Nuclear Decommissioning Authority

Eden Nuclear and Environment

NDA Strategy (2021)

Integrated Impact Assessment Report

Post Adoption Statement

March 2021

Contents

1.0 Introduction

1.1 Background

This document is the Integrated Impact Assessment (IIA) Post Adoption Statement to accompany the NDA Strategy (2021) ('the Strategy'), which has been adopted after taking into account feedback from public consultation.

The NDA has undertaken its third five-year review of its Strategy in accordance with the Energy Act (2004). The first iteration of the Strategy was published in 2006, with the first review cycle completed in 2011 and the second review cycle completed in 2016. This third review cycle commenced during 2019, and a revised draft Strategy was published for public consultation in August 2020. The Strategy has now been finalised, taking into consideration representations made during the public consultation.

The Strategy reviews the NDA's strategic position, establishing and maintaining its strategic direction on activities across the sites which comprise its estate. The strategies that have been selected are implemented by Site Licence Companies (SLCs), which manage the sites on the NDA's behalf and under its strategic guidance.

Whilst the direction of the revised 2021 Strategy is consistent with the Strategy published in 2016, it builds on significant changes which have occurred in the UK's nuclear landscape and across the NDA estate. It is important that the Strategy remains fit for purpose until the next review cycle and beyond.

An IIA for the Strategy has been completed in accordance with requirements of the EU Strategic Environmental Assessment (SEA) Directive and transposing UK SEA Regulations.[1] The NDA also wished to adhere to good practice by conducting a Health Impact Assessment (HIA) and Socio-economic Impact Assessment (SeIA), and the findings of these three assessment strands were reported in the IIA Report issued for public consultation alongside the draft Strategy in August 2020. This IIA was based on a review and update of the IIA for the NDA Strategy (2016), bringing the IIA into alignment with the Strategy and the NDA Business Plan (2020-2023). Underpinning data have been updated and options have been revised and reassessed in line with updates to the Strategy.

1.2 Purpose of this statement

The purpose of this Post Adoption Statement is to document how environmental, health and socio-economic considerations, the views of consultees, and the outcome of the IIA carried out for the Strategy (as presented in the IIA Report) have been taken into account in the adopted Strategy.

This Statement includes the following information in line with requirements set out in the SEA Regulations:

- how environmental, health and socio-economic considerations have been integrated into the Strategy
- how the findings of the IIA Report have been taken into account in the Strategy
- how any opinions expressed in response to the consultation on the draft Strategy and its accompanying IIA have been taken into account in finalising the Strategy for adoption
- the reasons for choosing the Strategy as adopted, in light of other reasonable alternatives dealt with during development of the Strategy; and

[1] SI No. 1633. Environmental Assessment of Plans and Programmes Regulations 2004 (the 'SEA Regulations')

- the measures to be taken to monitor the potentially significant effects of implementing the Strategy.

The IIA Report has been updated since the public consultation and is available in its final form together with the adopted Strategy and this Post Adoption Statement on the NDA's website.

2.0 Environmental, health and socio-economic considerations

2.1 How environmental, health and socio-economic considerations have been integrated

2.1.1 Stakeholder Engagement

Development of the NDA Strategy (2021) involved extensive engagement with stakeholders which began in 2019. This engagement included a number of targeted and focussed strategy groups with a wide range of organisations representing government and devolved administrations, regulators, SLCs and subsidiaries, the broader nuclear industry and the public. These now well-established forums will continue to support strategy development and delivery over the coming years.

Environmental, health and socio-economic considerations were specifically integrated as part of the IIA process. The IIA of Strategy (2016) was reviewed and updated to reflect Strategy (2021). As the IIA was updated rather than produced as a new document, a scoping workshop with stakeholders was not held. Instead, a scoping report was produced summarising the planned changes to the IIA and circulated to representatives of statutory consultees in an informal review process. Meetings were also held with various stakeholders, including statutory consultees, in which the proposed updates were presented and discussed. Review comments were collated and addressed in updates made to the IIA prior to publication for consultation. A summary of the updates made in response to this scoping consultation is given in the IIA Non-Technical Summary.

2.1.2 IIA Findings

The IIA of Strategy (2016) was reviewed and updated to reflect Strategy (2021). Underpinning data and the legislative context review were updated (see Volume 3 of the IIA). The credible options under each of the strategic areas or 'themes' that form the Strategy were also updated, and assessed quantitatively and qualitatively using available information to determine their potentially significant effects across 23 IIA topics. These topics were drawn from those set out in the SEA Regulations and then supplemented with additional topics covering a range of health and socio-economic issues relevant to the NDA Strategy (see Volume 1 of the IIA – Chapter 7 for a description of these topics).

By assessing the Strategy in terms of these topics, a wide range of potential effects of the Strategy were considered. Assessing them in an integrated manner allowed the results of one aspect of the assessment to inform other aspects. For example, results of the environmental and socio-economic assessments were used to inform the HIA.

The IIA of Strategy (2016) was underpinned by a clear set of assumptions, recognising uncertainties in the scope of the assessment and the assessment findings. These assumptions were reviewed and updated for the 2021 IIA. Recommendations were provided to mitigate adverse effects of the Strategy and create or enhance positive ones.

The assessment findings are outlined in Chapter 8 of the IIA Report: Volume 1, and recorded in more detail in Volume 2.

The IIA Report was issued alongside the draft Strategy for public consultation in August 2020. The outcomes of the consultation are outlined in this Post Adoption Statement, which completes the IIA process.

2.2 How the IIA Report has been taken into account

The IIA Report was prepared during 2019–2020, in parallel and close collaboration with the development of the draft Strategy. Consultation on the proposed updates to the IIA and the methods and approach to be applied in the assessment update was undertaken through meetings with statutory and non-statutory consultees in late 2019 and early 2020 and through informal review of a scoping report.

The findings of the IIA were reviewed by the Strategic Authorities for Site Decommissioning and Remediation, Spent Fuels, Nuclear Materials and Integrated Waste Management. These authorities are responsible for identifying and selecting the credible and preferred options which form the basis of the strategies.

It was intended that the assessment should identify likely significant effects of the strategies (in line with the SEA Regulations) but not foreclose or prejudice a future decision on which options would ultimately be implemented. This was particularly relevant for strategic topics where the strategy does not identify a preferred option, either because there are a number of credible options which may each be preferred under different circumstances, or because there is currently insufficient information or research to support selection of a preferred option.

The results of the assessment will be used to help direct further assessment work, while the methodology will provide a basis for identifying and selecting preferred options in the future, alongside other considerations such as cost, security and technical feasibility as outlined in the NDA Value Framework. This is done to ensure that we identify the option or options that offer the greatest value, accounting for the importance of economic, social and environmental impacts. Further information on the Value Framework is provided in 'NDA Value Framework: how we make decisions', published alongside the Strategy (2016). The findings set out in the IIA Report have helped identify potentially significant effects of the strategies and will provide a signpost for where future assessment could be targeted.

The IIA Report was published as a draft for consultation together with the draft Strategy document. This gave the public the opportunity to comment on the Strategy in light of the findings of the IIA, or on the IIA itself.

The Strategy has now been finalised for adoption based on the findings of the IIA and the representations received during consultation. This Post Adoption Statement should be read in conjunction with the finalised IIA Report and the adopted Strategy (2021) document.

3.0 Consultation on the NDA Strategy (2021) and the IIA

3.1 How consultation has been taken into account

Revisions to the Strategy were developed through a consultative, iterative process, involving a wide range of stakeholders. The approach to the IIA was developed through a similar consultative process, involving a smaller stakeholder group who reviewed proposed changes during the scoping stage of the assessment. This group comprised representatives of various organisations with an interest in the nuclear industry, environment, health or socio-economic issues, and included statutory environmental and regulatory bodies such as the Environment Agency, the Scottish Environment Protection Agency, Natural Resources Wales, Natural England, Scottish Natural Heritage and the Office for Nuclear Regulation.

Public consultation on the draft Strategy and IIA ran from 17th August 2020 to 8th November 2020.

Over 1000 comments on the Strategy were received from 77 organisations and individuals. Of these, 21 comments from six organisations related to the IIA. Comments on the Strategy were either general in nature or responses to questions framed within the Strategy document. The NDA has responded to these comments in a stakeholder response report published alongside Strategy (2021). Comments on the IIA covered topics including site-specific transport considerations, approach to assessment of cultural heritage, how the IIA influences the strategy, taking the opportunity to capitalise on natural assets and how the strategies can enable environmental enhancement.

Minor changes were made to the IIA following the consultation. These are outlined below:

- the cultural heritage section of the Policy and Legislative Context Review in the IIA Report: Volume 3 was updated to provide more information on the scope of this topic and include further references to relevant UK legislation and policy. We also expect that the scope of this topic will be widened in the IIA undertaken for the NDA's Strategy (2026) to include non-designated heritage assets and potentially iconic buildings.
- comments regarding environmental and storage issues within the Non-Technical Summary were also addressed.

In line with the comments received, the next version of the IIA for NDA Strategy (2026) should:

  - be a rewrite rather than an update. More time will therefore be allocated to writing the next IIA
  - include consideration of non-designated heritage properties in the immediate vicinity of NDA sites
  - include a review of the impact of the NDA's Critical Enabling strategies
  - include a more detailed consideration of the impacts of climate change.

4.0 Reasons for adopting the strategies

4.1 Introduction and summary of the strategies as adopted

This section identifies why the strategies within the Strategy have been chosen for adoption in the light of any reasonable alternatives that have been considered.

'Reasonable alternatives' in the context of the strategies are taken to mean any credible options that could potentially be implemented to help achieve the NDA mission; to deliver safe, secure, sustainable and publicly acceptable solutions to the challenge of nuclear clean-up and waste management.

As described in Chapter 4 of the IIA Report: Volume 1, core activities set out in the Strategy are grouped under four driving themes; Site Decommissioning and Remediation, Spent Fuels, Nuclear Materials and Integrated Waste Management, with a fifth theme covering Critical Enablers. Within each of the four driving themes, the strategy is further broken down into individual topic strategies.

For each of these four driving themes, credible options were identified in collaboration with the NDA and on the basis of a series of options evaluation papers published over the course of several years of strategic development.

These credible options are outlined below and are described in greater detail in Chapters 5 and 8 of the IIA Report: Volume 1. The results of the IIA of these options are also summarised in Chapter 8, with further information provided in the detailed assessment tables contained in Volume 2.

It is important to note that the results of the IIA form part of the basis for decisions, alongside other factors such as cost, security and technical feasibility which fall outside the remit of the IIA, but remain material considerations in NDA strategic decision making.

4.2 Reasonable alternatives and preferred options

4.2.1 Site Decommissioning and Remediation

This strategic theme is divided into four topic strategies: Decommissioning, Land Quality Management, Site End States and Land Use.

Decommissioning

There are three broad credible options for Decommissioning:

1. Decommissioning at a pace.

2. Decommissioning slowly but without interruption.

3. Deferred decommissioning that involves one or more periods when the facility is purposely made safe for a period of quiescence, during which only routine maintenance activities would be carried out.

Selection of the Decommissioning options is undertaken on a case by case basis, with each credible option being preferred under certain circumstances. Generally, the NDA preference is to decommission at a pace, except where there are clear benefits to be had from slowing or deferring the decommissioning.

Land Quality Management

Land Quality Management involves managing risks to people and the environment from radioactive and non-radioactive contamination in ground and groundwater. This is achieved through prevention and remediation (including control and monitoring).

Four credible options were identified for the Land Quality Management strategy. These are:

1. *In situ* management without intervention (e.g. monitored natural attenuation or monitored natural decay).
2. *In situ* management with intervention (e.g. enhanced bioremediation or physical treatment).
3. *Ex situ* management for reuse (this may involve a process such as soil washing to make material suitable for reuse).
4. *Ex situ* excavation for disposal (this option involves removing the material from the ground and transferring it to an authorised waste disposal site).

Due to decisions being taken on a case by case basis, there is no single preferred option for implementing this strategy. Any of the credible options might be preferred under specific conditions. The NDA strategy is to employ early risk-based decision making to ensure their actions are proportionate to the level of risk.

Site End States

Every NDA site will have an agreed end state. The site end state sets out the long-term restoration objectives for the site, considering the land's next planned use or probable future uses.

For the purpose of the assessment, three credible options were identified for the Site End States strategy:

1. Leave the hazard where it is and prevent use.
2. Make land suitable for next planned use.
3. Remove the hazard completely so that the risk does not need to be controlled.

The NDA's preferred option to achieve this strategy is to take its sites, on a site by site basis, to a condition suitable for their next planned use (in line with relevant planning requirements) or to their probable future use(s) where remediation occurs before the next use is planned.

This approach balances the benefits and detriments of site decommissioning. Sites can be made available for alternative uses, including potential divestment for social, environment or economic benefit, while ensuring that the activities undertaken to remediate the land do not go beyond those required; thereby avoiding or reducing some of the adverse environmental and health effects which might arise from removing the hazard completely.

Land Use

Whilst the Site End States strategy describes the condition to which designated land and associated structures and infrastructure need to be restored, the Land Use strategy explores how land can be used following the end of decommissioning, or during interim periods of decommissioning and remediation activities.

There are three options for Land Use:

1. Retain land as an NDA asset / liability.
2. Retain land on behalf of government as a national asset.
3. Divest the land (leasehold or freehold) for social, environmental or economic benefit.

The strategy is to identify credible uses for its land when decommissioning and remediation is complete. Part of this commitment is to encourage the reuse of brownfield land over greenfield land, in line with government policy. The NDA is committed to investigating reuse opportunities, recognising that there is a need to balance the cost of achieving an end state against the socio-economic and environmental value the next use will bring.

Whilst the NDA's preferred option is to divest the land for some benefit, it is recognised that there may be situations in which the land may need to be retained as a government asset or as an NDA liability.

4.2.2 Spent Fuels

Within the Spent Fuels theme, there are three individual topic strategies, reflecting the three groups of spent fuels for which the NDA is responsible.

Spent Oxide Fuel

The two credible options available for managing spent oxide fuel are:

1. Continued interim storage of fuel in existing facilities pending treatment and packaging prior to disposal in a Geological Disposal Facility (GDF).
2. Build new storage facilities and interim store pending treatment and packaging prior to disposal in a GDF.

Reprocessing at the Thermal Oxide Reprocessing Plant (THORP) has now ceased, and re-opening THORP is not deemed a credible option. As such, in delivering the current strategy, the NDA seeks to continue with the preferred option to store, immobilise and dispose of unreprocessed spent oxide fuel in a GDF. As the disposal end point is viewed as fixed, the only strategic decision to be made by the NDA is whether to store spent oxide fuel in existing or new storage facilities. The preferred option is to store spent oxide fuel in current facilities at the Sellafield site, namely in THORP Receipt and Storage.

Utilising existing facilities offers a number of advantages compared to the alternative of constructing new facilities, including avoiding most of the short, medium and long-term environmental impacts associated with construction, operation and decommissioning of a new facility to store the inventory. These impacts may include emissions of air pollutants, noise and vibration, landscape and visual impacts, energy use and consumption of raw materials. Continued operation of THORP Receipt and Storage and supporting infrastructure will maintain investment in the local economy in the short term to long term.

Spent Magnox Fuel

Three credible options were assessed for managing the remaining inventory of spent Magnox fuel:

1. Continue as planned, maximise the reprocessing of suitable spent Magnox fuel prior to ending operations in 2021. Interim store remaining material pending treatment and packaging prior to disposal in a GDF.
2. Stop reprocessing of suitable spent Magnox fuel early and interim store the remaining material pending treatment and packaging prior to disposal in a GDF.
3. Extend reprocessing operations to ensure all suitable spent Magnox fuel is reprocessed and interim store Magnox spent fuel not suitable for reprocessing pending treatment and packaging prior to disposal in a GDF.

The NDA strategy is to reprocess as much of the spent Magnox fuel as is practicable in line with the Magnox Operating Programme. The preferred option (1) is to maximise the reprocessing of suitable spent Magnox fuel prior to ending operations as early as practicable. Any remaining material will be interim stored pending treatment and packaging prior to disposal in a GDF. An alternative option is to extend reprocessing by a number of years beyond 2021.

Reprocessing spent Magnox fuel produces plutonium, uranium and Highly Active Liquor, all of which are radioactive and require careful management. There are a number of environmental impacts associated with continuing to reprocess the Magnox inventory. These include the ongoing use of energy and generation of carbon emissions associated with equipment and the movement of workers, and the landscape and visual impacts of the plant and stores. These impacts are short-term as the plant is scheduled to have largely completed reprocessing operations in late 2021, although the impacts of the COVID-19 pandemic could extend operations for several months beyond this date.

In the event of very poor performance, extending Magnox reprocessing for a number of years to reprocess relatively small amounts of fuel could be disproportionate in terms of impacts compared to transferring material into interim storage pending disposal to a GDF.

Spent Exotic Fuel

The Spent Exotic Fuel strategy differs from the strategies for Magnox and Oxides, primarily due to the unique nature of the inventory, which has mostly been produced from experimental research into nuclear reactor technologies. Some, but not all, of these fuels share common characteristics with bulk Magnox and oxide fuels, and can be managed in the same way, for example through reprocessing. Some, however, present their own particular management challenges due to their diverse and sometimes unique properties. In some cases, tailored solutions for long-term management and disposition may be required.

The preferred option is to continue managing the exotic inventory using existing facilities, reprocessing the spent fuels, where possible, alongside bulk fuels. For any part of the inventory that cannot be managed alongside bulk fuels, two credible options are available for managing the remaining spent exotic fuels:

1. Consolidate exotic spent fuels at Sellafield, and interim store in existing or modified facilities pending treatment and packaging prior to disposal in a GDF.
2. Consolidate exotic spent fuels at Sellafield, build new storage facilities and interim store pending treatment and packaging prior to disposal in a GDF.

Of these two options, the preferred option will vary with fuel type depending on the suitability and availability of existing facilities at the Sellafield site.

4.2.3 Nuclear Materials

This strategic theme comprises the two topics of Plutonium and Uranium.

Plutonium

Three credible options exist for managing the NDA inventory of civil plutonium:

1. Continued safe and secure storage, renovating and replacing stores as required.
2. Build facilities to make fuel to enable use in a third-party reactor prior to storage and disposal in a GDF.
3. Build facilities to condition and treat plutonium prior to storage and disposal in a GDF.

In 2011, informed by NDA strategic options work, the UK government proposed a preliminary policy view to pursue reuse of plutonium by converting the vast majority of the UK civil separated plutonium into fuel for use in civil nuclear reactors. Any remaining plutonium whose condition is such that it could not be converted into fuel would be immobilised and treated as waste for disposal.

Whilst reuse of plutonium is the preferred policy position, there is currently an insufficient understanding of the options to confidently move into implementation. In the meantime, the NDA's strategy for plutonium stocks is to continue to safely and securely store them on its sites in suitable facilities in line with regulatory requirements. The NDA continues to work with the UK government in developing

strategic options for the implementation of its policy to put plutonium beyond reach by undertaking further strategic work on its behalf. This work covers both reuse and conditioning and treatment options. In either case, disposal in a GDF is the ultimate end point of the plutonium stocks, either after irradiation in a reactor or after suitable conditioning and treatment.

Uranium

The credible options for managing the uranium inventory are broadly similar to those for plutonium. These are:

1. Continued safe and secure storage pending sale for reuse where practicable.
2. Continued safe and secure storage pending conditioning to an appropriate form for disposal.

Owing to the diverse nature of the uranium inventory there is no single preferred management option for the whole inventory; the preferred option will need to be determined on a group by group basis. Where uranium stocks have commercial value, the NDA will return them to the fuel cycle through sale to a third party. At the same time the NDA continues to work with government on identifying credible options for disposal in the event that these materials were to be declared as waste.

4.2.4 Integrated Waste Management

Unlike Spent Fuels and Nuclear Materials where there are clear credible options for how the inventory is managed, for Integrated Waste Management (including management of both radioactive and non-radioactive waste), there are few areas for strategic optioneering from an NDA perspective.

Radioactive Waste

As outlined in in the IIA Report: Volume 1 – Section 4.5, in the UK radioactive wastes are classified according to the type and quantity of radioactivity they contain and how much heat this radioactivity produces.

Historically, the NDA produced separate Low Level Waste (LLW) and Higher Activity Waste (HAW) strategies. However, as the programme moves towards supporting large scale decommissioning and site remediation this distinction is no longer fit for purpose. In 2019, the NDA published a new Radioactive Waste Strategy that applies to all radioactive waste generated within the NDA estate (including materials that may become waste at some point in the future). It replaces the previous NDA strategy for HAW and is consistent with the UK strategy for solid LLW, providing a consolidated position.

Higher Activity Waste

In England and Wales, the government policy is for HAW to be disposed of in a GDF using alternative disposal systems. The Scottish government policy is that the management of higher activity radioactive waste should be in near-surface facilities. As the NDA's strategy aligns with the requirements of these policies, in effect there is no strategic decision for the NDA to make (although the NDA works closely with government to identify solutions and develop policies). In other words, the NDA's strategic position is to comply with and deliver government policy regarding the management of HAW.

As the initial stage of the HAW management route is fixed (i.e. retrieve the waste from the sites) and the end stage is also fixed (i.e. geological disposal or alternative systems in England and Wales and near-surface in Scotland), the intermediary stage must involve some form of treatment, conditioning and/or packaging to make the waste suitable for disposal.

Credible management options available during this stage of relevance to the IIA revolve around two issues:

- where the waste is stored; and,
- where the waste is treated.

The IIA assessment considered the treatment and storage of HAW, for which there are three credible options:

1. Storage / treatment at local (on or near site) facilities.
2. Storage / treatment at regional facilities.
3. Treatment at national facilities.*

* Storage of wastes in a single national facility is not considered credible owing to the existence of numerous suitable storage facilities across the country.

Owing to the varying nature of wastes requiring management and their location at sites across the UK, decisions regarding the management of HAW are generally undertaken on a case by case basis. As such there is no single preferred option, and all of these alternatives are considered implementable.

Solid Low Level Waste

The NDA strategy for managing solid LLW, which includes Very Low Level Waste (VLLW), is consistent with the UK Nuclear Industry LLW Strategy, which can be accessed at: https://www.gov.uk/government/consultations/consultation-on-an-update-of-the-uk-strategy-for-the-management-of-solid-low-level-radioactive-waste-from-the-nuclear-industry

Therefore, from an NDA perspective, there are no strategic decisions to make and no credible options required assessment.

Liquid and Gaseous Discharges

The NDA strategy for managing liquid and gaseous discharges is to implement the UK Strategy for Radioactive Discharges, which it helped to develop. Therefore, from an NDA perspective, there are no strategic decisions to make and no credible options required assessment.

Non-radioactive Waste

The UK has a well established, comprehensive and prescriptive regulatory regime for the management of non-radioactive waste. The NDA adheres to this regime and implements it across its estate. As a result, there are no strategic decisions for the NDA to make and no credible options required assessment.

5.0 Monitoring measures during implementation

5.1 Introduction

A key element of the IIA process, as prescribed by the SEA Regulations, is the identification of an appropriate monitoring programme to monitor the potential significant effects of the strategies during implementation.

Monitoring could help to address such questions as:

- were the results of the assessment, including predicted effects, accurate?
- is the strategy contributing in practice to the achievement of objectives?
- are there any adverse effects (i.e. is the strategy acting against achievement of the objectives)? If so, are they within acceptable limits or is remedial action required?

Monitoring action should be focussed on:

- significant effects that may give rise to irreversible damage, with a view to identifying trends before such damage is caused; and
- aspects where the assessment has identified the potential for significant adverse effects, but where there is uncertainty, and where monitoring would help to resolve that uncertainty and enable preventative or mitigation/remedial measures to be taken.

In the detailed assessment tables contained in the IIA Report: Volume 2, an uncertainty rating was provided against each likely significant effect identified. The use of monitoring to remove or reduce uncertainty is of particular relevance for effects which were given a '??' rating, denoting that the result is highly uncertain and will almost certainly require more detailed assessment at a later stage. This is likely to be undertaken as part of project-level Environmental Impact Assessments (EIA), which would be required for certain developments at the NDA sites.

Given the high level nature of the Strategy, it is not appropriate to set a prescriptive monitoring programme at site level as part of this IIA. Instead, a monitoring framework is set out below to serve as a guideline to aid future assessment and monitoring work during strategy implementation.

A number of measures were set out in the IIA Report: Volume 1 – Section 9.2 to mitigate or enhance potential effects of the strategies. Indicators in the monitoring framework could be used to test how successfully these measures have been applied in practice.

5.2 Monitoring Framework

Table 5-A sets out a series of indicators which could be used to monitor effects of the strategies during their implementation. Where up to date data is available, monitoring of these indicators should be undertaken at least once during the Strategy review period or as often as considered necessary to enable any unforeseen adverse effects to be identified at an early stage and appropriate remedial action to be taken.

Table 5-A: Potential IIA Monitoring Framework

Topic	Monitoring Indicator	Potential Source of Information
Air quality	Discharges of pollutants to air (e.g. NO_x, PM_{10}).	NDA annual site-specific baseline reporting; SLCs/facility operators; Defra.
Biodiversity, flora	Condition and any changes in condition of designated sites	NDA annual site-specific baseline reporting;

Topic	Monitoring Indicator	Potential Source of Information
and fauna	within 2km (local, national, European, international). If there are any wildlife monitoring programmes, updated status. If there is a site Biodiversity Action Plan, updated status of relevant habitats.	SLCs/facility operators; Waste management site operators; Natural England; NatureScot; Natural Resources Wales; State of Nature Partnership.
Climate change and energy	Energy consumption. Emissions of greenhouse gases. Vulnerabilities to climate change/flooding/extreme weather and any local incidents.	NDA annual site-specific baseline reporting; SLCs/facility operators; Waste management site operators; BEIS; Environment Agency (incl. Nuclear Sector Plan); Scottish Environmental Protection Agency; Natural Resources Wales; Met Office.
Coastal change and flood risk	Change in flood risk zones. Changes in sea level, wave patterns etc.	Environment Agency; Natural Resources Wales; Scottish Environmental Protection Agency; SLCs/facility operators.
Cultural heritage	Changes in the condition, integrity or setting of historic buildings, archaeological remains or historic landscapes within or adjacent to a site	Historic England, Historic Environment Scotland or Cadw; Local Historic Environment Records or equivalent; Any site-related development proposals and EIAs.
Geology and soils	Changes in status of any existing contaminated land on or adjacent to the site, or any new contamination. Changes in condition of any agricultural or other topsoils on or adjacent to the site.	NDA annual site-specific baseline reporting; SLCs/facility operators; Waste management site operators; Environment Agency; Natural England; Scottish Natural Heritage; Natural Resources Wales; Any site-related development proposals and EIAs. Defra; Scottish Soil Framework.
Landscape and visual	Changes in the visual appearance of the facilities or the condition of the surrounding landscape/seascape/townscape.	NDA annual site-specific baseline reporting; SLCs/facility operators; Waste management site operators; Any site-related development proposals and EIAs.
Materials and waste	Radioactive and non-radioactive waste arisings. Waste management facility capacities.	UK Radioactive Waste Inventory; Environment Agency; National Waste Programme Waste Metrics Dashboard; Scottish Environmental Protection Agency.

Topic	Monitoring Indicator	Potential Source of Information
Noise and vibration	Noise levels at site boundary and at key receptors. Any new sources of noise or existing sources removed. Noise complaints.	NDA annual site specific baseline reporting; SLCs/facility operators; Waste management site operators.
Radiological emissions and discharges	Authorised radioactive gaseous and particulate discharges to air. Authorised radioactive discharges to water.	RIFE annual reports; NDA annual site specific baseline reporting; SLCs/facility operators; Public Health England; Environment Agency; Waste management site operators; Scottish Environmental Protection Agency; Natural Resources Wales.
Water resources and quality	Ecological and chemical status of surface water near to site. Water quality monitoring. Changes in status of any groundwater bodies underlying the site or adjacent land.	Environment Agency; Scottish Environmental Protection Agency; Natural Resources Wales; NDA annual site specific baseline reporting; SLCs/facility operators; Waste management site operators.
Economy, employment, education and skills	Unemployment levels, levels of qualifications etc. in local communities. Changes in employment at the site.	Office for National Statistics, National Records of Scotland and StatsWales; NDA Internal Employment Statistics; SLCs/facility operators; Nuclear Skills Strategy Group; Waste management site operators.
Local and national assets	Changes in health and community facilities and transport infrastructure surrounding sites	Local authority development plans; SLCs/facility operators.
Health	Results of local community health surveys Incidences of cancer and heart-related conditions	Office for National Statistics; Cancer Research UK, Macmillan Cancer Support, ISD Scotland, Welsh Cancer Intelligence and Surveillance Unit; Public Health England British Heart Foundation.

On behalf of the NDA, the SLCs and subsidiaries which operate its sites will carry out monitoring work in the course of implementing the strategies, for example, as part of project level EIAs. The indicators set out above are intended to serve as a guide to inform such work. It is important to note that not all indicators may be relevant to all sites.

A review of monitoring activities, and this framework, should be undertaken within the next review cycle (i.e. within the next five years) in line with other ongoing NDA monitoring of key performance indicators and the delivery of the Strategy (2021). Monitoring work should feed into future strategy development and IIA assessment cycles.

6.0 Concluding comments

This document is the Post Adoption Statement for the IIA of NDA Strategy (2021). It forms the final stage of the IIA process.

Representations received on the IIA Report during public consultation are discussed in Chapter 3 of this document. Although only a small number of comments were received, all proved to be useful and have resulted in a number of minor changes within the IIA and will also be taken into consideration in the IIA for the NDA Strategy (2026).

This Post Adoption Statement will be published alongside the NDA Strategy (2021).