



Nuclear Waste Services Annual Review 2022-23

Making nuclear waste permanently safe, sooner



Nuclear Waste
Services

The ability to safely manage and dispose of nuclear waste today and for future generations is crucial.

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Introduction

A joint statement by NWS Chair of the Board Adrienne Kelbie and NWS CEO Corhyn Parr

Delivering today and for future generations

Our vision and mission at Nuclear Waste Services (NWS) is vitally important to the UK today and for future generations. It is also incredibly exciting.

We're here to make nuclear waste permanently safe, sooner, and our mission is to become the 'one-stop shop' for the management of nuclear waste in the UK.

Everything we do is connected, and, with a view of the full waste management cycle, our skilled workforce is developing new treatment technologies and services to overcome the challenges of managing and disposing of nuclear waste safely and securely.

By doing so, we will speed up the Nuclear Decommissioning Authority's (NDA) safe, secure, and sustainable decommissioning and save the taxpayer money.

The UK has been producing and managing nuclear waste for many decades and will continue to do so for many more. Today, nuclear power is viewed by the UK Government as essential to the low-carbon energy mix and securing our energy supply in the future. The Welsh Government also supports nuclear new build.

Therefore, the ability to safely manage and dispose of nuclear waste today and for future generations is crucial.

NWS brings together UK expertise and dedicated nuclear waste management facilities to support the UK, across many areas including the nuclear energy industry, defence, industrial users of radioactivity, and the public health sector.

Success for the UK nuclear sector is reliant on the ability to manage waste safely, not just for today but for the very long-term future. NWS is an essential part of the system.



Adrienne Kelbie CBE
Chair of the Board
Nuclear Waste Services



Corhyn Parr
Chief Executive Officer
Nuclear Waste Services



Our new strategic approach

NWS was formed in 2022, bringing together the best of the UK's expertise in radioactive waste management.

Our Board sets our strategic direction, and this year we published our first strategy ('**2030 strategy**') which explains how we will deliver our vision and mission through key strategic objectives and milestones through to 2030.

Our strategic objectives are:

- We will be leaders in the application of the nuclear waste hierarchy to ensure that the right waste is placed in the right package and is disposed of at the right facility.
- We will support accelerated decommissioning through innovation with waste streams managed in the most sustainable and efficient way, supported by technology development and expertise, setting worldwide standards.
- And we will deliver value for money for the UK taxpayer.

We focus on doing the right thing for our people, partners, customers, and communities where we operate.

"With the pressures on public spending and the impact of inflation, it is absolutely crucial that we provide value for money and are always looking for efficiencies as we deliver our mission."

Achievements and progress

This has been our first full year operating as NWS, and in this short time we've created momentum and delivered a huge amount.

- We've strengthened as the UK's integrated expert nuclear waste management organisation, and our strategic approach reflects a clear and simple mission. We're building our expertise at NWS and creating a culture and behaviours that are inclusive, open-minded, and focused on optimising delivery, driving efficiencies, and creating value in everything we do.
- We continue to safely operate the UK's national Low Level Waste Repository ('the Repository') in Cumbria, for our workforce, customers, and the local community. There were zero major safety incidents in 2022-23. The continued safe, secure, and environmentally compliant operation of our repository is the foundation on which we will build NWS future missions.
- We're making significant progress with the UK's Geological Disposal Facility (GDF) programme – with three communities across England currently engaged in the associated siting process, learning about this project and what it could mean for them. Early site evaluation work (including surveys) is well underway. *In the period covered by this report, NWS had also been engaging with the Allerdale community. Following a comprehensive evaluation of information NWS has taken the decision not to take Allerdale further in the siting process, due to the lack of suitable geology. There is a positive legacy to the Allerdale community's participation in the process, with around £2 million in GDF Community Investment Funding supporting over 50 local projects, which we will continue to support.*
- We lead the Integrated Waste Management Programme as part of the NDA group, and this is helping to improve radioactive waste management by addressing gaps, introducing new technologies and capabilities, and enabling a more joined-up approach to waste management.
- We have safely diverted huge volumes of nuclear waste away from disposal at our Repository site. This has been achieved through a range of characterisation and treatment services, ensuring that only wastes which require the protection of an engineered vault are disposed of at our site and saving taxpayers millions of pounds. In 2022-23, 1689te of metallic waste was treated with 98% released for recycling.

Challenges

Together with our successes and progress we are operating within a complex and challenging environment:

- Along with the rest of the nation, we are managing financial challenges. With the pressures on public spending and the impact of inflation, it is absolutely crucial that we provide value for money and are always looking for efficiencies as we deliver our mission.

- Working with the nuclear sector across major UK nuclear, defence, and infrastructure programmes, there is an urgent need to develop the capability and skills to deliver ambitious programmes of work. Success will be underpinned by the ability to find and retain a skilled workforce.
- The uncertain nature of decommissioning and the ability for waste producers to provide certainty in waste volumes for treatment, diversions, or disposal. We will continue to support waste producers to help get waste flowing through the system according to plans and to enable decommissioning of existing sites.
- Our work can be complex, technical, and very long-term in its operation which can make building stakeholder and community understanding challenging. We embrace this challenge through our continuous programmes of national and community engagement, including stakeholder meetings, community events, site visits, and information-sharing across a range of channels.

Looking ahead

We're energised, excited, and ready to build on our progress, respond to challenges, and continue to deliver our mission.

- We're looking forward to the conclusion of the UK Government and devolved administrations' review of the management of radioactive substances and nuclear decommissioning policy framework, which includes potential scope for wider adoption of a risk-informed approach to disposal and use of the waste hierarchy for higher activity wastes in England and Wales.
- We will harness technology, innovations, and new partnerships to manage difficult challenges, such as radioactive waste that contains asbestos.
- And we want our business to be a great place to work, with diverse and inclusive teams at all levels - from the Board to each and every employee - that are action-orientated, ambitious, collaborative, and act with integrity.

We have an attentive, thoughtful, and hard-working Board who are providing terrific challenge and support. We are also extremely proud of our people and thank them all for their efforts, enthusiasm, and focus on delivering our mission.



"We will harness technology, innovations, and new partnerships to manage difficult challenges."

Our successes are not just down to the leadership of the NWS Board and Executive, but the whole NWS staff.

We're working in partnership with a wide range of stakeholders and we're grateful for their support and challenge, in particular from our regulators and Trade Unions.

We're also hugely thankful and value the contribution of the supply chain and from those communities in which we're working.

We know there is more to do. We're always striving to maintain and build on our excellent safety record, we're planning the next phases of work and growing our capability to deliver, and we're enhancing our programmes so that they are more robust.

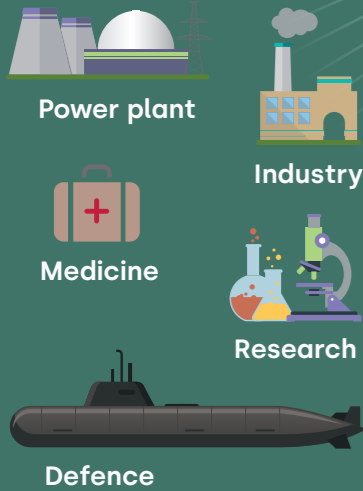
Our long-term strategic milestones and corporate targets build on progress and drive our ambition to deliver even more in the future.



Year at-a-glance

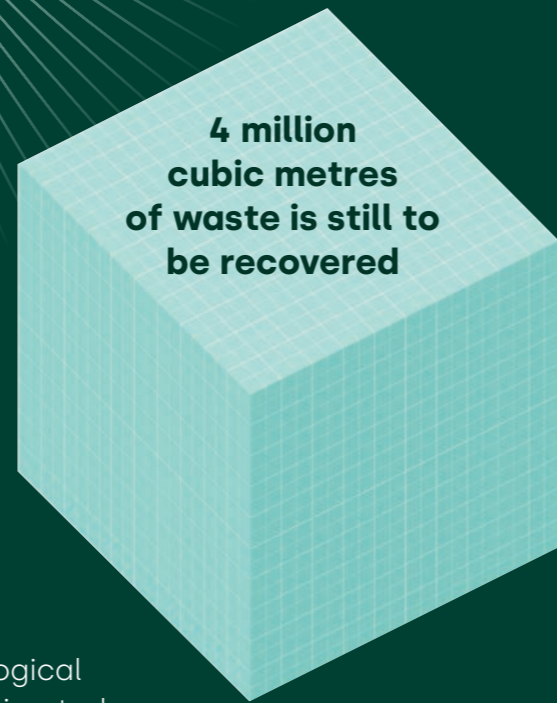
Context

For more than **70 years**, nuclear technology has been a part of our lives in the UK. It currently provides around **15% of the UK's electricity** and radioactive materials are used in industry, medicine, research, and defence.



1,324 different streams of radioactive waste exist within the UK.

More than **4 million cubic metres of waste** is still to be recovered and treated to complete the UK's decommissioning programme:



4 million cubic metres of waste is still to be recovered

- This includes approximately **2,830,000 m³ of VLLW** and **1,480,000 m³ of LLW**.
- The 2019 Inventory for Geological Disposal shows that the estimated packaged volume of waste and materials totals approximately **750,000 m³** (including new nuclear plans for 16GWe).
- Today, nuclear power is viewed by the UK Government as an essential element of the low-carbon energy mix, alongside renewables – providing a clean, reliable, and secure energy supply. The Welsh Government also supports nuclear new build.

24GWe



16GWe

New nuclear build ambition for inclusion in waste management planning.

Delivering solutions - NWS in 2022-23

Our extensive network extends across the NDA group to suppliers, academic, and international partners, who supplement our capability and ensure that our teams benefit from global expertise and best practice.



Safety first – zero major safety incidents at our sites.



Four communities engaged in the GDF siting process across England: three in Cumbria, namely **Mid Copeland, South Copeland** and **Allerdale**, and one in Lincolnshire around **Theddlethorpe**.

We're diverting huge volumes of waste away from disposal - in 2022-23 we treated **1689te** of metallic waste - **98% of which was released for recycling**.



We're investing in **expertise for the future**. Our Waste Expert Career Pathway is a first for the nuclear industry.



£6,000,000

Supporting our communities – **around £6m community funding** making a real and positive difference across our GDF and Repository programmes.

Our expertise - **900 people** whose skills include nuclear science, technology, engineering, safety, security, programme management, environmental protection, and community engagement.



We're getting on with the safe and secure disposal of nuclear waste - this year **we disposed of more than 80 containers at the Repository**. This was a marked increase in both volume and radioactivity on previous years.

About NWS

Overview

Nuclear Waste Services (NWS) is here to make nuclear waste permanently safe, sooner (*see 'NWS strategic approach – overview'*) and provide solutions for a challenge that affects us all.

For more than 70 years, nuclear technology has been a part of our lives in the UK. It currently provides around 15% of the UK's electricity and is used in industry, medicine, research, and defence.

All of this activity has created a legacy of nuclear waste. There are more than 4 million cubic metres of waste still to be recovered and treated to complete the UK's existing decommissioning programme.

Our work spans England, Wales, Scotland, and Northern Ireland. Radioactive waste management policy is a devolved matter, and we provide safe and secure solutions for nuclear

waste according to the respective policies in each nation.

The creation of NWS in January 2022 brought together the expertise of LLW Repository Ltd (LLWR), Radioactive Waste Management Ltd (RWM), and the NDA group's Integrated Waste Management Programme (IWMP).

We are specialists in the treatment and disposal of nuclear waste and offer a full range of skills and solutions across preparation and planning, treatment and packaging, and disposal.

The net funding granted to us by the NDA in 2022-23 was £205.7m. We have an expert team of around 900 people whose skills cover nuclear science, technology, engineering, safety, security, programme management, environmental protection, and community engagement.

We are passionate about developing a thriving national workforce of nuclear waste specialists to support our long-term mission. We will grow significantly in the next few years as we work closely with partners in the nuclear industry, engineering, and construction sectors to deliver all our major programmes.

We are a core part of the Nuclear Decommissioning Authority (NDA) group, which is responsible for keeping the UK's former nuclear sites and facilities safe and secure as they are decommissioned. Our activities provide the endpoint in the nuclear journey and are critical to the NDA's mission, which represents one of the world's largest environmental programmes.

We are a core part of the Nuclear Decommissioning Authority (NDA) group, which is responsible for keeping the UK's former nuclear sites and facilities safe and secure as they are decommissioned.

Berkeley Site reactor building and decommissioned boilers.





Inside Trawsfynydd ILW store

Working collaboratively will be crucial for delivering our ambitions, which include potential for £2.3 billion savings across the NDA group.

The continued safe, secure, and environmentally compliant operation of our existing Low Level Waste (LLW) Repository is a key enabler to realise the wider NDA, defence, and civil nuclear estates decommissioning missions and the foundation on which we will build NWS.

One of our key responsibilities is to develop a Geological Disposal Facility (GDF) as a permanent solution for most of the UK's higher-activity radioactive wastes. At an estimated cost of £20-£53 billion, this represents one of the UK's largest environmental and infrastructure programmes.

Some higher-activity wastes may be suitable for near surface disposal but others will require the long-term safe, secure isolation of a facility built deep in a stable rock formation.

The search for a successful GDF site is based on the need for a suitable site and the informed support of a willing host community.

In 2022-23, we engaged with four communities across England: three in Cumbria, namely Mid Copeland, South Copeland and Allerdale, and one in Lincolnshire around Theddlethorpe.

Our operations and major programmes

We harness our combined expertise to think differently about waste, enabling a more flexible approach to managing all waste streams safely in the long term.

This approach is the responsibility of the IWMP within NWS, an initiative that spans the whole NDA group and the wider UK nuclear industry.

The programme includes investment in new technologies and addressing gaps in the waste management lifecycle. It aims to deliver the benefits of greater integration, helping to reduce and divert waste, enable a more proportionate, risk-informed approach (see 'waste hierarchy explainer'), support better coordination across the industry and, ultimately, reduce costs for the taxpayer.

NWS 2030 strategy - overview

Nuclear Waste Services was created with the vision and purpose to make nuclear waste permanently safe, sooner.

Our mission is to become the 'one-stop shop' for all radioactive waste management and disposal solutions for the UK.

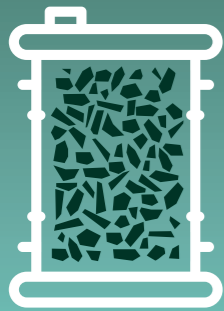
We have a clear picture of the organisation we will become by 2030 and Our Values set out who we want to be as a world-leading organisation.



Strategic objectives

Right Waste Form, in the Right Package, in the Right Facility

We are committed to ensuring that the waste hierarchy is applied throughout the radioactive waste management lifecycle and will continue to drive waste prevention, recycling, and the minimising of overall volumes. We will set standards and provide specialist advice and services so that the waste form is assigned to the right package and right facility. We will achieve this by using a safety case led approach to ensure protection of people and the environment, now and in the future, whilst promoting sustainable practices.



Accelerate Decommissioning by Innovation

We will work with waste producers to overcome a range of waste challenges and to capitalise on new opportunities. We will do this by thinking differently about waste, innovating in everything we do and enabling a flexible approach to long-term waste management. Innovation is everyone's role. The NDA has charged us with this work, creating and developing new approaches and defining the appropriate implementation of waste routes to support the overall nuclear decommissioning mission.



Value for the UK

We will support integration across the NDA group and the supply chain and seek opportunities to deliver the overall mission in an optimised way by providing industry wide solutions to our radioactive waste challenges. Integrated waste solutions will allow us to build and share sustainable capabilities to assess make versus buy options, deliver timely solutions and efficiencies, and overall value to the taxpayer.



The Low Level Waste Repository



Our culture and people

As an organisation our people are our greatest asset, and we are committed to creating an environment where we can all thrive. We all have a role to play in achieving our vision of making nuclear waste permanently safe, sooner.

We will realise our vision by embodying our values and behaviours; listening to one another, allowing space for innovation, being open and honest in our conversations and working together to deliver solutions, respecting everyone's views, opinions, and experience.

Our culture is focused on nurturing and promoting safe working and the wellbeing of our colleagues and communities, and celebrating the diversity of experiences that we benefit from. Our values have been determined by NWS colleagues for what they want to stand for and challenge each other to be, in our journey to continuous development of our workplace.

We believe that no one should be injured or made unwell by what we do, and we were pleased with our continued high standards of health, safety, and wellbeing performance this year. We also celebrate the efforts of our mental health first aiders, and our passionate equality and diversity champions and menopause experts.



"As an organisation our people are our greatest asset, and we are committed to creating an environment where we can all thrive."





We have a passion for the nuclear waste industry to be accessible to everyone. Our education and 'science, technology, engineering, and mathematics' (STEM) ambassadors are at the grassroots in primary schools, secondary schools, and universities, talking about diverse and fulfilling careers in the industry. This year we were able to connect with more than 600 pupils between the ages of five to 17 years old whom we hope to inspire to consider a future with us.

Effective community and stakeholder engagement is a priority for every member of the NWS team, from the operational teams to the Board. Our emphasis is on encouraging a two-way dialogue and making sure this helps inform our decision making.



Living our values

Beth Haynes, NWS Human Resources

"When leaving university in 2022 I must admit I was feeling apprehensive about joining the world of work. However, as soon as I had my first day, I knew I was going to settle in just fine.

"People are my passion and always have been really, so to be able to take my education in psychology into a business has been such a great opportunity. Particularly working in health and wellbeing, I've been able to work with my line manager really closely to see how we can make positive change across NWS to ensure all staff feel supported. Looking for best practice, taking on feedback from staff themselves, and ensuring collaboration across the organisation have been vital for the development of initiatives within the health and wellbeing space, and I've thoroughly enjoyed being able to contribute to these changes.

"Over the past year, everyone I've been able to work with has been so supportive and encouraged me to try new things in all areas of my personal and professional development, such as my training to become a mental health first aider, my involvement with our employee networks, and introducing wellbeing webinars to NWS. I think as a graduate you want to get everything right and make good impressions, but I've learnt that not everything will be 100% right first time and that's okay! There's always room for improvement and being in a psychologically safe environment allows you to be your full self, feel trusted, and make mistakes which you can learn from, which is really empowering for a young professional starting in their career journey."



We're responding to the skills challenge in the nuclear sector by bringing in and adapting skills from other sectors, which gives us diversity of thought. We're also making sure we capture the insights of our experienced colleagues through detailed 'retention of critical knowledge' programmes.

We stand out in our sector for gender equality from our Board and throughout our teams. Four members (50%) of our Executive Team and 21 members (39%) of our senior leaders group are female. Our Board role models diversity of experience and voice. For example, our Chair of the Board is a woman and 50% of our Non-Executive Directors are women.

We're striving to create an ambitious and action-orientated organisation where colleagues feel part of the future direction and able to fulfil their potential and perform at their best.

"Our Board role models diversity of experience and voice. For example, our Chair of the Board is a woman and 50% of our Non-Executive Directors are women."

Government policy - update

At the time of writing this Annual Review, the draft UK policy framework for managing radioactive substances and nuclear decommissioning is being reviewed, following a public consultation process.

The update aims to bring together changes made since 1995 into a single UK-wide policy framework to give a clearer and more consistent direction to those using radioactive substances and those responsible for decommissioning and managing radioactive waste.

This includes new proposals around near-surface disposal in England and Wales and the risk-informed approach to radioactive waste management.

Near-surface disposal already forms part of Scottish Government policy on Higher Activity Waste.

The proposed update also reflects the impact, in waste management planning, of the changed scale of new nuclear energy ambition from 16GWe to 24GWe. The newly-formed Great British Nuclear will lead clean nuclear energy for the future.

Our 2030 strategy is presented subject to the outcome of the Government's consideration of consultation on the draft policy and as such this strategy will remain live and flexible should this context change and need to be updated accordingly.

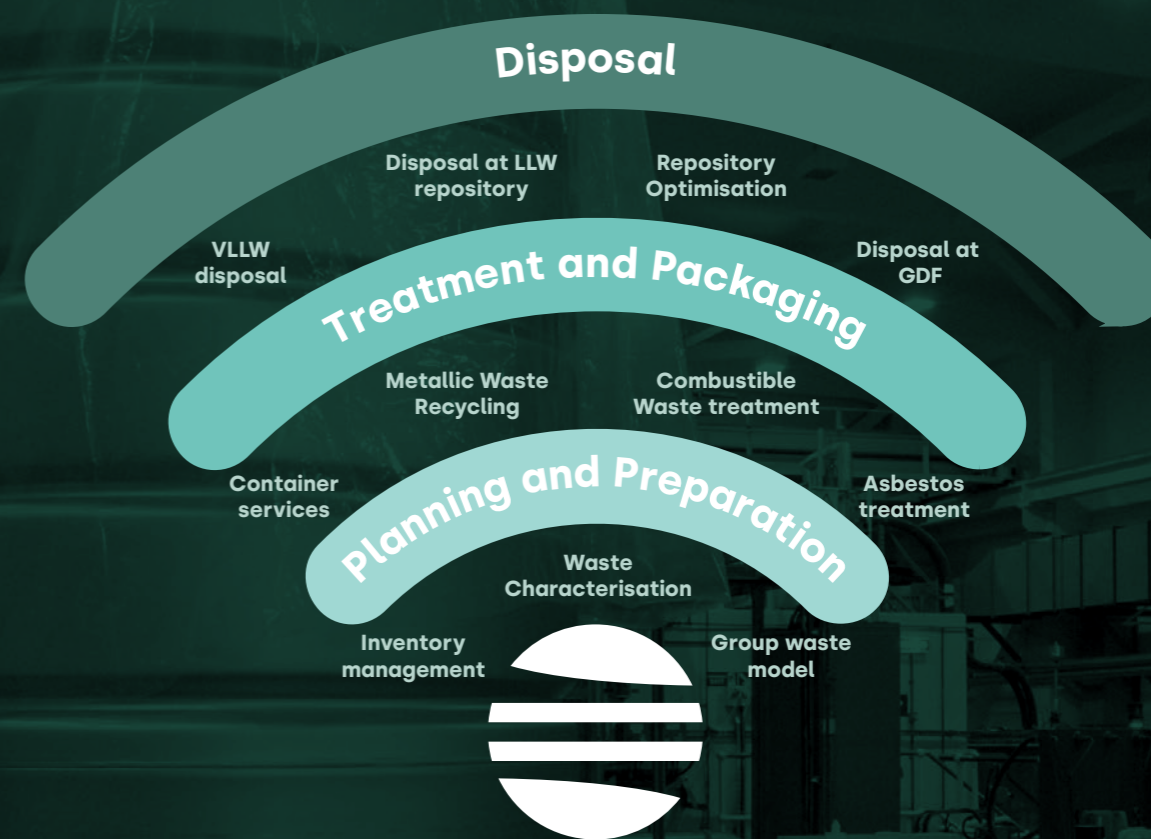
Updating the policy could allow us to implement new management options for some of our higher activity waste inventory while ensuring that waste minimisation activities are being pursued throughout the lifecycle. It would also allow for the introduction of a wider range of disposal facilities than those already in place or planned for.

Greater flexibility in disposal options could lead to earlier and more cost effective decommissioning of nuclear facilities, while maintaining the highest standards of safety.

Updating the policy could allow us to implement new management options for some of our higher activity waste inventory.

Our Priorities and Themes

At NWS we focus our activities on three key areas:



Planning and Preparation

Planning and preparation are the foundation of successful nuclear waste management and are an ongoing process throughout all of the waste lifecycle stages, with the application of the waste hierarchy (see 'waste hierarchy explainer') at the core of our approach. Key activities that take place at this stage include waste characterisation, defining and managing radioactive waste inventory, developing safety cases, and integrated waste management planning.

Treatment and Packaging

The effective treatment and packaging of radioactive waste allows us to reduce overall waste volumes and maximise package performance. We require a toolkit of waste treatment options to allow optimisation and the efficient use of waste management routes. Our waste services team provides a range of services to help waste producers manage their waste throughout the lifecycle.

Disposal

Our ambition is to provide the full range of waste disposal capabilities in line with the needs of the UK nuclear industry, enabling permanent disposal of waste in the right disposal solution at the right time for the best value to the taxpayer.

2022-23 year in review

Planning and Preparation

In conversation with Claire Gallery-Strong

Claire Gallery-Strong is the NWS Director of Strategy and Integrated Waste Management Programme.

In her role, she helps set the strategic direction of the organisation and informs the implementation of our work. She is the Executive lead for sustainability at NWS, making certain it runs through everything NWS does. She also leads an integrated approach to waste services through the Integrated Waste Management Programme.

As part of her approach, and in describing planning and preparation at NWS, Claire sets out the importance of connecting and bringing people together to deliver.

"Planning and preparation is all about knowing and understanding what we have and what the waste is. Everything else then flows from this, and we can understand and implement the best treatment, most appropriate containment, and the right disposal route.

"This is what is known as 'waste characterisation' and includes all the steps taken to collect information on the physical, chemical, and radiological properties of a material.

"It may determine the way in which facilities are decommissioned and how the materials are sorted to segregate different waste types or categories. It helps us understand whether something is a waste and inform how it is best managed.

"Waste characterisation includes a wide range of activities, from desk-based reviews of records to the application of highly specialised and cutting-edge technologies to obtain new data on the properties of the waste.

"It requires the right equipment, technologies and infrastructure, and outstanding people with the right skills, knowledge, and experience.



Claire Gallery-Strong
Director of Strategy at Nuclear Waste Services

"Planning and preparation is all about knowing and understanding what we have and what the waste is. Everything else then flows from this."



"This is an incredibly exciting and influential time for NWS - and a decisive point in setting the thinking for the organisation."

"In our first full year operating as Nuclear Waste Services, we've shone a light on the importance of integrated planning and preparation and have made important progress in key areas.

"We're leading enhanced waste planning across the NDA group and collaborating with the other waste producers to develop a group wide set of waste assumptions to support the development of integrated waste management opportunities and leverage economies of scale where possible, along with improving long-term decision-making across the waste management lifecycle.

"There is significant benefit in conducting more detailed characterisation to allow waste to be more accurately characterised. Our aim is to protect our people and the environment, and assigning the appropriate classification means our resources are used in the most effective way.

"For example, this year we've also worked with Magnox Ltd to safely and efficiently manage 500l stainless steel drums at the treatable radioactive waste store at Winfrith. Previously designated as ILW, our detailed technical analysis has confirmed the drums fall within the LLW classification which can be disposed of now – making this nuclear waste permanently safe, sooner.

"We are working with waste producers more closely than ever before – and this year we've positioned our waste management experts on secondment within waste producers to provide embedded support and guidance and help to get waste flowing through the system.

"We will lead the implementation of cutting-edge technologies and operate as a centre for expertise – while developing a new generation of experts for the future.

"This is an incredibly exciting and influential time for NWS - and a decisive point in setting the thinking for the organisation."

Waste hierarchy - explainer



Our goal is to ensure that waste is managed in a way that is sustainable and protects people and the environment, now and in the future, whilst optimising the lifetime of the current Repository and future sites.

Waste is only disposed of as the last resort if it cannot be diverted for alternative treatment. We strongly promote the use of the waste hierarchy in all of our operational activities.

Most radioactive waste arising in the UK in volumetric terms is Low Level (LLW) or Very Low Level (VLLW). Nuclear Waste Services delivers solutions for this waste, including at the existing National Low Level Waste Repository, which has been operating since 1959 in West Cumbria as a valuable (but finite) resource for low level waste disposal.

The volumes of this waste going to disposal in the UK have been driven down greatly over the years through more effective application of the waste hierarchy to identify ways to avoid creating waste, to better characterise materials, identify new opportunities to re-use or recycle materials and physically reduce the volume of the remaining waste.

Between 2009 and 2021 this saw a remarkable shift from 95% of waste arising in 2009 going straight to disposal at the Repository, to only 2% of waste arising in 2021 going to disposal. The rest has been successfully diverted (for example, re-used or recycled).

We have led the way in developing and offering services to the industry to take advantage of alternative waste management routes, applying the waste hierarchy – helping to ensure the right waste form is in the right package and is disposed of at the right facility.

2022-23 year in review

Treatment and Packaging

In conversation with Dr Craig Ashton

Craig Ashton is Waste Services Director and leads the 'one-stop shop' provided by Nuclear Waste Services to support customers with the management of their radioactive waste.

He describes our broad range of customers, as we work with NDA group operating companies, such as Sellafield and Magnox, and other organisations that generate radioactive waste, including defence, healthcare, and industry.

"The effective treatment and packaging of radioactive waste allows us to achieve our strategic objective to reduce overall waste volumes and maximise package performance – helping us to achieve value for money alongside the safe management of radioactive waste.

"Our waste services team provides a range of existing services to help waste producers manage their waste throughout the lifecycle.

"Treatment is all about enabling the waste hierarchy (see 'waste hierarchy explainer'). We treat nuclear waste so that it can be managed in a more optimised manner, and ideally re-used or recycled. Treatment can take many forms, like super-compaction or incineration. And if something needs disposal, it's conditioned to optimise it for disposal, for example looking to reduce its volume.

"For example, thermal treatment technologies apply high temperatures to waste to pacify reactive materials, reduce volumes, and produce a stable waste form for final disposal. We are working closely with Sellafield Ltd who are leading the trials programme towards developing thermal treatment into a proven technology solution.

"Our work on containers is about making sure they are fit for transportation and disposal, factoring the safety case of the facility it's going to.

"Radioactive waste containers are designed to provide containment through all phases of the waste management lifecycle. The design or selection process is underpinned

by government policy, legislation, and strategy, and is influenced by a variety of factors including the characteristics of the waste, as well as the proposed approach to waste treatment, storage, and disposal.

"This year has seen some great achievements:

- We have safely diverted huge volumes of nuclear waste away from disposal at our Repository site. This has been achieved through a range of characterisation and treatment services, ensuring that only wastes which require the protection of an engineered vault are disposed of at our site and saving taxpayers millions of pounds. In 2022-23, 1689te of metallic waste was treated with 98% released for recycling.
- We're creating containers fit for the job. Last year we made 57 containers, 766 soft-sided packages, and 5179 drums - all licensed and certified for radioactive waste.
- We're investing in our expertise for the future. Our Waste Expert Career Pathway has been accredited by the CIWM – a first for the nuclear industry."

"Looking ahead, we wish to expand our service offerings and our 2030 strategy will focus on an approach to standardise waste containers, innovative ways to treat bulk or problematic wastes like asbestos and metals. We'll also continue to support Sellafield and others developing new technologies, such as options for thermal treatment of higher activity waste."

"Our waste services team provides a range of existing services to help waste producers manage their waste throughout the lifecycle."



Dr Craig Ashton
Waste Services Director at
Nuclear Waste Services

2022-23 year in review

Disposal

In conversation with Martin Walkingshaw and Mike Pigott

Martin Walkingshaw is the Chief Operating Officer at Nuclear Waste Services, with overall accountability for our existing LLW Repository site in Cumbria and our main programmes of work, including the Geological Disposal Facility (GDF).

He describes the benefits and excitement of establishing NWS as one family – from LLWR Ltd, RWM Ltd, and the NDA's IWMP.

"Radioactive waste represents a significant societal challenge for the UK. As a country we've benefitted from the use of radioactive materials for several generations and must deal with the legacy that our usage has and continues to produce.

"I'm proud to be part of the generation that is moving forward with safe and permanent solutions for disposal of radioactive waste. With that comes a huge responsibility. The decisions we take around disposing permanently of radioactive waste must be very well underpinned, whether that's in our existing Repository, in our future GDF, or at other facilities.

"With every container of waste we accept for permanent disposal, we have a really important duty to people now and in the future to make sure that these are the correct decisions.

"We work hard to define safety cases and waste acceptance criteria, ensuring compliance is built into the processes associated with building and operating our disposal facilities. We're held to a high standard by our regulators, and the communities in which we are operating expect us to be rigorous when it comes to radioactive waste disposal.

"Accepting ownership of a package for final disposal is hugely significant – legally, morally, and commercially – and we're conscious of that for each and every package.

"Creating a disposal facility is a significant undertaking – whether that's a new vault at our existing Repository, or a completely new facility like a GDF. That capacity you create needs to be managed carefully. Every square inch needs to be optimised and dedicated to the waste that absolutely needs to go there.



Martin Walkingshaw
Chief Operating Officer at Nuclear Waste Services

"If we can divert the waste through other routes – reduction, re-use, or recycle – it's absolutely the right thing to do and part of our objective to ensure the right waste is in the right place.

"There are a number of highlights and achievements this year:

- We are proud of the Environmental, Health, Safety and Security performance we have achieved in the first year of NWS and being recognised by RoSPA with an Order of Distinction is something that everyone in the organisation can be proud of. We can't be complacent however, so sustained safety performance will remain our top priority.
- The GDF programme is further ahead than it has ever been before. In 2022-23, we engaged with four communities across England: three in Cumbria, namely Mid Copeland, South Copeland and Allerdale, and one in Lincolnshire around Theddlethorpe. Early site evaluation work is also well underway." (See 'GDF site evaluation - explainer'.)
- I have been delighted to see the positive impact of our community funding. We've distributed around £6m in community funding across our GDF and Low Level Waste Repository programmes. For example, the formation of GDF Community Partnerships has so far unlocked more than £3m of Community Investment Funding, supporting around 80 projects from community youth projects to mental health initiatives, and driving positive change in those places. This means that there are clear benefits already to communities participating in the GDF siting process.

"This is a really exciting time for the industry, with UK Government plans for nuclear power as a source of low carbon electricity generation and NWS providing the solutions for radioactive waste."



The rig used in our borehole sealing project

Mike Pigott is the Director of Sites & Operations at Nuclear Waste Services, who leads, directs and controls all activities on our nuclear licensed site; safely, securely, with environmental compliance, and responsible stewardship.

He details some of the achievements and progress that have been made at the Repository site.

"We're getting on with safe and secure disposal, and this year disposed of more than 80 containers at the Repository – representing a marked increase in both volume and radioactivity on previous years."

"We have completed the necessary enabling activity for works that will ultimately see construction of the final engineered 'cap' over the disposal vaults and adjacent trenches. During the enabling works phase, over more than two years, new features have been added to the site, including a haul road from the rail sidings on site to the vaults and historic trenches, to segregate future construction vehicles from regular site traffic.

"Through RACER, our Repository Asset Care, Enhancement and Remediation programme, we continue to enhance the Repository site's critical asset base. An example of this being the significant refurbishment of our Grouting Facility.

"The first campaign for almost three years to grout containers for disposal in the vaults on the Repository site is underway. More than 250 containers will be grouted ahead of disposal, using a cement-based grout that immobilises the low level waste in the containers and creates a very robust wasteform.

"We take our responsibility of being a 'good neighbour' very seriously and where possible aim to reduce the impact of operations on our community. As such, any potential impacts are always a key consideration when planning our activities and operations and we work closely with community representatives to ensure we maintain our social license to operate."

"We're getting on with safe and secure disposal, and this year disposed of more than 80 containers at the Repository – representing a marked increase in both volume and radioactivity on previous years."



Mike Pigott
Director of Sites & Operations
at Nuclear Waste Services



An aerial view of the LLW Repository

The SW Bly conducting a marine geophysical survey



GDF site evaluation underway - explainer

In working with communities as part of the GDF programme, one of our key tasks is to look for potential GDF sites.

Detailed studies and investigations of site suitability will be conducted over a number of years to help ensure a GDF can be constructed, operated, and closed safely and securely.

NWS will evaluate each potential site to establish whether it is suitable, based on siting factors which include safety and security, community, environment, engineering feasibility, transport, and value for money.

This site evaluation work is progressing. NWS' first marine geophysical survey off the coast of Copeland, Cumbria, has successfully acquired data, currently being processed by expert contractors.

We also purchased existing geophysical data for other areas in relation to both the Allerdale and Theddlethorpe locations for information on their geology.

Wider site evaluation studies covering issues such as geology, labour and skills, and transport are also in progress.

The findings from our site evaluation work will inform our decision, for approval by the Secretary of State, about the site or sites to be taken forward into the phase known as 'site characterisation'.

As part of the site characterisation phase, NWS will conduct more detailed investigative work including surveys and the drilling of boreholes, to understand more about the geology deep below the surface where a GDF could be built.

If we make a decision to proceed, and the Secretary of State approves it, the information gathered from these studies will be used to prepare applications for the necessary regulatory permissions and consents to drill boreholes and build a GDF and will be key in the development of a GDF design and safety case.

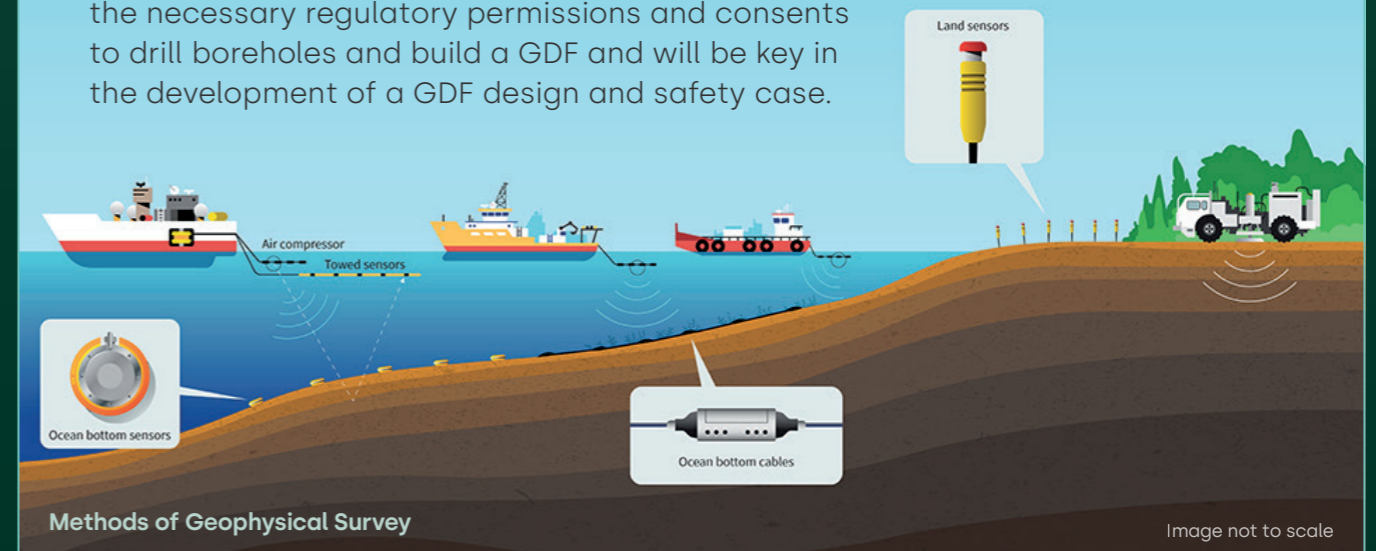


Image not to scale

Look ahead

Corhyn Parr, CEO

We have a clear picture of the organisation we will become by 2030, the values we'll uphold on our journey, and the three strategic objectives to get us there.

For 2023-24 we have five corporate targets which align to the NDA's business plan, our strategic approach, and to the ten long-term strategic milestones we've set ourselves for 2030.

Our corporate targets:

- **Integrating Nuclear Waste Services** – the work we began by forming NWS continues as we work to integrate an organisation that's set up to succeed – by ensuring we have the necessary tools, systems, processes and culture, and becoming a single legal entity in 2024.

- **Geological Disposal Facility** - managing the delivery of our GDF programme with a specific focus this year on delivering the site evaluation inputs to inform discussions with communities and in time to support timely decisions on where to seek major permission for boreholes.

- **Waste Operations** - managing and operating the Repository site, focusing on Repository development and the safe, compliant, and effective management of waste management infrastructure.
- **Waste Services** – providing commercial access to waste management solutions, subject matter expertise and innovative advisory services to waste producers, as well as new service lines that complement our current offerings.
- **Integrated Waste Management Programme** - developing new NDA-wide capability and opportunities that create a more joined-up approach to waste management across the UK. We will be developing our integrated sustainability strategy and sharing more on this by the end of 2023.

As thought leaders in radioactive waste management, ensuring value and cost efficiencies across our remit remains integral to our work. We must maintain effective and efficient deployment of resources to continue to safely and effectively manage nuclear waste at a national scale.

These are big ambitions, and I have every faith in the amazing talent we have here at NWS that we can achieve these together with our partners, stakeholders, and communities.

"I have every faith in the amazing talent we have here at NWS that we can achieve these together with our partners, stakeholders, and communities."



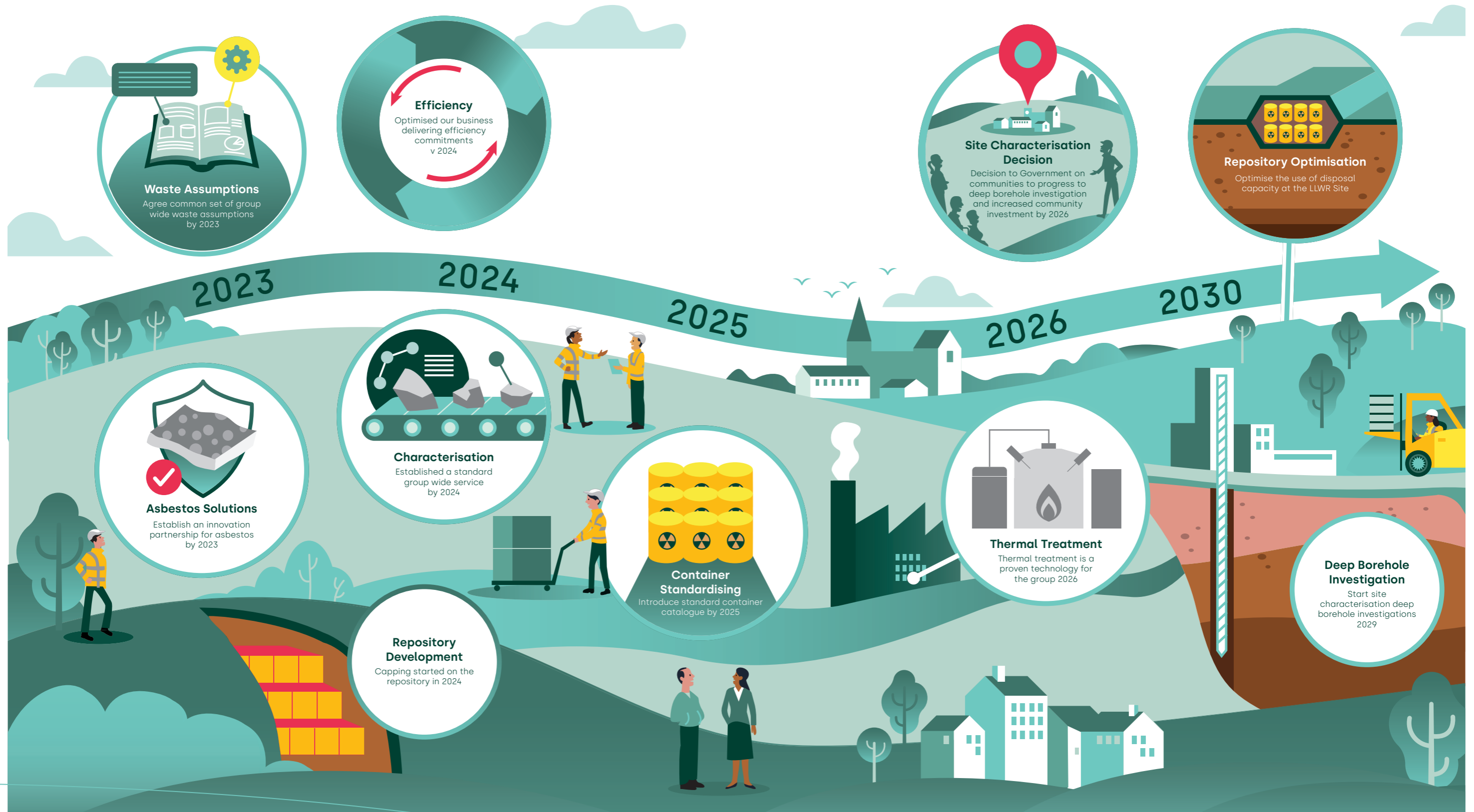
Corhyn Parr
Chief Executive Officer at Nuclear Waste Services



10 by 2030 Road Map

Our success in delivering our strategic approach will be measured against the '10 by 2030'. This will be done in parallel with our nationally important mission, to operate our current national Repository and waste services in a safe, secure manner with environmentally compliant responsible stewardship.

We will use our operating plan, annual targets, and performance measures to demonstrate and evidence our strategy implementation. Our targets will evolve as our strategy implementation matures and be set out in future iterations of our strategic approach and operating plans. Our success in delivering our strategy will be measured against the '10 by 2030'.



nuclearwasteservices.uk

Where to find more information

You can find more information about NWS and geological disposal online or by contacting Nuclear Waste Services directly.

More from Nuclear Waste Services -
nuclearwasteservices.uk

About a GDF -
gov.uk/guidance/gdf-geological-disposal-facility

Twitter -
[@Nuclear_WS](https://twitter.com/Nuclear_WS)

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