

Briefing Paper 10

New nuclear: decommissioning and waste implications

October 2022

1: Introduction

It is not within Nuleaf's remit to form a view on whether new nuclear power stations should be built. However, current Government commitments to a significant programme of new build will impact on nuclear legacy management and the waste inventory. New nuclear generation is likely to be identified as the 'next planned use' for a number of legacy sites. NDA sites may also host new renewable energy capacity along with hydrogen and energy storage facilities.

This Briefing Paper explains the significant developments in legislation and strategy/policy for new nuclear over recent years and considers the implications for Nuleaf's areas of interest. It provides information on:

- Current policy for nuclear power in England and Wales.
- The key relevant points of the UK Net Zero Strategy, Energy Security Strategy and Energy Security Bill.
- Other recent developments, including the launch of Great British Nuclear and the signing of a Memorandum of Understanding (MoU) between the NDA and Cwmni Eginio to develop SMRs on the Trawsfynydd site.
- The implications, in terms of decommissioning and waste management, of alternative forms of nuclear generation, along with the scope for NDA sites to be used to promote renewable energy technologies.

Policy and proposals for individual new nuclear developments are moving forward and this paper will be updated to reflect these.

2: Policy for nuclear power development, decommissioning and waste management

In 2008 the UK Government committed to the development of a new generation of nuclear power stations in the UK¹. All of the potential sites for new nuclear identified at that time were existing NDA sites or those hosting operational nuclear stations. The **Energy Act 2008** required that operators of new nuclear power stations have secure financing arrangements in place to meet the costs of decommissioning and their full share of waste management and disposal costs. The Act is supported by the UK Government's **Long term Nuclear Energy Strategy**² which was published in 2013.

¹ http://news.bbc.co.uk/1/hi/uk_politics/7179579.stm

² [Long-term Nuclear Energy Strategy \(publishing.service.gov.uk\)](https://www.publishing.service.gov.uk/government/uploads/system/uploads/attachment_data/file/262222/long-term-nuclear-energy-strategy.pdf)

The energy landscape changed significantly in 2020 when the UK Government published a **White Paper**³, setting out how it intends to deliver Net Zero Carbon by the target date of 2050. This was followed in October 2021 by the UK's **Net Zero Strategy: Build Back Greener**⁴.

The Strategy commits the Government to make a final investment decision on at least one more large new nuclear station before the next election. It outlines support for the development of alternative forms of nuclear generation: **Small Modular Reactors (SMRs)**, **Advanced Modular Reactors (AMRs)** and **fusion** power. Government also envisages a vast expansion of renewable energy, large-scale energy storage and the development of the hydrogen economy.

The huge impact on global energy prices caused by the Russian attack on Ukraine led to the publication of an **Energy Security Strategy**⁵ in April 2022 and an **Energy Security Bill**⁶ three months later. These re-affirm the Government's commitment to nuclear being '*an important part of the UK's energy mix*' and set out support intended to enable final delicensing and reuse of nuclear sites to be brought forward.

Policy for the delivery of major energy developments in England and Wales is set out in a series of National Policy Statements (NPS) all published in 2011. The **National Policy Statement (NPS) for Nuclear Power Generation (EN-6)**⁷ provides the primary basis for decisions taken by the Infrastructure Planning Commission (IPC) on applications it receives. It is used by local planning authorities in preparing local impact reports and provides a range of information on the decommissioning and legacy waste aspects of new nuclear. EN-6 sits under the primary NPS on **Energy (EN-1)**. EN1 is currently under revision and in due course all the energy NPS' will be revised and updated to respond to recent policy and legislative changes.

The end point of Higher Activity Waste (HAW) from any new nuclear stations, as with that of former and current plants, will be a **Geological Disposal Facility (GDF)**. Waste should be placed in safe and secure interim storage facilities prior to a geological repository becoming available.

³https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment_data/file/945899/201216_BEIS_EWP_Command_Paper_Accessible.pdf

⁴ <https://www.gov.uk/government/publications/net-zero-strategy>

⁵ <https://www.gov.uk/government/publications/british-energy-security-strategy/british-energy-security-strategy>

⁶ <https://www.gov.uk/government/collections/energy-security-bill>

⁷ <https://www.gov.uk/government/publications/national-policy-statements-for-energy-infrastructure>

Government launched a new siting process for a GDF in 2018. Current policy is set out in:

- **Working with Communities: long term management of higher activity radioactive waste**, published in December 2018 (England⁸) and January 2019 (Wales⁹).
- The **National Policy Statement (NPS) for Geological Disposal Infrastructure**¹⁰, which establishes a Geological Disposal Facility (GDF) as a Nationally Significant Infrastructure Project (NSIP). The NPS only applies to England – separate planning process will be applicable if communities in Wales enter the siting process.

Current inventory projections for a GDF include the Spent Fuel and Intermediate Level Waste (ILW) generated by a 16GW new nuclear programme. However, the Energy Security Strategy (2022) is based on the delivery of up to 24GW of new nuclear, incorporating SMRs and other novel technologies. If 24GW is achieved this will almost certainly lead to a requirement for a larger GDF, though the scale of the enlargement may not be particularly significant. Government and Nuclear Waste Services (NWS) have not addressed this issue in detail to date.

The Working with Communities policy (para 6.55) recognises that any increase in Spent Fuel and ILW resulting from a new nuclear programme that exceeds current expectations would have to be discussed and agreed with communities engaged in the siting process. The policy (para 6.54) emphasises that dialogue around the inventory should be undertaken with potential host communities.

Upcoming policy developments

The UK and Devolved Governments are due to consult on a new **Nuclear Decommissioning and Radioactive Substances Policy**. This will set out the framework for site remediation and the management of waste from new nuclear power stations.

⁸ <https://www.gov.uk/government/publications/implementing-geological-disposal-working-with-communities-long-term-management-of-higher-activity-radioactive-waste>

⁹ <https://gov.wales/written-statement-geological-disposal-radioactive-waste-working-potential-host-communities-0>

¹⁰ https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment_data/file/814491/national-policy-statement-geological-disposal-infrastructure.pdf

3: The UK Net Zero Strategy: a new energy landscape

The UK Government has set a legally binding target to achieve Net Zero Carbon by 2050¹¹ and has committed delivering 78% emission reductions by 2035¹². The **Welsh Government** has committed to Net Zero carbon by 2050 and has set interim targets of a 63% cut by 2030 and an 89% reduction by 2040¹³.

A **Net Zero Strategy: Build Back Greener** was launched in October 2021. The primary objective is to drive moves towards a 'net zero' energy system through action across energy generation, industry, transport and the domestic sector. It sets targets for 2030 of:

- 40GW of offshore wind, representing a quadrupling of current capacity.
- 5GW of low carbon hydrogen.
- Ending the sale of petrol and diesel engine cars and vans.
- The Capture, Usage and Storage (CCUS) of 10Mt of carbon in four industrial clusters.
- Development of at least one more large nuclear power station.

The Strategy also identifies new and advanced nuclear technologies, which are explained in more detail in Section 4 below. Government is committed to:

- Consideration of Small Modular Reactors (SMRs) and Advanced Modular Reactors (AMRs).
- The construction of a commercially viable fusion power plant by 2040.

The **Net Zero Strategy** is supported by a **10 Point Plan for a Green Industrial Revolution**¹⁴, published at the end of 2020. A **Clean Growth Strategy**¹⁵ was launched in 2017 and an **Industrial Decarbonisation Strategy** was released in March 2021¹⁶.

¹¹ <https://www.gov.uk/government/news/uk-becomes-first-major-economy-to-pass-net-zero-emissions-law>

¹² <https://www.gov.uk/government/news/uk-enshrines-new-target-in-law-to-slash-emissions-by-78-by-2035>

¹³ <https://gov.wales/climate-change-targets-and-carbon-budgets>

¹⁴ <https://www.gov.uk/government/publications/the-ten-point-plan-for-a-green-industrial-revolution/title#point-3-delivering-new-and-advanced-nuclear-power>

¹⁵ [Clean Growth Strategy \(publishing.service.gov.uk\)](https://www.gov.uk/government/publications/clean-growth-strategy)

¹⁶ <https://www.gov.uk/government/publications/industrial-decarbonisation-strategy>

4: A new focus on energy security

In 2022 the Government launched an **Energy Security Strategy** while an **Energy Security Bill** has been laid before Parliament.

The main driver for the new Strategy is the current cost and availability of fossil fuel energy, following Russia's invasion of Ukraine. The Government states that *'if we are going to get prices down and keep them there for the long term, we need a flow of energy that is affordable, clean and above all secure. We need a power supply that's made in Britain, for Britain...'*

The main ways to achieve this are identified as the development of new wind and solar capacity, the production of a large amount of hydrogen and also the *'embracing (of a) safe, clean, affordable new generation of nuclear reactors, taking the UK back to pre-eminence in a field where we once led the world.'* The Strategy commits to making *'the UK... one of the best places in the world to invest in nuclear'*.

There is a commitment to deploy up to 24GW of new nuclear by 2050 – three times more than now and representing up to 25% of projected electricity demand. This will be underpinned by the following actions:

- Taking one project to Final Investment Decision (FID) this Parliament and two projects to FID in the next Parliament, including Small Modular Reactors, subject to value for money and relevant approvals.
- Launching the £120 million Future Nuclear Enabling Fund
- Setting up Great British Nuclear, tasked with helping projects through every stage of the development process and developing a resilient pipeline of new builds.
- Backing Great British Nuclear with funding to support projects to get investment ready and through the construction phase. The Government plan to initiate the selection process in 2023 for further UK projects.
- Developing an overall siting strategy for the long-term covering the 8 designated nuclear sites: Hinkley, Sizewell, Heysham, Hartlepool, Bradwell, Wylfa, Oldbury and Moorside.
- Collaborating with other countries to accelerate work on advanced nuclear technologies, including both Small Modular Reactors and Advanced Modular Reactors (AMRs).

The **Energy Security Bill** was introduced to Parliament in July 2022 and is intended to support the security and decarbonisation of the UK energy system as well as provide financial assistance for those impacted by high energy bills.

The Bill also addresses a range of other areas, including those related to nuclear. It:

- Sets out the regulatory regime for fusion energy
- Clarifies that a geological disposal facility (GDF) located under the seabed can be licensed.

- Brings forward the final delicensing and reuse of nuclear sites, enabling a more proportionate clean up with the aim of saving significant sums of public money.

5. Evolution of energy policy: Implications for legacy waste management

It is possible to offer a range of comments on the current proposals for large conventional nuclear power, SMRs/AMRs and fusion in relation to nuclear legacy issues. Proposals for the expansion of renewable generation, hydrogen and energy storage also have potential implications for existing nuclear sites.

Conventional nuclear generation

When the 2008 Energy White Paper was launched, the stated intention of Government was to deliver 16 Gigawatts (GW) of new nuclear power.

In 2022, the Energy Security Strategy has committed to an expanded nuclear programme of up to 24GW. This could see the nuclear sector progressing up to 8 more reactors across the next series of projects, delivering the equivalent of one reactor a year, rather than one a decade as has occurred since 2010.

A new government body, **Great British Nuclear**, has been formed to bring forward new projects, backed by substantial funding. The Government has also launched a £120m **Future Nuclear Enabling Fund**.

Only one station, Hinkley Point C¹⁷, is currently under construction, with latest estimates being that it will begin generation in 2026. Sizewell C¹⁸, in Suffolk was granted planning permission by the Government in July 2022¹⁹ while there is also a proposal for a new large nuclear station at Bradwell in Essex²⁰. Renewed interest in the Wylfa site emerged in autumn 2021, with Government in discussion with developers interested in either a new large nuclear plant or a smaller reactor and wind farm on the site²¹.

a. Regulation and Planning

New nuclear plants are regulated under the same framework as existing stations, by the **Office for Nuclear Regulation (ONR)** and the **Environment**

¹⁷ [Hinkley Point C | EDF \(edfenergy.com\)](#)

¹⁸ [Sizewell C | EDF \(edfenergy.com\)](#)

¹⁹ <https://www.theguardian.com/business/2022/jul/20/uk-government-gives-go-ahead-to-sizewell-c-nuclear-power-plant>

²⁰ [Homepage - Bradwell B Project Site](#)

²¹ <https://www.bbc.co.uk/news/uk-wales-politics-58668704>

Agency/Natural Resource Wales. The Office for Nuclear Regulation (ONR) and Environment Agency published their guidance on the **Modernised Generic Design Assessment (GDA)** process in October 2019²².

While such developments are classed as NSIPs, Local Planning Authorities (LPAs) play a significant part in the process as has been shown in relation to Hinkley Point C. Councils also have a wider role in managing the socio-economic and environmental impacts that such large-scale developments have during construction, operation and decommissioning.

b. Decommissioning and waste implications

Under the Energy Act, operators of new nuclear power stations are required to have a Funded Decommissioning Programme (FDP) in place and approved by Government before construction of a new nuclear power station begins, and to comply with this FDP thereafter. Guidance on the Funded Decommissioning Programme was published in 2011²³.

The **Long-term Nuclear Energy Strategy**²⁴ requires that:

- Any nuclear programme to 2050 and beyond will need to ensure the minimisation and management of any waste arisings and spent fuel, through planning for decommissioning and waste routes early in the design process.
- Operators must have secure financial arrangements to meet the full costs of decommissioning and their full share of waste management and disposal costs, in other words a Funded Decommissioning Programme, as defined by the Energy Act 2008. In particular, operators have to demonstrate a credible plan for the long-term management of their wastes, especially Higher Activity Wastes (HAW).

Section 2.11 of EN-6 deals with radioactive waste. This states that:

- There is an assumption that there will be no reprocessing of spent fuel.
- That Higher Activity Waste (HAW) from new nuclear stations will consist of spent fuel and Intermediate Level Waste (ILW). The intention is that this material should be disposed of in a Geological Disposal Facility (GDF), preceded by 'safe and secure interim storage.'

²² <https://www.gov.uk/government/publications/advanced-nuclear-technologies/advanced-nuclear-technologies>

²³ https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment_data/file/70214/guidance-funded-decommissioning-programme-consult.pdf

²⁴ [Long-term Nuclear Energy Strategy \(publishing.service.gov.uk\)](https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment_data/file/70214/guidance-funded-decommissioning-programme-consult.pdf)

- Solid low-level waste (LLW), liquid and gaseous discharges and non-radioactive wastes will be managed in line with the arrangements that already exist for dealing with legacy wastes of this type.

Proposals for waste management facilities that either form part of the development itself, or which are classed as associated development should be considered by the **Planning Inspectorate – National Infrastructure Planning** using the principles and policies set out in EN-1.

c. Socio-economics

Decommissioning, as well as construction and operation, of any energy infrastructure will have socio-economic impacts.

In accordance with EN-1, the developer is required to identify at local and regional levels any socio-economic impacts associated with the decommissioning of the proposed new nuclear power station. This assessment should demonstrate that the applicant has taken account of, amongst other things, potential pressures on local and regional resources, demographic change and economic benefits.

SMRs and AMRs

The Net Zero Strategy and the Ten Point Plan for a Green Industrial Revolution, both identify **Advanced Nuclear Technologies**²⁵ as having an important role to play in the transition to a low carbon economy.

Advanced Nuclear Technologies encompass a wide range of nuclear reactor designs under development. The technologies share common attributes in that they are:

- smaller than conventional nuclear power station reactors
- designed so that much of the plant can be fabricated in a factory environment and transported to site, reducing construction risk and, it is claimed, reducing costs. A number of such modular reactors could be developed on a single site.

Advanced nuclear technologies generally fall into one of 2 groups:

- Third generation water-cooled **Small Modular Reactors (SMRs)**, similar to existing nuclear power station reactors but on a smaller scale. SMRs are usually defined as reactors that produce less than 300 MWe—compared to the more than 1,600 MWe that a modern nuclear power plant can produce.

²⁵ <https://www.gov.uk/government/publications/advanced-nuclear-technologies/advanced-nuclear-technologies>

- Fourth generation and beyond **Advanced Modular Reactors (AMRs)**, which use novel cooling systems or fuels. It is suggested that these offer the potential for a step change reduction in costs. AMRs may also offer new functionalities – for example through operating at over 800C they could unlock the efficient production of hydrogen and synthetic fuels.

The £385 million Advanced Nuclear Fund will see £215 million allocated to develop a domestic SMR design and up to £170 million to a research and development programme on AMRs. A further £40 million will be provided to develop regulatory frameworks and support the UK's supply chain.

On the 9th November 2021 it was announced that a consortia led by **Rolls Royce** had secured around £400 million from the UK Government and private investors. The funding will go towards developing Rolls-Royce's SMR design and take it through regulatory processes to assess whether it is suitable to be deployed in the UK. It will also identify sites which will manufacture the reactors' parts. In parallel, **Nuscale** and **Shearwater Energy** are working to develop a SMR/renewables/hydrogen hybrid system.

Both the Rolls Royce and Nuscale/Shearwater plans have identified existing NDA sites as prime locations for their development, although there is also potential for SMRs to be constructed in other locations.

The site of the former Trawsfynydd nuclear power station in north Wales has emerged as a front runner for development of SMRs. A development agency, **Cwmni Egino**²⁶ has been created to take forward proposals and has set a target that construction of an SMR will begin in 2027. In October 2022 a **Memorandum of Understanding (MoU)** was signed between the NDA/Magnox (as the site owner) and Cwmni Egino to support the development of small reactors on the site²⁷.

The **Nuclear Free Local Authorities (NFLA)** oppose the development of SMRs and AMRs and have prepared a briefing setting out their views²⁸.

a. Regulation and Planning

SMRs and AMRs would be regulated in the same way as larger nuclear plants²⁹, that is by the Office for Nuclear Regulation (ONR) and by the Environment

²⁶ <https://ambitionnorth.wales/low-carbon-energy/trawsfynydd/>

²⁷ <https://www.gov.uk/government/news/agreement-to-progress-development-of-new-uk-small-modular-reactors>

²⁸ http://www.nuclearpolicy.info/wp/wp-content/uploads/2021/04/NFLA_New_Nuclear_Monitor_No65_SMR_in_the_UK.pdf

²⁹ <https://www.gov.uk/government/publications/advanced-nuclear-technologies/advanced-nuclear-technologies>

Agency/Natural Resource Wales. ONR has been considering how it can develop its capability and capacity to regulate these advanced nuclear technologies³⁰.

b. Decommissioning and waste implications

The decommissioning and waste management aspects of SMR and AMR development are governed by the same framework as for conventional nuclear stations. It is likely that the decommissioning process and waste generation from SMRs will be broadly equivalent to that of a conventional nuclear station of equivalent energy output, though information is limited.

Potential AMR technologies are diverse in character and could use new types of fuel and coolant, and even potentially reuse spent nuclear materials as new fuel. It is too early to give any estimate on type and quantity of waste arisings.

c. Socio-economics

The claimed benefits of SMRs over conventional nuclear station are largely related to construction costs, based on economies of scale for a large SMR programme. As with any energy scheme, these developments will create employment and support supply chains through construction, operation and decommissioning.

Nuclear fusion

Nuclear fusion is fundamentally different from conventional (fission) power generation. In fusion two lighter atomic nuclei, such as isotopes of Hydrogen (Deuterium and Tritium) form a heavier nucleus while releasing energy³¹.

Fusion power has not so far been developed as a source of commercial energy generation anywhere in the world. However, there is significant interest in it, with a number of large national and international research programmes. The UK Atomic Energy Agency (UKAEA) undertakes research on fusion at its Culham site in Oxfordshire.

In 2020 a siting process for a **STEP (Spherical Tokamak for Energy Production)** fusion reactor was launched by UKAEA³². This is a prototype reactor and while it will generate some net energy (around 50MW) it is not intended to operate as a commercial power station.

³⁰ <https://www.onr.org.uk/advanced-nuclear-technologies/index.htm>

³¹ <https://ccfe.ukaea.uk/>

³² <https://step.ukaea.uk/>

Following engagement with local authorities and other stakeholders a shortlist of 5 potential sites for STEP was identified, spread across England and Scotland and include two sites in existing nuclear communities³³.

In October 2022 it was announced that the reactor will be built at **West Burton** in Nottinghamshire. Councillor Ben Bradley, Leader of Nottinghamshire County Council, claimed that *'The site will be the international hub for carbon-neutral, fusion development, attracting the brightest minds locally and from across the world, boosting skills, training, and creating thousands of highly skilled jobs.'* The reactor itself is expected to begin operation around 2040³⁴.

A new large scale fusion demonstration plant is also planned for the Culham site³⁵, with backing from General Fusion, a Canadian company. UKAEA is also developing a fusion technology facility in South Yorkshire³⁶.

The **Nuclear Free Local Authorities (NFLA)** oppose fusion due to the generation of waste, the cost and the fact that commercial generation is still some decades away³⁷.

a. Regulation and Planning

The Government has confirmed that it intends to regulate future fusion energy facilities under the same legal framework as at present³⁸. It states that: *'While the hazard and complexity of fusion energy facilities will be greater than current research facilities, we remain confident that existing regulations in the UK will be able to uphold safety standards in a proportionate way. We are also clear that the fundamental differences between nuclear fission and fusion mean that it would be disproportionate and unnecessary to incorporate fusion energy facilities into nuclear regulations.'*

As noted earlier, the proposal to maintain the current regime for fusion regulation has been incorporated in the Energy Security Bill.

It is likely that the STEP fusion plan will be designated as a Nationally Significant Infrastructure Project. If so, a Fusion NPS will be prepared, setting out the development consent framework.

³³ <https://www.gov.uk/government/news/five-sites-shortlisted-for-uk-fusion-energy-plant>

³⁴ <https://www.itv.com/news/calendar/2022-10-03/worlds-first-nuclear-fusion-power-plant-to-be-built-in-north-nottinghamshire>

³⁵ <https://www.bbc.co.uk/news/science-environment-57512229>

³⁶ <https://ccfe.ukaea.uk/construction-milestone-at-new-fusion-technology-site-in-yorkshire/>

³⁷ <https://www.nuclearpolicy.info/news/nfla-analysis-nuclear-fusion-english-councils-should-decline-host-experimental-reactor/>

³⁸ <https://www.gov.uk/government/consultations/towards-fusion-energy-proposals-for-a-regulatory-framework>

b. Decommissioning and waste implications

Fusion reactors create far less radioactive material, with a shorter half-life, than fission reactors but do generate radioactive waste. The recent Government consultation states:

No High-Level Waste will be generated from fusion during normal operations

The quantity of Low-Level Waste (LLW) produced is comparable to the quantities produced by a fission reactor producing equivalent power, namely thousands of tonnes of LLW which does not require specialist storage or disposal.

A fusion power plant could potentially produce thousands of tonnes of what is currently defined as Intermediate Level Waste (ILW) if that waste were sent for disposal immediately after operations (e.g. without decay storage). This would be less than 1% of the UK's total ILW inventory.

A significant proportion of this ILW is expected to be classed as LLW after a period of decay storage of around 100 years and then disposed of accordingly. However, impurities within the activated materials could result in much longer-lived radioisotopes, meaning that some fusion waste may be classed as ILW for thousands of years.

Waste reduction, handling and mitigation strategies are already established in the nuclear sector and would be applied to fusion reactor waste.

The STEP programme is a small scale, prototype facility and the waste arisings are expected to be limited. UKAEA has committed to provide more information on radioactive waste generation and management. Waste arisings would be stored on site pending final disposal.

c. Socio-economics

UKAEA has been engaging with local authorities around the STEP process and has committed to delivering a range of direct and indirect socio-economic benefits as part of the development³⁹.

Renewables and integrated Net Zero Planning

The Net Zero Strategy and Energy Security Strategy support a huge expansion of renewable energy capacity, storage and hydrogen generation. There is scope for all these technologies to be developed on NDA land, either on an interim basis or as the next planned use. They therefore offer an alternative to new nuclear

³⁹ <https://step.ukaea.uk/step-siting/>

development on NDA sites, as do other uses that promote biodiversity, economic development and recreational projects.

The use of nuclear licensed sites for new energy developments, whether based on nuclear, renewables, storage or hydrogen, can be integrated into wider strategic energy and net zero plans as has already been done in Cumbria, North Wales, Southwest England and East Anglia.

6: Conclusions and recommendations

New nuclear build will impact on nuclear legacy management in a number of ways. These include:

- the number and location of interim storage facilities, particularly for Intermediate Level Waste and spent fuel;
- requirements for the number, location and capacity of Low-Level Waste disposal facilities, either at existing nuclear sites, or new regional or national disposal facilities;
- impacts on site end states or the time period within which the end state might be reached, given that many new nuclear developments are likely to be on or adjacent to current NDA sites; and
- the impact on the inventory of wastes for emplacement in a geological repository and implications for repository size and cost.

The UK Net Zero Strategy and Energy Security Strategy set out broad aspirations for a major expansion of nuclear and renewable generation and establish a range of mechanisms and funding to help deliver these ambitions. However, more information is required on:

- The balance between conventional nuclear and SMR/AMR reactors that is likely to be developed.
- How to deliver such a large and complex expansion of energy infrastructure in the timescales envisaged. Challenges relate to financing, materials, skills and wider resources. The UK will be seeking to deliver on these nuclear ambitions at the same time as it is aiming to rapidly expand renewables and storage technologies, decommission oil and gas installations and support other infrastructure projects.
- The socio-economic implications of developments including on direct and indirect employment, skills and the supply chain. Nuleaf will continue to press for the maximisation of local socio-economic benefits and for community benefits to be paid to host communities. While agreement has already been reached on community benefits and mitigation around Hinkley Point C, there is less clarity on what is proposed around SMRs/AMRs and in relation to fusion.

- What the likely impact will be on the UK Radioactive Waste Inventory in terms of (a) types of waste arising (b) when wastes are likely to arise and (c) the timeframe for their decay.
- The storage of wastes, the management options and their impact on current plans for waste disposal including the Geological Disposal Facility and Near Surface Disposal.

At a local level, any developer of new nuclear facilities must engage properly with local authorities and communities and ensure that what they propose aligns with and helps facilitate the NDA/Magnox plans for decommissioning of current nuclear legacy sites. This should include the following:

- The developer should ensure that it identifies the requirements for on and off-site facilities for radioactive waste management and decommissioning, and the implications for existing or planned facilities for managing the nuclear legacy on or adjacent to the site concerned and for any regional or national facilities;
- The developer should engage with the local planning authority on those requirements and implications throughout the application process;
- The developer should publish the above information and engage with the host community in an open and transparent way;
- In liaison with the NDA, and taking into account the views of local authorities and the communities they represent, the developer must ensure that its proposals for radioactive waste management and decommissioning do not prejudice effective management of the nuclear legacy; and
- That the recruitment of staff into any new build programme does not leave nuclear legacy management short of staff and skills.