NDA's carbon footprint during the timeframe of the strategy.

7.2.2 Health

The presence of the NDA in an area gives the opportunity to enhance the health opportunities of the population. NDA presence may lead to greater investment in the healthcare facilities in the area. The NDA may also have the opportunity to invest in local recreation areas and sports teams, which may lead to improved general and mental health.

7.2.3 Socio-economic

The NDA group has grant giving powers which are administered in collaboration with each SLC [49]. The NDA can offer grants for projects which support the delivery of the strategy in communities where its sites are located. Funding is available for collaboration with universities, innovation hubs, and research organizations to stimulate the development of new, safer, and more cost-effective decommissioning technologies.

Through the Strategy and through close working with partner organisations and communities the NDA can achieve enhancement by:

- Optimal utilisation of socio economic budgets.
- High-quality projects of different types and values.
- Transparency of decision making supported by evidence.
- Demonstrable delivery progress and measurable social impact.
- Evidence of 'adding value' including maximising on 3rd party funding.

8. Monitoring

The SEA Regulations 2004 [50] state that the responsible authority, in this case the NDA, are required to monitor the significant environmental effects of the implementation of each plan or programme. It is necessary to identify unforeseen adverse effects at an early stage in order to undertake appropriate remedial action.

Monitoring of environmental impacts is undertaken by NDA Groups on a site or project specific basis, as shown in Table 7 Monitoring data collected by the NDA.

Table 7 Monitoring data collected by the NDA

Theme/Topic	Reported
Spent Fuel	NDA Mission Reporting
Nuclear Materials	NDA Mission Reporting
Materials and waste	NDA Mission Reporting
Decommissioning & Demolition (including remediation)	NDA Mission Reporting
Land Use	NDA Mission Reporting
Carbon emissions	NDA Sustainability Review [51]
Diversity	NDA Group Inclusion Strategy [40]

Monitoring of a range of IIA related topics and themes is also undertaken by a variety of national bodies covering the UK, England and the devolved administrations of Scotland and Wales, as shown in Table 8.

Table 8 Monitoring data collected by external organisations

Theme/Topic	Monitoring body	Reported
Radiological emissions	EA et al	RIFE Report [13]
Non-radiological emissions	EA, SEPA	EA Pollution Inventory [52], Scottish Pollution Release Inventory [15]
General Health	UK Government, Scottish Government	Office for National Statistics [53], Scotland's Census [54]
Water resources and quality	EA, SEPA, NRW	EA Catchment Data Explorer [29], SEPA Water Classification Hub [30], Data Map Wales [25]
Heart and circulatory disease	British Heart Foundation	Heart and Circulatory Disease Statistics 2024 [32]
Cancer	NHS England, Public Health Scotland, Public Health Wales,	Cancer Registration Statistics 2022 [33], Cancer Incidence Public Health Wales [34], Cancer Incidence in Scotland 2021 Report [35]
Radioactivity (Health)	EA et al	RIFE Report [13]
Life expectancy	UK Government, Scottish Government	Office for National Statistics [53], National Records of Scotland [37]
Mental Health	NHS England, Scottish Government, Welsh Government	NHS Mental Health Bulletin [38], Scottish Health Survey [55], National survey for Wales [39]
Population	UK Government, Scottish Government	Office for National Statistics [53], Scotland's Census [54]

9. Conclusions

This Integrated Impact Assessment, combining a Strategic Environmental Assessment, Health Impact Assessment and Socio-economic Impact Assessment, aims to inform, but not drive, future NDA strategic decision-making. As such, there are a number of general conclusions that can be drawn from the IIA of the NDA group Strategy (2026) [2].

Most significant impacts were in relation to the acquisition of land for the construction, operation and maintenance of new facilities. These generic activities will be required for developing and constructing new assets for the Safe Stewardship (Site Decommissioning and Remediation); all options for the consolidation and interim storage of spent fuels (Spent Fuels); new facilities for plutonium and uranium storage (Nuclear Materials); and additional facilities for the treatment, packaging and storage of waste (Integrated Waste Management).

The adverse impacts of construction can be mitigated by reusing existing facilities and by complying with already existing legislation and best practice. The preferred options for Site Decommissioning and Remediation and Integrated Waste Management strategies are selected on a case-by-case basis. A change in transport requirements associated with the location and number of new facilities could also offset some of the significant impacts because of reduced construction, operation and maintenance activities.

Implementation of a number of the preferred options may put pressure on the existing nuclear skills base. This pressure will be increased if or when aligned to any future demand from the UK's new nuclear build programme. Health risks associated with options are linked to environmental and socio-economic changes. There is the opportunity for the socio-economic impacts associated with closing facilities to be mitigated by transferring staff to alternative facilities or sites, or from the creation of business areas on delicenced land.

There is considerable uncertainty regarding how options will be implemented at a future time and at site level by SLCs. The results of this assessment should therefore be viewed as being indicative of potential trends. The results of this IIA should be used to inform future, more detailed assessments, to help select strategic options, as well as inform future decision-making made by the NDA and the SLCs which operate its sites. Specific impacts upon particular receptors may be more appropriately assessed as part of project-level site specific Environmental Impact Assessments (EIAs).

The cumulative effects of strategic themes of the Strategy were assessed. It is concluded that the two strategic themes with the highest probability for cumulative effects are Site Decommissioning and Remediation and Integrated Waste Management, and that Spent Fuels and Nuclear Materials themes may also interact at certain sites. The timing of implementation of the Defence Nuclear Organisation's (DNO's) Nuclear Liabilities, the New Nuclear Programme and advanced nuclear technologies relative to implementation of the

NDA group Strategy is uncertain, consequently making it difficult to accurately predict potential cumulative effects.

The IIA assessment results will be used as part of the context for future strategic decision-making alongside aspects such as cost, feasibility, security and site-specific factors. The mitigations and potential enhancements identified in the IIA will be considered during future strategy development, and emerging legislation will be taken into account during the next IIA for Strategy 2031. Following public consultation, this IIA Report will be published alongside the NDA group Strategy (2026) [2]. The outcomes of the consultation and its influence on development of the Strategy and the IIA will be documented in an IIA Post-Adoption Statement.

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